

PROJECT: **COOLING TOWER REPLACEMENT
GUILFORD COUNTY SCHOOLS
HAIRSTON MIDDLE SCHOOL
3911 NACO RD
GREENSBORO, NC 27401**

CONSTRUCTION DOCUMENTS

December 12, 2022

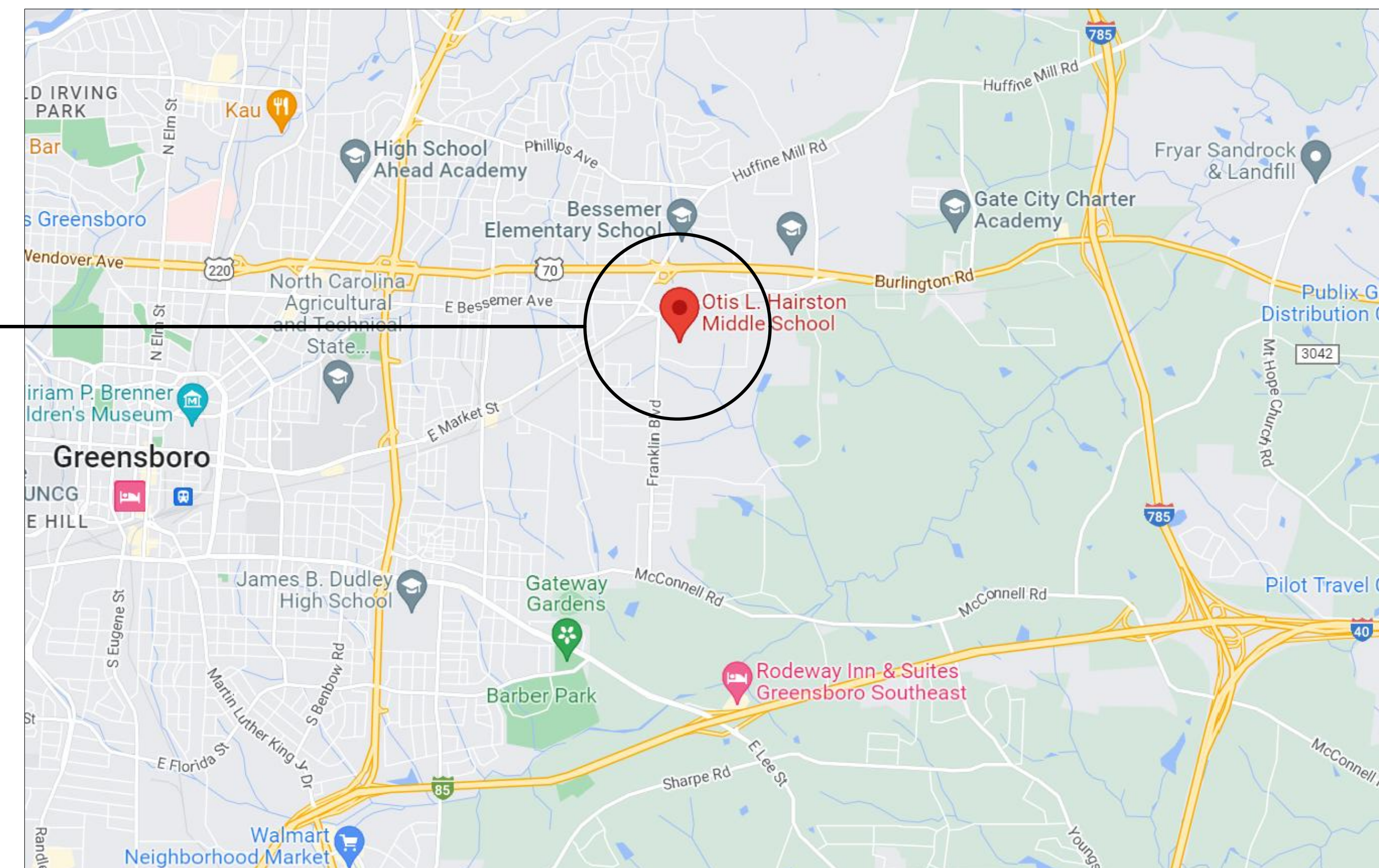
DESIGNER: **SUD ASSOCIATES, P.A.**

COMPANY LICENSE C-0315
PROJECT NUMBER NC16X001
DRAWING DATE 12/12/2022

OWNER'S REPRESENTATIVE: MR. TRACY NANCE
PROGRAM ADMINISTRATOR-HVAC

Sheet List Table	
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---	COVER
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HAIRSTON MIDDLE SCHOOL



COVER SHEET

	REVISIONS			PROJECT NUMBER NC16X002
	ID	DATE	COMMENTS	REVIEWED BY MES
				DESIGNED BY MES/MJS
				DRAWN BY MJS/SEH
				DRAWING DATE 12/12/2022
			SHEET NUMBER	COVER

SCOPE OF WORK:

THE EXISTING TWIN FAN COOLING TOWER SYSTEM WILL BE REMOVED AND REPLACED.
 A NEW COOLING TOWER WILL BE INSTALLED AT THE SAME LOCATION WITH AN ADJUSTMENT TO THE WIDTH OF THE SUPPORTING I BEAMS
 EXISTING CONDENSER PUMPS AND HX WILL BE REUSED.
 EXISTING DDC CONTROLS WILL BE REUSED WITH MODIFICATIONS AND POINTS ADDED TO ACCOMPLISH A TEMPERATURE RESET.
 ELECTRICAL WILL REUSE EXISTING POWER WITH SOME MODIFICATIONS, A NEW CIRCUIT WILL BE RUN FOR BASIN HEATERS.

