

### SYSTEM 1 EQUIPMENT SCHEDULE

TYPICAL OF HITACHI OR ACCEPTABLE EQUAL

Outdoor Unit	Name	Unit Type	Unit	Cooling Dry Bulb Temp (F)	Cooling Wet Bulb Temp (F)	Heating Dry Bulb Temp (F)	Total Cooling Capacity (MBH)	Sensible Cooling Capacity (MBH)	Total Heating Capacity (MBH)	Air Flow (CFM)
HP-1 HVAHP144B32S	IU-1	4-Way Cassette	HIC4036B21S	80.0	67.0	70.0	34.6	34.6	39.8	1307
	IU-2	4-Way Cassette	HIC4036B21S	80.0	67.0	70.0	34.6	34.6	39.8	1307
	IU-3	4-Way Cassette	HIC4036B21S	80.0	67.0	70.0	34.6	34.6	39.8	1307
	IU-4	4-Way Cassette	HIC4036B21S	80.0	67.0	70.0	34.6	34.6	39.8	1307
Additional refrigerant (lb):	12.1			Total (MBH):			138.5	138.5	159.1	

Indoor unit type		Duct 2 pipe	Non-duct 2 pipe	Mixed 2 pipe	HP-1 HVAHP144B32S
HP-1	HVAHP144B32S	10206777	10206693	10207527	Cooling DB (°F) 65.0
Cooling	Capacity [Btu/h]	138000.00	138000.00	138000.00	Heating DB (°F) 65.0
	EER [Btu/Wh]	11.20	10.90	11.05	Heating WB (°F) 59.0
	IEER [Btu/Wh]	21.20	23.90	22.55	Connection % 100%
Total Cooling MBH		138.5			
Heating	Capacity 47F [Btu/h]	154000.00	154000.00	154000.00	Sensible Cooling MBH 138.5
	COP47F [W/W]	3.40	3.42	3.41	Heating MBH 159.1
	Capacity 17F [Btu/h]	110000.00	110000.00	150000.00	
	COP17F [W/W]	2.15	2.12	2.14	
Cooling & Heating	SCHE [Btu/Wh]				

### SYSTEM 2 EQUIPMENT SCHEDULE

TYPICAL OF HITACHI OR ACCEPTABLE EQUAL

Outdoor Unit	Name	Unit Type	Unit	Cooling Dry Bulb Temp (F)	Cooling Wet Bulb Temp (F)	Heating Dry Bulb Temp (F)	Total Cooling Capacity (MBH)	Sensible Cooling Capacity (MBH)	Total Heating Capacity (MBH)	Air Flow (CFM)	
HP-2 HVAHP192B32S	IU-5	Wall	T1WM030B22S	80.0	67.0	70.0	26.9	26.9	33.9	812	
	IU-6	Wall	T1WM030B22S	80.0	67.0	70.0	26.9	26.9	33.9	812	
	IU-7	Wall	T1WM024B22S	80.0	67.0	70.0	21.5	21.5	27.1	759	
	IU-8	Wall	T1WM012B22S	80.0	67.0	70.0	10.8	10.8	13.6	494	
	IU-9	Wall	T1WM030B22S	80.0	67.0	70.0	26.9	26.9	33.9	812	
	IU-10	Wall	T1WM030B22S	80.0	67.0	70.0	26.9	26.9	33.9	812	
	IU-11	Wall	T1WM018B22S	80.0	67.0	70.0	16.2	16.2	20.3	653	
	IU-12	Wall	T1WM018B22S	80.0	67.0	70.0	16.2	16.2	20.3	653	
	IU-13	Wall	T1WM018B22S	80.0	67.0	70.0	16.2	16.2	20.3	653	
	IU-22	4-Way Cassette	HIC4015B21S	80.0	67.0	70.0	13.5	13.5	17.0	777	
	Additional refrigerant (lb):	23.1			Total (MBH):			202.0	202.0	254.3	

Indoor unit type		Duct 2 pipe	Non-duct 2 pipe	Mixed 2 pipe	HP-2 HVAHP192B32S
HP-2	HVAHP192B32S	10206779	10206695	10207529	Cooling DB (°F) 65.0
Cooling	Capacity [Btu/h]	184000.00	184000.00	184000.00	Heating DB (°F) 47.0
	EER [Btu/Wh]	11.10	10.60	10.85	Heating WB (°F) 46.0
	IEER [Btu/Wh]	20.80	21.40	21.10	Connection % 117%
Total Cooling MBH		202.0			
Heating	Capacity 47F [Btu/h]	206000.00	206000.00	206000.00	Sensible Cooling MBH 202.0
	COP47F [W/W]	3.38	3.32	3.35	Heating MBH 254.3
	Capacity 17F [Btu/h]	140000.00	140000.00	140000.00	
	COP17F [W/W]	2.15	2.05	2.10	
Cooling & Heating	SCHE [Btu/Wh]				

### SYSTEM 3 EQUIPMENT SCHEDULE

TYPICAL OF HITACHI OR ACCEPTABLE EQUAL

Outdoor Unit	Name	Unit Type	Unit	Cooling Dry Bulb Temp (F)	Cooling Wet Bulb Temp (F)	Heating Dry Bulb Temp (F)	Total Cooling Capacity (MBH)	Sensible Cooling Capacity (MBH)	Total Heating Capacity (MBH)	Air Flow (CFM)
HP-3 HVAHP168B32S	IU-14	Wall	T1WM024B22S	80.0	67.0	70.0	24.4	24.4	14.7	759
	IU-15	Wall	T1WM024B22S	80.0	67.0	70.0	24.4	24.4	14.7	759
	IU-16	Wall	T1WM024B22S	80.0	67.0	70.0	24.4	24.4	14.7	759
	IU-17	4-Way Cassette	HIC4015B21S	80.0	67.0	70.0	15.2	15.2	9.2	777
	IU-18	Wall	T1WM024B22S	80.0	67.0	70.0	24.4	24.4	14.7	759
	IU-19	Wall	T1WM018B22S	80.0	67.0	70.0	18.3	18.3	11.0	653
	IU-20	Wall	T1WM015B22S	80.0	67.0	70.0	15.2	15.2	9.2	512
	IU-21	Wall	T1WM015B22S	80.0	67.0	70.0	15.2	15.2	9.2	512
	Additional refrigerant (lb):	17.6			Total (MBH):			161.6	161.6	97.5

Indoor unit type		Duct 2 pipe	Non-duct 2 pipe	Mixed 2 pipe	HP-3 HVAHP168B32S
HP-3	HVAHP168B32S	10206778	10206694	10207528	Cooling DB (°F) 65.0
Cooling	Capacity [Btu/h]	160000.00	160000.00	160000.00	Heating DB (°F) 0.0
	EER [Btu/Wh]	11.80	11.60	11.70	Heating WB (°F) -1.0
	IEER [Btu/Wh]	21.40	23.40	22.40	Connection % 95%
Total Cooling MBH		161.6			
Heating	Capacity 47F [Btu/h]	180000.00	180000.00	180000.00	Sensible Cooling MBH 161.6
	COP47F [W/W]	3.58	3.65	3.61	Heating MBH 97.5
	Capacity 17F [Btu/h]	124000.00	124000.00	125000.00	
	COP17F [W/W]	2.40	2.16	2.28	
Cooling & Heating	SCHE [Btu/Wh]				

### SYSTEM 4 EQUIPMENT SCHEDULE

TYPICAL OF HITACHI OR ACCEPTABLE EQUAL

Outdoor Unit	Name	Unit Type	Unit	Cooling Dry Bulb Temp (F)	Cooling Wet Bulb Temp (F)	Heating Dry Bulb Temp (F)	Total Cooling Capacity (MBH)	Sensible Cooling Capacity (MBH)	Total Heating Capacity (MBH)	Air Flow (CFM)	
HP-4 HVAHP192B32S	IU-23	Wall	T1WM030B22S	80.0	67.0	70.0	28.0	28.0	14.5	812	
	IU-24	4-Way Cassette	HIC4012B21S	80.0	67.0	70.0	11.2	11.2	5.8	742	
	IU-25	Wall	T1WM030B22S	80.0	67.0	70.0	28.0	28.0	14.5	812	
	IU-26	Wall	T1WM024B22S	80.0	67.0	70.0	22.4	22.4	11.6	759	
	IU-27	Wall	T1WM024B22S	80.0	67.0	70.0	22.4	22.4	11.6	759	
	IU-28	Wall	T1WM012B22S	80.0	67.0	70.0	11.2	11.2	5.8	494	
	IU-30	Wall	T1WM030B22S	80.0	67.0	70.0	28.0	28.0	14.5	812	
	IU-31	Wall	T1WM030B22S	80.0	67.0	70.0	28.0	28.0	14.5	812	
	IU-32	Wall	T1WM015B22S	80.0	67.0	70.0	14.0	14.0	7.3	512	
	Additional refrigerant (lb):	22.0			Total (MBH):			193.4	193.4	100.2	

Indoor unit type		Duct 2 pipe	Non-duct 2 pipe	Mixed 2 pipe	HP-4 HVAHP192B32S
HP-4	HVAHP192B32S	10206779	10206695	10207529	Cooling DB (°F) 65.0
Cooling	Capacity [Btu/h]	184000.00	184000.00	184000.00	Heating DB (°F) 0.0
	EER [Btu/Wh]	11.10	10.60	10.85	Heating WB (°F) -1.0
	IEER [Btu/Wh]	20.80	21.40	21.10	Connection % 108%
Total Cooling MBH		193.4			
Heating	Capacity 47F [Btu/h]	206000.00	206000.00	206000.00	Sensible Cooling MBH 193.4
	COP47F [W/W]	3.38	3.32	3.35	Heating MBH 100.2
	Capacity 17F [Btu/h]	140000.00	140000.00	140000.00	
	COP17F [W/W]	2.15	2.05	2.10	
Cooling & Heating	SCHE [Btu/Wh]				

### Mechanical Notes:

- ALL MATERIALS AND EQUIPMENT ARE TO BE NEW, UNUSED, AND FREE FROM DEFECTS OF ANY KIND. THE BASIS OF QUALITY SHALL BE THE LATEST REVISION OF ASTM, ANSI, OR OTHER ACCEPTABLE STANDARDS.
- THESE DRAWINGS ARE DIAGRAMMATIC, AND INDICATE GENERAL ARRANGEMENT OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE REVIEWED THE SITE FOR HIS WORK PRIOR TO HAVING SUBMITTED HIS PROPOSAL. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CONDITIONS FOUND DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES.
- ALL WORK INCLUDING LABOR AND MATERIALS SHALL BE FULLY GUARANTEED FOR ONE (1) YEAR FROM THE DATE OF PAYMENT AND FINAL ACCEPTANCE BY THE OWNER AND ENGINEER.
- ALL CUTTING, PATCHING, FIRE-STOPPING, AND SURFACE RESTORATION IN CONNECTION WITH THIS TRADE SHALL BE COMPLETED BY THIS CONTRACTOR.
- A MINIMUM OF FOUR (4) COPIES OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION OF THE EQUIPMENT AND/OR MATERIALS. BY SUBMITTING SHOP DRAWINGS, THE CONTRACTOR REPRESENTS THAT ACTUAL FIELD CONDITIONS ARE VERIFIED BY HIM AND ARE REFLECTED ON HIS SUBMITTALS.
- THIS CONTRACTOR SHALL PAY ALL FEES, GIVE ALL NOTICES, FILE ALL NECESSARY DRAWINGS, AND OBTAIN ALL PERMITS, INSPECTIONS AND CERTIFICATES OF APPROVAL REQUIRED IN CONNECTION WITH WORK UNDER THIS CONTRACT.
- ALL WORK IN ASSOCIATION WITH THIS CONTRACT SHALL BE COMPLETED IN STRICT COMPLIANCE WITH THE 2020 BUILDING CODE OF NEW YORK STATE, 2020 MECHANICAL CODE OF NEW YORK STATE, AS WELL AS THE 2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE.
- ALL DUCTWORK IS TO BE CONSTRUCTED OF GALVANIZED SHEET STEEL (EXCEPT WHERE OTHERWISE SPECIFIED) WITH GAUGES, BRACING AND CONSTRUCTION IN ACCORDANCE WITH THE LATEST SMACNA DUCT MANUAL STANDARDS AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
- PROVIDE MANUAL DAMPERS AT EACH SPLIT OR TAP CONNECTION TO TRUNK DUCTS FOR BALANCING PURPOSES WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS. EACH DAMPER SHALL BE OF THE OPPOSED BLADE DAMPER TYPE INSTALLED WITH AN OPERATOR AND LOCKING DEVICE. ALL DAMPERS LOCATED ABOVE HARD OR INACCESSIBLE CEILINGS SHALL BE INSTALLED WITH REMOTE GEAR OPERATORS.
- FURNISH & INSTALL FUSIBLE LINK FIRE DAMPERS AT ALL LOCATIONS WHERE DUCT PENETRATES FIRE-RATED FLOOR OR CEILING ASSEMBLY WHETHER OR NOT SPECIFICALLY SHOWN. INSTALL DUCTWORK CASING ACCESS DOORS AND FRAMES AHEAD OF EACH FIRE DAMPER FOR INSPECTION AND MAINTENANCE. DOORS SHALL BE A MINIMUM OF 20 GA. DOUBLE PANEL INSULATED TYPE.
- INSTALL TURNING VANES ON ALL RECTANGULAR TURNS. TURNING VANES SHALL BE DOUBLE THICKNESS TYPE CONSTRUCTED IN ACCORDANCE WITH SMACNA MANUAL.
- ROUND SHEET STEEL ELBOWS ARE TO BE INSTALLED AT THE DUCT CONNECTION TO ALL SUPPLY AIR DIFFUSERS. SHEET STEEL PLENUM BOXES ARE TO BE INSTALLED AT THE DUCT CONNECTION TO ALL RETURN AND EXHAUST AIR GRILLES. THE CONTRACTOR IS TO PAINT THE INSIDE OF THE SHEET STEEL PLENUM BOXES FLAT BLACK.
- ALL SUPPLY AND RETURN DUCTWORK LOCATED IN UNCONDITIONED SPACES OR ABOVE CEILINGS SHALL BE INSULATED WITH A MINIMUM OF R-5 INSULATION. ALL DUCTWORK LOCATED OUTSIDE THE BUILDING ENVELOPE SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION. INSULATION SHALL BE FIBERGLASS DUCT WRAP WITH VAPOR SEAL SECURELY TAPED AROUND DUCT. IF DUCT LINING IS TO BE USED, ALL DUCT SIZES SHOWN SHALL BE CONSIDERED TO BE INSIDE CLEAR DIMENSIONS.
- INSTALL ALL DUCTWORK AS HIGH AS POSSIBLE PROVIDING RISERS, DROPS AND OFFSETS TO CLEAR STRUCTURAL MEMBERS, LIGHT FIXTURES, OTHER PIPING, AND OTHER OBSTRUCTIONS. WHERE CONFLICTS ARISE, IT SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO PROCEEDING.
- THE ENTIRE AIR DISTRIBUTION SYSTEM IS TO BE BALANCED TO WITHIN 10% OF THE SPECIFIED AIRFLOW REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE TO TEST ALL EQUIPMENT, PIPING, FIXTURES, AND SYSTEMS INSTALLED UNDER THIS CONTRACT TO ENSURE PROPER OPERATION PRIOR TO FINAL ACCEPTANCE BY THE OWNER AND ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE TO DETERMINE WHETHER SPECIAL LICENSING IS REQUIRED IN ORDER TO PERFORM THE REQUIRED WORK IN THE MUNICIPALITY WHERE THE PROJECT IS LOCATED. IF THE CONTRACTOR CANNOT OBTAIN THE REQUIRED LICENSING TO COMPLETE THE WORK WITHIN THE PROJECT SCHEDULE, THEN THE CONTRACTOR SHALL NOT BE PERMITTED TO BID ON THIS PROJECT.
- CONTRACTOR IS RESPONSIBLE TO CREATE AND SUBMIT RED-LINE "AS-BUILT" PLANS TO THE ENGINEER AT THE END OF THE PROJECT. AS-BUILT PLANS SHALL ACCURATELY REPRESENT THE SYSTEMS AS THEY WERE INSTALLED.

### Mechanical Equipment:

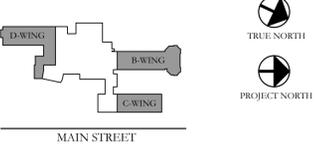
- WC** VRF PROGRAMMABLE WIRED CONTROLLER TYPICAL OF HITACHI #CIW01 OR ACCEPTABLE EQUAL; LARGE BACKLIT LCD; MOUNT 5'-6" A.F.F. IN LOCATIONS SHOWN ON PLANS
- BN** HITACHI VRF TO BACNET IP/MSTP INTERFACE; FURNISH W/ BACNET MASTER SOFTWARE LICENSE; MOUNT AND WIRE CONTROLLER TO ALL UNITS AND REMOTE CONTROLLERS; CONNECTION TO EXISTING BUILDING MANAGEMENT SYSTEM AND INTEGRATION WITH EXISTING SEQUENCE OF OPERATIONS BY OWNER
- CC** HITACHI LARGE CENTRAL CONTROLLER CCL01; MOUNT AND WIRE CONTROLLER TO ALL UNITS AND REMOTE CONTROLLERS

### VRF System Notes:

- VRF PROGRAMMABLE WIRED CONTROLLERS SHALL BE FURNISHED BY MECHANICAL CONTRACTOR FOR EACH INDOOR UNIT. CONTROLLERS SHIP LOOSE FOR FIELD INSTALLATION AND WIRING BY THE MECHANICAL CONTRACTOR.
- MECHANICAL CONTRACTOR TO PROVIDE CENTRAL CONTROLLER FOR LOCAL SET POINT CONTROL AND SYSTEM VIEWING. CONTROLLER TO BE INSTALLED AND WIRING BY MECHANICAL CONTRACTOR. 24V POWER BY ELECTRICAL CONTRACTOR.
- DISCONNECT SWITCH FOR HEAT PUMP UNITS AND INDOOR UNITS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- EXTERNAL SUPPORTS FOR INDOOR AND HEAT PUMP UNITS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- FILTER RACK AND 2" PLEATED MERV-8 FILTERS FOR DUCTED UNITS SHALL FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- CONDENSATE PUMPS SHIP FOR FIELD INSTALLATION BY MECHANICAL CONTRACTOR FOR WALL MOUNTED UNITS. DUCTED UNITS FURNISHED WITH FACTORY MOUNTED CONDENSATE PUMP. MECHANICAL CONTRACTOR TO PROVIDE CONDENSATE PIPING FROM ALL UNITS TO SANITARY DRAIN. FIELD VERIFY EXACT ROUTING AND TERMINATION POINT IN BUILDING.
- PROVIDE REFRIGERANT ISOLATION VALVES ON LIQUID AND GAS LINES AT EVERY FAN COIL UNIT.

