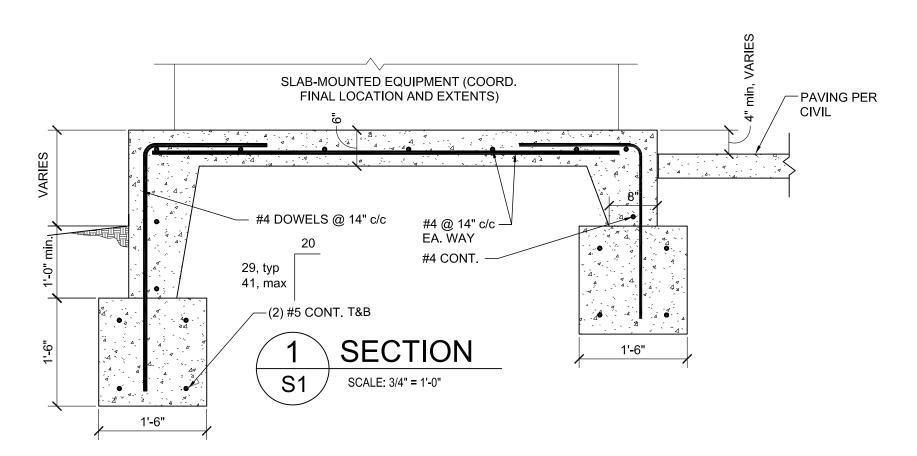
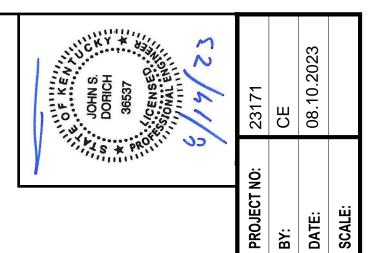


SCALE: 1/8" = 1'-0"





D 9	01:14 ACO (047) TTOTA : 10
GOP Limited Structural Engineers	CECE ACO (CAR) TROPA CITE CALL CONTRACT AND THE CALL CALL CALL CALL CALL CALL CALL CAL

PROJECT TITLE

Dayton Independent Schools Athletic

Complex - Lincoln Elementary Cooling

DRAWING TITLE TOWER REPLACEMENT Exterior Equipment Pad HVAC

	STANDA	RD I	HVAC ABBREVIATION	<u> SNC</u>	•
AACC ESS AAFF PARAME AARAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	AUTOMATIC AIR VENT ACCESSORIES ACCESS DOOR ABOVE FINISHED FLOOR AMPERE ACCESS PANEL AIR PRESSURE DROP AIR CONDITIONING AND REFRIGERATION INSTITUTE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BUILDING AUTOMATION SYSTEM BACKDRAFT DAMPER BRAKE HORSEPOWER BRITISH THERMAL UNIT BRITISH THERMAL UNIT PER HOUR CEILING DIFFUSER CUBIC FEET PER HOUR CUBIC FEET PER HOUR CUBIC FEET PER MINUTE CHILLED WATER RETURN CHILLED WATER SUPPLY CAST IRON COOLING CARBON MONOXIDE CARBON DIOXODE COEFFICIENT OF PERFORMANCE CONSTANT VOLUME CONDENSER WATER SUPPLY DECIBELS DRY-BULB TEMPERATURE DISCONNECT DIRECT DIGITAL CONTROLS DEGREE DELTA(CHANGE IN TEMPERATURE) DIAMETER DEW POINT TEMPERATURE DIENCT LEGITAL CONTROLS DEGREE DELTA(CHANGE IN TEMPERATURE) DIAMETER DEW POINT TEMPERATURE DIENCT EXPANSION EXHAUST AIR ENTERING AIR TEMPERATURE ENERGY EFFICIENCY RATIO EXHAUST AIR ENTERING AIR TEMPERATURE ENERGY EFFICIENCY RATIO EXHAUST AIR ENTERING WATER TEMPERATURE ENERGY EFFICIENCY RATIO EXHAUST GRILLE EMERGENCY POWER EXTERNAL STATIC PRESSURE ENTERING WATER TEMPERATURE EXISTING FAHRENHEIT FLOAT AND THERMOSTATIC FREE AREA FIRE DAMPER FULL LOAD AMPERES FEET PER SECOND FEET FURNISHED GALLONS GALLONS PER MINUTE	HDA HPR HTGRS GCGINNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	HEAD HAND/OFF/AUTOMATIC HORSEPOWER HIGH PRESSURE RETURN (STEAM CONDENSATE) HUMIDISTAT HEATING HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY HERTZ INPUT/OUTPUT INDOOR AIR QUALITY INCHES OF MERCURY INCH WATER COLUMN INCH WATER GAUGE INTERGRATED PART LOAD VALUE INSTALLED KILOWATT KILOWATT HOUR LEAVING AIR TEMPERATURE POUNDS PER HOUR LINEAR FOOT (FEET) LOW PRESSURE STEAM LEAVING WATER TEMPERATURE MAXIMUM 1000 BTUH MINIMUM BRANCH CIRCUIT AMPACITY MINIMUM BFFICIENCY REPORTING VALUE MINIMUM MOTOR OPERATED DAMPER MEDIUM PRESSURE RETURN (STEAM CONDENSATE) MEDIUM PRESSURE STEAM MAGNETIC RESONANCE IMAGING MANUAL VOLUME DAMPER NOT APPLICABLE NOISE CRITERIA NORMALLY OPEN NOT TO SCALE OUTSIDE AIR OVER CURRENT PROTECTION PRESSURE REGULATING (VALVE) STATION PRESSU	RO RPM RS SAT SCD SENS SP TAB TDS TSP TSTAT UL VFD WB WPD WIRE	REVERSE OSMOSIS REVOLUTIONS PER MINUTE REFRIGERANT SUCTION SUPPLY AIR TEMPERATURE SHADING COEFFICIENT SMOKE CONTROL DAMPER SMOKE DETECTOR SENSIBLE HEAT STATIC PRESSURE TESTING, ADJUSTING, BALANCE TOTAL DYNAMIC HEAD TOTAL DISSOLVED SOLIDS TOTAL STATIC PRESSURE THERMOSTAT UNDERWRITERS LABORATORY VARIABLE AIR VOLUME VARIABLE FREQUENCY DRIVE WET-BULB (TEMPERATURE) WATER GAGE WATER SIDE PRESSURE DROP WIRED

						Н	VAC	ELEC	CTRIC	CAL (COORI	DINATI	ON S	CHE	DULE	<u> </u>								
MC MOTOR SD DUCT S CN CONTRO TS TOGGLE C/B H.A.C.R. FUSE FUSE A FLA OPERA MCA MINIMU	DISCONNECT I CONTROL (POWER) IMOKE DETECTOR OLS E SWITCH I CIRCUIT BREAKER AT SOURCE PAN T LOCAL DISCONNECT (VERIFY FIELI TING FULL LOAD AMPS M CIRCUIT AMPACITY AND PLUG CONNECTION		EC EX FC GC HC MF PC OF	EXIS FIRE GENI HVAC FR MAN PLUM	CTRICAL CO TING PROTECTI ERAL CON' C CONTRAG UFACTURE	CTOR ER NTRACTOR					CS CC MCC MC MG MA MS MA VFD VA MSR MA	NTROL TYPE OMBINATION ST OTOR CONTRO AGNETIC START ANUAL STARTE ARIABLE FREQL ANUAL STARTE VERCURRENT F	L STARTE TER OR CO R JENCY DR R W/ CON	ONTACT IVE TROL RELAY	,			CONTRO TC CPT BAS LOW LINE RLINE MAN FA CO INT ASD DSD	TIMECLO CONTRO BUILDINI LOW VO LINE VO REVERS MANUAL FIRE ALA CARBON INTEGRA	DL POWER G AUTOMA PLTAGE COP LTAGE COP SE ACTING ARM N MONOXID AL TO EQU MOKE DETE	NTROLS LINE VOLTA DE SENSOR JIPMENT ECTOR	EM AGE THERM	1OSTAT	
EQUIPMENT MARK	DESCRIPTION AND COOLED	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	ОСР	FED FRO		DC INST	DC WIRE	MC TYPE	MC FURN	MC INST		CN TYPE	-		CN WIRE	FA SHUTDOWN	AVAILABLE FAULT CURREN
_	AIR COOLED SCROLL WATER CHILLER HYDRONIC PUMP	208 V 208 V	3		15				8/8	1000		EC EC	EC	EC	VFD	HC	EC	EC	BAS	HC HC	HC HC	HC	NA NA	20413 15087
GF-1	GLYCOL FEEDER	120 V	1		0.333							EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	EC	NA	1478

ŀ	HVAC PIPING SP	ECIALITIES - GLYCOL	FEEDER	SCHEDULE
EQUIPMENT MARK	DESCRIPTION	MANUFACTURER	MODEL	KLH Equipment Electric Connection Summar
GF-1	GLYCOL FEEDER	NEPTUNE	G-50-1A	GF-1 - 120V/1PH, 0.33 HP

GLYCOL NOTE

GLYCOL SHALL BE NOTOXIC PROPYLENE GLYCOL.
REFER TO 23 25 00.00 HVAC WATER TREATMENT SPECIFICATION.

EQUIPMENT MARK	DESCRIPTION	MANUFACTURER	MODEL	ACCEPTANCE VOL	UME(Gal) WEIGHT (Ib
ET-1	EXPANSION TANK	BELL & GOSSETT	B200	53	651
	<u> </u>				
$HV\Delta CPI$	コレバナ ぐわトし	,1V1 111FC - VII	$E(C(C)) \sqcup C(E)$;(,HHI) H
HVAC PII	PING SPEC	CIALITIES - AII	R SOLID SE	PARATOR S	CHEDULE
HVAC PII		CIALITIES - AII	R SOLID SE		MODEL

				H'	VAC HY	DRONIC	PUMPS	SCHED	ULE			
Equipment shall b	e braced and labeled	d by the equipment	t manufacturer to with	stand the minimum	scheduled available	e fault current value	for listed equipment					
EQUIPMENT MARK	DESCRIPTION	STATUS	WEIGHT (lbs)	MANUFACTURER	MODEL	HEAD (ft)	FLOW (gpm)	PUMP (rpm)	BHP (hp)	EMERGENCY	ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRE
CWP-1	HYDRONIC PUMP	NEW	520	BELL & GOSSETT	E-1510 3BD	65	440	1800	8.52	NO	CWP-1 - 208V/3PH, 15 HP	15087

								HVAC	C CHILLE	ERS SC	HEDULE							
Equipment shall t	be braced and labeled by the equipment mar	ufacturer to withsta	and the minimum sch	eduled available fa	ult current value for listed equi	pment.												
EQUIPMENT MARK CH-1	DESCRIPTION AIR COOLED SCROLL WATER CHILLER	STATUS NEW	WEIGHT (lbs)	MANUFACTURER TRANE	MODEL ACSA2002AUL	MIN EER 9.69	IPLV	NOMINAL TONS	MIN EER (EER)	CLG MBH (mb	h) CHW EWT (Deg F)	CHW LWT (Deg F)	CHW GPM (gpm)	EMERGENCY NO	ELECTRIC CONNECTION SUMMARY CH-1 - 208V/3PH, 878 MCA, 1000A OCP	AVAILABLE FAULT CURRENT	GLYCOL	ACCESSORIES SUPERIOR SOUND LEVEL

GLYCOL NOTE

CHILLER SHALL BE DESIGNED TO OPERATE AT 160 TONS OF COOLING OUTPUT WITH 30% PROPYLENE GLYCOL SOLUTION

SECTION 23 08 00.00 - COMMISSIONING OF HVAC SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The requirements of this Section apply to all sections of Division 23
 B. This project will have selected building systems commissioned. The complete list of equipment and systems to be commissioned are specified in Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS. The commissioning process, which the Contractor is responsible to execute, is defined in Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS. A Commissioning Agent (CxA) appointed by OWNER will manage the commissioning process

1.2 RELATED WORK

A. Section 01 00 00 GENERAL REQUIREMENTS.

B. Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS.
 C. Section 01 33 23 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

1.3 SUMMARY

A. This Section includes requirements for commissioning the HVAC systems, subsystems and equipment. This Section supplements the general requirements specified in Section 01 91 00 General Commissioning Requirements.

The commissioning actives have been developed to support 2012 IECC and to support delivery of an efficient project in accordance with the Contract Documents developed by the design team.

Commissioning activities and documentation for 2012 IECC Section C 408 Systems Commissioning.

D. Refer to Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS for more specifics regarding processes and procedures as well as roles and responsibilities for all Commissioning Team members.

1.4 DEFINITIONS

A. Refer to Section 019100 GENERAL COMMISSIONING REQUIREMENTS for definitions

1.5 COMMISSIONED SYSTEMS

Commissioning of a system or systems specified in this Division is part of the construction process and required by 2012 IECC. The commissioning process for these systems is required in cooperation with the Code Official, Owner, Construction Manager and the Commissioning Agent.

1.6 SUBMITTALS

A. Review of equipment submittals is not required for any of the energy codes
 B. The commissioning process requires review of Submittals for equipment and systems that are part of the commissioning scope of work. The Construction Manager will be responsible for delivering these submittals to the CxA for their review.

GENERAL DEMOLITION NOTE

NEW WORK GENERAL NOTES

ALL SYSTEMS SHOWN ON THE DRAWINGS AND DELINEATED IN THE SPECIFICATIONS IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND ORDINANCES. REPORT ANY KNOWN

DRAWINGS FOR DIMENSIONED LOCATIONS OF WALLS, DOORS,

COORDINATE WORK AND SPACE REQUIREMENTS IN CEILING

MANUFACTURER RECOMMENDED MINIMUM CLEARANCES FOR

ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NON-COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE

THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTME E 84.

DISCREPANCIES TO THE ARCHITECT/ENGINEER PRIOR TO

DO NOT SCALE DRAWINGS; REFER TO ARCHITECTURAL

SPACES WITH OTHER TRADES PRIOR TO INSTALLATION.
INSTALL ALL EQUIPMENT WITH CODE REQUIRED AND

SERVICE, ACCESS, AND FIRE PROTECTION.

PROVIDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETELY FURNISH, INSTALL, AND PLACE INTO OPERATION,

MECHANICAL CONTRACTOR TO REMOVE EXISTING HVAC EQUIPMENT, PIPING, HANGERS, INSULATION, CONTROLS AND MISCELLANEOUS

EQUIPMENT, ETC... NOT INTENDED FOR REUSE.

INSTALLATION.

WINDOWS, AND CABINETRY.

