

FLUID COOLER SCHEDULE																										
REMARKS: 1. FORCED DRAFT, COUNTERFLOW, BELT DRIVEN CENTRIFUGAL FAN, CLOSED CIRCUIT COOLING TOWER. 2. PROVIDE WITH INVERTER DUTY MOTOR FOR VARIABLE FREQUENCY DRIVE OPERATION, WELDED STAINLESS STEEL (304) WATER BASIN, VIBRATION CUTOUT AND KILL SWITCH, ELECTRONIC WATER CONTROL FOR BASIN WATER LEVEL CONTROL, DUAL 6" INLET/OUTLET CONNECTIONS, PVC NON-CORROSIVE SPRAY SYSTEM, 3" OVERFLOW CONNECTION, 2" DRAIN CONNECTION, 1" MAKEUP CONNECTION, GALVANIZED STEEL COIL, AND 10 KW ELECTRIC BASIN HEATER (RATED FOR 0°F OPERATION) INCLUDING TRANSFORMER AND DISCONNECT. 3. FAN MOTOR TO BE OPERATED BY VFD CONTROLLED THROUGH THE BAS. 4. SPRAY PUMP TO BE ENABLED THROUGH THE BAS. 5. ELECTRIC BASIN HEATER TO BE CONTROLLED THROUGH THE BAS. 6. TOWER SHALL BE CAPABLE OF 650 GPM WITH EWT: 102°F, LWT: 90°F AT 40°F AMBIENT TEMPERATURE WITHOUT SPRAY WATER OPERATION. (2,768,000 BTH/H OF HEAT REJECTION) 7. DIMENSIONS EXCLUDE SPRAY PUMP AND PIPING ACCESSORIES. 8. ELECTRICAL DISCONNECT AND MOTOR STARTER BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS. TOTAL OF (3) CONNECTIONS: ONE FOR THE FAN; ONE FOR THE BASIN HEATER; ONE FOR THE SPRAY PUMP.																										
GENERAL			PHYSICAL SIZE		FAN MOTOR				SPRAY PUMP		COOLING			LOOP WATER			ELECTRIC BASIN HEATER		REMARKS							
PLAN TAG	MANUFACTURER	MODEL	CONFIGURATION	DIMENSIONS (D x W x H)	WEIGHT (lbs.)	DESIGN AIRFLOW (CFM)	HP	VOLTAGE / PHASE	TYPE	CONTROL DEVICE	HP	VOLTAGE / PHASE	FLOW (GPM)	FLUID	REFILL RATE (GPM)	CAPACITY (BTU/H)	AMBIENT WET BULB TEMP (°F)	FLOW (GPM)			FLUID	PRESSURE DROP (PSI)	TEMPERATURE EWT / LWT (°F)	CONN. SIZE INLET	CONN. SIZE OUTLET	CAPACITY (kW)
FC-1	B.A.C.	VF1-1012N-702AS-Q1	(1)	12'-0" x 9'-10" x 19'-5"	26500	77,610	50	480 V / 3	INVERTER DUTY	VFD-FC1	3	480 V / 3	350	100% WATER	7.5	3,742,500	78	650	30% GLYCOL	6.71	102 / 90	6"	6"	10	480 V / 3	(2-8)

HYDRONIC PUMP SCHEDULE																				
REMARKS: 1. BASE MOUNTED, FLEXIBLE COUPLED, END SUCTION CENTRIFUGAL PUMP. 2. SEE MECHANICAL RISER DIAGRAM FOR PIPING SPECIALTIES. 3. PUMP MOTOR SHALL BE COMPATIBLE WITH A VARIABLE FREQUENCY DRIVE (SEE VFD SCHEDULE). PUMP TO BE CONTROLLED BY B.A.S. 4. EACH PUMP IS SIZED FOR 100% OF TOTAL BUILDING LOAD. 5. 3-PHASE, VFD-DRIVEN, MOTORS SHALL BE NEMA MG1 PART 31.4.4.2 (1,600 V), AND SHALL HAVE HELWIG (NO EQUALS) SHAFT-GROUNDING.																				
GENERAL						PUMP - FLOW				PUMP - SIZE				MOTOR				REMARKS		
PLAN TAG	MANUFACTURER	MODEL	SERVES	TYPE	WEIGHT (lbs.)	FLUID	GPM	HEAD (Feet H ₂ O)		MIN. EFF.	CONNECTIONS		IMPELLER DIAMETER	BHP / HP	RPM	VOLTAGE / PHASE	TYPE		CONTROL DEVICE	
								TOTAL	SHUTOUT		NPSH	SUCT.								DISCH.
P-1	BELL & GOSSETT	BG-E1510-40C-SS-324T-L	HEAT PUMP LOOP	(1)	520	30% GLYCOL	650	110	127	9.02	78.6%	5"	4"	12 1/4"	23.4 / 30	1800	480 V / 3	O.D.P.	VFD-P1	(2) (3) (4) (5)
P-2	BELL & GOSSETT	BG-E1510-40C-SS-324T-L	HEAT PUMP LOOP	(1)	520	30% GLYCOL	650	110	127	9.02	78.6%	5"	4"	12 1/4"	23.4 / 30	1800	480 V / 3	O.D.P.	VFD-P2	(2) (3) (4) (5)

VARIABLE FREQUENCY DRIVE SCHEDULE									
REMARKS: 1. VARIABLE FREQUENCY DRIVES SHALL BE SUITABLE FOR HVAC APPLICATIONS. DRIVE SHALL HAVE STANDARD ACH890 FEATURES PLUS FOLLOWING FEATURES: INTEGRAL AND LOCKABLE DISCONNECT, EM, RFI FILTERS, INPUT AC LINE REACTORS AND AUTOMATIC RESET UPON LOSS OF POWER. DRIVES SHALL NOT HAVE BY-PASS. SEE MECHANICAL SPECIFICATIONS. 2. VARIABLE FREQUENCY DRIVES SHALL BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. POWERED BY ELECTRICAL CONTRACTOR.									
PLAN TAG	MANUFACTURER	MODEL	SERVES	DIMENSIONS (D x W x H)	MOTOR HP	TYPE	VOLTAGE / PHASE	REMARKS	
VFD-FC1	ASEA BROWN	ACH890	FC-1	11" x 8" x 35"	50	TEFC	480 V / 3	(1) (2)	
VFD-P1	ASEA BROWN	ACH890	P-1	10" x 8" x 29"	30	OOP	480 V / 3	(1) (2)	
VFD-P2	ASEA BROWN	ACH890	P-2	10" x 8" x 29"	30	OOP	480 V / 3	(1) (2)	