### KEY PLAN:

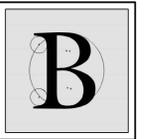
'CORNWALL CENTRAL MIDDLE SCHOOL'



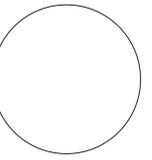
PROJECT:  
CORNWALL CENTRAL MIDDLE SCHOOL B, C & D WING AIR-CONDITIONING PROJECT  
122 MAIN STREET  
CORNWALL, NEW YORK 12518

### SUB-CONSULTANT:

### ENGINEER:



**BLAKE ENGINEERING PLLC**  
1898 COUNTY ROUTE 1  
WESTTOWN, NEW YORK 10998  
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### MECHANICAL SCHEDULES & NOTES

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO. **1814** SHEET NO. **M.101**

UNAUTHORIZED ALTERATION OR ADDITION TO THIS PLAN IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.

**SYSTEM 5 EQUIPMENT SCHEDULE**

TYPICAL OF HITACHI OR ACCEPTABLE EQUAL

Outdoor Unit	Name	Unit Type	Unit	Cooling Dry Bulb Temp (F)	Cooling Wet Bulb Temp (F)	Heating Dry Bulb Temp (F)	Total Cooling Capacity (MBH)	Sensible Cooling Capacity (MBH)	Total Heating Capacity (MBH)	Air Flow (CFM)	
HP-5 HVAHP240B32S	IU-29	4-Way Cassette	HIC4012B21S	80.0	67.0	70.0	11.9	11.9	8.9	742	
	IU-33	Wall	TWMM030B22S	80.0	67.0	70.0	29.8	29.8	22.2	812	
	IU-34	Wall	TWMM030B22S	80.0	67.0	70.0	29.8	29.8	22.2	812	
	IU-35	Wall	TWMM030B22S	80.0	67.0	70.0	29.8	29.8	22.2	812	
	IU-36	Wall	TWMM018B22S	80.0	67.0	70.0	17.9	17.9	13.3	653	
	IU-37	Wall	TWMM015B22S	80.0	67.0	70.0	14.9	14.9	11.1	512	
	IU-38	Wall	TWMM030B22S	80.0	67.0	70.0	29.8	29.8	22.2	812	
	IU-39	Wall	TWMM024B22S	80.0	67.0	70.0	23.8	23.8	17.7	759	
	IU-40	Wall	TWMM015B22S	80.0	67.0	70.0	14.9	14.9	11.1	512	
	IU-41	Wall	TWMM030B22S	80.0	67.0	70.0	29.8	29.8	22.2	812	
	Additional refrigerant (lb):				24.3			Total (MBH):		232.1	232.1

Indoor unit type		Duct 2 pipe	Non-duct 2 pipe	Mixed 2 pipe
HP-5	HVAHP240B32S	10206781	10206697	10207531
Cooling	Capacity [Btu/h]	228000.00	228000.00	228000.00
	EER [Btu/Wh]	10.60	11.10	10.85
	IEER [Btu/Wh]	21.00	20.80	20.90
Heating	Capacity 47F [Btu/h]	258000.00	258000.00	258000.00
	COP47F [W/W]	3.51	3.67	3.59
	Capacity 17F [Btu/h]	178000.00	178000.00	178000.00
	COP17F [W/W]	2.27	2.35	2.31
Cooling & Heating	SCHE [Btu/Wh]			

HP-5	HVAHP240B32S
Cooling DB (°F)	65.0
Heating DB (°F)	0.0
Heating WB (°F)	-1.0
Connection %	98%
Total Cooling MBH	232.1
Sensible Cooling MBH	232.1
Heating MBH	172.8

**SYSTEM 6 EQUIPMENT SCHEDULE**

TYPICAL OF HITACHI OR ACCEPTABLE EQUAL

Outdoor Unit	Name	Unit Type	Unit	Cooling Dry Bulb Temp (F)	Cooling Wet Bulb Temp (F)	Heating Dry Bulb Temp (F)	Total Cooling Capacity (MBH)	Sensible Cooling Capacity (MBH)	Total Heating Capacity (MBH)	Air Flow (CFM)	
HP-6 HVAHP192B32S	IU-53	4-Way Cassette	HIC4015B21S	80.0	67.0	70.0	13.0	13.0	6.8	777	
	IU-54	Wall	TWMM024B22S	80.0	67.0	70.0	20.8	20.8	10.8	759	
	IU-55	Wall	TWMM024B22S	80.0	67.0	70.0	20.8	20.8	10.8	759	
	IU-47	Wall	TWMM030B22S	80.0	67.0	70.0	25.9	25.9	13.5	812	
	IU-48	Wall	TWMM030B22S	80.0	67.0	70.0	25.9	25.9	13.5	812	
	IU-49	Wall	TWMM030B22S	80.0	67.0	70.0	25.9	25.9	13.5	812	
	IU-50	Wall	TWMM030B22S	80.0	67.0	70.0	25.9	25.9	13.5	812	
	IU-51	Wall	TWMM030B22S	80.0	67.0	70.0	25.9	25.9	13.5	812	
	Additional refrigerant (lb):				32.4			Total (MBH):		184.2	184.2

Indoor unit type		Duct 2 pipe	Non-duct 2 pipe	Mixed 2 pipe
HP-6	HVAHP192B32S	10206779	10206695	10207529
Cooling	Capacity [Btu/h]	184000.00	184000.00	184000.00
	EER [Btu/Wh]	11.10	10.80	10.85
	IEER [Btu/Wh]	20.80	21.40	21.10
Heating	Capacity 47F [Btu/h]	206000.00	206000.00	206000.00
	COP47F [W/W]	3.38	3.32	3.35
	Capacity 17F [Btu/h]	140000.00	140000.00	140000.00
	COP17F [W/W]	2.15	2.05	2.10
Cooling & Heating	SCHE [Btu/Wh]			

HP-6	HVAHP192B32S
Cooling DB (°F)	65.0
Heating DB (°F)	0.0
Heating WB (°F)	-1.0
Connection %	111%
Total Cooling MBH	184.2
Sensible Cooling MBH	184.2
Heating MBH	96.2

**SYSTEM 7 EQUIPMENT SCHEDULE**

TYPICAL OF HITACHI OR ACCEPTABLE EQUAL

Outdoor Unit	Name	Unit Type	Unit	Cooling Dry Bulb Temp (F)	Cooling Wet Bulb Temp (F)	Heating Dry Bulb Temp (F)	Total Cooling Capacity (MBH)	Sensible Cooling Capacity (MBH)	Total Heating Capacity (MBH)	Air Flow (CFM)	
HP-7 HVAHP192B32S	IU-42	Wall	TWMM030B22S	80.0	67.0	70.0	27.6	27.6	17.5	812	
	IU-43	Wall	TWMM030B22S	80.0	67.0	70.0	27.6	27.6	17.5	812	
	IU-44	Wall	TWMM030B22S	80.0	67.0	70.0	27.6	27.6	17.5	812	
	IU-45	Wall	TWMM030B22S	80.0	67.0	70.0	27.6	27.6	17.5	812	
	IU-46	Wall	TWMM030B22S	80.0	67.0	70.0	27.6	27.6	17.5	812	
	IU-52	4-Way Cassette	HIC4015B21S	80.0	67.0	70.0	13.8	13.8	8.7	777	
Additional refrigerant (lb):				26.1			Total (MBH):		151.7	151.7	96.2

Indoor unit type		Duct 2 pipe	Non-duct 2 pipe	Mixed 2 pipe
HP-7	HVAHP192B32S	10206779	10206695	10207529
Cooling	Capacity [Btu/h]	184000.00	184000.00	184000.00
	EER [Btu/Wh]	11.10	10.80	10.85
	IEER [Btu/Wh]	20.80	21.40	21.10
Heating	Capacity 47F [Btu/h]	206000.00	206000.00	206000.00
	COP47F [W/W]	3.38	3.32	3.35
	Capacity 17F [Btu/h]	140000.00	140000.00	140000.00
	COP17F [W/W]	2.15	2.05	2.10
Cooling & Heating	SCHE [Btu/Wh]			

HP-7	HVAHP192B32S
Cooling DB (°F)	65.0
Heating DB (°F)	0.0
Heating WB (°F)	-1.0
Connection %	86%
Total Cooling MBH	151.7
Sensible Cooling MBH	151.7
Heating MBH	96.2

**SYSTEM 8 EQUIPMENT SCHEDULE**

TYPICAL OF HITACHI OR ACCEPTABLE EQUAL

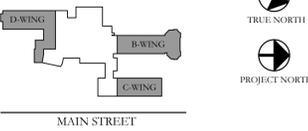
Outdoor Unit	Name	Unit Type	Unit	Cooling Dry Bulb Temp (F)	Cooling Wet Bulb Temp (F)	Heating Dry Bulb Temp (F)	Total Cooling Capacity (MBH)	Sensible Cooling Capacity (MBH)	Total Heating Capacity (MBH)	Air Flow (CFM)	
HP-8 HVAHP144B32S	IU-56	High Static Pressure Ducted	HIDH072B21S	80.0	67.0	70.0	63.2	63.2	39.9	2047	
	IU-57	Wall	TWMM024B22S	80.0	67.0	70.0	21.1	21.1	13.3	759	
	IU-58	Wall	TWMM024B22S	80.0	67.0	70.0	21.1	21.1	13.3	759	
	IU-59	Wall	TWMM024B22S	80.0	67.0	70.0	21.1	21.1	13.3	759	
	IU-60	Wall	TWMM024B22S	80.0	67.0	70.0	21.1	21.1	13.3	759	
Additional refrigerant (lb):				19.2			Total (MBH):		147.6	147.6	93.1

Indoor unit type		Duct 2 pipe	Non-duct 2 pipe	Mixed 2 pipe
HP-8	HVAHP144B32S	10206777	10206693	10207527
Cooling	Capacity [Btu/h]	138000.00	138000.00	138000.00
	EER [Btu/Wh]	11.20	10.90	11.05
	IEER [Btu/Wh]	21.20	23.90	22.55
Heating	Capacity 47F [Btu/h]	154000.00	154000.00	154000.00
	COP47F [W/W]	3.40	3.42	3.41
	Capacity 17F [Btu/h]	110000.00	110000.00	150000.00
	COP17F [W/W]	2.15	2.12	2.14
Cooling & Heating	SCHE [Btu/Wh]			

HP-8	HVAHP144B32S
Cooling DB (°F)	65.0
Heating DB (°F)	0.0
Heating WB (°F)	-1.0
Connection %	117%
Total Cooling MBH	147.6
Sensible Cooling MBH	147.6
Heating MBH	93.1

KEY PLAN:

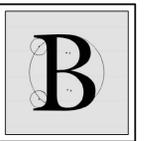
'CORNWALL CENTRAL MIDDLE SCHOOL'



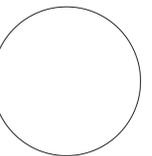
PROJECT:  
CORNWALL CENTRAL MIDDLE SCHOOL  
B, C & D WING AIR-CONDITIONING PROJECT  
122 MAIN STREET  
CORNWALL, NEW YORK 12518

SUB-CONSULTANT:

ENGINEER:



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MA - 53197 CT - 32283 FL - 85928

**MECHANICAL SCHEDULES**

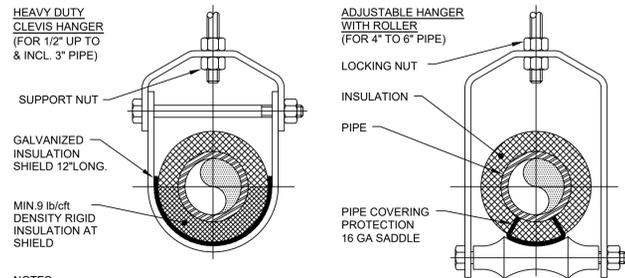
DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO. **1814** SHEET NO. **M.102**

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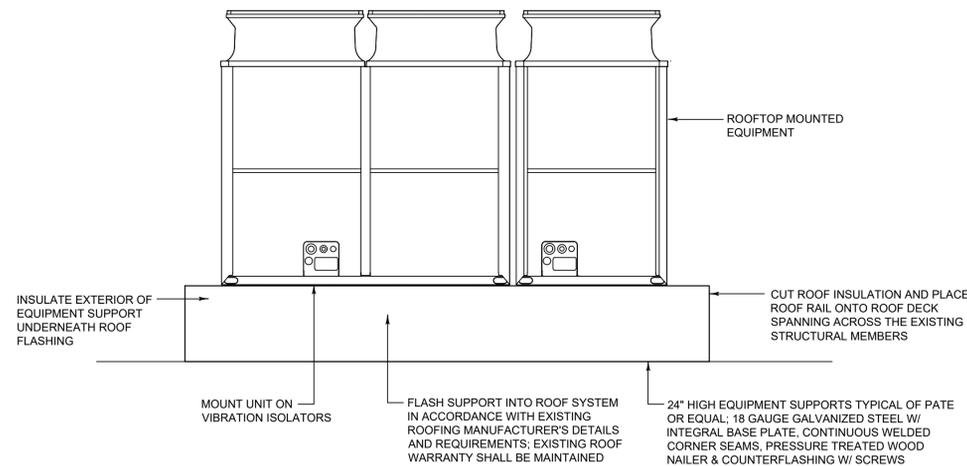
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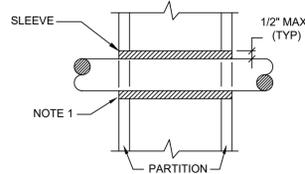
NOTES:  
 1. PIPE 8\"/>

PIPE Ø (IN.)	MAX. SPACING BETWEEN HANGERS (FT.)			MIN. ROD SIZE (IN.)
	STEEL PIPE	COPPER PIPE	CPVC	
1/2 THRU 1	7	5	5	3/8
1-1/2 THRU 2	9	8	6	3/8
2-1/2	11	9	7.5	1/2
3	12	10	7.5	1/2
4	14	12	8.5	5/8
6	17	14	9	3/4
8	19	16	10	7/8
10	22	18	10.5	7/8

1 Pipe Hanger Support  
 M.103 N.T.S.

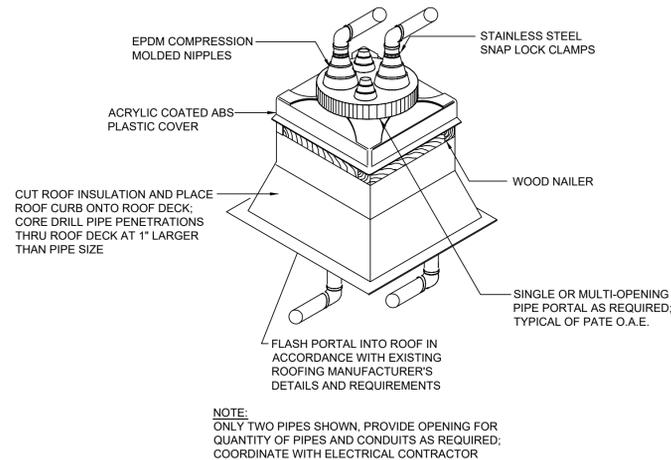


3 Rooftop Equipment Support System  
 M.103 N.T.S.



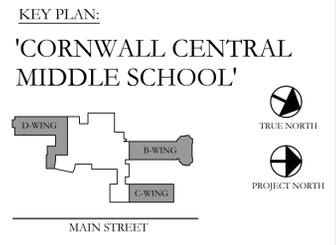
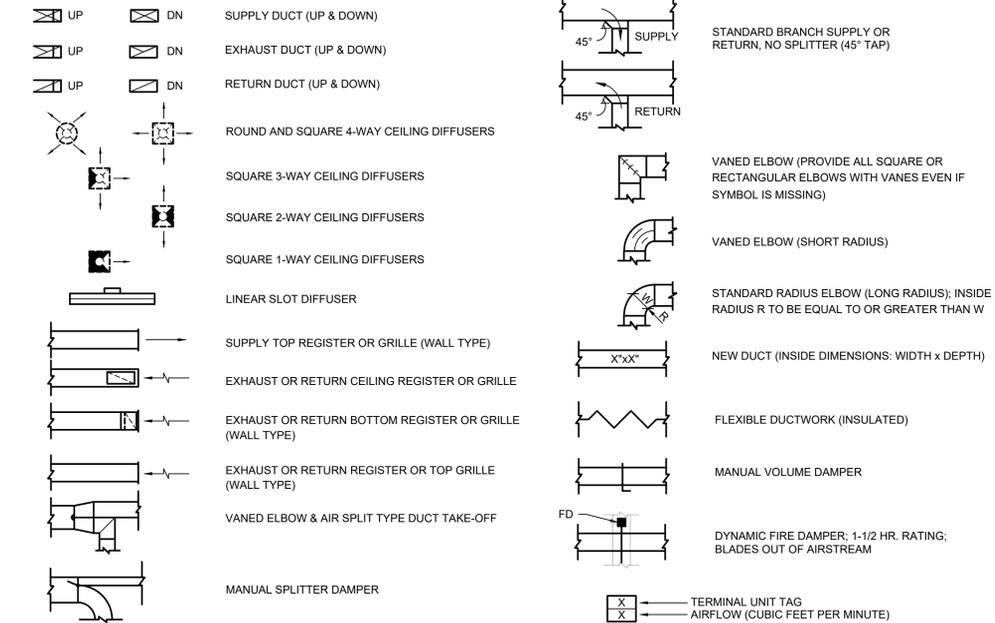
NOTES:  
 1. AT FIRE RATED PARTITIONS, ADD ADDITIONAL LAYER OF FIRE SAFING INSULATION AROUND PENETRATION SO AS TO FILL CAVITY.  
 2. DUCT AND PIPE PENETRATIONS THRU CORRIDOR WALLS ABOVE THE CEILING ARE TO BE FIRE STOPPED AROUND THE PENETRATION.