230800.00-01 - COMMISSIONING OF HVAC SYSTEMS

SCALE: NONE

C. The commissioning process requires Submittal review simultaneously with engineering review. Specific submittal requirements related to the commissioning process are specified in Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EQUIPMENT VERIFICATION CHECKLIST (EVCs)

A. The Contractor shall complete EVCs to verify systems, subsystems, and equipment installation is complete and systems are ready for Systems start-up and Functional Performance Testing. The Commissioning Agent will prepare all EVCs to be used by the installing contractors to document equipment verification and installation. The installing personnel shall complete the checklists for completion and accuracy. If the Commissioning Agent determines that the information provided on the checklist is not accurate, the Commissioning Agents will return the marked-up checklist to the Contractor for correction and resubmission. If the Commissioning Agent determines that a significant number of completed checklists for similar equipment are not accurate, the Commissioning Agent will select a broader sample of checklists for review. If the Commissioning Agent determines that a significant number of the broader sample of checklists is also inaccurate, all checklists for that type of equipment will be returned to the Contractor for correction and resubmission. Refer to SECTION 01 91 00 GENERAL COMMISSIONING REQUIREMENTS for further explanation of requirements for Equipment Verification Checklists, Factory Startup Reports, and other commissioning documents.

3.2 FUNCTIONAL PERFORMANCE TESTING

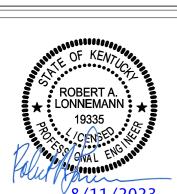
Contractor tests as required by other sections of Division 23 shall be scheduled and documented in accordance with Section 01 00 00 GENERAL REQUIREMENTS. The Commissioning Agent will work with the CM to incorporate the Functional Performance Testing schedule into the master construction schedule. The CxA will conduct and witness all Functional Performance Testing performed by the Contractors. The commissioning process includes Functional Performance Testing that is intended to test systems functional performance under steady state conditions, reactions to changes in operating conditions and performance under emergency conditions. The contractors shall review and comment on the functional performance tests prior to testing.

3.3 TRAINING OF OPERATION AND MAINTENANCE PERSONNEL

Training operations and maintenance personnel on the proper operation, maintenance and any emergency situations is required. Provide competent, factory authorized personnel to provide instructions to the operation and maintenance personnel concerning the location, operation, and troubleshooting of the installed systems. The instruction shall be scheduled in coordination with the CxA after submission and approval of formal training plans. The CxA will review the training plans and observe the training performed by the factory personnel and installing contractors. Refer to Section 01 91 00 GENERAL COMMISSIONING REQUIREMENTS and Division 23 Sections for additional Contractor training requirements.

SYMBOL	DESCRIPTION
	PLAN-VIEW LINE TYPES
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK
	DRAWING SET APPEARANCE
CREATED IN BOTH "COLOR CONTROLLED THROUGH THAND WHITE". TO MAINTAIN FOR FURTHER INSTRUCTIC INSTRUCTIONS".	E SCOPE TO PERMIT AGENCIES AND CONTRACTORS, EACH DRAWING IN THIS DRAWING SET HAS BEEN I" AND "BLACK AND WHITE". THERE EXISTS A COLOR LAYER WITHIN EACH DRAWING WHERE VISIBILITY IS HE PDF LAYER MANAGER. THIS LAYER VISIBILITY CAN BE TOGGLED DISPLAYING EITHER "COLOR" OR "BL SCOPE BASED SHADING WHEN PRINTING TO PAPER, BLACK AND WHITE NEEDS TO BE VISIBLE. DNS, REFER TO CONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD "DRAWING COLOR DONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD."
	PIPING LINE TYPES
	HOT WATER SUPPLY
HWR	HOT WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
cws	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
— H/CHWS —	HOT/CHILLED WATER SUPPLY
— — H/CHWR —	HOT/CHILLED WATER RETURN
CD	CONDENSATE DRAIN
	SUPPLY MAIN OR BRANCH
	RETURN MAIN OR BRANCH
	MECHANICAL PIPING ACCESSORIES
	CHECK VALVE (DIRECTION OF FLOW INDICATED)
<u> </u>	PRESSURE RELIEF VALVE
<u>\</u>	PRESSURE REGULATING VALVE
	MANUAL BALANCING VALVE
Н	HEAT TRACING
	UNION
<u> </u>	TEMPERATURE & PRESSURE TEST PORT
—	FLOW DIRECTION
	FLEX PIPING CONNECTOR
	THERMOMETER
<u> </u>	PRESSURE GAUGE
——⊗——	SOLENOID VALVE
(M)	WATER METER
	Y-STRAINER
	STRAINER WITH BLOW OFF
	DRAIN VALVE (3/4" UNLESS OTHERWISE NOTED)
	MANUAL AIR VENT
	MECHANICAL STATS & SENSORS
FS	FLOW SENSOR
CS	CURRENT SENSOR
ES	END SWITCH
FL	FLUID SENSOR
V	VIBRATION SENSOR
	MECHANICAL MISCELLANOUS
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
	HARD WIRE INTERLOCK
F	POINT OF DEMOLITION TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO TERMINATING CONNECTION)
	SELECTION E, I THORETO TELIMINATING CONTINECTION)





Dayton Independent Schools - Athletic Complex
| Package #1 - Lincoln Elementary Cooling Tower Replacement 200 Greendevil LaneDayton, Kentucky 41074

SHEET TITLE

MECHANICAL COVER SHEET

BG # **23-538**

168-523

REH#

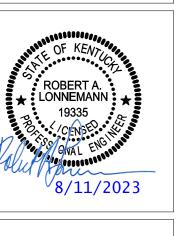
DATE 8-10-23

M0-001

EXISTING CHILLERS, PUMPS, GLYCOL FEEDER, CONTROLS, AND PIPING TO BE DEMOLISHED. EXISTING CHILLED WATER PIPING TO BE DEMOLISHED TO POINT INDICATED.







Complex wer Replacement Athletic C Package #1 - Lincoln Elementary Cooling Toward ackage #1 - Lincoln Elementary Cooling Toward 200 Greendevil LaneDayton, Kentucky 41074 Dayton Independent Schools Board of Education- Mr. Jay Brewer Independent Schools **Dayton I**Bid Package #1

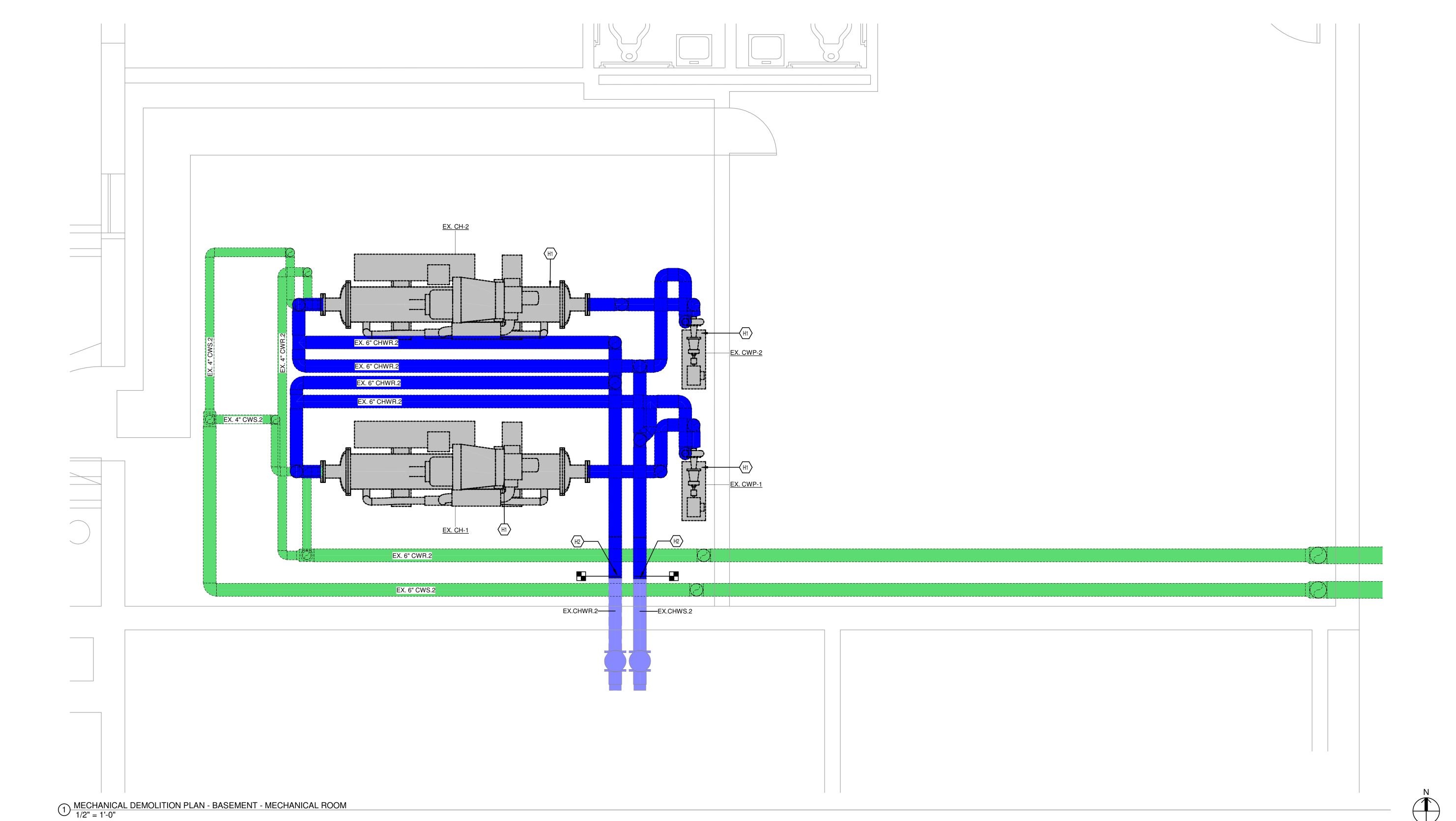
SHEET TITLE MECHANICAL DEMOLITION BASEMENT PLAN MECHANICAL ROOM

> BG# 23-538 REH#

168-523 DATE

8-10-23

M1-101









Athletic Complex oling Tower Replacement Dayton Bid Package #1

SHEET TITLE

MECHANICAL DEMOLITION LEVEL 1 PLAN OVERALL

BG# 23-538

REH# 168-523 DATE

8-10-23

M1-102

CONNECT NEW CHILLED WATER SUPPLY AND RETURN PIPING TO EXISTING CHILLED WATER PIPING. COORDINATE ROUTING OF NEW CHILLED WATER PIPING WITH EXISTING JOIST. FOLLOW PREVIOUS ROUTING OF DEMOLISHED CONDENSER WATER PIPING TO GET UNDERGROUND TO NEW CHILLER. SEAL ALL PENETRATIONS IN WALL. COORDINATE TRENCH ROUTING.







Complex wer Replacement Athletic C Package #1 - Lincoln Elementary Cooling Tow 200 Greendevil LaneDayton, Kentucky 41074

Dayton Independent Schools Board of Education- Mr. Jay Brewe Independent Schools **Dayton |** Bid Package #1

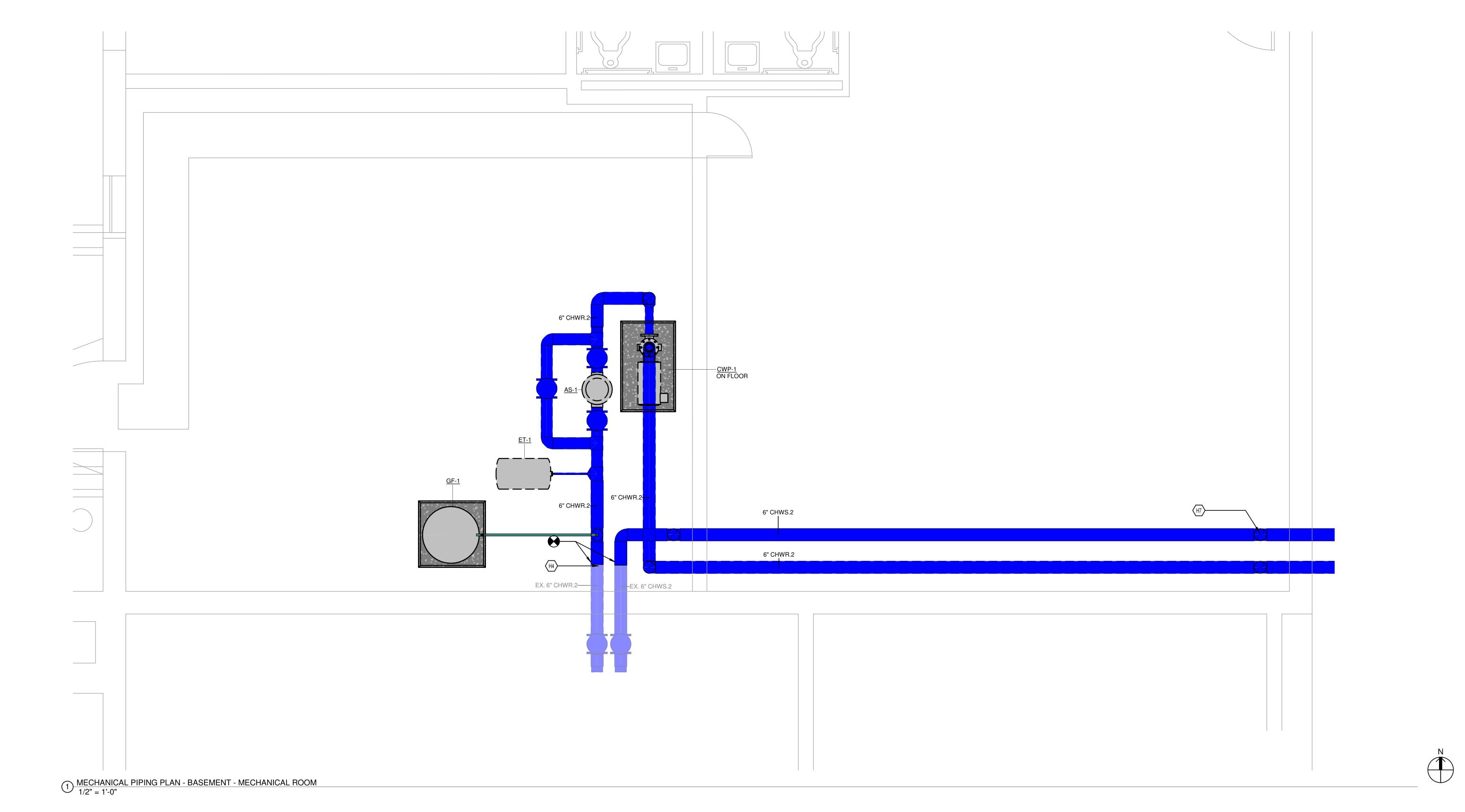
SHEET TITLE MECHANICAL PIPING BASEMENT PLAN MECHANICAL ROOM

BG# 23-538 REH#

168-523

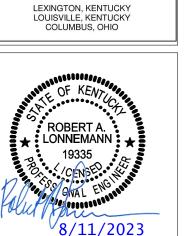
8-10-23

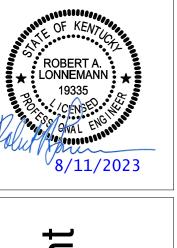
M4-101



LOT.
COORDINATE TRENCHING.