PIPING SPECIALTY SCHEDULE					
REMARKS: 1. HIGH VELOCITY, COALESCING TYPE AIR AND DIRT ELIMINATOR. 2. 6" INLET / OUTLET, ASME RATED SECTION VIII DIV. I, AND RATED FOR 150 PSIG WORKING PRESSURE. PROVIDE WITH REMOVABLE HEAD, AIR VENT, AND BOTTOM DRAIN VALVE. SEPARATOR SHALL HAVE AIR ELIMINATION EFFICIENCY OF 100% FREE AIR, 100% ENTRAINED AIR, AND 99.6% DISSOLVED AIR AT INSTALLED LOCATION. DIRT SEPARATION SHALL HAVE MINIMUM EFFICIENCY OF 80" OF ALL PARTICLES 30 MICRON AND LARGER WITHIN 100 PASSES.					
PLAN TAG	MANUFACTURER	MODEL	SERVES	CONFIG.	REMARKS
AS-1	SPIROTHERM	VNH 600 FA	HEAT PUMP LOOP	(1)	(2)

PIPING INSULATION SCHEDULE (1) (2) (3)					
SERVICE	PIPING SIZES	INSULATION TYPE	INSULATION THICKNESS	VAPOR RETARDER	REMARKS
HEAT PUMP LOOP (HPLS & HPLR) INSIDE BUILDING	ALL	MINERAL FIBER	2"	YES	-
HEAT PUMP LOOP (HPLS & HPLR) OUTSIDE BUILDING	ALL	NONE	-	-	-
INDUSTRIAL COLD WATER (ICW) INSIDE BUILDING	ALL	MINERAL FIBER	1/2"	YES	-
INDUSTRIAL COLD WATER (ICW) OUTSIDE BUILDING	ALL	MINERAL FIBER	1"	YES	(4) (5)
FLUID COOLER DRAINS	ALL	MINERAL FIBER	2	YES	(4) (5)

- REMARKS:
1. SEE PIPING INSULATION DETAIL 1M0.0.
2. INSULATION TYPE AND THICKNESS SHALL MEET ALL REQUIREMENTS OF 2018 IECC.
3. SEE SPECIFICATION SECTIONS 22 07 20 & 23 07 20 FOR ADDITIONAL INFORMATION.
4. PROVIDE EXTERIOR RATED ALUMINUM INSULATION JACKET.
5. PROVIDE PIPE HEAT TRACING. COORDINATE WITH ELECTRICAL CONTRACTOR.

**COMcheck Software Version 4.1.5.5**
Mechanical Compliance Certificate

Project Information
Energy Code: 2018 IECC
Project Title: Norfolk Middle School Fluid Cooler Replacement
Location: Norfolk, Nebraska
Climate Zone: 5a
Project Type: Alteration

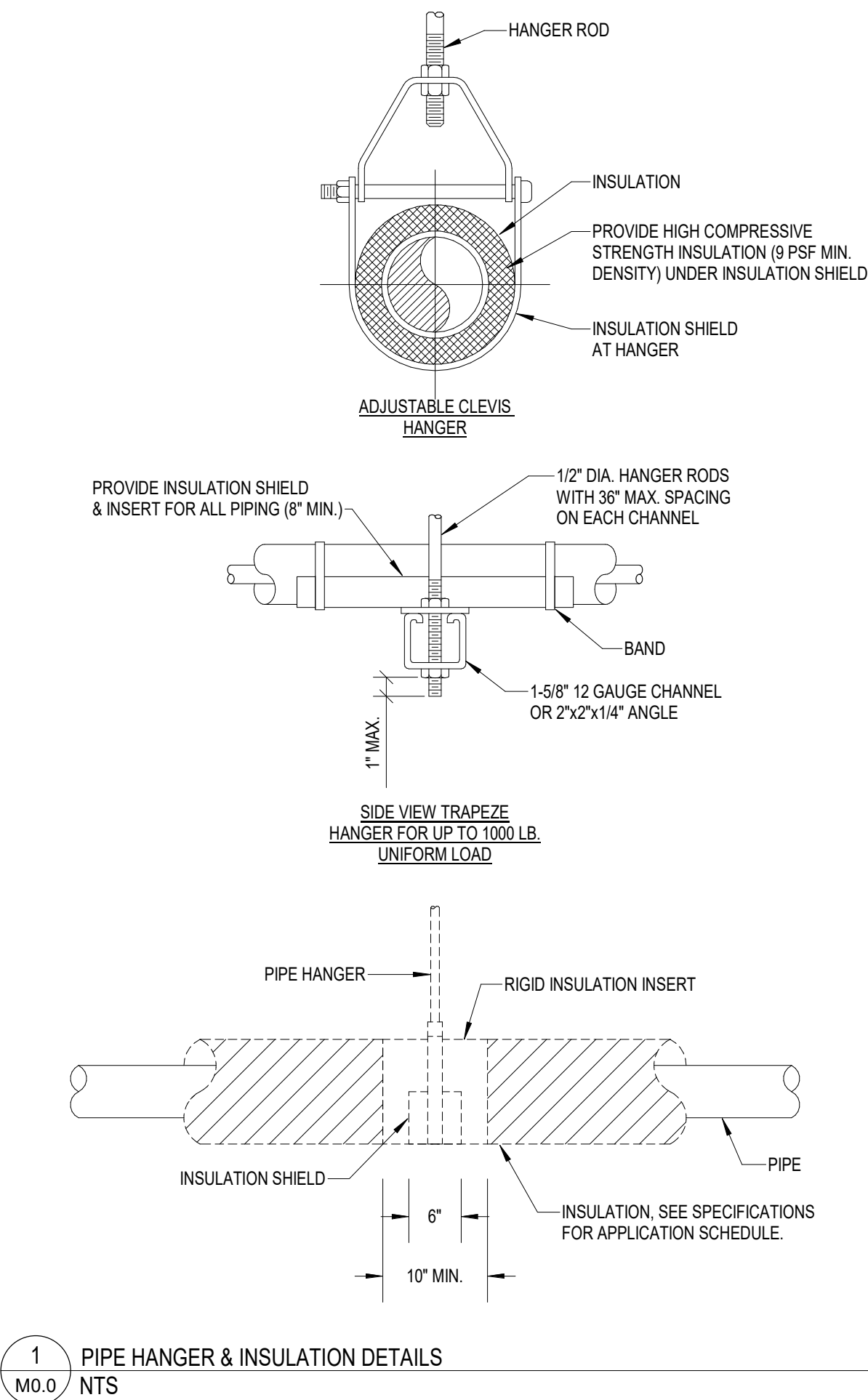
Construction Site: 1221 N. First Street
Norfolk, NE 68702
Owner/Agent: Norfolk Public Schools
512 West Phillip Avenue
PO Box 139
Norfolk, NE 68701
Designer/Contractor: Morrissey Engineering Inc.
4940 N. 138th St
Omaha, NE 68164