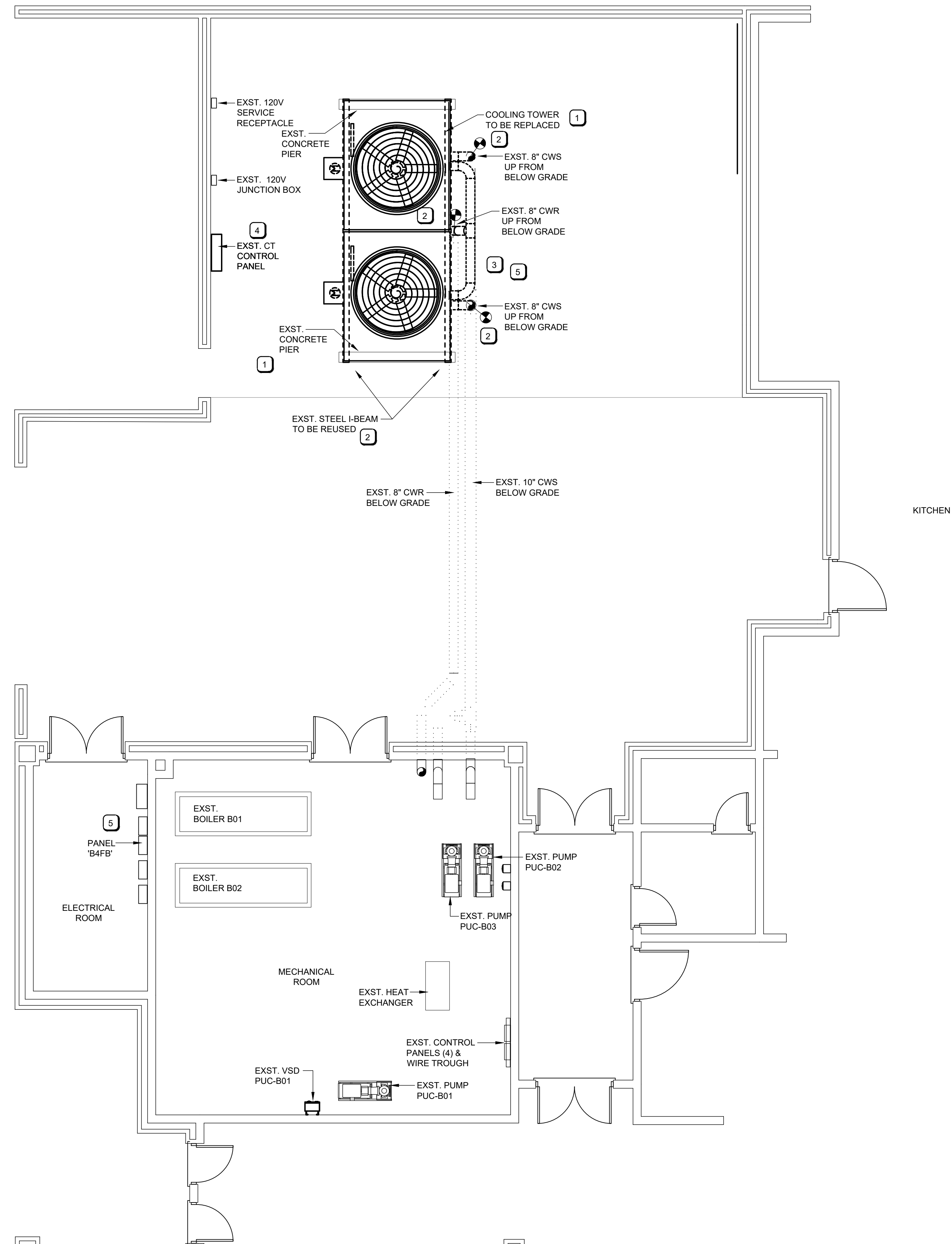
Control Scope/sequence:

Base bid: Confirm the proper operation of the existing controls with the engineer during controls check out at the end of the project. Modify programming to maintain 60F water as a minimum setting using the boilers. Incorporate the VSD on the fans to maintain condenser supply water setpoint. The tower fan will come on at a loop supply temperature of 80F and remain on at min speed until supply water is back down to 70F. Vary fan speed with linear reset of min speed at 60F and full speed at 85F. No PID.
 Confirm the building pump VFD properly slows down with reduced load using the DP sensor.
 Coordinate with mechanical contractor to have temperature sensors installed where required.

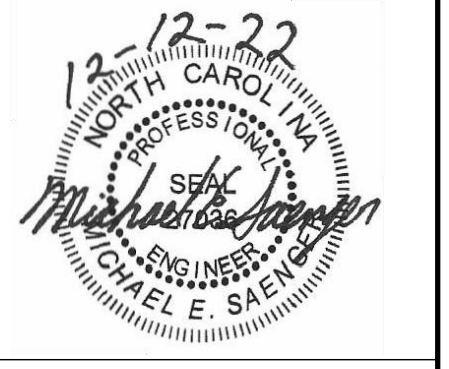
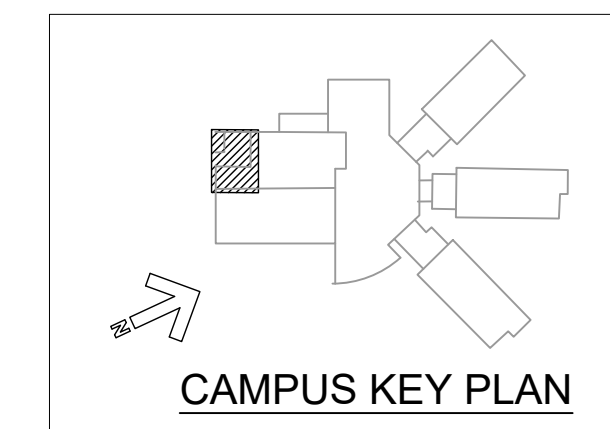
KEYED NOTES - MECHANICAL:

DEMOLITION

- 1 The existing twin cell tower will be replaced. Remove electrical wiring to tower, referring to electrical notes. The existing steel support I beams will be removed, painted, and reused. Adjust width to match tower. Contractor to adjust for the tower supplied. See new work.
- 2 Remove existing piping as needed to allow connections for new tower. This included CWS, CWR, drains. Level sensor will be replaced with new level sensor. Control wiring to be reused.
- 3 Existing make up water valve in boiler room to be reused.
- 4 Existing tower control cabinet will be removed and disconnects installed. Conduit will be reused to outside location. A new VSD located in the boiler room will supply power to the fans. A new circuit will be run to the basin heater.
- 5 See electrical drawings for details of rerouting power to the tower fans.



1 PARTIAL FIRST FLOOR PLAN - MECHANICAL DEMOLITION
 M-101 3/16" = 1'-0"



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**COOLING TOWER REPLACEMENT
 HAIRSTON MIDDLE SCHOOL**
 GUILFORD COUNTY SCHOOLS
 GUILFORD COUNTY, NORTH CAROLINA
 MECHANICAL - SCOPE & DEMOLITION