H6 CH-1 TO BE MOUNTED ON NEW PAD. MAINTAIN MINIMUM CLEARANCES.





Dayton IBid Package #1 SHEET TITLE

MECHANICAL PIPING LEVEL 1 PLAN OVERALL

BG# 23-538

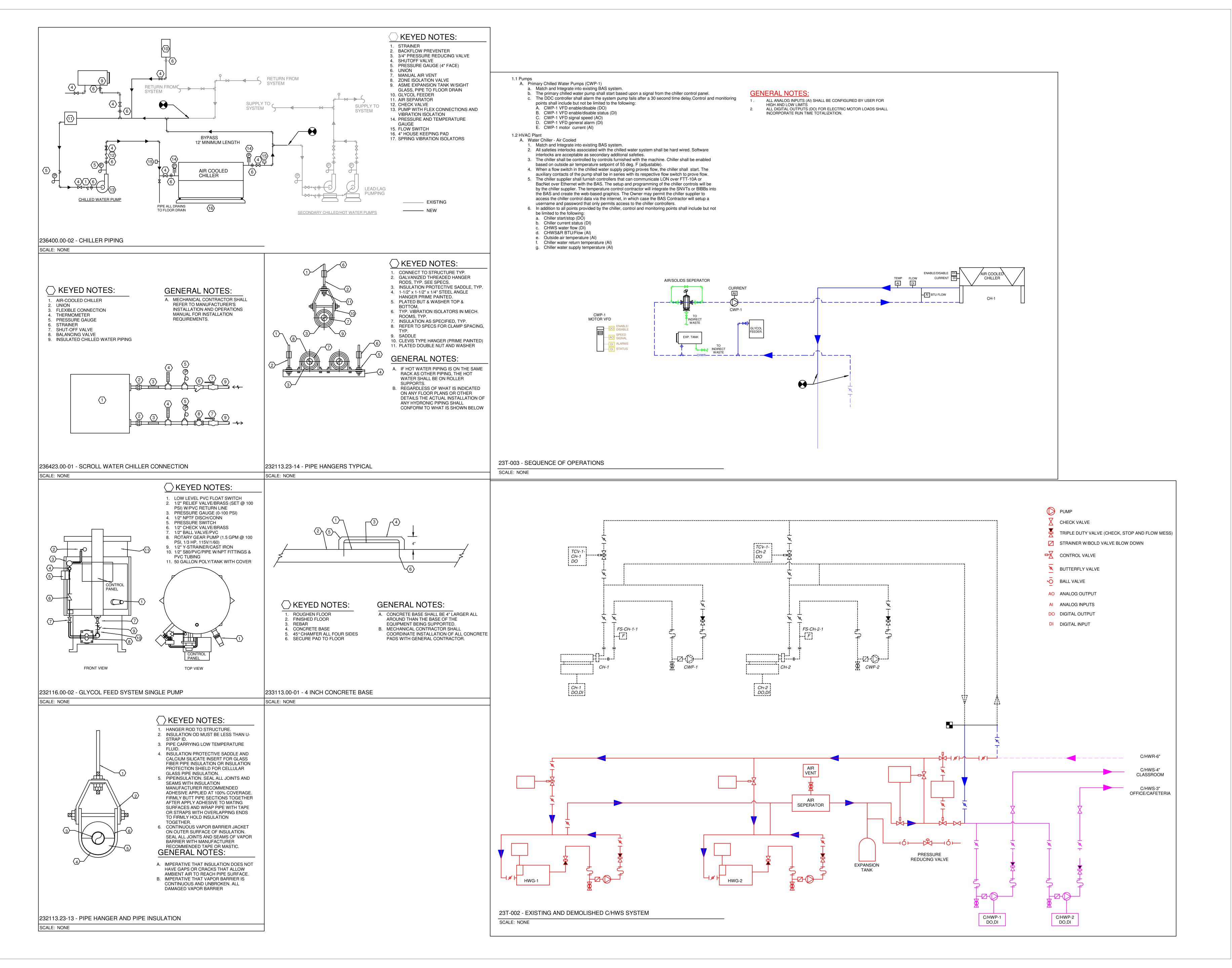
REH# 168-523 DATE

8-10-23

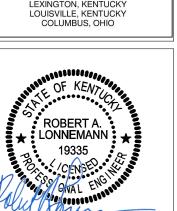
M4-102

1 MECHANICAL PIPING PLAN - LEVEL 1 - OVERALL
1" = 10'-0"

6" CHWR.2







eplacement

Somplex ver Replac

Athletic incoln Elementary Cooling
Greendevil LaneDayton, Kentucky 4107
Schools Board of Education-Mr. Jay Schools Independent Dayton Dayton Indepe Bid

SHEET TITLE

MECHANICAL DETAILS

> BG# 23-538

REH# 168-523

DATE 8-10-23

M6-501

Project Information

Energy Code: 2012 IECC Project Title: Lincoln Elementary Location: Dayton, Kentucky Climate Zone: Project Type: Alteration

Construction Site: Owner/Agent: Designer/Contractor: 701 5th Ave Dayton, Kentucky 41074

Mechanical Systems List Quantity System Type & Description

1 Plant: Cooling: Water Chiller, Capacity 200 tons, Condenser Air-Cooled, Rotary Screw or Scroll Chiller Proposed Efficiency: 9.69 EER, Required Efficiency: 9.56 EER Proposed Part Load Efficiency: 17.00 IPLV, Required Part Load Efficiency: 12.75 IPLV

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 2012 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Robert Lonnemann - PE 08/02/2023 Name - Title

□Does Not

☐Complies

□Does Not

■Not Observable

□Not Applicable

■Not Observable

□Not Applicable

COMcheck Software Version COMcheckWeb **Inspection Checklist** Energy Code: 2012 IECC

Requirements: 100.0% were addressed directly in the COMcheck software Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Report date: 08/02/23

Comments/Assumptions

Exception: Requirement does not apply.

Project Title: Lincoln Elementary Data filename: Page 2 of 7

Section # & Req.ID Comments/Assumptions Final Inspection Complies? Exception: Requirement does not apply. C403.2.4. Thermostatic controls have a 5 °F □Complies deadband. Does Not ☐Not Observable □Not Applicable Exception: Total installed heat capacity of water cooled Requirement will be met. systems = 6 MMBtu/h of heat rejection. overlap restrictions. Does Not ☐Not Observable □Not Applicable ☐Complies Exception: Requirement does not apply. C403.2.4. Each zone equipped with setback Requirement will be met. controls using automatic time clock or Does Not [FI39]³ programmable control system.

Additional Comments/Assumptions:

C403.2.11 Unenclosed spaces that are heated

[ME71]² use only radiant heat.

C403.2.6 Exhaust air energy recovery on

[ME57]¹ systems meeting Table C403.2.6

Mechanical Rough-In Inspection Complies?

C403.4.6 Condenser heat recovery system that Complies

[ME31]³ can heat water to 85 °F or provide Does Not

can heat water to 85 ≥ r or provide 60% of peak heat rejection is installed for preheating of service hot water. □Not Observable □Not Applicable

Project Title: Lincoln Elementary

Data filename:

FI40]³ hour occupant override, 10-hour ☐Not Observable backup □Not Applicable C408.2.5. Furnished HVAC as-built drawings ☐Complies Requirement will be met. submitted within 90 days of system Does Not acceptance. ☐Not Observable □Not Applicable C303.3, Furnished O&M manuals for HVAC ☐Complies Requirement will be met. C408.2.5. systems within 90 days of system □Does Not acceptance. ☐Not Observable □Not Applicable ☐Complies C408.2.5. An air and/or hydronic system Requirement will be met. balancing report is provided for HVAC Systems. ☐Not Observable □Not Applicable C408.2.3. HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls. Requirement will be met. □Not Applicable Complies C403.2.2 HVAC systems and equipment Requirement will be met. [FI27]³ capacity does not exceed calculated □Does Not □Not Observable □Not Applicable C408.2.1 Commissioning plan developed by registered design professional or ☐Complies Requirement will be met. □Does Not approved agency. □Not Observable □Not Applicable C408.2.4 Preliminary commissioning report ☐Complies [Fl29]¹ completed and certified by registered ☐Does Not ☐Complies Requirement will be met. design professional or approved □Not Observable □Not Applicable

■Not Observable

□Not Applicable

C408.2.5. Final commissioning report due to building owner within 90 days of

[FI30]¹ receipt of certificate of occupancy.

C408.2.3. HVAC equipment has been tested to

ensure proper operation.

(heat) and 85°F (cool); 7-day clock, 2- Does Not

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Lincoln Elementary Data filename: Page 6 of 7

Requirement will be met.

Requirement will be met.

☐Complies

☐Complies

□Does Not ☐Not Observable □Not Applicable

□Not Observable ☐Not Applicable

Does Not

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Lincoln Elementary Report date: 08/02/23 Data filename: Page 7 of 7

Footing / Foundation Inspection Complies? Comments/Assumptions C403.2.4. Freeze protection and snow/ice Requirement will be met. melting system sensors for future □Does Not connection to controls. ■Not Observable

□Not Applicable Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.2.3 [ME55] ²	HVAC equipment efficiency verified.	□Complies □Does Not	See the Mechanical Systems list for values.
		□Not Observable □Not Applicable	
C403.2.5. 1 [ME59] ¹	Demand control ventilation provided for spaces >500 sq.ft. and >25 people/1000 sq.ft. occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.2.7 [ME60] ²	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.2.8 [ME61] ²	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C403.2.8. 1 [ME7] ³	Piping Insulation exposed to weather is protected from damage (due to sun, moisture, wind, etc.).	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C403.2.8 [ME41] ³	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.2.7 [ME10] ²	Ducts and plenums sealed based on static pressure and location.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C408.2.2. 1 [ME53] ³	Air outlets and zone terminal devices have means for air balancing.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.4.2 [ME66] ²	VAV fan motors >=7.5 hp to be driven by variable speed drive, have a vane- axial fan with variable pitch blades, or have controls to limit fan motor demand.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C403.4.3. 4 [ME68] ³	Hydronic systems greater than 300,000 Btu/h designed for variable fluid flow.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C403.4.3. 5 [ME26] ³	Reduce flow in pumping systems >10 hp to multiple chillers or boilers when others are shut down.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C403.4.3. 4 [ME69] ³		□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

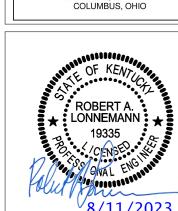
Project Title: Lincoln Elementary Report date: 08/02/23 Data filename:

Report date: 08/02/23

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KOHRS LONNEMANN HEIL ENGINEERS. IN MECHANICAL/ELECTRICAL ENGINEERS WWW.KLHENGRS.COM 1538 ALEXANDRIA PIKE, SUITE 11 FT. THOMAS, KENTUCKY 41075 800-354-9783 859-442-8050 859-442-8058 FAX LEXINGTON, KENTUCKY LOUISVILLE, KENTUCKY COLUMBUS, OHIO



Somplex Tow incoln Elementary Cooling Toward Greendevil LaneDayton, Kentucky 41074
Schools Board of Education-Mr. Jay Brewer **Athletic** Schools Independent Dayton | Bid

SHEET TITLE

MECHANICAL COMPLIANCE

> BG# 23-538 REH# 168-523

DATE 8-10-23

M9-901

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Lincoln Elementary Data filename:

Report date: 08/02/23 Page 5 of 7

Report date: 08/02/23

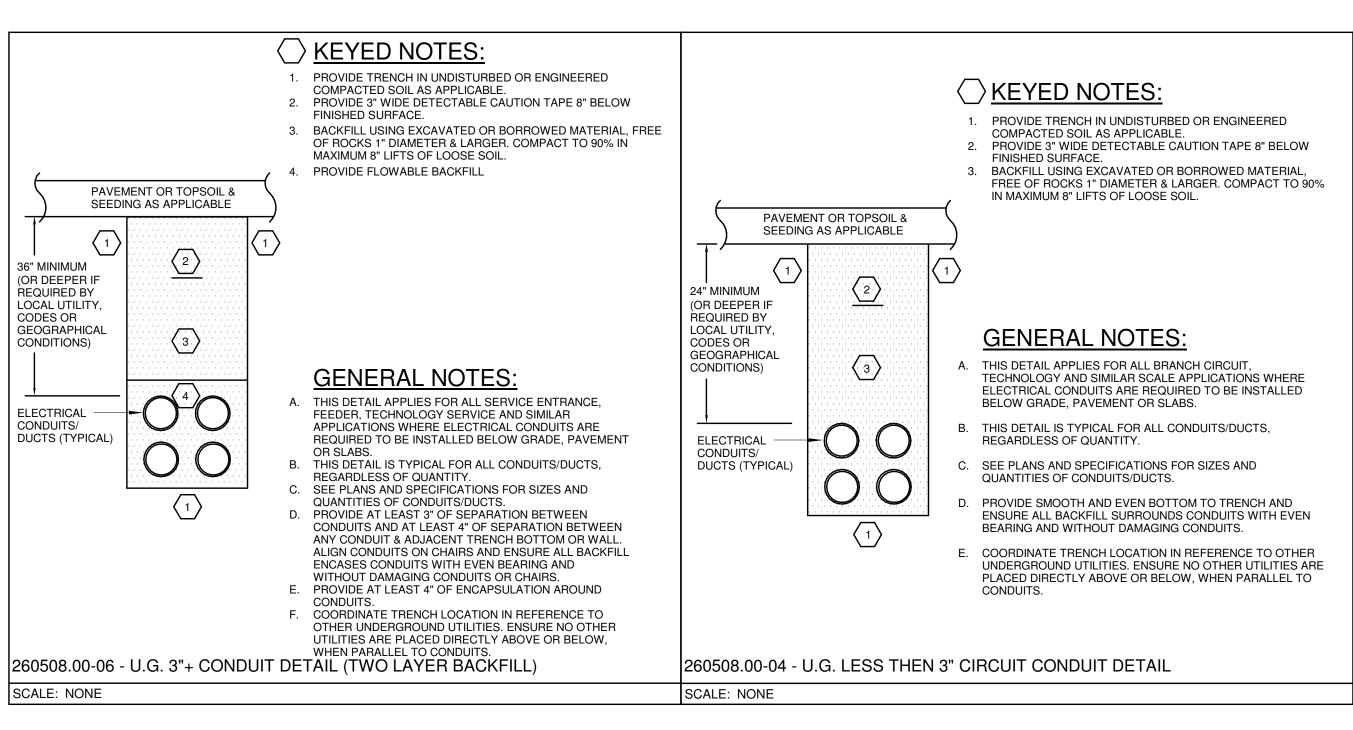
Page 1 of 7

Report date: 08/02/23

Project Title: Lincoln Elementary

Additional Comments/Assumptions:

Data filename:



SYMB	OL		DESCR	RIPTION
		LIGHTING AND LI	GHTING	CONTROLS
VALL H⊗ Ø	8	SINGLE / DOUBLE SIDED EXIT SIGN CONNECT AHEAD OF SWITCHING & CO	ONFIGURE ARRO	DWS TO INDICATE DIRECTION OF EGRESS TRAVEL
• ¢ ¢	⊫ ¢	OUTDOOR AREA SITE LIGHTING STAN NUMBER OF LUMINAIRE HEADS AS INI		AWINGS.
	RE	CEPTACLES AND MI	SCELLA	NEOUS OUTLETS
ФФ	#	SINGLE ("SIMPLEX"), DUPLEX, AND DO	OUBLE DUPLEX ("QUAD") RECEPTACLE RESPECTIVELY
ф ф	#	GFI / GFCI RECEPTACLES		
${\displaystyle \mathop{\Phi}^{\!$	⇔ ^C	RECEPTACLE ATTRIBUTES 42" = MOUNT RECEPTACLE AT THIS H C = INSTALL ABOVE COUNTER AND BA		RADE / FINISHED FLOOR
^Т ф ^{42"}	⇔ W	H = INSTALL RECEPTACLE HORIZONTA	ALLY	LIGHT TO INDICATE THERE IS POWER TO RECEPTACLE)
ф ^{sw}	Ф	T = TAMPER-RESISTANT W = WEATHER PROOF WHILE IN USE	COVER AND WE	ATHER RESISTANT RECEPTACLE
			LANEOL	JS
•		INDICATES DIRECT CONNECTION TO B		
		HEAVY DUTY DISCONNECT SWITCH (NEAVY DUTY DISCONNECT SWITCH (F	FUSED) (RIGHT)	
VFC	-	VARIABLE FREQUENCY DRIVE / VARIA		VE
		ELECTRICAL SWITCHBOARD OR SWIT (DIMENSIONS MAY VARY)		
FROI	NT	ELECTRICAL PANELBOARD OR DISTRI (DIMENSIONS MAY VARY / FLUSH OR S	SURFACE MOUN	ITED AS INDICATED)
	<u> </u>	WALL (RIGHT) OIL FILLED TRANSFORMER	OONTED ON CO	NCRETE PAD (LEFT), SUSPENDED FROM CEILING OR
PAD	⊘ POLE			
	1	SINGLE LII		
	mr	CUSTOMER ELECTRIC METER AND A		
HD M	Մ		ET/BANK MOUN	TED TO TIGHTLY GROUP ALL METERS TOGETHER
PANEL	_	ELECTRICAL PANELBOARD OR DISTRI		
	<u> </u>	ELECTRICAL SWITCHBOARD OR SWIT		
	<u> </u>	SURGE PROTECTIVE DEVICE		
	<u> </u>			_\A/A\/
	I DA 4 0	WIRE / CABI		
	LPA-1,3	CABLING / RACEWAY INSTALLED CON		
		CABLING / RACEWAY INSTALLED BELC		
	- ——— {	UTILITY POLE		
UPO		CONDUIT UP OR DOWN		
	DN	ABBRE	VIATION	IS
42"	DISTANCE	ABOVE FINISHED FLOOR / GRADE /	IG	ISOLATED GROUND
AF	PAVEMEN	T ME OF FUSED SWITCH OR CIRCUIT	LR LI	LEGALLY REQUIRED STANDBY LONG - INSTANTANEOUS
AFCI AIC	ARC-FAUL AMPS INT	T CIRCUIT INTERRUPTER ERRUPTING CURRENT	LSI LSIG	LONG - INSTANTANEOUS LONG - SHORT - INSTANTANEOUS LONG - SHORT - INSTANTANEOUS - GROUND FAULT
ATS	BREAKER	OF FUSED SWITCH OR CIRCUIT IC TRANSFER SWITCH	MCB MFR	MAIN CIRCUIT BREAKER MANUFACTURER
BAS	BUILDING	AUTOMATION SYSTEM	MLO MTS MW	MAIN LUGS ONLY MANUAL TRANSFER SWITCH MICROWAVE OVEN
C.T.C.	WORK UN APPLICAB CIRCUIT E		NIC	NOT IN CONTRACT (SHOWN FOR REFERENCE ONLY)
C / CH DW	COUNTER DISHWAS	HEIGHT OR SPECIAL HEIGHT DEVICE HER	NTS OFE	NOT TO SCALE OWNER-FURNISHED EQUIPMENT - INSTALLED AND
E E.C. EMS		ICY DER DIVISION 26 MANAGEMENT SYSTEM	OS	WIRED BY E.C. OPTIONAL STANDBY
EPO ER	EMERGEN EQUIPMEI	ICY POWER OFF NT ROOM	P.C.	WORK UNDER DIVISION 22
ERM ESP ETR	EMERGEN EXISTING	REDUCTION MAINTENANCE SWITCH ICY STANDBY RATING TO REMAIN	S.C.	WORK UNDER DIVISION 21
EWC EX.	EXISTING	WATER COOLER	SCCR SPD ST	SHORT CIRCUIT CURRENT RATING SURGE PROTECTIVE DEVICE SHUNT TRIP
FBO FIBO	WIRED BY FURNISHE	ED AND INSTALLED BY OTHERS -	TAAC TR	TO ABOVE ACCESSIBLE CEILING TAMPER RESISTANT
FP	DISPLAY.	CLE TO BE USED FOR A FLAT PANEL	TTB TYP	TELEPHONE TERMINAL BOARD TYPICAL
FWE	INSTALLE	ED WITH EQUIPMENT BY OTHERS - D AND WIRED BY E.C.	UCR UL U.L.S.E.	UNDER COUNTER REFRIGERATOR UNDERWRITER'S LABORATORY LISTED FOR SERVICE ENTRANCE
GD GFEP GFI / GFCI	GROUND	DISPOSAL FAULT EQUIPMENT PROTECTION FAULT CIRCUIT INTERRUPTER DEVICE	UNO	UNLESS NOTED OR INDICATED OTHERWISE ON DRAWINGS OR IN SPECIFICATIONS
GND H.C.	GROUND	DER DIVISION 23	VFD / VSD VIF VM	VARIABLE FREQUENCY / SPEED DRIVE VERIFY IN FIELD VENDING MACHINE
H.O.A.		FF - AUTO" SWITCH	VP W/WP	VANDAL PROOF WEATHERPROOF
			WG WR	WIRE GUARD WEATHER RESISTANT
		PLAN-VIEW AND G	RAPHIC	LINE TYPES
		INUOUS INDICATES NEW WORK		
	N FADED INDI	CATES EXISTING WORK TO REMAIN OR	NEW WORK BY	OTHERS AS APPLICABLE
(UNLESS OTH	FD/Wich	un i luj		
WORK SHOWN (UNLESS OTH	N BOLD-DASH	IED INDICATES SELECTIVE DEMOLITION	WORK	

INSTRUCTIONS".

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ELECTRIC DESIGN CRITERIA

APPLICABLE BUILDING CODES

2018 KENTUCKY BUILDING CODE (BASED ON THE INTERNATIONAL BUILDING CODE) 2017 NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) 2013 NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE 2012 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

	GENERAL ELECTRICAL INSTALLATION NOTES
Α.	CODE COMPLIANCE: PROVIDE ALL ELECTRICAL WORK COMPLIANT WITH ALL PREVAILING CODES.
В.	<u>LISTINGS</u> : PROVIDE MATERIALS, COMPONENTS AND ASSEMBLED COMPONENTS WITH LISTINGS AND LABELS FROM A
_	NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), MANUFACTURED, LISTED AND LABELED FOR THEIR INTENDED U
Э.	RATED BUILDING SURFACES: SEPARATE DEVICE BOXES BY A MINIMUM OF 6 INCHES WHERE INSTALLED BACK-TO-BACK V
	DEMISING WALLS TO MAINTAIN REQUIRED FIRE AND SOUND RATING (TYPICAL OF ALL DEVICE BOXES INSTALLED ON DEMI
	WALLS). PROVIDE LISTED FIRE-RATED WRAPS AROUND ALL RECESSED OUTLET, DEVICE AND EQUIPMENT BOXES IN
	FIRE/SMOKE RATED WALLS, CEILINGS AND FLOORS TO MEET OR EXCEED THE RESPECTIVE FIRE/SMOKE RATING OF THE SURFACE.
).	RATED PENETRATIONS: SEAL ALL PENETRATIONS THROUGH FIRE-RATED AND/OR SMOKE-RATED MEMBRANES (FLOORS,
<i>'</i> .	WALLS, CEILINGS, ETC.) USING SEALANT PRODUCTS THAT MEET OR EXCEED THE RATING OF THE RESPECTIVE MEMBRAN
Ξ.	GANGED DEVICES: INSTALL WIRING DEVICES GANGED WHEREVER POSSIBLE FOR INSTANCES WHERE THEY ARE SHOWN
	TOGETHER. THIS INCLUDES LOCATIONS ABOVE COUNTERS AND WORK SURFACES WHERE APPLICABLE.
·.	OUTLET BOXES NEAR CORNERS: INSTALL WALL-MOUNTED SWITCHES, CONTROLS, RECEPTACLES, OUTLETS, ETC. AT LE
	INCHES FROM WALL CORNERS.
à.	CONCEALMENTS: CONCEAL ALL CONDUIT DROPS AND RISES WITHIN WALLS, AND PROVIDE FLUSH-MOUNTED WALL OUTL
	BOXES UNLESS OTHERWISE INDICATED.
1.	<u>DOCUMENTS OF OTHER TRADES</u> : REVIEW DOCUMENTS OF OTHER TRADES, INCLUDING ARCHITECTURAL, PRIOR TO SUBMITTING A BID. PROVIDE ELECTRICAL WORK FOR EQUIPMENT, DEVICES, ETC. OF OTHER TRADES AS REQUIRED TO R
	THEM FULLY OPERATIONAL. REFER TO ARCHITECTURAL ELEVATIONS FOR INTENDED LOCATIONS AND MOUNTING HEIGHT
	EQUIPMENT AND OUTLETS, ETC. PRIOR TO COMMENCING WITH ANY RELATED ROUGH-IN WORK.
	SCHEMATIC REPRESENTATIONS: CIRCUITING WORK SHOWN ON DRAWINGS IS FOR SCHEMATIC GENERAL GRAPHIC
	REPRESENTATION ONLY. DETERMINE SPECIFICS IN FIELD (POINT-TO-POINT ROUTING, HOME-RUN LOCATIONS, METHODS
	CONCEALMENT, ETC.). LOCATIONS AND ROUTING INDICATED ON PLANS ARE SCHEMATIC AND DIAGRAMMATIC IN NATURE.
	LAYOUT AND INSTALL ALL ELECTRICAL WORK IN STRICT COMPLIANCE WITH CHAPTER 1, PART II, ARTICLE 110.26 OF THE
	LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70).
	<u>HOME-RUN DESIGNATIONS</u> : HOME-RUN DESIGNATIONS INDICATED ON PLANS ARE SCHEMATIC DESIGNATIONS ONLY. DETERMINE EXACT CIRCUIT ASSIGNMENTS IN FIELD BASED ON FIELD CONDITIONS. PROVIDE COLOR-CODED CONDUCTOR
	INSULATION ACCORDINGLY, CODED PROPERLY DEPENDING ON SYSTEM, PHASE, NEUTRAL, ETC. PROVIDE EQUIPMENT AI
	PANELBOARD SCHEDULES THAT ACCURATELY INDICATE INSTALLED CONDITIONS.
	LOCAL DISCONNECTS AND CONTROLS AT EQUIPMENT: LOCAL DISCONNECTS AND LOCAL CONTROLS SHOWN AT OR ON
	EQUIPMENT IN PLAN-VIEW ARE SHOWN FOR SCHEMATIC ASSOCIATIONS ONLY. AVOID INSTALLING DISCONNECTS OR
	CONTROLS ON EQUIPMENT ENCLOSURES. INSTALL ON ADJACENT WALLS OR BUILDING STRUCTURE, OR PROVIDE FIELD-
	FABRICATED UNISTRUT OR EQUIVALENT ASSEMBLIES AS NEEDED. PROVIDE FIELD COORDINATION WITH SITE CONDITION
	OTHER TRADES, AND PROVIDE ALL RELATED WORK IN STRICT COMPLIANCE WITH NFPA 70, INCLUDING ARTICLE 110.26.
	PROVIDE A PERMANENT LABEL ON LOCAL DISCONNECTS NOTING THE EQUIPMENT IT SERVES AND THE PANEL AND CIRCL NUMBER FEEDING THE EQUIPMENT PER NFPA 70, ARTICLE 110.22(A).
	EQUIPMENT & LOAD COORDINATION: REFER TO AND COORDINATE WITH POWER FLOOR PLANS, EQUIPMENT SCHEDULES
	(INCLUDING EQUIPMENT COORDINATION SCHEDULES), DRAWINGS OF ALL TRADES, ALL DIVISIONS AND SECTIONS OF
	SPECIFICATIONS AND INSTALLERS OF ALL TRADES. BASED ON ACTUAL EQUIPMENT BEING PROVIDED, DETERMINE AND
	PROVIDE APPROPRIATE BREAKERS, FUSES, CONDUCTORS, CONTROLS, POWER DISTRIBUTION EQUIPMENT, ETC. PERFO
	THESE SERVICES PRIOR TO FURNISHING POWER DISTRIBUTION EQUIPMENT SUBMITTALS.
Λ.	EXTERIOR ELECTRICAL WORK AND WORK SUBJECT TO MOISTURE: EXTERIOR ELECTRICAL WORK SHALL BE WEATHERP
	AND WATER-TIGHT, AND SHALL BE RUST-RESISTANT. PROVIDE XHHW-2 CONDUCTORS FOR ALL APPLICATIONS THAT ARE
	BELOW GRADE OR SUBJECT TO MOISTURE. PROVIDE MINIMUM NEMA 3R ENCLOSURES FOR ALL OUTDOOR EQUIPMENT A INDOOR EQUIPMENT THAT IS SUBJECT TO MOISTURE. PROVIDE NEMA 1 ENCLOSURES FOR ALL OTHER INDOOR EQUIPME
۱.	EQUIPMENT GROUNDING CONDUCTORS: PROVIDE EQUIPMENT GROUNDING CONDUCTORS IN STRICT COMPLIANCE WITH
1.	LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70), INCLUDING ARTICLE 250 AND TABLE 250.122.
	CONDUCTORS MAY OR MAY NOT BE INDICATED ON SINGLE-LINE DIAGRAMS OR ELSEWHERE, BUT SHALL BE PROVIDED UI
	BASE BID NEVERTHELESS.
).	OVERHEAD WORK: HOLD ALL NEW OVERHEAD ELECTRICAL WORK AS TIGHTLY AS POSSIBLE TO THE BOTTOM OF THE
_	OVERHEAD STRUCTURE. DO NOT INSTALL ANY ELECTRICAL WORK WITHIN SIX INCHES OF ROOF DECKING.
) .	COORDINATION DRAWINGS: LAYOUT ALL PROPOSED RACEWAY ROUTING, ELEVATIONS, INSTALLATION METHODS, ETC. (
	COORDINATION DRAWINGS AND COORDINATE ALL PROPOSED RACEWAY ROUTING WITH ALL AFFECTED TRADES PRIOR TO COMMENCING WITH A PROPOSED RACEWAY ROUTING WITH A PROPOSED
	COMMENCING WITH WORK. IN ADDITION, REVIEW THE INFORMATION WITH ARCHITECT, ENGINEER AND OWNER FOR ALL A WHERE THE RACEWAYS WILL BE VISIBLE AFTER COMPLETION OF CONSTRUCTION.
Q .	JUNCTION AND PULL BOXES: LOCATE JUNCTION AND PULL BOXES SO THAT THEY REMAIN ACCESSIBLE AFTER ALL
Χ.	CONSTRUCTION WORK IS COMPLETE. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO COMMENCEMENT OF
	WORK. LOCATE BOXES IN A MANNER THAT AVOIDS HAVING TO USE ACCESS PANELS. IF ACCESS PANELS ARE INEVITABLE
	PROVIDE THEM RATED TO MEET OR EXCEED THE FIRE AND/OR SMOKE RATINGS OF THE RESPECTIVE CEILING OR WALL,
	OBTAIN APPROVAL OF DESIGN PROFESSIONALS FOR EACH LOCATION
₹.	CONDUCTOR TERMINATIONS: IN CASES WHERE CONDUCTOR SIZES ARE TOO LARGE TO FIT INTO LUGS/TERMINALS, PRO
	APPROPRIATE FACTORY LUG KITS FOR AFFECTED EQUIPMENT IF AVAILABLE. ELSEWHERE, PROVIDE INSULATED BUTT-SI
	OR EQUIVALENT METHOD, WITH TAILS SIZED TO FIT LUGS/TERMINALS. PROVIDE SPLICES IN SEPARATE BOXES IF REQUIR
	BASED ON FIELD CONDITIONS, BOX SIZE LIMITATIONS, ETC. CONCEAL BOXES IN ACCESSIBLE OVERHEAD JOIST SPACES II FINISHED REGULARLY OCCUPIED AREAS.
	TYPE MC, AC, NM, SE CABLE: WHERE MORE THAN TWO TYPE MC, AC, NM, OR SE CABLES CONTAINING TWO OR MORE
S.	
i.	CURRENT CARRYING CONDUCTORS IN EACH CABLE ARE INSTALLED IN CONTACT WITH THERMAL INSULATION, CAULK, OR

