

# ANCHOR BAY SCHOOL DISTRICT SCHMIDT ELEMENTARY SCHOOL

## HVAC Upgrade

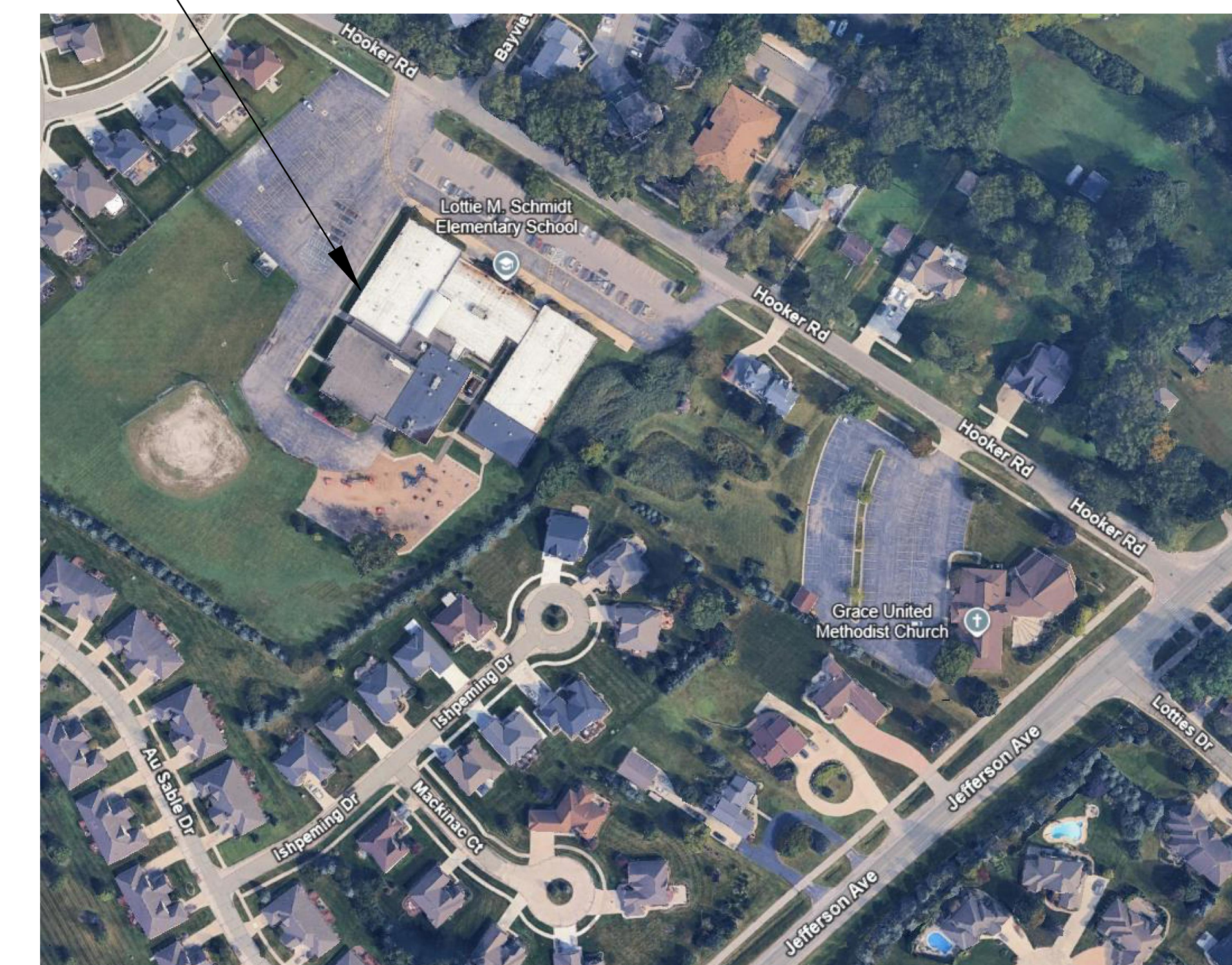
33700 Hooker Rd, New Baltimore, MI 48047

# CONSTRUCTION DOCUMENTS 05/01/2026



**PBA**  
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PBA Project No.: 2026.0034.54

PROJECT LOCATION



### CODES AND STANDARDS

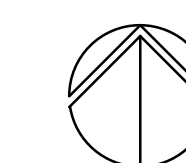
2021	MICHIGAN BUILDING CODE
2021	MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
2021	MICHIGAN MECHANICAL CODE
2023	MICHIGAN ELECTRICAL CODE PART 8

### MECHANICAL DRAWING INDEX

05-01-2026 CONSTRUCTION DOCUMENTS	
SHEET NO.	SHEET TITLE
MO.1	MECHANICAL STANDARDS AND DRAWING INDEX
MO.2	MECHANICAL COMPOSITE DEMOLITION PLAN
MO.2	MECHANICAL COMPOSITE NEW WORK PLAN
M6.1	MECHANICAL DETAILS
M7.1	MECHANICAL SCHEDULES
M8.1	TEMPERATURE CONTROLS

### ELECTRICAL DRAWING INDEX

05-01-2026 CONSTRUCTION DOCUMENTS	
SHEET NO.	SHEET TITLE
EO.1	ELECTRICAL STANDARDS AND DRAWING INDEX
EO.2	ELECTRICAL STANDARD SCHEDULES
EO.3	FIRST FLOOR ELECTRICAL COMPOSITE DEMOLITION PLAN
EO.3	FIRST FLOOR ELECTRICAL COMPOSITE NEW WORK PLAN
E5.1	ONE LINE DIAGRAM



LOCATION MAP  
NO SCALE



FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE							KEYED NOTES
OVERCURRENT DEVICE RATING (AMPERES)	COPPER CONDUCTORS						
	WIRE SIZE (AWG OR KCMIL)		CONDUIT SIZE				
	PHASE & NEUTRAL	GROUND	SINGLE PHASE 2 WIRE+G (1PH, 1N, 1G, 2PH, 1G)	SINGLE PHASE 3 WIRE+G (2PH, 1N, 1G)	THREE PHASE 3 WIRE+G (3PH, 1G)	THREE PHASE 4 WIRE+G (3PH, 1N, 1G)	
15-20	12	12	3/4"	3/4"	3/4"	3/4"	
25-30	10	10	3/4"	3/4"	3/4"	3/4"	
35-40	8	10	3/4"	3/4"	3/4"	3/4"	
45-50	8 (6)	10	3/4"	3/4"	3/4"	3/4"	1
60	6 (4)	10	3/4" (1")	3/4" (1")	3/4" (1")	1" (1 1/4")	1
70	4	8	1"	1 1/4"	1 1/4"	1 1/4"	
80	4 (3)	8	1"	1 1/4"	1 1/4"	1 1/4"	1
90-100	3 (2)	8	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1
110	2 (1)	6	-	1 1/4"	1 1/4"	1 1/4" (1 1/2")	1
125	1 (1/0)	6	-	1 1/4" (1 1/2")	1 1/4" (1 1/2")	1 1/2"	1
150	1/0	6	-	1 1/2"	1 1/2"	1 1/2"	
175	2/0	6	-	2"	2"	2"	
200	3/0	6	-	2"	2"	2 1/2"	
225	4/0	4	-	2"	2"	2 1/2"	
250	250	4	-	2 1/2"	2 1/2"	2 1/2"	
300	350	4	-	2 1/2"	2 1/2"	3"	
350	500	3	-	3"	3"	3"	
400	500	3	-	3"	3"	3"	
450	2-4/0	2-2	-	2-2"	2-2"	2-2 1/2"	
500	2-250	2-2	-	2-2 1/2"	2-2 1/2"	2-2 1/2"	
600	2-350	2-1	-	2-2 1/2"	2-2 1/2"	2-3"	
700	2-500	2-1/0	-	2-3"	2-3"	2-3 1/2"	
800	2-500	2-1/0	-	2-3"	2-3"	2-3 1/2"	
1000	3-400	3-2/0	-	3-3"	3-3"	3-3"	
1200	3-600	3-3/0	-	3-3 1/2"	3-3 1/2"	3-3 1/2"	
1600	4-600	4-4/0	-	4-3 1/2"	4-3 1/2"	4-3 1/2"	
2000	5-600	5-250	-	5-3 1/2"	5-3 1/2"	5-3 1/2"	

GENERAL NOTES:  
 1. CONTRACTOR TO SIZE FEEDERS AND BRANCH CIRCUITS BASED ON THIS SCHEDULE AND OVER CURRENT DEVICE SIZE, UNLESS NOTED OTHERWISE.  
 2. CONTRACTOR MAY COMBINE 20A CIRCUITS AS NOTED IN SPECIFICATION.  
 3. CONDUCTORS ARE BASED ON THHN/THWN-2 UP TO AND INCLUDING #4/0. LARGER THAN #4/0 ARE BASED ON TYPE XHHW.  
 4. CONDUIT SIZES ARE VALID FOR EMT OR RSC. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHER TYPES OF CONDUIT.  
 5. SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.  
 6. OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.

KEYED NOTES:  
 1. CONDUCTORS ARE BASED ON 90°C, 600V INSULATED WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C. FOR TERMINATION RATED AT 60°C, USE CONDUCTORS AND CONDUIT SIZES INDICATED IN PARENTHESES.

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS						
BRANCH CKT RATING (A)	WIRE SIZE (AWG)	MAXIMUM BRANCH CIRCUIT LENGTH (IN FEET)				
		120V	208V	240V	277V	480V
20A	12	83	143	165	191	331
	10	128	222	256	295	511
	8	201	348	402	464	804
	6	313	542	625	721	1250
30A	10	85	148	170	197	341
	8	134	232	268	309	536
	6	208	361	417	481	833
	4	313	542	625	721	1250

GENERAL NOTES:  
 1. THE ABOVE TABLE VALUES ARE BASED ON COPPER CONDUCTORS, IN STEEL CONDUIT, WITH A LOAD POWER FACTOR OF 0.85 PER NEC CHAPTER 9, TABLE 9.  
 2. PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.  
 3. CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 9 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.  
 4. LIMITS FOR CONDUCTOR LENGTHS SHOWN ARE BASED ON A MAXIMUM BRANCH CIRCUIT LOADING OF 64% OF THE BRANCH BREAKER RATING AND A MAXIMUM OF 3 PERCENT VOLTAGE DROP TO COMPLY WITH ASHRAE 90.1 AND THE NEC. FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING, THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

**MOTOR CIRCUIT SIZING SCHEDULE (480V, 3 PHASE)**

MOTOR HP	SWITCH/FUSE	CIRCUIT BREAKER	STARTER SIZE/TYPE	MOTOR DISCONNECT (NOTE 9)
1/2	30/3A	15A	1	30A
3/4	30/3A	15A	1	30A
1	30/6A	15A	1	30A
1 1/2	30/6A	15A	1	30A
2	30/6A	15A	1	30A
3	30/10A	15A	1	30A
5	30/15A	15A	1	30A
7 1/2	30/20A	20A	1	30A
10	30/20A	25A	1	30A
15	30/30A	40A	2	30A
20	60/40A	60A	2	60A
25	60/50A	70A	2	60A
30	60/60A	80A	3	60A
40	100/80A	90A	3	100A
50	100/100A	100A	3	100A
60	200/125A	125A	4	200A
75	200/150A	150A	4	200A
100	200/200A	200A	4	200A
125	200/200A	225A	5	200A
150	400/250A	250A	5	400A
200	400/350A	350A	5	400A

GENERAL NOTES:  
 1. BASED ON MOTOR FULL LOAD AMPERES AS PROVIDED BY THE NEC.  
 2. BASED ON MOTOR RUNNING OVERLOAD PROTECTIONS PROVIDED BY THERMAL OVERLOAD RELAYS.  
 3. WHERE THE STARTER IS LOCATED REMOTE FROM THE MOTOR, PROVIDE DISCONNECT LOCATED AT THE MOTOR, SIZE AS INDICATED.