Mechanical Systems List
Quantity System Type & Description
1 FC-1 (Single Zone):
Cooling: 1 each - Hydronic Coil, Capacity = 3742 kBtu/h, Air Economizer
Fan System: FC-1 FAN - Compliance (Motor nameplate HP method) - Passes

Fans:
FC1 FAN Supply, Constant Volume, 77610 CFM, 50.0 motor nameplate hp, 0.0 fan efficiency grade

Mechanical Compliance Statement
Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.
Matt Kasprzak, PE - Mech Eng. Signature:  Date: 02/17/2026
Name - Title Date

Project Title: Norfolk Middle School Fluid Cooler Replacement Report date: 02/17/26
Data filename: K:\2026\26003 - Norfolk Middle School Fluid Cooler Replacement\Calculations\Mechanical\2600 Page 1 of 10
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TEMPERATURE CONTROL GENERAL NOTES

EXISTING TEMPERATURE CONTROL SYSTEM WAS INSTALLED BY RASMUSSEN MECHANICAL SERVICE (GIBSON, NE). ALL TEMPERATURE CONTROL WORK SHALL BE INCLUDED IN THE MECHANICAL CONTRACTOR'S SCOPE OF WORK AND COST, AND PERFORMED BY RASMUSSEN MECHANICAL SERVICE. CONTACT DAVE WEST WITH RASMUSSEN MECHANICAL SERVICES - 712-266-6691.

- TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL PATHWAYS AND CONTROL WIRING FOR A COMPLETE CONTROL SYSTEM.
- CONTROLS CONTRACTOR SHALL PROVIDE ALL THERMOSTATS, SENSORS, ACTUATORS, ETC. AS REQUIRED FOR THE FLUID COOLER REPLACEMENT. THE FLUID COOLER REPLACEMENT SHALL BE BACnet IP COMPATIBLE.
- EXISTING BUILDING MANAGEMENT SYSTEM CONSISTS OF HONEYWELL BACnet CONTROLLERS AND LON CONTROLLERS. EXISTING JACE CONTROLLER SERVING RENOVATION AREA SHALL BE REPLACED/UPDATED TO LATEST BACnet PROTOCOL BY THE CONTROLS CONTRACTOR.

GENERAL DEMOLITION NOTES

- ALL MECHANICAL ITEMS SHOWN ARE EXISTING. NOT ALL EXISTING MECHANICAL ITEMS ARE SHOWN. ITEMS MARKED (E) SHALL REMAIN AS IS UNLESS OTHERWISE NOTED. REMOVE ITEMS SHOWN DASHED AND/OR MARKED (D). RELOCATE ITEMS MARKED (R).
- EXISTING DRAWINGS ARE BASED ON EXISTING CONSTRUCTION DOCUMENTS AND APPROXIMATIONS FROM FIELD OBSERVATIONS. DRAWINGS ARE SCHEMATIC IN NATURE. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DEMOLITION AND INSTALLATION OF NEW WORK. CONTACT ARCHITECT/ENGINEER IF EXISTING CONDITIONS SIGNIFICANTLY VARY FROM THOSE SHOWN.
- HOLES CUT IN WALLS, FLOORS, AND CEILINGS TO PERMIT THE REMOVAL OF EQUIPMENT, PIPING, ETC. SHALL BE CAREFULLY MADE AND RESTRICTED TO THE SMALLEST PRACTICAL SIZE. PATCH ALL HOLES NOT REQUIRED FOR NEW WORK TO MATCH EXISTING.
- THE OWNER RESERVES THE FIRST RIGHT OF SALVAGE OF ANY ITEMS REMOVED. CONTRACTOR SHALL REMOVE ALL UNWANTED MATERIALS FROM THE SITE. OWNER'S DUMPISTER OR OTHER TRASH RECEPTACLES ARE NOT TO BE UTILIZED.
- COORDINATE PHASING OF DEMOLITION AND REMOVAL WITH GENERAL CONTRACTOR. PLAN ALL WORK TO MINIMIZE SHUT DOWNS. WHERE APPLICABLE, COORDINATE EXTENT OF DEMOLITION WORK WITH NEW WORK.

MECHANICAL GENERAL NOTES

- DO NOT ROUTE PIPING ABOVE ELECTRICAL PANELS. MAINTAIN ALL CODE REQUIRED CLEARANCES.
- MAINTAIN MINIMUM 10'-0" CLEARANCE TO WASTE VENTS FROM ALL FRESH AIR INTAKES.
- MAINTAIN MANUFACTURER'S REQUIRED CLEARANCE AROUND ALL MECHANICAL EQUIPMENT TO ALLOW PROPER OPERATION AND FOR EASY MAINTENANCE AND FILTER ACCESS.
- COORDINATE EXACT LOCATION OF ALL FLOOR, WALL, AND ROOF PENETRATIONS AND WORK TO BE PERFORMED ABOVE THE FLOORS AND ROOF WITH GENERAL CONTRACTOR. SEAL ALL PENETRATIONS OF EXTERIOR ENVELOPE WEATHER TIGHT.
- UNLESS OTHERWISE NOTED, ROUTE PIPING AS HIGH AS POSSIBLE. UTILIZE JOIST SPACE AND OPEN WEBBING OF JOISTS TO AVOID CONFLICTS. COORDINATE EXACT ROUTING WITH STRUCTURE, LIGHTS, DUCTWORK, AND ALL OTHER TRADES. PROVIDE NECESSARY OFFSETS, TRANSITIONS, AND EXTENSIONS AS REQUIRED TO COMPLETE INSTALLATION AT NO ADDITIONAL COST TO OWNER.
- PLANS ARE SCHEMATIC IN NATURE. PIPE ROUTING IS SHOWN FOR CLARITY AND FOR GENERAL ROUTING INFORMATION. COORDINATE EXACT ROUTING WITH ALL OTHER TRADES. PROVIDE ALL ADDITIONAL OFFSETS AS REQUIRED TO COMPLETE INSTALLATION.
- INSTALL ALL VALVES ABOVE ACCESSIBLE CEILINGS OR IN ACCESSIBLE LOCATIONS. PROVIDE ACCESS PANELS WHERE REQUIRED.
- CONNECT NEW PIPING TO EXISTING PIPING AT LOCATION INDICATED. FIELD VERIFY EXACT SIZE, LOCATION AND ELEVATION OF EXISTING PIPING PRIOR TO CONNECTION. TRANSITION, EXTEND AND OFFSET NEW PIPING AS REQUIRED TO MAKE CONNECTION AND AVOID CONFLICTS.
- DO NOT ROUTE WATER PIPING IN EXTERIOR WALLS UNLESS OTHERWISE NOTED. PIPING ROUTED IN EXTERIOR WALLS SHALL BE LOCATED ON THE INTERIOR SIDE OF INSULATION.
- FIRE CAULK ALL PIPE PENETRATIONS THROUGH FIRE RATED WALLS AND ASSEMBLIES. CAULK AROUND ALL PIPE PENETRATIONS THROUGH FULL HEIGHT SOUND WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR WALL CONSTRUCTION. ALL PENETRATIONS OF FIRE-RESISTANT CONSTRUCTION SHALL BE SEALED WITH A LISTED FIRESTOPPING ASSEMBLY BY THE CONTRACTOR RESPONSIBLE FOR THE PENETRATION.
- ALL PLUMBING SHALL BE IN ACCORDANCE WITH THE LOCAL PLUMBING CODE. NOT ALL CLEANOUTS SHOWN. PROVIDE CLEANOUTS AS REQUIRED PER AUTHORITY HAVING JURISDICTION. COORDINATE CLEANOUT LOCATIONS WITH GENERAL CONTRACTOR.