	ELECTRIC I	DRAWING	G INDEX	
SHEET NUMBER	SHEET NAME	CURRENT REVISION ISSUED	CURRENT REVISION DATE	CURRENT REVISION DESCRIPTION
E0-001	ELECTRIC COVER SHEET	No		
E1-101	ELECTRIC DEMOLITION BASEMENT PLAN OVERALL	No		
E4-101	ELECTRIC POWER BASEMENT PLAN OVERALL	No		
E4-601	ELECTRIC POWER SINGLE LINE DIAGRAM	No		

ELECTRIC CONI	DUIT AND V	VIRE	MATERIAL S	CHEDULE
MC - METAL CLAD CABLE MI - MINERAL INSULATED CABLE HMC - HEALTHCARE METAL CLAD CABLE USE - UNDERGROUND SERVICE ENTRANCI SE - SERVICE ENTRANCE CABLE UF - UNDERGROUND FEEDER NM - NON-METALLIC SHEATHED CABLE RMC - RIGID METAL CONDUIT RNC - RIGID NON-METALLIC CONDUIT RTRC - REINFORCED THERMOSETTING RE LIM - LINE ISOLATION MONITOR		EMT - ELE ENT - ELE FMC - FLE GRC - GA HDPE - H IMC - INTI LFMC - LI SCH 40 P	VC - SCHEDULE 40 POL	NG TUBING DUIT . CONDUIT YLENE CONDUIT NDUIT
CONDUIT APPLICATION	CONDUCTOR TY	PE	RACEWAY TYPE	RACEWAY AND CONDUCTOR NOTES
POWER - INDOOR				
EXISTING HOLLOW PARTITIONS	THHN		EMT	
CONCEALED	THHN		EMT	
CONCEALED, DAMP LOCATIONS	XHHW-2		EMT	
EMBEDDED IN CONCRETE SLAB	THHN		RNC (SCH 40 PVC)	
EXPOSED	THHN		EMT	
POWER - OUTDOOR				
EXPOSED	XHHW-2		RMC (GRC)	
CONCEALED	XHHW-2		EMT	
CONCEALED, DAMP LOCATIONS	XHHW-2		IMC	
UNDERGROUND	XHHW-2		RNC (SCH 40 PVC)	
EXPOSED TO DIRECT SUNLIGHT, ROOF	XHHW-2		RMC (GRC)	







Somplex ver Replac ayton Bid

SHEET TITLE

ELECTRIC COVER SHEET

> BG# 23-538

REH# 168-523

8-10-23

DATE

E0-001

THIS INSPECTION. REUSE OF REMOVED MATERIALS: DO NOT REUSE REMOVED ELECTRICAL MATERIALS UNLESS SPECIFICALLY INDICATED IN PROJECT DOCUMENTS. EXISTING WIRING SYSTEMS MAY BE UTILIZED ONLY TO THE EXTENT INDICATED IN PROJECT DOCUMENTS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE IN FIELD. EXISTING POWER DISTRIBUTION EQUIPMENT: WHERE MODIFICATIONS ARE MADE TO EXISTING POWER DISTRIBUTION EQUIPMENT, COMPLETELY RE-TYPE PANELBOARD DIRECTORIES USING ACCURATE "AS-BUILT" INFORMATION. WHEN ADDING COMPONENTS TO EXISTING POWER DISTRIBUTION EQUIPMENT, PROVIDE FULL SIZE (NO SPLIT OR TANDEM DEVICES) OVERCURRENT PROTECTION DEVICES (OCPs) TO MATCH THOSE ALREADY IN PLACE, INCLUDING MANUFACTURER, MODEL/SERIES, SHORT CIRCUIT CURRENT (SCCR/AIC) RATINGS. PROVIDE COMMON TRIPS (NO FIELD-INSTALLED HANDLE TIES) IN THE SAME GUTTER FOR MULTI-POLE DEVICES. PROVIDE SWITCHING DUTY (SWD). HACR AND HID RATINGS WHERE APPLICABLE FOR LOADS. PROVIDE HANDLE LOCK-ON DEVICES FOR EMERGENCY AND

EXISTING BRANCH CIRCUITS: MAINTAIN, AND RECONNECT IF REQUIRED, BRANCH CIRCUITS THAT ARE EXISTING TO REMAIN. UNLESS NOTED OTHERWISE, ALL CIRCUIT DESIGNATIONS SHOWN ON THE DRAWINGS INDICATE NEW CIRCUIT ASSIGNMENTS, NOT EXISTING. WHERE COLOR CODING OF BRANCH CIRCUIT CONDUCTORS DOES NOT COMPLY WITH NFPA 70 OR IS NOT CONSISTENT WITH EXISTING CONDITIONS. MODIFY TO COMPLY LOAD DOES NOT EXCEED 80 PERCENT OF THE SOURCE CIRCUIT BREAKER AMPERE RATING. IF THAT LOAD IS

ADDED LOADS TO EXISTING CIRCUITS: IN CASES WHERE NEW LOADS ARE INDICATED TO BE CONNECTED TO EXISTING CIRCUITS WITH EXISTING LOADS, METER THE EXISTING CIRCUIT IN ADVANCE AND ENSURE THE EXISTING PLUS ADDED EXCEEDED, NOTIFY DESIGN PROFESSIONAL. REASSIGNMENT OF EXISTING CIRCUITS: IN CASES WHERE EXISTING CIRCUITS ARE REUSED (BASED ON INFORMATION SHOWN ON DRAWINGS OR BASED ON FIELD CONDITIONS) BUT MUST BE CONNECTED TO BREAKERS OTHER THAN THEIR ORIGINAL BREAKER, MODIFY COLOR-CODING AS REQUIRED IF THE NEW BREAKER ASSIGNMENT IS CONNECTED

TO A DIFFERENT LINE/PHASE THAN THE ORIGINAL ONE. USE MEANS AND METHODS COMPLIANT WITH NFPA 70 AND WITH AUTHORITIES HAVING JURISDICTION. ELECTRICAL WORK TO REMAIN OR BE RELOCATED: IF REQUIRED TO ACCOMMODATE CONSTRUCTION RELATED ACTIVITIES OR WHERE SPECIFICALLY SHOWN ON THE DRAWINGS, TEMPORARILY REMOVE, STORE IN PROTECTED LOCATION ON SITE, AND REINSTALL CONFLICTING ELECTRICAL EQUIPMENT, LUMINAIRES, OR DEVICES THAT ARE TO PROTECTIVE BARRIERS: PROVIDE AND MAINTAIN TEMPORARY PARTITIONS AND DUST BARRIERS ADEQUATE TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT FINISHED AREAS AND OTHER SYSTEM COMPONENTS. PROTECT ADJACENT INSTALLATIONS DURING CUTTING AND PATCHING OPERATIONS. REMOVE PROTECTION AND

BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE. PREVENT AIRBORNE DUST AND PARTICULATE MATTER RESULTING FROM ELECTRICAL WORK FROM ENTERING OCCUPIED SPACES, AND FROM ENTERING AIR INTAKES TO OPERATING HVAC SYSTEMS. MEET WITH OWNER AND HVAC INSTALLER TO DETERMINE SPECIAL INDOOR AIR QUALITY (IAQ) REQUIREMENTS RELATED TO ELECTRICAL THAT MAY APPLY TO THIS PROJECT. COOPERATE FULLY WITH HVAC IAQ REQUIREMENTS THAT AFFECT ELECTRICAL WORK AND ARE AFFECTED BY ELECTRICAL WORK. PENETRATIONS: MAKE REQUIRED ELECTRICAL OPENINGS THROUGH WALLS, FLOORS, ETC. IMMEDIATELY PRIOR TO INSTALLATION OF WORK. PROPERLY AND PERMANENTLY SEAL ELECTRICAL OPENINGS IMMEDIATELY AFTER INSTALLATION OF WORK. PROVIDE TEMPORARY SEALS FOR APPLICATIONS WHERE PENETRATIONS ARE MADE BUT CANNOT BE PERMANENTLY SEALED WITHIN FOUR HOURS.

PRE-EXISTING CODE VIOLATIONS: INSPECT EXISTING ELECTRICAL WORK IN AREAS ACCESSED UNDER THIS PROJECT AND BRING INTO COMPLIANCE WITH NFPA 70. THIS APPLIES ONLY TO THE EXTENT THAT SUCH WORK IS UNCOVERED IN THE IMMEDIATE PROJECT AREAS AFFECTED BY CONSTRUCTION ACTIVITIES, AND ONLY TO THE LIMITED EXTENT THAT IT APPLIES TO PRE-EXISTING GENERAL INSTALLATION METHODS SUCH AS MISSING JUNCTION BOX PLATE, OPEN JUNCTION BOX KNOCKOUT, MINOR CONDUIT RE-ANCHORING AND MINOR EXPOSED WIRING/CONNECTIONS. IF MORE EXTENSIVE CODE OR SAFETY VIOLATIONS ARE DISCOVERED, IMMEDIATELY BRING THEM TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE (DETAILED IN WRITING) ALONG WITH PROPOSED COST FOR CORRECTIONS AND IMPACT (IF ANY) ON THE CONSTRUCTION SCHEDULE. <u>TEMPORARY LIGHTING AND POWER</u>: COMPLY WITH NFPA 70 (INCLUDING ARTICLE 590), NFPA 70E AND ALL OTHER

PREVAILING CODES. PROVIDE SUFFICIENT LIGHTING AND POWER CENTERS THROUGHOUT INTERIOR OF NEW WORK OR RENOVATION SCOPE. PROVIDE GFCI PROTECTION FOR ALL WORK. COORDINATE WITH GENERAL CONTRACTOR AND OTHER TRADES, AND PROVIDE ANY ADDITIONAL TEMPORARY ELECTRICAL NEEDS THAT ARE REQUIRED. FULLY DEMOLISH TEMPORARY ELECTRIC BY END OF PROJECT. UPON RECEIVING WRITTEN PERMISSION FROM OWNER'S REPRESENTATIVE, TEMPORARY ELECTRICAL SERVICE(S) MAY BE DERIVED FROM EXISTING BUILDING ENERGIZED SERVICE, PROVIDE OVERCURRENT PROTECTION, DISCONNECTS, CABLES, CONDUCTORS, RACEWAY, ETC. ACCORDINGLY. PROVIDE TEMPORARY SERVICE FROM UTILITY IF PERMISSION TO USE EXISTING BUILDING POWER IS NOT GRANTED BY OWNER'S REPRESENTATIVE; ARRANGE WITH LOCAL UTILITY FOR TEMPORARY SERVICE AND PAY ASSOCIATED FEES FOR INSPECTIONS, CONNECTIONS, ETC., AND PAY FOR UTILITY ELECTRIC USAGE/CONSUMPTION COSTS. RESTORE ASSOCIATED SITE AND BUILDING MATERIALS TO THEIR PRE-CONSTRUCTION STATE AND CONDITION AFTER TEMPORARY LIGHTING AND POWER IS NO LONGER NEEDED. INTERIM LIFE-SAFETY PROVISIONS: PROVIDE INTERIM FIRE ALARM AND CODE MINIMUM LIGHTING IN DEMOLITION AND CONSTRUCTION AREAS. PROVIDE TEMPORARY PLASTIC COVERS, OBTAINED FROM SMOKE DETECTOR MANUFACTURER OR OBTAINED FROM A THIRD PARTY AND SPECIFICALLY APPROVED FOR SUCH USE BY SMOKE

DETECTOR MANUFACTURER, OVER EXISTING SMOKE DETECTORS WITHIN PROJECT AREA, AND IN ADJACENT AREAS THAT ARE EXPOSED TO CONSTRUCTION-RELATED DUST OR AIRBORNE PARTICULATES. REMOVE ALL TEMPORARY LIFE SAFETY WORK WHEN NO LONGER NEEDED. INTERIM EGRESS PATH PROVISIONS: PROVIDE TEMPORARY UL 924 COMPLIANT EXIT AND/OR EGRESS LIGHTING ALONG EGRESS ROUTES THAT MUST REMAIN ACCESSIBLE DURING CONSTRUCTION. PROVIDE TEMPORARY FIRE ALARM SYSTEM PULL STATIONS AND AUDIO/VISUAL ALARM NOTIFICATION DEVICES ALONG ALL AFFECTED EGRESS ROUTES. REMOVE THIS SCOPE WHEN NO LONGER NEEDED.