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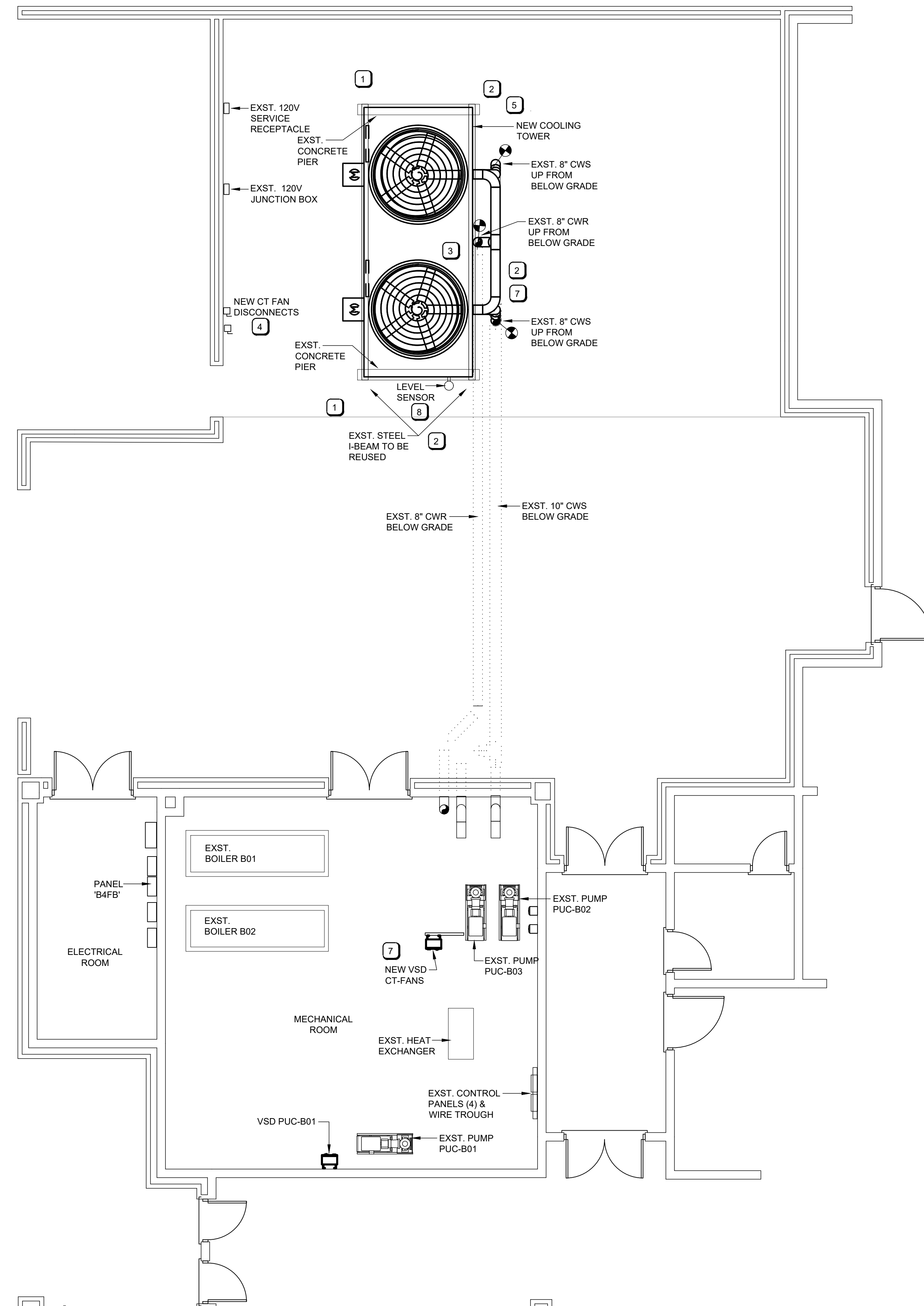
REVISIONS		
ID	DATE	COMMENTS

PROJECT NUMBER	NC16X002
REVIEWED BY	MS
DESIGNED BY	MJM/MS
DRAWN BY	MJS/SEH
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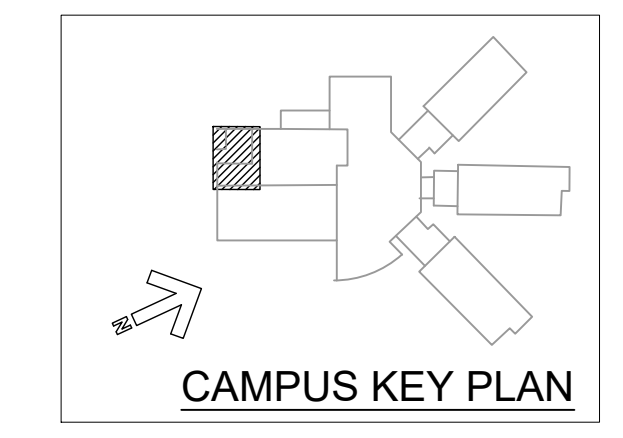
KEYED NOTES - MECHANICAL:

NEW WORK

- 1 Clean and paint existing steel I beams.
- 2 Set new tower on steel and secure. Reconnect CWS and CWR. Existing piping can be reused to the extent possible but adjusted for new connections. Piping to be insulated. Reuse existing heat trace and aluminum jacketed.
- 3 Reconnect drain and overflow piping.
- 4 Install disconnects at location where control panel was located. See electrical drawings. Underground conduit to tower from electrical room can be reused.
- 5 Tower to come with basin heater control panel with disconnect. Mount on side of tower and wire back to new breaker in electrical room.
- 6 Reinstall temperature sensors in piping at tower at the approximate location as before.
- 7 Mount tower fan VFD, 20 hp, at location shown on uni-strut frame. Power from existing tower control panel breaker to be routed to VFD overhead then back to route in existing conduit out to tower.
- 8 Install new basin level sensor on tower similar to existing installation. Reuse existing wiring to operate existing make up water valve. Insulate and heat trace new basin level sensor.



1 PARTIAL FIRST FLOOR - MECHANICAL - NEW WORK
M-102 3/16" = 1'-0"



SUD ASSOCIATES, P.A.
CONSULTING ENGINEERS
LICENSE NO. C-0315
PROJECT #NC16X002



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COOLING TOWER REPLACEMENT
HAIRSTON MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
GUILFORD COUNTY, NORTH CAROLINA
MECHANICAL - NEW WORK

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PROJECT NUMBER: NC16X002
 REVIEWED BY: MS
 DESIGNED BY: MS/MJS
 DRAWN BY: MJS/SEH
 DRAWING DATE: 12/12/2022
 SHEET NUMBER:

M-1.2
OF

90 SOUTHSIDE AVE. SUITE 350
ASHVILLE, NC 28601
(828) 255-4691

1813 CHAPEL HILL ROAD
NORTH CAROLINA 27707
(919) 483-5277

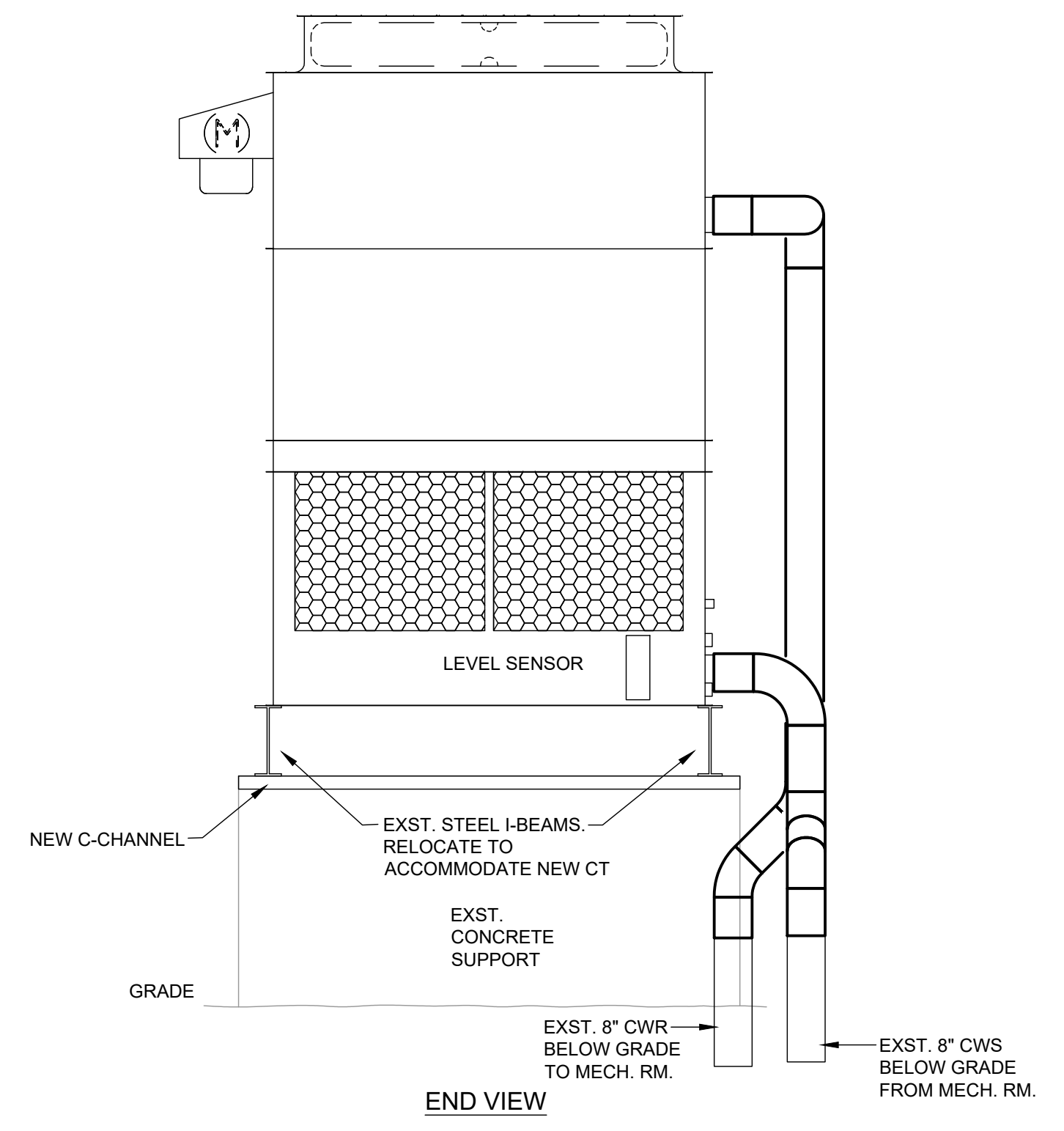
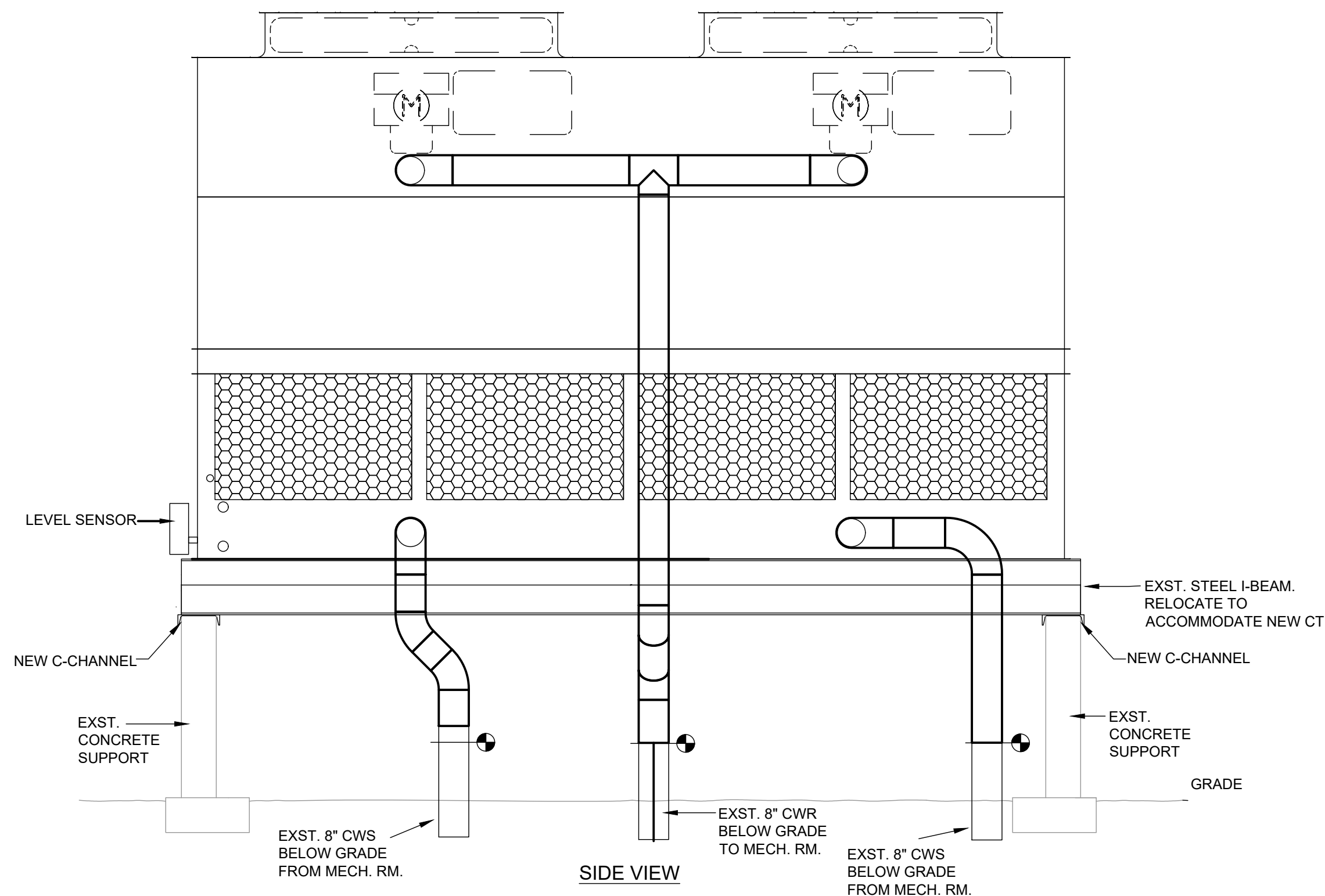
GENERAL MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
---	NEW PIPING OR EQUIPMENT
---	EXISTING PIPING OR EQUIPMENT
---	DEMO PIPING OR EQUIPMENT
HWR	HOT WATER RETURN PIPING
HWS	HOT WATER SUPPLY PIPING
CHWR	CHILLED WATER RETURN PIPING
CHWS	CHILLED WATER SUPPLY PIPING
CWR	CONDENSER WATER RETURN PIPING
CWS	CONDENSER WATER SUPPLY PIPING
DTR	DUAL TEMPERATURE WATER RETURN PIPING
DTS	DUAL TEMPERATURE WATER SUPPLY PIPING
GTR	GEOHERMAL WATER RETURN PIPING
GTS	GEOHERMAL WATER SUPPLY PIPING
SR	SOLAR WATER RETURN PIPING
SS	SOLAR WATER SUPPLY PIPING
	FLEXIBLE DUCT
□	SUPPLY AIR DIFFUSER
□	RETURN AIR DIFFUSER
□	EXHAUST AIR DIFFUSER
□	SUPPLY AIR DIFFUSER TAG
□	RETURN AIR DIFFUSER TAG
□	EXHAUST AIR DIFFUSER TAG
□	SUPPLY DUCT UP OR DOWN
□	RETURN DUCT UP OR DOWN
□	EXHAUST DUCT UP OR DOWN
BD	MANUAL BALANCING DAMPER
	BACKDRAFT DAMPER
M	AUTOMATIC DAMPER
S	SMOKE DAMPER
FD	FIRE DAMPER
F/S	COMBINATION FIRE/SMOKE DAMPER
□	BALL/BUTTERFLY VALVE
□	GLOBE VALVE
□	GATE VALVE
□	CONTROL VALVE - TWO WAY
□	CONTROL VALVE - THREE WAY
TDV	TRIPLE DUTY VALVE
□	PRESSURE RELIEF VALVE
□	AUTO FLOW VALVE
□	CHECK VALVE
□	CIRCUIT SETTER
	UNION
Y	Y STRAINER
□	PUMP
□	AIR VENT
VSD	VARIABLE SPEED DRIVE
T	TEMPERATURE SENSOR AND THERMOMETER
P	PRESSURE SENSOR AND PRESSURE GAUGE
AF	AIR FLOW MONITORING STATION
T	THERMOSTAT
M	METER
CO2	CO2 SENSOR
SD	DUCT SMOKE DETECTOR
---	1 HOUR FIRE WALL
---	2 HOUR FIRE WALL
+	POINT OF CONNECTION - NEW TO EXISTING