MECHANICAL SYMBOLS			
SYMBOL		DESCRIPTION	
TYPICAL PIPING		SYMBOL	DESCRIPTION
+	+	PIPE TEE / PIPE ELBOW	UNION
→	→	ELBOW DN / ELBOW UP	STRAINER
→	→	ISOLATION VALVE (BALL OR BUTTERFLY)	CHECK VALVE (ARROW INDICATES FLOW)
→	→	BALANCING VALVE	AUTOMATIC CONTROL VALVE TWO-WAY/THREE-WAY
→	→	GATE VALVE	PRESSURE REGULATING VALVE (PRV)
→	→	AIR VENT	PRESSURE GAUGE
→	→	PRESSURE/TEMPERATURE TEST PORT	THERMOMETER

ENERGY CODE COMPLIANCE		
CODE	2018 IECC	
ComCHECK	YES	(1)
COMMISSIONING	YES	(2)(3)(4)
TAB REPORT	YES	(3) (4)

REMARKS:

- ComCHECK COMPLIANCE REPORT CAN BE FOUND ON THIS SHEET.
- COMMISSIONING IS REQUIRED.
- REQUIRED DOCUMENTS (REFER TO CODE) SHALL BE PROVIDED TO THE BUILDING OWNER OR OWNER REPRESENTATIVE WITHIN 90 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY.
- SEE RESPECTIVE SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION.

PIPING ABBREVIATIONS	
DESCRIPTION	ABBV.
Heat Pump Loop Return	HPLR
Heat Pump Loop Supply	HPLS
Industrial Cold Water	ICW
Sanitary	IW

MECHANICAL SYMBOLS, NOTES, DETAILS, & SCHEDULES

NORFOLK MIDDLE SCHOOL FLUID COOLER REPLACEMENT
1221 N. FIRST STREET NORFOLK, NE 68702

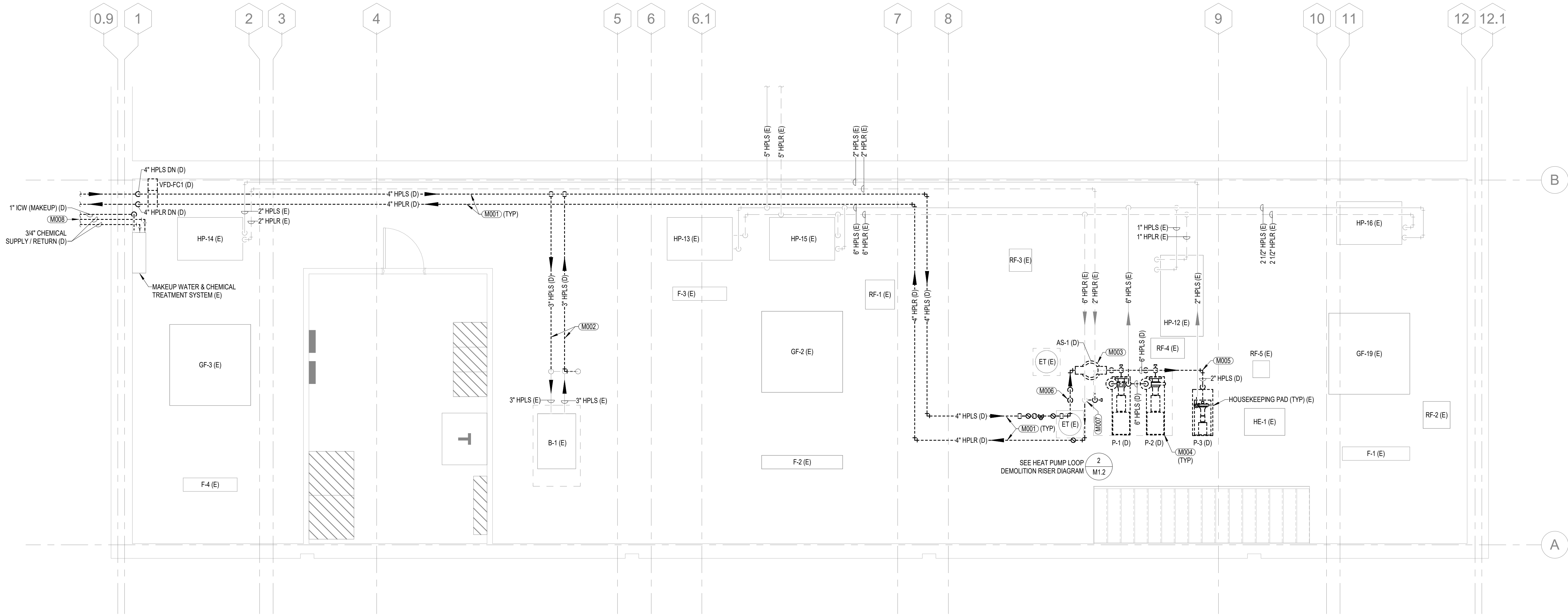


date: 03/04/2026
project number: 26003
designed by: MCK
drawn by: KWM
sheet number:

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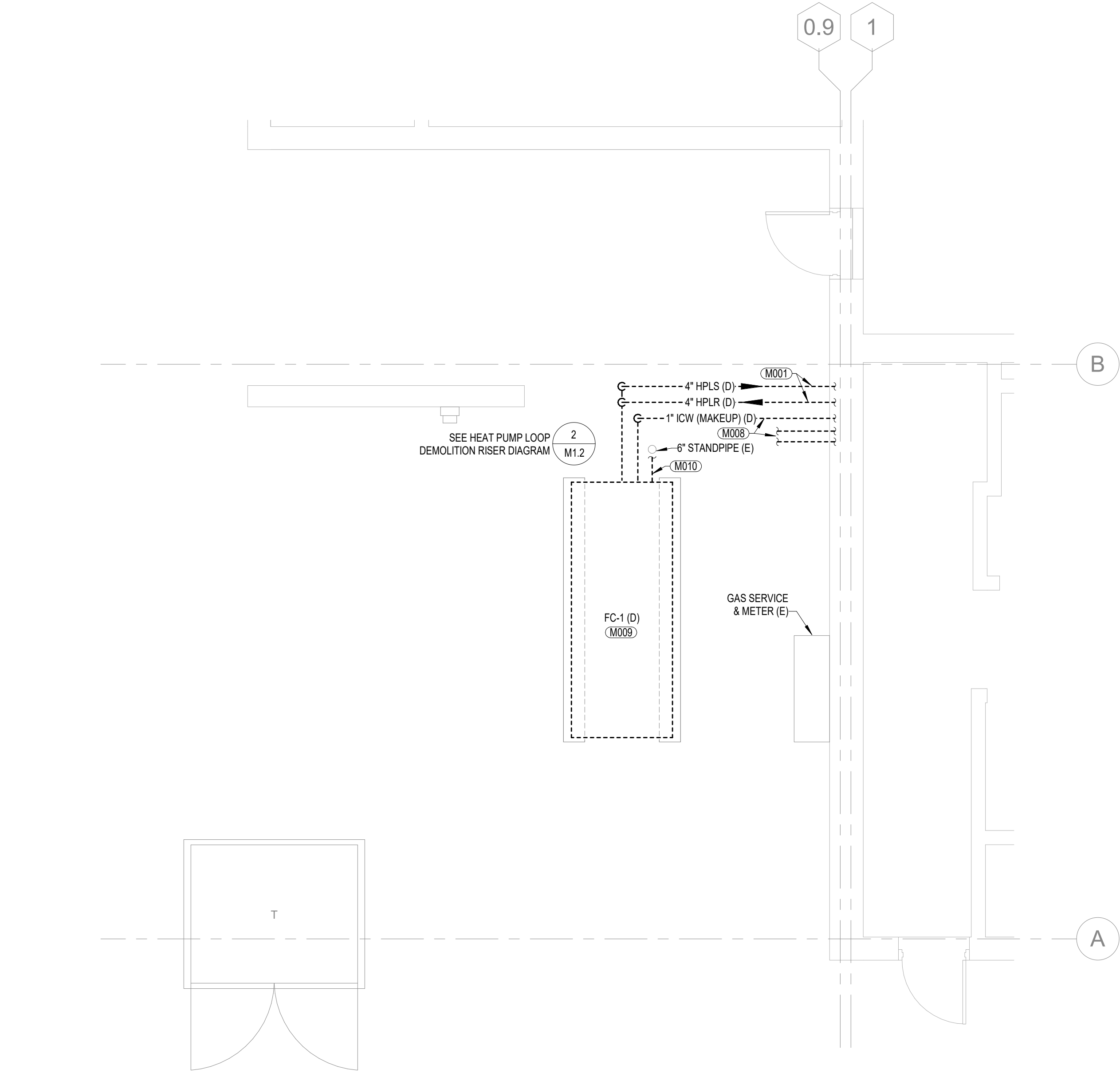
1
MD1.1
1/4" = 1'-0"
0 1 2 4 8

PARTIAL SECOND FLOOR PLAN - MECHANICAL DEMOLITION



2
MD1.1
1/4" = 1'-0"
0 1 2 4 8

PARTIAL FIRST FLOOR PLAN - MECHANICAL DEMOLITION



- KEYNOTES**
- M001 REMOVE EXISTING 4" HPLSR PIPING TO / FROM EXISTING FLUID COOLER COMPLETE.
 - M002 REMOVE EXISTING 3" HPLS TO / FROM EXISTING BOILER SHOWN DASHED COMPLETE. COORDINATE EXTENT OF REMOVAL WITH NEW WORK.
 - M003 REMOVE EXISTING AIR SEPARATOR COMPLETE.
 - M004 REMOVE EXISTING HYDRONIC PUMP COMPLETE.
 - M005 REMOVE EXISTING HPLS HEADER TO PUMPS COMPLETE.
 - M006 REMOVE EXISTING HPLS RISER DOWN TO CONNECTION TO EXISTING EXPANSION TANKS (APPROXIMATELY 4'-6" ABOVE FINISHED FLOOR). COORDINATE EXTENT OF REMOVAL WITH NEW WORK.
 - M007 REMOVE PORTION OF HPLR RISER AS REQUIRED TO MAKE CONNECTIONS IN NEW WORK. COORDINATE EXTENT OF REMOVAL WITH NEW WORK.
 - M008 REMOVE 1" MAKEUP WATER & 3/4" CHEMICAL SUPPLY / RETURN PIPING SHOWN DASHED COMPLETE. COORDINATE EXTENT OF REMOVAL WITH NEW WORK.
 - M009 REMOVE EXISTING FLUID COOLER AND ALL ASSOCIATED PIPING AND ACCESSORIES COMPLETE.
 - M010 REMOVE EXISTING OVERFLOW, DRAIN, AND CHEMICAL DRAIN PIPING AND VALVES COMPLETE.

PARTIAL FLOOR PLANS - MECHANICAL DEMOLITION

NORFOLK MIDDLE SCHOOL FLUID COOLER REPLACEMENT

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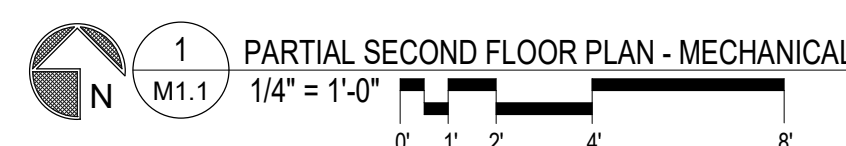
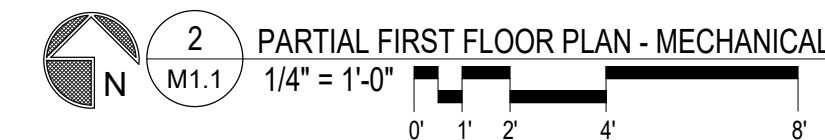
project number: 26003

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MD1.1



M101 DO NOT REMOVE PIPING OVER ELECTRICAL PANELS. MAINTAIN ALL CODE
REQUIRED CLEARANCES.