EXISTING CONDITIONS - POWER CONTINUITY NOTES

THE FOLLOWING NOTES BROADLY DEFINE SOME OF THE SPECIALTY BASE BID SCOPE OF WORK REQUIRED TO PROVIDE SPECIAL TEMPORARY POWER FOR NEW AND EXISTING FACILITIES TO ACCOMMODATE UTILITY POWER INTERRUPTIONS. FIELD VERIFY ALL SPECIFICS AND PROVIDE MATERIALS, NORMAL TIME LABOR, PREMIUM TIME LABOR, SERVICES, ETC. FOR ALL WORK UNDER BASE BID, INCLUDING BUT NOT LIMITED TO THE FOLLOWING.

INVESTIGATION OF EXISTING CONDITIONS: LOCATE, IDENTIFY, AND PROTECT ELECTRICAL SERVICES PASSING THROUGH DEMOLITION AREAS AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED. PROVIDE TEMPORARY SERVICES FOR AFFECTED AREAS. IT IS RECOGNIZED THAT THERE MAY BE SOME CONDUIT SYSTEMS RENDERED INACTIVE BY DEMOLITION, CAUSING DISCONNECTION OF "DOWNSTREAM" OUTLETS, ETC. INVESTIGATE THESE TYPES OF CONDITIONS (FOR ALL SYSTEMS) PRIOR TO DEMOLITION. PROVIDE NECESSARY CORRECTIVE ELECTRICAL WORK PRIOR TO DEMOLITION TO ENSURE THAT SUCH "DOWNSTREAM" DEVICES REMAIN PERMANENTLY ACTIVE THROUGHOUT DEMOLITION, DURING NEW CONSTRUCTION, AND AFTER PROJECT COMPLETION. PROTECT EXISTING ELECTRICAL WORK SERVING EXISTING SPACES AND EQUIPMENT THAT MUST REMAIN OPERATIONAL DURING PART OR ALL OF THE CONSTRUCTION PERIOD, AND ENSURE POWER CONTINUITY IS MAINTAINED FOR SAME THROUGHOUT DURATION OF CONSTRUCTION ACTIVITIES.

COORDINATION WITH OWNER: CAREFULLY COORDINATE WORK AND SYSTEM SHUTDOWNS IN ADVANCE WITH OWNER'S REPRESENTATIVE, AND WITH AFFECTED TRADES SO THAT NORMAL BUILDING ACTIVITIES AND OTHER CONSTRUCTION TRADES ARE MINIMALLY AFFECTED. DO NOT INTERRUPT ELECTRICAL UTILITY SERVICE(S) TO THE FACILITY, OR ANY PART THEREOF, UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS, AND THEN ONLY AFTER PROVIDING TEMPORARY ELECTRICAL SERVICE(S)/FEEDS: NOTIFY OWNER NO FEWER THAN FOURTEEN DAYS IN ADVANCE OF EACH PROPOSED INTERRUPTION OF AN ELECTRICAL SERVICE; DO NOT PROCEED WITH INTERRUPTION OF AN ELECTRICAL SERVICE WITHOUT OWNER'S WRITTEN PERMISSION: DO NOT ENERGIZE ANY NEW WORK WITHOUT NOTIFICATION TO, AND SUBSEQUENT PERMISSION FROM, THE OWNER AND ALL AFFECTED PARTIES.

TEMPORARY ARRANGEMENTS: COMPLY WITH NFPA 70 (INCLUDING ARTICLE 590), NFPA 70E AND ALL OTHER PREVAILING CODES. DURING CONSTRUCTION RELATED ELECTRICAL OUTAGES, PROVIDE ALL TEMPORARY ELECTRICAL WORK REQUIRED TO MAINTAIN POWER TO OCCUPIED AREAS OF THE BUILDING. COORDINATE WITH, AND OBTAIN APPROVAL FROM, OWNER AND DESIGN PROFESSIONALS FOR ALL MEANS AND METHODS. COMPLY WITH NFPA 70E. SCHEDULE ALL OUTAGES IN ADVANCE WITH OWNER, AT DAYS OF WEEK AND TIMES OF DAY OR NIGHT AS DIRECTED BY

TEMPORARY GENERATOR: PROVIDE A TEMPORARY MOBILE ENCLOSED TRAILER-MOUNTED DIESEL-FUEL-POWERED PACKAGE GENERATOR SET (EPA TIER 4 FINAL RATED) FOR EACH INSTANCE FOR AS LONG AS IT TAKES TO MODIFY OR REPLACE UTILITY POWER TO ANY PART OF THE FACILITY. PROVIDE SECURED AND PROTECTED TEMPORARY FEEDERS AND TERMINATIONS FROM MOBILE GENERATOR TO EQUIPMENT. REMOVE MOBILE GENERATOR FROM SITE WHEN NO LONGER NEEDED AND REMOVE ALL RELATED TEMPORARY PROVISIONS. PROVIDE ALL REQUIRED DIESEL FUEL FOR TEMPORARY GENERATOR OPERATION. PARK THE TEMPORARY GENERATOR AT A LOCATION AS DIRECTED BY OWNER. RESTORE ALL SITE AND BUILDING CONDITIONS TO THEIR RESPECTIVE PRE-MODIFIED STATE AND CONDITION AFTER

(E2)

EXISTING CONDITIONS - DEMOLITION NOTES

. <u>DEFINITION OF DEMOLITION</u>: WHERE THE TERM "DEMOLITION" IS USED IN ELECTRICAL DOCUMENTS, INTERPRET IT TO MEAN "DEMOLITION" OR "SELECTIVE DEMOLITION" AS APPLICABLE FOR THE RESPECTIVE SCOPE OF WORK. WHERE THE TERM "DEMOLISH", "REMOVE" OR SIMILAR TERMS ARE USED IN ELECTRICAL DOCUMENTS, INTERPRET TO MEAN "DISCONNECT, REMOVÉ, DISPOSE OF, AND REMOVE ALL RELATED ELECTRICAL CONDUIT, RACEWAYS, WIRING,

CABLES, BOXES, SUPPORTS, ETC.". GENERAL ACCOMMODATIONS: PROVIDE ELECTRICAL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT DEMOLITION AND AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION. DISCONNECT AND REMOVE WORK TO BE ABANDONED, AND AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES, IN AREAS AFFECTED BY THIS

PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE. COORDINATE PHASING OF WORK CAREFULLY WITH OWNER PRIOR TO BEGINNING ELECTRICAL DEMOLITION WORK. REMOVAL OF ABANDONED WORK: REMOVE ACCESSIBLE ABANDONED, INACTIVE AND OBSOLETE RACEWAY SYSTEMS. EQUIPMENT, LUMINAIRES, DEVICES, CONDUIT, WIRING, CABLES, BOXES, SUPPORTS, CONTROLS, ETC. ABANDONED RACEWAYS EMBEDDED IN FLOORS, WALLS, AND CEILINGS MAY REMAIN IF SUCH MATERIALS DO NOT INTERFERE WITH NEW INSTALLATIONS. THIS APPLIES FOR ALL ELECTRICAL WORK, AND ALL COMMUNICATIONS AND INFORMATION TECHNOLOGY TYPE WORK, INCLUDING ALL SUCH WORK ABOVE CEILINGS, ETC. REMOVE RELATED ABANDONED UNUSED RACEWAY BACK TO THE NEAREST RESPECTIVE "UPSTREAM" JUNCTION BOX THAT REMAINS ACTIVE EVEN IF

OUTSIDE OF THE CONFINES OF THE PROJECT AREA. REMOVE ABANDONED UNUSED WIRING AND CABLES BACK TO RESPECTIVE SOURCES SOURCE EVEN IF SOURCES ARE OUTSIDE THE CONFINES OF THE PROJECT AREA.

RE-USE OF EXISTING CONDUIT: EXISTING BRANCH CIRCUIT AND SYSTEMS CONDUIT, NOT CONFLICTING WITH NEW CONSTRUCTION AND NOT CONFLICTING WITH OVERHEAD OR CEILING CAVITY REQUIREMENTS, MAY BE RE-USED AT THE DISCRETION OF THE ELECTRICAL INSTALLER IF IT COMPLIES WITH THESE CONTRACT DOCUMENTS AFTER ALL ABANDONED CONDUCTORS AND CABLES HAVE BEEN REMOVED FROM THEM. DO NOT EXCEED NFPA 70 REQUIRED CONDUIT FILL AND DO NOT INSTALL WIRING FED FROM DIFFERENT SOURCES IN COMMON CONDUIT.

MODIFICATIONS TO ACCOMMODATE NEW WORK: REMOVE AND RELOCATE EQUIPMENT, LUMINAIRES, DEVICES, CONDUIT, RACEWAYS, WIRING, CABLES, BOXES, SUPPORTS, ETC. THAT CONFLICT WITH CONSTRUCTION RELATED WORK OF ALL TRADES AS NECESSARY TO ACCOMMODATE NEW WORK OF RESPECTIVE TRADES. REWORK AND EXTEND RACEWAY AND WIRING AS REQUIRED TO ACCOMMODATE NEW OR RELOCATED ELECTRICAL WORK. MAINTAIN (OR RECONNECT IF APPLICABLE) REMAINING WIRING. PROVIDE ELECTRICAL DISCONNECTIONS, AND RECONNECTIONS WHERE APPLICABLE, FOR EQUIPMENT TO BE REMOVED (OR RELOCATED) BY OTHER TRADES.

CUTTING AND PATCHING: PERFORM CUTTING AND PATCHING REQUIRED FOR DEMOLITION, RESTORED TO MATCH SURROUNDING REMAINING SURFACES, INCLUDING FIRE/SMOKE RATINGS. LUMINAIRES: FOR ALL EXISTING LUMINAIRES WHICH ARE SCHEDULED FOR REUSE, REMOVE FROM EXISTING CEILINGS DURING DEMOLITION; PROTECT DURING CONSTRUCTION; CLEAN, SERVICE (IF REQUIRED), RE-LAMP (WITH LAMPS TO MATCH BUILDING STANDARD) AND REINSTALL AT LOCATIONS INDICATED. FOR ALL EXISTING LUMINAIRES WHICH ARE SCHEDULED TO BE REMOVED AND TURNED OVER TO OWNER, THE LUMINAIRES SHALL BE DISCONNECTED, CAREFULLY REMOVED AND TURNED OVER TO OWNER. TRANSFER SUCH LUMINAIRES TO STORAGE AREA ÁS

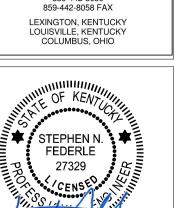
DIRECTED IN FIELD. DISPOSAL OF MATERIALS: REFER TO OWNER'S REPRESENTATIVE FOR DISPOSAL INSTRUCTIONS FOR ABANDONED ELECTRICAL MATERIALS REMOVED DURING DEMOLITION AND THEREAFTER. NEATLY STORE ELECTRICAL MATERIALS THAT THE OWNER ELECTS TO RETAIN AT THE SITE AS DESIGNATED BY THE OWNER'S REPRESENTATIVE. LEGALLY DISPOSE OF MATERIALS THAT THE OWNER ELECTS NOT TO RETAIN, DISCONNECT AND REMOVE ELECTRICAL MATERIALS DESIGNATED FOR SALVAGE (REMOVAL AND REUSE, OR FOR TURNING OVER TO OWNER) UNDAMAGED. DISCONNECT AND REMOVE WIRING AND "WHIPS" FROM EQUIPMENT TERMINAL POINTS. CAREFULLY TRANSPORT SALVAGED ELECTRICAL MATERIALS TO A PROTECTED ON-SITE STORAGE LOCATION AS DIRECTED IN FIELD AND NEATLY STORE THEM GROUPED BY SYSTEM TYPE.

CLEANING OF REUSED COMPONENTS: CLEAN COMPONENTS TO BE REUSED INSIDE AND OUT, AND REINSTALL WHERE INDICATED ON DRAWINGS. MODIFY AND EXTEND RELATED EXISTING WIRING IN CONDUIT ACCORDINGLY.

KEYED NOTES

COORDINATE WITH DUKE-ENERGY AND DEMOLISH EXISTING UTILITY POLES FOR SECURITY LIGHTING. SEE NEW ELECTRIC PLANS FOR REPLACEMENT FLOOD LIGHTING.







0 200 Dayton Independent Dayton

SHEET TITLE

ELECTRIC DEMOLITION **BASEMENT PLAN OVERALL**

> BG# 23-538

REH# 168-523 DATE

8-10-23

E1-101

1" = 10'-0"

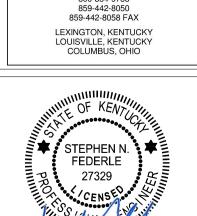
UTILITY

KEYED NOTES

- ROUTE NEW FEEDER UP HIGH THROUGH BASEMENT FROM MPDP, DOWN BASEMENT EXTERIOR WALL TO GET UNDERGROUND, THEN UNDERGROUND TO CHILLER. FOLLOW NEW CHILLER PIPE ROUTING AND COORDINATE TRENCHES BETWEEN TRADES. COORDINATE EXACT ROUTING WITHIN BASEMENT IN FIELD PRIOR TO ROUGH IN. PROVIDE NEW FLOOD LIGHTING TO REPLACE DEMOLISHED DUKE-ENERGY SECURITY LIGHTING. MOUNT AS HIGH AS POSSIBLE ON
- EXTERIOR OF BUILDING. CONCEAL AND ROUTE CONDUIT WITHIN BUILDING. PROVIDE PHOTOCELL CONTROL. PROVIDE CONDUIT(S) FOR CHILLER CONTROL WIRING. COORDINATE CONDUIT REQUIREMENTS WITH MECHANICAL CONTROLS CONTRACTOR

PRIOR TO TRENCHING / ROUGH-IN.