**RACEWAY / CONDUCTOR / CABLE APPLICATION SCHEDULE**

	WIRE	RACEWAY	CABLE / CORD
FEEDERS - EXTERIOR			
EXPOSED, SURFACE MOUNTED TO STRUCTURE	X	X	X
EXPOSED, WITH FREESTANDING SUPPORT	X	X	X
CONCEALED IN RETAINING WALL OR SIMILAR ELEMENT	X	X	X
ROOFTOPS (WHEN APPROVED BY ENGINEER)	X	X	X
FEEDERS - INTERIOR			
CONCEALED, ACCESSIBLE CEILINGS	X	X	X
CONCEALED, INACCESSIBLE CEILINGS	X	X	X
CONCEALED IN GYPSUM BOARD PARTITION WALLS	X	X	X
EXPOSED, BELOW 10' AFF AND SUBJECT TO DAMAGE	X	X	X
EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X	X	X
EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X	X	X
EXPOSED, FINISHED SPACES	X	X	X
DAMP AND WET LOCATIONS	X	X	X
BRANCH CIRCUITS - EXTERIOR			
EXPOSED, SURFACE MOUNTED TO STRUCTURE	X	X	X
EXPOSED, WITH FREESTANDING SUPPORT	X	X	X
CONCEALED IN RETAINING WALL OR SIMILAR ELEMENT	X	X	X
WITHIN 5' OF FOUNDATION WALL	X	X	X
ROOFTOPS (WHEN APPROVED BY ENGINEER)	X	X	X
BRANCH CIRCUITS - INTERIOR			
CONCEALED, ACCESSIBLE CEILINGS	X	X	X
CONCEALED, INACCESSIBLE CEILINGS	X	X	X
CONCEALED IN GYPSUM BOARD PARTITION WALLS	X	X	X
EXPOSED, BELOW 10' AFF AND SUBJECT TO DAMAGE	X	X	X
EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X	X	X
EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X	X	X
EXPOSED, ABOVE 10' AFF FINISHED SPACES	X	X	X
DAMP AND WET LOCATIONS	X	X	X
SPECIAL APPLICATIONS			
CONNECTION BETWEEN VFC AND MOTORS (KEYED NOTE 1)			X
CLASS 1 CONTROL CIRCUITS	X	X	X
CLASS 2 CONTROL CIRCUITS	X	X	X
CLASS 3 CONTROL CIRCUITS	X	X	X
CONNECTIONS TO TRANSFORMERS, MOTORS AND VIBRATING EQUIPMENT	X	X	X

GENERAL NOTES:  
 1. TRANSITION FROM PVC/HDPE AND PROVIDE RIGID STEEL OR RTRC SWEEPS WHERE CONDUITS PENETRATE WALLS, CONCRETE SLABS, CONCRETE BASES, AND ASPHALT.  
 2. REFER TO SPECIFICATIONS FOR RESTRICTIONS ON MC/AC CABLE INSTALLATION.  
 3. EMT SHALL NOT BE USED ON THE EXTERIOR OF A BUILDING OR IN AREAS SUBJECT TO DAMAGE BELOW 10' AFF.

KEYED NOTES:  
 1. NON-ARMORED CABLE SHALL BE INSTALLED IN RACEWAY. ARMORED CABLE SHALL BE INSTALLED IN TRAY OR FREE-AIR AS APPLICABLE.  
 2. CONDUIT AND BUILDING WIRE ALLOWED PER ONE OF THE FOLLOWING METHODS: ROUTED OUTSIDE THE BUILDING, ROUTED UNDER A MINIMUM OF 2" OF CONCRETE BENEATH THE BUILDING, OR ENCASED IN A MINIMUM OF 2" OF CONCRETE.  
 3. EMERGENCY FEEDERS IN OCCUPANCIES THAT ARE UNDER 700.10(D) SHALL HAVE A TWO HOUR RATING. RATING SHALL BE OBTAINED BY ROUTING CONDUIT AND BUILDING WIRE IN SPRINKLERED SPACE.  
 4. IN A TWO HOUR SHAFT, OUTSIDE OF THE BUILDING, IN A LISTED TWO HOUR RATED RACEWAY, OR UNDER A MINIMUM OF 2" OF CONCRETE, OR BY USING A LISTED TWO-HOUR RATED CABLE ASSEMBLY.  
 5. SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS BASED ON UL TESTING AND RATING.  
 6. MC CABLE SHALL ONLY BE USED FOR FINAL CONNECTIONS TO TRANSFORMERS, MOTORS, VIBRATING EQUIPMENT, AND LUMINAIRES.  
 7. INTERMEDIATE METAL CONDUIT AND RIGID STEEL CONDUIT, INCLUDING ALL FITTINGS, BOXES AND SUPPORTS, SHALL BE TREATED WITH CORROSION RESISTANT PAINT. FLEXIBLE CORD SHALL ONLY BE USED FOR FINAL CONNECTION TO LUMINAIRES.

REVISION

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 CONSULTING ENGINEERS

PROJECT TITLE

ANCHOR BAY SCHOOL DISTRICT  
 SCHMIDT ELEMENTARY  
 HVAC UPGRADE

33700 HOOKER RD., NEW BALTIMORE, MI 48047

SHEET TITLE

ELECTRICAL STANDARD  
 SCHEDULES

DATE

05-01-2026

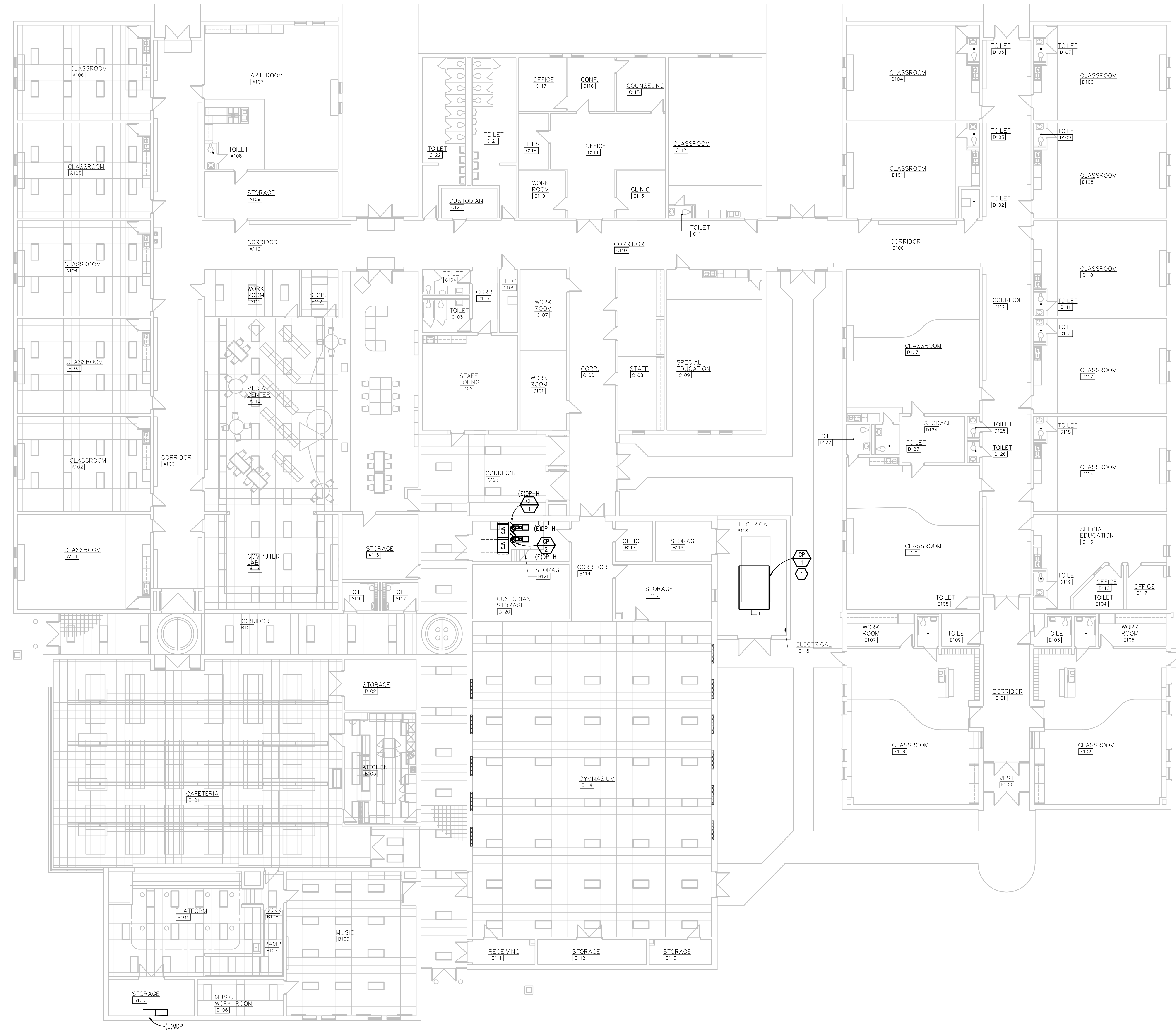
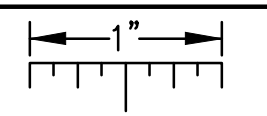
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CONSTRUCTION DOCUMENTS

SHEET No.

E0.2

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



**ELECTRICAL GENERAL NOTES:**

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
7. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
8. REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED FIRE ALARM CONTROL MODULES, DUCT SMOKE DETECTORS, AND MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.

**CONSTRUCTION KEY NOTES:**

1. CIRCUIT MECHANICAL EQUIPMENT TO MAINTAINED BRANCH CIRCUIT.

**FIRST FLOOR ELECTRICAL COMPOSITE NEW WORK PLAN**  
SCALE: 3/32" = 1' - 0"

REVISION

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PBA Project No.: 2026-0034-04

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SCHMIDT ELEMENTARY  
HVAC UPGRADE**