2 Pipe Penetrations Detail  
 M.103 N.T.S.



4 Typical Pipe Portal System Detail  
 M.103 N.T.S.

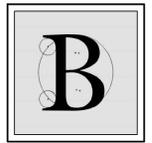
Mechanical Legend :



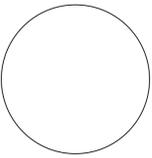
PROJECT:  
 CORNWALL CENTRAL MIDDLE SCHOOL B, C & D WING AIR-CONDITIONING PROJECT  
 122 MAIN STREET  
 CORNWALL, NEW YORK 12518

SUB-CONSULTANT:

ENGINEER:



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MECHANICAL SCHEDULE, LEGEND & DETAILS

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO. **1814** SHEET NO. **M.103**

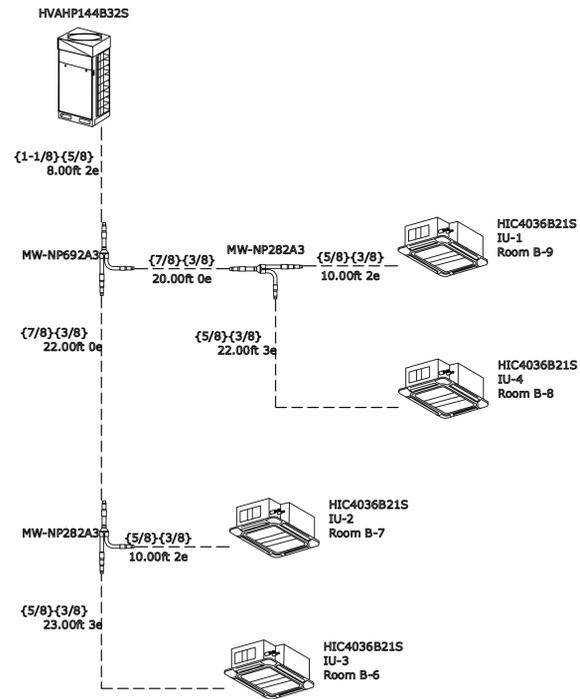
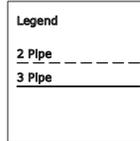
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AIR GRILLE/DIFFUSER SCHEDULE													NOTES
EQUIPMENT TAG	MANUFACTURER (OR ACCEPT. EQUAL)	MODEL	AIR DEVICE TYPE	AIRFLOW (CFM)		MAX AIR PRESS. DROP (IN. W.C.)	MOUNTING	PANEL SIZE (IN.)	NECK SIZE (IN.)	MAX NC	DAMPER	FINISH	NOTES
				MIN.	MAX.								
D-1	KRUEGER	RA2-10-03-0-01	ADJUSTABLE ROUND DIFFUSER	0	350	0.10	DUCT MTD.	-	10"Ø	20	OBD	MILL	MOUNT ON DUCT; VERIFY HEIGHT & VERTICAL/HORIZONTAL ADJUSTMENT W/ ENGINEER IN FIELD
R-1	KRUEGER	EGC5-25x14-F22-NONE-08-00-04-01	FILTER RETURN GRILLE	0	1,000	0.10	DUCT MTD.	-	25"x14"	20	NONE	MILL	FURNISH & INSTALL W/ 25"x14" PRE-FILTER; FURNISH OWNER W/ (2) SETS OF ADDITIONAL FILTERS

AIR-COOLED HEAT PUMP SCHEDULE																					
EQUIPMENT TAG	MANUFACTURER (OR ACCEPT. EQUAL)	MODEL	INDOOR UNITS SERVED	COMPRESSOR TYPE	NOM. COOL CAPACITY (MBH)	NOM. HEAT CAPACITY (MBH)	OUTDOOR OPERATING TEMP. RANGE (°F)			AHRU EFFICIENCY RATINGS			REFRIGERANT	SOUND PRESSURE LEVEL COOLING/ HEATING (dB(A))	ELECTRICAL POWER REQUIREMENTS					WEIGHT (LB)	NOTES
							COOLING	HEATING	EER	IEER	COP	VOLT.			PHASE	Hz.	MCA	MOCP			
HP-1	HITACHI	PUHY-P144TKMU-A	IU-1 THRU 4	INVERTER SCROLL HERMETIC	144.0	160.0	23 TO 115	-13 TO 60	11.8	20.2	3.72	R410A	61	208	3	60	53	60	697	FURNISH W/ REQUIRED PIPING ACCESSORIES AS SHOWN ON RISER DIAGRAM	
HP-2	HITACHI	PUHY-P192TSKMU-A	IU-5 THRU 13	INVERTER SCROLL HERMETIC	192.0	215.0	23 TO 115	-13 TO 60	12.5	19.1	3.61	R410A	62.5	208	3	60	45+25	50+30	1,127	FURNISH W/ TWINNING KIT #CMY-Y100BK3 & REQUIRED PIPING ACCESSORIES AS SHOWN ON RISER DIAGRAM	
HP-3	HITACHI	PUHY-P168TSKMU-A	IU-14 THRU 22	INVERTER SCROLL HERMETIC	168.0	188.0	23 TO 115	-13 TO 60	12.9	19.7	3.83	R410A	61	208	3	60	34+25	40+30	962	FURNISH W/ TWINNING KIT #CMY-Y100BK3 & REQUIRED PIPING ACCESSORIES AS SHOWN ON RISER DIAGRAM	
HP-4	HITACHI	PUHY-P192TSKMU-A	IU-23 THRU 32	INVERTER SCROLL HERMETIC	192.0	215.0	23 TO 115	-13 TO 60	12.5	19.1	3.61	R410A	62.5	208	3	60	45+25	50+30	1,127	FURNISH W/ TWINNING KIT #CMY-Y100BK3 & REQUIRED PIPING ACCESSORIES AS SHOWN ON RISER DIAGRAM	
HP-5	HITACHI	PUHY-P216TSKMU-A	IU-32 THRU 41	INVERTER SCROLL HERMETIC	216.0	243.0	23 TO 115	-13 TO 60	12.3	18.6	3.56	R410A	62.5	208	3	60	45+34	50+40	1,229	FURNISH W/ TWINNING KIT #CMY-Y100BK3 & REQUIRED PIPING ACCESSORIES AS SHOWN ON RISER DIAGRAM	

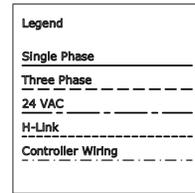
HP-1



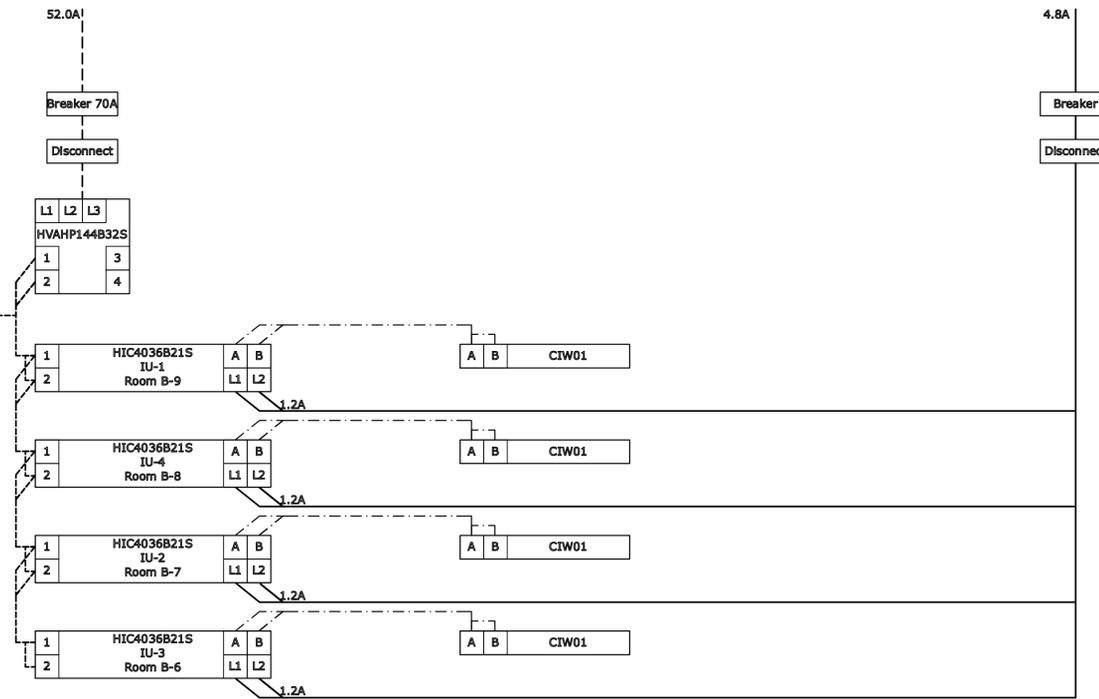
1 Heat Pump HP-1 System Piping Diagram  
 M.104 Scale: NTS

NOTE:  
 REFRIGERANT PIPING CONFIGURATION AND SIZES ARE SPECIFIC TO EQUIPMENT MANUFACTURER AND MAY VARY. VERIFY PIPING SIZES AND ACTUAL PIPING LAYOUT BASED ON FIELD CONDITIONS AND MANUFACTURER REQUIREMENTS.

HP-1



Connect to remaining outdoor systems anywhere along H-Link II System 1 wiring



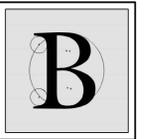
2 Heat Pump HP-1 System Wiring Diagram  
 M.104 Scale: NTS

KEY PLAN:  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  
 D-WING B-WING C-WING  
 TRUE NORTH  
 PROJECT NORTH  
 MAIN STREET

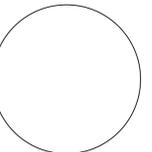
PROJECT:  
 CORNWALL CENTRAL MIDDLE SCHOOL  
 B, C & D WING AIR-CONDITIONING PROJECT  
 122 MAIN STREET  
 CORNWALL, NEW YORK 12518

SUB-CONSULTANT:

ENGINEER:



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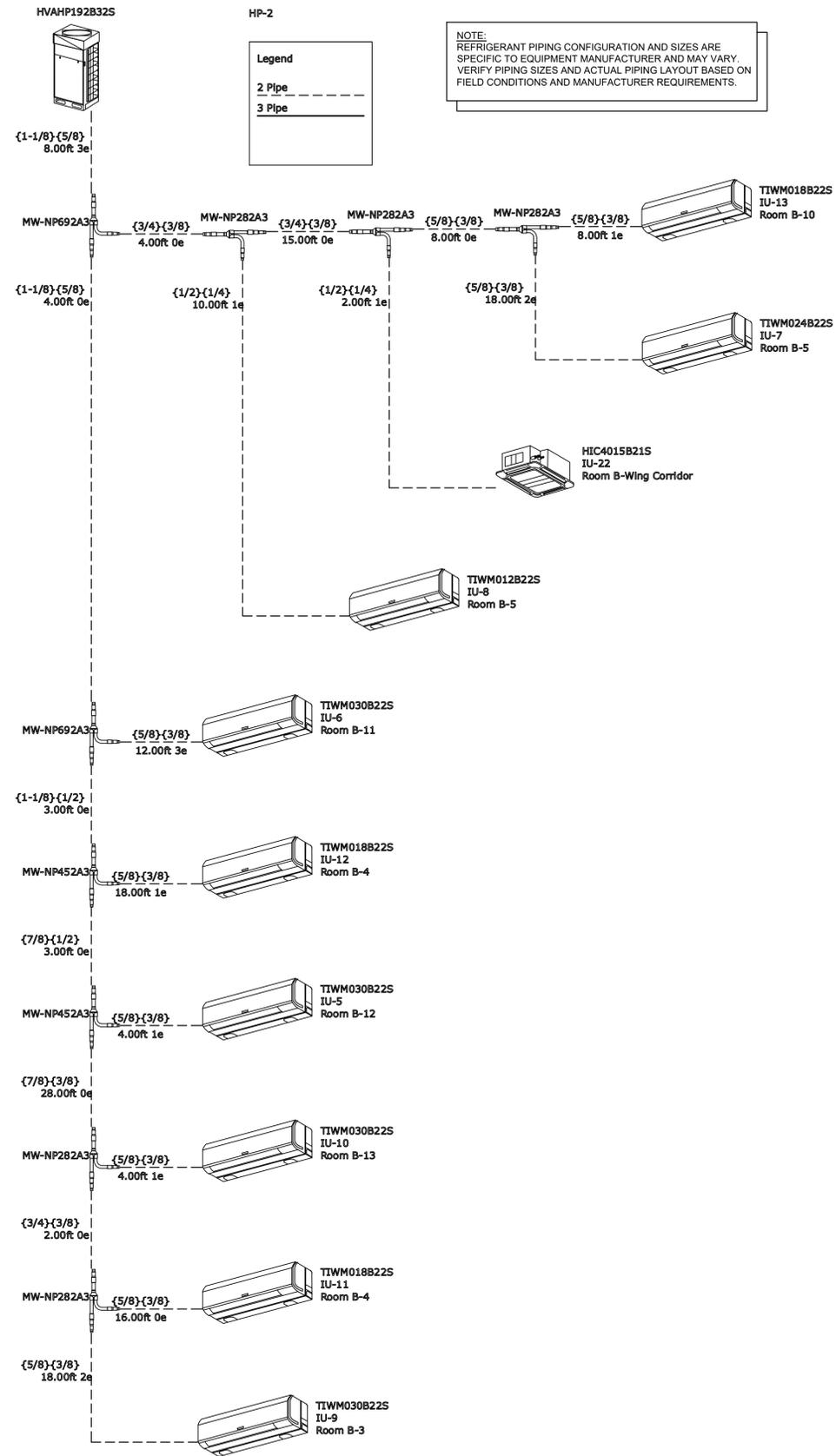
HEAT PUMP HP-1 SYSTEM RISER DIAGRAMS

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

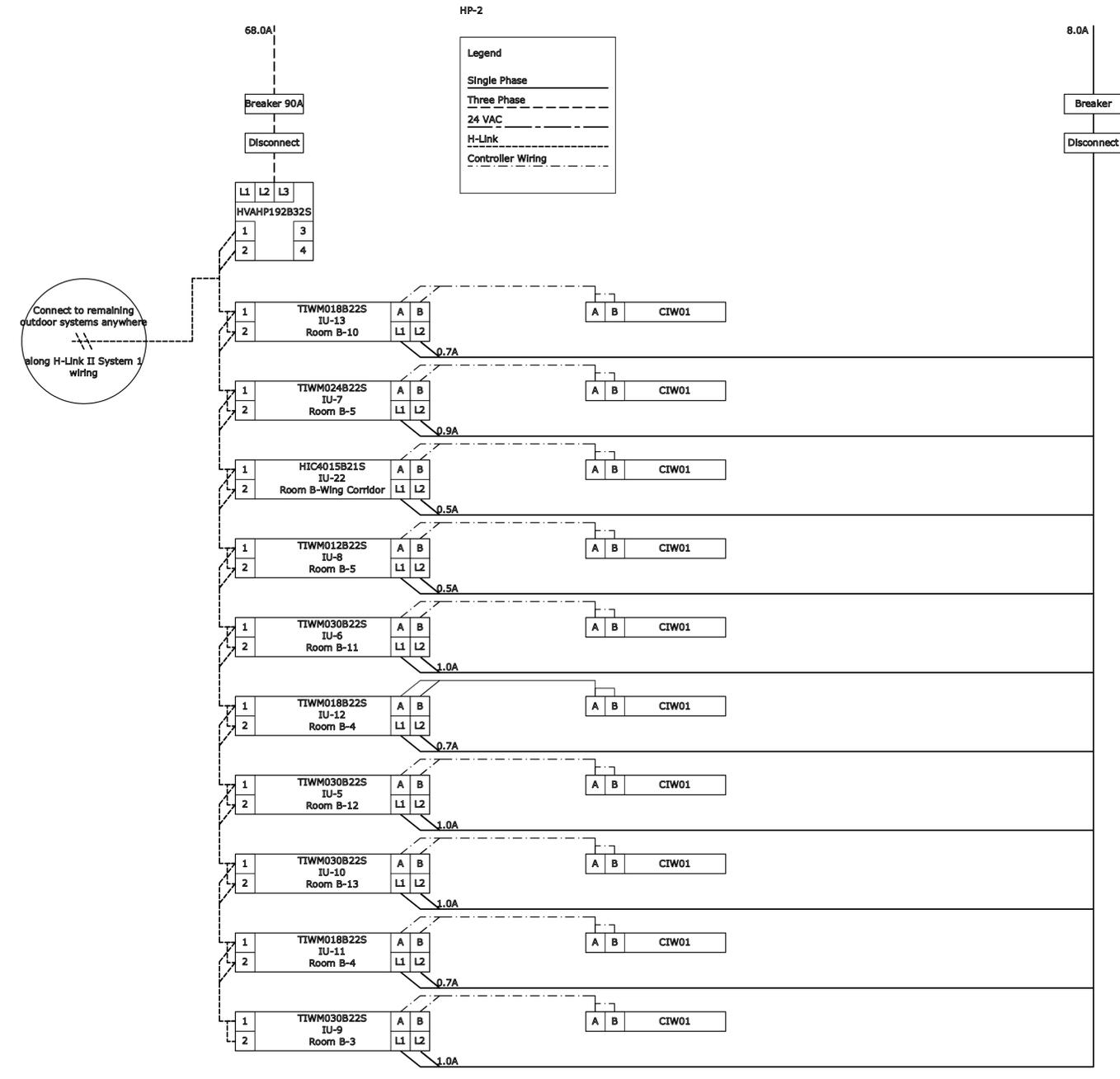
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PROJECT NO. **1814** SHEET NO. **M.104**