COOLING TOWER		
IDENTIFICATION	NEW CT-1	
MANUFACTURER **	EVAPCO	
MODEL NUMBER	AT 29-3H21	
DESCRIPTION	INDUCED DRAFT, COUNTER FLOW	
OPERATING WEIGHT (LBS)	16,950	
SIZE: LENGTH X WIDTH X HEIGHT (FT)	21'-0" X 8'-5 1/2" X 13'-3/4"	
CONNECTIONS: INLET/OUTLET	(2) 8" / (2) 8"	
CHILLER COOLING LOAD (TONS)	390	
PERFORMANCE	GPM	1172
	EWI	95
	LWT	85
	AMBIENT WET BULB (DESIGN)	78 F
	STATIC LIFT	
FAN(S)	HP	(2) 10
	CFM	90,500
ELECTRIC IMMERSION BASIN HEATERS	NUMBER	2
	AMBIENT TEMPERATURE DEGREES F	3
	KW	5
	VOLTS	460
ELECTRICAL	PHASE	3
	SOUND PRESSURE AT 50'	AIR INLET FACE / CASED FACE / FAN DISCHARGE FACE
SOUND	MAXIMUM dB A WEIGHTED SOUND PRESSURE LEVEL	- / - / -

NOTES:
 ** BASIS OF DESIGN
 1. PROVIDE ADJUSTABLE SPEED DRIVES AND PREMIUM EFFICIENCY INVERTER DUTY MOTORS FOR FANS.
 2. PROVIDE STAINLESS STEEL BASIN.
 3. PROVIDE SERVICE LADDER.
 4. PROVIDE ELECTRONIC LEVEL CONTROLLER.
 5. PROVIDE BASIN HEATERS, BASIN CONTROLS, AND FAN VIBRATION SENSOR.
 6. PROVIDE FAN LOW NOISE OPTION.
 7. PROVIDE DISCONNECT ON BASIN HEATER CONTROL PANEL.

MECHANICAL GENERAL NOTES:

1. THE BUILDING PLANS ARE BASED ON INFORMATION PROVIDED BY THE OWNER. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, QUANTITIES, AND CONDITIONS PRIOR TO WORK. OWNER WILL NOT APPROVE ANY CHANGE ORDERS RESULTING FROM CONTRACTOR'S FAILURE TO FIELD VERIFY. DRAWINGS ARE NOT SCALED TO DETERMINE ACTUAL DIMENSIONS.
2. THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE APPROXIMATE LOCATION OF EQUIPMENT AND PIPING. MINOR ADJUSTMENTS AND OFFSETS SHALL BE PROVIDED WHERE REQUIRED AT NO ADDITIONAL COST TO THE OWNER. COORDINATE CHANGES IN ROUTING OR OTHER WORK WITH THE ENGINEER PRIOR TO PROCEEDING.
3. EXISTING AREAS WHETHER WITHIN OR WITHOUT THE "GENERAL LIMITS OF CONSTRUCTION", SHALL BE REPAIRED WHERE ANY DAMAGE HAS OCCURRED DUE TO CONSTRUCTION BY THE CONTRACTOR.
4. ALL PENETRATIONS SHOULD BE REUSED TO EXTENT POSSIBLE. PATCH NEW AND EXISTING PENETRATIONS TO MATCH EXISTING WALL CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR SEALING ALL PENETRATIONS THROUGH ALL WALLS TO PREVENT SOUND TRANSFER. GROUT OR GYPSUM WALL BD. "MUD" MAY BE USED FOR NON RATED WALLS. PENETRATIONS THROUGH RATED WALLS SHALL BE MADE PER UL DETAILS PROVIDED.
5. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE NORTH CAROLINA STATE MECHANICAL CODE.
6. UNLESS OTHERWISE INDICATED, MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, CORE-DRILLING AND PATCHING OF FLOORING AND WALLS AS REQUIRED TO MATCH EXISTING CONDITIONS.
7. ALL SHUTDOWNS OF THE EXISTING UTILITIES SHALL BE SCHEDULED IN ADVANCE WITH OWNER.
8. ALL EQUIPMENT, BOTH EXISTING AND NEW, SHALL BE LABELED WITH PERMANENT LABELS, PROPERLY AFFIXED TO THE EQUIPMENT.
9. PROPER FIRE WATCH TO BE MAINTAINED AT ALL TIMES DURING WELDING OR OPEN FLAME USE.
10. THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. COORDINATE WORK SO THAT UTILITIES ARE OPERATIONAL WHEN NEEDED IN OCCUPIED AREAS.
11. INSTALL THERMAL WELLS OR TAPS IN PIPING WHERE NEW ONES ARE REQUIRED FOR CONTROL COMPANY. THEY WILL PROVIDE THERMAL WELLS.
12. INSTALL CONTROL VALVES, PROVIDED BY CONTROL COMPANY, WHERE SHOWN.



