TOWN OF GLASTONBURY

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

BUTTONBALL ELEMENTARY SCHOOL
HEBRON ELEMENTARY SCHOOL
HOPEWELL ELEMENTARY SCHOOL
NAUBUC ELEMENTARY SCHOOL

BID #GL-2018-18

M/E/P ENGINEER
BEMIS ASSOCIATES LLC
185 MAIN STREET
FARMINGTON, CONNECTICUT 06032
Phone: 860-667-3233
Fax: 860-321-7070

LIST OF DRAWINGS

COVER

M1.1 BUTTONBALL ELEMENTARY SCHOOL SECTION A MECHANICAL NEW WORK FLOOR PLAN
M1.2 BUTTONBALL ELEMENTARY SCHOOL SECTION B MECHANICAL NEW WORK FLOOR PLAN
M1.3 BUTTONBALL ELEMENTARY SCHOOL SECTION C MECHANICAL NEW WORK FLOOR PLAN
M1.4 BUTTONBALL ELEMENTARY SCHOOL MECHANICAL SCHEDULES

E1.1 BUTTONBALL ELEMENTARY SCHOOL SECTION A ELECTRICAL NEW WORK FLOOR PLAN
E1.2 BUTTONBALL ELEMENTARY SCHOOL SECTION B ELECTRICAL NEW WORK FLOOR PLAN
E1.3 BUTTONBALL ELEMENTARY SCHOOL SECTION C ELECTRICAL NEW WORK FLOOR PLAN

M2.1 HEBRON ELEMENTARY SCHOOL SECTION A MECHANICAL NEW WORK FLOOR PLAN
M2.2 HEBRON ELEMENTARY SCHOOL SECTION B MECHANICAL NEW WORK FLOOR PLAN
M2.3 HEBRON ELEMENTARY SCHOOL SECTION C MECHANICAL NEW WORK FLOOR PLAN
M2.4 HEBRON ELEMENTARY SCHOOL MECHANICAL SCHEDULES

E2.1 HEBRON ELEMENTARY SCHOOL SECTION A ELECTRICAL NEW WORK FLOOR PLAN
E2.2 HEBRON ELEMENTARY SCHOOL SECTION B ELECTRICAL NEW WORK FLOOR PLAN
E2.3 HEBRON ELEMENTARY SCHOOL SECTION C ELECTRICAL NEW WORK FLOOR PLAN

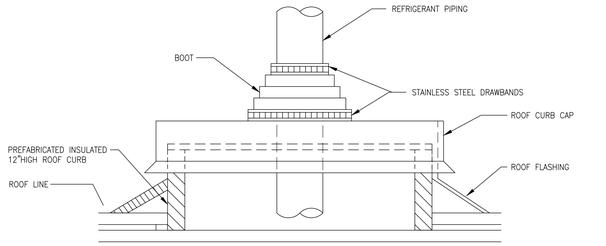
M3.1 HOPEWELL ELEMENTARY SCHOOL SECTION A MECHANICAL NEW WORK FLOOR PLAN
M3.2 HOPEWELL ELEMENTARY SCHOOL SECTION B MECHANICAL NEW WORK FLOOR PLAN
M3.3 HOPEWELL ELEMENTARY SCHOOL SECTION C MECHANICAL NEW WORK FLOOR PLAN
M3.4 HOPEWELL ELEMENTARY SCHOOL MECHANICAL SCHEDULES

E3.1 HOPEWELL ELEMENTARY SCHOOL SECTION A ELECTRICAL NEW WORK FLOOR PLAN
E3.2 HOPEWELL ELEMENTARY SCHOOL SECTION B ELECTRICAL NEW WORK FLOOR PLAN
E3.3 HOPEWELL ELEMENTARY SCHOOL SECTION C ELECTRICAL NEW WORK FLOOR PLAN

M4.1 NAUBUC ELEMENTARY SCHOOL SECTION B MECHANICAL NEW WORK FLOOR PLAN
M4.2 NAUBUC ELEMENTARY SCHOOL SECTION B MECHANICAL SCHEDULES

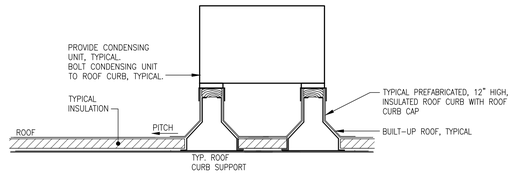
E4.1 NAUBUC ELEMENTARY SCHOOL SECTION B ELECTRICAL NEW WORK FLOOR PLAN

03/08/2018

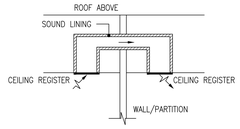


NOTE:ROOF CURB TO BE PROVIDED BY MECHANICAL CONTRACTOR. APPROVED PITCH POCKET, PROPERLY FLASHED INTO THE EXISTING ROOF, FOR ALL NEW MECHANICAL PIPE PENETRATIONS SHALL BE PER THE ROOF MANUFACTURER'S REQUIREMENTS. ALL ROOF WORK AROUND NEW PENETRATIONS SHALL BE DONE BY A LICENSED AND QUALIFIED ROOFING COMPANY CERTIFIED FOR ROOF SYSTEM.

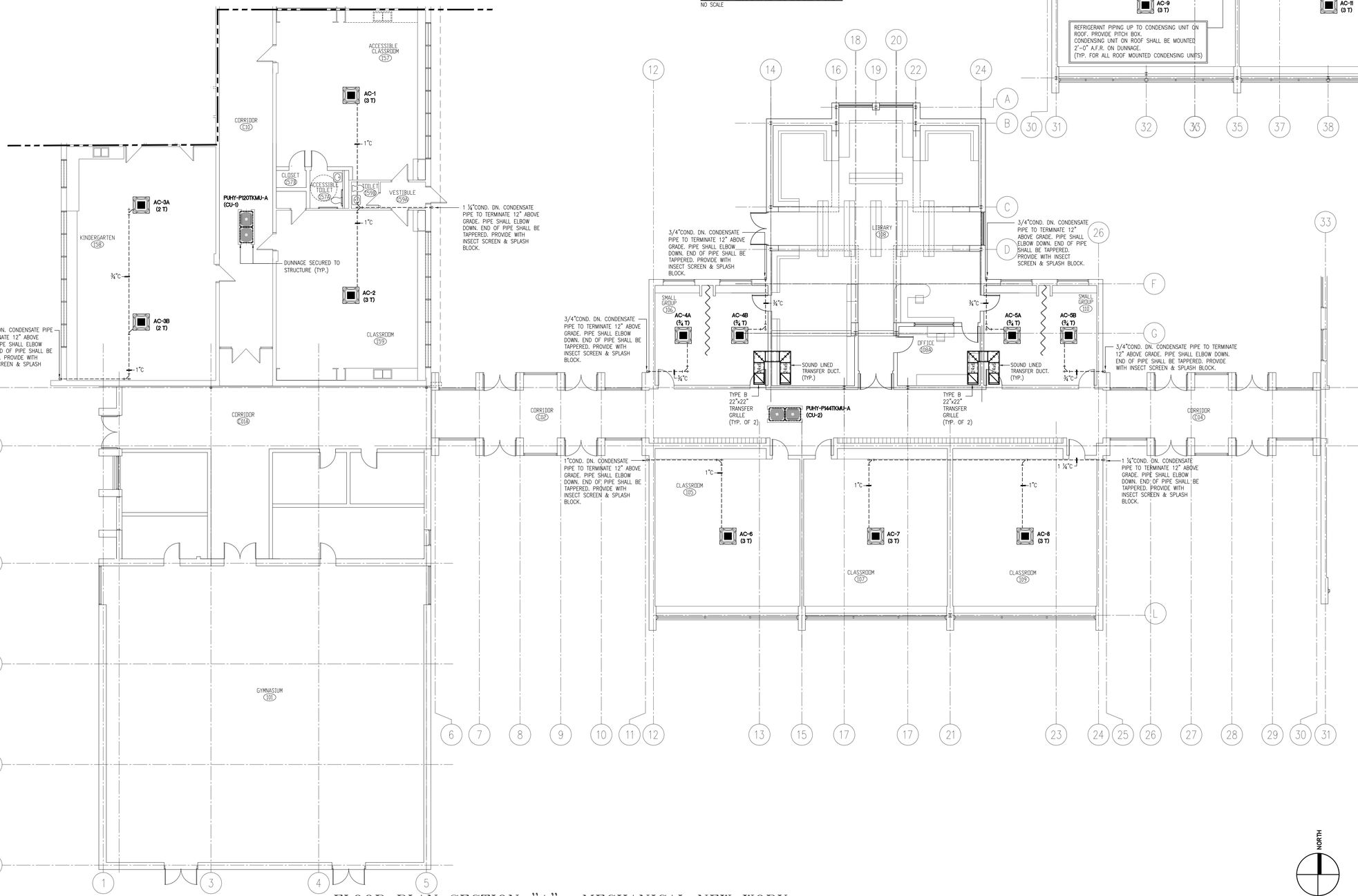
TYPICAL PIPING AND DUCTWORK ROOF CURB DETAIL
NOT TO SCALE



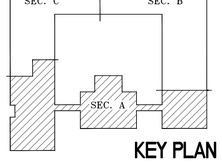
TYPICAL CONDENSING UNIT DETAIL
NO SCALE



TYPICAL TRANSFER DUCT DETAIL
NO SCALE



FLOOR PLAN SECTION "A"– MECHANICAL NEW WORK
SCALE: 1/8"=1'-0"



KEY PLAN

NORTH

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

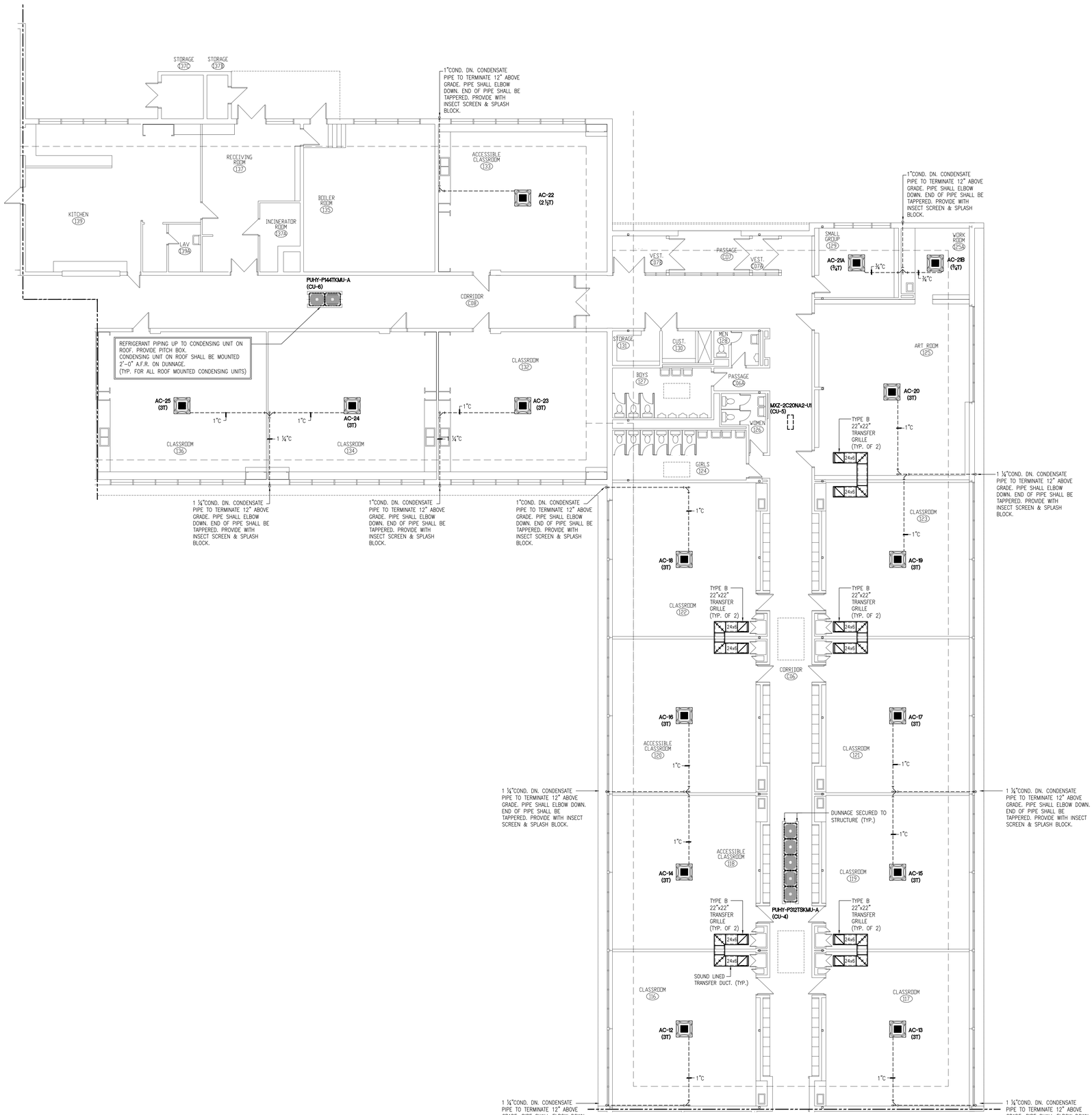
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 677-2313
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
BUTTONBALL ELEMENTARY SCHOOL SECTION A MECHANICAL NEW WORK FLOOR PLAN

DATE 3/08/2018

DWG. NO.
M1.1



FLOOR PLAN SECTION "B"– MECHANICAL NEW WORK

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

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

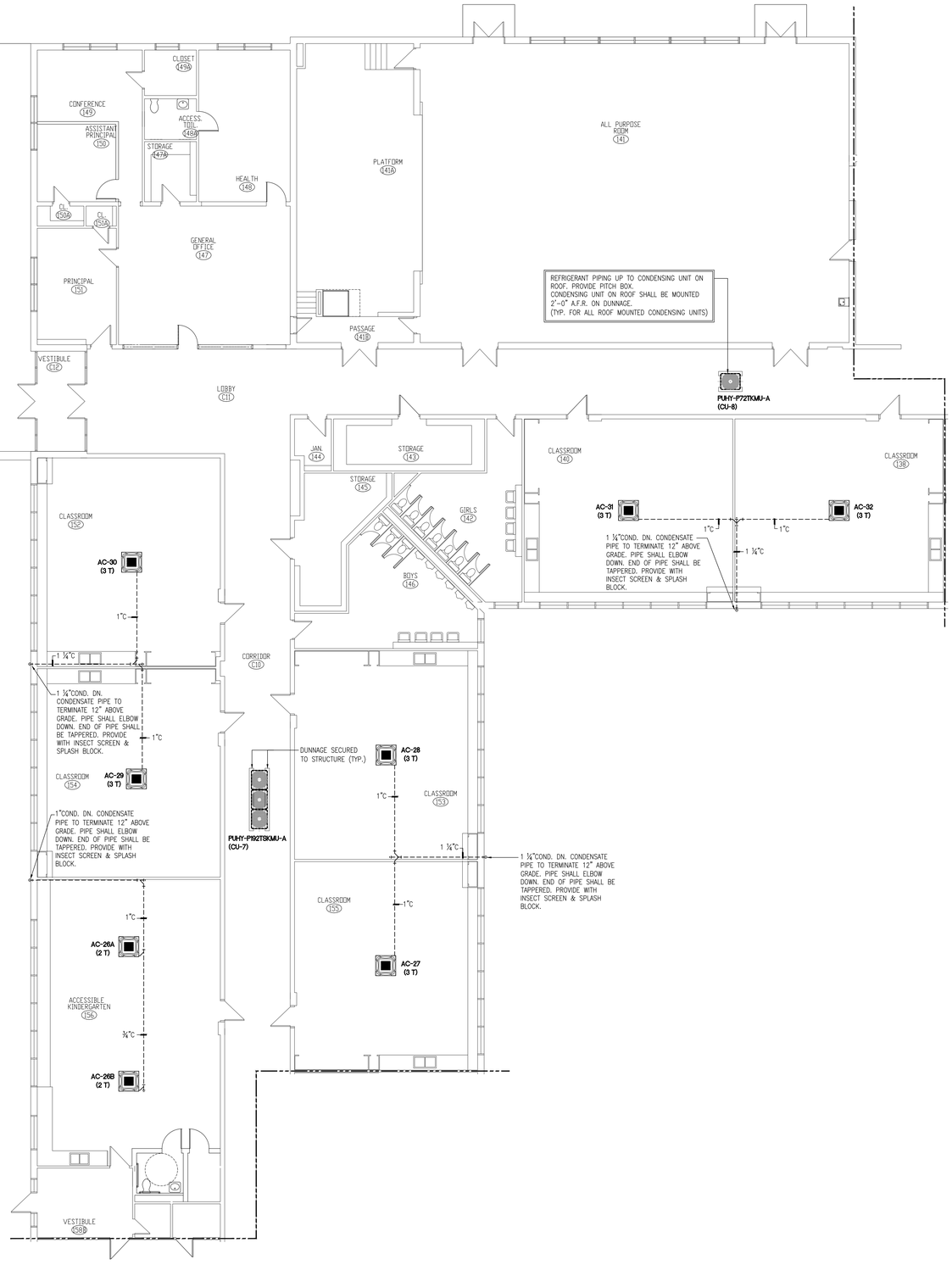
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 521-3311
Fax: (860) 521-7070
www.bemisassociates.com

TITLE
BUTTONBALL ELEMENTARY SCHOOL SECTION B MECHANICAL NEW WORK FLOOR PLAN

DATE 3/08/2018

DWG. NO.
M1.2



FLOOR PLAN SECTION "C"– MECHANICAL NEW WORK

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

MITSUBISHI CITY MULTI VRF INDOOR UNIT SCHEDULE

System Tag	Room Name	Tag Reference	Model	Type	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Design Entering Temp DB/WB (°F) / [Water in temp]	Heating Design Entering Temp DB/WB (°F) / [Water in temp]	Corrected Capacity					Estimated Cooling Coil LAT (°F) / [LWT]	Estimated Heating Coil LAT (°F) / [LWT]	Refrig Pipe Dim Liquid/ Suction (inch)	Peak Fan Airflow (cfm) / [Design gpm G(US)/min]	Sound Pressure Per Fan Speed 208V/230V (dBA)	Voltage / Phase	Electrical MCA/MFS	Notes / Options
									Cooling Diversity Full/Partial (See Note 5, 6)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Diversity Full/Partial (See Note 5, 6)	Heating Capacity (BTU/h)								
CU-1	Accessible Classroom 157	AC-1	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	23,274.3	58.4	89.7	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Classroom 159	AC-2	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	23,274.3	58.4	89.7	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Kindergarten 158	AC-3A	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,008.5	16,865.6	FULL DEMAND	15,710.1	60.4	87.9	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-1	Kindergarten 158	AC-3B	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,008.5	16,865.6	FULL DEMAND	15,710.1	60.4	87.9	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-2	Small Group 106	AC-4A	PLFY-P08NCMU-ER4	Ceiling cassette (4-way airflow) type	8,000.0	9,000.0	80.0/67.0	70.0	PARTIAL DEMAND	8,002.8	6,552.2	FULL DEMAND	5,330.3	62.3	84.1	1/4 / 1/2	350	29-32-38	208/230V/ 1-phase	0.29/15	1, 2, 3, 4, 5, 6
CU-2	Small Group 106	AC-4B	PLFY-P08NCMU-ER4	Ceiling cassette (4-way airflow) type	8,000.0	9,000.0	80.0/67.0	70.0	PARTIAL DEMAND	8,002.8	6,552.2	FULL DEMAND	5,330.3	62.3	84.1	1/4 / 1/2	350	29-32-38	208/230V/ 1-phase	0.29/15	1, 2, 3, 4, 5, 6
CU-2	Small Group 110	AC-5A	PLFY-P08NCMU-ER4	Ceiling cassette (4-way airflow) type	8,000.0	9,000.0	80.0/67.0	70.0	PARTIAL DEMAND	8,002.8	6,552.2	FULL DEMAND	5,330.3	62.3	84.1	1/4 / 1/2	350	29-32-38	208/230V/ 1-phase	0.29/15	1, 2, 3, 4, 5, 6
CU-2	Small Group 110	AC-5B	PLFY-P08NCMU-ER4	Ceiling cassette (4-way airflow) type	8,000.0	9,000.0	80.0/67.0	70.0	PARTIAL DEMAND	8,002.8	6,552.2	FULL DEMAND	5,330.3	62.3	84.1	1/4 / 1/2	350	29-32-38	208/230V/ 1-phase	0.29/15	1, 2, 3, 4, 5, 6
CU-2	Classroom 105	AC-6	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	23,690.1	58.4	90.1	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-2	Classroom 107	AC-7	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	23,690.1	58.4	90.1	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-2	Classroom 109	AC-8	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	23,690.1	58.4	90.1	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Classroom 111	AC-9	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	26,033.5	58.4	92.0	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Classroom 115	AC-10	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	26,033.5	58.4	92.0	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Classroom 113	AC-11	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	26,033.5	58.4	92.0	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Classroom 116	AC-12	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Classroom 117	AC-13	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Accessible Classroom 118	AC-14	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Classroom 119	AC-15	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Accessible Classroom 120	AC-16	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Classroom 121	AC-17	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Classroom 122	AC-18	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	1/2 / 5/8	1095	35-37-39-41	208/230V /1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Classroom 123	AC-19	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	1/2 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	Art Room 125	AC-20	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,072.3	25,078.3	FULL DEMAND	22,303.3	58.4	88.9	1/2 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-5	Small Group 129	AC-21A	SLZ-KA09NAR1.TH	Ceiling cassette (4-way airflow) type	9,000.0	10,500.0	80.0/67.0	70.0	PARTIAL DEMAND	9,020.0	7,302.8	FULL DEMAND	4,488.7	58.4	83.0	1/4 / 3/8	320		/	Powered by Outdoor	1, 2, 3, 4, 5, 6
CU-5	Work Room 125A	AC-21B	SLZ-KA09NAR1.TH	Ceiling cassette (4-way airflow) type	9,000.0	10,500.0	80.0/67.0	70.0	PARTIAL DEMAND	9,020.0	7,302.8	FULL DEMAND	4,488.7	58.4	83.0	1/4 / 3/8	320		/	Powered by Outdoor	1, 2, 3, 4, 5, 6
CU-6	Accessible Classroom 133	AC-22	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,010.6	21,150.5	FULL DEMAND	20,479.8	55.4	93.4	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-6	Classroom 132	AC-23	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	24,093.9	58.4	90.4	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	Classroom 134	AC-24	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	24,093.9	58.4	90.4	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	Classroom 136	AC-25	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	24,093.9	58.4	90.4	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-7	Accessible Kindergarten 156	AC-26A	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,019.8	16,870.3	FULL DEMAND	16,149.3	60.4	88.4	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-7	Accessible Kindergarten 156	AC-26B	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,019.8	16,870.3	FULL DEMAND	16,149.3	60.4	88.4	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-7	Classroom 155	AC-27	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	23,924.9	58.4	90.3	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-7	Classroom 153	AC-28	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	23,924.9	58.4	90.3	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-7	Classroom 154	AC-29	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	23,924.9	58.4	90.3	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-7	Classroom 152	AC-30	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	23,924.9	58.4	90.3	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-8	Classroom 140	AC-31	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,046.9	25,067.7	FULL DEMAND	23,993.0	58.4	90.3	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-8	Classroom 138	AC-32	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,046.9	25,067.7	FULL DEMAND	23,993.0	58.4	90.3	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6

Notes & Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

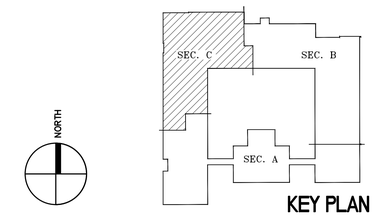
2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities

4 See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.

5 Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system. Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply. It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.