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1 Heat Pump HP-2 System Piping Diagram  
 Scale: NTS



2 Heat Pump HP-2 System Wiring Diagram  
 Scale: NTS

**KEY PLAN:**  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  
 D WING B WING C WING  
 TRUE NORTH  
 PROJECT NORTH  
 MAIN STREET

**PROJECT:**  
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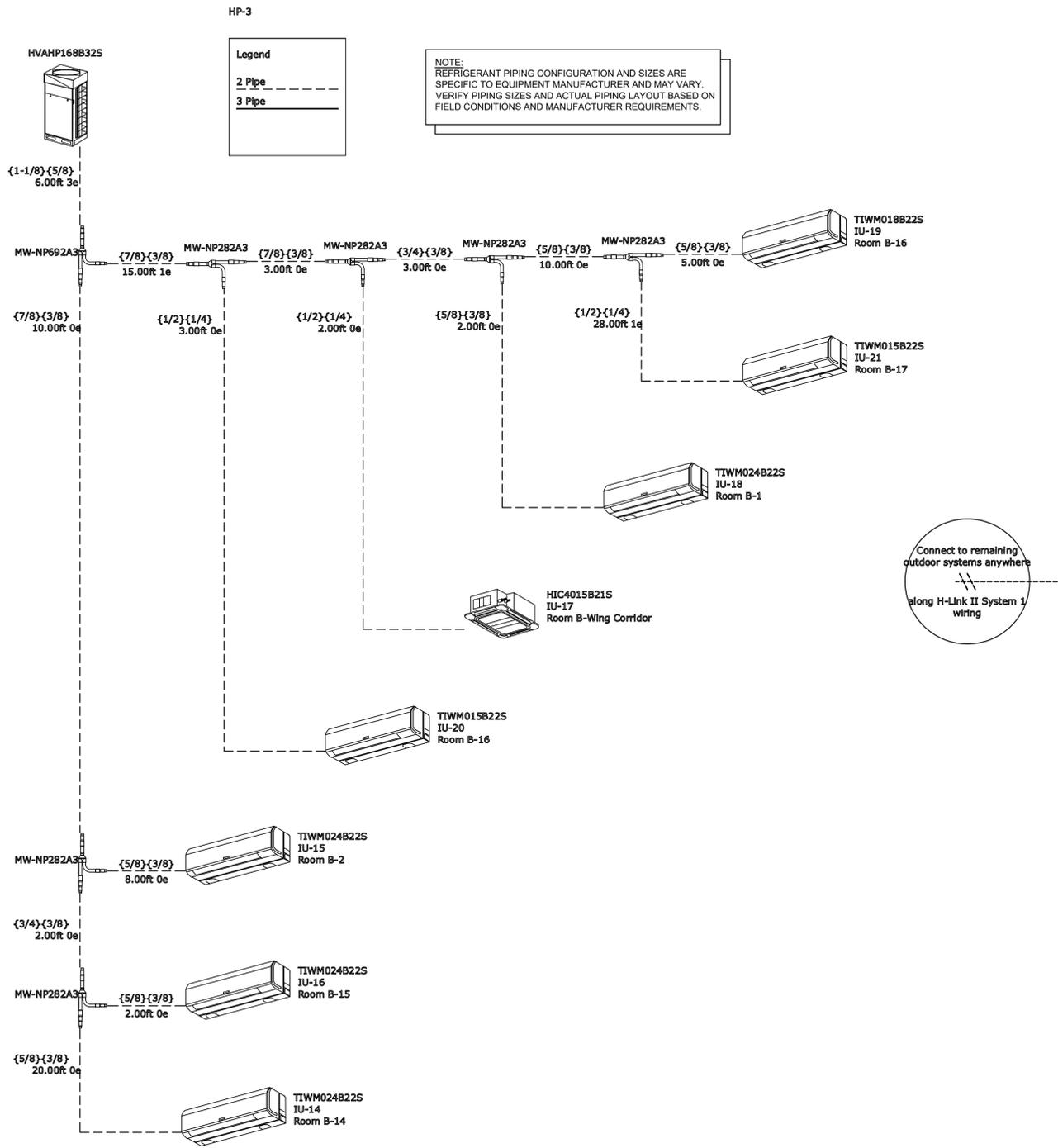
**HEAT PUMP HP-2 SYSTEM RISER DIAGRAMS**

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

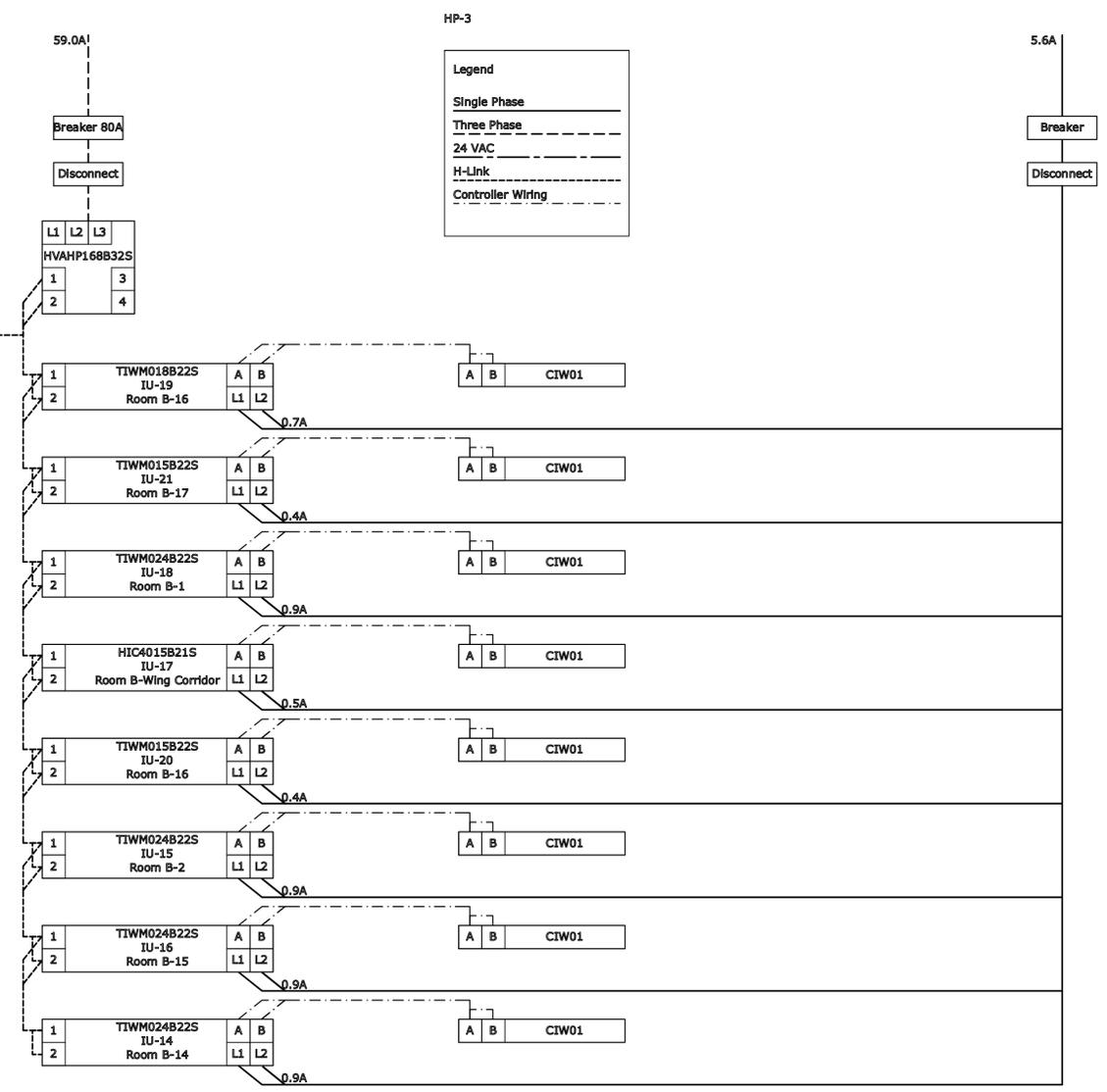
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PROJECT NO. **1814** SHEET NO. **M.105**

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1 Heat Pump HP-3 System Piping Diagram  
 M.106 Scale: NTS



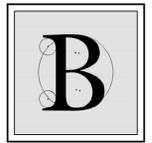
2 Heat Pump HP-3 System Wiring Diagram  
 M.106 Scale: NTS

**KEY PLAN:**  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  
 B-WING  
 C-WING  
 MAIN STREET  
 TRUE NORTH  
 PROJECT NORTH

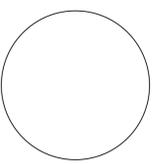
**PROJECT:**  
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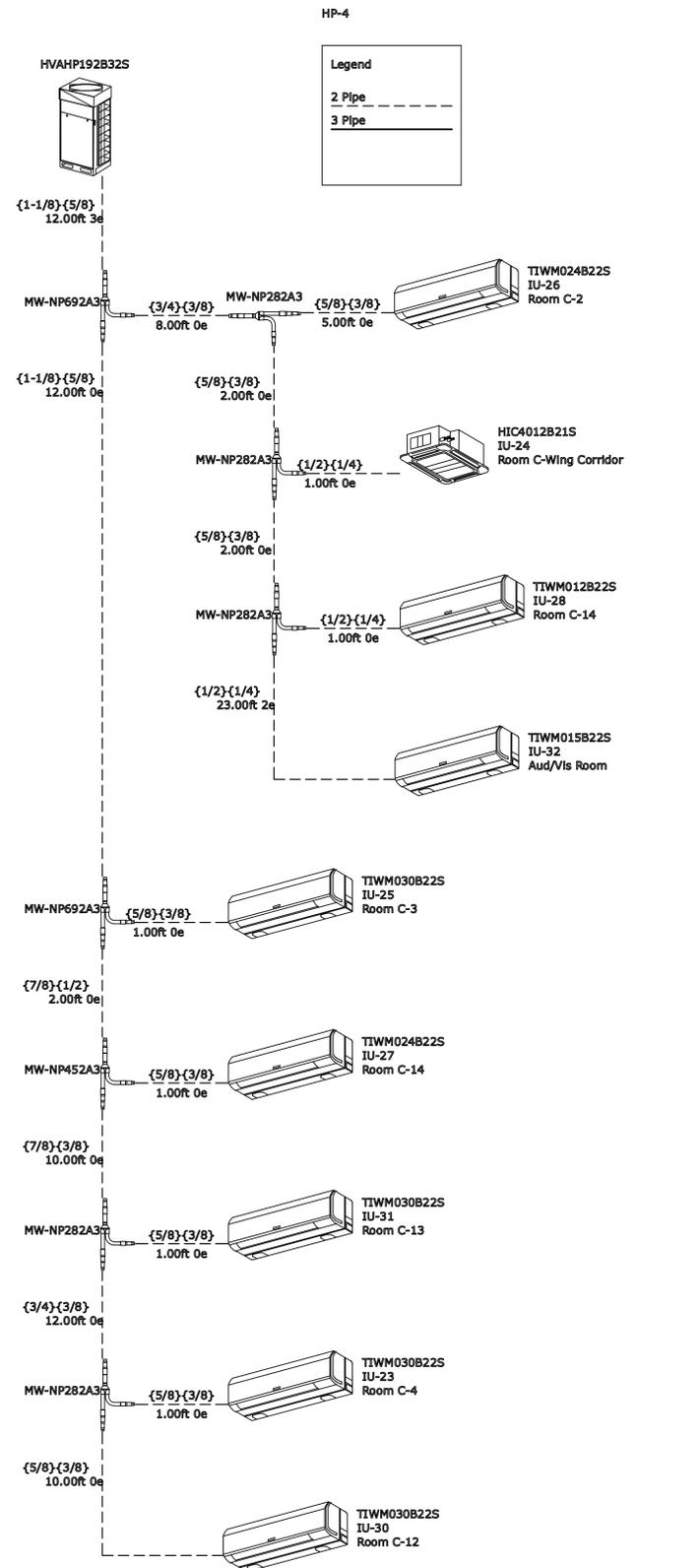
**HEAT PUMP HP-3 SYSTEM RISER DIAGRAMS**

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11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

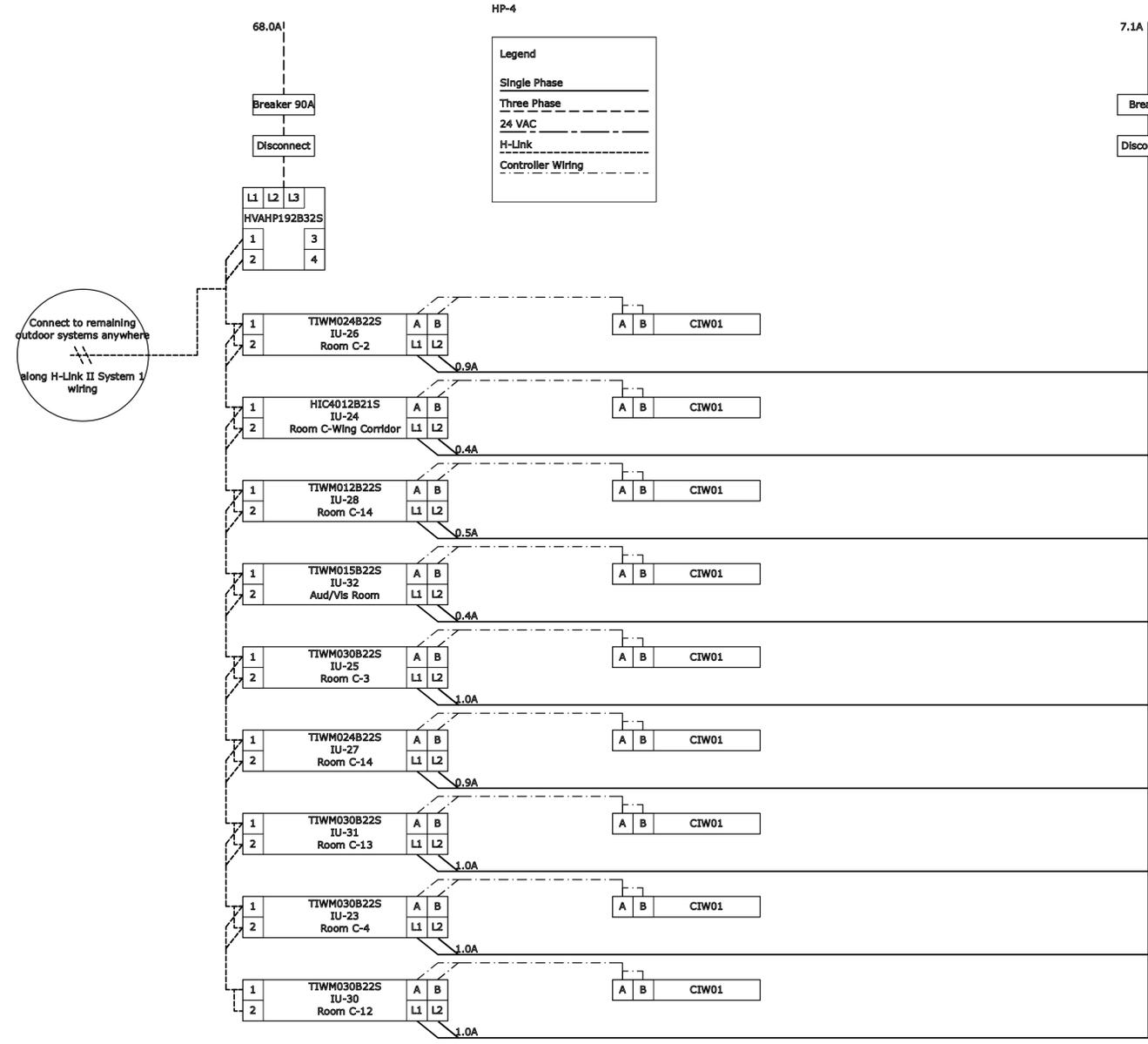
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1 Heat Pump HP-4 System Piping Diagram  
 M.107 Scale: NTS