33700 HOOKER RD. NEW BALTIMORE, MI 48047

SHEET TITLE  
**FIRST FLOOR ELECTRICAL  
COMPOSITE NEW WORK PLAN**

DATE  
05-01-2026

ISSUE  
**CONSTRUCTION  
DOCUMENTS**

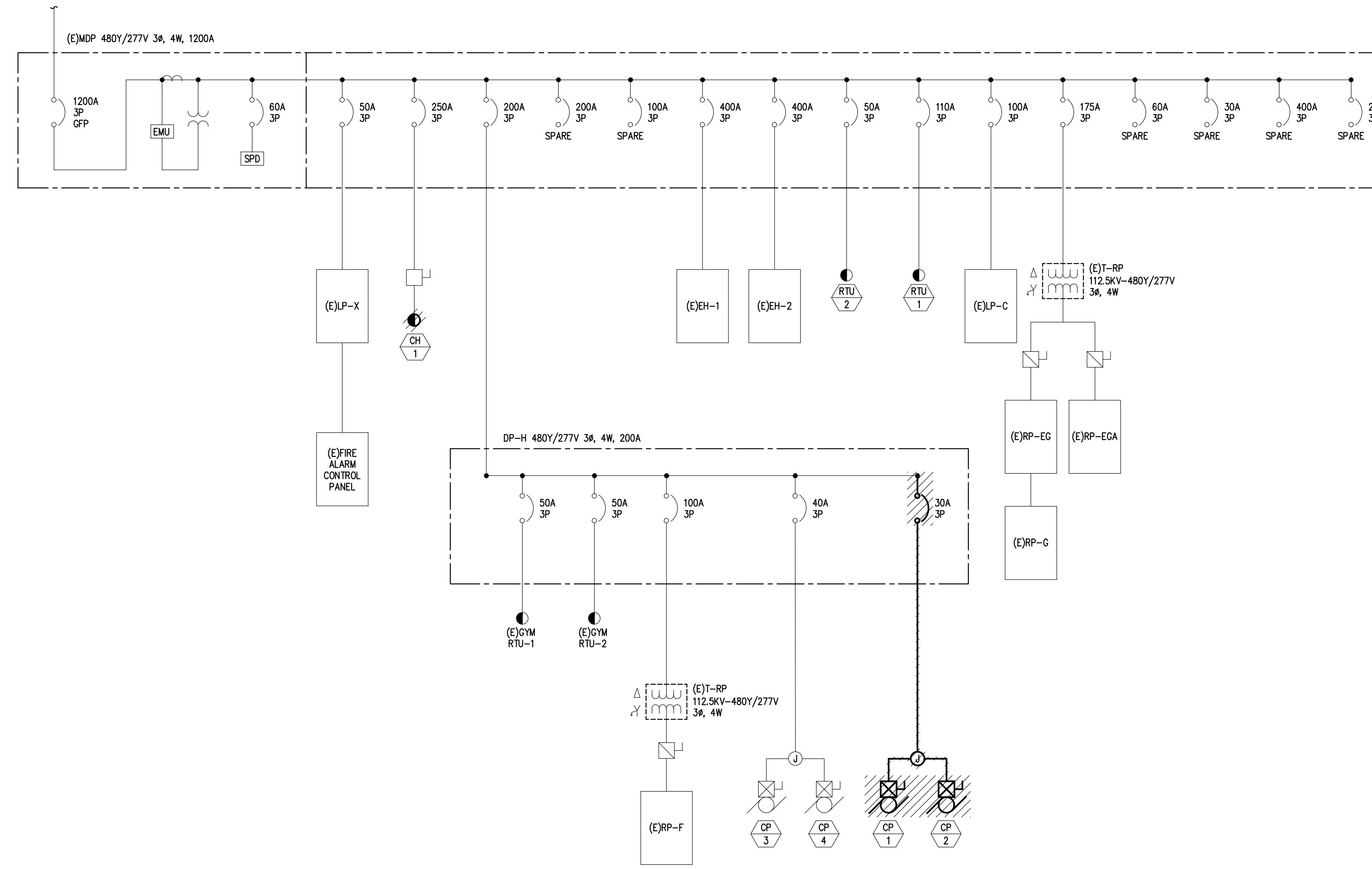
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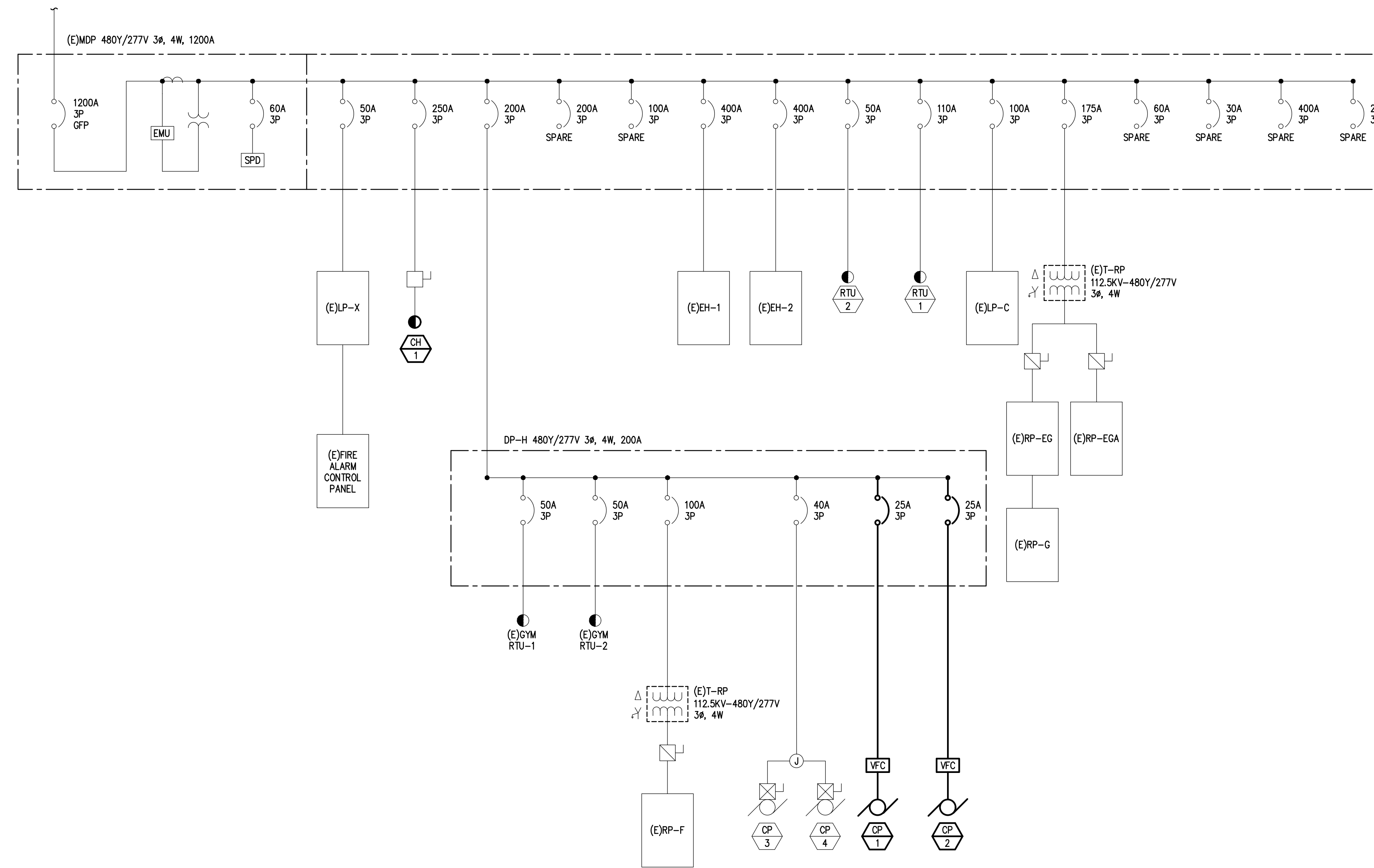
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**DIAGRAM GENERAL NOTES:**

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE-GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
3. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH THE MOTOR CIRCUIT SIZING SCHEDULES ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.



**ONE LINE DIAGRAM - DEMOLITION**  
NO SCALE



**ONE LINE DIAGRAM - NEW WORK**  
NO SCALE

**MAIN DISTRIBUTION PANEL  
CONNECTED LOAD CALCULATION**

MAIN DISTRIBUTION PANEL METERED LOAD	548 KVA
ADDED LOAD	
MDP (CH-1)	5 KVA
<b>TOTAL CONNECTED LOAD</b>	<b>553 KVA</b>

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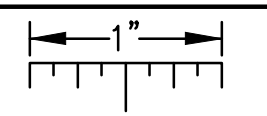
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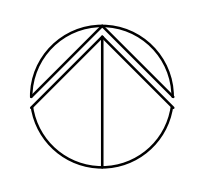
SHEET TITLE  
**ONE LINE DIAGRAM**  
DATE  
05-01-2026  
ISSUE  
CONSTRUCTION DOCUMENTS  
SHEET No.

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**ELECTRICAL DEMOLITION GENERAL NOTES:**

1. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION WORK.
2. EXAMINE THE DRAWINGS OF OTHER TRADES AND BE FAMILIAR WITH THE DEMOLITION REQUIRED BY OTHER TRADES. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES, WHETHER OR NOT SPECIFICALLY INDICATED.
3. REMOVE EQUIPMENT OR MATERIALS AS INDICATED ON PLAN WITH CROSS HATCHING. DEMOLITION SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE COMPONENTS SHOWN.
4. COORDINATE WITH NEW WORK PLANS, ONE LINE DIAGRAMS AND RISER DIAGRAMS FOR EXTENT OF DEMOLITION WORK.
5. PROVIDE PROPER SUPPORT FOR EXISTING TO REMAIN CONDUITS AND BOXES WHERE EXISTING SUPPORT IS TO BE REMOVED. RE-ROUTE BRANCH CIRCUIT CONDUITS AND RELOCATE JUNCTION BOXES AS REQUIRED TO FACILITATE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS IN CEILING SPACES.
6. REMOVE ALL CONDUIT AND WIRE BACK TO THE SOURCE OR NEAREST UPSTREAM DEVICE REMAINING IN SERVICE.
7. MAINTAIN ELECTRICAL SERVICE TO ALL LIGHTING FIXTURES, DEVICES AND EQUIPMENT THAT ARE TO REMAIN. EXTEND CONDUIT AND WIRE AS REQUIRED WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM LOADS THAT ARE TO REMAIN.
8. DISPOSE OF ALL MATERIALS OFF SITE AND INCLUDE ALL COSTS FOR DISPOSAL IN BID. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING TOLP TESTING, PROPER DISPOSAL AND/OR RECYCLING OF FLUORESCENT LAMPS.
9. PROVIDE BLANK COVER PLATES WHERE SWITCHES AND DEVICES ARE REMOVED BUT EXISTING WALLS REMAIN INTACT.
10. RING OUT AND TAG ALL CIRCUITS AFFECTED BY THIS ALTERATION AT BOTH ENDS. MARK ALL UNUSED CIRCUIT BREAKERS "SPARE".
11. PROVIDE UPDATED TYPED-IN DIRECTORIES FOR ALL PANELS AFFECTED BY THIS ALTERATION.
12. VERIFY ALL UNDERGROUND AND IN SLAB UTILITY LOCATIONS PRIOR TO SAW-CUTTING OR PENETRATING ANY FLOOR SLAB.
13. COORDINATE ANY SHUT DOWN OF EXISTING SERVICES AND EQUIPMENT THAT ARE REMAINING IN USE WITH THE OWNER'S REPRESENTATIVE. WHERE EXISTING BUILDING SERVICE IS REQUIRED TO BE SHUT DOWN, INCLUDE ALL ASSOCIATED OVERTIME COSTS TO PERFORM THIS WORK DURING WEEKENDS AND EVENINGS INCLUDE ALL COSTS FOR PROVIDING TEMPORARY POWER WHERE SHUT DOWNS MUST OCCUR FOR PERIODS LONGER THAN THESE HOURS. COORDINATE ELECTRICAL SHUT DOWNS WITH THE OWNER 72 HOURS PRIOR TO SHUT DOWN.



**FIRST FLOOR ELECTRICAL COMPOSITE DEMOLITION PLAN**  
SCALE: 3/32" = 1' - 0"

REVISION

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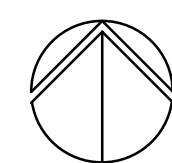
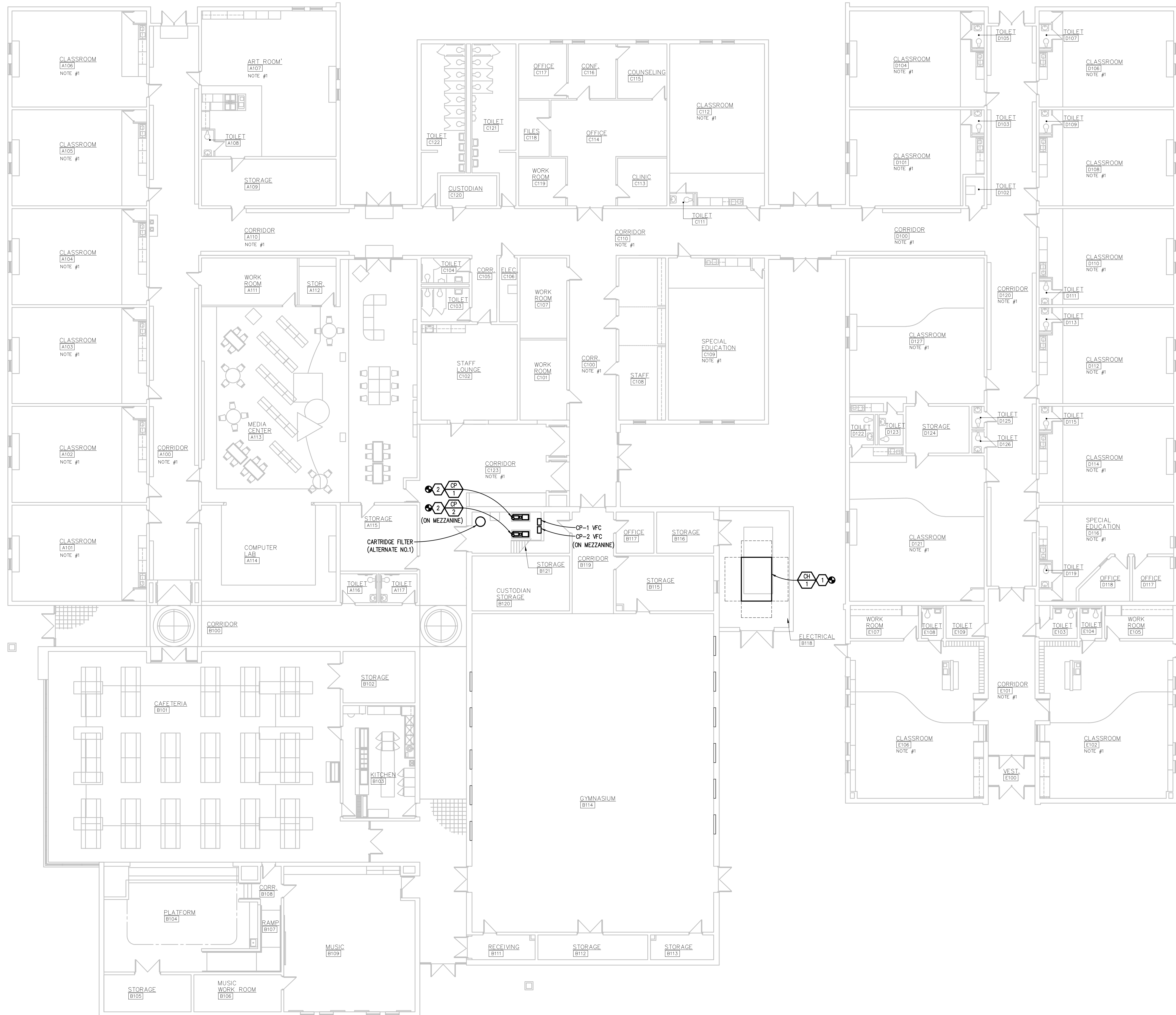
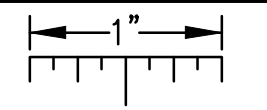
SHEET No.

