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## GENERAL NOTES

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1. CONTRACTOR SHALL COORDINATE LAY DOWN AREAS WITH OWNER AND ENGINEER PRIOR TO MOBILIZATION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY AND ALL EQUIPMENT AND ETC. DEMOLISHED DURING CONSTRUCTION.
3. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING DELIVERY OF NEW CHILLERS PREPURCHASED BY FCCFA.

# Greater Columbus Convention Center North Facility Chiller Replacement - 2023-6

400 North High Street Columbus, OH 43215

## PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF MECHANICAL, HVAC CONTROLS, PLUMBING, & ELECTRICAL WORK REQUIRED FOR THE INSTALLATION OF THREE REPLACEMENT CHILLERS SERVING THE GREATER COLUMBUS CONVENTION CENTER'S NORTH FACILITY AND CORRESPONDING PUMPS ASSOCIATED WITH THE CHILLED WATER SYSTEM AS CALLED OUT IN THE DRAWINGS AND PROJECT MANUAL SPECIFICATIONS.

## PROJECT LOCATION

VICINITY MAP: LOCAL / CAMPUS

An aerial photograph of the Greater Columbus Convention Center North Facility. The building features a large, curved, light-colored roof with several dark, rectangular skylight or ventilation structures. The facility is situated in an urban area with roads, parking lots, and other buildings visible in the background.

## GOVERNING REGULATIONS

OHIO BUILDING CODE .....	2017
OHIO MECHANICAL CODE.....	2017
OHIO PLUMBING CODE.....	2017
NATIONAL ELECTRICAL CODE NFPA 70.....	2017
INTERNATIONAL ENERGY CONSERVATION CODE.....	2012
ASHRAE 90.1.....	2010
OHIO FIRE CODE.....	2017

## PROJECT TEAM

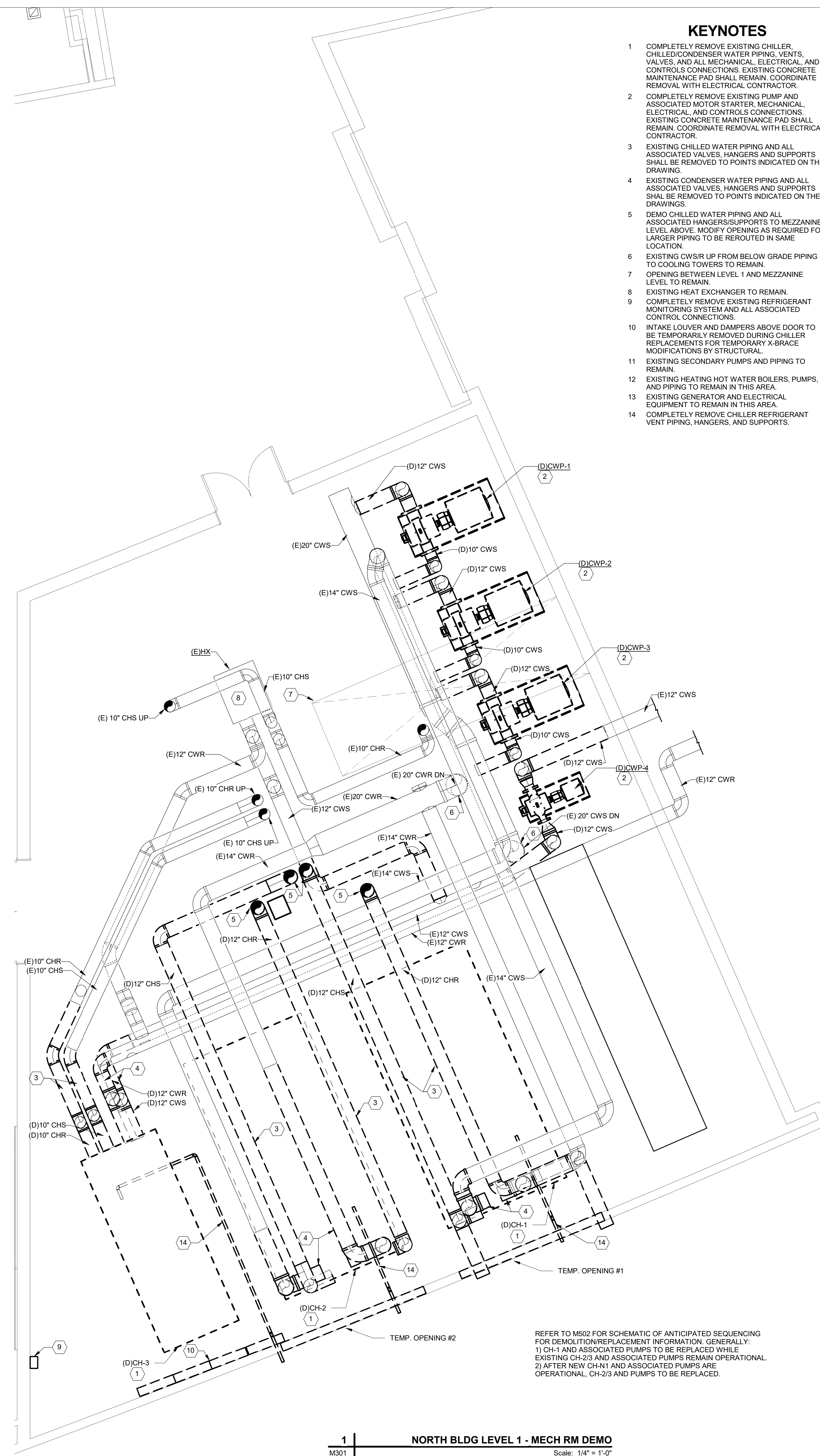
PROJECT MANAGER - COLE PARKINSON  
MECHANICAL ENGINEER - PAUL COYNE  
ELECTRICAL ENGINEER - JEFF EVERS