NOTE:  
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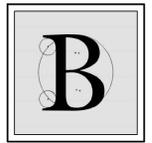
2 Heat Pump HP-4 System Wiring Diagram  
 M.107 Scale: NTS

KEY PLAN:  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  
 D-WING B-WING C-WING  
 TRUE NORTH  
 PROJECT NORTH  
 MAIN STREET

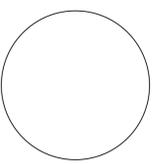
PROJECT:  
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 B, C & D WING AIR-CONDITIONING PROJECT  
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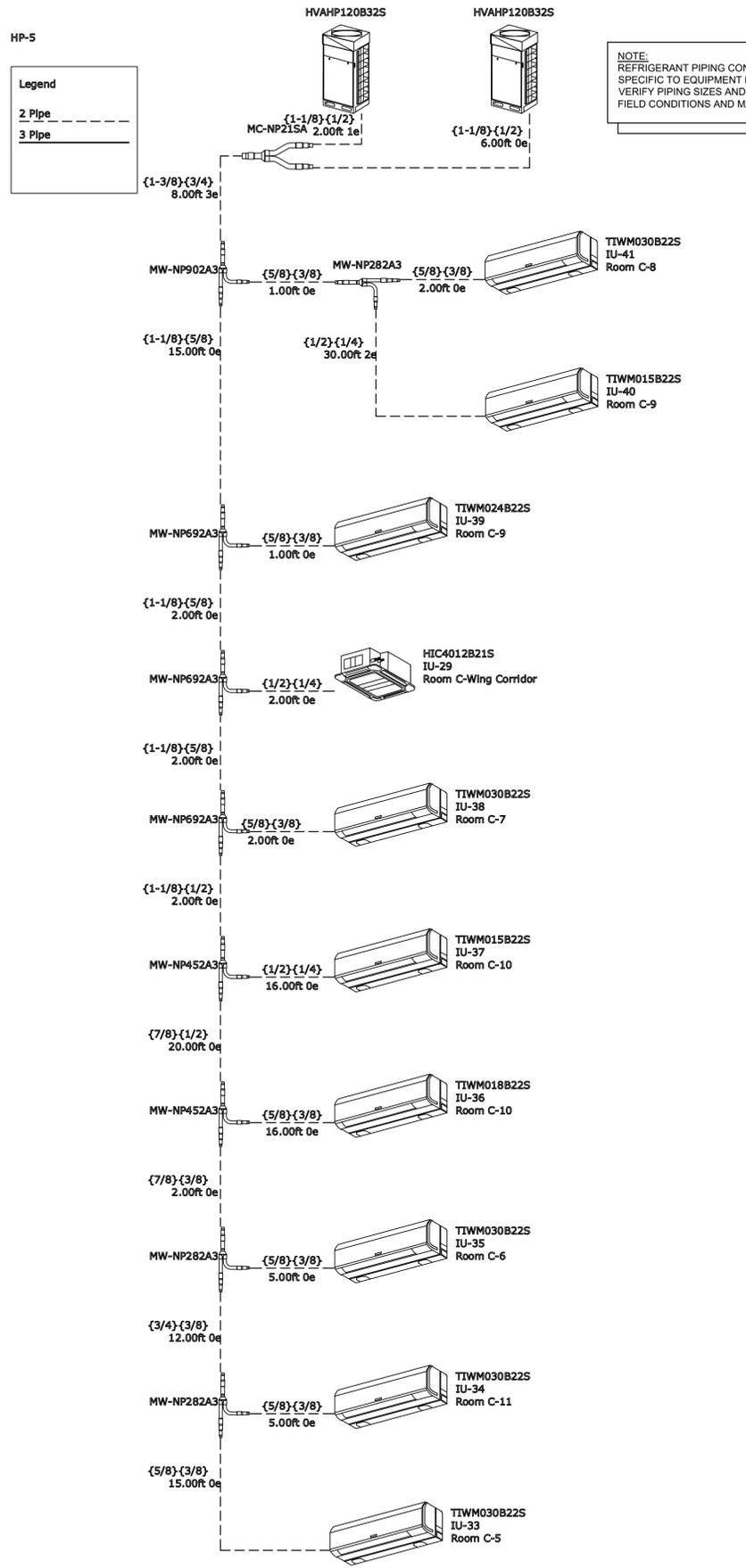
HEAT PUMP HP-4 SYSTEM RISER DIAGRAMS

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

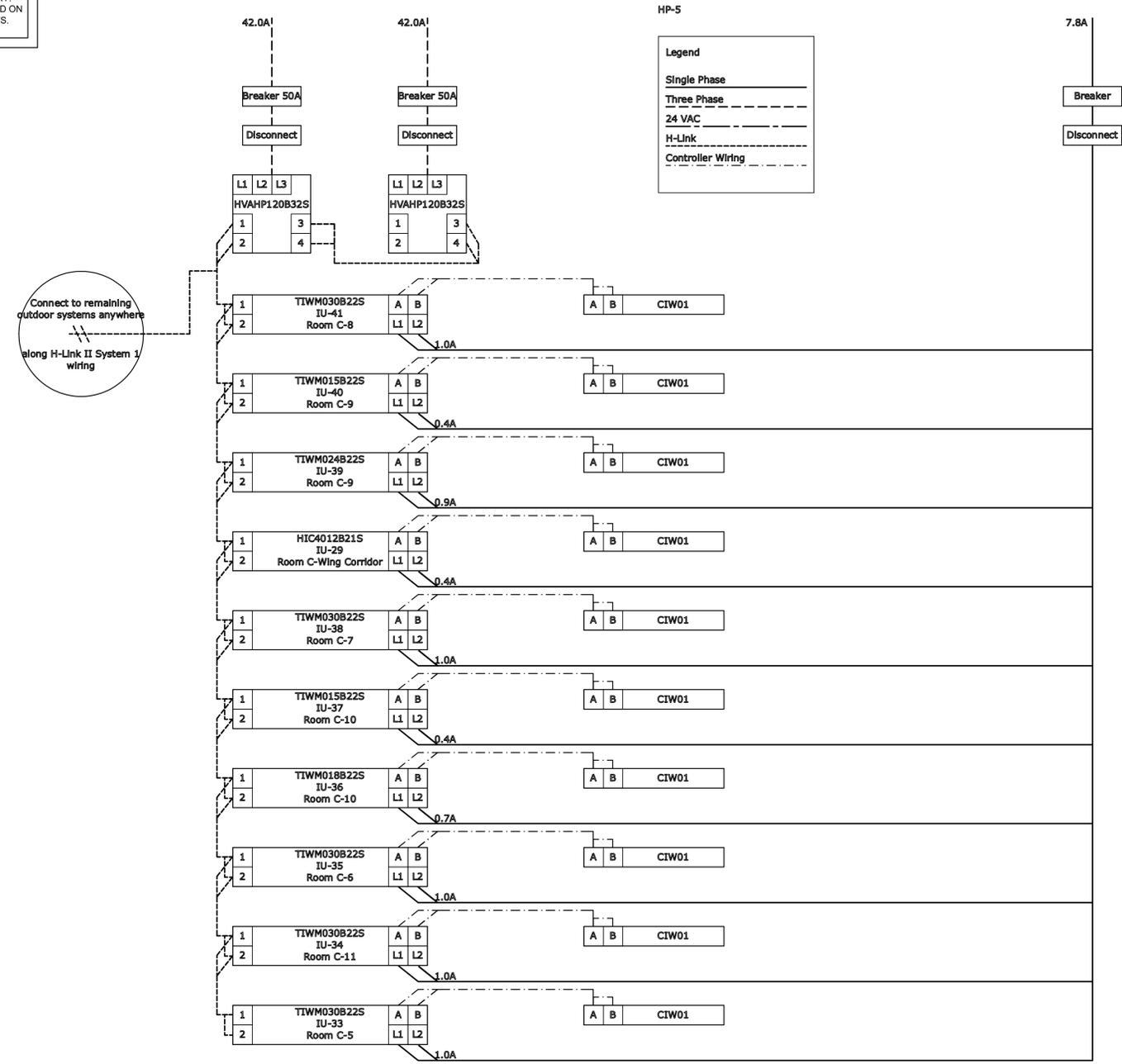
REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO. 1814 SHEET NO. M.107

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1 Heat Pump HP-5 System Piping Diagram  
 M.107 Scale: NTS



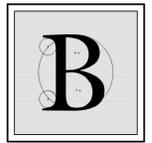
2 Heat Pump HP-5 System Wiring Diagram  
 M.108 Scale: NTS

**KEY PLAN:**  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  
 TRUE NORTH  
 PROJECT NORTH  
 MAIN STREET

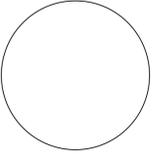
**PROJECT:**  
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 CORNWALL, NEW YORK 12518

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 MA - 53197 CT - 32283 FL - 85928

**HEAT PUMP HP-5 SYSTEM RISER DIAGRAMS**

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO. **1814** SHEET NO. **M.108**

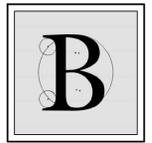
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KEY PLAN:  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  
  
 MAIN STREET

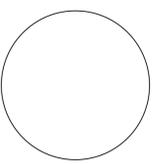
PROJECT:  
 CORNWALL CENTRAL MIDDLE SCHOOL  
 B, C & D WING AIR-CONDITIONING PROJECT  
 122 MAIN STREET  
 CORNWALL, NEW YORK 12518

SUB-CONSULTANT:

ENGINEER:



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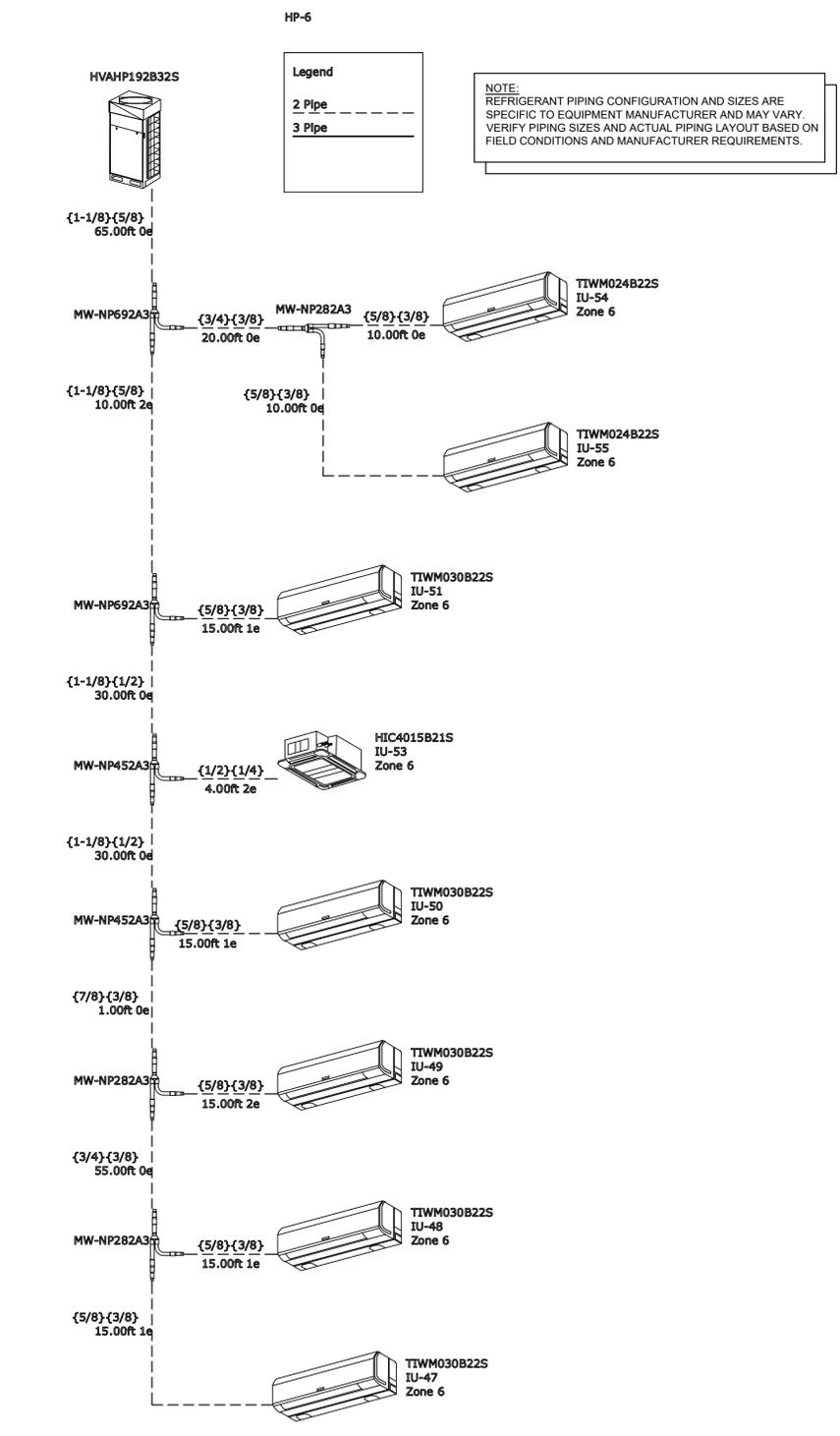
HEAT PUMP HP-6 SYSTEM RISER DIAGRAMS

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

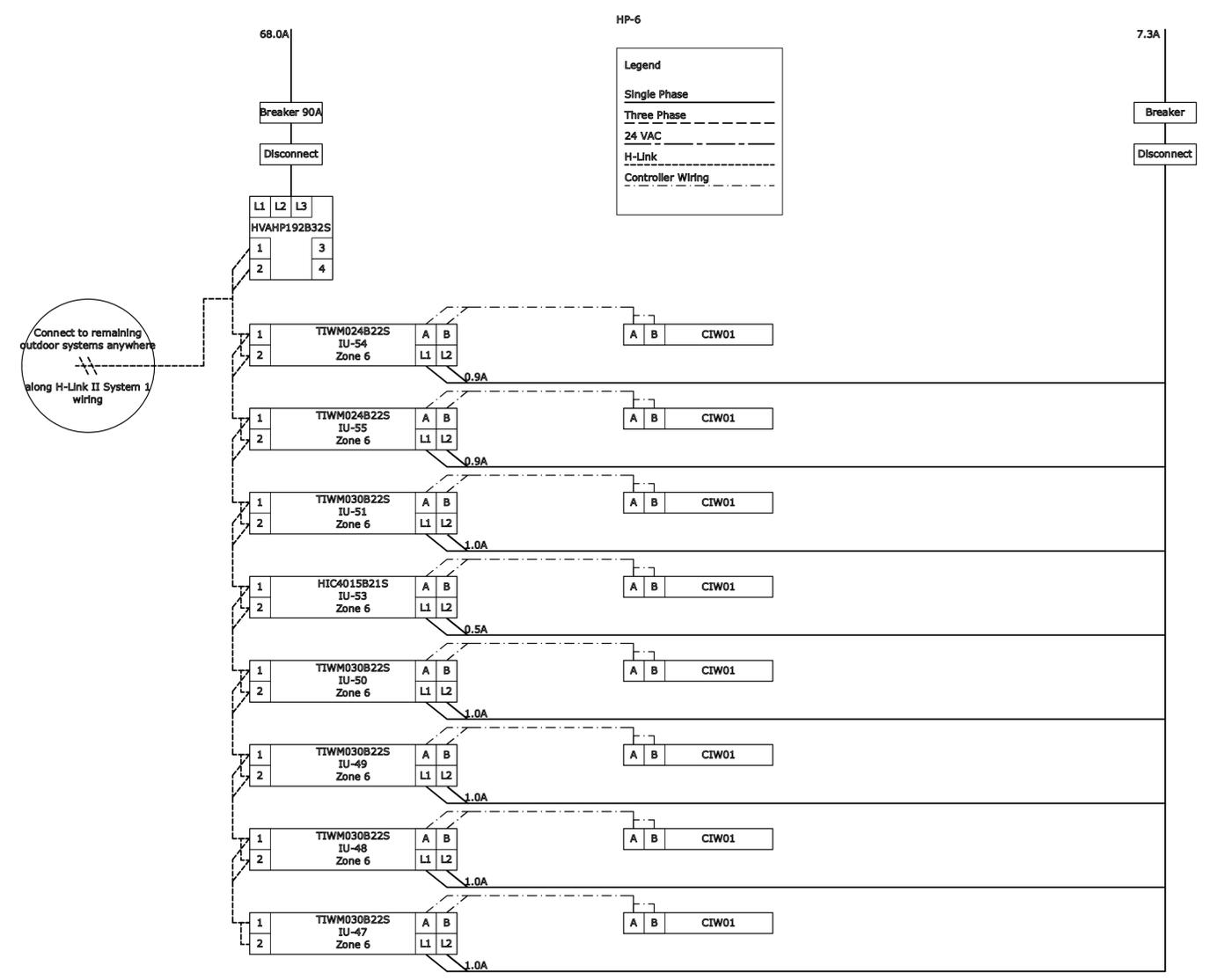
REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO. **1814** SHEET NO. **M.109**

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1 Heat Pump HP-6 System Piping Diagram  
 M.109 Scale: NTS



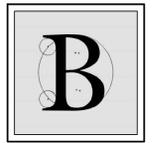
2 Heat Pump HP-6 System Wiring Diagram  
 M.109 Scale: NTS

KEY PLAN:  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  
  
 MAIN STREET

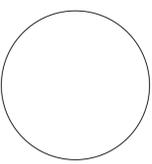
PROJECT:  
 CORNWALL CENTRAL MIDDLE SCHOOL  
 B, C & D WING AIR-CONDITIONING PROJECT  
 122 MAIN STREET  
 CORNWALL, NEW YORK 12518