6 It is recommended to always base heating corrected capacity on full demand.



REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 677-2331
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
BUTTONBALL ELEMENTARY SCHOOL
SECTION C
MECHANICAL NEW WORK
FLOOR PLAN AND SCHEDULE

DATE 3/08/2018

DWG. NO.
M1.3

MITSUBISHI CITY MULTI VRF OUTDOOR UNIT SCHEDULE

System Tag	Tag Reference	M-Net Address	Model Number	Modules	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Efficiency IEER/EER [SEER]	Heating COP @ 47°F [HSPF]	Nom System Connected Capacity (% of NOM)	Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Max Pipe Length from BC or 1st Joint (feet)	Corrected Cooling Total Capacity (BTU/h)	Corrected Heating Capacity (BTU/h)	Electrical-Per Module				Notes / Options
																208/230 or [460V]			
															Voltage / Phase	MCA 208/230 or [460V]	RFS	MOCP	
CU-1	CU-1	51	PUHY-P120TKMU-A	P120	120,000.0	135,000.0	19.1 / 12.7	3.83	100.0%	91.0	2.2	60.0	120,042.3	77,968.9	208/230V / 3-phase 3-wire	45/42	50	73/67	1, 2, 3, 4, 5
CU-2	CU-2	55	PUHY-P144TKMU-A	P144	144,000.0	160,000.0	20.2 / 11.8	3.72	97.2%	91.0	2.2	80.0	140,049.3	92,391.5	208/230V / 3-phase 3-wire	53/49	60	88/80	1, 2, 3, 4, 5
CU-3	CU-3	62	PUHY-P120TKMU-A	P120	120,000.0	135,000.0	19.1 / 12.7	3.83	90.0%	91.0	2.2	40.0	108,038.1	78,100.6	208/230V / 3-phase 3-wire	45/42	50	73/67	1, 2, 3, 4, 5
CU-4	CU-4	65, 66, 67	PUHY-P312TSKMU-A	P120, P120, P72	312,000.0	350,000.0	18.1 / 12.1	3.45	103.8%	91.0	2.2	160.0	324,650.4	200,729.5	208/230V / 3-phase 3-wire	45/42, 45/42, 25/23	50, 50, 30	73/67, 73/67, 42/38	1, 2, 3, 4, 5
CU-5	CU-5		MXZ-2C20NA2-U1		18,000.0	22,000.0	[20]	[10]	90.0%	91.0	2.2	20.0	18,040.0	8,977.5	208/230V /	N/A	20	20	1, 2, 3, 4, 5, 6
CU-6	CU-6	76	PUHY-P144TKMU-A	P144	144,000.0	160,000.0	20.2 / 11.8	3.72	95.8%	91.0	2.2	60.0	138,048.6	92,761.4	208/230V / 3-phase 3-wire	53/49	60	88/80	1, 2, 3, 4, 5
CU-7	CU-7	80, 81	PUHY-P192TSKMU-A	P120, P72	192,000.0	215,000.0	19.1 / 12.5	3.61	100.0%	91.0	2.2	80.0	192,158.7	127,998.3	208/230V / 3-phase 3-wire	45/42, 25/23	50, 30	73/67, 42/38	1, 2, 3, 4, 5
CU-8	CU-8	86	PUHY-P72TKMU-A	P72	72,000.0	80,000.0	21.3 / 14.2	4.19	100.0%	91.0	2.2	20.0	72,093.7	47,986.0	208/230V / 3-phase 3-wire	25/23	30	42/38	1, 2, 3, 4, 5

Notes &
Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.

4 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twinning.

5 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.

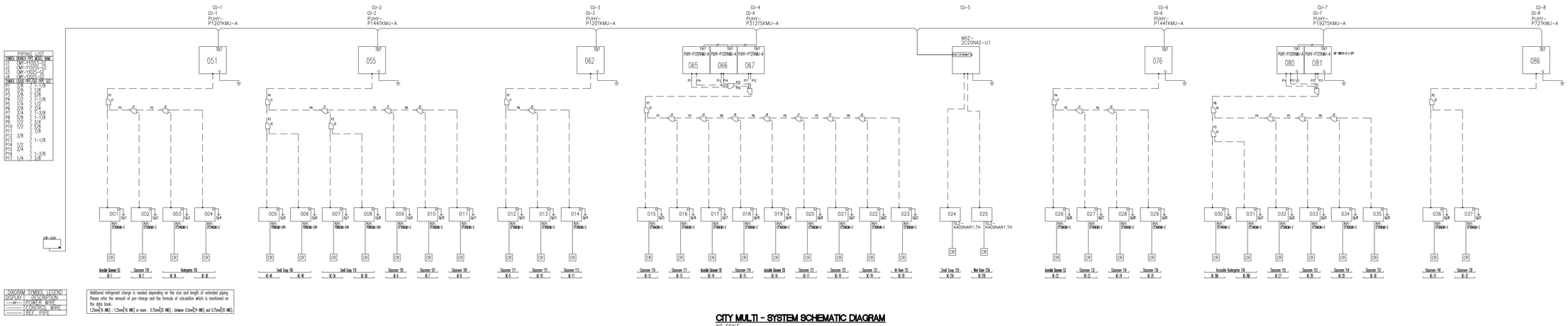
6 Corrected capacities shown are based on lowest guaranteed outdoor temperature, temperatures below this are not guaranteed.

NOTES:

1. UNIT MANUFACTURER SHALL PROVIDE WIRED CONTROLLER INDOOR UNIT.
2. PROVIDE REFRIGERATION LINESETS FOR AIR CONDITIONING UNIT WITH CONNECTIONS TO CONDENSING UNIT.
3. POWER WIRING AND RACEWAY BY DIVISION 26.
4. DISCONNECTS AND STARTING RELAYS FURNISHED BY DIVISION 23.
5. REFER TO DIVISION 23 SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
6. PROVIDE SEISMIC SUPPORT RAIL FOR OUTDOOR UNIT IN ACCORDANCE WITH DIVISION 23 SPECIFICATIONS
7. UNITS USING CFC BASED REFRIGERANTS WILL NOT BE ACCEPTABLE.
8. CASSETTE UNITS SHALL HAVE MULTIFUNCTION CASEMENT/MERV 10 FILTER
9. WALL MOUNTED UNITS SHALL HAVE CONDENSATE PUMP BLUE DIAMOND X87-711/721, 115V. UNIT SHALL SHUT DOWN ON CONDENSATE PUMP FAILURE
10. OUTDOOR UNITS SHALL HAVE WIND BAFFLE

MECHANICAL - GENERAL NOTES:

1. INSTALL UNITS WITH CLEARANCE FOR SERVICE.
2. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, NOT EXACT EQUIPMENT LOCATION. ALL CONTRACTORS MUST COORDINATE EQUIPMENT LOCATIONS WITH OTHER TRADES BEFORE WORK BEGINS.
3. THE LOCATION OF ALL AC CASSETTE UNITS SHALL BE COORDINATED WITH THE EXISTING CEILING
4. CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING. INSULATE ALL REFRIGERANT PIPES.
5. CONDENSATE PIPING SHALL BE COPPER. PIPE SHALL BE INSULATED.
6. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS.
7. PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH WALLS/PARTITION. THIS CONTRACTOR SHALL OPEN WALLS AS NECESSARY. SEAL PENETRATIONS
8. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS.
9. ROOF MOUNTED UNITS SHALL BE LOCATED MIN. 10'-0" AWAY FROM THE EDGE OF THE ROOF.



CITY MULTI - SYSTEM SCHEMATIC DIAGRAM
NO SCALE

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

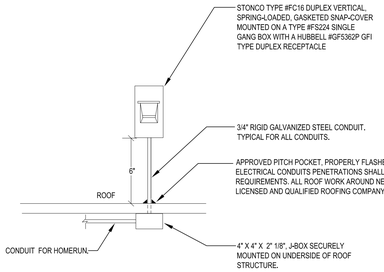
GLASTONBURY, CONNECTICUT

BEMIS | ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 687-1333
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
BUTTONBALL ELEMENTARY SCHOOL MECHANICAL SCHEDULES

DATE 3/08/2018

DWG. NO.
M1.4



ROOF MOUNTED RECEPTACLE DETAIL

SCALE: NOT TO SCALE

DRAWING LEGEND			
SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION
▼	TELE/DATA OUTLET	A	AMPS.
▬▬	SURFACE PANELBOARD.	C	CONDUIT.
▬▬	RECESSED MOUNTED PANELBOARD.	C/B	CIRCUIT BREAKER.
——#——	BRANCH CIRCUIT WIRING. CROSS LINES INDICATE NUMBER OF CONDUCTORS.	GFCI	INDICATES RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
——#——►	BRANCH CIRCUIT WIRING HOMERUN. CROSS LINES INDICATE NUMBER OF CONDUCTORS.	GND	GROUND.
⊕	DUPLEX RECEPTACLE, 18" AFF UNLESS NOTED DIFFERENTLY.	V	VOLTS.
▲	SPECIAL EQUIPMENT POWER CONNECTION	WP	WEATHER PROOF

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

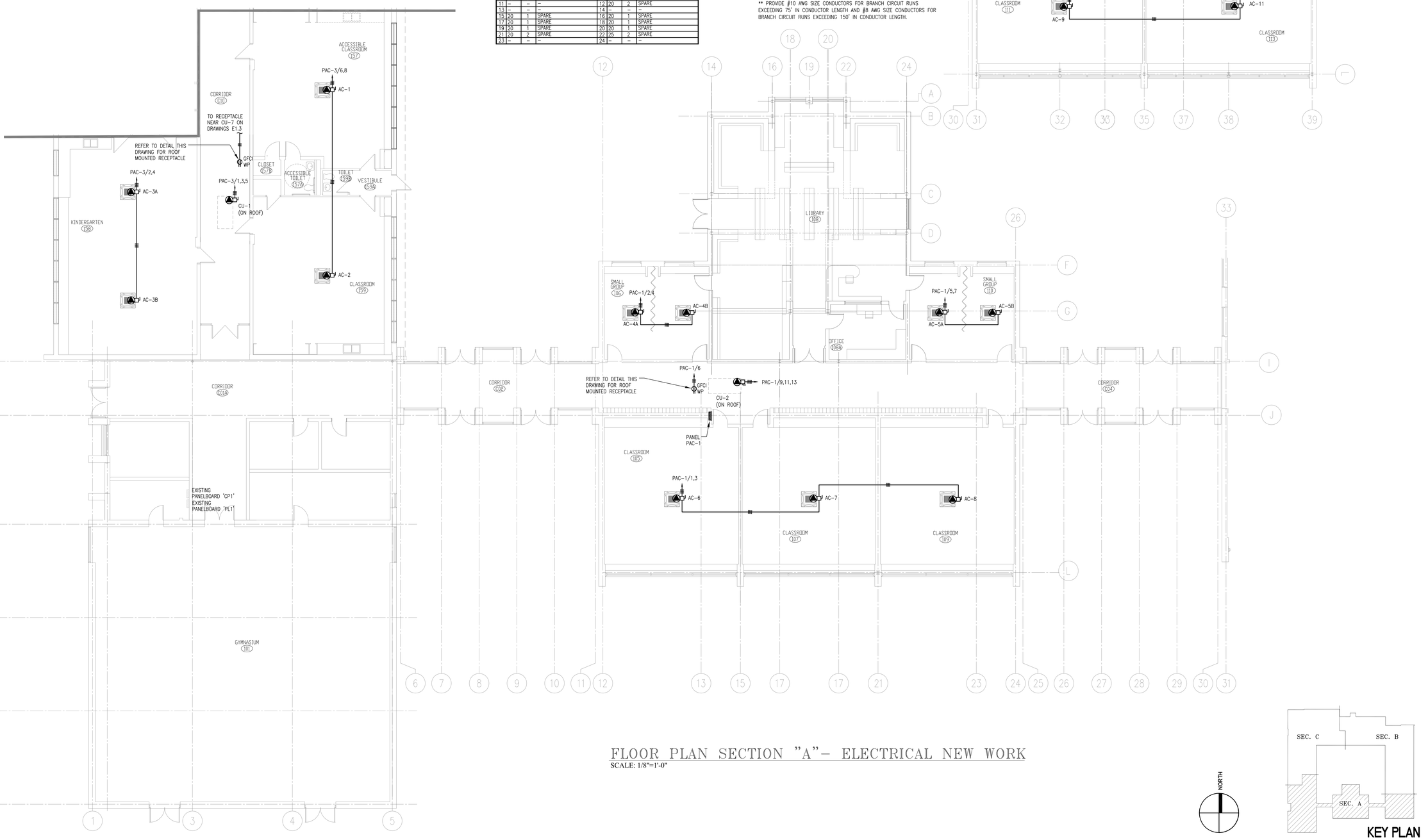
C/B SIZE	* CIRCUIT SIZE
20A-1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

EXISTING PANEL #PAC-1 – FLUSH, 208Y/120V, 3 PHASE, 4 WIRE, 100 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	20	2	AC-6, 7 & 8	2	20	2	AC-4A & 4B
3	–	–	–	4	–	–	–
5	30	2	AC-5A & 5B	6	20	1	RECEPTACLE
7	–	–	–	8	40	2	SPARE
9	90	3	CU-2	10	–	–	–
11	–	–	–	12	20	2	SPARE
13	–	–	–	14	–	–	–
15	20	1	SPARE	16	20	1	SPARE
17	20	1	SPARE	18	20	1	SPARE
19	20	1	SPARE	20	20	1	SPARE
21	20	2	SPARE	22	25	2	SPARE
23	–	–	–	24	–	–	–



FLOOR PLAN SECTION "A"– ELECTRICAL NEW WORK

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

KEY PLAN

NORTH

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

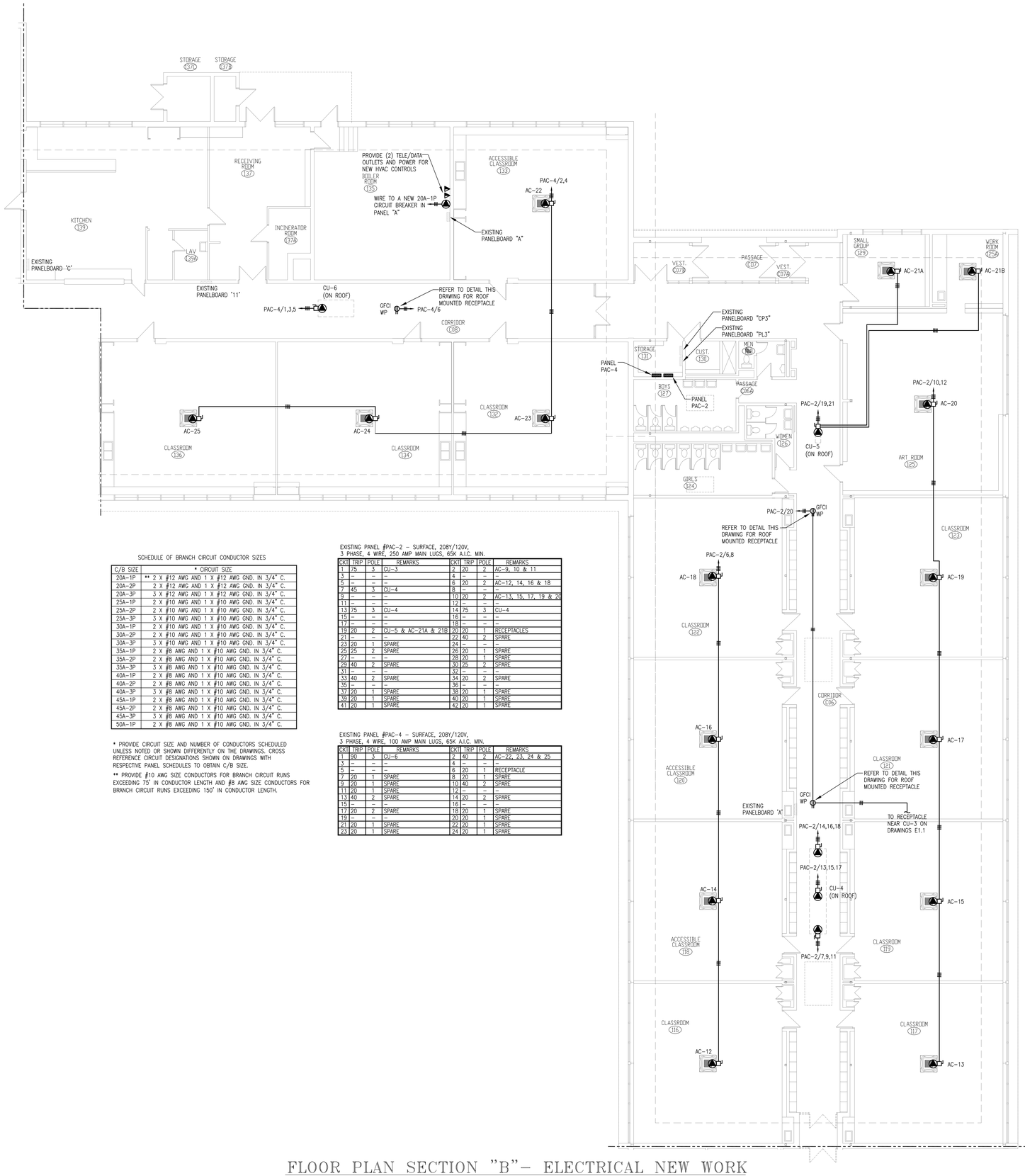
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(Mail: P.O. Box 273)
Fax: (860) 521-7070
www.bemisassociates.com

TITLE
BUTTONBALL ELEMENTARY SCHOOL
SECTION A
ELECTRICAL NEW WORK PLAN

DATE 3/08/2018

DWG. NO.
E1.1



FLOOR PLAN SECTION "B"– ELECTRICAL NEW WORK

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

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

C/B SIZE	* CIRCUIT SIZE
20A-1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

EXISTING PANEL #PAC-2 – SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	75	3	CU-3	2	20	2	AC-9, 10 & 11
3	–	–	–	4	–	–	–
5	–	–	–	6	20	2	AC-12, 14, 16 & 18
7	45	3	CU-4	8	–	–	–
9	–	–	–	10	20	2	AC-13, 15, 17, 19 & 20
11	–	–	–	12	–	–	–
13	75	3	CU-4	14	75	3	CU-4
15	–	–	–	16	–	–	–
17	–	–	–	18	–	–	–
19	20	2	CU-5 & AC-21A & 21B	20	20	1	RECEPTACLES
21	–	–	–	22	40	2	SPARE
23	20	1	SPARE	24	–	–	–
25	25	2	SPARE	26	20	1	SPARE
27	–	–	–	28	20	1	SPARE
29	40	2	SPARE	30	25	2	SPARE
31	–	–	–	32	–	–	–
33	40	2	SPARE	34	20	2	SPARE
35	–	–	–	36	–	–	–
37	20	1	SPARE	38	20	1	SPARE
39	20	1	SPARE	40	20	1	SPARE
41	20	1	SPARE	42	20	1	SPARE

EXISTING PANEL #PAC-4 – SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 100 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	90	3	CU-6	2	40	2	AC-22, 23, 24 & 25
3	–	–	–	4	–	–	–
5	–	–	–	6	20	1	RECEPTACLE
7	20	1	SPARE	8	20	1	SPARE
9	20	1	SPARE	10	40	2	SPARE
11	20	1	SPARE	12	–	–	–
13	40	2	SPARE	14	20	2	SPARE
15	–	–	–	16	–	–	–
17	20	2	SPARE	18	20	1	SPARE
19	–	–	–	20	20	1	SPARE
21	20	1	SPARE	22	20	1	SPARE
23	20	1	SPARE	24	20	1	SPARE

GENERAL SPECIFICATION NOTES – POWER

1 - THE CONTRACTOR SHALL VERIFY AND OBTAIN ALL NECESSARY DIMENSIONS AT THE BUILDING.

2 - FINISHED WORK: THE INTENT OF THE SPECIFICATIONS AND DRAWINGS IS TO CALL FOR FINISHED WORK, COMPLETED, TESTED AND READY FOR OPERATION.

3 - GOOD PRACTICE: IT IS NOT INTENDED THAT THE DRAWINGS SHOW EVERY CONDUIT, JUNCTION BOX, FITTING OR MINOR DETAIL AND IT IS UNDERSTOOD THAT WHILE THE DRAWINGS MUST BE FOLLOWED AS CLOSELY AS CIRCUMSTANCES WILL PERMIT, THE SYSTEMS SHALL BE INSTALLED ACCORDING TO THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH GOOD PRACTICE.

4 - ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON DRAWINGS BUT MENTIONED IN SPECIFICATIONS OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AT NO ADDITIONAL COST TO OWNER.

5 - CODES AND STANDARDS - COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES AND STANDARDS WHEREVER APPLICABLE INCLUDING THE FOLLOWING: THE 2016 CONNECTICUT STATE BUILDING CODE , 2012 INTERNATIONAL BUILDING CODE, 2016 CONNECTICUT FIRE SAFETY CODE, 2014 NATIONAL ELECTRICAL CODE, ICC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, ADA, NFPA, UNDERWRITERS LABORATORIES, FACTORY MUTUAL INSURANCE COMPANY, NEMA STANDARDS.

6 - NOTE THAT THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF THE ELECTRICAL EQUIPMENT AND SYSTEMS, WITHOUT SHOWING EVERY DETAIL AND FITTING.

7 - RACEWAYS: PROVIDE EMT CONDUIT FOR ALL WIRING. EMT CONNECTORS AND COUPLINGS SHALL BE GALVANIZED STEEL SET-SCREW TYPE. PROVIDE GLAND COMPRESSION CONNECTORS AND COUPLINGS WHERE LOCATED IN DAMP AND WET LOCATIONS. PROVIDE FLEXIBLE STEEL CONDUIT FOR FINAL CONNECTIONS TO MOTOR DRIVEN EQUIPMENT. PROVIDE LIQUID TIGHT FLEXIBLE STEEL CONDUIT FOR FINAL CONNECTIONS TO MOTOR DRIVEN EQUIPMENT IN DAMP AND WET AREAS.

8 - BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, RATED 600 VOLTS, 90 DEG.C., COLOR CODED, TYPE XHHW-2.

9 - WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED. WIRE OF SIZE SMALLER THAN #8 AWG SHALL BE SOLID.

10 - MINIMUM SIZE CONDUCTORS FOR POWER AND LIGHTING SHALL BE #12 AWG. PROVIDE MINIMUM #10 AWG SIZE FOR RUNS EXCEEDING 75' IN CONDUCTOR LENGTH, AND #8 AWG SIZE FOR RUNS EXCEEDING 150' IN CONDUCTOR LENGTH. PROVIDE LARGER SIZE CONDUCTORS AS SCHEDULED OR AS NOTED ON THE DRAWINGS.

11 - THE NUMBER OF WIRES IN A CONDUIT RUN IS INDICATED ON THE DRAWINGS BY CROSS LINES ON THE CONDUIT RUNS. PROVIDE CODE-SIZED CONDUIT FOR THE NUMBER AND SIZE OF WIRES UNLESS A LARGER SIZE IS SHOWN ON THE DRAWINGS. MINIMUM CONDUIT SIZE SHALL BE 3/4".

12 - RACEWAYS SHALL BE CONCEALED WHEREVER POSSIBLE IN ALL FINISHED AREAS.

13 - RACEWAYS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALL LINES.

14 - RACEWAYS SHALL BE SUPPORTED FROM THE STRUCTURE BY STRAP HANGERS, ROD HANGERS, OR RACK MOUNTED, OR OTHER APPROVED ELECTRICAL MOUNTING.

15 - PROVIDE FIRE STOPPING AT ALL FIRE AND/OR SMOKE RATED WALL OR CEILING PENETRATIONS IN ORDER TO MAINTAIN ITS ORIGINAL INTEGRITY.

16 - OUTLET BOXES SHALL BE CODE GAUGE GALVANIZED STEEL AND SHALL BE OF SHAPES AND SIZES TO SUIT THEIR RESPECTIVE LOCATIONS AND INSTALLATIONS, AND SHALL BE PROVIDED WITH COVERS TO SUIT THEIR FUNCTION AND INSTALLATION. MINIMUM BOX SIZE SHALL BE 4" SQ. X 2 1/8" DEEP (2-GANG), PROVIDE CAST BOXES FOR OUTDOOR WORK.

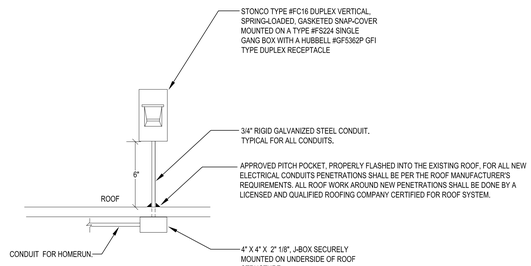
17 - OUTLET BOXES SHALL BE EQUIPPED WITH FIXTURE STUD OR STRAPS WHERE REQUIRED.