NOT FOR CONSTRUCTION

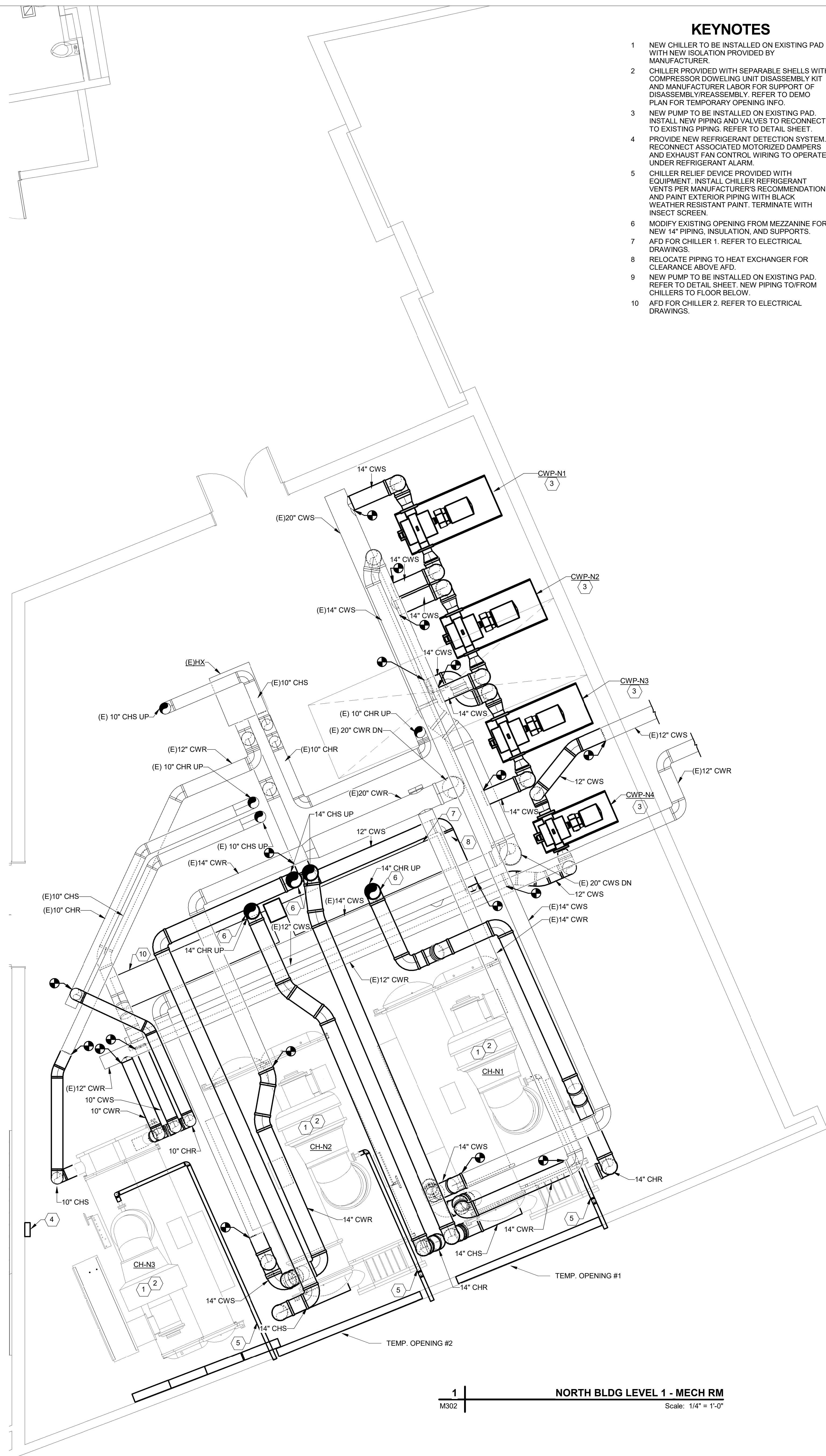












Autodesk Docs/Columbus Convention Center MEP Replacement-R23-Mech Inv



REMARKS:  
1. CHILLERS HAVE BEEN PRE-PURCHASED BY OWNER AND ARE SCHEDULED FOR REFERENCE ONLY.  
2. NEW CHILLERS TO FOLLOW EXISTING SEQUENCE OF OPERATION.