1 ELEVATION VIEW OF NEW COOLING TOWER
 M-500 3/8" = 1'-0"

SUD ASSOCIATES, P.A.
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 LICENSE NO. C-0315
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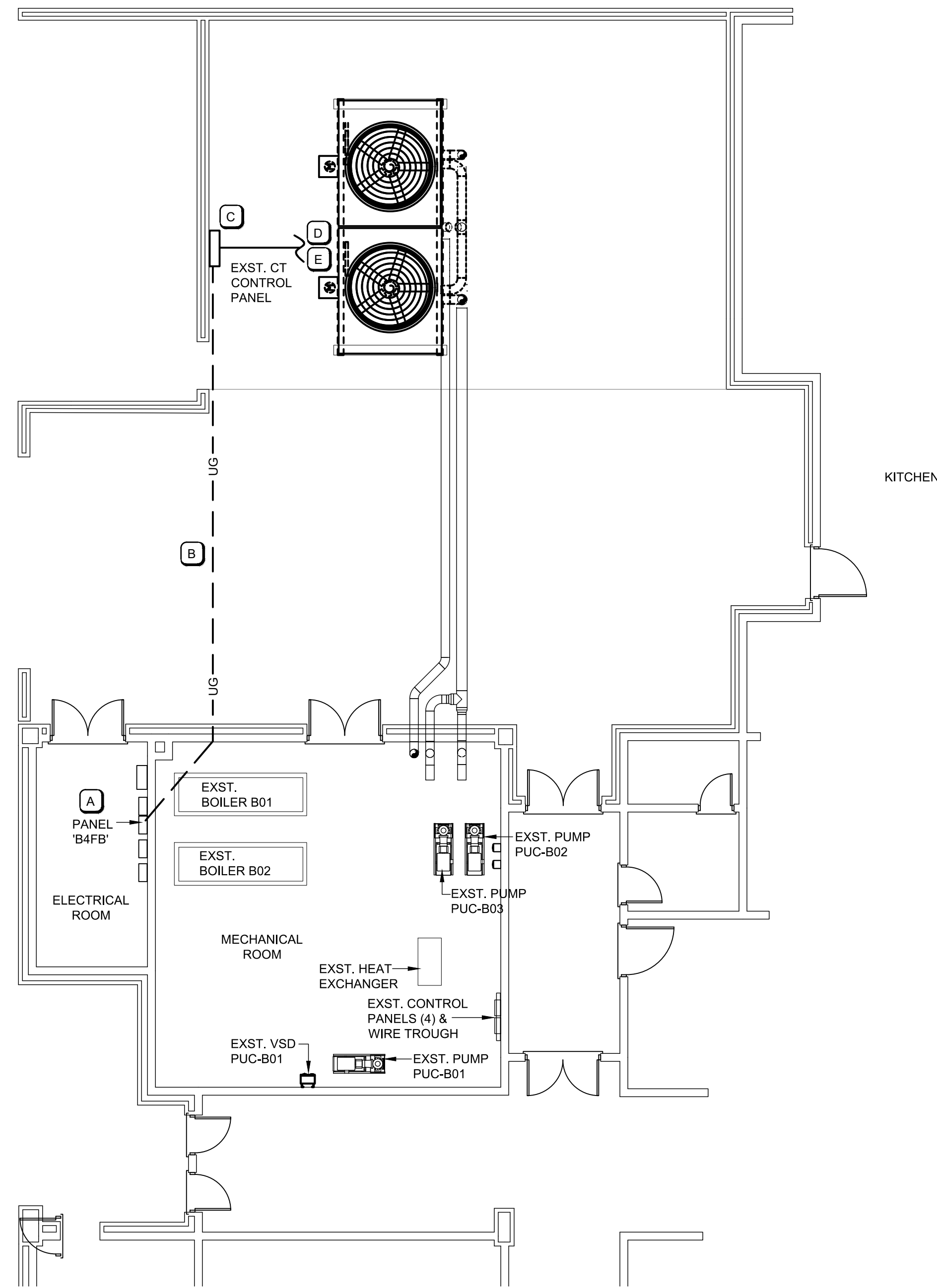
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 MECHANICAL - SCHEDULES, NOTES,
 LEGEND & SEQUENCE

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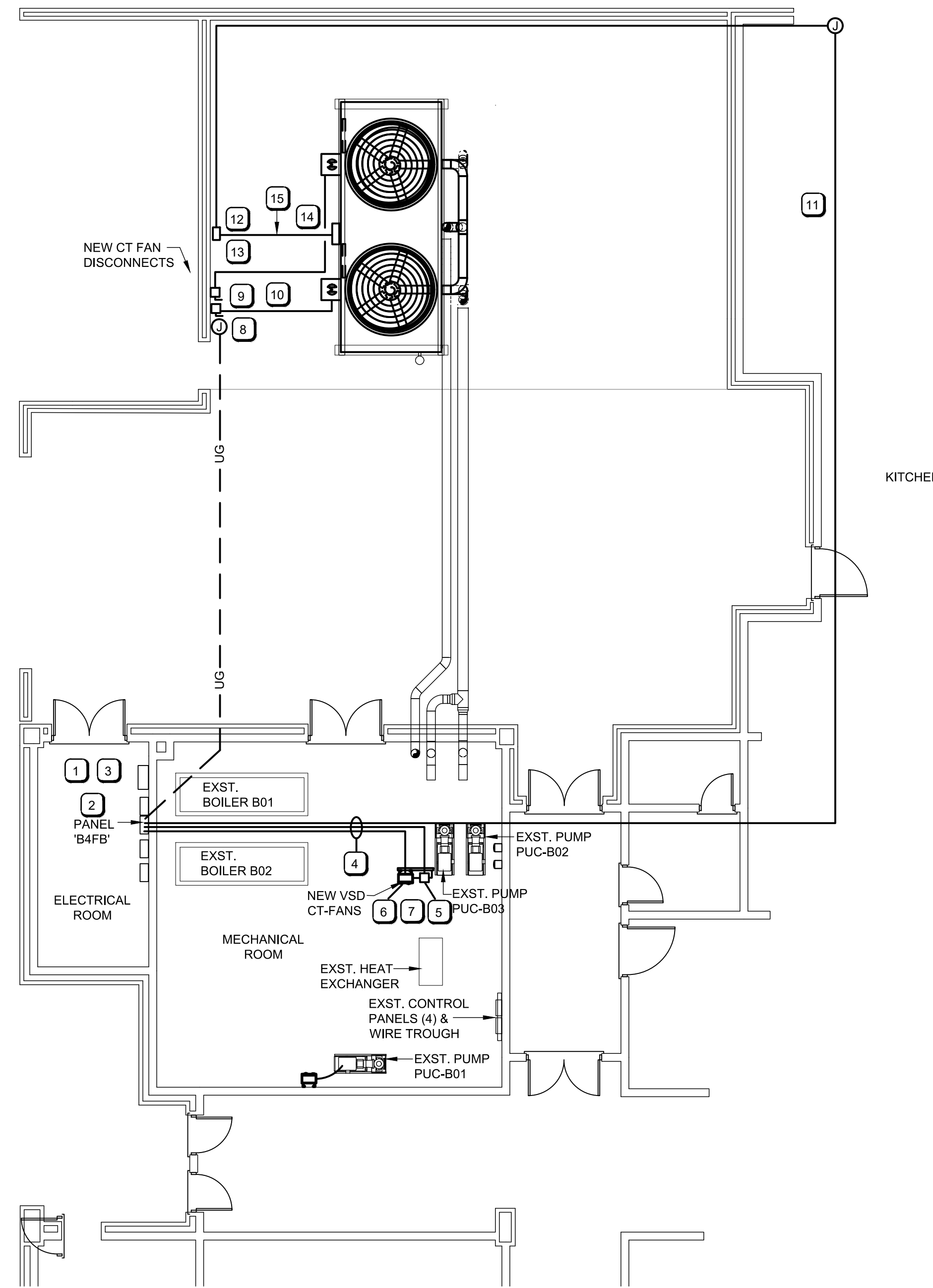
M-2.1



1 PARTIAL FIRST FLOOR - ELECTRICAL - DEMOLITION
 E1.1 1/8" = 1'-0"

KEYED NOTES - ELECTRICAL

- A TURN OFF POWER TO COOLING TOWER CONTROL PANEL AT 70 AMP BREAKER IN PANEL B4FB IN ELECTRICAL ROOM. DISCONNECT FEEDER WIRES DURING WORK ON TOWER.
- B REUSE EXISTING WIRE FROM ELECTRICAL ROOM TO COOLING TOWER. (BFG LOCATION NOT KNOWN)
- C REMOVE CONTROL PANEL.
- D CONDUIT AND WIRE TO COOLING TOWER WILL BE REUSED FOR FEED TO FANS DISCONNECTS.
- E CONDUIT TO TOWER MAY BE REUSED/MODIFIED AS REQUIRED. REMOVE WIRES.