18 - INSTALL BOXES IN ACCESSIBLE LOCATIONS AND AT UNIFORM HEIGHTS.

19 - SET BOXES AND COVERS SQUARE AND TRUE WITH BUILDING FINISH.

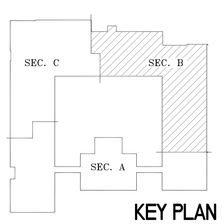
20 - BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS HAS BEEN DESIGNED FOR MAXIMUM ECONOMY CONSISTENT WITH ADEQUATE SIZING FOR VOLTAGE DROPS, CIRCUIT AMPACITIES, AND OTHER CONSIDERATIONS. INSTALL THE WIRING WITH CIRCUITS ARRANGED AS SHOWN ON THE DRAWINGS, EXCEPT AS APPROVED IN ADVANCE BY THE ARCHITECT AND ENGINEER. DO NOT MAKE CHANGES WITHOUT PRIOR APPROVAL.

21 - PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH 120V SINGLE PHASE CIRCUIT. DO NOT USE A COMMON NEUTRAL FOR GROUPS OF CIRCUITS. PROVIDE A SEPARATE GROUND WIRE FOR EACH CIRCUIT BACK TO THE RESPECTIVE PANEL GROUND. IF MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE INSTALLED IN ONE CONDUIT THEY SHALL BE DE-RATED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. DO NOT INSTALL MORE THAN THREE 30 AMP SINGLE PHASE OR FOUR 20 AMP SINGLE PHASE CIRCUITS IN THE SAME CONDUIT.



ROOF MOUNTED RECEPTACLE DETAIL

SCALE: NOT TO SCALE



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

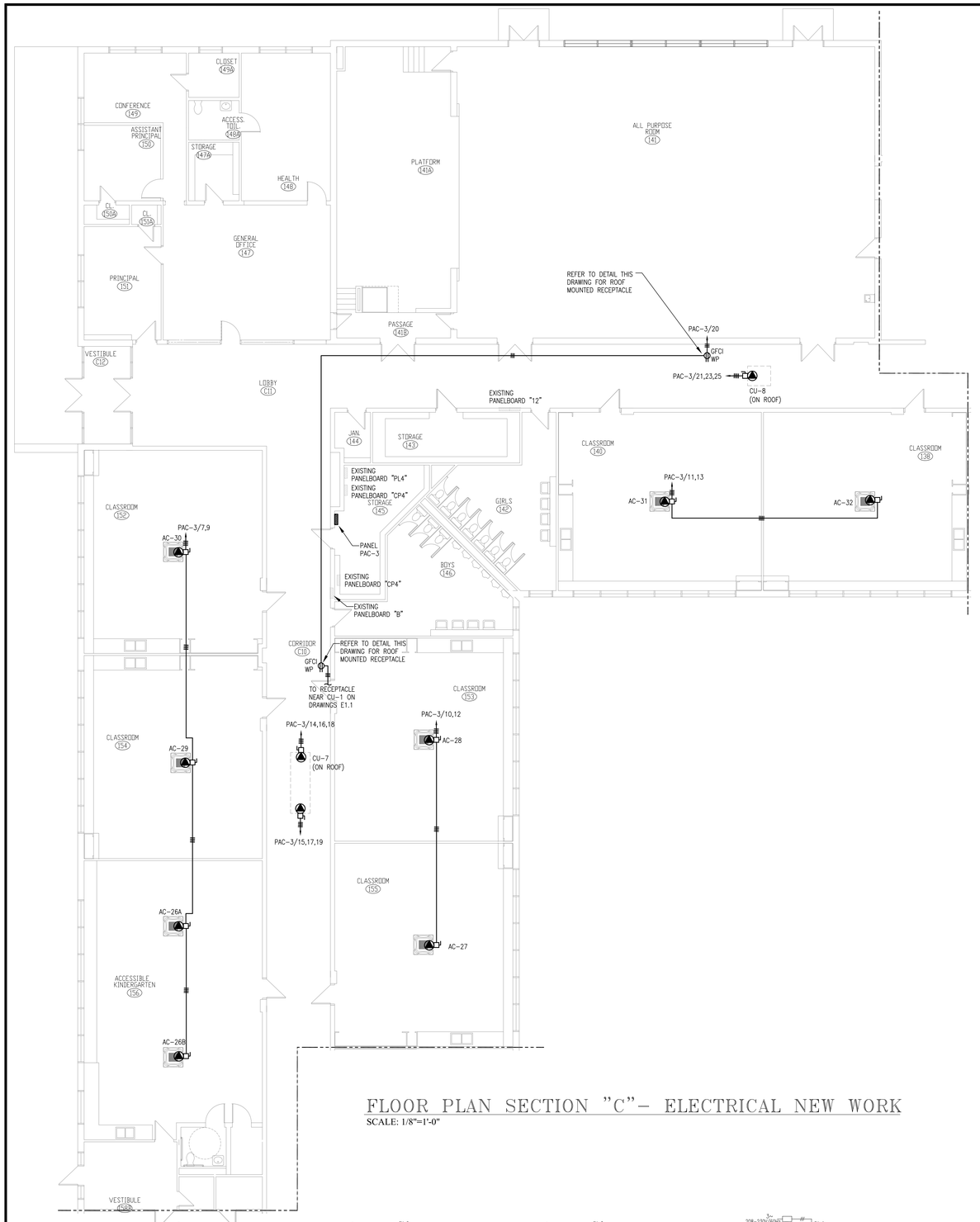
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 677-2603
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
BUTTONBALL ELEMENTARY SCHOOL
SECTION B
ELECTRICAL
NEW WORK PLAN

DATE 3/08/2018

DWG. NO.
E1.2



FLOOR PLAN SECTION "C"– ELECTRICAL NEW WORK

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

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

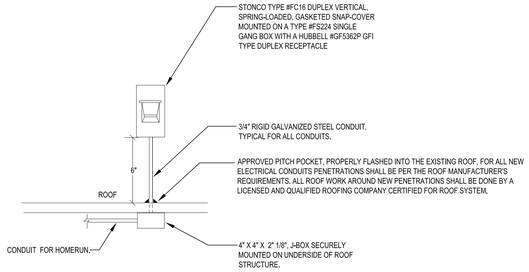
C/B SIZE	* CIRCUIT SIZE
20A–1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

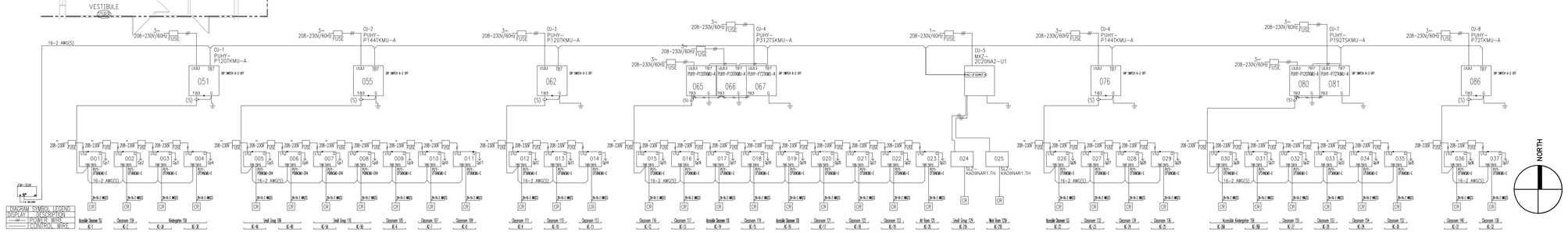
EXISTING PANEL #PAC–3 – SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	75	3	CU–1	2	20	2	AC–3A & 3B
3	–	–	–	4	–	–	–
5	–	–	–	6	20	2	AC–1 & 2
7	20	2	AC–26A, 26B, 29 &30	8	–	–	–
9	–	–	–	10	20	2	AC–27 & 28
11	20	2	AC–31 & 32	12	–	–	–
13	–	–	–	14	45	3	CU–7
15	75	3	CU–7	16	–	–	–
17	–	–	–	18	–	–	–
19	–	–	–	20	20	1	RECEPTACLES
21	45	3	CU–8	22	40	2	SPARE
23	–	–	–	24	–	–	–
25	–	–	–	26	40	2	SPARE
27	20	1	SPARE	28	–	–	–
29	40	2	SPARE	30	40	2	SPARE
31	–	–	–	32	–	–	–
33	40	2	SPARE	34	20	2	SPARE
35	–	–	–	36	–	–	–
37	25	2	SPARE	38	20	1	SPARE
39	–	–	–	40	20	1	SPARE
41	20	1	SPARE	42	20	1	SPARE



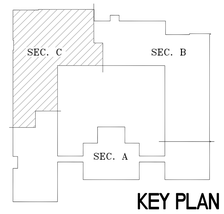
ROOF MOUNTED RECEPTACLE DETAIL

SCALE: NOT TO SCALE



CITY MULTI – SYSTEM SCHEMATIC DIAGRAM

NO SCALE



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

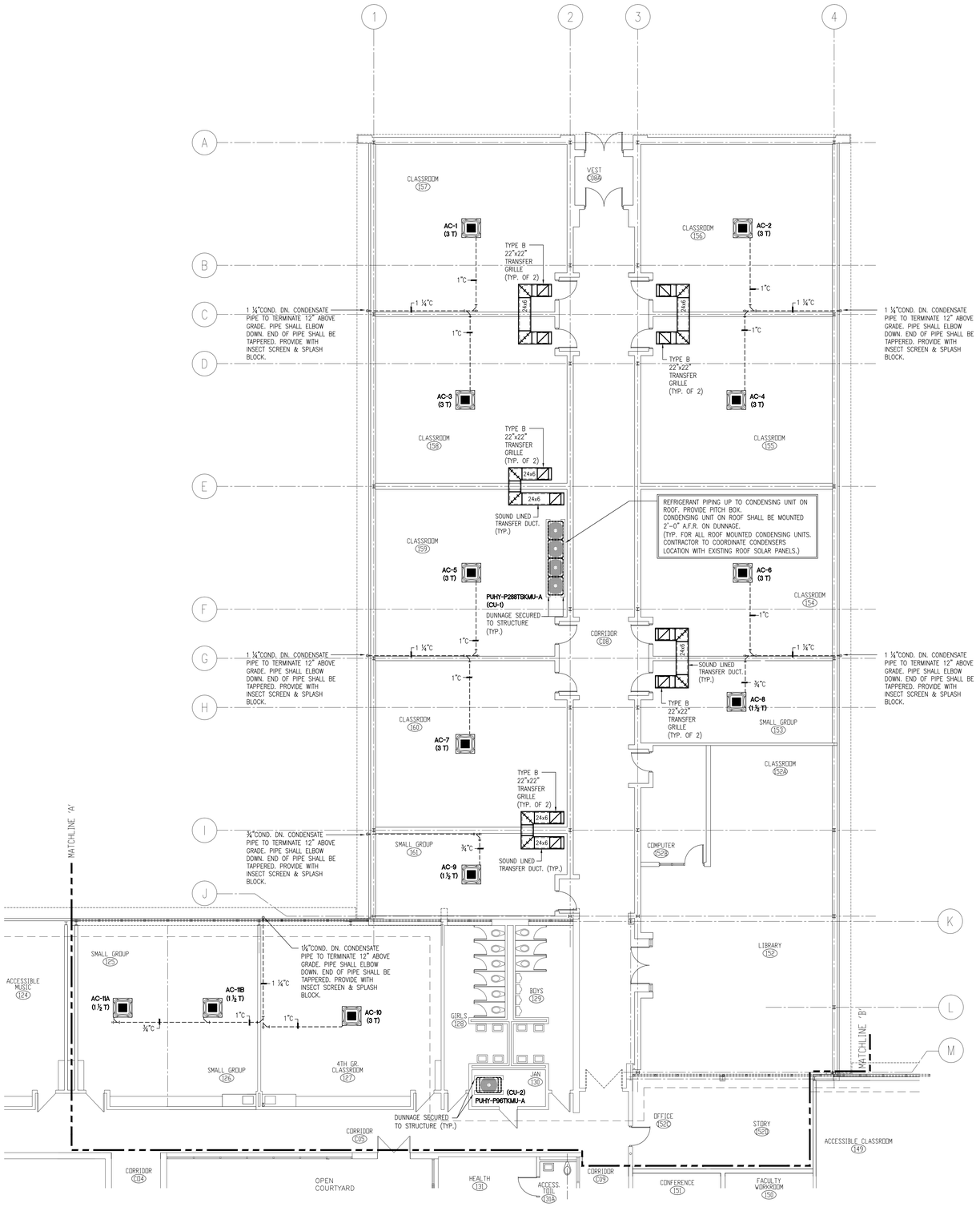
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(Mailing Address)
Fax: (860) 521-7070
www.bemisassociates.com

TITLE
BUTTONBALL ELEMENTARY SCHOOL
SECTION C
ELECTRICAL
NEW WORK PLAN

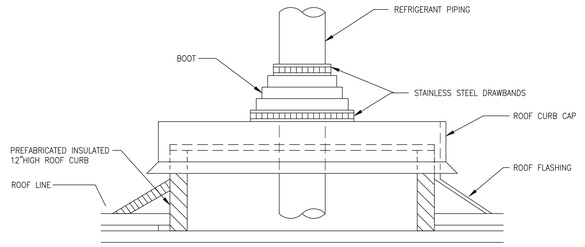
DATE 3/08/2018

DWG. NO.
E1.3



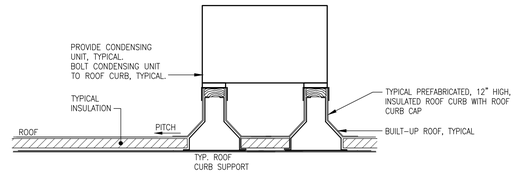
FLOOR PLAN SECTION "A" – MECHANICAL NEW WORK

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

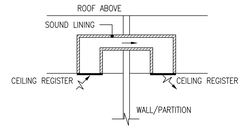


NOTE: ROOF CURB TO BE PROVIDED BY MECHANICAL CONTRACTOR. APPROVED PITCH POCKET, PROPERLY FLASHED INTO THE EXISTING ROOF, FOR ALL NEW MECHANICAL PIPE PENETRATIONS SHALL BE PER THE ROOF MANUFACTURER'S REQUIREMENTS. ALL ROOF WORK AROUND NEW PENETRATIONS SHALL BE DONE BY A LICENSED AND QUALIFIED ROOFING COMPANY CERTIFIED FOR ROOF SYSTEM.

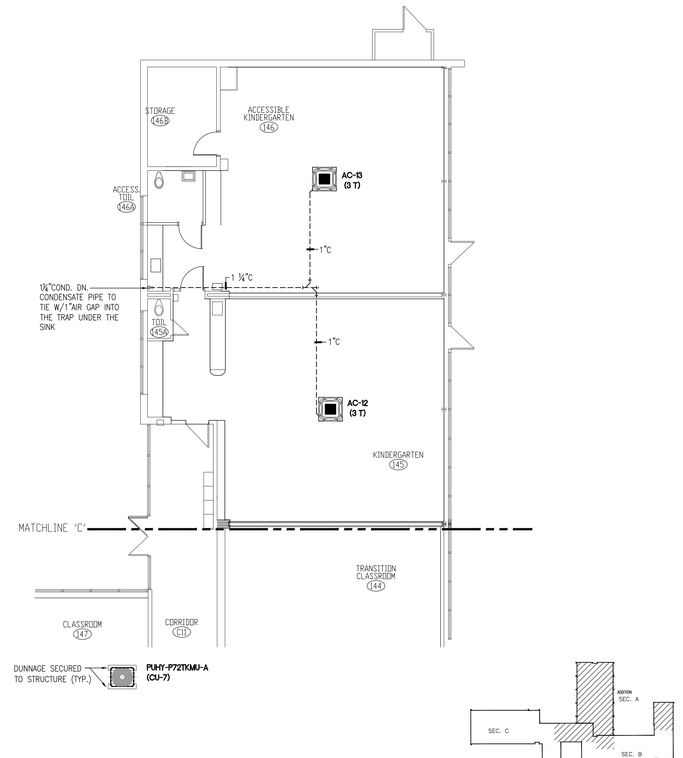
TYPICAL PIPING AND DUCTWORK ROOF CURB DETAIL
NOT TO SCALE

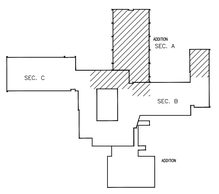


TYPICAL CONDENSING UNIT DETAIL
NO SCALE



TYPICAL TRANSFER DUCT DETAIL
NO SCALE





KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

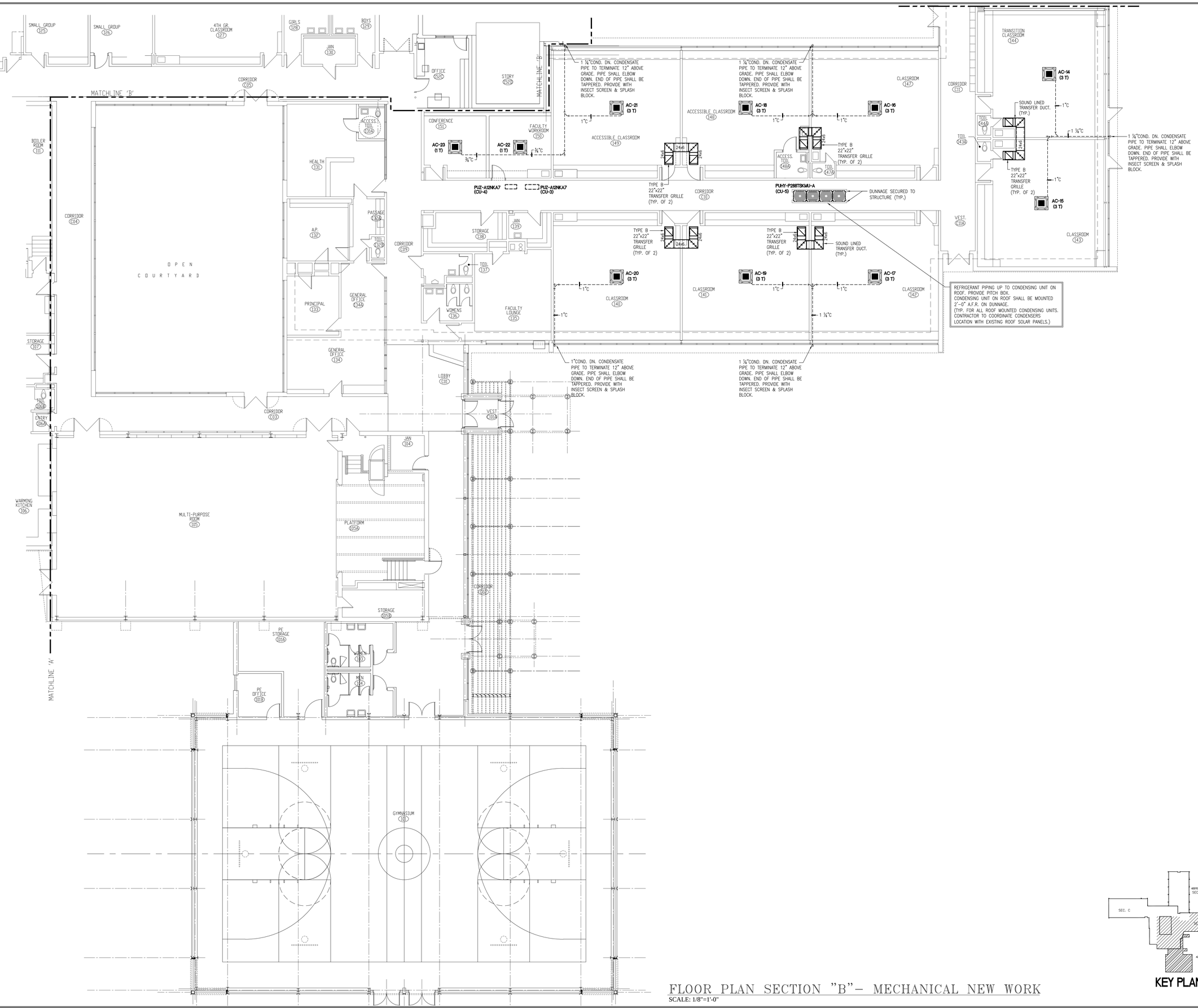
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 521-7311
Fax: (860) 521-7070
www.bemisassociates.com

TITLE
HEBRON ELEMENTARY SCHOOL SECTION A MECHANICAL NEW WORK FLOOR PLAN

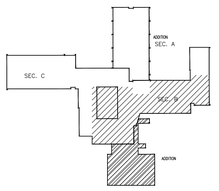
DATE 3/08/2018

DWG. NO.
M2.1



FLOOR PLAN SECTION "B" – MECHANICAL NEW WORK

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



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR SCHOOLS

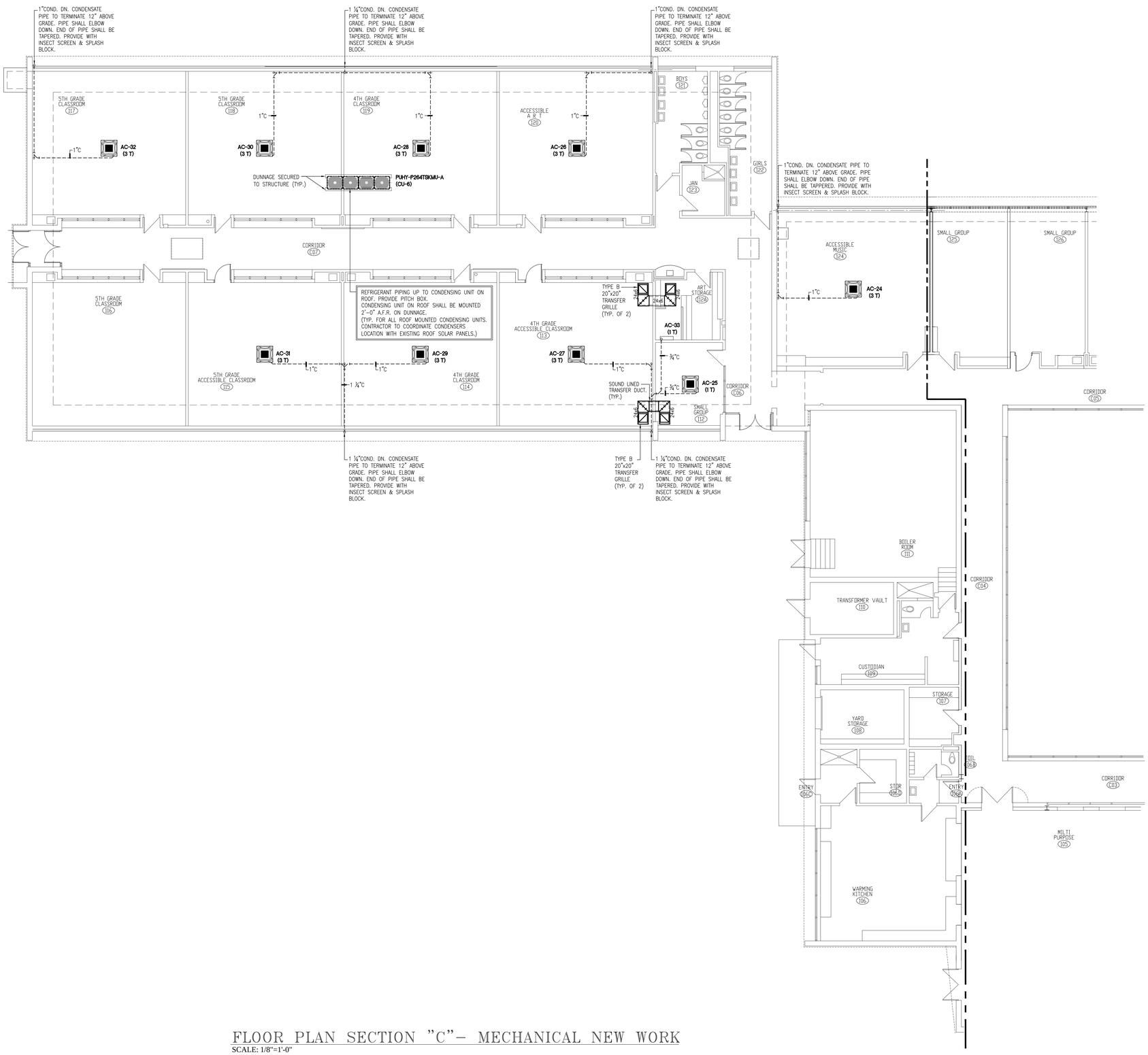
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 677-2603
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
HEBRON ELEMENTARY SCHOOL
SECTION B
MECHANICAL NEW WORK
FLOOR PLAN