KOHRS LONNEMANN HEIL ENGINEERS, INC MECHANICAL/ELECTRICAL ENGINEERS WWW.KLHENGRS.COM 1538 ALEXANDRIA PIKE, SUITE 11 FT. THOMAS, KENTUCKY 41075 800-354-9783 859-442-8050 859-442-8058 FAX LEXINGTON, KENTUCKY LOUISVILLE, KENTUCKY COLUMBUS, OHIO





Complex ver Replac Package #1 - Lincoln Elementary Cooling Tovelogyton, Kentucky 41074

Dayton Independent Schools Board of Education- Mr. Jay Brew Dayton

SHEET TITLE ELECTRIC POWER BASEMENT PLAN OVERALL

> BG# 23-538

REH# 168-523

8-10-23

E4-101

1 ELECTRIC POWER PLAN - BASEMENT - OVERALL 1" = 10'-0"

LP-BASE N

							ELE	CTRIC E	NCLOSE	D SWIT	CH AND	CIRCUIT	BREAK	KER SCHEDULE					
YPICAL EQUIPMI	ENT NAME NOME BUTION SYSTEM (H - 480Y/277V, L	ENCLATURE M (BLANK - N	: IORMAL, E - EMERGE	SWITCHES AND CIRCUITS B		AND MAY NOT INC	OLODE ALL EI	NGLOSED SWITCH	IES AND CIRCUIT B	REAKERS REQUIP	RED IN THESE CON	STRUCTION DOCU	MENIS.						
EQUIPMENT	PHASE	SPACE NUMBER	SPACE NAME	SUPPLY FROM POWER BRANC	H TYPE	VOLTAGE	PHASE	WIRES	DEMAND (kVA)	DEMAND (A)	TRIP RATING (A)	FRAME RATING (A)	OCP TYPE	FEEDER	ULSE	ENCL GEC T	OSURE CURRE	ENT CIRCUIT	NOTES
H-1	New Construction			MPDP	Fused Switch	208 3	3	4	284674 VA	790 A	1000	1000	FUSED	(4) SETS OF (4) #350 KCMIL AL, (1) #4/0 AWG AL GND. IN 3" CONDUIT EACH		NEMA	3R 20413	25000	

											ELECT	RIC PAN	IELBOAF	RD AND S	SWITCHBO	DARD SC	HEDULE						
POWER DISTR	(H - 480Y/277V.	EM (BLANK - I	NORMAL, E - EMERGEN	CY, S - STAI	NDBY, L - LIFE SAF	ETY)									I							.ult sh	DT.
IIIDMENT	DHASE	SPACE	SDACE NAME	SUPPLY	DOWED BRANCH	TVDE	VOLTAGE	DHASE	WIDES	DEMAND (LVA)	DEMAND (A)	MAINS DATING (A)	MAINS FRAME	MAINS TYPE	RUSSING	MOLINTING	EEEDED	LUGS TVDE	SDD	III SE GEC	ENCLOSURE CUF	RENT CIR	UIT
	PHASE Existing	SPACE NUMBER	SPACE NAME		POWER BRANCH NORMAL	TYPE Switchboard	VOLTAGE 208	PHASE	WIRES 4	DEMAND (kVA) 41550 VA	DEMAND (A) 115 A	MAINS RATING (A)	RATING (A)	MAINS TYPE MAIN LUGS ONLY	BUSSING COPPER	MOUNTING PAD	FEEDER EXISTING FEEDER, (4) SETS OF (4) #350 KCMIL CU, (1) #3/0 AWG CU GND. IN 3" CONDUIT EACH 75C RATED	LUGS TYPE	SPD	ULSE GEC		RENT CIRC (A) RATII	UIT
UIPMENT		SPACE NUMBER			NORMAL	Switchboard		PHASE 3 3	WIRES 4		· , ,	MAINS RATING (A) 1200 3000	RATING (A) 1200 3000		COPPER	PAD	EXISTING FEEDER, (4) SETS OF (4) #350 KCMIL CU, (1) #3/0 AWG CU GND. IN		SPD Yes	ULSE GEC	ENCLOSURE CUF	RRENT CIRC (A) RATII 3 65000	UIT G (A) NOTES EXISTING CUTLER-HAMMER FREEDOM SERIES 2100
	Existing	SPACE NUMBER		MPDP I	NORMAL :	Switchboard	208	PHASE 3 3 3	WIRES 4 4 4	41550 VA	115 A	1200	RATING (A) 1200 3000	MAIN LUGS ONLY FUSED - BOLTED	COPPER	PAD	EXISTING FEEDER, (4) SETS OF (4) #350 KCMIL CU, (1) #3/0 AWG CU GND. IN 3" CONDUIT EACH 75C RATED EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED		SPD Yes	ULSE GEC Yes	NEMA 1 3474	RENT (A) CIRCURATE 3 65000 6 65000	UIT G (A) NOTES EXISTING CUTLER-HAMMER FREEDOM SERIES 2100 EXISTING CUTLER-HAMMER POW-R-LINI

	ELE	CTF	RIC E	QU	IPMEI	NT S	SUF	PL	Y 5	SCI	HE	DL	JLE	
EQUIPMENT MARK	SUPPLY FROM	СКТ	EMERG.	LOAD (kVA)	AVAILABLE FAULT CURRENT	VOLTS	POLE	HTG KW	WATT	HP	FLA (A)	MCA (A)	RQD OCP (A)	BREAKER RATING (A)
CH-1	MPDP	13		284.67	20413	208 V	3					878	1000	1000
CWP-1	MCC-1	2		17.40	15087	208 V	3			15				90
GF-1	PANEL B	40		0.90	1478	120 V	1			0.333				20

						H	VAC I	ELE(CTRIC	CAL C	OORE	DINAT	ION S	CHE	DULE									
ABBREVIATIO	ONS		C	ONTRACTOR T	PE					N	MOTOR CON	TROL TYPE						CONTRO	L TYPE					
MC M SD E CN C TS T C/B H FUSE F FLA C MCA M	OCAL DISCONNECT MOTOR CONTROL (POWER) DUCT SMOKE DETECTOR CONTROLS TOGGLE SWITCH H.A.C.R. CIRCUIT BREAKER AT SOURCE P TUSE AT LOCAL DISCONNECT (VERIFY FIEDPERATING FULL LOAD AMPS MINIMUM CIRCUIT AMPACITY CORD AND PLUG CONNECTION		EC EX FC GG HC MI PC OI	C EXIS C FIRE C GEN C HVA FR MAN C PLUI	TING PROTECT ERAL CON CONTRA JFACTURE	CTOR FR ITRACTOR				N	MCC MC MG MA MS MA /FD VAI MSR MA	MBINATION S TOR CONTR GNETIC STAI NUAL START RIABLE FREG NUAL START ERCURRENT	OL STARTEF RTER OR CC ER QUENCY DRI ER W/ CONT	ONTACT VE TROL RELAY	,			TC CPT BAS LOW LINE RLINE MAN FA CO INT ASD DSD	BUILDIN LOW VC LINE VO REVERS MANUAL FIRE AL CARBON INTEGR. AREA SI	OL POWER IG AUTOMA PLTAGE COI PLTAGE COI SE ACTING I L	TION SYST NTROLS NTROLS LINE VOLTA E SENSOR PMENT ECTOR	EM AGE THERM	IOSTAT	
EQUIPMENT	MARK DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	ОСР	FED FROI	M DC FUR	N DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	FA SHUTDOWN	AVAILA FAULT CU
CH-1	AIR COOLED SCROLL WATER CHILLER	208 V	3						878	1000		EC	EC	EC					BAS	HC	HC	HC	NA	20413
WP-1	HYDRONIC PUMP	208 V	3		15							EC	EC	EC	VFD	HC	EC	EC	BAS	HC	HC	HC	NA	15087
GF-1	GLYCOL FEEDER	120 V	1		0.333							EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	EC	NA	1478

	SUPPLY FR LOCAT DISTRIBUTION SYST		#3/0 AV	WG CU		MAINS FEE	NG (A): 5 TYPE: DER ID: CU GND	MAIN XC-20	0-4C		RATED		RT CIR	CUIT RA	RENT (A ATING (A IGS TYPI IRE TYPI	.): EXIS	STING	i			PHASE: Existing URGE SUPRESSION: ULSE: 200% NEUTRAL: SOLATED GROUND:	
CKT	CIRCUIT	DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE			В		С	POLE	FRAME	TRIP	GND	AWG	VD%		CIRCUIT DESCRIPTION	CK
3	(EX) UNIT VENT					20 A	20 A	2	1.30		.30 1	.30		2	20 A	20 A				(EX) UNIT \	/ENT	4
5 7	(EX) UNIT VENT					20 A	20 A	2	4.20	1.30		1.3	1.40	1	20 A	20 A	-			(EX) FCU		6
9	(EX) UNIT VENT					20 A	20 A	2	1.30		.30 1	.30		2	20 A	20 A				(EX) UNIT V	/ENT	8 10
11	(LX) OIVIT VEIVI					20 /	207					1.3	1.00	1	20 A	20 A				(EX) EF		12
13 15	(EX) UNIT VENT					20 A	20 A	2	1.30	0.70	.30 1	20		1	20 A	20 A				(EX) EF		14 16
	(EX) FCU		-			20 A	20 A	1		'	.30 1		0 1.30	2	20 A	20 A				(EX) UNIT \	/ENT	18
19 21	(EX) UNIT VENT					20 A	20 A	2	1.30		.30 1	30		2	20 A	20 A				(EX) UNIT \	/ENT	20
	(EX) FCU					20 A	20 A	1					1.40	1	20 A	20 A				(EX) FCU		24
	(EX) LIGHTING					20 A	20 A	1	1.00	0.50				1	20 A	20 A				(EX) RCPT		26
	(EX) LIGHTING					20 A	20 A	1			.00 0	.00		1	20 A	20 A				(EX) SPARE		28
	(EX) LIGHTING					20 A	20 A	1				1.0	0.00	1	20 A	20 A				(EX) SPARE		30
	(EX) LIGHTING					20 A	20 A	1	1.00	0.00										,		32
33 35	(EX) UNIT VENT					20 A	20 A	2		1	.30 0		2 0 00	2	30 A	30 A		-		(EX) DRYEF	К	34
	(EX) EMERG LIGHTING		-			20 A	20 A	1	1.00	0.00		1.3	0.00	2	50 A	50 A				(EX) RANGI	E	36 38
	(EX) SPACE		- -					1	1.00		0	.90		1	20 A	20 A	#12	#12	1.158	GF-1 MOT	OR	40
	(EX) SPACE							1					0.26	_						RCPT, LTG		42
	. ,			1	OTAL (CONNE	CTED I	OAD:	13.3	kVA	13.6 k\	/A 13	.1 kVA							,		
LOA	CLASSIFICATION	CONNECTED LOA	D			DEM	IAND F	ACTOR	₹		Е	STIMATE	D DEM	AND						PAI	NEL TOTALS	
	nuous	0 VA					0.00%						VA							TED LOAD:		
Coolii	<u> </u>	0 VA					0.00%						VA							D FACTOR:		
Eleva		0 VA					0.00%						VA				ADDE	D CO	NNEC.	TED LOAD:	1160 VA	
Heati	ng en Equipment	0 VA 0 VA					0.00%						VA VA			DEM	AND (CALC	JLATI	ON NOTES:	100% EXISTING	
Lighti		84 VA					125.00						VA 5 VA						ΤΩΤΔΙ	DEMAND:	40205 0 VA	
Motor	-	896 VA					125.00						20 VA							. DEMAND.	.5_50.0 171	
	Continuous	0 VA					0.00%						VA				T	OTAL	DEM/	AND AMPS:	112 A	
Rece	otacle	180 VA					100.00						0 VA								-	
NOTE	:S:	•								BR	FAKF	R QUANT	ITIFS (I	NFW O	NLY)							

	SN	/ITCHR	OARD:	MCC-	.1							
					•							
			PLY FROM:								T CURRENT (A): 34743	
			LOCATION:								UIT RATING (A): 65000	
	D		N SYSTEM:		3PH 4W						CLOSURE TYPE: NEMA 1	
			RATING (A):							SURG	E SUPRESSION:	
			AINS TYPE:		GS ONLY					1001	ULSE:	
			NEUTRAL: FEEDER ID:		10					150L	ATED GROUND:	
						(A) SETS (NE (1) #350 K	CMII	CII (1) #3/0 A\MC	CLICND IN 3"	PHASE: Existing CONDUIT EACH 75C RATED	
							REEDOM SE			CO GIND. IIN 3	CONDUIT EACH 75C RATED	
			NOTES.	LAISTING	OUTLEN		NEEDOW 31	INILO	5 2 100			
СКТ	TRIP	FRAME	POLES	VD%	AWG	GND			CIR	CUIT DESCRIP	TION	LOAD
1	225 A	225 A	3							(#) SPARE		0.00 kVA
2	90 A	150 A	3	0.221	#2	#8			(#	#) CWP-1 MOT	OR	17.40 kVA
3	225 A	225 A	3							(#) SPARE		0.00 kVA
4	150 A	150 A	3		-					(#) SPARE		0.00 kVA
5	70 A	70 A	3							(#) SPARE		0.00 kVA
6	70 A	70 A	3							(#) SPARE		0.00 kVA
7	40 A	40 A	3							(#) SPARE		0.00 kVA
8	40 A	40 A	3							(#) SPARE		0.00 kVA
9	40 A 40 A	40 A 40 A	3		-					(EX) H/CWP-1		5.20 kVA 5.20 kVA
11	20 A	20 A	3		-	-				(EX) H/CWP-2 (EX) HWP-1	<u> </u>	2.70 kVA
12	20 A	20 A 20 A	3		-					(EX) HWP-1		2.70 kVA
13	15 A	15 A	3							(EX) AHU-1		2.00 kVA
14	15 A	15 A	3							(EX) H/CWP		2.00 kVA
15										(=//) / // (-//)		
16												
17												
18												
19												
20												
LOAD CLA		ION		CTED LOA	D		ND FACTOR		_	ED DEMAND	BREAKER QUANTITIES (N	1EW ONLY)
Continuous) VA			0.00%) VA		
Cooling) VA			0.00%) VA		
Elevator) VA			0.00%) VA		
Heating	inman!) VA			0.00%) VA) VA		
Kitchen Equ Lighting	upment) VA) VA			0.00%) VA) VA		
Jgnung Motor				100 VA			25.00%			750 VA		
Violoi Von-Contini	LIOUS) VA			0.00%) VA		
Receptacle) VA			0.00%		_) VA		
.500ptaolo							PANEL .	ΓΟΤΔ				
					EXISTIN	IG CONNEC	TED LOAD:					
				EXI			D FACTOR:					
							TED LOAD:					
							ION NOTES					
TOTAL DEMA									0.0 VA			
					T	OTAL DEM	AND AMPS:	115	Α			