**ED0.3**

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THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



**MECHANICAL COMPOSITE NEW WORK PLAN**  
SCALE: 3/32" = 1' - 0"

**PLUMBING GENERAL NOTES:**

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONED LOCATIONS OF PLUMBING FIXTURES.
7. HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS OTHERWISE NOTED.
8. PLUMBING VENT PIPING THROUGH ROOF SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF PARAPET.
9. PROVIDE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.
10. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".
11. WATER SERVICE ENTRANCE PIPING SHALL BE BURIED WITH DEPTH OF COVER OVER TOP OF PIPE OF AT LEAST 18" OR WITH TOP OF PIPE AT LEAST 12" BELOW LEVEL OF MAXIMUM FROST PENETRATION, OR AS REQUIRED BY AUTHORITIES HAVING JURISDICTION, WHICHEVER IS DEEPEST.

**HVAC PIPING GENERAL NOTES:**

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PIPING AND DUCTWORK SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. SUBMIT PROPOSED METHODS OF ANCHORING AND GUIDING PIPING SYSTEMS TO STRUCTURAL ENGINEER FOR APPROVAL.
7. COORDINATE LOCATION OF DUCT-MOUNTED HYDRONIC DEVICES WITH SHEET METAL TRADES.
8. BRANCH PIPING SERVING TERMINAL UNIT HEATING COILS OR RADIANT CEILING PANELS SHALL BE 3/4" UNLESS OTHERWISE NOTED. BRANCH PIPING SERVING MORE THAN ONE TERMINAL UNIT HEATING COIL SHALL BE 1" UNLESS OTHERWISE NOTED. BRANCH PIPING SERVING HOT WATER UNIT HEATERS AND CABINET UNIT HEATERS SHALL BE 1" UNLESS OTHERWISE NOTED.
9. REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE DEVICES.
10. STEAM AND CONDENSATE SYSTEMS ARE DESIGNED BASED ON THE ASSUMPTION OF A SUPERVISED WARM-UP PROCEDURE.

**SHEET METAL GENERAL NOTES:**

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PIPING AND DUCTWORK SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONED LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.
7. REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

**CONSTRUCTION KEY NOTES:**

1. EXTEND EXISTING CHWS/R PIPING AS REQUIRED TO RECONNECT TO NEW CHILLERS.
2. RECONNECT CHWS/R PIPING TO NEW PUMPS. EXTEND CONCRETE PADS AS REQUIRED TO ACCOMMODATE NEW PUMPS.

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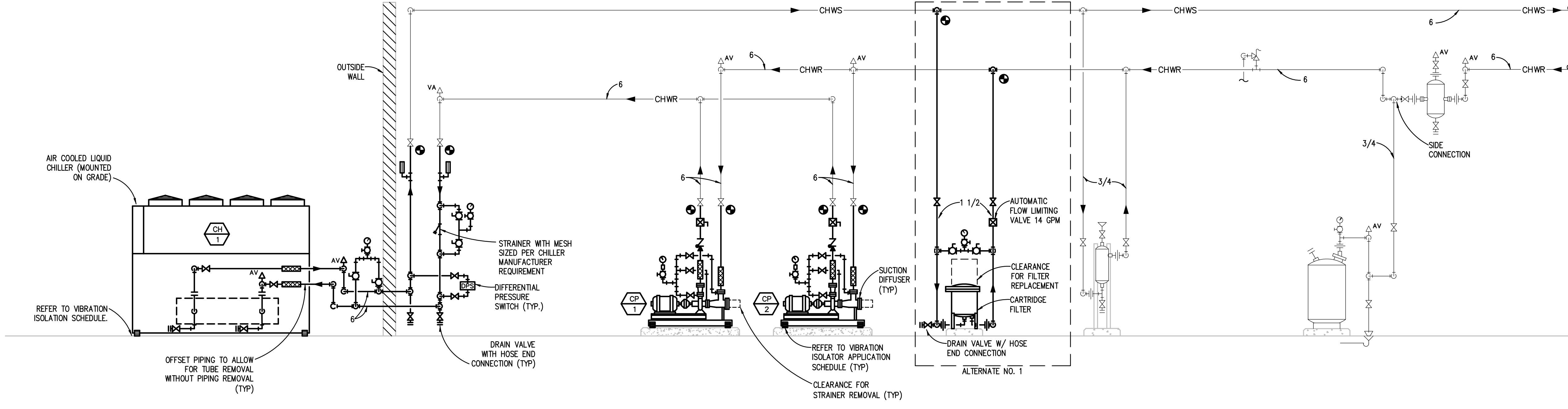
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PROJECT TITLE  
**ANCHOR BAY SCHOOL DISTRICT  
SCHMIDT ELEMENTARY  
HVAC UPGRADE**  
33700 HOOKER RD., NEW BALTIMORE, MI 48047

SHEET TITLE  
**MECHANICAL COMPOSITE NEW  
WORK PLAN**  
DATE  
05-01-2026  
ISSUE  
CONSTRUCTION DOCUMENTS  
SHEET No.

**M0.2**

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SHEET TITLE  
MECHANICAL DETAILS  
DATE  
05-01-2026  
ISSUE  
CONSTRUCTION DOCUMENTS  
SHEET No.

M6.1

ABOVEGROUND HVAC PIPE & ACCESSORY INSULATION APPLICATION SCHEDULE													
INSULATION MATERIAL & THICKNESS (INCHES)	FIELD-APPLIED JACKET MATERIAL												
	FLEXIBLE ELASTOMERIC	FIBERGLASS	MINERAL WOOL	FOAMSYNTHURITE	PHENOLIC	CELLULASE GLASS	CALCIUM SILICATE	ALUMINUM	STAINLESS STEEL	PVC	SELF-ADHESIVE (FOR OUTDOOR APPLICATIONS)	PODCE (INDOOR)	PODCE (OUTDOOR)
INDOOR PIPE SYSTEM AND SIZE (INCHES)													
CHILLED WATER & BRINE 40 DEG F to 60 DEG F:	1	1						X	X				A
OUTDOOR (ABOVEGROUND) AND TUNNEL PIPE SYSTEM AND SIZE (INCHES)													
CHILLED WATER & BRINE	3	3						X		X			B

UNLESS OTHERWISE INDICATED OR SCHEDULED, THE FOLLOWING DO NOT REQUIRE INSULATION:  
 DIRECT BURIED COOLING SYSTEM PIPING  
 PIPING THAT CONVEYS FLUIDS HAVING DESIGN OPERATING TEMPERATURE RANGE BETWEEN 60 DEG F. AND 105 DEG F., INCLUSIVE.

- GENERAL NOTES:**
- "X" OR THICKNESS IN INCHES INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
  - INSULATE PIPING WITH AIR HANDLING EQUIPMENT THE SAME AS INDOOR PIPING. PROVIDE ALUMINUM OR STAINLESS STEEL JACKET.
  - FOR PIPING NPS 1-1/4 AND SMALLER WITHIN PARTITIONS IN CONDITIONED SPACES INSULATION MAY BE REDUCED BY ONE-INCH THICKNESS, BUT NOT TO LESS THAN ONE-INCH THICKNESS.
  - FOR PIPING NPS 1 AND SMALLER, INSULATION IS NOT REQUIRED FOR STRAINERS, CONTROL VALVES, AND BALANCING VALVES.

- KEYED NOTES:**
- PROVIDE FIELD APPLIED JACKET FOR PIPING EXPOSED IN EQUIPMENT ROOMS, STORAGE ROOMS, JANITORS CLOSETS, RECEIVING ROOMS, TEST AREAS, CIRCULATION AREAS AND SUCH AREAS SUBJECT TO DAMAGE WITHIN 10 FEET (3 METERS) OF FINISHED FLOOR.
  - PROVIDE MANUFACTURER'S RECOMMENDED PROTECTIVE COATING FOR FLEXIBLE ELASTOMERIC THERMAL INSULATION.
  - STEAM AND CONDENSATE PIPING JACKET SHALL BE STUCCO EMBOSSED.
  - FOR PIPING WITHIN ENERGY RECOVERY UNITS SHALL BE TYPE 304 STAINLESS STEEL, SMOOTH; 0.010 INCH THICK. SEAMS AND JOINTS CAULKED WITH CHEMICALLY RESISTANT SEALER.

EQUIPMENT TYPE	EQUIPMENT CATEGORY	HORSEPOWER AND OTHER	RPM	EQUIPMENT LOCATION						KEYED NOTES
				SLAB ON GRADE			UP TO 40 FT (12 M) FLOOR SPAN			
				BASE TYPE	ISOLATOR TYPE	MIN. DEFL. IN. (MM)	BASE TYPE	ISOLATOR TYPE	MIN. DEFL. IN. (MM)	
REFRIGERATING MACHINES AND CHILLERS	RECIPROCATING	ALL	ALL	A	2	0.25 (6)	A	4	2.50 (64)	NOTE 3
	CENTRIFUGAL, SCROLL	ALL	ALL	A	1a OR 1b	0.25 (6)	A	4	1.50 (38)	
	SCREW	ALL	ALL	A	1a OR 1b	1.00 (25)	A	4	2.50 (64)	
	ABSORPTION	ALL	ALL	A	1a OR 1b	0.25 (6)	A	4	1.50 (38)	
PUMPS	AIR-COOLED SCREW	ALL	ALL	A	4	1.00 (25)	B	4	2.50 (64)	NOTE 3
	OPEN CENTRIFUGAL	ALL	ALL	C	1a OR 1b	0.25 (6)	C	4	1.50 (38)	
	CLOSE COUPLED	<7.5	ALL	B	2	0.25 (6)	C	3	0.75 (19)	
		>=30	ALL	C	3	0.75 (19)	C	3	1.50 (38)	
END SUCTION AND DOUBLE SUCTION/SPLIT CASE	INLINE	5 TO 25	ALL	A	3	0.75 (19)	A	3, 8a OR 8b	1.50 (38)	
		>=40	ALL	A	3	1.50 (38)	A	3, 8a OR 8b	2.50 (64)	
		<40	ALL	C	3	0.75 (19)	C	3	1.50 (38)	
		>=150	ALL	C	3	0.75 (19)	C	3	3.50 (89)	
PACKAGED PUMP SYSTEMS	ALL	ALL	A	3	0.75 (19)	C	3	2.50 (64)		

- GENERAL NOTES:**
- KEYED NOTES:**
- THRUST RESTRAINTS: PROVIDE THRUST RESTRAINTS BETWEEN FAN DISCHARGE AND DUCT (N PAIRS, LOCATED ON THE CENTERLINE OF THE DISCHARGE OUTLET OF THE FAN, BRIDGING THE FLEXIBLE DUCT CONNECTOR) FOR ALL FAN HEADS, FOR AXIAL AND CENTRIFUGAL FANS UNITS OPERATING AT 2 INCHES OR GREATER TOTAL STATIC PRESSURE AND AS SHOWN ON DRAWINGS. SPRING DEFLECTION SHALL BE SAME AS THE SUPPORT ISOLATORS.
  - PIPING RISER ISOLATION: PROVIDE PIPE RISER RESILIENT ANCHORS, SPRING MOUNTS AND RESILIENT PIPE GUIDES CAPABLE OF DISTRIBUTING THE LOADS WITHIN THE BUILDING DESIGN LIMITS AT THE SUPPORT POINTS.
  - HORIZONTAL PIPING-VIBRATION ISOLATION: PROVIDE TYPE 8a OR 8b SPRING HANGERS FOR PIPING CONNECTED TO VIBRATION ISOLATED EQUIPMENT FOR ALL PIPING IN MECHANICAL ROOMS OR THE FOLLOWING MINIMUM HORIZONTAL DISTANCES FROM THE ISOLATED EQUIPMENT: UP TO 6" - 50 FEET (1 1/2" MINIMUM DEFLECTION), 8" AND LARGER - 100 FEET (2 1/2" MINIMUM DEFLECTION), WHICHEVER IS GREATER, AND AS SHOWN ON DRAWINGS. THE FIRST 4 HANGERS FROM THE ISOLATED EQUIPMENT SHALL BE TYPE 8b.
  - DUCTWORK VIBRATION ISOLATION: PROVIDE TYPE 8a OR 8b SPRING HANGERS FOR DUCTWORK WITH A CROSS SECTION OF 2 SQUARE FEET OR GREATER CONNECTED TO AIR HANDLING UNITS, RETURN OR RELIEF FANS, AND VIBRATION ISOLATED EQUIPMENT FOR ALL SUCH DUCTWORK IN MECHANICAL ROOMS OR FOR A MINIMUM HORIZONTAL DISTANCE OF 100 FEET FROM THE ISOLATED EQUIPMENT, WHICHEVER IS GREATER, AND AS SHOWN ON DRAWINGS (3/4" MINIMUM DEFLECTION).
  - IF SPAN DOES NOT EXCEED 20 FT, SPRING DEFLECTION MAY BE 1.0 IN AND TYPE D BASE MAY BE USED. FOR SPANS GREATER THAN 20 FT, USE SPRING DEFLECTION INDICATED AND TYPE E BASE.