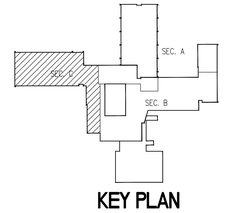
DATE 3/08/2018

DWG. NO.
M2.2



FLOOR PLAN SECTION "C"– MECHANICAL NEW WORK

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



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS / ASSOCIATES, L.L.C.
Consulting Engineers
BA
185 Main Street
Farmington, CT 06032
(860) 677-2313
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
HEBRON ELEMENTARY SCHOOL
SECTION C
MECHANICAL NEW WORK FLOOR PLAN

DATE 3/08/2018

DWG. NO.
M2.3

MITSUBISHI CITY MULTI VRF INDOOR UNIT SCHEDULE

System Tag	Room Name	Tag Reference	Model	Type	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Design Entering Temp DB/WB (°F) / [Water in temp]	Heating Design Entering Temp DB/WB (°F) / [Water in temp]	Corrected Capacity					Estimated Cooling Coil LAT (°F) / [LWT]	Estimated Heating Coil LAT (°F) / [LWT]	Refrig Pipe Dim Liquid/ Suction (inch)	Peak Fan Airflow (cfm) / [Design gpm G(US)/min]	Sound Pressure Per Fan Speed 208V/230V (dBA)	Voltage / Phase	Electrical MCA/MFS	Notes / Options
									Cooling Diversity Full/Partial (See Note 5, 6)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Diversity Full/Partial (See Note 5, 6)	Heating Capacity (BTU/h)								
CU-1	Classroom 157	AC-1	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,059.2	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Classroom 156	AC-2	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,059.2	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Classroom 158	AC-3	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,059.2	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Classroom 155	AC-4	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,059.2	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Classroom 159	AC-5	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,059.2	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Classroom 154	AC-6	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,059.2	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Classroom 160	AC-7	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,059.2	58.4	89.5	1/2 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Small Group 153	AC-8	PLFY-EP18NEMU-E	Ceiling cassette (4-way airflow) type	18,000.0	20,000.0	80.6/67.0	70.0	PARTIAL DEMAND	18,041.8	13,463.8	FULL DEMAND	11,529.6	60.0	86.8	3/8 / 1/2	636	28-30-31-32	208/230V/ 1-phase	0.43/0.43/15	1, 2, 3, 4, 5, 6
CU-1	Small Group 161	AC-9	PLFY-EP18NEMU-E	Ceiling cassette (4-way airflow) type	18,000.0	20,000.0	80.6/67.0	70.0	PARTIAL DEMAND	18,041.8	13,463.8	FULL DEMAND	11,529.6	60.0	86.8	3/8 / 1/2	636	28-30-31-32	208/230V/ 1-phase	0.43/0.43/15	1, 2, 3, 4, 5, 6
CU-2	Small Group 125	AC-11A	PLFY-EP18NEMU-E	Ceiling cassette (4-way airflow) type	18,000.0	20,000.0	80.6/67.0	70.0	PARTIAL DEMAND	18,023.4	13,456.5	FULL DEMAND	10,743.4	60.0	85.7	1/4 / 1/2	636	28-30-31-32	208/230V/ 1-phase	0.43/0.43/15	1, 2, 3, 4, 5, 6
CU-2	Small Group 126	AC-11B	PLFY-EP18NEMU-E	Ceiling cassette (4-way airflow) type	18,000.0	20,000.0	80.6/67.0	70.0	PARTIAL DEMAND	18,023.4	13,456.5	FULL DEMAND	10,743.4	60.0	85.7	1/4 / 1/2	636	28-30-31-32	208/230V/ 1-phase	0.43/0.43/15	1, 2, 3, 4, 5, 6
CU-2	4th Grade Classroom 127	AC-10	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,046.9	25,067.7	FULL DEMAND	21,486.8	58.4	88.2	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-2	Accessible Music 124	AC-24	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,046.9	25,067.7	FULL DEMAND	21,486.8	58.4	88.2	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Faculty Workroom 150	AC-22	PLA-A12BA6	Ceiling cassette (4-way airflow) type	12,000.0	14,000.0	80.6/67.0	70.0	PARTIAL DEMAND	12,352.2	11,709.7	FULL DEMAND	8,672.3	59.1	85.2	1/2 / 1/4	530	27-28-29-31	208/230V/ 1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6
CU-4	Conference 151	AC-23	PLA-A12BA6	Ceiling cassette (4-way airflow) type	12,000.0	14,000.0	80.6/67.0	70.0	PARTIAL DEMAND	12,352.2	11,709.7	FULL DEMAND	8,672.3	59.1	85.2	1/2 / 1/4	530	27-28-29-31	208/230V/ 1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6
CU-5	Transition Classroom 144	AC-14	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,068.7	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-5	Classroom 143	AC-15	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,068.7	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-5	Classroom 147	AC-16	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,068.7	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-5	Classroom 142	AC-17	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,068.7	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-5	Accessible Classroom 148	AC-18	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,068.7	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-5	Classroom 141	AC-19	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,068.7	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-5	Accessible Classroom 149	AC-21	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,068.7	58.4	89.5	1/2 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-5	Classroom 140	AC-20	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,068.7	58.4	89.5	1/2 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	Small Group 112	AC-25	PLFY-EP12NEMU-E	Ceiling cassette (4-way airflow) type	12,000.0	13,500.0	80.6/67.0	70.0	PARTIAL DEMAND	12,027.9	9,728.3	FULL DEMAND	7,546.9	64.7	81.7	1/4 / 1/2	600	27-29-30-31	208/230V/ 1-phase	0.39/0.39/15	1, 2, 3, 4, 5, 6
CU-6	Art Storage 112A	AC-33	PKFY-P12NHMU-E2	Wall mounted type	12,000.0	13,500.0	80.6/67.0	70.0	PARTIAL DEMAND	12,027.9	8,841.0	FULL DEMAND	7,546.9	59.8	86.9	1/4 / 1/2	413	34-39-43	208/230V/ 1-phase	0.38(208V)/0.38(230V)/15	1, 2, 3, 4, 5, 6
CU-6	Accessible Art 120	AC-26	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	22,361.1	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	4th Grade Accessible Classroom 113	AC-27	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	22,361.1	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	4th Grade Accessible Classroom 119	AC-28	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	22,361.1	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	4th Grade Classroom 114	AC-29	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	22,361.1	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	5th Grade Classroom 118	AC-30	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	22,361.1	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	5th Grade Accessible Classroom 115	AC-31	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	22,361.1	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	5th Grade Classroom 117	AC-32	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	22,361.1	58.4	88.9	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-7	Accessible Kindergarten 146	AC-13	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,046.9	25,067.7	FULL DEMAND	23,629.1	58.4	90.0	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-7	Kindergarten 145	AC-12	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.6/67.0	70.0	PARTIAL DEMAND	36,046.9	25,067.7	FULL DEMAND	23,629.1	58.4	90.0	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6

Notes &
Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities

4 See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.

5 Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system. Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply. It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.

6 It is recommended to always base heating corrected capacity on full demand.

MITSUBISHI CITY MULTI VRF OUTDOOR UNIT SCHEDULE

System Tag	Tag Reference	M-Net Address	Model Number	Modules	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Efficiency IEER/EER [SEER]	Heating COP @ 47°F [HSPF]	Nom System Connected Capacity (% of NOM)	Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Max Pipe Length from BC or 1st Joint (feet)	Corrected Cooling Total Capacity (BTU/h)	Corrected Heating Capacity (BTU/h)	Electrical-Per Module				Notes / Options
															208/230 or [460V]				
															Voltage / Phase	MCA 208/230 or [460V]	RFS	MOCP	
CU-1	CU-1	51, 52, 53	PUHY-P288TSKMU-A	P120, P96, P72	288,000.0	320,000.0	18.7 / 12.4	3.59	100.0%	91.0	2.2	160.0	288,669.4	184,473.4	208/230V / 3-phase 3-wire	45/42, 34/31, 25/23	50, 35, 30	73/67, 57/52, 42/38	1, 2, 3, 4, 5
CU-2	CU-2	60	PUHY-P96TKMU-A	P96	96,000.0	108,000.0	20.7 / 13.7	4.22	112.5%	91.0	2.2	60.0	108,140.6	64,460.5	208/230V / 3-phase 3-wire	34/31	35	57/52	1, 2, 3, 4, 5
CU-3	CU-3	15	PUZ-A12NKA7		12,000.0	14,000.0	[14]	[9.8]	100.0%	91.0	2.2	0.0	12,352.2	8,672.3	208/230V / 1-phase	1	15	28	1, 2, 3, 4, 5, 6
CU-4	CU-4	16	PUZ-A12NKA7		12,000.0	14,000.0	[14]	[9.8]	100.0%	91.0	2.2	0.0	12,352.2	8,672.3	208/230V / 1-phase	1	15	28	1, 2, 3, 4, 5, 6
CU-5	CU-5	63, 64, 65	PUHY-P288TSKMU-A	P120, P96, P72	288,000.0	320,000.0	18.7 / 12.4	3.59	100.0%	91.0	2.2	140.0	288,669.4	184,549.3	208/230V / 3-phase 3-wire	45/42, 34/31, 25/23	50, 35, 30	73/67, 57/52, 42/38	1, 2, 3, 4, 5
CU-6	CU-6	74, 75, 76	PUHY-P264TSKMU-A	P120, P72, P72	264,000.0	295,000.0	18.7 / 12.5	3.6	104.5%	91.0	2.2	85.0	276,641.5	171,621.6	208/230V / 3-phase 3-wire	45/42, 25/23, 25/23	50, 30, 30	73/67, 42/38, 42/38	1, 2, 3, 4, 5
CU-7	CU-7	83	PUHY-P72TKMU-A	P72	72,000.0	80,000.0	21.3 / 14.2	4.19	100.0%	91.0	2.2	50.0	72,093.7	47,258.1	208/230V / 3-phase 3-wire	25/23	30	42/38	1, 2, 3, 4, 5

Notes &
Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.

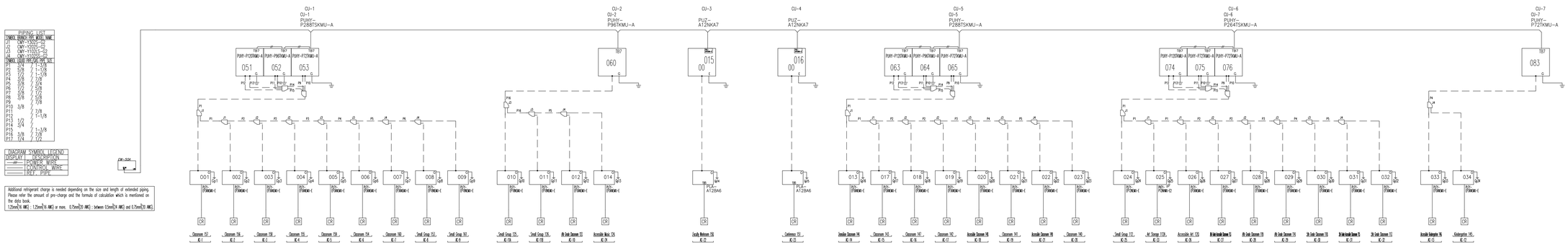
4 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twinning.

5 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.

6 Corrected capacities shown are based on lowest guaranteed outdoor temperature, temperatures below this are not guaranteed.

NOTES :
1. UNIT MANUFACTURER SHALL PROVIDE WIRED CONTROLLER INDOOR UNIT.
2. PROVIDE REFRIGERATION LINESETS FOR AIR CONDITIONING UNIT WITH CONNECTIONS TO CONDENSING UNIT.
3. POWER WIRING AND RACEWAY BY DIVISION 26.
4. DISCONNECTS AND STARTING RELAYS FURNISHED BY DIVISION 23.
5. REFER TO DIVISION 23 SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
6. PROVIDE SEISMIC SUPPORT RAIL FOR OUTDOOR UNIT IN ACCORDANCE WITH DIVISION 23 SPECIFICATIONS
7. UNITS USING CFC BASED REFRIGERANTS WILL NOT BE ACCEPTABLE.
8. CASSETTE UNITS SHALL HAVE MULTIFUNCTION CASEMENT/MERV 10 FILTER
9. WALL MOUNTED UNITS SHALL HAVE CONDENSATE PUMP BLUE DIAMOND X87-711/721, 115V. UNIT SHALL SHUT DOWN ON CONDENSATE PUMP FAILURE
10. OUTDOOR UNITS SHALL HAVE WIND BAFFLE

MECHANICAL - GENERAL NOTES :
1. INSTALL UNITS WITH CLEARANCE FOR SERVICE.
2. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, NOT EXACT EQUIPMENT LOCATION. ALL CONTRACTORS MUST COORDINATE EQUIPMENT LOCATIONS WITH OTHER TRADES BEFORE WORK BEGINS.
3. THE LOCATION OF ALL AC CASSETTE UNITS SHALL BE COORDINATED WITH THE EXISTING CEILING
4. CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING, INSULATE ALL REFRIGERANT PIPES.
5. CONDENSATE PIPING SHALL BE COPPER, PIPE SHALL BE INSULATED.
6. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS.
7. PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH WALLS/PARTITION. THIS CONTRACTOR SHALL OPEN WALLS AS NECESSARY. SEAL PENETRATIONS.
8. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS.
9. ROOF MOUNTED UNITS SHALL BE LOCATED MIN. 10'-0" AWAY FROM THE EDGE OF THE ROOF.



CITY MULTI - SYSTEM SCHEMATIC DIAGRAM
NO SCALE

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS | ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 521-7070
Fax: (860) 521-7070
www.bemisassociates.com

TITLE
HEBRON ELEMENTARY SCHOOL MECHANICAL SCHEDULES

DATE 3/08/2018

DWG. NO.
M2.4

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

C/B SIZE	* CIRCUIT SIZE
20A–1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

EXISTING PANEL #PAC–1 – FLUSH, 208Y/120V,
3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	75	3	CU–1	2	60	3	CU–1
3	–	–	–	4	–	–	–
5	–	–	–	6	–	–	–
7	25	3	CU–1	8	60	3	CU–2
9	–	–	–	10	–	–	–
11	–	–	–	12	–	–	–
13	20	2	AC–2, 4, 6 & 8	14	20	2	AC–1, 3, 5, 7 & 9
15	–	–	–	16	–	–	–
17	20	2	AC–10, 11A, 11B & 24	18	20	1	RECEPTACLES
19	–	–	–	20	20	1	SPARE
21	45	2	SPARE	22	40	2	SPARE
23	–	–	–	24	–	–	–
25	20	1	SPARE	26	20	1	SPARE
27	20	2	SPARE	28	25	2	SPARE
29	–	–	–	30	–	–	–

GENERAL SPECIFICATION NOTES – POWER

1 - THE CONTRACTOR SHALL VERIFY AND OBTAIN ALL NECESSARY DIMENSIONS AT THE BUILDING.

2 - FINISHED WORK: THE INTENT OF THE SPECIFICATIONS AND DRAWINGS IS TO CALL FOR FINISHED WORK, COMPLETED, TESTED AND READY FOR OPERATION.

3 - GOOD PRACTICE: IT IS NOT INTENDED THAT THE DRAWINGS SHOW EVERY CONDUIT, JUNCTION BOX, FITTING OR MINOR DETAIL AND IT IS UNDERSTOOD THAT WHILE THE DRAWINGS MUST BE FOLLOWED AS CLOSELY AS CIRCUMSTANCES WILL PERMIT, THE SYSTEMS SHALL BE INSTALLED ACCORDING TO THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH GOOD PRACTICE.

4 - ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON DRAWINGS BUT MENTIONED IN SPECIFICATIONS OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AT NO ADDITIONAL COST TO OWNER.

5 - CODES AND STANDARDS - COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES AND STANDARDS WHEREVER APPLICABLE INCLUDING THE FOLLOWING: THE 2016 CONNECTICUT STATE BUILDING CODE , 2012 INTERNATIONAL BUILDING CODE, 2016 CONNECTICUT FIRE SAFETY CODE, 2014 NATIONAL ELECTRICAL CODE, ICC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, ADA, NFPA, UNDERWRITERS LABORATORIES, FACTORY MUTUAL INSURANCE COMPANY, NEMA STANDARDS.

6 - NOTE THAT THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF THE ELECTRICAL EQUIPMENT AND SYSTEMS, WITHOUT SHOWING EVERY DETAIL AND FITTING.

7 - RACEWAYS: PROVIDE EMT CONDUIT FOR ALL WIRING. EMT CONNECTORS AND COUPLINGS SHALL BE GALVANIZED STEEL SET-SCREW TYPE. PROVIDE GLAND COMPRESSION CONNECTORS AND COUPLINGS WHERE LOCATED IN DAMP AND WET LOCATIONS. PROVIDE FLEXIBLE STEEL CONDUIT FOR FINAL CONNECTIONS TO MOTOR DRIVEN EQUIPMENT. PROVIDE LIQUID TIGHT FLEXIBLE STEEL CONDUIT FOR FINAL CONNECTIONS TO MOTOR DRIVEN EQUIPMENT IN DAMP AND WET AREAS.

8 - BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, RATED 600 VOLTS, 90 DEG.C., COLOR CODED, TYPE XHHW-2.

9 - WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED. WIRE OF SIZE SMALLER THAN #8 AWG SHALL BE SOLID.

10 - MINIMUM SIZE CONDUCTORS FOR POWER AND LIGHTING SHALL BE #12 AWG. PROVIDE MINIMUM #10 AWG SIZE FOR RUNS EXCEEDING 75' IN CONDUCTOR LENGTH, AND #8 AWG SIZE FOR RUNS EXCEEDING 150' IN CONDUCTOR LENGTH. PROVIDE LARGER SIZE CONDUCTORS AS SCHEDULED OR AS NOTED ON THE DRAWINGS.

11 - THE NUMBER OF WIRES IN A CONDUIT RUN IS INDICATED ON THE DRAWINGS BY CROSS LINES ON THE CONDUIT RUNS. PROVIDE CODE-SIZED CONDUIT FOR THE NUMBER AND SIZE OF WIRES UNLESS A LARGER SIZE IS SHOWN ON THE DRAWINGS. MINIMUM CONDUIT SIZE SHALL BE 3/4".

12 - RACEWAYS SHALL BE CONCEALED WHEREVER POSSIBLE IN ALL FINISHED AREAS.

13 - RACEWAYS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALL LINES.

14 - RACEWAYS SHALL BE SUPPORTED FROM THE STRUCTURE BY STRAP HANGERS, ROD HANGERS, OR RACK MOUNTED, OR OTHER APPROVED ELECTRICAL MOUNTING.

15 - PROVIDE FIRE STOPPING AT ALL FIRE AND/OR SMOKE RATED WALL OR CEILING PENETRATIONS IN ORDER TO MAINTAIN ITS ORIGINAL INTEGRITY.

16 - OUTLET BOXES SHALL BE CODE GAUGE GALVANIZED STEEL AND SHALL BE OF SHAPES AND SIZES TO SUIT THEIR RESPECTIVE LOCATIONS AND INSTALLATIONS, AND SHALL BE PROVIDED WITH COVERS TO SUIT THEIR FUNCTION AND INSTALLATION. MINIMUM BOX SIZE SHALL BE 4" SQ. X 2 1/8" DEEP (2-GANG). PROVIDE CAST BOXES FOR OUTDOOR WORK.

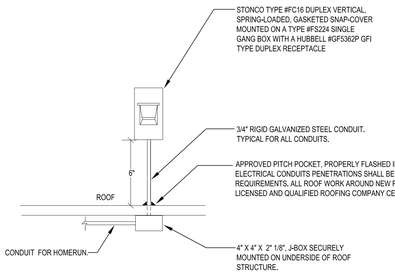
17 - OUTLET BOXES SHALL BE EQUIPPED WITH FIXTURE STUD OR STRAPS WHERE REQUIRED.

18 - INSTALL BOXES IN ACCESSIBLE LOCATIONS AND AT UNIFORM HEIGHTS.

19 - SET BOXES AND COVERS SQUARE AND TRUE WITH BUILDING FINISH.

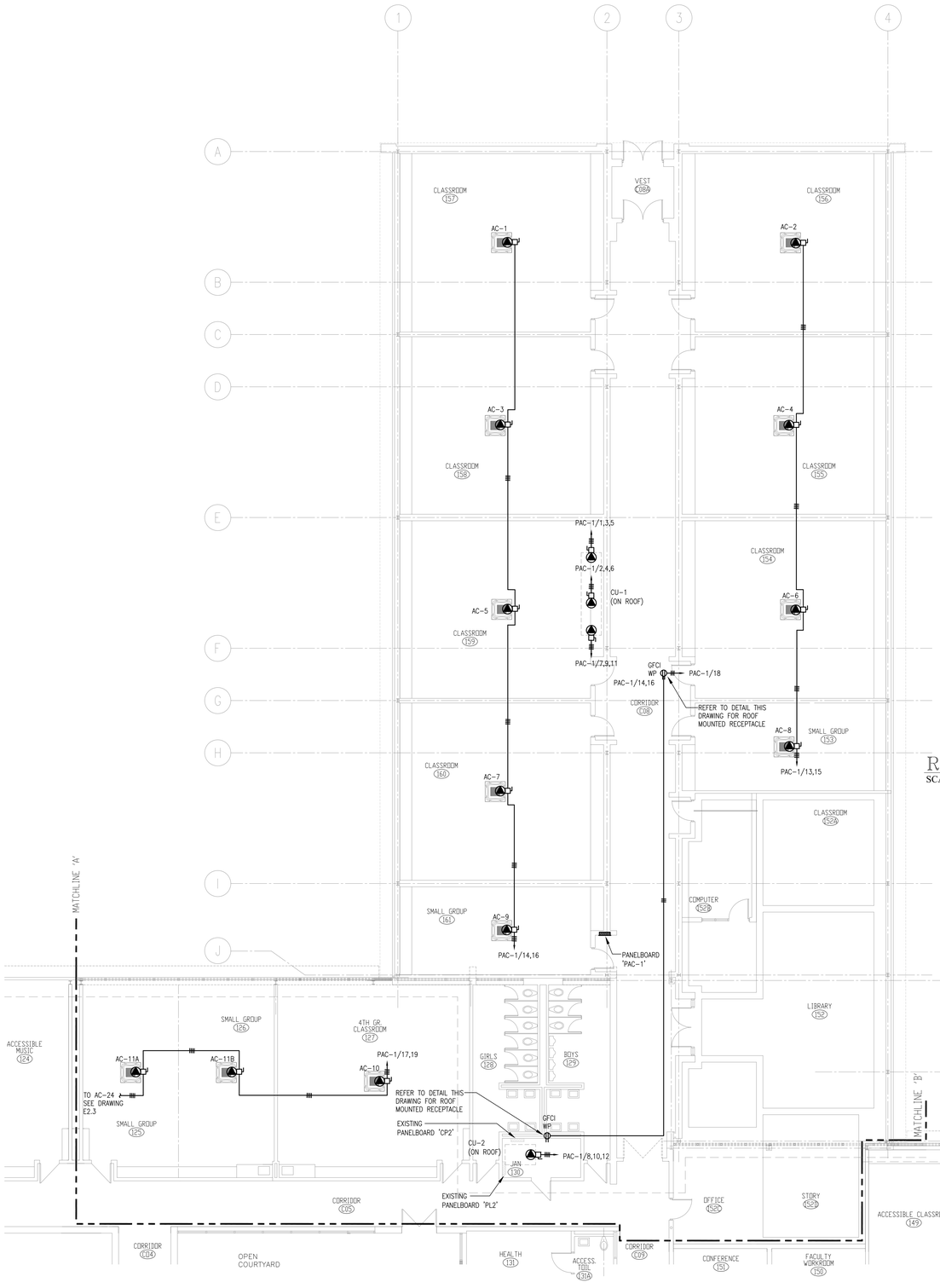
20 - BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS HAS BEEN DESIGNED FOR MAXIMUM ECONOMY CONSISTENT WITH ADEQUATE SIZING FOR VOLTAGE DROPS, CIRCUIT AMPACITIES, AND OTHER CONSIDERATIONS. INSTALL THE WIRING WITH CIRCUITS ARRANGED AS SHOWN ON THE DRAWINGS, EXCEPT AS APPROVED IN ADVANCE BY THE ARCHITECT AND ENGINEER. DO NOT MAKE CHANGES WITHOUT PRIOR APPROVAL.