_	PHASE	EMERGE	NCY	HP	WA	TTS	HTG KW	FLA	MCA	OCP	FED FROM	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	1
3				5					878	1000		EC EC	EC EC	EC EC	VFD	HC	-
1).333								EC	EC	EC	MG	MFR	Ī
																	_
		SW	/ITC	HBOA	RD:	MPD	P										
				SUPPLY F	:DOM·	LITILITY	/					EALUT C	URRENT (A	N. 42116			
				LOCA		UTILITI	l				SHC	RT CIRCUIT	•	,			
		DI	STRIRI			208/120	V 3PH 4W				Offic		SURE TYP	•			
		Di		INS RATIN			,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						UPRESSIO				
							- BOLTED	PRESSUR	E					E: Yes			
			2	200% NEU	TRAL:							ISOLAT	ED GROUN	D:			
				FEEDI	ER ID:	X3000							PHAS	E: Existing			
											MAIN UNLESS NOTE	ED OTHERW	ISE				
				NO	OTES:	EXISTIN	NG CUTLEF	R-HAMMEF	POW-R-LINE	С							_
	CKT	TRIP	FRA		LES	VD%	AWG	GND				DESCRIPTION	ON			LOAD	
	1	1200 A	1200		3	-					,	X) DP-1				0.00 kVA	_
_	3	400 A 400 A	400 400		3						<u> </u>	X) L1KA GYM RTU				0.00 kVA 0.00 kVA	
_	4	200 A	200		3						, ,	X) LP-1				0.00 kVA	_
_	5	200 A	200		3						· · · · · · · · · · · · · · · · · · ·	X) LP-2				0.00 kVA	
	6	400 A	400		3						,	P GYM RTU				0.00 kVA	_
_	7	1200 A	1200		3	SL	SL	SL			. ,	() MCC-1				37.20 kVA	
	8	200 A	200	Α :	3						(EX	X) LP-1A				0.00 kVA	
	9	200 A	200	Α :	3						(E	X) LP-2B				0.00 kVA	ι
	10	200 A	200		3	SL	SL	SL				PANEL B				39.96 kVA	_
	11	200 A	200		3	SL	SL	SL			, ,	PANEL C				0.00 kVA	_
	12	200 A	200		3						. ,	L1AA L2AA				0.00 kVA	_
	13	1000 A	1000) A	3	SL	SL	SL			CH-1	I MOTOR				284.67 kVA	Α
	14 15																4
	16																-
	17																_
	18																
	19																
	20																
_			ION C			D DEM	IAND FACT	OR ESTI	MATED DEMA		DEMOLITION LOA	AD SUMMAR			JANTITIES (I	NEW ONLY))
	ontinuous	i		0 VA			0.00%		0 VA	Moto	or: 101% 211.51kVA		(1)) 1000A / 3P			
_	ooling levator			0 VA 0 VA			0.00%		0 VA 0 VA								
_	eating			0 VA			0.00%		0 VA								
_	itchen Equ	uipment		0 VA			0.00%		0 VA								
	ghting			84 V			125.00%		105 VA								
_	lotor			302970			123.49%		374139 VA								
N	on-Contin	uous		0 VA	١		0.00%		0 VA								
R	eceptacle			180 V	/A		100.00%		180 VA								
										TOTALS							
					ME	TERED			NEC 220.87):								4
									CTED LOAD:								\dashv
									ED DEMAND:		VA XISTING METERED I	DEMAND. LE	ESS DEMOL	ISHED DEM	AND		$\frac{1}{2}$
									AL DEMAND:			,					\dashv
_																	\dashv
_							•	TOTAL DE	MAND AMPS:	1172 <i>/</i>	Α						

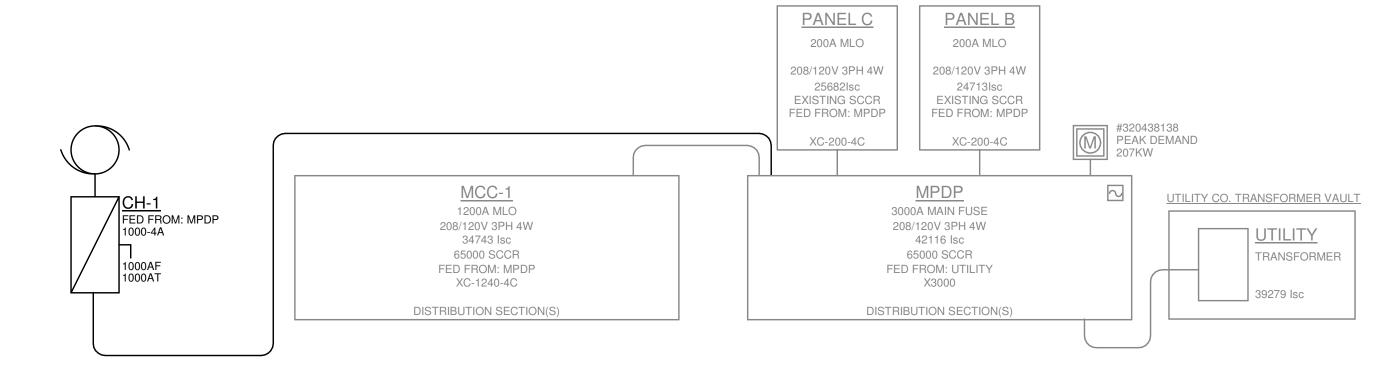
GE	NERAL ELECTRICAL POWER DISTRIBUTION NOTES
A.	PARALLEL CONDUCTOR SETS: CUT PARALLEL SERVICE/FEEDER CONDUCTORS TO EXACTLY THE SAME LENGTHS AND USE CONDUCTORS FROM THE SAME FACTORY RUN. TORQUE ALL CONNECTIONS FOR
В.	PARALLEL SERVICE/FEEDER CONDUCTORS TO IDENTICAL VALUES. OVERCURRENT PROTECTION RATINGS: UNLESS INDICATED OTHERWISE, PROVIDE FULLY-RATED OR SERIES-RATED OVERCURRENT PROTECTION
	(OCP) AS REQUIRED TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF NFPA 70. PROVIDE EQUIPMENT AND OCP RATED TO MEET OR EXCEED THE AVAILABLE SERIES-RATED FAULT CURRENT AT THE RESPECTIVE NODE IN
	THE POWER DISTRIBUTION SYSTEM. SERIES-RATED BREAKERS/SYSTEMS ARE NOT PERMITTED WHERE PROHIBITED BY PREVAILING CODES AND
	STANDARDS, INCLUDING APPLICATIONS INVOLVING MOTOR CONTRIBUTION AS ADDRESSED IN ARTICLE 240.86(C) OF NFPA 70. FURNISH ELECTRONIC COPIES OF THE ELECTRICAL DOCUMENTS TO THE MANUFACTURER'S
	REPRESENTATIVE AND/OR EQUIPMENT SUPPLIER SO THAT PROPERLY RATED AND BRACED EQUIPMENT IS PROVIDED UNDER BASE BID. IF FAULT CURRENT VALUES ARE NOT INDICATED ON PLANS, ALSO PROVIDE FAULT
C.	CURRENT CALCULATIONS AND FURNISH RESULTS WITH EQUIPMENT SUBMITTALS. GROUNDING ELECTRODE CONDUCTOR SYSTEM: PROVIDE GROUNDING ELECTRODE CONDUCTOR SYSTEM IN STRICT COMPLIANCE WITH THE
	LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70), INCLUDING ARTICLE 250 AND TABLE 250.66. THESE CONDUCTORS MAY OR MAY NOT BE INDICATED ON SINGLE-LINE DIAGRAMS, BUT SHALL BE
D.	PROVIDED UNDER BASE BID NEVERTHELESS. POWER DISTRIBUTION EQUIPMENT LABELS: IN ADDITION TO LABELS REQUIRED WITHIN THE SPECIFICATIONS, INCLUDE CORRESPONDING
	MAXIMUM AIC (AVAILABLE INRUSH CURRENT) AND SHORT-CIRCUIT CURRENT RATING (SCCR) FOR EACH PIECE OF POWER DISTRIBUTION EQUIPMENT, ALONG WITH ARC FLASH LABELS COMPLIANT WITH ARTICLE
E.	110.16 OF NFPA 70. ALSO INCLUDE CONDUCTOR COLOR CODING FOR THE BUILDING AND PHASE ROTATION AS APPLICABLE. CONDUCTOR TERMINATIONS: IN CASES WHERE CONDUCTOR SIZES ARE
	TOO LARGE TO FIT INTO LUGS/TERMINALS, PROVIDE APPROPRIATE FACTORY LUG KITS FOR AFFECTED EQUIPMENT IF AVAILABLE. ELSEWHERE, PROVIDE INSULATED BUTT-SPLICES OR EQUIVALENT
	METHOD, WITH TAILS SIZED TO FIT LUGS/TERMINALS. PROVIDE SPLICES IN SEPARATE BOXES IF REQUIRED BASED ON FIELD CONDITIONS, BOX SIZE LIMITATIONS, ETC. CONCEAL BOXES IN ACCESSIBLE OVERHEAD JOIST
F.	SPACES IN FINISHED REGULARLY OCCUPIED AREAS. <u>ALUMINUM CONDUCTORS</u> : PROVIDE THE FOLLOWING SUPPLEMENTAL WORK FOR ALUMINUM-CONDUCTOR ELECTRICAL EQUIPMENT
	CONNECTIONS, REGARDLESS OF WHO FURNISHES THE EQUIPMENT: REVIEW EQUIPMENT SUBMITTALS, INSTALLATION DOCUMENTS AND NAMEPLATES TO DETERMINE IF THERE ARE ANY WARRANTY OR UL LIMITATIONS REGARDING COPPER VERSUS ALUMINUM WIRING
	CONNECTIONS AT EQUIPMENT; IF THERE ARE ANY LIMITATIONS, PROVIDE LOCAL DISCONNECT AT OR NEAR EQUIPMENT (EXTERNAL TO THE EQUIPMENT) AND TERMINATE ALUMINUM CONDUCTORS TO THE LINE-SIDE
	LUGS/TERMINALS OF THE DISCONNECT SWITCH; PROVIDE COPPER CONDUCTORS FROM LOAD-SIDE LUGS/TERMINALS OF THE DISCONNECT SWITCH TO THE RESPECTIVE EQUIPMENT FACTORY DISCONNECT OR
G.	LUG/TERMINALS AS APPLICABLE; COORDINATE ALL RELATED WORK WITH ALL AFFECTED INSTALLERS. BREAKER FRAME SIZES: AMPERE RATINGS INDICATED ON DRAWINGS FOR
	CIRCUIT BREAKERS ARE SHOWN TO DEFINE OVERCURRENT REQUIREMENTS/TRIP RATINGS. PROVIDE BREAKER FRAMES IN SIZES AND TYPES GREATER THAN THE DESIGNATED OVERCURRENT TRIP RATINGS
	WHERE NECESSARY TO ACHIEVE THE REQUIRED SELECTIVE COORDINATION, AND/OR AS NECESSARY FOR OTHER APPLICABLE REASONS.

PANE	L SCHEDULE LEGEND	PA	NEL SCHEDULE GENERAL NOTES
* = ** = (#) =	WIRE SIZED TO COMPENSATE FOR VOLTAGE DROP REFER TO DRAWINGS FOR SPECIFICATIONS NEW CIRCUIT TO EXISTING CIRCUIT BREAKER	A. B.	PROVIDE HACR RATED BREAKERS ON ALL MOTOR LOADS. ALL CONDUCTORS SHOWN ARE COPPER.
(") =	CONNECT BRANCH CIRCUIT, WHICH WAS DISCONNECTED FROM ANOTHER SOURCE AS PART OF SELECTIVE DEMOLITION, TO POLE SPACE(S) INDICATED, DETERMINE EXACT POLE ASSIGNMENT(S) BASED ON EXISTING COLOR-CODING OF THE BRANCH CIRCUIT CONDUCTOR INSULATION. PROVIDE NEW BREAKER IF REQUIRED.	C.	ALL VOLTAGE DROP CALCULATIONS AND COMPENSATED WIRE SIZES ARE BASED ON RIGHT ANGLE CIRCUIT LENGTHS. ACTUAL VOLTAGE DROP MAY VARY BASED ON INSTALLED WIRE
(A) = (AG) =	PROVIDE ARC FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKER PROVIDE COMBINATION ARC FAULT (AFCI) / GROUND FAULT (GFCI) CIRCUIT INTERRUPTER CIRCUIT BREAKER	D.	LENGTH. VOLTAGE DROP CALCULATIONS AND WIRE SIZES SHOWN IN THE PANEL SCHEDULES ARE FOR HOMERUN CONDUCTORS
(AT) = (ERM) = (EX) =	EXISTING FUSIBLE SWITCH/CIRCUIT BREAKER WITH NEW FUSES/TRIP RATING PROVIDE ENERGY REDUCTION MAINTENANCE (REDUCED ENERGY) CIRCUIT BREAKER EXISTING CIRCUIT TO REMAIN		ONLY. FOR CIRCUITS WITH MORE THAN 1 DEVICE, THESE SIZES ASSUME THE CONDUCTORS DOWNSTREAM OF THE HOMERUN DEVICE ARE THE MINIMUM SIZE REQUIRED BY THE NEC BASED
(F) = (G) = (GE) =	CIRCUIT FOR FURTURE USE. PROVIDE BREAKER INDICATED. LOAD SHOWN FOR REFERENCE ONLY. PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER PROVIDE GROUND-FAULT EQUIPMENT PROTECTION (GFEP) CIRCUIT BREAKER		ON THE RATING OF THE CIRCUIT. WHERE THIS IS NOT THE CASE, IT HAS BEEN INDICATED ON THE DRAWINGS. VOLTAGE DROP TO THE FARTHEST DEVICE HAS BEEN CALCULATED TO
(H) = (L) =	PROVIDE HANDLE TIE PROVIDE LOCK-ON DEVICE	E.	NEVER EXCEED 5%. RECEPTACLE LOADS CALCULATED AT 100% OF FIRST 10kVA,
(LSI) = (LSI) =	PROVIDE ELECTRONIC LONG AND INSTANTANEOUS ADJUSTABILITY PROVIDE ELECTRONIC LONG, SHORT, AND INSTANTANEOUS ADJUSTABILITY PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND CROUND FAULT ALABAM AD JUSTABILITY		50% OF REMAINDER. MOTOR LOADS CALCULATED AT 125% OF THE LARGEST MOTOR, 100% OF ALL OTHER MOTORS.

PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ALARM ADJUSTABILITY

(LSIG) = PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ADJUSTABILITY
(LT) = PROVIDE LOCK-OUT/TAG-OUT DEVICE

SL = SEE THE SINGLE LINE DIAGRAM / SCHEDULE FOR WIRE SIZE AND VOLTAGE DROP
(ST) = PROVIDE SHUNT TRIP CIRCUIT BREAKER



PARTIAL SINGLE LINE DIAGRAM

SCALE: NONE

KOHRS LONNEMANN HEIL ENGINEERS, INC MECHANICAL/ELECTRICAL ENGINEERS WWW.KLHENGRS.COM 1538 ALEXANDRIA PIKE, SUITE 11 FT. THOMAS, KENTUCKY 41075 800-354-9783 859-442-8050 859-442-8058 FAX LEXINGTON, KENTUCKY LOUISVILLE, KENTUCKY COLUMBUS, OHIO



Complex ver Replac Package #1 - Lincoln Elementary Cooling Tow 200 Greendevil LaneDayton, Kentucky 41074

Dayton Independent Schools Board of Education- Mr. Jay Brewe Dayton Bid Package

SHEET TITLE

ELECTRIC POWER SINGLE LINE DIAGRAM

BG# 23-538 REH#

168-523 DATE 8-10-23

E4-601