- BASE TYPES:**
- BASE TYPE A - NO BASE, ISOLATORS ATTACHED DIRECTLY TO EQUIPMENT.  
 BASE TYPE B - STRUCTURAL, STEEL RAILS OR BASE.  
 BASE TYPE C - CONCRETE INERTIA BASE.  
 BASE TYPE D - CURB - MOUNTED ALUMINUM BASE WITH 1" DEFL. SPRING ISOLATORS  
 BASE TYPE E - CURB - MOUNTED STEEL BASE WITH ADJUSTABLE 1", 2" OR 3" DEFL. SPRING ISOLATORS

- ISOLATOR TYPES:**
- ISOLATOR TYPE 1a - ELASTOMERIC ISOLATION PAD.  
 ISOLATOR TYPE 1b - ELASTOMERIC ISOLATION PAD WITH STEEL LOAD BEARING PLATE.  
 ISOLATOR TYPE 2 - ELASTOMERIC FLOOR ISOLATOR.  
 ISOLATOR TYPE 3 - FREE STANDING SPRING FLOOR ISOLATOR.  
 ISOLATOR TYPE 4 - RESTRAINED SPRING ISOLATOR.  
 ISOLATOR TYPE 5 - THRUST RESTRAINT.  
 ISOLATOR TYPE 6 - AIR SPRING.  
 ISOLATOR TYPE 7 - ELASTOMERIC HANGERS.  
 ISOLATOR TYPE 8a - SPRING HANGERS.  
 ISOLATOR TYPE 8b - SPRING HANGERS WITH VERTICAL-LIMIT STOP.

PUMP SCHEDULE																								
UNIT IDENTIFICATION	SYSTEM SERVED	LOCATION	TYPE	COUPLING TYPE	WATERFLOW GPM	FLUID TYPE	COLDEST SYSTEM OPERATING TEMP. °F FOR PUMP SELECTION	PUMP HEAD FT.	OVERLOAD GPM	MINIMUM EFFICIENCY %	INDUCTION MOTOR				ELECTRONICALLY COMMUTATED MOTOR			MODULATION TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
											BHP	HP	RPM	VARIABLE FREQUENCY CONTROLLER	FLA	MOP	RPM		VOLTS	PHASE	SCRR KA (NOTE 4)	OPTIONS/ACCESSORIES		
CP-1	CH-1	BOILER ROOM	END SUCTION	FLEXIBLE	280	PG35	40	65	NON-OVERLOADING	73.4	6.59	10	1800	NON-INTEGRAL	---	---	---	MANUAL	480	3	5	---	E-1510 2.5SB	
CP-2	CH-1	BOILER ROOM	END SUCTION	FLEXIBLE	280	PG35	40	65	NON-OVERLOADING	73.4	6.59	10	1800	NON-INTEGRAL	---	---	---	MANUAL	480	3	5	---	E-1510 2.5SB	

- GENERAL NOTES:**
- REFER TO SCHEDULES GENERAL NOTES.
  - MODEL NUMBER ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.
  - FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.
  - CONTROLLER (E.G. VARIABLE FREQUENCY CONTROLLER, MOTOR STARTER) FOR SPECIFIED EQUIPMENT SHALL BE MANUFACTURED AND MARKED PER NEC WITH A MINIMUM SHORT CIRCUIT CURRENT RATING AS INDICATED.

PACKAGED AIR COOLED LIQUID CHILLER SCHEDULE																															
UNIT NUMBER	CAPACITY TONS	CHILLED WATER						COMPRESSOR MOTOR					EFFICIENCY				CONDENSER			CONDENSER FAN MOTOR			MODULATION/CONTROL TYPE			ELECTRICAL				MODEL NUMBER	KEYED NOTES
		FLOW GPM	MINIMUM OPERATING FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD	FOULING FACTOR	NUMBER OF COMPRESSOR	KW TOTAL	RLA EACH	MINIMUM FULL LOAD EER	MINIMUM IPLV (EER)	AMBIENT AIR TEMPERATURE °F	MINIMUM AMBIENT TEMPERATURE °F	QUANTITY	FLA EACH	LENGTH	HEIGHT	WIDTH	MODULATION/CONTROL TYPE	VOLTS	PHASE	MCA	MOP	SCRR KA	OPTIONS/ACCESSORIES				
CH-1	102.4	280	144.7	PG35	51.4	42	16.3	0.0001	4	123	69	10.64	17.32	95	32	6	3.3	127.8	98.6	88.0	AUTO	480	3	231	250	10	B	AG2006F			

- GENERAL NOTES:**
- REFER TO SCHEDULES GENERAL NOTES.
  - MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
  - FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

ABOVEGROUND HVAC PIPING & VALVE APPLICATION SCHEDULE																			
PIPE SIZE (INCHES)	MATERIAL					CONNECTION				ISOLATION VALVES			KEYED NOTES						
	SOFT COPPER TYPE K	HARD COPPER TYPE L	HARD COPPER TYPE M	CARBON STEEL (SCH. 40)	CARBON STEEL (SCH. 80)	COPPER TYPE DWV	SOLDERED	BRAZED	WELDED	THREADED	FLANGED	GROOVED		PRESSURE SEAL	MECHANICALLY FORMED TEE	BALL	GENERAL SERVICE BUTTERFLY	HI-PERF BUTTERFLY	GATE
CHILLED WATER SUPPLY & RETURN - MIN. WORKING PRESS. & TEMP. 125 PSIG AT 200 DEG F																			
UP TO 2	X						X	X				X	X	X					
2-1/2 TO 4		X							X	X	X					X			A
6 TO 8			X						X	X	X					X			A

- GENERAL NOTES:**
- "X" INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A PIPING SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
  - DISSIMILAR-METAL PIPING JOINTS: CONSTRUCT JOINTS USING DIELECTRIC FITTINGS COMPATIBLE WITH BOTH PIPING MATERIALS. IF A BRONZE VALVE CONNECTS THE DISSIMILAR METALS NO FURTHER DIELECTRIC ISOLATION IS REQUIRED.
    - NPS 2 AND SMALLER: USE BRASS COUPLING, NIPPLE, OR UNION.
    - NPS 2-1/2 AND LARGER: USE DIELECTRIC FLANGE KITS.
  - USE UNIONS OR FLANGES AT VALVE AND EQUIPMENT CONNECTIONS.
  - HVAC EQUIPMENT DRAINS, VENTS, SAFETY VALVE PIPING, BLOWDOWN PIPING AND THE LIKE SHALL BE SAME PIPING MATERIAL AS ASSOCIATED PIPING SYSTEM.
  - GROOVED END VALVES MAY BE USED WITH GROOVED PIPING.
- KEYED NOTES:**
- GROOVED AND FLANGED FITTINGS, JOINTS, AND COUPLINGS, IF INDICATED AS AN ACCEPTABLE SELECTION, MAY BE USED IN ACCESSIBLE LOCATIONS FOR THIS PIPING SYSTEM ONLY. ACCESSIBLE LOCATIONS ARE DEFINED AS EXPOSED CONSTRUCTION OR ABOVE LAT-IN CEILINGS.
  - BALL VALVE WITH 250 PSIG STEAM TRIM.
  - BALL VALVE WITH 150 PSIG STEAM TRIM.

**PRESCRIPTIVE INCENTIVES PROGRAM**

THE MECHANICAL CONTRACTOR SHALL INCLUDE IN HIS BID AND BE RESPONSIBLE FOR PROVIDING AND MEETING ALL REQUIREMENTS FOR THE OWNER TO PARTICIPATE IN UTILITY PROVIDER REBATE PROGRAM. THE FOLLOWING ITEMS WILL BE REQUIRED BUT NOT LIMITED TO, FOR THE OWNER TO PARTICIPATE IN THIS PROGRAM:

- ON BEHALF OF THE OWNER, PROVIDE ALL REQUIRED DOCUMENTATION FOR THE RESERVATION AND FINAL APPLICATIONS.
- CUSTOMER INFORMATION.
- CONTRACTOR INFORMATION.
- MECHANICAL INCENTIVES WORKSHEETS AS REQUIRED.
- MANUFACTURERS' EQUIPMENT SPECIFICATIONS AND CUT-SHEETS WITH MODEL NUMBERS, QUANTITIES AND ENERGY PERFORMANCE.
- ITEMIZED INVOICES.
- MEASURES ARE COMPLETELY INSTALLED WITHIN 90 DAYS OF PROJECT APPROVAL.
- THE FINAL APPLICATION MUST BE SUBMITTED WITHIN 60 DAYS OF PROJECT COMPLETION.

IT IS THE MECHANICAL CONTRACTORS RESPONSIBILITY TO CONTACT UTILITY PROVIDER REPRESENTATIVE IF A PROJECT IS DELAYED, OR SUBSTANTIALLY CHANGED.

THE MECHANICAL CONTRACTOR SHALL WORK AND COORDINATE WITH THE OWNER FOR THE RESERVATION AND FINAL APPLICATION PROCESS PRIOR TO SITE WORK BEING CONDUCTED AND POST REVIEW INSPECTION FOR REMOVAL AND INSTALLATION OF ALL EQUIPMENT RELATED TO THE INCENTIVE PROGRAM.