21 - PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH 120V SINGLE PHASE CIRCUIT. DO NOT USE A COMMON NEUTRAL FOR GROUPS OF CIRCUITS. PROVIDE A SEPARATE GROUND WIRE FOR EACH CIRCUIT BACK TO THE RESPECTIVE PANEL GROUND. IF MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE INSTALLED IN ONE CONDUIT THEY SHALL BE DE-RATED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. DO NOT INSTALL MORE THAN THREE 30 AMP SINGLE PHASE OR FOUR 20 AMP SINGLE PHASE CIRCUITS IN THE SAME CONDUIT.



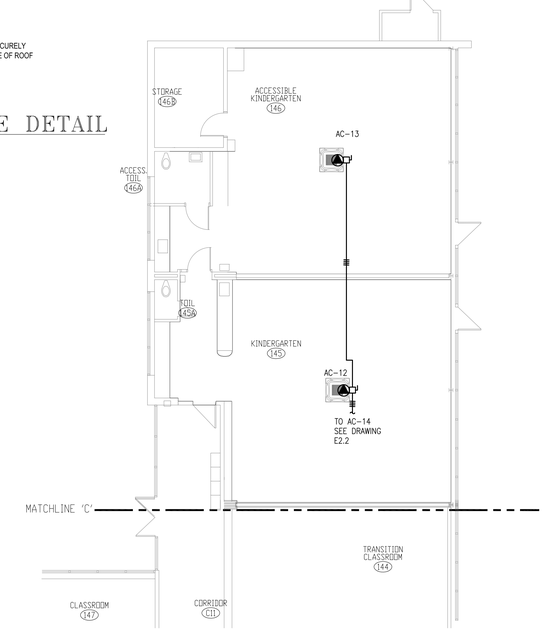
ROOF MOUNTED RECEPTACLE DETAIL

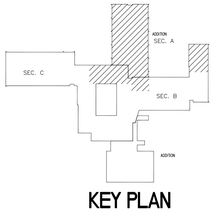
SCALE: NOT TO SCALE



FLOOR PLAN SECTION "A" – ELECTRICAL NEW WORK

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





KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

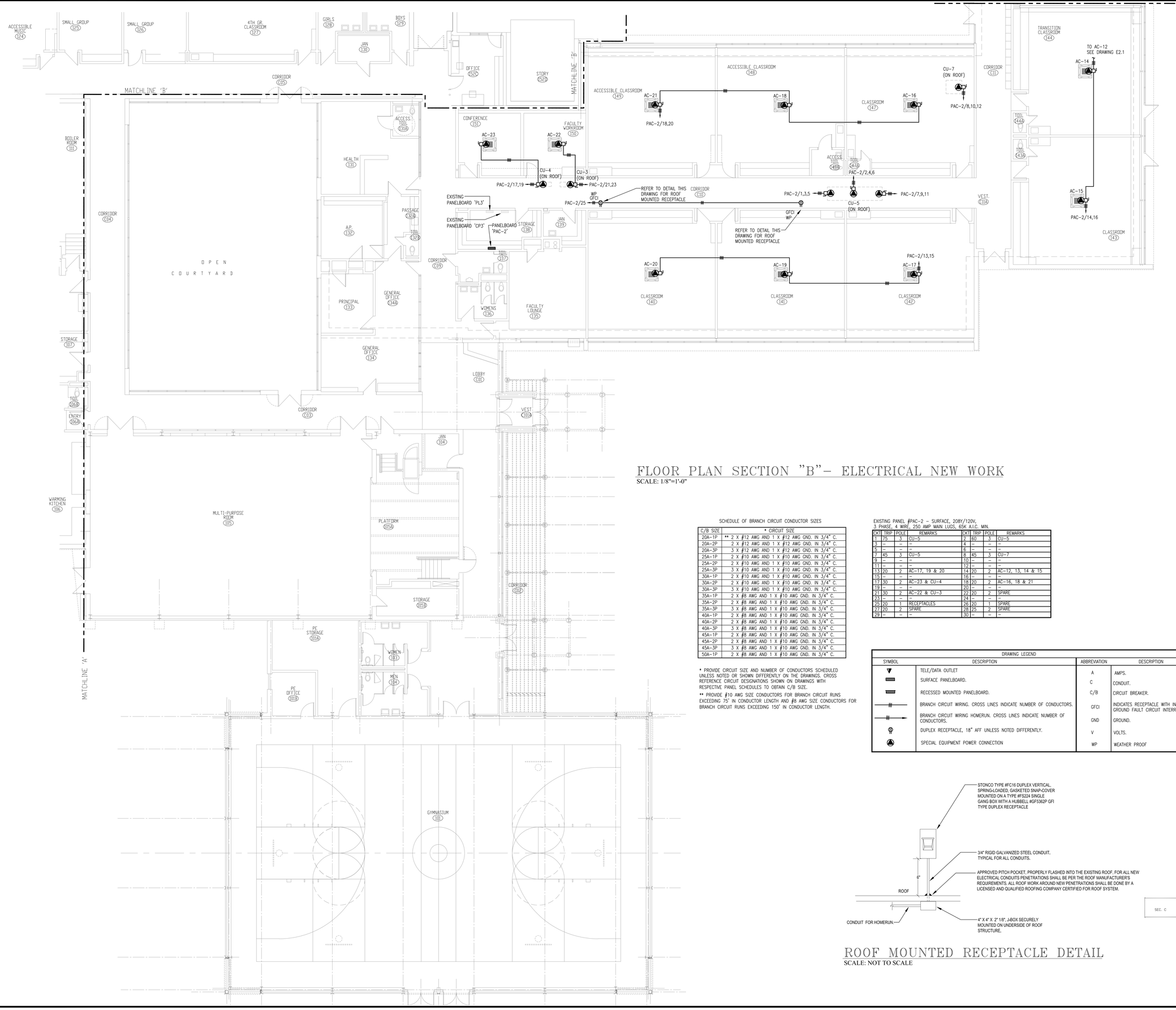
GLASTONBURY, CONNECTICUT

BEMIS | ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 521-7311
Fax: (860) 521-7070
www.bemisassociates.com

TITLE
HEBRON ELEMENTARY SCHOOL
SECTION A
ELECTRICAL
NEW WORK PLAN

DATE 3/08/2018

DWG. NO.
E2.1



FLOOR PLAN SECTION "B"– ELECTRICAL NEW WORK

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

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

C/B SIZE	* CIRCUIT SIZE
20A–1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A–1P	2 X #6 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

EXISTING PANEL #PAC-2 – SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 65K A.I.C. MIN.

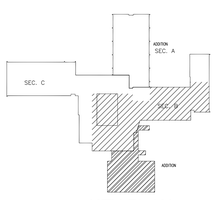
CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	75	3	CU–5	2	60	3	CU–5
3	–	–	–	4	–	–	–
5	–	–	–	6	–	–	–
7	45	3	CU–5	8	45	3	CU–7
9	–	–	–	10	–	–	–
11	–	–	–	12	–	–	–
13	20	2	AC–17, 19 & 20	14	20	2	AC–12, 13, 14 & 15
15	–	–	–	16	–	–	–
17	30	2	AC–23 & CU–4	18	20	2	AC–16, 18 & 21
19	–	–	–	20	–	–	–
21	30	2	AC–22 & CU–3	22	20	2	SPARE
23	–	–	–	24	–	–	–
25	20	1	RECEPTACLES	26	20	1	SPARE
27	20	2	SPARE	28	25	2	SPARE
29	–	–	–	30	–	–	–

DRAWING LEGEND

SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION
▼	TELE/DATA OUTLET	A	AMPS.
	SURFACE PANELBOARD.	C	CONDUIT.
	RECESSED MOUNTED PANELBOARD.	C/B	CIRCUIT BREAKER.
	BRANCH CIRCUIT WIRING. CROSS LINES INDICATE NUMBER OF CONDUCTORS.	GFCI	INDICATES RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
	BRANCH CIRCUIT WIRING HOMERUN. CROSS LINES INDICATE NUMBER OF CONDUCTORS.	GND	GROUND.
	DUPLEX RECEPTACLE, 18" AFF UNLESS NOTED DIFFERENTLY.	V	VOLTS.
	SPECIAL EQUIPMENT POWER CONNECTION	WP	WEATHER PROOF

ROOF MOUNTED RECEPTACLE DETAIL

SCALE: NOT TO SCALE



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

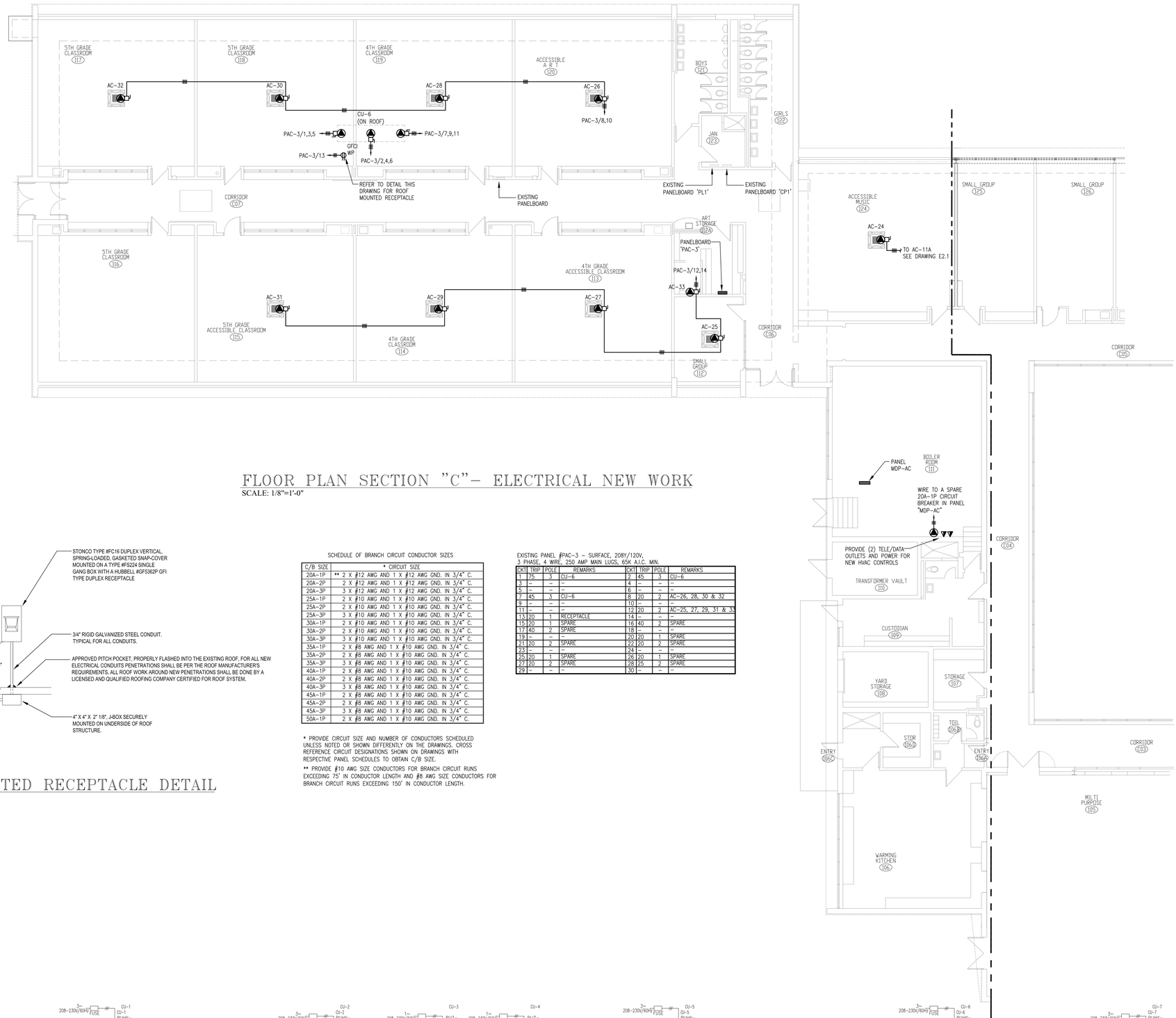
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 321–7070
Fax: (860) 321–7070
www.bemisassociates.com

TITLE
HEBRON ELEMENTARY SCHOOL
SECTION B
ELECTRICAL NEW WORK PLAN

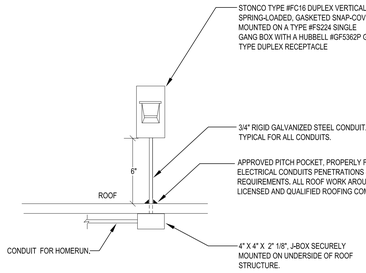
DATE 3/08/2018

DWG. NO.
E2.2



FLOOR PLAN SECTION "C" – ELECTRICAL NEW WORK

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



ROOF MOUNTED RECEPTACLE DETAIL

SCALE: NOT TO SCALE

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

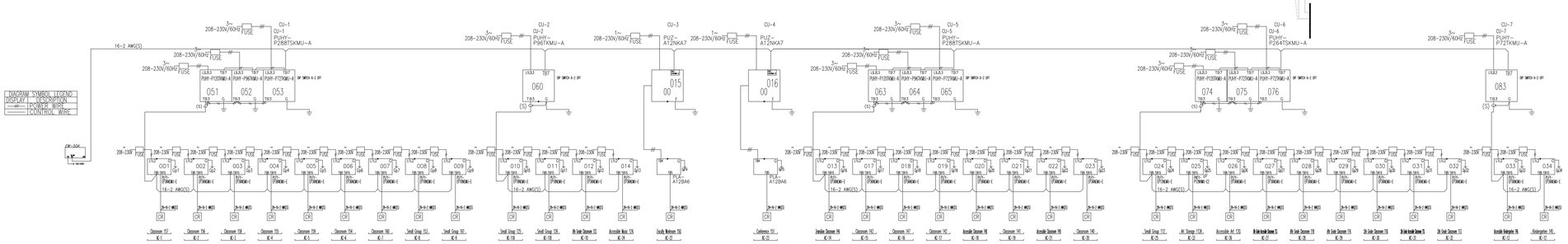
C/B SIZE	* CIRCUIT SIZE
20A–1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

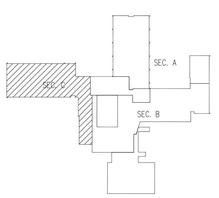
EXISTING PANEL #PAC–3 – SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	175	3	CU–6	2	45	3	CU–6
3	–	–	–	4	–	–	–
5	–	–	–	6	–	–	–
7	45	3	CU–6	8	20	2	AC–26, 28, 30 & 32
9	–	–	–	10	–	–	–
11	–	–	–	12	20	2	AC–25, 27, 29, 31 & 33
13	20	1	RECEPTACLE	14	–	–	–
15	20	1	SPARE	16	40	2	SPARE
17	40	2	SPARE	18	–	–	–
19	–	–	–	20	20	1	SPARE
21	20	2	SPARE	22	20	2	SPARE
23	–	–	–	24	–	–	–
25	20	1	SPARE	26	20	1	SPARE
27	20	2	SPARE	28	25	2	SPARE
29	–	–	–	30	–	–	–



CITY MULTI – SYSTEM SCHEMATIC DIAGRAM

NO SCALE



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 677-2313
Fax: (860) 321-7070
www.bemisassociates.com

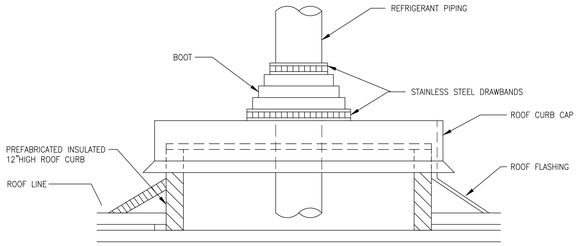
TITLE

HEBRON ELEMENTARY SCHOOL SECTION A ELECTRICAL NEW WORK PLAN

DATE 3/08/2018

DWG. NO.

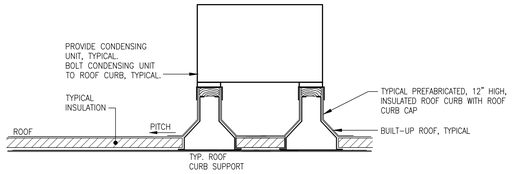
E2.3



NOTE: ROOF CURB TO BE PROVIDED BY MECHANICAL CONTRACTOR. APPROVED PITCH POCKET, PROPERLY FLASHED INTO THE EXISTING ROOF, FOR ALL NEW MECHANICAL PIPE PENETRATIONS SHALL BE PER THE ROOF MANUFACTURER'S REQUIREMENTS. ALL ROOF WORK AROUND NEW PENETRATIONS SHALL BE DONE BY A LICENSED AND QUALIFIED ROOFING COMPANY CERTIFIED FOR ROOF SYSTEM.

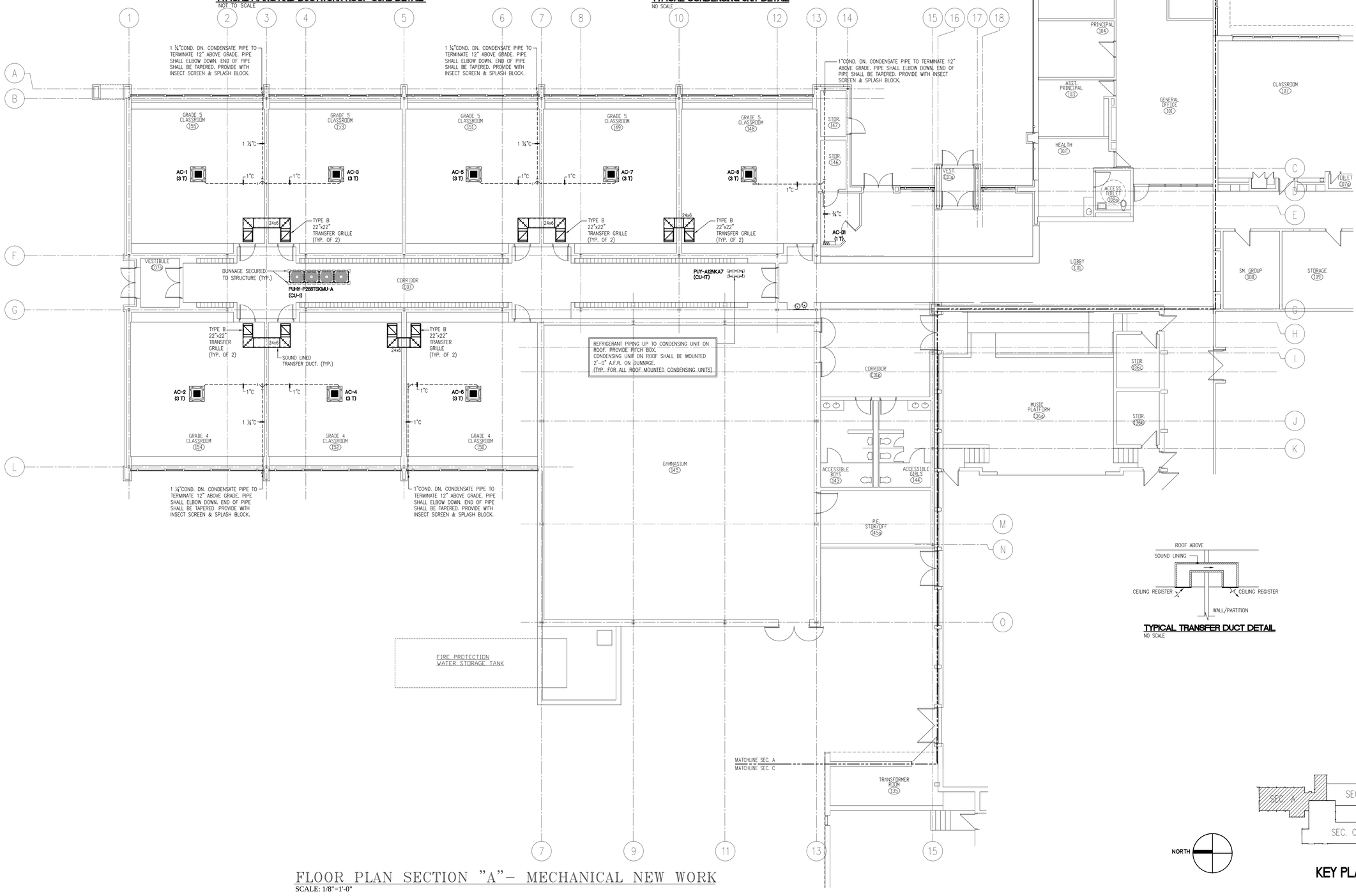
TYPICAL PIPING AND DUCTWORK ROOF CURB DETAIL

NOT TO SCALE



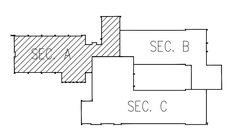
TYPICAL CONDENSING UNIT DETAIL

NO SCALE



TYPICAL TRANSFER DUCT DETAIL

NO SCALE



KEY PLAN

NORTH

FLOOR PLAN SECTION "A"– MECHANICAL NEW WORK

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

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 687-3233
Fax: (860) 687-3232
www.bemisassociates.com

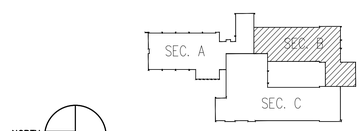
TITLE
HOPEWELL ELEMENTARY SCHOOL
SECTION A
MECHANICAL NEW WORK FLOOR PLAN

DATE 3/08/2018

DWG. NO.
M3.1

FLOOR PLAN SECTION "B"– MECHANICAL NEW WORK

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



KEY PLAN

NORTH

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

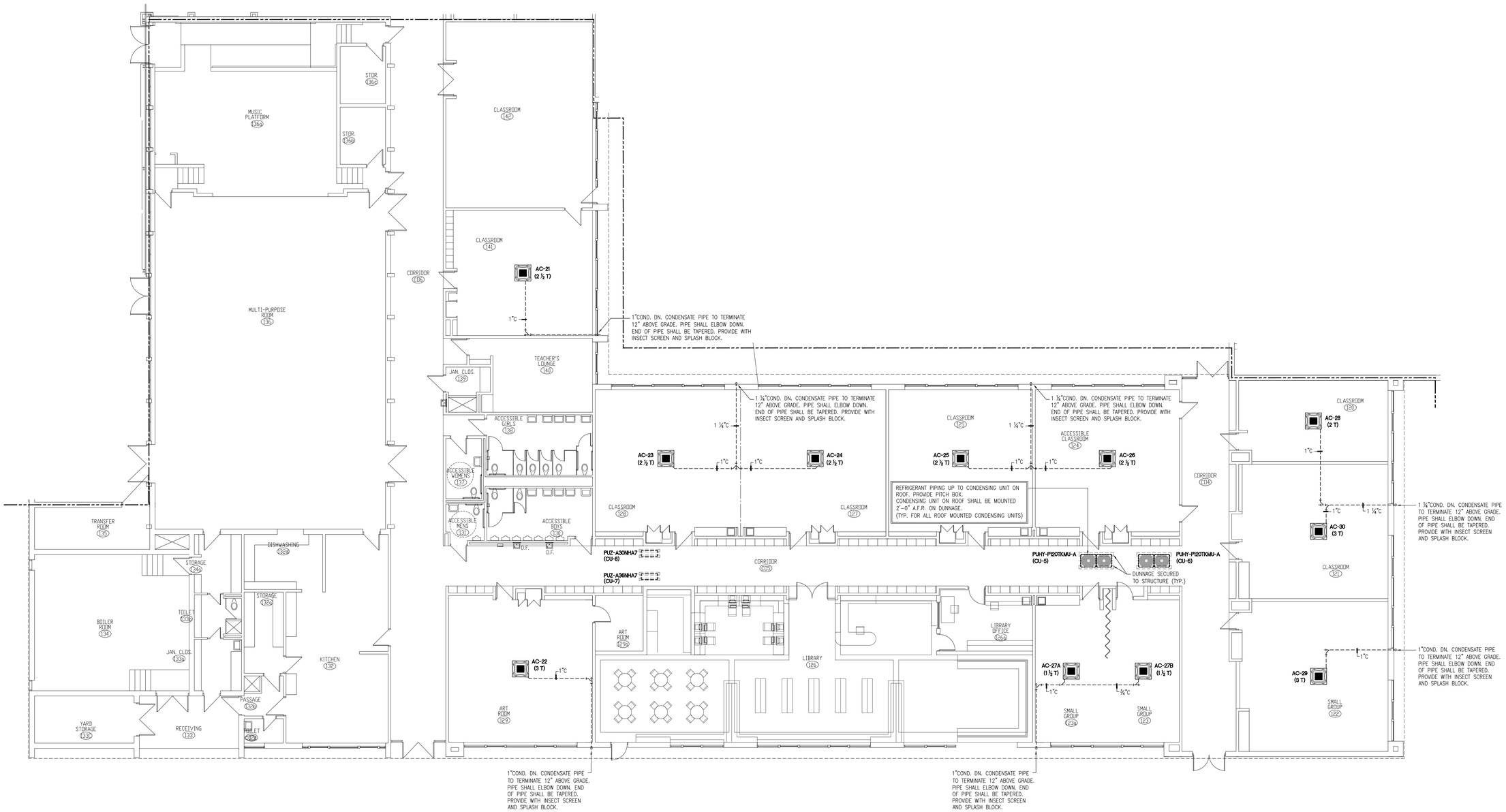
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
BA
185 Main Street
Farmington, CT 06032
(860) 687-3233
Fax: (860) 687-3030
www.bemisassociates.com