M102 CONNECT NEW PIPING TO EXISTING PIPING AT LOCATION INDICATED. FIELD
VERIFY SIZE, LOCATION AND ELEVATION OF EXISTING PIPING PRIOR
TO CONNECTION. TRANSITION, EXTEND AND OFFSET CONNECTIONS
REQUIRED TO MAKE CONNECTION TO EXISTING CONDUITS.

M103 ROUTE PIPING TO FLOOD COOLER BOTTOM OF PIPE APPROXIMATELY 5' ABOVE
REMOVED HANG PIPING (BOTTOM OF PIPE APPROXIMATELY 5' ABOVE
FINISHED FLOOR) TO AVOID CONFLICTS WITH EXISTING DUCTWORK, PIPING
AND CONDUITS. ELEVATION TO BE MAINTAINED.

M104 ROUTE PIPING TO FLOOD COOLER BOTTOM OF PIPE APPROXIMATELY 5' ABOVE
REMOVED HANG PIPING (BOTTOM OF PIPE APPROXIMATELY 5' ABOVE
FINISHED FLOOR) TO AVOID CONFLICTS WITH EXISTING DUCTWORK, PIPING
AND CONDUITS. ELEVATION TO BE MAINTAINED.

M105 ROUTE PIPING TO PUMPS WITH BOTTOM OF PIPE APPROXIMATELY
1' ABOVE FINISHED FLOOR.

M106 ROUTE PIPING TO FLOOD COOLER, 1" MAKEUP WATER & 3/4"
CHEMICAL SUPPLY / RETURN PIPING THROUGH EXTERIOR WALL WITH
CONNECTIONS TO PIPES APPROXIMATELY 10" ABOVE GRADE. EXISTING
PIPING PENETRATIONS THROUGH WALL. EXPAND PENETRATIONS AS
REQUIRED FOR NEW, LARGER PIPES. INFILL BRICKS AND SEAL
PENETRATIONS WEATHER.

M107 CONNECT NEW 3/4" CHEMICAL SUPPLY / RETURN PIPING TO EXISTING
CHEMICAL TREATMENT SYSTEM COORDINATE WITH CHEMICAL TREATMENT
SUPPLIER.

M108 PROVIDE NEW FLOOD COOLER ON STRUCTURAL FOOTINGS. SEE STRUCTURAL
DETAIL FOR FOOTING DETAILS.

M109 OFFSET PIPES TO FLOOD COOLER UP TO ELEVATION OF INLETS ON BOTTOM
OF PIPE APPROXIMATELY 1' ABOVE GRADE.

M110 OFFSET PIPES FROM FLOOD COOLER DOWN TO ELEVATION OF OUTLETS ON
FLOOD COOLER BOTTOM OF PIPE APPROXIMATELY 10" ABOVE GRADE.

M111 OFFSET PIPES TO FLOOD COOLER DOWN TO ELEVATION OF OUTLETS ON
FLOOD COOLER BOTTOM OF PIPE APPROXIMATELY 10" ABOVE GRADE.
CONNECTIONS TO PIPES TO FLOOD COOLER TO PROVIDE SELF-BALANCING BETWEEN
CONNECTIONS.

M112 ROUTE MAKEUP WATER DOWN TO ELEVATION OF MAKEUP WATER
CONNECTION ON FLOOD COOLER BOTTOM OF PIPE APPROXIMATELY 5'-8"
ABOVE GRADE. SLOPE MAKEUP WATER PIPING DOWN TOWARDS FLOOD
COOLER. ALLOW FOR FLOOD COOLER TOLERANCES.

M113 ROUTE CHEMICAL SUPPLY / RETURN PIPING TO FLOOD COOLER. COORDINATE
CONNECTIONS LOCATIONS WITH CHEMICAL TREATMENT SUPPLIER. SLOPE
CHEMICAL SUPPLY / RETURN PIPING DOWN TOWARDS FLOOD COOLER TO
ALLOW FOR DRAINAGE.

M114 ROUTE 3" OVERFLOW, 2" DRAIN, AND 3/4" CHEMICAL DRAIN TO EXISTING 6"
STANDPIPE. MODIFY EXISTING 6" STANDPIPE TO ACCOMMODATE
ADDITIONAL DRAINING INTO EXISTING 6" STANDPIPE. MAINTAIN REQUIRED AIR GAP
BETWEEN PIPES AND STANDPIPE.

M115 REUSE EXISTING PIPING SUPPORTS. MODIFY AS REQUIRED FOR NEW PIPING.
REMOVE EXISTING HPS PRIOR TO INSTALLATION OF NEW PIPING.

M116 VALVE AND CAP PIPING HPS DRAIN FOR FUTURE PUMP CONNECTION TO SERVICE
EXISTING HP-1.

M117 VALVE AND CAP PIPING HPS FOR FUTURE CONNECTION TO SERVICE EXISTING
HP-2.

M118 VALVE AND CAP PIPING HPS FOR FUTURE CONNECTION TO SERVICE EXISTING
HP-3.

[illegible][illegible]

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M1.1

1. WHERE INDICATED AS NEW, PROVIDE A 4" CONCRETE HOUSEKEEPING PAD BELOW EACH PIECE OF MECHANICAL EQUIPMENT. WHERE INDICATED AS EXISTING, EXTEND EXISTING PADS AS REQUIRED TO ACCOMMODATE NEW EQUIPMENT. COORDINATE EXACT PAD SIZES WITH ACTUAL EQUIPMENT DIMENSIONS. PADS SHALL BE A MINIMUM OF 6" LARGER THAN EQUIPMENT FOOTPRINT IN ALL DIRECTIONS. CHAMFER PAD EDGES. COORDINATE LOCATION OF PADS WITH GENERAL CONTRACTOR. DOWEL ALL PAD EXTENSIONS INTO EXISTING PADS.

2. EQUIPMENT CONNECTIONS SHOWN ARE TYPICAL EACH PIECE OF EQUIPMENT. CONNECTIONS INDICATE MINIMUM REQUIREMENTS. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. NOTIFY ENGINEER IN CASE OF DISCREPANCY.