**SCHEDULES GENERAL NOTES:**

- TYPICAL FOR ALL SCHEDULE SHEETS:
- REFER TO ELECTRICAL STANDARD SCHEDULES, ONE LINE DIAGRAM AND PANEL SCHEDULES FOR ADDITIONAL ELECTRICAL INFORMATION.
  - PROVIDE THE FOLLOWING FACTORY-WIRED ELECTRICAL OPTIONS/ACCESSORIES WHERE INDICATED IN SCHEDULE:
    - NON-FUSED DISCONNECT SWITCH
    - UNIT SHALL BE SINGLE POINT ELECTRICAL CONNECTION WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS
    - SERVICE RECEPTACLE
    - FUSED DISCONNECT SWITCH
    - COMBINATION STARTER
    - UNIT SHALL HAVE (2) SINGLE POINT CONNECTIONS WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS. (1) CONNECTION SHALL BE FOR CONDENSING SECTION AND (1) CONNECTION SHALL BE FOR THE REMAINDER OF THE UNIT.
  - FOR MODULATION TYPE COLUMN, "AUTO" INDICATES AUTOMATIC OPERATION (CONTROLLED BY TEMPERATURE CONTROLS OR SELF CONTAINED CONTROLS), "MANUAL" INDICATES HAND OPERATION.
  - FOR VARIABLE FREQUENCY CONTROLLER COLUMN:
    - NON-INTEGRAL INDICATES THAT VARIABLE FREQUENCY CONTROLLER SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR (UNLESS OTHERWISE NOTED) AND INSTALLED BY THE ELECTRICAL CONTRACTOR, INCLUDING LINE SIDE AND LOAD SIDE WIRING TO THE MOTOR, AND INCLUDING MISCELLANEOUS STEEL FOR LOCATION.
    - INTEGRAL INDICATES THAT EQUIPMENT SHALL COME COMPLETE WITH VARIABLE FREQUENCY CONTROLLER WHICH IS FACTORY INSTALLED AND WIRED TO THE MOTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE VARIABLE FREQUENCY CONTROLLER.
    - "NONE" INDICATES THAT NO VARIABLE FREQUENCY CONTROLLER IS REQUIRED FOR THIS EQUIPMENT.
  - WHERE EQUIPMENT IS DESIGNATED TO HAVE A SINGLE POINT ELECTRICAL CONNECTION, THAT EQUIPMENT SHALL COME COMPLETE WITH FACTORY INSTALLED STARTERS, MOTOR OVERLOAD PROTECTION, CONTACTORS, FUSING AND ALL NECESSARY INTERNAL WIRING AND CONTROLS. PROVIDE A FACTORY MOUNTED UNIT DISCONNECTING MEANS WHERE THE ELECTRICAL CONTRACTOR SHALL MAKE SINGLE POINT CONNECTION. INSTALL PACKAGED EQUIPMENT SUCH THAT THE ELECTRICAL CONNECTION AND CONTROLS ARE ACCESSIBLE AND HAVE CLEARANCES MEETING THE NATIONAL ELECTRICAL CODE.
  - WHERE PACKAGED EQUIPMENT IS PROVIDED, NAMEPLATE MUST INDICATE MAXIMUM OVERCURRENT PROTECTION BY HACR RATED CIRCUIT BREAKERS OR FUSES. IF FUSE PROTECTION ONLY IS INDICATED, PROVIDE A FUSIBLE DISCONNECT AND FUSES WITH THE UNIT.
  - WHERE EQUIPMENT IS DESIGNATED BY MANUFACTURER AND MODEL NUMBER, THIS IS THE BASIS OF DESIGN. IF THE CONTRACTOR ELECTS TO PROVIDE EQUIPMENT BY OTHER SPECIFIED MANUFACTURERS OR PROPOSED ALTERNATE EQUIPMENT BY THE BASIS OF DESIGN MANUFACTURER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS TO ELECTRICAL REQUIREMENTS, STRUCTURAL LOADING, OR ARCHITECTURAL APPURTENANCES AND SHALL INCLUDE THE COST OF SUCH REVISIONS IN THEIR BID.
  - WHERE EQUIPMENT IS SCHEDULED TO INCLUDE A SERVICE RECEPTACLE, PROVIDE A FACTORY MOUNTED SERVICE RECEPTACLE WITH APPROPRIATE FUSES AND TRANSFORMERS CONNECTED ON THE LINE SIDE OF THE UNIT DISCONNECT. PROVIDE A NAMEPLATE ON THE DISCONNECT SWITCH INDICATING THE PRESENCE OF LIVE POWER TO THE SERVICE RECEPTACLE WHEN THE UNIT DISCONNECT IS IN THE OFF POSITION.
  - SIZE ALL EQUIPMENT FEEDERS BASED ON THE LISTED MOP (MAXIMUM OVERCURRENT PROTECTION). REFER TO THE FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE ON THE ELECTRICAL STANDARD SCHEDULES SHEET.

## TEMPERATURE CONTROL - SYMBOLS LIST

### SCHEMATIC SYMBOLS

SYMBOL	DESCRIPTION
AD	AQUASTAT, STRAP ON BULB
CO2	CARBON DIOXIDE SENSOR - WALL MOUNTED
CO2D	CARBON DIOXIDE SENSOR - DUCT MOUNTED
CS	CURRENT SWITCH
CT	CURRENT TRANSDUCER
DB	DAMPER - OPPOSED BLADE
DBP	DAMPER - PARALLEL BLADE
M	DAMPER MOTOR
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
ECM	ELECTRONICALLY COMMUTATED MOTOR
FA	FIRE ALARM SYSTEM, ADDRESSABLE CONTROL MODULE
FM	FLOW METER
FS	FLOW SWITCH
FZ	FREEZE/STAT
G	GUARD FOR STAT OR SENSOR
H	HUMIDIFIER
H	HUMIDISTAT OR HUMIDITY SENSOR (AS DEFINED ON TC DRAWINGS)
H	HUMIDITY SENSOR, DUCT MOUNTED
LWL	LEVEL SWITCH OR TRANSMITTER
LS	LIMIT SWITCH
---	LINE - ELECTRIC
---	LINE - INSTRUMENT AIR (PNEUMATIC)
M/S	MOTOR STARTER
OS	OCCUPANCY SENSOR
PT	PRESSURE TRANSMITTER
R	RELAY, ELECTRIC
✓N	SELECTOR SWITCH, (N=NUMBER OF POSITIONS)
⊕	SIGNAL - DDC/BAS, ANALOG INPUT
⊖	SIGNAL - DDC/BAS, ANALOG OUTPUT
Ⓚ	SIGNAL - DDC/BAS, DIGITAL INPUT
Ⓛ	SIGNAL - DDC/BAS, DIGITAL OUTPUT
Ⓜ	SIGNAL - PACKAGED EQUIPMENT, ANALOG INPUT
Ⓝ	SIGNAL - PACKAGED EQUIPMENT, ANALOG OUTPUT
Ⓟ	SIGNAL - PACKAGED EQUIPMENT, DIGITAL INPUT
Ⓠ	SIGNAL - PACKAGED EQUIPMENT, DIGITAL OUTPUT
DD	SMOKE DETECTOR - DUCT MOUNTED
S/S	START/STOP RELAY
SPT	STATIC PRESSURE TRANSMITTER
SP	STATIC PRESSURE SENSOR OR PROBE

### SCHEMATIC SYMBOLS (CONT.)

SYMBOL	DESCRIPTION
SW	SWITCH
T	TEMPERATURE SENSOR - RIGID ELEMENT IN WELL
T	TEMPERATURE SENSOR - STRAP ON BULB
T	TEMP. SENSOR - DUCT MOUNTED AVG ELEMENT
T	TEMP. SENSOR - DUCT MOUNTED RIGID ELEMENT
T	THERMOSTAT OR TEMPERATURE SENSOR (AS DEFINED ON TC DRAWINGS)
TMR	TIMER SWITCH
TR	TRANSFORMER
2W	VALVE - 2 WAY CONTROL VALVE
3W	VALVE - 3 WAY CONTROL VALVE
VFC	VARIABLE FREQUENCY CONTROLLER
VS	VELOCITY SENSOR
VS	VIBRATION SWITCH

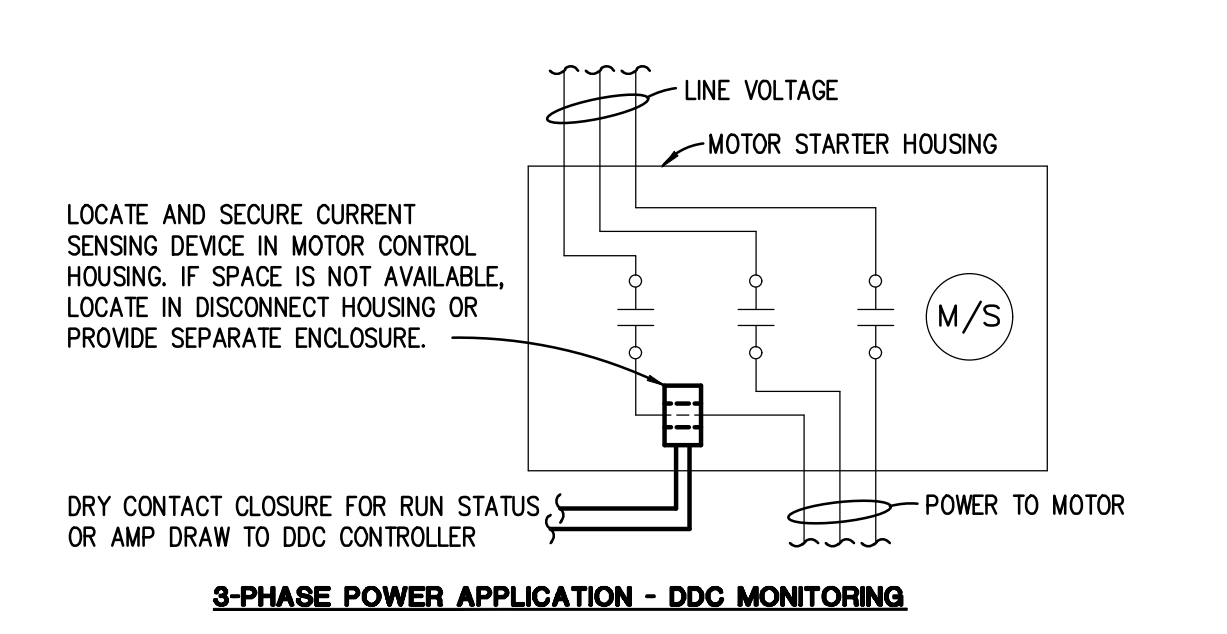
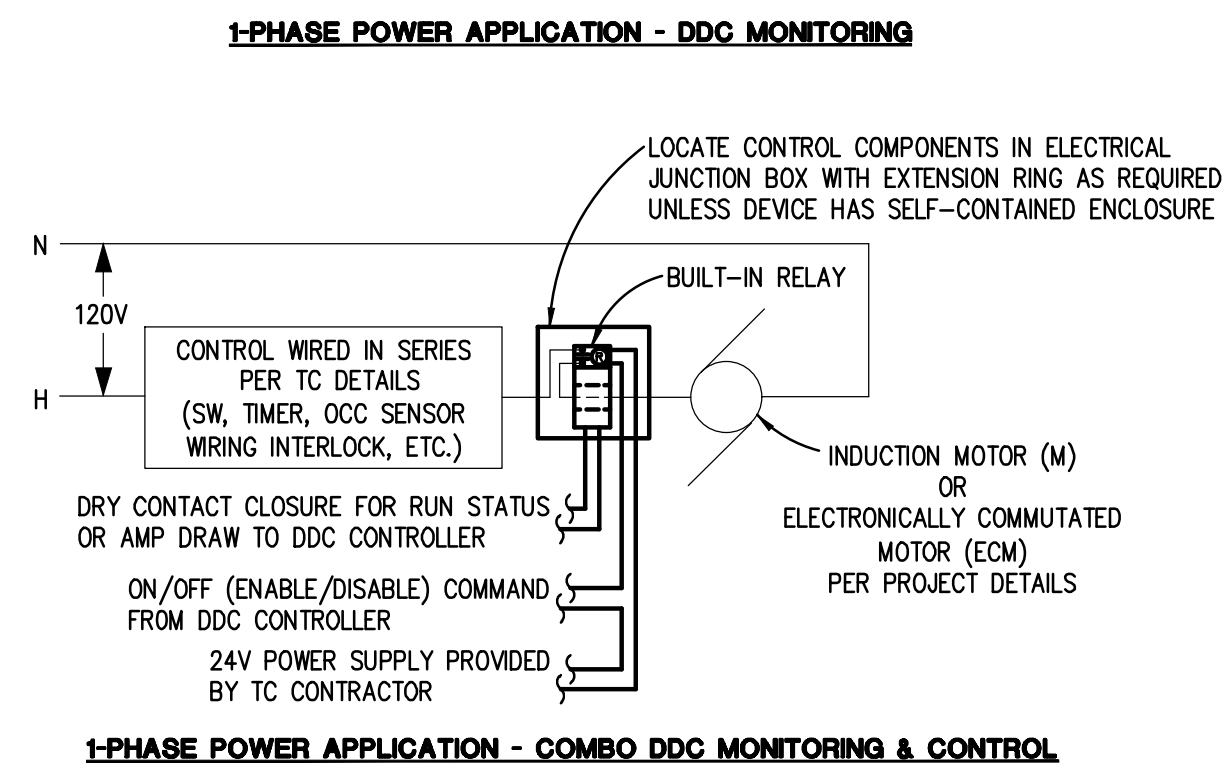
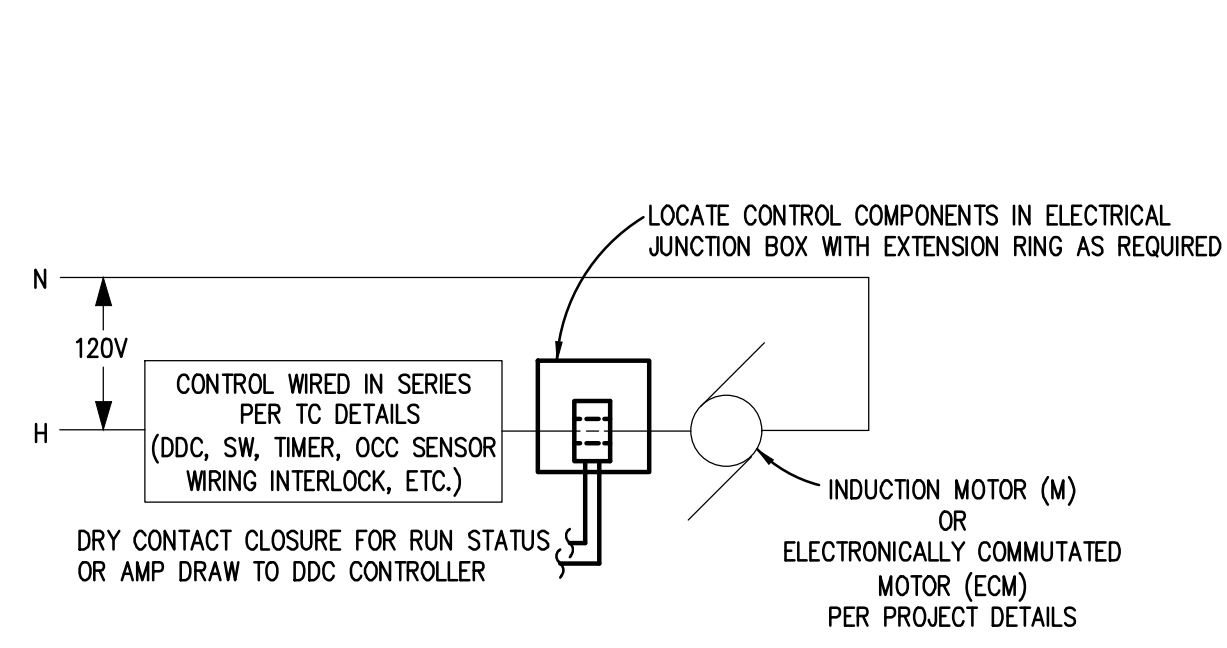
### WIRING SYMBOLS