TITLE
HOPEWELL ELEMENTARY SCHOOL
SECTION B
MECHANICAL NEW WORK FLOOR PLAN

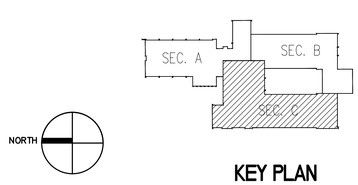
DATE 3/08/2018

DWG. NO.
M3.2



FLOOR PLAN SECTION "C" – MECHANICAL NEW WORK

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



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
BA
185 Main Street
Farmington, CT 06032
(860) 687-3333
Fax: (860) 677-7202
www.bemisassociates.com

TITLE
HOPEWELL ELEMENTARY SCHOOL
SECTION C
MECHANICAL NEW WORK FLOOR PLAN

DATE 3/08/2018

DWG. NO.
M3.3

MITSUBISHI CITY MULTI VRF INDOOR UNIT SCHEDULE

System Tag	Room Name	Tag Reference	Model	Type	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Design Entering Temp DB/WB (°F) / [Water in temp]	Heating Design Entering Temp DB/WB (°F) / [Water in temp]	Corrected Capacity					Estimated Cooling Coil LAT (°F) / [LWT]	Estimated Heating Coil LAT (°F) / [LWT]	Refrig Pipe Dim Liquid/ Suction (inch)	Peak Fan Airflow (cfm) / [Design gpm G(US)/min]	Sound Pressure Per Fan Speed 208V/230V (dBA)	Voltage / Phase	Electrical MCA/MFS	Notes / Options
									Cooling Diversity Full/Partial (See Note 5, 6)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Diversity Full/Partial (See Note 5, 6)	Heating Capacity (BTU/h)								
CU-1	Grade 5 Classroom 155	AC-1	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,136.4	58.4	89.6	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Grade 5 Classroom 153	AC-3	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,136.4	58.4	89.6	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Grade 4 Classroom 154	AC-2	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,136.4	58.4	89.6	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Grade 4 Classroom 152	AC-4	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,136.4	58.4	89.6	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Grade 5 Classroom 151	AC-5	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,136.4	58.4	89.6	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Grade 4 Classroom 150	AC-6	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,136.4	58.4	89.6	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Grade 5 Classroom 149	AC-7	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,136.4	58.4	89.6	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-1	Grade 5 Classroom 148	AC-8	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,083.7	25,083.0	FULL DEMAND	23,136.4	58.4	89.6	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-IT	IT Room	AC-31	PEAD-A12AA7	Ceiling concealed type (ducted)	12,000.0	14,000.0	80.0/67.0	70.0	PARTIAL DEMAND	12,352.2	11,223.9	FULL DEMAND	00.0	58.5	70.0	1/2 / 1/4	494	28 - 30 - 34	208/230V/ 1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6
CU-2	Classroom 107	AC-9	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,024.8	21,156.4	FULL DEMAND	20,735.8	55.4	93.7	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-2	Classroom 111	AC-10	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,024.8	21,156.4	FULL DEMAND	20,735.8	55.4	93.7	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-2	Accessible Classroom 113	AC-15	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,024.8	21,156.4	FULL DEMAND	20,735.8	55.4	93.7	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-2	Accessible Classroom 115	AC-14	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,024.8	21,156.4	FULL DEMAND	20,735.8	55.4	93.7	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-2	Classroom 117	AC-18	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,024.8	21,156.4	FULL DEMAND	20,735.8	55.4	93.7	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-2	Kindergarten 118	AC-19	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	24,395.0	58.4	90.7	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Classroom 110	AC-12	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	25,657.3	58.4	91.7	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Classroom 112	AC-13	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	25,657.3	58.4	91.7	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Classroom 114	AC-16	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	25,657.3	58.4	91.7	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Classroom 116	AC-17	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	25,657.3	58.4	91.7	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-3	Kindergarten 119	AC-20	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	25,657.3	58.4	91.7	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-4	SM Group 108	AC-11	PKA-A12HA7	Wall mounted type	12,000.0	14,000.0	80.0/67.0	70.0	PARTIAL DEMAND	12,352.2	10,304.5	FULL DEMAND	8,672.3	57.1	88.9	1/2 / 1/4	425	36 - 40 - 43	208/230V/ 1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6
CU-5	Classroom 128	AC-23	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,010.6	21,150.5	FULL DEMAND	19,504.6	55.4	92.3	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-5	Classroom 127	AC-24	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,010.6	21,150.5	FULL DEMAND	19,504.6	55.4	92.3	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-5	Classroom 125	AC-25	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,010.6	21,150.5	FULL DEMAND	19,504.6	55.4	92.3	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-5	Accessible Classroom 124	AC-26	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,010.6	21,150.5	FULL DEMAND	19,504.6	55.4	92.3	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-6	Classroom 120	AC-28	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,008.5	16,865.6	FULL DEMAND	14,348.6	60.4	86.4	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-6	Classroom 121	AC-30	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	21,257.2	58.4	88.0	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	Small Group 122	AC-29	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,012.7	25,053.5	FULL DEMAND	21,257.2	58.4	88.0	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-6	Small Group 123a	AC-27A	PLFY-EP18NEMU-E	Ceiling cassette (4-way airflow) type	18,000.0	20,000.0	80.0/67.0	70.0	PARTIAL DEMAND	18,006.3	13,449.7	FULL DEMAND	10,628.6	60.0	85.5	1/4 / 1/2	636	28-30-31-32	208/230V/ 1-phase	0.43/0.43/15	1, 2, 3, 4, 5, 6
CU-6	Small Group 123b	AC-27B	PLFY-EP18NEMU-E	Ceiling cassette (4-way airflow) type	18,000.0	20,000.0	80.0/67.0	70.0	PARTIAL DEMAND	18,006.3	13,449.7	FULL DEMAND	10,628.6	60.0	85.5	1/4 / 1/2	636	28-30-31-32	208/230V/ 1-phase	0.43/0.43/15	1, 2, 3, 4, 5, 6
CU-7	Art Room 129	AC-22	PLA-A36EA7	Ceiling cassette (4-way airflow) type	36,000.0	38,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,254.0	29,621.4	FULL DEMAND	23,539.2	56.7	88.2	5/8 / 3/8	1200	32 - 37 - 41 - 44	208/230V/ 1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6
CU-8	Classroom 141	AC-21	PLA-A30EA7	Ceiling cassette (4-way airflow) type	30,000.0	32,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,458.9	23,228.3	FULL DEMAND	19,822.5	55.1	90.9	5/8 / 3/8	880	28 - 32 - 35 - 38	208/230V/ 1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6

Notes &
Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities

4 See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.

5 Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system. Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply. It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.

6 It is recommended to always base heating corrected capacity on full demand.

MITSUBISHI CITY MULTI VRF OUTDOOR UNIT SCHEDULE

System Tag	Tag Reference	M-Net Address	Model Number	Modules	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Efficiency IEER/EER [SEER]	Heating COP @ 47°F [HSPF]	Nom System Connected Capacity (% of NOM)	Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Max Pipe Length from BC or 1st Joint (feet)	Corrected Cooling Total Capacity (BTU/h)	Corrected Heating Capacity (BTU/h)	Electrical-Per Module				Notes / Options
															208/230 or [460V]				
															Voltage / Phase	MCA 208/230 or [460V]	RFS	MOCP	
CU-1	CU-1	51, 52, 53	PUHY-P288TSKMU-A	P120, P96, P72	288,000.0	320,000.0	18.7 / 12.4	3.59	100.0%	91.0	2.2	100.0	288,669.4	185,091.2	208/230V / 3-phase 3-wire	45/42, 34/31, 25/23	50, 35, 30	73/67, 57/52, 42/38	1, 2, 3, 4, 5
CU-IT	CU-IT	28	PUY-A12NKA7		12,000.0	00.0	[21.1]	[Clg Only]	100.0%	91.0	2.2	0.0	12,352.2	00.0	208/230V / 1-phase	1.45	15	28	1, 2, 3, 4, 5
CU-2	CU-1	58, 59	PUHY-P192TSKMU-A	P120, P72	192,000.0	215,000.0	19.1 / 12.5	3.61	96.9%	91.0	2.2	80.0	186,153.8	128,073.9	208/230V / 3-phase 3-wire	45/42, 25/23	50, 30	73/67, 42/38	1, 2, 3, 4, 5
CU-3	CU-3	64, 65	PUHY-P192TSKMU-A	P120, P72	192,000.0	215,000.0	19.1 / 12.5	3.61	93.8%	91.0	2.2	65.0	180,148.8	128,286.3	208/230V / 3-phase 3-wire	45/42, 25/23	50, 30	73/67, 42/38	1, 2, 3, 4, 5
CU-4	CU-4	29	PUZ-A12NKA7		12,000.0	14,000.0	[20.8]	[10.2]	100.0%	91.0	2.2	0.0	12,352.2	8,672.3	208/230V / 1-phase	1	15	28	1, 2, 3, 4, 5, 6
CU-5	CU-5	69	PUHY-P120TKMU-A	P120	120,000.0	135,000.0	19.1 / 12.7	3.83	100.0%	91.0	2.2	50.0	120,042.3	78,018.5	208/230V / 3-phase 3-wire	45/42	50	73/67	1, 2, 3, 4, 5
CU-6	CU-6	73	PUHY-P120TKMU-A	P120	120,000.0	135,000.0	19.1 / 12.7	3.83	110.0%	91.0	2.2	70.0	132,046.5	78,120.1	208/230V / 3-phase 3-wire	45/42	50	73/67	1, 2, 3, 4, 5
CU-7	CU-7	30	PUZ-A36NKA7		36,000.0	38,000.0	[21.8]	[10.4]	100.0%	91.0	2.2	0.0	36,254.0	23,539.2	208/230V / 1-phase	2	30	31	1, 2, 3, 4, 5, 6
CU-8	CU-8	31	PUZ-A30NHA7		30,000.0	32,000.0	[22.8]	[11.6]	100.0%	91.0	2.2	0.0	30,458.9	19,822.5	208/230V / 1-phase	1	25	26	1, 2, 3, 4, 5, 6

Notes &
Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.

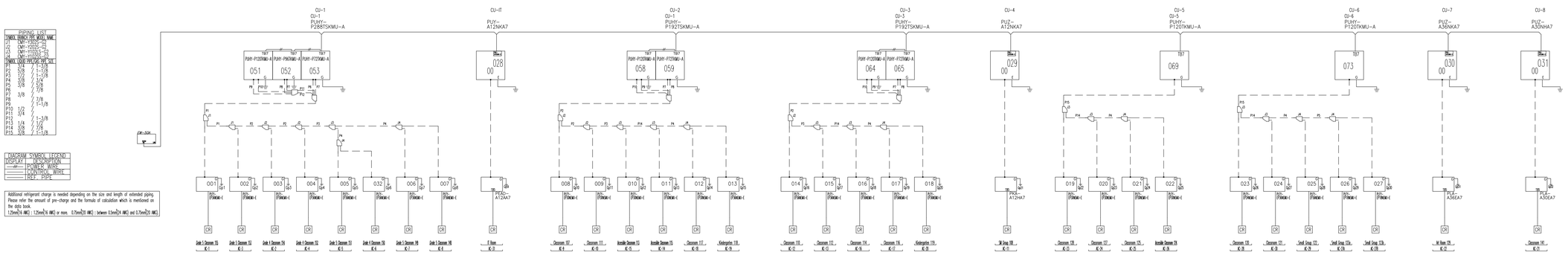
4 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twin

5 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.

6 Corrected capacities shown are based on lowest guaranteed outdoor temperature, temperatures below this are not guaranteed.

NOTES:
1. UNIT MANUFACTURER SHALL PROVIDE WIRED CONTROLLER INDOOR UNIT.
2. PROVIDE REFRIGERATION LINESETS FOR AIR CONDITIONING UNIT WITH CONNECTIONS TO CONDENSING UNIT.
3. POWER WIRING AND RACEWAY BY DIVISION 26.
4. DISCONNECTS AND STARTING RELAYS FURNISHED BY DIVISION 23.
5. REFER TO DIVISION 23 SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
6. PROVIDE SEISMIC SUPPORT RAIL FOR OUTDOOR UNIT IN ACCORDANCE WITH DIVISION 23 SPECIFICATIONS
7. UNITS USING CFC BASED REFRIGERANTS WILL NOT BE ACCEPTABLE.
8. CASSETTE UNITS SHALL HAVE MULTIFUNCTION CASEMENT/MERV 10 FILTER
9. WALL MOUNTED UNITS SHALL HAVE CONDENSATE PUMP BLUE DIAMOND X87-711/721, 115V. UNIT SHALL SHUT DOWN ON CONDENSATE PUMP FAILURE
10. OUTDOOR UNITS SHALL HAVE WIND BAFFLE

MECHANICAL - GENERAL NOTES:
1. INSTALL UNITS WITH CLEARANCE FOR SERVICE.
2. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, NOT EXACT EQUIPMENT LOCATION. ALL CONTRACTORS MUST COORDINATE EQUIPMENT LOCATIONS WITH OTHER TRADES BEFORE WORK BEGINS.
3. THE LOCATION OF ALL AC CASSETTE UNITS SHALL BE COORDINATED WITH THE EXISTING CEILING
4. CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING. INSULATE ALL REFRIGERANT PIPES.
5. CONDENSATE PIPING SHALL BE COPPER. PIPE SHALL BE INSULATED.
6. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS.
7. PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH WALLS/PARTITION. THIS CONTRACTOR SHALL OPEN WALLS AS NECESSARY. SEAL PENETRATIONS
8. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS.
9. ROOF MOUNTED UNITS SHALL BE LOCATED MIN. 10'-0" AWAY FROM THE EDGE OF THE ROOF.



CITY MULTI - SYSTEM SCHEMATIC DIAGRAM
NO SCALE

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
BA
185 Main Street
Farmington, Ct. 06032
(860) 677-3233
Fax: (860) 677-7502
www.bemisassociates.com

TITLE
HOPEWELL ELEMENTARY SCHOOL MECHANICAL SCHEDULES

DATE 3/08/2018

DWG. NO.
M3.4

DRAWING LEGEND			
SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION
▼	TELE/DATA OUTLET	A	AMPS.
	SURFACE PANELBOARD.	C	CONDUIT.
	RECESSED MOUNTED PANELBOARD.	C/B	CIRCUIT BREAKER.
	BRANCH CIRCUIT WIRING. CROSS LINES INDICATE NUMBER OF CONDUCTORS.	GFCI	INDICATES RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
	BRANCH CIRCUIT WIRING HOMERUN. CROSS LINES INDICATE NUMBER OF CONDUCTORS.	GND	GROUND.
	DUPLEX RECEPTACLE, 18" AFF UNLESS NOTED DIFFERENTLY.	V	VOLTS.
	SPECIAL EQUIPMENT POWER CONNECTION	WP	WEATHER PROOF

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

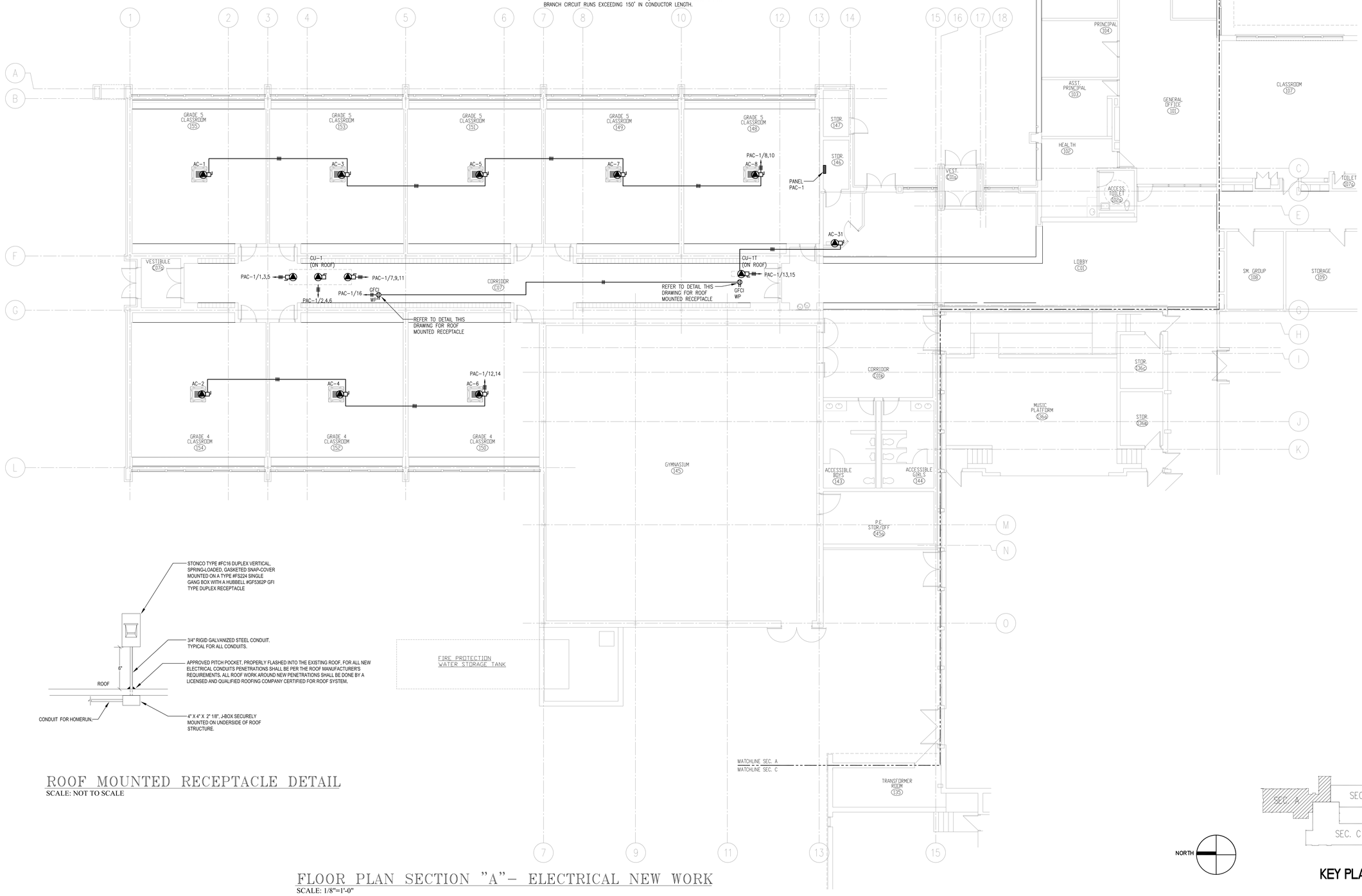
C/B SIZE	* CIRCUIT SIZE
20A-1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

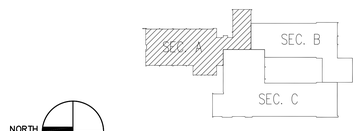
EXISTING PANEL #PAC-1 – SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	75	3	CU-1	2	60	3	CU-1
3	–	–	–	4	–	–	–
5	–	–	–	6	–	–	–
7	45	3	CU-1	8	20	2	AC-1, 3, 5, 7 & 8
9	–	–	–	10	–	–	–
11	–	–	–	12	20	2	AC- 2, 4 & 6
13	30	2	CU-1T & AC-31	14	–	–	–
15	–	–	–	16	20	1	RECEPTACLES
17	20	2	SPARE	18	20	1	SPARE
19	–	–	–	20	20	1	SPARE
21	20	2	SPARE	22	40	2	SPARE
23	–	–	–	24	–	–	–
25	20	1	SPARE	26	20	1	SPARE
27	40	2	SPARE	28	25	2	SPARE
29	–	–	–	30	–	–	–



ROOF MOUNTED RECEPTACLE DETAIL
SCALE: NOT TO SCALE

FLOOR PLAN SECTION "A"– ELECTRICAL NEW WORK
SCALE: 1/8"=1'-0"



KEY PLAN

NORTH

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

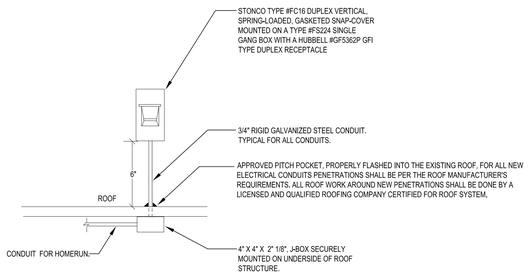
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 521-7070
Fax: (860) 521-7070
www.bemisassociates.com

TITLE
HOPEWELL ELEMENTARY SCHOOL
SECTION A
ELECTRICAL
NEW WORK PLAN

DATE 3/08/2018

DWG. NO.
E3.1



ROOF MOUNTED RECEPTACLE DETAIL

SCALE: NOT TO SCALE

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

C/B SIZE	* CIRCUIT SIZE
20A–1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A–3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A–3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A–3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A–1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

EXISTING PANEL #PAC–2 – SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	75	3	CU–2	2	75	3	CU–3
3	–	–	–	4	–	–	–
5	–	–	–	6	–	–	–
7	45	3	CU–2	8	45	3	CU–3
9	–	–	–	10	–	–	–
11	–	–	–	12	–	–	–
13	20	2	AC–9,10,14,15,18 & 19	14	20	2	AC–12,13,16,17 & 20
15	–	–	–	16	–	–	–
17	30	2	CU–4 & AC–11	18	20	1	RECEPTACLE
19	–	–	–	20	40	2	SPARE
21	40	2	SPARE	22	–	–	–
23	–	–	–	24	40	2	SPARE
25	20	1	SPARE	26	–	–	–
27	40	2	SPARE	28	25	2	SPARE
29	–	–	–	30	–	–	–

GENERAL SPECIFICATION NOTES – POWER

1 - THE CONTRACTOR SHALL VERIFY AND OBTAIN ALL NECESSARY DIMENSIONS AT THE BUILDING.

2 - FINISHED WORK: THE INTENT OF THE SPECIFICATIONS AND DRAWINGS IS TO CALL FOR FINISHED WORK, COMPLETED, TESTED AND READY FOR OPERATION.

3 - GOOD PRACTICE: IT IS NOT INTENDED THAT THE DRAWINGS SHOW EVERY CONDUIT, JUNCTION BOX, FITTING OR MINOR DETAIL AND IT IS UNDERSTOOD THAT WHILE THE DRAWINGS MUST BE FOLLOWED AS CLOSELY AS CIRCUMSTANCES WILL PERMIT, THE SYSTEMS SHALL BE INSTALLED ACCORDING TO THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH GOOD PRACTICE.

4 - ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON DRAWINGS BUT MENTIONED IN SPECIFICATIONS OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AT NO ADDITIONAL COST TO OWNER.