3. PROVIDE DRAIN VALVES AT ALL LOW POINTS OF PIPING TO ALLOW COMPLETE DRAINAGE OF ALL SYSTEMS. PROVIDE HOSE CONNECTION AT EACH DRAIN OR PIPE TO FLOOR DRAIN.

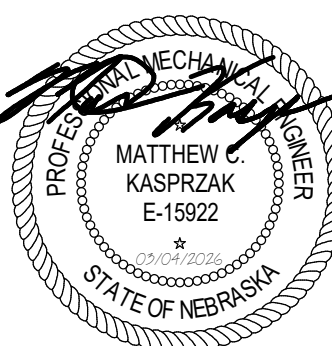
4. PROVIDE AIR VENTS AT ALL HIGH POINTS IN PIPING SYSTEMS.

- #### 5. INSTALL ALL VALVES, GAUGES, ETC. IN ACCESSIBLE LOCATIONS

6. PROVIDE SENSOR WELLS AS REQUIRED FOR FOR TEMPERATURE CONTROL SYSTEM. COORDINATE REQUIREMENTS WITH TEMPERATURE CONTROL CONTRACTOR.



NORFOLK MIDDLE SCHOOL FLUID COOLER REPLACEMENT
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M1.2

9. LOCATION OF CONTROL DEVICES ON PLAN IS DIAGRAMMATIC FOR CLARITY. LOCATE DEVICES IN ELECTRICAL ROOM SERVING CIRCUIT.

13. ELECTRICAL CONTRACTOR SHALL PROVIDE ROUGH IN FOR ALL THERMOSTATS AND/OR SENSORS. ROUGH-IN TO INCLUDE 4" SQUARE BOX WITH SINGLE GANG MUD RING AND 1/2" CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING. LOCATE BOX AT 44" AFF ALIGNED VERTICALLY AND HORIZONTALLY WITH ADJACENT ELECTRICAL DEVICES. REFER TO MECHANICAL DRAWINGS FOR THERMOSTAT AND/OR SENSOR LOCATIONS.

[illegible]

MECHANICAL CONNECTION SCHEDULE NOTES:
1. ROUTE CIRCUIT FOR PUMP VIA ASSOCIATED VFD. SEE PLANS FOR LOCATION

E201	PROVIDE A NEW 400/3 CIRCUIT BREAKER IN SPACE IN EXISTING GE SPECTRA SERIES SWITCHBOARD. PROVIDE NEW COVERS AND MODIFICATIONS TO SWITCHBOARD AS NECESSARY TO ACCOMMODATE NEW CIRCUIT BREAKER.
E204	PROVIDE A NEW 175/3 CIRCUIT BREAKER IN SPACE IN EXISTING GE SPECTRA SERIES SWITCHBOARD. PROVIDE NEW COVERS AND MODIFICATIONS TO SWITCHBOARD AS NECESSARY TO ACCOMMODATE NEW CIRCUIT BREAKER.

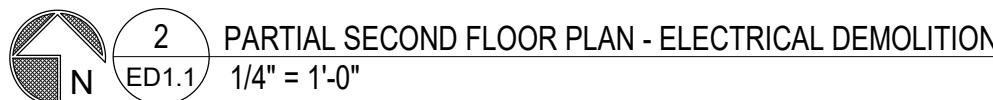
Notes:

E201	PROVIDE A NEW 400/3 CIRCUIT BREAKER IN SPACE IN EXISTING GE SPECTRA SERIES SWITCHBOARD. PROVIDE NEW COVERS AND MODIFICATIONS TO SWITCHBOARD AS NECESSARY TO ACCOMMODATE NEW CIRCUIT BREAKER.
E204	PROVIDE A NEW 175/3 CIRCUIT BREAKER IN SPACE IN EXISTING GE SPECTRA SERIES SWITCHBOARD. PROVIDE NEW COVERS AND MODIFICATIONS TO SWITCHBOARD AS NECESSARY TO ACCOMMODATE NEW CIRCUIT BREAKER.

[illegible]

sheet

E0.0



KEYNOTES

- | | |
|------|---|
| E001 | REMOVE EXISTING ELECTRICAL CONNECTIONS TO PUMPS BEING REMOVED COMPLETE. REMOVE EXISTING CONDUIT, WIRING, STARTERS, VFDs AND OTHER ELECTRICAL EQUIPMENT ASSOCIATED WITH PUMPS INDICATED AS BEING REMOVED. |
| E003 | PROTECT EXISTING ELECTRICAL EQUIPMENT THROUGHOUT PROJECT. REPAIR OR REPLACE ELECTRICAL EQUIPMENT THAT IS DAMAGED DURING CONSTRUCTION. CIRCUIT CONTINUITY IS TO BE MAINTAINED TO ALL EXISTING EQUIPMENT. |
| E004 | REMOVE EXISTING STARTERS SERVING DESIGNATED PUMPS. REMOVE ASSOCIATED WIRING AND ELECTRICAL GEAR. REMOVE PUMPS AND REMOVAL WITH MECHANICAL CONTRACTOR. |
| E006 | REMOVE EXISTING CONDUIT AND WIRING SERVING SENSORS TO BE RELOCATED. COORDINATE NEW LOCATIONS WITH MECHANICAL CONTRACTOR. PROVIDE CONDUIT AND WIRING FOR NEW LOCATIONS. NEW CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING: CONDUIT ROUTING WITH WITH ENGINEER PRIOR TO RUGH-IN. ANY EXPOSED CONDUIT IN FRONT-OF-HOUSE SPACES SHALL BE PAINTED. |
| E007 | REMOVE EXISTING ELECTRICAL CONNECTIONS TO FLUID COOLER BEING REMOVED COMPLETE. REMOVE EXISTING CONDUIT, WIRING, STARTERS, VFDs AND OTHER ELECTRICAL EQUIPMENT ASSOCIATED WITH PUMPS INDICATED AS BEING REMOVED. |

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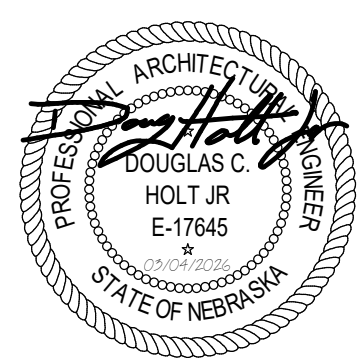
4940 North 118th Street
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PARTIAL FLOOR PLANS - ELECTRICAL DEMOLITION