SYMBOL	DESCRIPTION
W	COIL - MOTOR STARTER CONTACTOR
R	COIL - RELAY
Ⓚ	CONTACT - INSTANT OPERATING, NO
Ⓛ	CONTACT - INSTANT OPERATING, NC
Ⓜ	GROUND
M/S	MOTOR, SINGLE PHASE
Ⓜ	PUSH BUTTON - MOMENTARY, NC (MUSHROOM HEAD)
Ⓜ	SWITCH - 3 POSITION SELECTOR HAND/OFF/AUTO
Ⓜ	SWITCH - FLOW (AIR, WATER, ETC.), NO
Ⓜ	SWITCH - LIMIT, NO
Ⓜ	SWITCH - PRESSURE & VACUUM, NC
Ⓜ	SWITCH - TEMPERATURE ACTUATED, NO
Ⓜ	THERMAL OVERLOAD, SINGLE PHASE
Ⓜ	THERMAL OVERLOAD CONTACTS-3 PHASE
Ⓜ	TRANSFORMER
Ⓜ	WIRE TERMINATION AT DEVICE
Ⓜ	WIRE TO WIRE TERMINATION
Ⓜ	WIRING NOT CONNECTED

### ABBREVIATIONS

ABBREVIATION	DESCRIPTION
BAS	BUILDING AUTOMATION SYSTEM
DDC	DIRECT DIGITAL CONTROL
TC	TEMPERATURE CONTROLS
NO	NORMALLY OPEN
NC	NORMALLY CLOSED

- NOTES:
- SOME SYMBOLS & ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.
  - REFER TO MECHANICAL STANDARDS ON DRAWING M0.1 FOR ADDITIONAL SYMBOLS & ABBREVIATIONS THAT MAY BE USED ON TEMPERATURE CONTROL DRAWINGS.

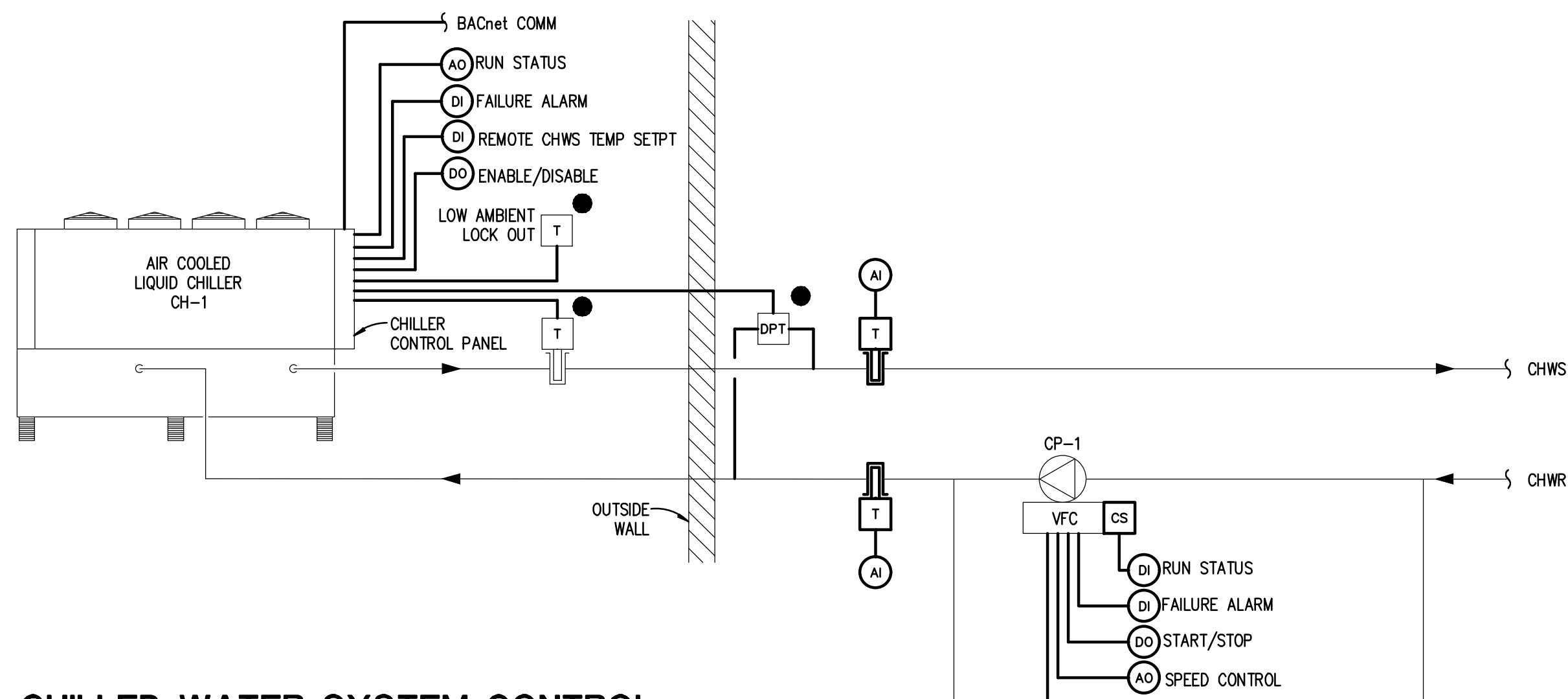


## CURRENT SWITCH INSTALLATION DETAILS

### TYPICAL

### NOTES:

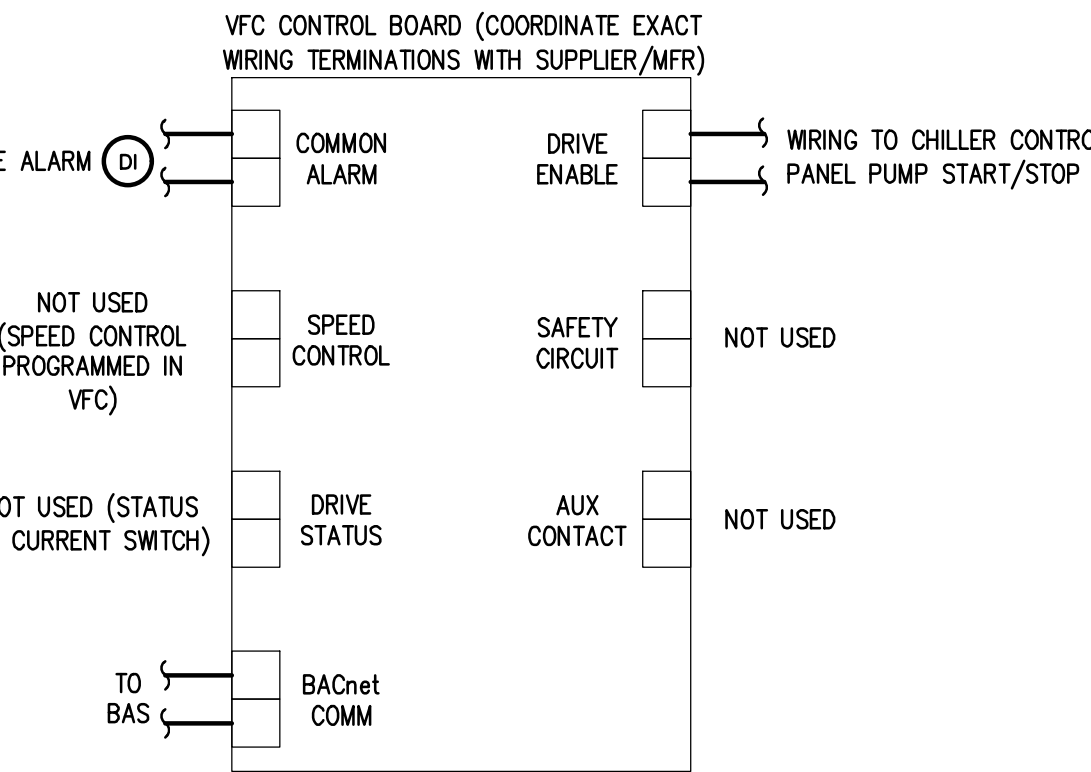
- CURRENT SWITCH (CS) OR CURRENT TRANSDUCER (CT) AMP MONITORING AS APPLICABLE PER CONTROL DETAILS SHALL BE INSTALLED FOR DDC SYSTEM STATUS INDICATION OF FAN OR PUMP OPERATION. APPROPRIATE TIME DELAY FOR STATUS FEEDBACK UPON DDC START AND STOP COMMANDS SHALL BE INCLUDED WITH THE DDC LOGIC TO AVOID NUISANCE OPERATIONAL ALARMS.
- REVIEW EQUIPMENT SHOP DRAWINGS TO DETERMINE POTENTIAL AMPERAGE RANGE OF FAN OR PUMP OPERATION. APPROPRIATE TRIP SETTING PRIOR TO SELECTING APPROPRIATE CURRENT SWITCH (MINIMUM SPEED AMPERAGE FOR PFTU WITH ECM CAN BE VERY LOW).
- FOR ECM CURRENT SWITCH APPLICATIONS: PROVIDE CURRENT SWITCH RATED FOR ECM OPERATION WITH AMPERAGE TRIP SETTING HIGHER THAN TROUBLE/IDLE/STANDBY AMPERAGE ASSOCIATED WITH ECM WHEN OFF AND AMPERAGE TRIP SETTING LOWER THAN THE MINIMUM SPEED OPERATION OF FAN OR PUMP AS SET BY THE TAB CONTRACTOR.
- FOR INDUCTION MOTOR CURRENT SWITCH APPLICATIONS (AS APPLICABLE): AMPERAGE TRIP SETTING SHALL BE ADJUSTABLE TO ACCOMMODATE VFC MINIMUM SPEED SETTING, TO DETECT FAN BELT LOSS, OR TO DETECT PUMP COUPLING DETACHMENT.
- WHEN FAN OR PUMP IS ON AND NOT IN ALARM, DDC SYSTEM SHALL TOTALIZE RUN TIME HOURS FOR OPERATOR INFORMATION FROM BUILDING AUTOMATION SYSTEM OPERATOR INTERFACE.