5 - CODES AND STANDARDS - COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES AND STANDARDS WHEREVER APPLICABLE INCLUDING THE FOLLOWING: THE 2016 CONNECTICUT STATE BUILDING CODE , 2012 INTERNATIONAL BUILDING CODE, 2016 CONNECTICUT FIRE SAFETY CODE, 2014 NATIONAL ELECTRICAL CODE, ICC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, ADA, NFPA, UNDERWRITERS LABORATORIES, FACTORY MUTUAL INSURANCE COMPANY, NEMA STANDARDS.

6 - NOTE THAT THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF THE ELECTRICAL EQUIPMENT AND SYSTEMS, WITHOUT SHOWING EVERY DETAIL AND FITTING.

7 - RACEWAYS: PROVIDE EMT CONDUIT FOR ALL WIRING. EMT CONNECTORS AND COUPLINGS SHALL BE GALVANIZED STEEL SET-SCREW TYPE. PROVIDE GLAND COMPRESSION CONNECTORS AND COUPLINGS WHERE LOCATED IN DAMP AND WET LOCATIONS. PROVIDE FLEXIBLE STEEL CONDUIT FOR FINAL CONNECTIONS TO MOTOR DRIVEN EQUIPMENT, PROVIDE LIQUID TIGHT FLEXIBLE STEEL CONDUIT FOR FINAL CONNECTIONS TO MOTOR DRIVEN EQUIPMENT IN DAMP AND WET AREAS.

8 - BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, RATED 600 VOLTS, 90 DEG.C., COLOR CODED, TYPE XHHW-2.

9 - WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED. WIRE OF SIZE SMALLER THAN #8 AWG SHALL BE SOLID.

10 - MINIMUM SIZE CONDUCTORS FOR POWER AND LIGHTING SHALL BE #12 AWG. PROVIDE MINIMUM #10 AWG SIZE FOR RUNS EXCEEDING 75' IN CONDUCTOR LENGTH, AND #8 AWG SIZE FOR RUNS EXCEEDING 150' IN CONDUCTOR LENGTH. PROVIDE LARGER SIZE CONDUCTORS AS SCHEDULED OR AS NOTED ON THE DRAWINGS.

11 - THE NUMBER OF WIRES IN A CONDUIT RUN IS INDICATED ON THE DRAWINGS BY CROSS LINES ON THE CONDUIT RUNS. PROVIDE CODE-SIZED CONDUIT FOR THE NUMBER AND SIZE OF WIRES UNLESS A LARGER SIZE IS SHOWN ON THE DRAWINGS. MINIMUM CONDUIT SIZE SHALL BE 3/4".

12 - RACEWAYS SHALL BE CONCEALED WHEREVER POSSIBLE IN ALL FINISHED AREAS.

13 - RACEWAYS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALL LINES.

14 - RACEWAYS SHALL BE SUPPORTED FROM THE STRUCTURE BY STRAP HANGERS, ROD HANGERS, OR RACK MOUNTED, OR OTHER APPROVED ELECTRICAL MOUNTING.

15 - PROVIDE FIRE STOPPING AT ALL FIRE AND/OR SMOKE RATED WALL OR CEILING PENETRATIONS IN ORDER TO MAINTAIN ITS ORIGINAL INTEGRITY.

16 - OUTLET BOXES SHALL BE CODE GAUGE GALVANIZED STEEL AND SHALL BE OF SHAPES AND SIZES TO SUIT THEIR RESPECTIVE LOCATIONS AND INSTALLATIONS, AND SHALL BE PROVIDED WITH COVERS TO SUIT THEIR FUNCTION AND INSTALLATION. MINIMUM BOX SIZE SHALL BE 4" SQ. X 2 1/8" DEEP (2-GANG). PROVIDE CAST BOXES FOR OUTDOOR WORK.

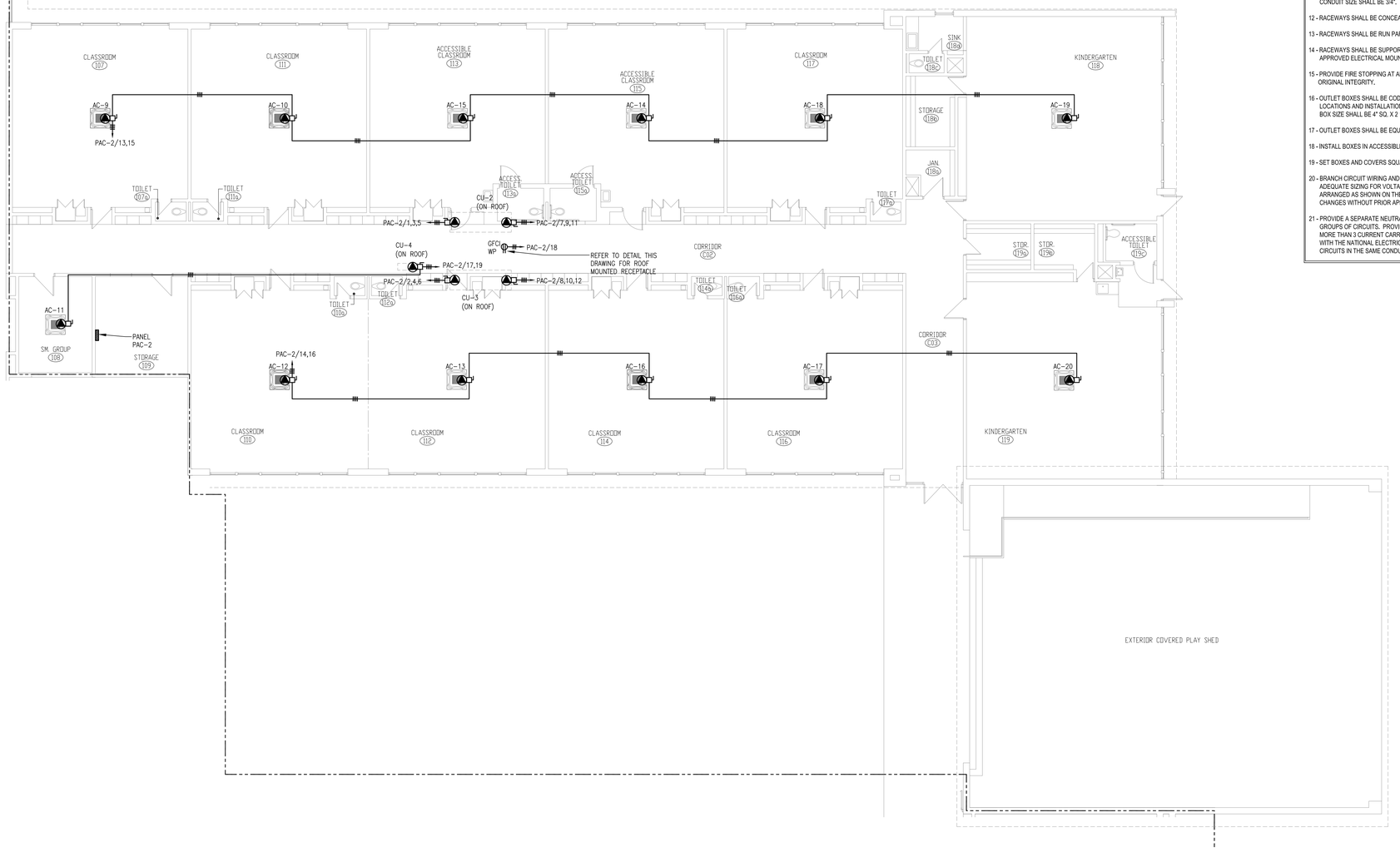
17 - OUTLET BOXES SHALL BE EQUIPPED WITH FIXTURE STUD OR STRAPS WHERE REQUIRED.

18 - INSTALL BOXES IN ACCESSIBLE LOCATIONS AND AT UNIFORM HEIGHTS.

19 - SET BOXES AND COVERS SQUARE AND TRUE WITH BUILDING FINISH.

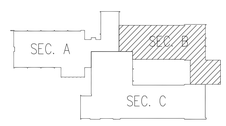
20 - BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS HAS BEEN DESIGNED FOR MAXIMUM ECONOMY CONSISTENT WITH ADEQUATE SIZING FOR VOLTAGE DROPS, CIRCUIT AMPACITIES, AND OTHER CONSIDERATIONS. INSTALL THE WIRING WITH CIRCUITS ARRANGED AS SHOWN ON THE DRAWINGS, EXCEPT AS APPROVED IN ADVANCE BY THE ARCHITECT AND ENGINEER. DO NOT MAKE CHANGES WITHOUT PRIOR APPROVAL.

21 - PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH 120V SINGLE PHASE CIRCUIT. DO NOT USE A COMMON NEUTRAL FOR GROUPS OF CIRCUITS. PROVIDE A SEPARATE GROUND WIRE FOR EACH CIRCUIT BACK TO THE RESPECTIVE PANEL GROUND. IF MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE INSTALLED IN ONE CONDUIT THEY SHALL BE DE-RATED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. DO NOT INSTALL MORE THAN THREE 30 AMP SINGLE PHASE OR FOUR 20 AMP SINGLE PHASE CIRCUITS IN THE SAME CONDUIT.



FLOOR PLAN SECTION "B"– ELECTRICAL NEW WORK

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



KEY PLAN

NORTH

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

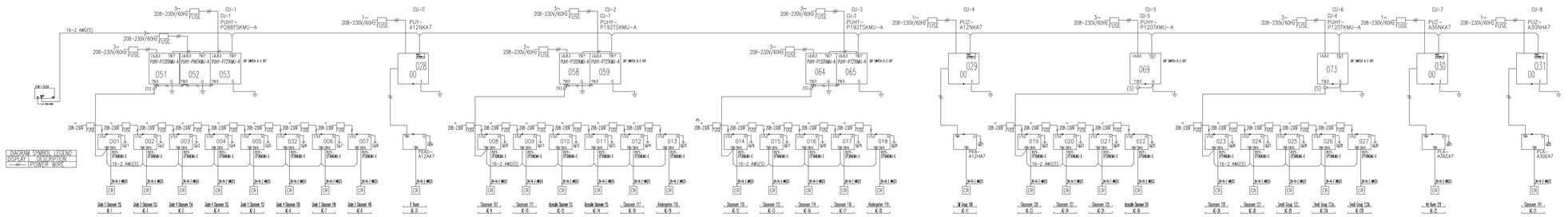
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
Mailing Address: P.O. Box 313
Fax: (860) 321-7070
www.bemisassociates.com

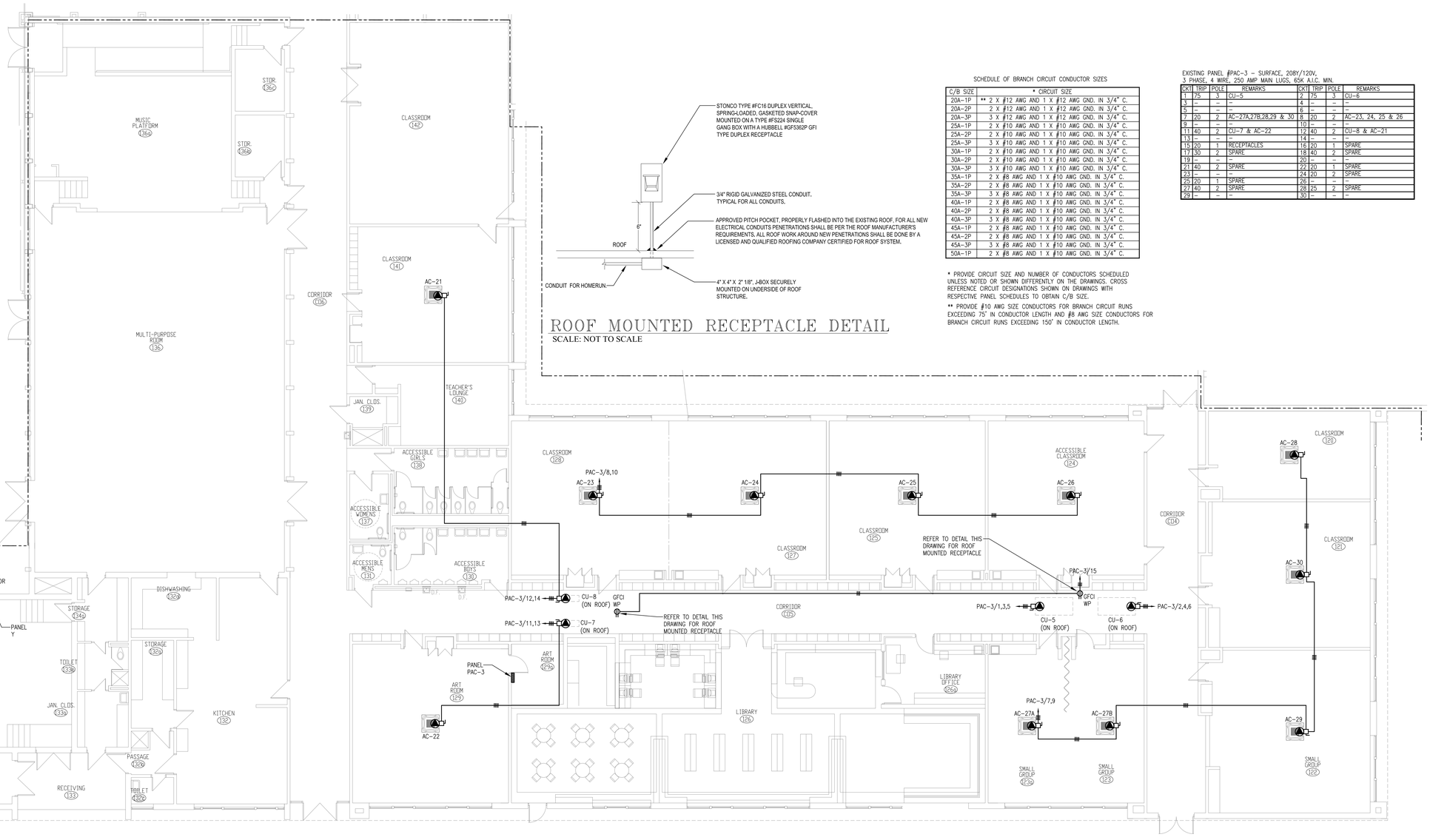
TITLE
HOPEWELL ELEMENTARY SCHOOL
SECTION B
ELECTRICAL NEW WORK PLAN

DATE 3/08/2018

DWG. NO.
E3.2



CITY MULTI - SYSTEM SCHEMATIC DIAGRAM
NO SCALE



FLOOR PLAN SECTION "C"- ELECTRICAL NEW WORK
SCALE: 1/8"=1'-0"

ROOF MOUNTED RECEPTACLE DETAIL
SCALE: NOT TO SCALE

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

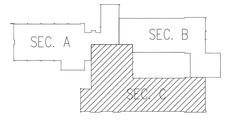
C/B SIZE	* CIRCUIT SIZE
20A-1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS, CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

EXISTING PANEL #PAC-3 – SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 65K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	75	3	CU-5	2	75	3	CU-6
3	–	–	–	4	–	–	–
5	–	–	–	6	–	–	–
7	20	2	AC-27A,27B,28,29 & 30	8	20	2	AC-23, 24, 25 & 26
9	–	–	–	10	–	–	–
11	40	2	CU-7 & AC-22	12	40	2	CU-8 & AC-21
13	–	–	–	14	–	–	–
15	20	1	RECEPTACLES	16	20	1	SPARE
17	30	2	SPARE	18	40	2	SPARE
19	–	–	–	20	–	–	–
21	40	2	SPARE	22	20	1	SPARE
23	–	–	–	24	20	2	SPARE
25	20	1	SPARE	26	–	–	–
27	40	2	SPARE	28	25	2	SPARE
29	–	–	–	30	–	–	–



NORTH

KEY PLAN

REVISIONS

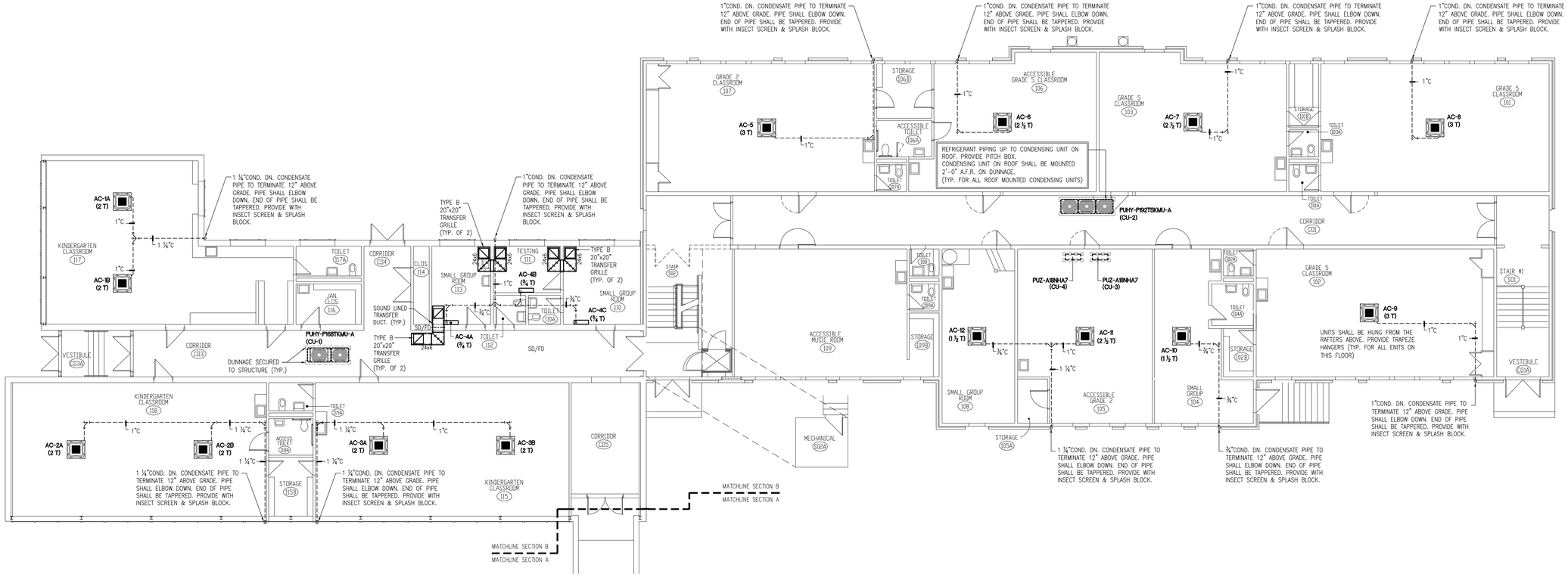
AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS
GLASTONBURY, CONNECTICUT

BEMIS | ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT 06032
(860) 677-1333
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
HOPEWELL ELEMENTARY SCHOOL
SECTION C
ELECTRICAL NEW WORK PLAN

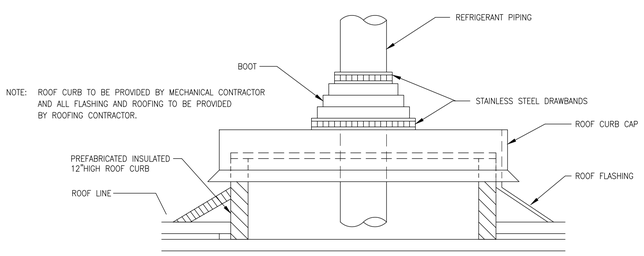
DATE 3/08/2018

DWG. NO.
E3.3



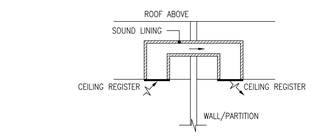
FLOOR PLAN SECTION "B"– MECHANICAL NEW WORK

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

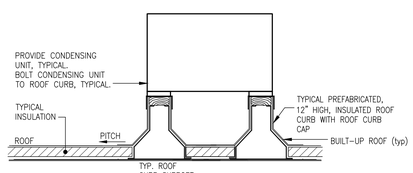


NOTE: ROOF CURB TO BE PROVIDED BY MECHANICAL CONTRACTOR. APPROVED PITCH POCKET, PROPERLY FLASHED INTO THE EXISTING ROOF, FOR ALL NEW MECHANICAL PIPE PENETRATIONS SHALL BE PER THE ROOF MANUFACTURER'S REQUIREMENTS. ALL ROOF WORK AROUND NEW PENETRATIONS SHALL BE DONE BY A LICENSED AND QUALIFIED ROOFING COMPANY CERTIFIED FOR ROOF SYSTEM.

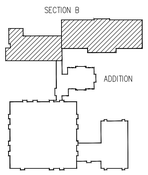
TYPICAL PIPING AND DUCTWORK ROOF CURB DETAIL
NOT TO SCALE



TYPICAL TRANSFER DUCT DETAIL
NO SCALE



TYPICAL CONDENSING UNIT DETAIL
NO SCALE



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, CT. 06032
Phone: (860) 677-3233
Fax: (860) 677-7705
www.bemisassociates.com

TITLE
NAUBUC ELEMENTARY SCHOOL
SECTION B MECHANICAL NEW WORK FLOOR PLAN

DATE 3/08/2018

DWG. NO.
M4.1

MITSUBISHI CITY MULTI VRF INDOOR UNIT SCHEDULE

System Tag	Room Name	Tag Reference	Model	Type	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Design Entering Temp DB/WB (°F) / [Water in temp]	Heating Design Entering Temp DB/WB (°F) / [Water in temp]	Corrected Capacity					Estimated Cooling Coil LAT (°F) / [LWT]	Estimated Heating Coil LAT (°F) / [LWT]	Refrig Pipe Dim Liquid/ Suction (inch)	Peak Fan Airflow (cfm) / [Design gpm G(US)/min]	Sound Pressure Per Fan Speed 208V/230V (dBA)	Voltage / Phase	Electrical MCA/MFS	Notes / Options
									Cooling Diversity Full/Partial (See Note 5, 6)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Diversity Full/Partial (See Note 5, 6)	Heating Capacity (BTU/h)								
CU-1	Kindergarten Classroom 117	AC-1A	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,019.8	16,870.3	FULL DEMAND	15,976.4	60.4	88.2	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-1	Kindergarten Classroom 117	AC-1B	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,019.8	16,870.3	FULL DEMAND	15,976.4	60.4	88.2	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-1	Kindergarten Classroom 118	AC-2A	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,019.8	16,870.3	FULL DEMAND	15,976.4	60.4	88.2	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-1	Kindergarten Classroom 118	AC-2B	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,019.8	16,870.3	FULL DEMAND	15,976.4	60.4	88.2	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-1	Kindergarten Classroom 115	AC-3A	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,019.8	16,870.3	FULL DEMAND	15,976.4	60.4	88.2	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-1	Kindergarten Classroom 115	AC-3B	PLFY-EP24NEMU-E	Ceiling cassette (4-way airflow) type	24,000.0	27,000.0	80.0/67.0	70.0	PARTIAL DEMAND	24,019.8	16,870.3	FULL DEMAND	15,976.4	60.4	88.2	3/8 / 5/8	812	28-30-32-34	208/230V/ 1-phase	0.54/0.54/15	1, 2, 3, 4, 5, 6
CU-1	Small Group Room 113	AC-4A	PKFY-P08NHMU-E2	Wall mounted type	8,000.0	9,000.0	80.0/67.0	70.0	PARTIAL DEMAND	8,006.6	6,814.0	FULL DEMAND	5,325.5	64.4	82.0	1/4 / 1/2	413	34-39-43	208/230V/ 1-phase	0.38(208V)/ 0.38(230V)/15	1, 2, 3, 4, 5, 6
CU-1	Testing 111	AC-4B	PKFY-P08NHMU-E2	Wall mounted type	8,000.0	9,000.0	80.0/67.0	70.0	PARTIAL DEMAND	8,006.6	6,814.0	FULL DEMAND	5,325.5	64.4	82.0	1/4 / 1/2	413	34-39-43	208/230V/ 1-phase	0.38(208V)/ 0.38(230V)/15	1, 2, 3, 4, 5, 6
CU-1	Small Group 110	AC-4C	PKFY-P08NHMU-E2	Wall mounted type	8,000.0	9,000.0	80.0/67.0	70.0	PARTIAL DEMAND	8,006.6	6,814.0	FULL DEMAND	5,325.5	64.4	82.0	1/4 / 1/2	413	34-39-43	208/230V/ 1-phase	0.38(208V)/ 0.38(230V)/15	1, 2, 3, 4, 5, 6
CU-2	Grade 2 Classroom	AC-5	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	23,052.1	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-2	Accessible Grade 5 Classroom	AC-6	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,024.8	21,156.4	FULL DEMAND	19,594.3	55.4	92.4	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-2	Grade 5 Classroom 103	AC-7	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,024.8	21,156.4	FULL DEMAND	19,594.3	55.4	92.4	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-2	Grade 5 Classroom 101	AC-8	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	23,052.1	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-2	Grade 5 Classroom 102	AC-9	PLFY-EP36NEMU-E	Ceiling cassette (4-way airflow) type	36,000.0	40,000.0	80.0/67.0	70.0	PARTIAL DEMAND	36,029.8	25,060.6	FULL DEMAND	23,052.1	58.4	89.5	3/8 / 5/8	1095	35-37-39-41	208/230V/ 1-phase	0.92/0.92/15	1, 2, 3, 4, 5, 6
CU-2	Accessible Grade 2 105	AC-11	PLFY-EP30NEMU-E	Ceiling cassette (4-way airflow) type	30,000.0	34,000.0	80.0/67.0	70.0	PARTIAL DEMAND	30,024.8	21,156.4	FULL DEMAND	19,594.3	55.4	92.4	3/8 / 5/8	812	28-31-33-35	208/230V/ 1-phase	0.57/0.57/15	1, 2, 3, 4, 5, 6
CU-3	Small Group 104	AC-10	PLA-A18EA7	Ceiling cassette (4-way airflow) type	18,000.0	19,000.0	80.0/67.0	70.0	PARTIAL DEMAND	18,267.0	14,864.4	FULL DEMAND	11,769.6	56.6	88.2	1/2 / 1/4	600	28 - 29 - 31 - 32	208/230V/ 1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6
CU-4	Small Group 108	AC-12	PLA-A18EA7	Ceiling cassette (4-way airflow) type	18,000.0	19,000.0	80.0/67.0	70.0	PARTIAL DEMAND	18,267.0	14,864.4	FULL DEMAND	11,769.6	56.6	88.2	1/2 / 1/4	600	28 - 29 - 31 - 32	208/230V/ 1-phase	Powered by Outdoor	1, 2, 3, 4, 5, 6

Notes & Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities

4 See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.

5 Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system. Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply. It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.