NORFOLK MIDDLE SCHOOL FLUID COOLER REPLACEMENT
1221 N. FIRST STREET NORFOLK, NE 68702



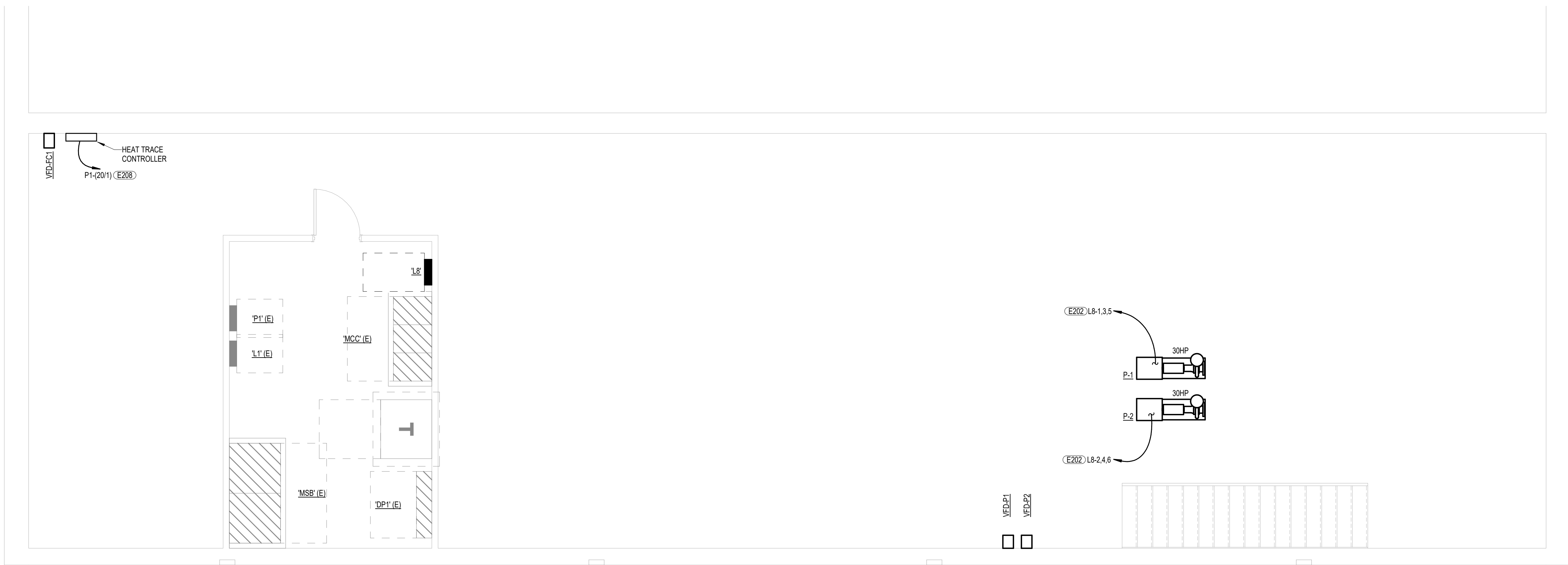
date:	03/04/2026
project number:	26003
designed by:	d. holt
drawn by:	d. holt
sheet number:	

ED1.1

1
E2.1 PARTIAL FIRST FLOOR PLAN - POWER
1/4" = 1'-0"



2
E2.1 PARTIAL SECOND FLOOR PLAN - POWER
1/4" = 1'-0"



KEYNOTES

- E202 ROUTE CIRCUIT FOR PUMP VIA ASSOCIATED VFD.
- E205 PROVIDE HEAT TAPE TO PREVENT FREEZING OF PIPES TO FLUID COOLER FC-1. PROVIDE SELF-REGULATING HEAT TRACE CABLE, DELTA-THERM #C02040-4-CBT. SEE 2/M1.1 AND 1/M1.2 ON THE MECHANICAL DRAWINGS FOR EXACT LOCATION, LENGTH, AND QUANTITY OF PIPES THAT REQUIRE HEAT TRACE. PROVIDE HEAT TRACE FOR ENTIRE EXTERIOR LENGTH OF PIPE FROM THE FLUID COOLER TO THE EXTERIOR FACE OF THE BUILDING. PROVIDE AMBIENT PIPE SENSING ELECTRONIC THERMOSTAT WITH EMBEDDED SENSOR, DELTA-THERM #OTS-F1 FOR EACH PIPE THAT REQUIRES HEAT TRACE. LOCATE SENSOR IN LOCATION ON PIPE THAT WOULD POTENTIALLY BE THE COLDEST SO THAT SYSTEM CAN PREDICT FREEZING CONDITIONS. LOCATE TEMPERATURE SENSOR AT PIPES PER MANUFACTURER'S RECOMMENDATION. PROVIDE ALL CONNECTORS, TEMPERATURE SENSING COMPONENTS, MOUNTING ACCESSORIES, AND OTHER PARTS AS REQUIRED FOR A COMPLETE HEAT TRACE SYSTEM. LOCATE HEAT TRACE CONTROLLER IN MECHANICAL ROOM ON THE 2ND FLOOR.
- E206 ROUTE CONDUIT FROM FC-1 UNDERGROUND TO WALL. ROUTE CONDUIT UP WALL AND LB INTO MECHANICAL ROOM ON 2ND FLOOR. UTILIZE TWO-HOLE STRAPS FOR CONNECTION OF CONDUIT TO SIDE OF BUILDING AND PAINT CONDUIT AND FASTENERS TO MATCH SIDE OF BUILDING. REUSE EXISTING WALL PENETRATIONS AS MUCH AS POSSIBLE. SEAL ALL PENETRATIONS WEATHER TIGHT WITH SILICONE.
- E207 PROVIDE NEW CIRCUIT BREAKER OF SIZE INDICATED IN EXISTING GE PANELBOARD. IF NECESSARY, REMOVE SPARE CIRCUIT BREAKERS TO ACCOMMODATE ADDITION OF NEW CIRCUIT BREAKER. TURN REMOVED CIRCUIT BREAKERS OVER TO OWNER.
- E208 PROVIDE NEW CIRCUIT BREAKER OF SIZE INDICATED IN EXISTING GE PANELBOARD. PROVIDE CIRCUIT BREAKER WITH 30mA GFI PROTECTION. IF NECESSARY, REMOVE SPARE CIRCUIT BREAKERS TO ACCOMMODATE ADDITION OF NEW CIRCUIT BREAKER. TURN REMOVED CIRCUIT BREAKERS OVER TO OWNER.

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