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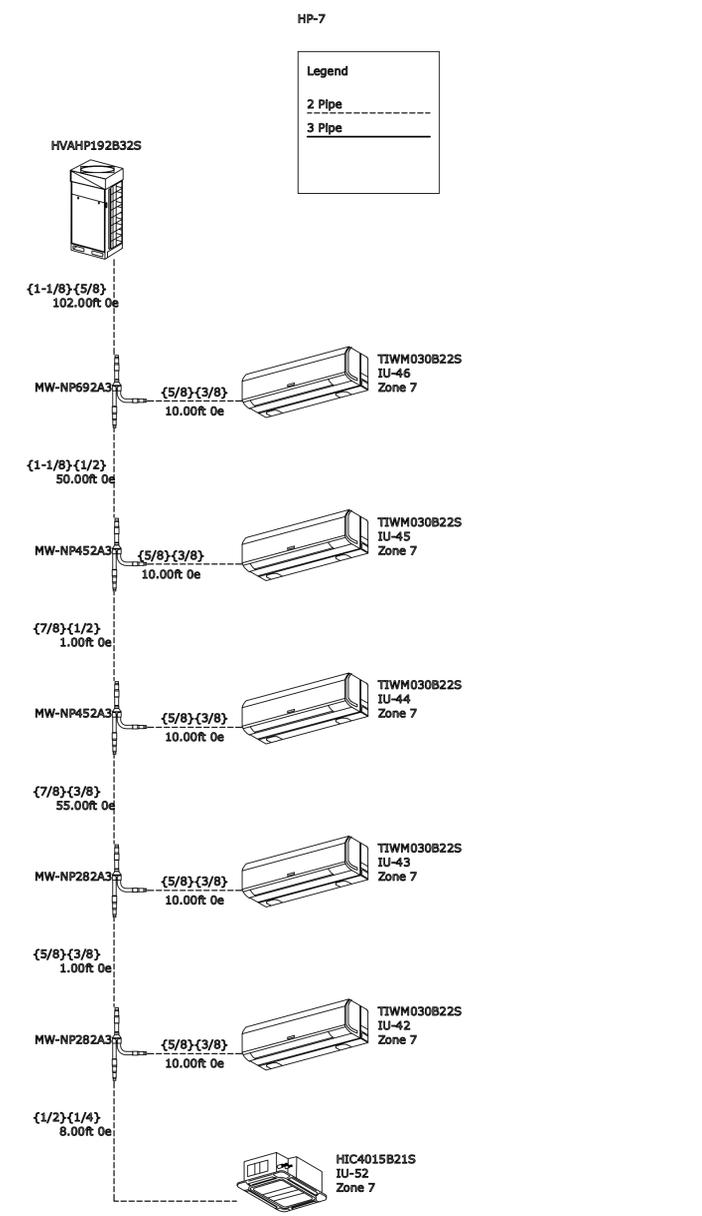
**HEAT PUMP HP-7 SYSTEM RISER DIAGRAMS**

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

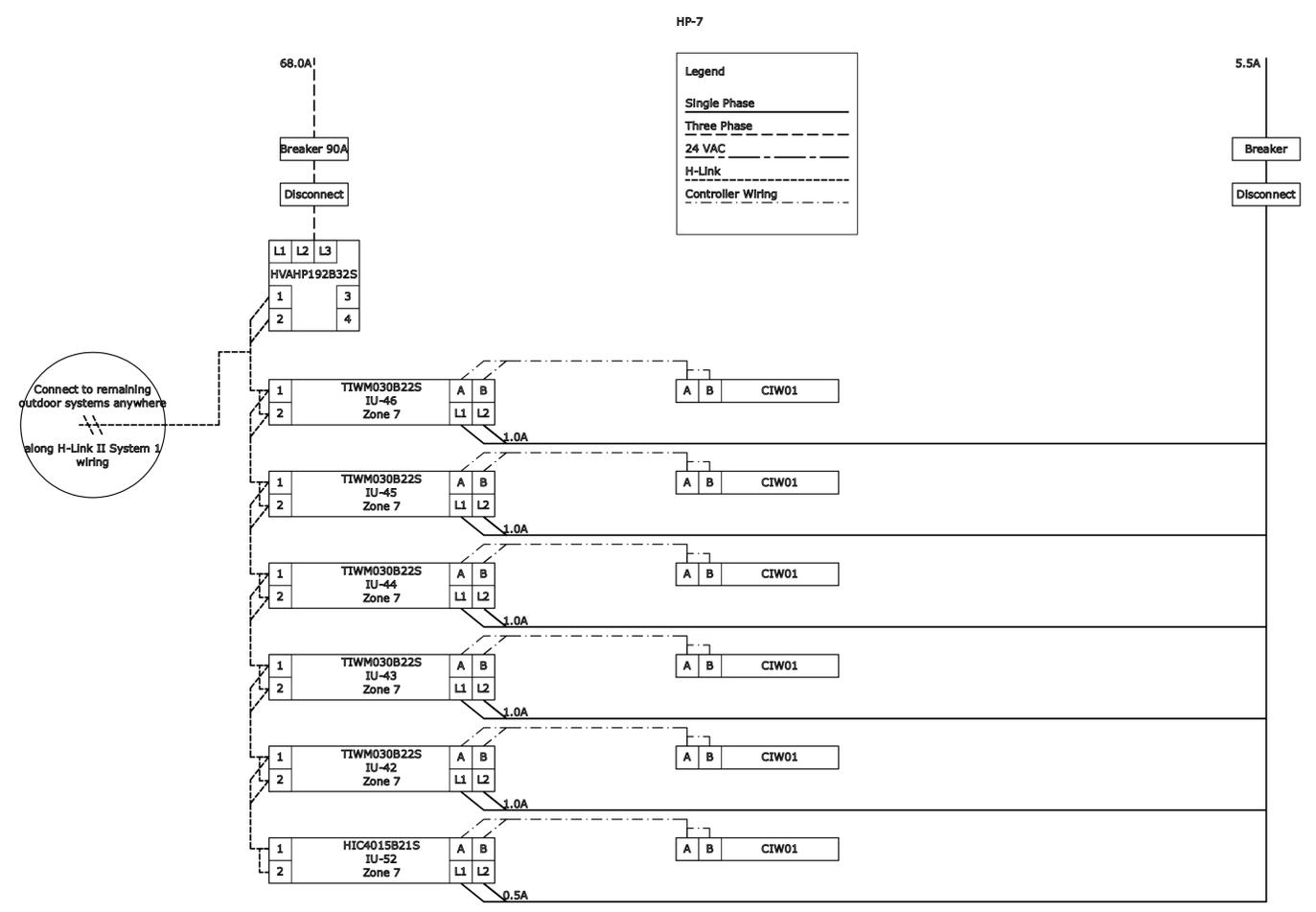
PROJECT NO. <b>1814</b>	SHEET NO. <b>M.110</b>
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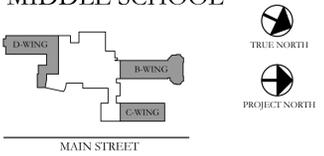


**1 Heat Pump HP-7 System Piping Diagram**  
 M.110 Scale: NTS

NOTE:  
 REFRIGERANT PIPING CONFIGURATION AND SIZES ARE SPECIFIC TO EQUIPMENT MANUFACTURER AND MAY VARY. VERIFY PIPING SIZES AND ACTUAL PIPING LAYOUT BASED ON FIELD CONDITIONS AND MANUFACTURER REQUIREMENTS.



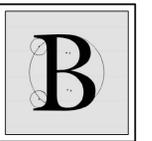
**2 Heat Pump HP-7 System Wiring Diagram**  
 M.110 Scale: NTS

KEY PLAN:  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  


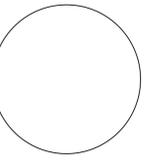
PROJECT:  
 CORNWALL CENTRAL MIDDLE SCHOOL  
 B, C & D WING AIR-CONDITIONING PROJECT  
 122 MAIN STREET  
 CORNWALL, NEW YORK 12518

SUB-CONSULTANT:

ENGINEER:



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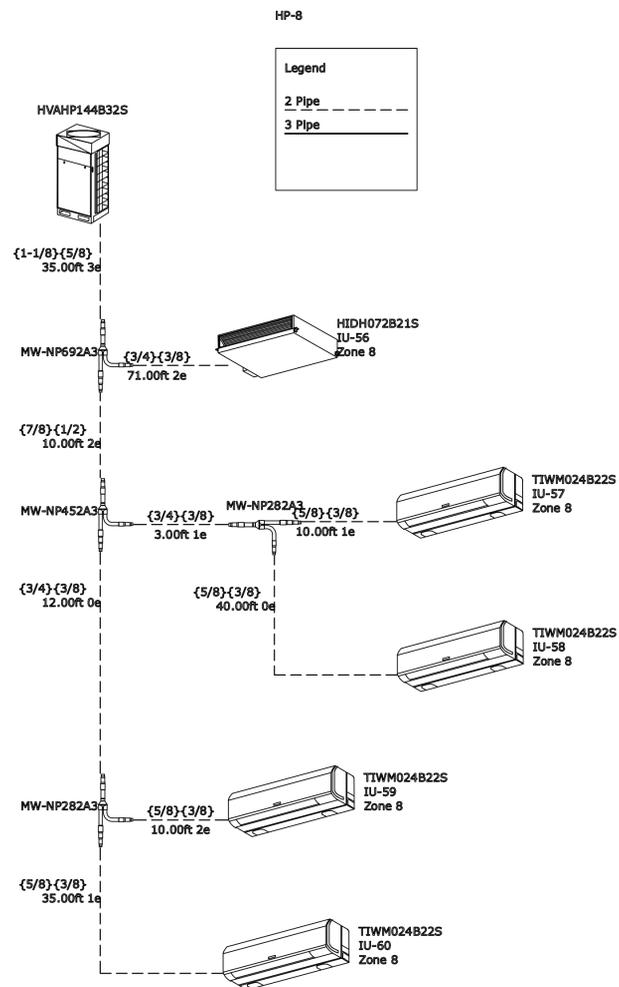
**HEAT PUMP HP-8 SYSTEM RISER DIAGRAMS**

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

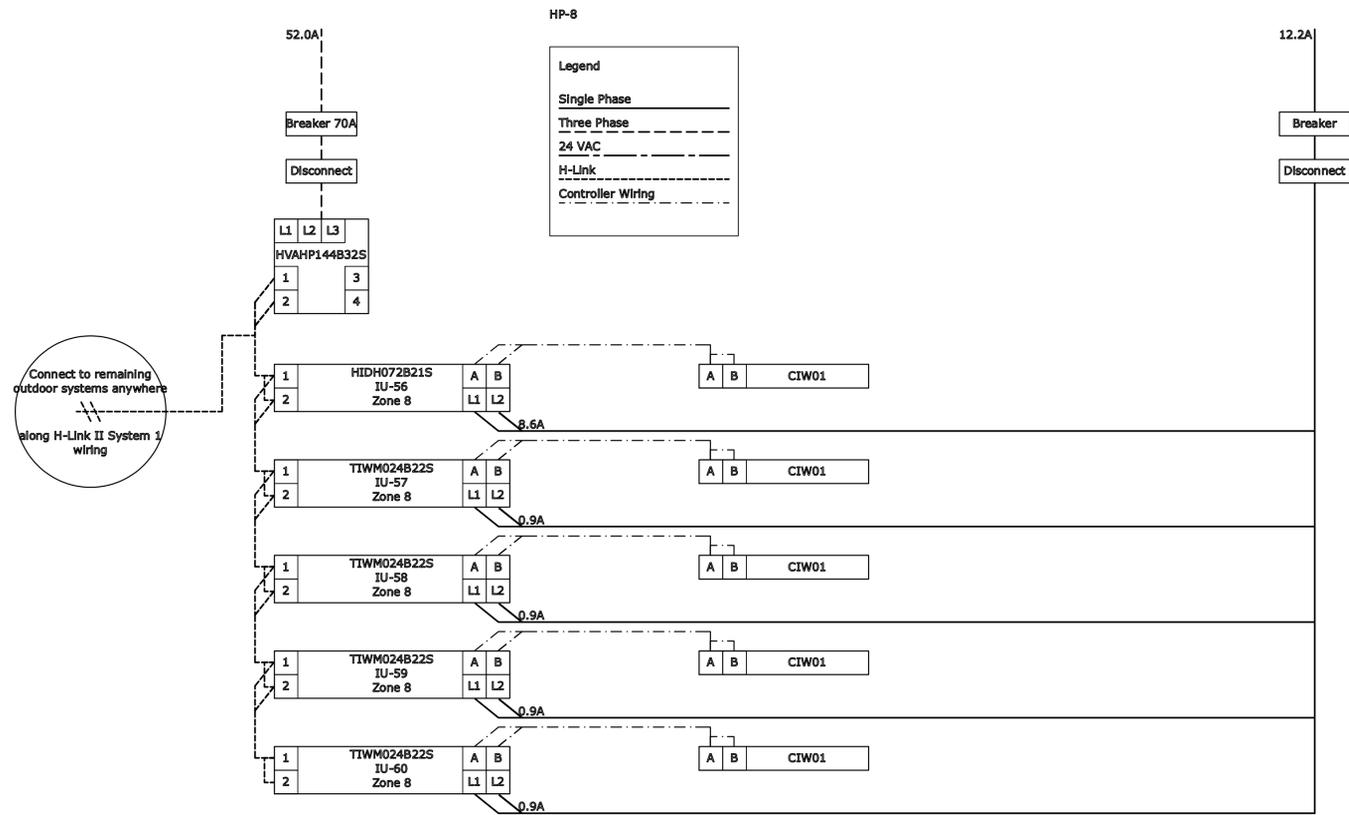
PROJECT NO. <b>1814</b>	SHEET NO. <b>M.111</b>
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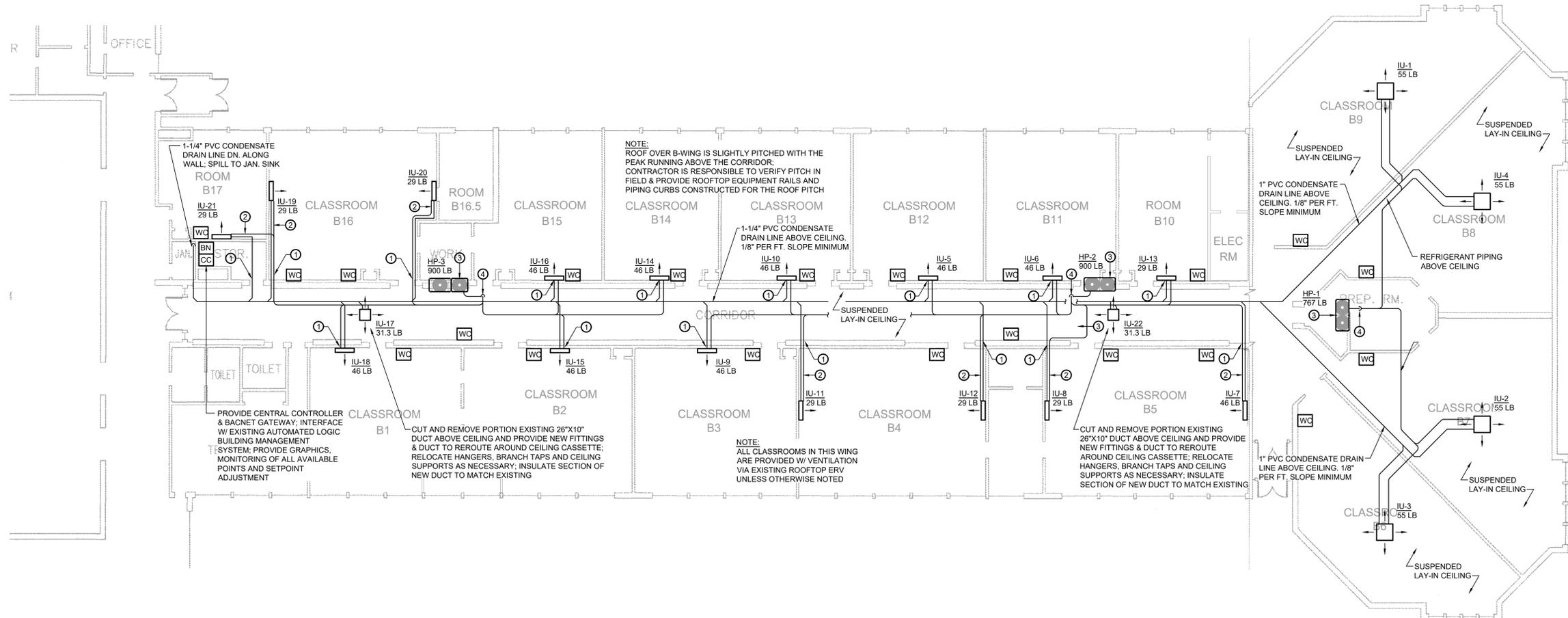
**1 Heat Pump HP-8 System Piping Diagram**  
 M.111 Scale: NTS

NOTE:  
 REFRIGERANT PIPING CONFIGURATION AND SIZES ARE SPECIFIC TO EQUIPMENT MANUFACTURER AND MAY VARY. VERIFY PIPING SIZES AND ACTUAL PIPING LAYOUT BASED ON FIELD CONDITIONS AND MANUFACTURER REQUIREMENTS.