## CHILLED WATER SYSTEM CONTROL

### NOTE:

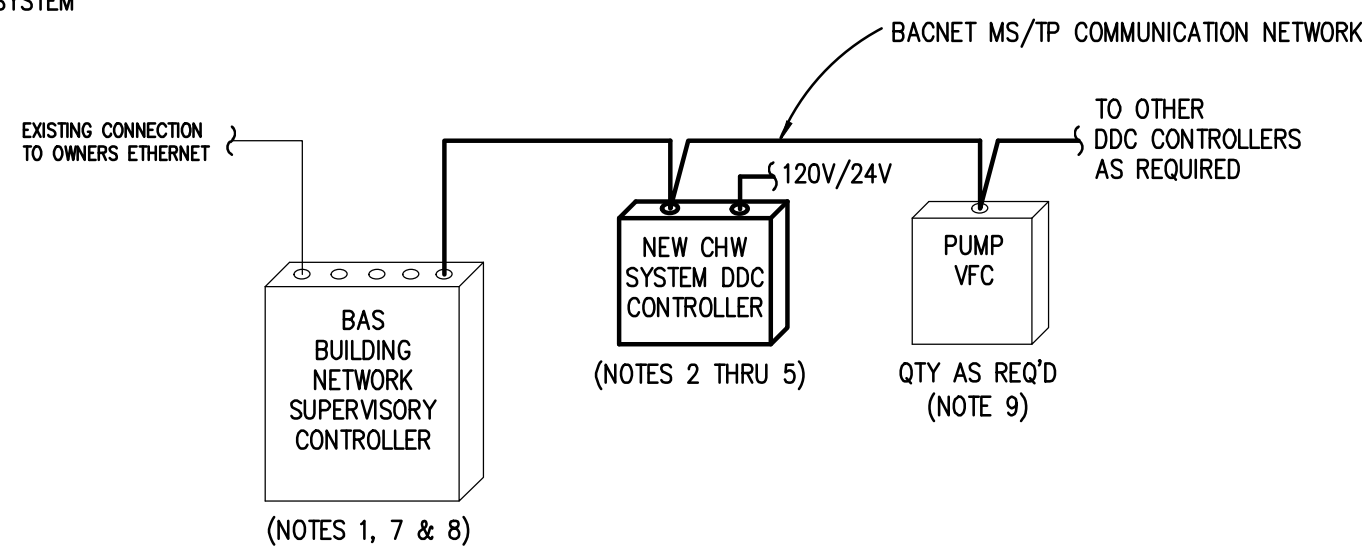
- Ⓚ DESIGNATES CHILLED WATER SYSTEM CONTROL DEVICE FURNISHED BY CHILLER MANUFACTURER AND WIRED BY TEMPERATURE CONTROLS CONTRACTOR.
- TC SHALL COORDINATE PUMP VFD MINIMUM SPEED WITH BALANCER AND CHILLER MANUFACTURER TO MAINTAIN CHILLER MINIMUM EVAPORATOR FLOW UNDER ALL LOAD CONDITIONS.



## CHW PUMP VFC WIRING

### NOTES:

- WIRING DETAIL IDENTIFIES INTENT AND DOES NOT INDICATE ACTUAL WIRING REQUIREMENTS. CONSULT WITH VFC SUPPLIER FOR THE ACTUAL WIRING REQUIREMENTS.



## BUILDING AUTOMATION SYSTEM ARCHITECTURE

### NO SCALE

### NOTES:

- EXISTING BUILDING AUTOMATION SYSTEM FOR BUILDING IS AUTOMATED LOGIC OPERATOR INTERFACE PLATFORM.
- REFER TO TEMPERATURE CONTROL SCHEMATICS FOR THE REQUIRED POINTS ASSOCIATED FOR EACH NEW HVAC SYSTEM PER MECHANICAL DRAWINGS.
- TC CONTRACTOR SHALL DETERMINE DDC CONTROLLER QUANTITY AND AUXILIARY PANEL REQUIREMENTS BASED ON POINT IDENTITIES AND LOCATIONS PER AVAILABLE MOUNTING SPACE. UNLESS SPECIFICALLY NOTED IN DESIGN DRAWINGS, TC CONTRACTOR SHALL LOCATE TEMPERATURE CONTROL PANELS WITH CONTROLLERS AND AUX COMPONENTS AS REQUIRED. COORDINATE WITH OTHER TRADES.
- TC CONTRACTOR SHALL PROVIDE REQUIRED POWER SUPPLIES AS INDICATED IN TC GENERAL NOTES.
- TC CONTRACTOR SHALL PROVIDE 24V TRANSFORMERS REQUIRED FOR TC CONTRACTOR PROVIDED CONTROLLERS AS REQUIRED. TRANSFORMERS SHALL BE LOCATED WITHIN EQUIPMENT ENCLOSURES OR OTHER TC PROVIDED ENCLOSURES TO BE LOCATED IN MECHANICAL OR ELECTRICAL ROOMS - COORDINATE LOCATIONS. MAXIMUM TRANSFORMER SIZE SHALL BE 100VA.
- TC CONTRACTOR SHALL PROVIDE AUXILIARY PANEL FOR GAUGES, TRANSMITTERS, RELAYS, POWER TRANSFORMERS, ETC.
- GRAPHICS FOR OPERATOR INTERFACE OF SYSTEMS ARE TO BE BUILT ON THE EXISTING TROJAN R4 SERVER APPLICATION SOFTWARE LOCATED ON THE DISTRICT'S IT NETWORK.
- DDC CONTROLLERS FOR PACKAGED CONTROL EQUIPMENT SHALL INCLUDE BACNET MS/TP INTERFACE CARDS FOR THIS PROJECT. TC CONTRACTOR TO PROVIDE BACNET NETWORK WIRING TO PACKAGED CONTROLLERS.
- TC CONTRACTOR SHALL PROVIDE BACNET COMMUNICATION TO VARIABLE FREQUENCY CONTROLLERS FOR NEW EQUIPMENT WHERE APPLICABLE FOR ADDITIONAL MONITORING INFORMATION. REFER TO VFC BACnet INTERFACE & MONITORING REQUIREMENTS DETAIL.

BACnet-MS/TP OPEN PROTOCOL INTERFACE TO BAS COMMUNICATING BUT NOT LIMITED TO THE FOLLOWING POINT DATA AS AVAILABLE:

- ON/OFF ACTIVE COMMAND STATUS
- ON/OFF RUN STATUS
- COMMON ALARM STATUS
- REMOTE VFC (ALARM) RESET
- CURRENT SPEED COMMAND (0-100%)
- CURRENT OPERATING FREQUENCY (Hz)
- RUNTIME HOURS
- RUNTIME HOURS RESET
- MOTOR VOLTAGE
- MOTOR AMPS
- MOTOR TORQUE
- POWER (KW)
- ACCUMULATED KWH
- ACCUMULATED KWH RESET
- DC LINK VOLTAGE
- MOTOR THERMAL (0-100%)
- INVERTER THERMAL (0-100%)
- HEAT SINK TEMPERATURE

## VFC BACnet INTERFACE & MONITORING REQUIREMENTS

### TYPICAL FOR PUMP VFCs

### NOTE:

TC CONTRACTOR SHALL COORDINATE BACnet-MS/TP OPEN PROTOCOL WIRE TERMINATION REQUIREMENTS AND POINT INTEGRATION CAPABILITIES WITH VFC SUPPLIER/MANUFACTURER AND PROVIDE APPROPRIATE BAS COMPONENTS FOR COMMUNICATION INTERFACE TO BAS.

## TC GENERAL NOTES

- THESE GENERAL NOTES SHALL BE APPLICABLE FOR ALL TEMPERATURE CONTROL (TC) DRAWINGS.
- "PROVIDE" IS DEFINED AS "FURNISH AND INSTALL".
- TEMPERATURE CONTROLS CONTRACTOR (TC CONTRACTOR) SHALL BE RESPONSIBLE TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.
- FOR TEMPERATURE CONTROL DRAWINGS ONLY: ALL DETAILED INFORMATION IDENTIFIED WITH HEAVY LINE WEIGHT SHALL BE PROVIDED BY TC CONTRACTOR. ALL OTHER INFORMATION IDENTIFIED WITH LIGHT LINE WEIGHT SHALL BE PROVIDED BY OTHER TRADES.
- ALL CONTROL SCHEMATICS AND WIRING DIAGRAMS ARE FOR THE CLARIFICATION OF EQUIPMENT INTERLOCKING FUNCTIONS AND THE INTERFACE OF VARIOUS CONTRACTORS' WORK AND SHALL NOT BE MISTAKEN AS SHOP DRAWINGS FOR ACTUAL INSTALLATION.
- TC CONTRACTOR SHALL PROVIDE DDC CONTROLLERS AS REQUIRED TO MEET INTENT OF DESIGN DOCUMENTS. REFER TO THE PLANS FOR THE DDC FUNCTIONS THAT APPLY TO EACH MECHANICAL SYSTEM.
- ALL TO PROVIDED COMPONENTS AND ALL TO CONTRACTOR INSTALLED WIRING SHALL BE LABELED PER SPECIFICATIONS.
- ALL WIRING AND SYSTEM CONTROL VOLTAGES SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATION AND THE ELECTRICAL SPECIFICATIONS.
- VARIABLE FREQUENCY CONTROLLER AND PUMP MOTOR STARTERS, STARTER WIRING, CONTROL VOLTAGE TRANSFORMERS AND ASSOCIATED POWER WIRING SHALL BE PROVIDED BY OTHER TRADES.
- ALL DDC AND CONTROL INTERLOCK WIRING SHALL BE BY TC CONTRACTOR UNLESS OTHERWISE NOTED. TC CONTRACTOR SHALL COORDINATE WITH VFC AND MOTOR STARTER SUPPLIERS TO DETERMINE EXACT WIRING REQUIREMENTS AND TERMINATION POINTS.
- ALL DDC AND CONTROL INTERLOCK WIRING BETWEEN COMPONENTS SHALL BE INSTALLED WITHOUT INTERMEDIATE STOPS. WIRE SPLICES AT INTERMEDIATE TERMINAL STRIPS IS NOT ACCEPTABLE.
- ALL ELECTRICAL WIRING AND RACEWAY SYSTEMS SHALL COMPLY WITH ELECTRICAL SPECIFICATION REQUIREMENTS. WHERE RACEWAY IS REQUIRED, TWO SEPARATE ELECTRICAL RACEWAY SYSTEMS SHALL BE PROVIDED: ONE FOR 120V WIRING AND THE OTHER FOR 24V WIRING.
- TC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER SUPPLIES REQUIRED FOR TC SYSTEM UNLESS OTHERWISE NOTED. REFER TO ELECTRICAL PANEL SCHEDULES FOR SPARE CIRCUITS OR CIRCUITS DEDICATED TO TEMPERATURE CONTROLS. COORDINATE CIRCUIT USE WITH ELECTRICAL CONTRACTOR.
- TC CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL FIELD MOUNTED COMPONENTS.
- TC CONTRACTOR SHALL PROVIDE AUXILIARY PANELS FOR REQUIRED PANEL MOUNTED EQUIPMENT SUCH AS RELAYS, TRANSDUCERS, CONTROL TRANSFORMERS, ETC. AUXILIARY PANELS SHALL BE LOCATED NEXT TO ASSOCIATED DDC PANEL. DEPENDING ON WIRE QUANTITY OR COMPLEXITY, PROVIDE CONDUITS BETWEEN PANELS OR WIRING THROUGH WITH CONDUIT STUBS ABOVE ALL ASSOCIATED PANELS.
- REMOTELY MOUNTED FIELD DEVICES SUCH AS RELAYS, CONTROL TRANSFORMERS, ETC., SHALL BE HOUSED IN AN ENCLOSURE PROVIDED BY THE TC CONTRACTOR.
- CONTROL TRANSFORMERS WHEN REQUIRED SHALL BE SIZED FOR 150% OF ACTUAL LOAD.
- CURRENT SWITCHES USED FOR OPERATIONAL STATUS SHALL HAVE CURRENT THRESHOLD SETPOINT ADJUSTED TO INDICATE BELT OR DRIVE FAILURE.
- ALL CONTROL VALVES AND ASSOCIATED CONTROL ACTUATORS IDENTIFIED ON TC DRAWINGS SHALL BE FURNISHED BY TC CONTRACTOR UNLESS OTHERWISE NOTED. DAMPER SIZE AND LOCATIONS ARE INDICATED ON MECHANICAL FLOOR PLAN DRAWINGS.
- ALL CONTROL VALVES FURNISHED BY THE TC CONTRACTOR SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR. ALL PIPE PENETRATIONS AND BASIC FITTINGS REQUIRED FOR SENSOR INSTALLATIONS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
- ALL INSTRUMENTATION TUBING REQUIRED FOR DPS AND DPT COMPONENT INSTALLATIONS SHALL BE PROVIDED BY TC CONTRACTOR.
- TC CONTRACTOR SHALL FIELD MOUNT ALL REQUIRED "SHIPPED LOOSE" PACKAGED CONTROL COMPONENTS FURNISHED BY EQUIPMENT SUPPLIERS WHERE INDICATED. ALL REQUIRED 24V AND 120V FIELD WIRING SHALL BE PROVIDED BY TC CONTRACTOR UNLESS NOTED OTHERWISE. TC CONTRACTOR SHALL COORDINATE SPECIFIC SYSTEM WIRING REQUIREMENTS WITH PACKAGED EQUIPMENT SUPPLIERS.

REVISION

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PROJECT TITLE  
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SHEET TITLE  
TEMPERATURE CONTROLS

DATE  
05-01-2026

ISSUE  
CONSTRUCTION DOCUMENTS

SHEET No.

M8.1