2 PARTIAL FIRST FLOOR - ELECTRICAL - NEW WORK
 E1.1 1/8" = 1'-0"

KEYED NOTES - ELECTRICAL

- 1 EC TO VERIFY LOCATION OF MAIN SERVICE/MDP, AND BREAKER FEEDING PANEL B4FB. FAULT CURRENT IS NOT KNOWN BUT LIKELY LESS THAN 25 KAIC. VERIFY IF A LIGHTNING ARRESTER IS INSTALLED (AND IF IT IS STILL FUNCTIONAL).
- 2 PANEL B4FB PROVIDE 20 AMP BREAKER (32, 34, 36) TO MATCH EXISTING SIEMENS BREAKERS FOR COOLING TOWER BASIN HEATERS. LABEL: COOLING TOWER BASIN HEATERS. EXISTING 70 AMP BREAKER (20, 22, 24) TO BE REUSED FOR COOLING TOWER FANS/VFD. LABEL: COOLING TOWER FANS VIA VFD.
- 3 PROVIDE NEC TYPE 1 SPD, 50 KAIC TERMINATED/TAPPED TO MAIN BUSS OF MDP. SEE 1: IF ALREADY INSTALLED AND STILL FUNCTIONAL, DO NOT INSTALL THIS ITEM.
- 4 PROVIDE (2) 1" C., (3) #6 XHHW-2 + #6 THWN G. (1) FEEDS FUSIBLE DISCONNECT AT VFD FROM PANEL B4FB AND (1) FEEDS EXISTING CONDUIT (UNDERGROUND) TO COOLING TOWER FROM VFD. EC TO DETERMINE HOW TO MAKE CONDUIT TRANSITION UNDER PANEL B4FB. WIRES CAN NOT BE RUN THRU PANEL B4FB.
- 5 PROVIDE 480 VAC, 60 AMP 3 POLE + GND LUG, FUSIBLE DISCONNECT, NEMA 1, WITH (6) 60 AMP TYPE RK1 FUSES. (STORE SPARE FUSES IN ELECTRICAL ROOM) (THIS IS CIRCUITED FROM PANEL B4FB (20, 22, 24) AND FEEDS TOWER VFD) SEE 7.
- 6 INSTALL VARIABLE SPEED DRIVE FURNISHED BY MC AND MAKE ALL POWER AND GROUND TERMINATIONS; CONTROLS WIRING BY MC.
- 7 PROVIDE 1" C., (3) #6, #6G AND BETWEEN DISCONNECT AND VFD.
- 8 PROVIDE 12"x12"x6" JUNCTION SPLICE BOX, NEMA 3R, FOR EXISTING CONDUIT TO COOLING TOWER FAN DISCONNECTS.
- 9 PROVIDE (2) 600 VAC, 30 AMP 3 POLE + GND, FUSIBLE DISCONNECTS, NEMA 3R/12 + GROUND LUG. LABEL: FANS 1 & 2. PROVIDE (9) RD5-30AMP FUSES.
- 10 PROVIDE 3/4" C., (3) #10 XHHW-2 + #10 THWN G. TO EACH FAN. PROVIDE 18-24" LFMC AT FANS.
- 11 PROVIDE 3/4" C., (3) #10 + #10G. TO DISCONNECT FOR BASIN HEATERS, SEE #14 & 16. EC TO SELECT CONDUIT ROUTING (~9-12' AFF) AND JUNCTION PULL BOXES/LOCATIONS REQUIRED.
- 12 PROVIDE PULL BOX. LABEL: BASIN HEATERS / PANEL B4FB - 20,22,24
- 13 PROVIDE BASIN HEATER FEED FROM EXISTING 20 AMP BREAKER IN PANEL B4FB, SEE 2.
- 14 INSTALL / MOUNT BASIN HEATER CONTROL PANEL ON TOWER, FURNISHED BY MC, FIELD LOCATE WITH MC. MAKE ALL POWER, GROUND, AND CONTROL WIRE TERMINATIONS PER TOWER OEM INSTALLATION REQUIREMENTS INCLUDING CONNECTIONS TO BASIN HEATERS AND TEMPERATURE AND LEVEL CONTROL DEVICES.
- 15 PROVIDE 1" SCHEDULE 80 PVC., (3) #10, + #10 G. TO BASIN HEATER CONTROL PANEL.



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 GUILFORD COUNTY, NORTH CAROLINA
 ELECTRICAL - DEMOLITION & NEW WORK

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 DESIGNED BY: MS/MJS
 DRAWN BY: MJS/SEH
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GENERAL NOTES (ALL ELECTRICAL SHEETS)

NOT ALL THESE NOTES MAY BE APPLICABLE TO PROJECT. IT IS UNDERSTOOD THAT EC IS TO PROVIDE EVERYTHING LISTED.