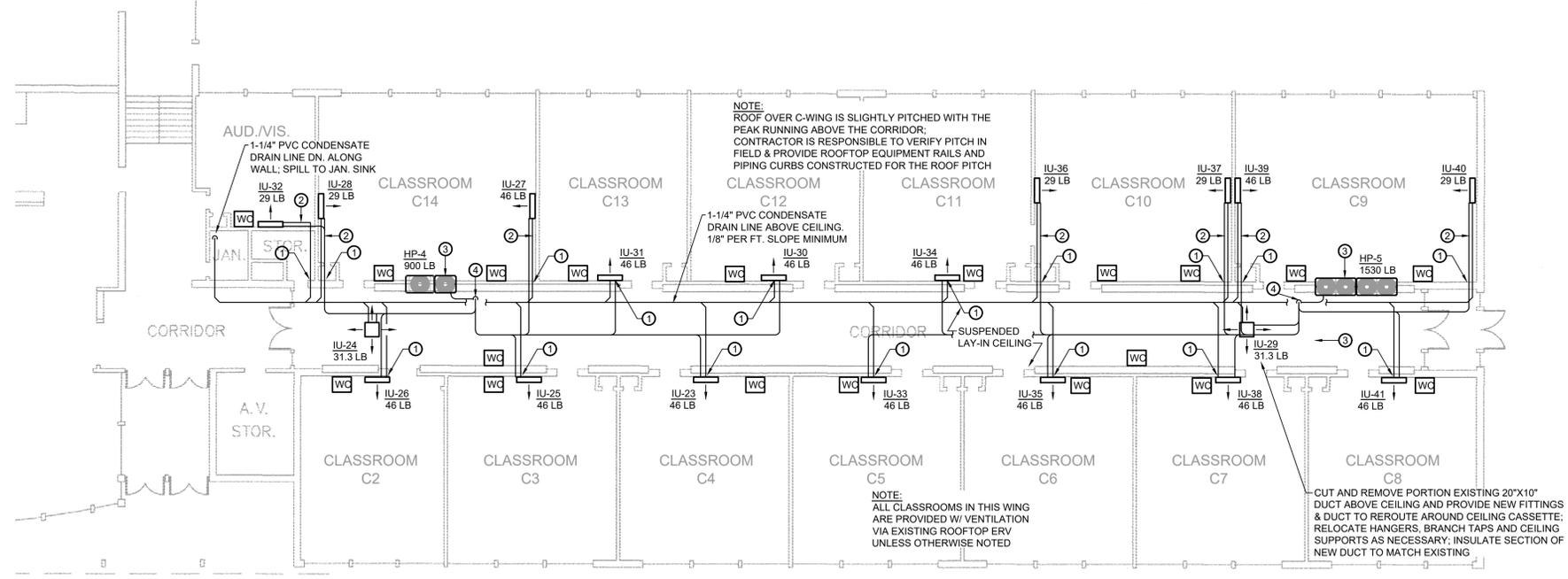


**2 Heat Pump HP-8 System Wiring Diagram**  
 M.111 Scale: NTS

Connect to remaining outdoor systems anywhere along H-Link II System 1 wiring



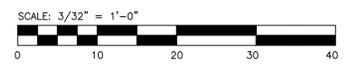
1 B-Wing Equipment Layout Plan  
M.201 Scale: 3/32" = 1'-0"



2 C-Wing Equipment Layout Plan  
M.201 Scale: 3/32" = 1'-0"

- GENERAL NOTES:**
- ALL SPACES WITHIN SCOPE OF WORK ARE PROVIDED WITH VENTILATION AIR DURING OCCUPIED HOURS VIA EXISTING EQUIPMENT. EXISTING SYSTEM TO BE MAINTAINED. NEW EQUIPMENT WILL OPERATE IN CONJUNCTION WITH EXISTING VENTILATION TO PROVIDE COOLING AND HEATING.
  - ALL B & C-WING CLASSROOMS HAVE INACCESSIBLE SPLINE CEILINGS UNLESS OTHERWISE NOTED.
  - ALL D-WING CLASSROOMS HAVE ACCESSIBLE SPLAY-INLINE CEILINGS UNLESS OTHERWISE NOTED.
  - ROUTE REFRIGERANT PIPING, POWER & CONTROLS ABOVE CORRIDOR SUSPENDED LAY-IN CEILING. CONTRACTOR RESPONSIBLE TO REMOVE AND REINSTALL TILES AND GRID INCLUDING LIGHTING AND ANY CEILING DEVICES AS NECESSARY TO COMPLETE INSTALLATION. ANY TILES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND TO MATCH EXISTING.
  - ALL ROOF PENETRATIONS ARE TO BE INSTALLED USING PIPE CURB ASSEMBLIES TYPICAL OF PATE (OR EQUAL) & FLASHED IN ACCORDANCE W/ ROOFING MANUFACTURER'S REQUIREMENTS TO MAINTAIN EXISTING WARRANTY.
  - REFER TO SHEET M.103 FOR REFRIGERANT PIPING DIAGRAMS. FIELD VERIFY EXACT ROUTING.

- PLAN KEY NOTES:**
- ROUTE REFRIGERANT PIPING, CONDENSATE PIPING, POWER & CONTROLS ABOVE CEILING & THRU CORRIDOR WALL TO ABOVE CORRIDOR CEILING. PROVIDE FIRESTOP ASSEMBLY AT EVERY PENETRATION OF CORRIDOR FIRE WALL. TYPICAL
  - SUSPEND AHU FROM STRUCTURE ABOVE W/ BEAM CLAMPS, 1/2" THREADED ROD & VIBRATION ISOLATION
  - FURNISH & INSTALL EQUIPMENT SUPPORT RAILS TYPICAL OF PATE (OR EQUAL). SEE DETAIL ON SHEET M.102; FLASH INTO EXISTING ROOFING SYSTEM
  - REFRIGERANT PIPING, POWER & CONTROLS UP THRU ROOF TO HEAT PUMP; FURNISH & INSTALL PIPING PORTAL & FLASH INTO EXISTING ROOFING SYSTEM



**KEY PLAN:**  
**'CORNWALL CENTRAL MIDDLE SCHOOL'**

**PROJECT:**  
**CORNWALL CENTRAL MIDDLE SCHOOL B, C & D WING AIR-CONDITIONING PROJECT**  
122 MAIN STREET  
CORNWALL, NEW YORK 12518

**SUB-CONSULTANT:**

**ENGINEER:**

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**B & C-WING EQUIPMENT LAYOUT PLAN**

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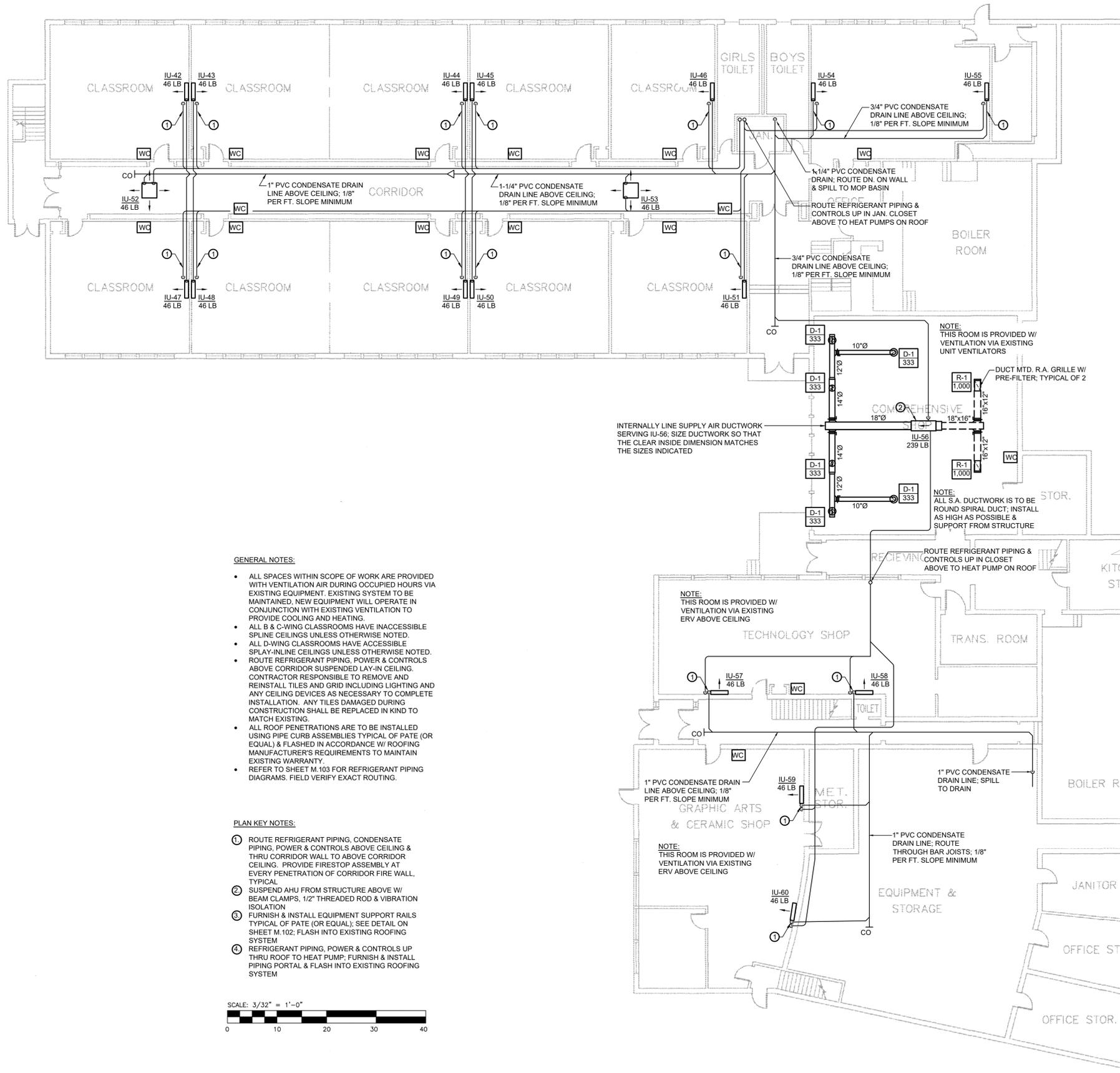
DATE	DRN	CHK	DESCRIPTION
11.14.2022	MBG	MBG	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO.	SHEET NO.
1814	M.201

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**GENERAL NOTES:**

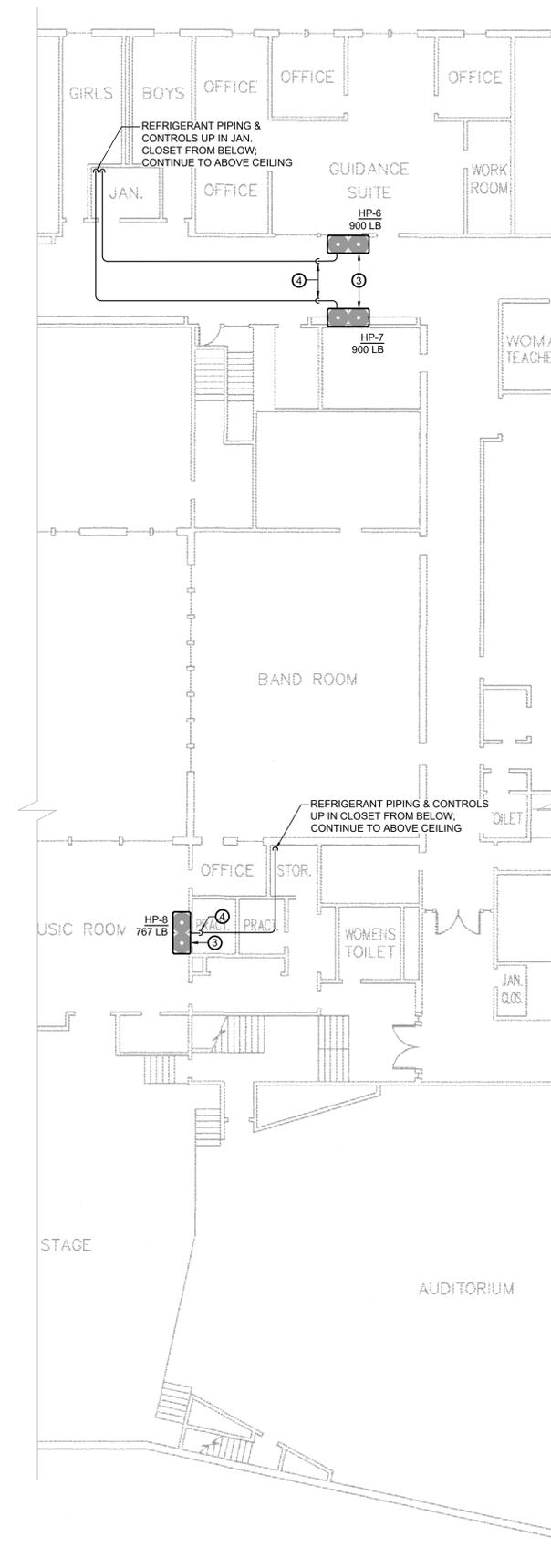
- ALL SPACES WITHIN SCOPE OF WORK ARE PROVIDED WITH VENTILATION AIR DURING OCCUPIED HOURS VIA EXISTING EQUIPMENT. EXISTING SYSTEM TO BE MAINTAINED. NEW EQUIPMENT WILL OPERATE IN CONJUNCTION WITH EXISTING VENTILATION TO PROVIDE COOLING AND HEATING.
- ALL B & C-WING CLASSROOMS HAVE INACCESSIBLE SPLINE CEILINGS UNLESS OTHERWISE NOTED.
- ALL D-WING CLASSROOMS HAVE ACCESSIBLE SPLAY-IN-LINE CEILINGS UNLESS OTHERWISE NOTED.
- ROUTE REFRIGERANT PIPING, POWER & CONTROLS ABOVE CORRIDOR SUSPENDED LAY-IN CEILING. CONTRACTOR RESPONSIBLE TO REMOVE AND REINSTALL TILES AND GRID INCLUDING LIGHTING AND ANY CEILING DEVICES AS NECESSARY TO COMPLETE INSTALLATION. ANY TILES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND TO MATCH EXISTING.
- ALL ROOF PENETRATIONS ARE TO BE INSTALLED USING PIPE CURB ASSEMBLIES TYPICAL OF PATE (OR EQUAL) & FLASHED IN ACCORDANCE W/ ROOFING MANUFACTURER'S REQUIREMENTS TO MAINTAIN EXISTING WARRANTY.
- REFER TO SHEET M.103 FOR REFRIGERANT PIPING DIAGRAMS. FIELD VERIFY EXACT ROUTING.

**PLAN KEY NOTES:**

- ① ROUTE REFRIGERANT PIPING, CONDENSATE PIPING, POWER & CONTROLS ABOVE CEILING & THRU CORRIDOR WALL TO ABOVE CORRIDOR CEILING. PROVIDE FIRESTOP ASSEMBLY AT EVERY PENETRATION OF CORRIDOR FIRE WALL. TYPICAL
- ② SUSPEND AHU FROM STRUCTURE ABOVE W/ BEAM CLAMPS, 1/2" THREADED ROD & VIBRATION ISOLATION
- ③ FURNISH & INSTALL EQUIPMENT SUPPORT RAILS TYPICAL OF PATE (OR EQUAL). SEE DETAIL ON SHEET M.102; FLASH INTO EXISTING ROOFING SYSTEM
- ④ REFRIGERANT PIPING, POWER & CONTROLS UP THRU ROOF TO HEAT PUMP; FURNISH & INSTALL PIPING PORTAL & FLASH INTO EXISTING ROOFING SYSTEM



1 D-Wing Lower Level Equipment Layout Plan  
M.202 Scale: 3/32" = 1'-0"



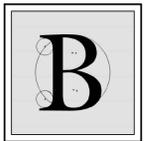
2 D-Wing Upper Level Equipment Layout Plan  
M.202 Scale: 3/32" = 1'-0"

**KEY PLAN:**  
**'CORNWALL CENTRAL MIDDLE SCHOOL'**

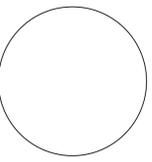
**PROJECT:**  
**CORNWALL CENTRAL MIDDLE SCHOOL B, C & D WING AIR-CONDITIONING PROJECT**  
122 MAIN STREET  
CORNWALL, NEW YORK 12518

**SUB-CONSULTANT:**

**ENGINEER:**



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MA - 53197 CT - 32283 FL - 85928

**D-WING EQUIPMENT LAYOUT PLAN**

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO. **1814** SHEET NO. **M.202**

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120/208V 3Ø 4W+G		BUS RATING: 600A						600A MCB	
CONNECTED LOAD	CONDUCTORS	CKT. BREAKER AMPACITY	POSITION	L1 KVA	L2 KVA	L3 KVA	POSITION	CKT. BREAKER AMPACITY	CONNECTED LOAD
HEAT PUMP HP-1	(3) #4 CU & (1) #8 GND.	70	1	6.9	9.1		2		HEAT PUMP HP-2
			3	6.9	9.1		4	90	(3) #3 CU & (1) #8 GND.
			5			6.9	6		
			7	7.8			8	20	(2) #12 CU & (1) #12 GND.
HEAT PUMP HP-3	(3) #4 CU & (1) #8 GND.	80	9		7.8		10	20	ROOF MTD. RECEPT.
			11			7.8	12	20	SPARE
SPARE	-	20	13	0.4			14	15	(2) #12 CU & (1) #12 GND.
SPARE	-	20	15			0.4	16	15	(2) #12 CU & (1) #12 GND.
SPARE	-	20	17			0.5	18	15	(2) #12 CU & (1) #12 GND.
PANEL DP-C	(4) #4/0 CU & (1) #4 GND.	200	19	20.9	0.5		20	15	(2) #12 CU & (1) #12 GND.
			21	20.9	0.5		22	15	(2) #12 CU & (1) #12 GND.
			23			20.1	24	15	(2) #12 CU & (1) #12 GND.
SPARE	-	20	25				26	20	SPARE
SPARE	-	20	27				28	20	SPARE
SPARE	-	20	29				30	20	SPARE
SQUARE 'D' I-LINE PANELBOARD W/ BOLT ON BREAKERS				45.6	45.6	44.9	136.1 KVA TOTAL		