6 It is recommended to always base heating corrected capacity on full demand.

MITSUBISHI CITY MULTI VRF OUTDOOR UNIT SCHEDULE

System Tag	Tag Reference	M-Net Address	Model Number	Modules	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Efficiency IEER/EER [SEER]	Heating COP @ 47°F [HSPF]	Nom System Connected Capacity (% of NOM)	Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Max Pipe Length from BC or 1st Joint (feet)	Corrected Cooling Total Capacity (BTU/h)	Corrected Heating Capacity (BTU/h)	Electrical-Per Module				Notes / Options
															208/230 or [460V]				
															Voltage / Phase	MCA 208/230 or [460V]	RFS	MOCP	
CU-1	CU-1	51, 52	PUHY-P168TSKMU-A	P96, P72	168,000.0	188,000.0	19.7 / 12.9	3.83	100.0%	91.0	2.2	85.0	168,138.9	111,834.6	208/230V / 3-phase 3-wire	34/31, 25/23	35, 30	57/52, 42/38	1, 2, 3, 4, 5
CU-2	CU-2	60, 61	PUHY-P192TSKMU-A	P120, P72	192,000.0	215,000.0	19.1 / 12.5	3.61	103.1%	91.0	2.2	100.0	198,163.7	127,939.0	208/230V / 3-phase 3-wire	45/42, 25/23	50, 30	73/67, 42/38	1, 2, 3, 4, 5
CU-3	CU-3	16	PUZ-A18NKA7		18,000.0	19,000.0	[24.6]	[11]	100.0%	91.0	2.2	0.0	18,267.0	11,769.6	208/230V / 1-phase	1	15	28	1, 2, 3, 4, 5, 6
CU-4	CU-4	17	PUZ-A18NKA7		18,000.0	19,000.0	[24.6]	[11]	100.0%	91.0	2.2	0.0	18,267.0	11,769.6	208/230V / 1-phase	1	15	28	1, 2, 3, 4, 5, 6

Notes & Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)

2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)

3 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.

4 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twinning

5 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.

6 Corrected capacities shown are based on lowest guaranteed outdoor temperature, temperatures below this are not guaranteed.

NOTES :
1. UNIT MANUFACTURER SHALL PROVIDE WIRED CONTROLLER INDOOR UNIT.
2. PROVIDE REFRIGERATION LINESETS FOR AIR CONDITIONING UNIT WITH CONNECTIONS TO CONDENSING UNIT.
3. POWER WIRING AND RACEWAY BY DIVISION 26.
4. DISCONNECTS AND STARTING RELAYS FURNISHED BY DIVISION 23.
5. REFER TO DIVISION 23 SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
6. PROVIDE SEISMIC SUPPORT RAIL FOR OUTDOOR UNIT IN ACCORDANCE WITH DIVISION 23 SPECIFICATIONS
7. UNITS USING CFC BASED REFRIGERANTS WILL NOT BE ACCEPTABLE.
8. CASSETTE UNITS SHALL HAVE MULTIFUNCTION CASEMENT/MERV 10 FILTER
9. WALL MOUNTED UNITS SHALL HAVE CONDENSATE PUMP BLUE DIAMOND X87-711/721, 115V. UNIT SHALL SHUT DOWN ON CONDENSATE PUMP FAILURE
10. OUTDOOR UNITS SHALL HAVE WIND BAFFLE

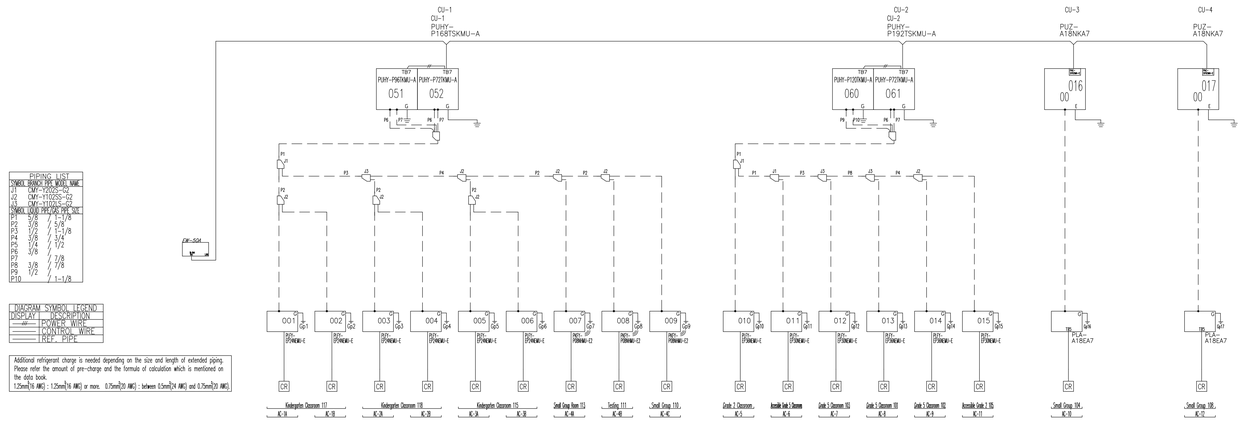
MECHANICAL - GENERAL NOTES :
1. INSTALL UNITS WITH CLEARANCE FOR SERVICE.
2. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, NOT EXACT EQUIPMENT LOCATION. ALL CONTRACTORS MUST COORDINATE EQUIPMENT LOCATIONS WITH OTHER TRADES BEFORE WORK BEGINS.
3. THE LOCATION OF ALL AC CASSETTE UNITS SHALL BE COORDINATED WITH THE EXISTING CEILING
4. CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING. INSULATE ALL REFRIGERANT PIPES.
5. CONDENSATE PIPING SHALL BE COPPER. PIPE SHALL BE INSULATED.
6. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS.
7. PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH WALLS/PARTITION. THIS CONTRACTOR SHALL OPEN WALLS AS NECESSARY. SEAL PENETRATIONS
8. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS.
9. ROOF MOUNTED UNITS SHALL BE LOCATED MIN. 10'-0" AWAY FROM THE EDGE OF THE ROOF.

MECHANICAL SYMBOL LIST

SYMBOL	ABBREV.	
		TRANSFER GRILLE
— — C — —	C	CONDENSATE DRAIN PIPING
RS	RS	REFRIGERANT SUCTION PIPING
RL	RL	REFRIGERANT LIQUID PIPING
UP	UP	PIPING SET UP/RISER
DN	DN.	PIPING SET DOWN
	F.D./S.D.	COMBINATION FIRE/SMOKE DAMPER

CU-X — X: Unit # — Condensing Unit

AC -X — X: Unit # — Air Conditioning Unit



CITY MULTI - SYSTEM SCHEMATIC DIAGRAM
NO SCALE

REVISIONS

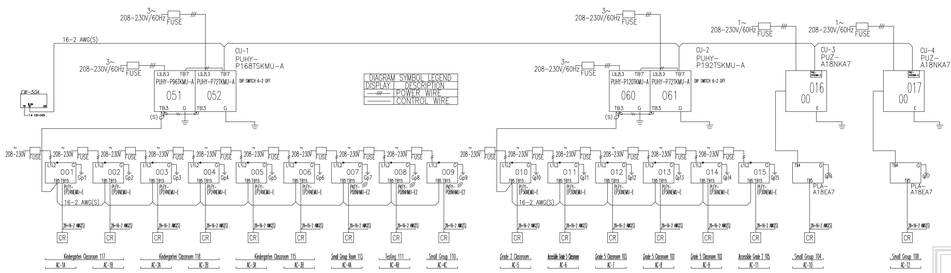
AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
BA
185 Main Street
Farmington, CT 06032
(860) 677-3233
Fax: (860) 677-7030
www.bemisassociates.com

TITLE
NAUBUC ELEMENTARY SCHOOL SECTION B MECHANICAL SCHEDULES

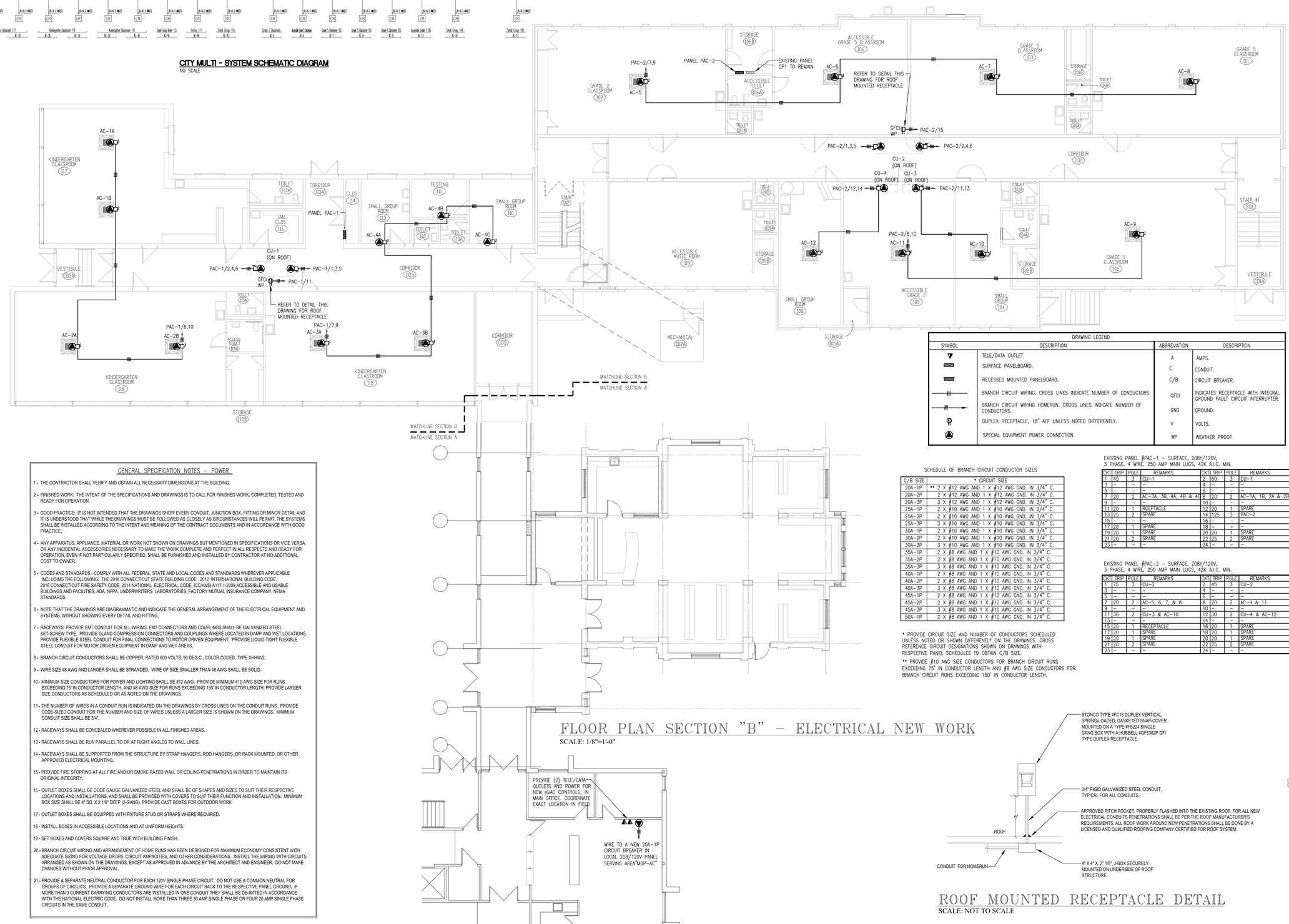
DATE 3/08/2018

DWG. NO.
M4.2



CITY MULTI - SYSTEM SCHEMATIC DIAGRAM

NO SCALE



MATCHLINE SECTION B
MATCHLINE SECTION A

FLOOR PLAN SECTION "B" - ELECTRICAL NEW WORK

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

DRAWING LEGEND

SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION
▼	TELE/DATA OUTLET	A	AMPS.
	SURFACE PANELBOARD.	C	CONDUIT.
	RECESSED MOUNTED PANELBOARD.	C/B	CIRCUIT BREAKER.
	BRANCH CIRCUIT WIRING. CROSS LINES INDICATE NUMBER OF CONDUCTORS.	GFCI	INDICATES RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
	BRANCH CIRCUIT WIRING HOMERUN. CROSS LINES INDICATE NUMBER OF CONDUCTORS.	GND	GROUND.
	DUPLEX RECEPTACLE, 18" AFF UNLESS NOTED DIFFERENTLY.	V	VOLTS.
	SPECIAL EQUIPMENT POWER CONNECTION	WP	WEATHER PROOF

SCHEDULE OF BRANCH CIRCUIT CONDUCTOR SIZES

C/B SIZE	* CIRCUIT SIZE
20A-1P	** 2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-2P	2 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
20A-3P	3 X #12 AWG AND 1 X #12 AWG GND. IN 3/4" C.
25A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
25A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-1P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-2P	2 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
30A-3P	3 X #10 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
35A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
40A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-2P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
45A-3P	3 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.
50A-1P	2 X #8 AWG AND 1 X #10 AWG GND. IN 3/4" C.

* PROVIDE CIRCUIT SIZE AND NUMBER OF CONDUCTORS SCHEDULED UNLESS NOTED OR SHOWN DIFFERENTLY ON THE DRAWINGS. CROSS REFERENCE CIRCUIT DESIGNATIONS SHOWN ON DRAWINGS WITH RESPECTIVE PANEL SCHEDULES TO OBTAIN C/B SIZE.

** PROVIDE #10 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 75' IN CONDUCTOR LENGTH AND #8 AWG SIZE CONDUCTORS FOR BRANCH CIRCUIT RUNS EXCEEDING 150' IN CONDUCTOR LENGTH.

EXISTING PANEL #PAC-1 - SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 42K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	45	3	CU-1	2	60	3	CU-1
3	–	–	–	4	–	–	–
5	–	–	–	6	–	–	–
7	20	2	AC-3A, 3B, 4A, 4B & 4C	8	20	2	AC-1A, 1B, 2A & 2B
9	–	–	–	10	–	–	–
11	20	1	RECEPTACLE	12	20	1	SPARE
13	25	2	SPARE	14	125	3	PAC-2
15	–	–	–	16	–	–	–
17	20	1	SPARE	18	–	–	–
19	20	1	SPARE	20	20	1	SPARE
21	20	2	SPARE	22	25	2	SPARE
23	–	–	–	24	–	–	–

EXISTING PANEL #PAC-2 - SURFACE, 208Y/120V, 3 PHASE, 4 WIRE, 250 AMP MAIN LUGS, 42K A.I.C. MIN.

CKT	TRIP	POLE	REMARKS	CKT	TRIP	POLE	REMARKS
1	175	3	CU-2	2	45	3	CU-2
3	–	–	–	4	–	–	–
5	–	–	–	6	–	–	–
7	20	2	AC-5, 6, 7, & 8	8	20	2	AC-9 & 11
9	–	–	–	10	–	–	–
11	30	2	CU-3 & AC-10	12	30	2	CU-4 & AC-12
13	–	–	–	14	–	–	–
15	20	1	RECEPTACLE	16	20	1	SPARE
17	20	1	SPARE	18	20	1	SPARE
19	20	1	SPARE	20	20	1	SPARE
21	20	2	SPARE	22	25	2	SPARE
23	–	–	–	24	–	–	–

GENERAL SPECIFICATION NOTES - POWER

1 - THE CONTRACTOR SHALL VERIFY AND OBTAIN ALL NECESSARY DIMENSIONS AT THE BUILDING.

2 - FINISHED WORK: THE INTENT OF THE SPECIFICATIONS AND DRAWINGS IS TO CALL FOR FINISHED WORK, COMPLETED, TESTED AND READY FOR OPERATION.

3 - GOOD PRACTICE: IT IS NOT INTENDED THAT THE DRAWINGS SHOW EVERY CONDUIT, JUNCTION BOX, FITTING OR MINOR DETAIL AND IT IS UNDERSTOOD THAT WHILE THE DRAWINGS MUST BE FOLLOWED AS CLOSELY AS CIRCUMSTANCES WILL PERMIT, THE SYSTEMS SHALL BE INSTALLED ACCORDING TO THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH GOOD PRACTICE.

4 - ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON DRAWINGS BUT MENTIONED IN SPECIFICATIONS OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AT NO ADDITIONAL COST TO OWNER.

5 - CODES AND STANDARDS - COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES AND STANDARDS WHEREVER APPLICABLE INCLUDING THE FOLLOWING: THE 2016 CONNECTICUT STATE BUILDING CODE , 2012 INTERNATIONAL BUILDING CODE, 2016 CONNECTICUT FIRE SAFETY CODE, 2014 NATIONAL ELECTRICAL CODE, ICC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, ADA, NFPA, UNDERWRITERS LABORATORIES, FACTORY MUTUAL INSURANCE COMPANY, NEMA STANDARDS.

6 - NOTE THAT THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF THE ELECTRICAL EQUIPMENT AND SYSTEMS, WITHOUT SHOWING EVERY DETAIL AND FITTING.

7 - RACEWAYS: PROVIDE EMT CONDUIT FOR ALL WIRING. EMT CONNECTORS AND COUPLINGS SHALL BE GALVANIZED STEEL SET-SCREW TYPE. PROVIDE GLAND COMPRESSION CONNECTORS AND COUPLINGS WHERE LOCATED IN DAMP AND WET LOCATIONS. PROVIDE FLEXIBLE STEEL CONDUIT FOR FINAL CONNECTIONS TO MOTOR DRIVEN EQUIPMENT. PROVIDE LIQUID TIGHT FLEXIBLE STEEL CONDUIT FOR MOTOR DRIVEN EQUIPMENT IN DAMP AND WET AREAS.

8 - BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, RATED 600 VOLTS, 90 DEG.C., COLOR CODED, TYPE XHHW-2.

9 - WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED. WIRE OF SIZE SMALLER THAN #8 AWG SHALL BE SOLID.

10 - MINIMUM SIZE CONDUCTORS FOR POWER AND LIGHTING SHALL BE #12 AWG. PROVIDE MINIMUM #10 AWG SIZE FOR RUNS EXCEEDING 75' IN CONDUCTOR LENGTH, AND #8 AWG SIZE FOR RUNS EXCEEDING 150' IN CONDUCTOR LENGTH. PROVIDE LARGER SIZE CONDUCTORS AS SCHEDULED OR AS NOTED ON THE DRAWINGS.

11 - THE NUMBER OF WIRES IN A CONDUIT RUN IS INDICATED ON THE DRAWINGS BY CROSS LINES ON THE CONDUIT RUNS. PROVIDE CODE-SIZED CONDUIT FOR THE NUMBER AND SIZE OF WIRES UNLESS A LARGER SIZE IS SHOWN ON THE DRAWINGS. MINIMUM CONDUIT SIZE SHALL BE 3/4".

12 - RACEWAYS SHALL BE CONCEALED WHEREVER POSSIBLE IN ALL FINISHED AREAS.

13 - RACEWAYS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALL LINES.

14 - RACEWAYS SHALL BE SUPPORTED FROM THE STRUCTURE BY STRAP HANGERS, ROD HANGERS, OR RACK MOUNTED, OR OTHER APPROVED ELECTRICAL MOUNTING.

15 - PROVIDE FIRE STOPPING AT ALL FIRE AND/OR SMOKE RATED WALL OR CEILING PENETRATIONS IN ORDER TO MAINTAIN ITS ORIGINAL INTEGRITY.

16 - OUTLET BOXES SHALL BE CODE GAUGE GALVANIZED STEEL AND SHALL BE OF SHAPES AND SIZES TO SUIT THEIR RESPECTIVE LOCATIONS AND INSTALLATIONS, AND SHALL BE PROVIDED WITH COVERS TO SUIT THEIR FUNCTION AND INSTALLATION. MINIMUM BOX SIZE SHALL BE 4" SQ. X 2 1/8" DEEP (2-GANG); PROVIDE CAST BOXES FOR OUTDOOR WORK.

17 - OUTLET BOXES SHALL BE EQUIPPED WITH FIXTURE STUD OR STRAPS WHERE REQUIRED.

18 - INSTALL BOXES IN ACCESSIBLE LOCATIONS AND AT UNIFORM HEIGHTS.

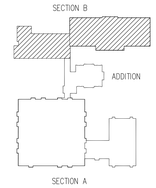
19 - SET BOXES AND COVERS SQUARE AND TRUE WITH BUILDING FINISH.

20 - BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS HAS BEEN DESIGNED FOR MAXIMUM ECONOMY CONSISTENT WITH ADEQUATE SIZING FOR VOLTAGE DROPS, CIRCUIT AMPACITIES, AND OTHER CONSIDERATIONS. INSTALL THE WIRING WITH CIRCUITS ARRANGED AS SHOWN ON THE DRAWINGS, EXCEPT AS APPROVED IN ADVANCE BY THE ARCHITECT AND ENGINEER. DO NOT MAKE CHANGES WITHOUT PRIOR APPROVAL.

21 - PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH 120V SINGLE PHASE CIRCUIT. DO NOT USE A COMMON NEUTRAL FOR GROUPS OF CIRCUITS. PROVIDE A SEPARATE GROUND WIRE FOR EACH CIRCUIT BACK TO THE RESPECTIVE PANEL GROUND. IF MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE INSTALLED IN ONE CONDUIT THEY SHALL BE DE-RATED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. DO NOT INSTALL MORE THAN THREE 30 AMP SINGLE PHASE OR FOUR 20 AMP SINGLE PHASE CIRCUITS IN THE SAME CONDUIT.

ROOF MOUNTED RECEPTACLE DETAIL

SCALE: NOT TO SCALE



KEY PLAN

REVISIONS

AIR CONDITIONING INSTALLATION AT FOUR ELEMENTARY SCHOOLS

GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, Ct 06032
(860) 677-2331
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
NAUBUC ELEMENTARY SCHOOL
SECTION B
ELECTRICAL
NEW WORK PLAN

DATE 3/08/2018

DWG. NO.
E4.1