- 1 THE ENGINEER HAS ATTEMPTED TO PROVIDE A COMPLETE DESIGN COMPLIANT WITH ALL CODES. THE EC IS STILL RESPONSIBLE FOR MAKING MINOR ADJUSTMENTS TO MEET CODES AND THE DESIGN INTENT. ANY SIGNIFICANT DEVIATIONS REQUIRED SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION ASAP.
- 2 THESE DRAWINGS ARE DIAGRAMATIC AND INDICATES THE APPROXIMATE LOCATIONS OF DEVICES AND EQUIPMENT. THE EC SHALL FIELD VERIFY ALL EXISTING CONDITIONS ON THE SITE. MINOR ADJUSTMENTS AND OFFSETS SHALL BE PROVIDED AT NO ADDITIONAL COSTS TO THE OWNER.
- 3 PROVIDE ALL WORK IN COMPLIANCE WITH THE CURRENT NEC, ALL STATE AND LOCAL CODES AND IN AN INDUSTRY STANDARD, WORKMANLIKE MANNER.
- 4 UON ALL SERVICE LATERALS AND FEEDERS SHALL BE IN CONDUIT. BELOW GRADE INSTALLATIONS SHALL USE SCHEDULE 80 PVC CONDUIT WITH XHHW-2 CONDUCTORS. ABOVE GRADE INSTALLATIONS SHALL BE EMT CONDUIT WITH HYDRAULICALLY CRIMPED CONNECTIONS AND THHW/THHN-2 CONDUCTORS UON.
- 5 ALL CONDUITS SHALL HAVE COPPER GROUND CONDUCTORS WITH THHW/THHN-2 INSULATION. GROUNDS SHALL BOND AT BOTH ENDS OF FEEDERS ON GROUND BARS/LUGS WITH BONDS TO THE ENCLOSURES. ALL INTERVENING BOXES SHALL ALSO BE BONDED. THIS SHALL BE PROVIDED FOR ALL FEEDERS, CIRCUITS AND LOW VOLTAGE CONDUITS.
- 6 RACEWAYS SHALL NOT BE RUN EXPOSED IN END USER AREAS UON.
- 7 ALL WALL, FLOOR AND ROOF PENETRATIONS SHALL BE REPAIRED AND SEALED. PROVIDE FIRE RATED SEALS WHERE FIRE RATING IS INDICATED ON DRAWINGS.
- 8 UON ALL WIRE SIZES SHOWN ARE FOR COPPER. CIRCUIT WIRING, #10 OR LESS, SHALL BE SOLID EXCEPT CONTROL WIRING MAY BE #14 OR SMALLER. ALL CIRCUIT WIRING SHALL BE MINIMUM OF #12.
- 9 PROVIDE ALL CONDUIT AND WIRING TERMINATIONS TO EQUIPMENT (HVAC, KITCHEN, ETC.) UON.
- 10 ALL DEVICES AND EQUIPMENT SHALL BE LABELED PER DRAWING DESIGNATIONS AND IN POWER PANEL DIRECTORIES WITH PHENOLIC PLATES SCREWED TO EQUIPMENT OR STICK ON PLASTIC TAPES FOR DEVICES.
- 11 ALL SPARE BREAKERS SHALL LABELED "SPARE" AND BE TURNED "OFF" IN PANELS.
- 12 ON EXISTING POWER PANELS, ALL BREAKERS USED IN CURRENT JOB SHALL BE LABELED AND CABLE TERMINATIONS TORQUED INCLUDING GROUND CONNECTIONS. PANELS SHALL HAVE ESTIMATED FAULT CURRENT LEVEL LABELED AT INCOMING SIDE OF PANEL.
- 13 THE SERVICE POWER PANEL SHALL HAVE AN NEC TYPE 1 SURGE SUPPRESSOR, 50 KAIC FOR 600 VOLTS.
- 14 ALL INSPECTIONS SHALL BE COORDINATED WITH INSPECTOR AND ENGINEER A WEEK PRIOR TO DATE REQUESTED. INSPECTIONS SHALL BE DURING NORMAL BUSINESS WORK HOURS UON BY INSPECTOR.

ABBREVIATIONS

- A AMP
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AL ALUMINUM
- BFG BELOW FINISHED GRADE
- C CONDUIT (AND DEVICE COUNTER HEIGHT)
- CU COPPER OR CONDENSING UNIT
- EC ELECTRICAL CONTRACTOR
- EF EXHAUST FAN
- ER REMTOE EMERGENCY LIGHT
- EWH ELECTRIC WALL HEATER
- EX EXIT SIGN
- FMC FLEXIBLE METAL CONDUIT
- G GROUND
- GC GENERAL CONTRACTOR
- GFI GROUND FAULT INTERRUPTER
- MC MECHANICAL CONTRACTOR
- MCA MINIMUM CIRCUIT AMPACITY
- MCB MAIN CIRCUIT BREAKER
- MDS MAIN DISCONNECT SWITCH
- MDP MAIN DISTRIBUTION PANEL
- N NEUTRAL
- NIC NOT IN CONTRACT
- OEM ORIGINAL EQUIPMENT MANU.
- PC PLUMBING CONTRACTOR
- PE PHOTOCELL
- PVC POLYVINYL CHLORIDE PIPE
- PNL PANELBOARD
- RSC RIGID STEEL CONDUIT
- RTU ROOF TOP UNIT
- SA SURGE ARRESTER
- UON UNLESS OTHERWISE NOTED
- VAC VOLTAGE AC
- W WET LOCATION RATED
- WIR WIRE (SIZE/RATING)

GENERAL ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	NEW EQUIPMENT
	EXISTING EQUIPMENT
	1 HOUR FIRE RATED WALL
	2 HOUR FIRE RATED WALL
	4 HOUR FIRE RATED WALL
	TYPICAL LIGHT FIXTURES LETTER INDICATES TYPE
	TYPICAL EXIT SIGN - NUMBER OF FACES AND DIRECTIONAL ARROWS INDICATED, LETTER INDICATES TYPE
	EMERGENCY LIGHTING UNIT
	OCCUPANCY SENSOR, DUAL UV/IR
	DATA OUTLET WITH 2 RJ-45 JACKS, CAT 6A COMPATIBLE
	DISCONNECT SWITCH - AMP RATING/NO. OF POLES/FUSE SIZE INDICATED
	NON-FUSIBLE DISCONNECT SWITCH, 60 AMP RATED, HP RATED FOR MOTORS NEMA ENCLOSURE RATING(3R) AS SHOWN. 3R: RAIN TIGHT.
	ELECTRICAL POWER SUPPLY CONNECTION TO EQUIPMENT - EQUIPMENT TAG OR DESIGNATION INDICATED. COORDINATE LOCATION AND CONNECTION DETAILS WITH EQUIPMENT PROVIDER.
	SPECIAL PURPOSE RECEPTACLE, MATCH RECEPTACLE TO EQUIPMENT PLUG. MAY ALSO BE HARDWIRED JUNCTION BOX OR TOGGLE DISCONNECT SWITCH. COORDINATE WITH EQUIPMENT.
	SIMPLEX RECEPTACLE, NEMA CONFIGURATION 5-20R
	DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20R
	TWO DUPLEX RECEPTACLES IN DOUBLE GANG BOX, NEMA CONFIGURATION 5-20R
	GFCI DUPLEX RECEPTACLE
	ABOVE COUNTER DUPLEX RECEPTACLE, MOUNT CENTER AT 44" AFF
	WEATHER TIGHT DUPLEX RECEPTACLE
	FLOOR OR TABLE MOUNTED DUPLEX RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	20A, 120/277VAC SINGLE POLE SNAP SWITCH
	20A, 120/277VAC DOUBLE POLE SNAP SWITCH
	20A, 120/277VAC THREE WAY SNAP SWITCH
	MOTOR STARTER TOGGLE SWITCH, #POLE TO MATCH # CIRCUITS
	NEMA 4 WET RATED MOTOR STARTER TOGGLE SWITCH
	WIRELESS INTERNET ACCESS POINT
	20A, 120/277 VAC OCCUPANCY SENSOR, INFRARED SNAP SWITCH
	DIMMER LIGHT SWITCH
	METER
	PHOTO CELL
	JUNCTION BOX
	SURGE ARRESTER, TYPE I
	ON/OFF TOGGLE SWITCH
	TRANSIENT SUPPRESSOR, TYPE II
	UNDERGROUND CONDUIT
	SWITCHED CIRCUIT
	UNSWITCHED CIRCUIT
	HOMERUN CIRCUIT TO PANEL - CIRCUIT INDICATED

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LICENSE NO. C-0315
PROJECT #NC16X002

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HAIRSTON MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
GUILFORD COUNTY, NORTH CAROLINA
ELECTRICAL - SCHEDULES, NOTES & LEGEND

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REVISIONS		
ID	DATE	COMMENTS

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