1 New Panelboard DP-B  
E.102 Scale: None

120/208V 3Ø 4W+G		BUS RATING: 200A						MLO	
CONNECTED LOAD	CONDUCTORS	CKT. BREAKER AMPACITY	POSITION	L1 KVA	L2 KVA	L3 KVA	POSITION	CKT. BREAKER AMPACITY	CONNECTED LOAD
HEAT PUMP HP-4	(3) #3 CU & (1) #8 GND.	90	1	9.1	5.5		2		HEAT PUMP HP-5, SECT. A
			3	9.1	5.5		4	60	(3) #6 CU & (1) #10 GND.
			5			9.1	6	60	(3) #6 CU & (1) #10 GND.
ROOF MTD RECEPT.	(2) #12 CU & (1) #12 GND.	20	7	5.5			8	60	HEAT PUMP HP-5, SECT. B
SPARE	-	20	9			5.5	10	60	(3) #6 CU & (1) #10 GND.
SPARE	-	20	11			5.5	12	60	(3) #6 CU & (1) #10 GND.
UNITS IU-23 THRU 32	(2) #12 CU & (1) #12 GND.	15	13	0.4	0.4		14	15	(2) #12 CU & (1) #12 GND.
			15	0.4	0.4		16	15	(2) #12 CU & (1) #12 GND.
SPARE	-	20	17			0.4	18	20	SPARE
SPARE	-	20	19				20	20	SPARE
SPARE	-	20	21				22	20	SPARE
SPARE	-	20	23				24	20	SPARE
SPARE	-	20	25				26	20	SPARE
SPARE	-	20	27				28	20	SPARE
SPARE	-	20	29				30	20	SPARE
SQUARE 'D' NQ PANELBOARD W/ BOLT ON BREAKERS				20.9	20.9	20.1	61.9 KVA TOTAL		

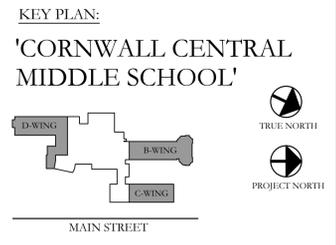
2 New Panelboard DP-C  
E.102 Scale: None

120/208V 3Ø 4W+G		BUS RATING: 200A						MLO	
CONNECTED LOAD	CONDUCTORS	CKT. BREAKER AMPACITY	POSITION	L1 KVA	L2 KVA	L3 KVA	POSITION	CKT. BREAKER AMPACITY	CONNECTED LOAD
HEAT PUMP HP-6	(3) #3 CU & (1) #8 GND.	90	1	9.1	9.1		2		HEAT PUMP HP-7
			3	9.1	9.1		4	90	(3) #3 CU & (1) #8 GND.
			5			9.1	6		
ROOF MTD RECEPT.	(2) #12 CU & (1) #12 GND.	20	7			9.1	8	20	SPARE
SPARE	-	20	9				10	20	SPARE
SPARE	-	20	11				12	20	SPARE
INDOOR UNITS	(2) #12 CU & (1) #12 GND.	15	13	0.4	0.4		14	15	(2) #12 CU & (1) #12 GND.
			15	0.4	0.4		16	15	(2) #12 CU & (1) #12 GND.
SPARE	-	20	17				18	20	SPARE
SPARE	-	20	19				20	20	SPARE
SPARE	-	20	21				22	20	SPARE
SPARE	-	20	23				24	20	SPARE
SPARE	-	20	25				26	20	SPARE
SPARE	-	20	27				28	20	SPARE
SPARE	-	20	29				30	20	SPARE
SQUARE 'D' NQ PANELBOARD W/ BOLT ON BREAKERS				19.0	19.0	18.2	56.2 KVA TOTAL		

3 New Panelboard DP-D1  
E.102 Scale: None

120/208V 3Ø 4W+G		BUS RATING: 200A						MLO	
CONNECTED LOAD	CONDUCTORS	CKT. BREAKER AMPACITY	POSITION	L1 KVA	L2 KVA	L3 KVA	POSITION	CKT. BREAKER AMPACITY	CONNECTED LOAD
HEAT PUMP HP-8	(3) #4 CU & (1) #8 GND.	70	1	6.9	0.4		2	15	(2) #12 CU & (1) #12 GND.
			3	6.9	0.4		4	15	(2) #12 CU & (1) #12 GND.
			5			6.9	6	15	(2) #12 CU & (1) #12 GND.
ROOF MTD RECEPT.	(2) #12 CU & (1) #12 GND.	20	7	0.4			8	15	(2) #12 CU & (1) #12 GND.
SPARE	-	20	9				10	20	SPARE
SPARE	-	20	11				12	20	SPARE
SPARE	-	20	13				14	20	SPARE
SPARE	-	20	15				16	20	SPARE
SPARE	-	20	17				18	20	SPARE
SPARE	-	20	19				20	20	SPARE
SPARE	-	20	21				22	20	SPARE
SPARE	-	20	23				24	20	SPARE
SPARE	-	20	25				26	20	SPARE
SPARE	-	20	27				28	20	SPARE
SPARE	-	20	29				30	20	SPARE
SQUARE 'D' NQ PANELBOARD W/ BOLT ON BREAKERS				7.7	7.3	7.3	22.3 KVA TOTAL		

4 New Panelboard DP-D2  
E.102 Scale: None



PROJECT:  
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B, C & D WING AIR-CONDITIONING PROJECT  
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NY - 89039 NJ - GE050037 PA - PE079303  
MA - 53197 CT - 32283 FL - 85928

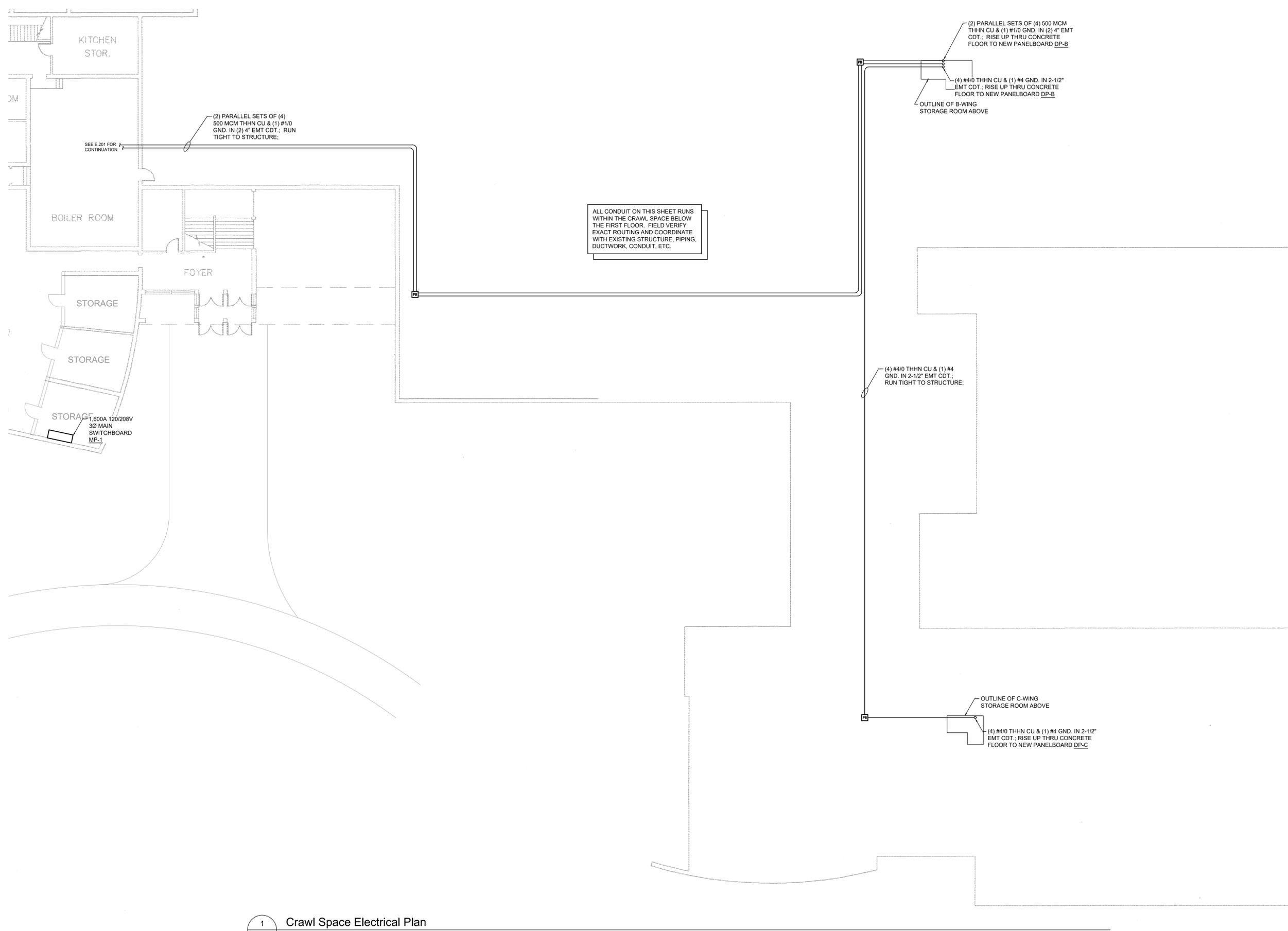
NEW ELECTRIC PANEL SCHEDULES

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MGB	MGB	BID SET

REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO. **1814** SHEET NO. **E.102**





KEY PLAN:  
 'CORNWALL CENTRAL MIDDLE SCHOOL'  
  
 TRUE NORTH  
 PROJECT NORTH  
 MAIN STREET

PROJECT:  
 CORNWALL CENTRAL MIDDLE SCHOOL  
 B, C & D WING AIR-CONDITIONING PROJECT  
 122 MAIN STREET  
 CORNWALL, NEW YORK 12518

SUB-CONSULTANT:

ENGINEER:  
  
**BLAKE ENGINEERING PLLC**  
 1898 COUNTY ROUTE 1  
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CRAWL SPACE ELECTRICAL PLAN

DATE	DRN	CHK	DESCRIPTION	
11.14.2022	MGB	MGB	BID SET	
REV.	DATE	DRN	CHK	DESCRIPTION

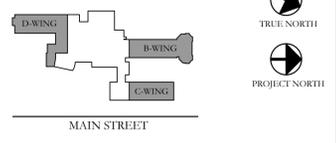
PROJECT NO. **1814** SHEET NO. **E.202**

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1 Crawl Space Electrical Plan  
 E.202 Scale: 3/32" = 1'-0"



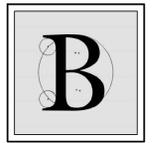
KEY PLAN:  
'CORNWALL CENTRAL MIDDLE SCHOOL'



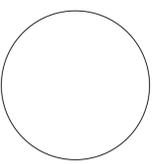
PROJECT:  
CORNWALL CENTRAL MIDDLE SCHOOL  
B, C & D WING AIR-CONDITIONING PROJECT  
122 MAIN STREET  
CORNWALL, NEW YORK 12518

SUB-CONSULTANT:

ENGINEER:



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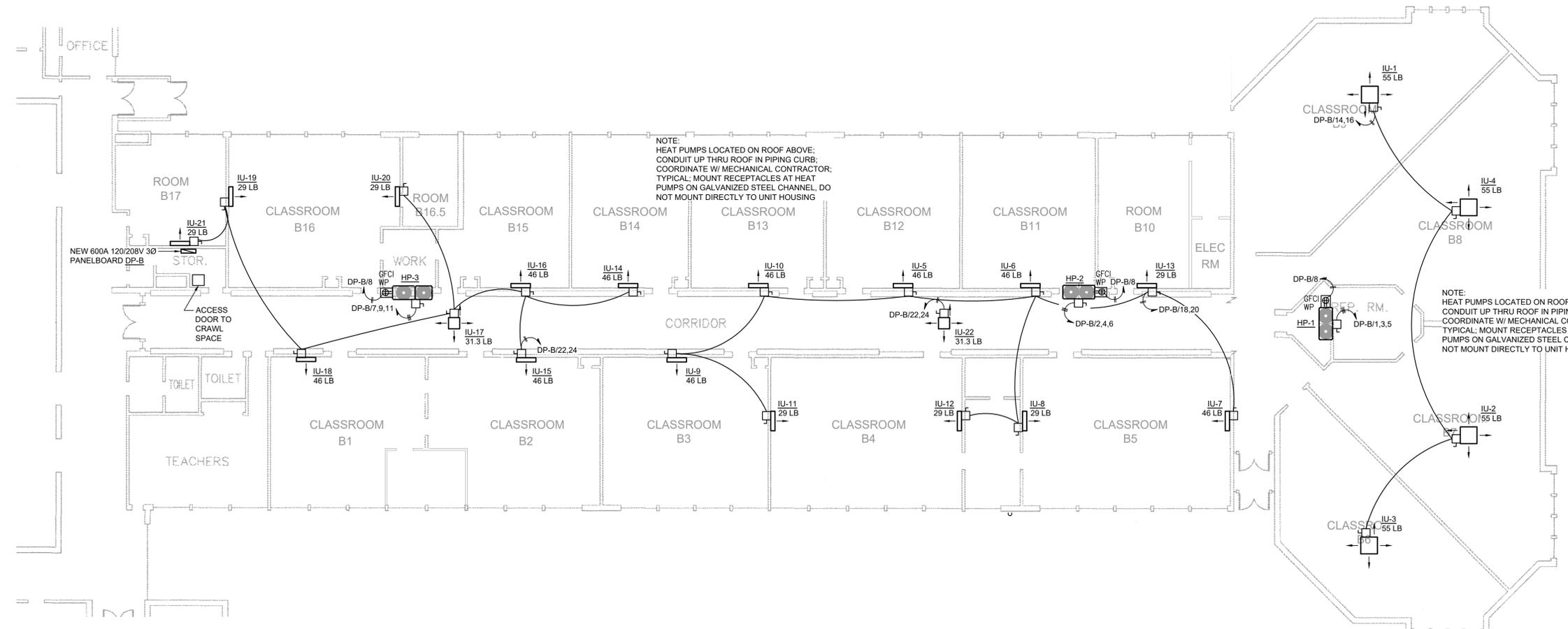
B & C WING ELECTRICAL PLAN

DATE	DRN	CHK	DESCRIPTION
11.14.2022	MG	MG	BID SET

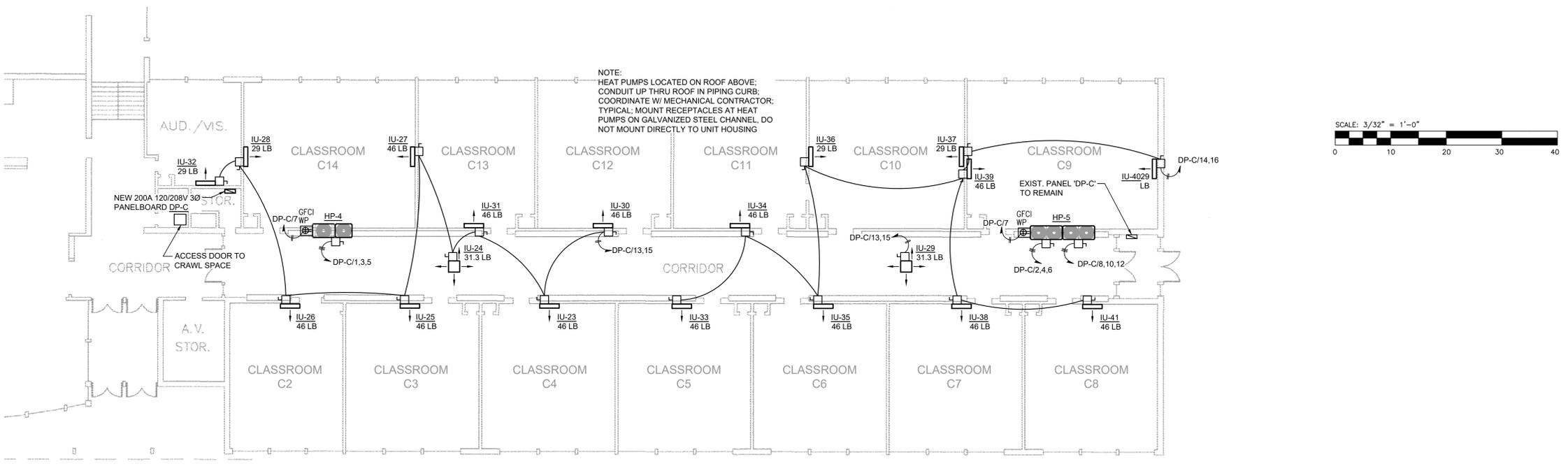
REV.	DATE	DRN	CHK	DESCRIPTION

PROJECT NO.	SHEET NO.
<b>1814</b>	<b>E.203</b>

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1 B-Wing Electrical Plan  
E.203 Scale: 3/32" = 1'-0"



2 C-Wing Electrical Plan  
E.203 Scale: 3/32" = 1'-0"