REMARKS:

1. PUMPS TO BE PROVIDED WITH NEW VFDS INSTALLED IN SIMILAR LOCATION AS VFDS BEING REMOVED
2. NEW PUMPS TO FOLLOW EXISTING SEQUENCE OF OPERATION.















[illegible]

DESCRIPTION	MOUNTING HEIGHT (TO CENTER OF BOX)
<b>SWITCHES</b>	
LIGHT SWITCH-GENERAL PURPOSE	46"
DIMMER SWITCH	46"
THREE-WAY SWITCH	46"
KEYED SWITCH	46"
OCCUPANCY OR VACANCY SENSOR SWITCH	46"
LOW VOLTAGE SWITCH	46"
NON-REVERSING MOTOR STARTER SNAP SWITCH	AS NOTED
TIMER SWITCH	46"
OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT	CLG
PHOTO-CELL AS NOTED	AS NOTED
EXAM-LIGHT SWITCH	46"
NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE	46"
SURGICAL LIGHT INTENSITY CONTROL	46"
FOUR-WAY SWITCH	46"
LIGHT SWITCH FOR UNDER-CABINET LIGHTS	46"
ILLUMINATED HANDLE LIGHT SWITCH (ILLUMINATED WHEN LOAD IS OFF)	46"
PILOT LIGHT SWITCH (ILLUMINATED WHEN LOAD IS ON)	46"
MOMENTARY CONTACT SWITCH	46"
HAND-OFF-AUTO 3-POSITION SWITCH	46"
EMERGENCY AUTOMATIC TRANSFER SWITCH FOR LIGHTING CONTROLS (REFER TO DETAIL)	
<b>POWER OUTLETS</b>	
SIMPLEX RECEPTACLE	1'-6"
DUPLEX RECEPTACLE-E-SAFETY TYPE, TANGLE-RESISTANT	1'-6"
DUPLEX RECEPTACLE	1'-6"
SLASH THROUGH ANY DEVICE INDICATES MOUNTING ABOVE COUNTERTOP, 2" ABOVE BACKSPASH, OR AT 48" WHERE NO COUNTER IS PRESENT	
FIRED CENTER BAR INDICATES INTEGRAL, GROUND FAULT PROTECTED (GFCI)	1'-6"
FIRED OUTER BAR INDICATES INTEGRAL, GROUND ULT OUTLETS IN ADDITION TO POWER RECEPTACLES	1'-6"
DUPLEX RECEPTACLE, CEILING MOUNTED	CLG
QUADRUPLEX RECEPTACLE	1'-6"
JUNCTION BOX, CEILING OR WALL	
VOLTAGE/PH RECEPTACLE, AS NOTED	AS NOTED
VOLTAGE/SPH RECEPTACLE	1'-6"
GROUND FAULT PROTECTED DUPLEX WITH WEATHER-PROOF "WHILE IN USE" TYPE DIE-CAST METAL COVERPLATE WITH LOCKABLE ENCLOSURE AT OUTLET, SEE SPECIFICATIONS	2'-2"
DUPLEX FOR ELONG WATER COOLER, PROVIDE REMOTE, READY ACCESSIBLE GFI DEVICE AT 48" ADJACENT TO WATER COOLER COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR TO CONCEAL OUTLET BEHIND COOLER	
READ POINT GROUND, LABEL AND INSTALL IN READILY ACCESSIBLE LOCATION	
GANG RECEPTACLE IN COMBINATION WITH SWITCH PROVIDE DIVISOR WITH LOCKING CIRCUIT (S 277V)	46"
DOGS-HOUSE TYPE TWIN DUPLEX RECEPTACLE WITH ONE DIE-CAST RECEPTACLE ON BOTH SIDES	ON CNTR.
SS INDICATES SURGE SUPPRESSION TYPE OUTLET(S)	
<b>FIRE ALARM</b>	
MAIN CONTROL PANEL, CENTRAL PROCESSING UNIT (CPU)	6'-6" TO TOP
PULL STATION - DOUBLE ACTION	46" TO LEVER
AUDIVISUAL NOTIFICATION APPLIANCE	WALL, CLG
AUDIO-ONLY NOTIFICATION APPLIANCE	WALL, CLG
VISUAL-ONLY NOTIFICATION APPLIANCE	WALL, CLG
PHOTO-ELECTRIC SMOKE DETECTOR	CLG
PROJECTED BEAM SMOKE DETECTOR, EMITTER (BE) AND RECEIVER (BR)	CLG
HEAT DETECTOR	AS BLDG.
CARBON MONOXIDE DETECT DETECTOR	AS BLDG.
DOOR HOLDER - WALL TYPE	WALL
DOOR HOLDER - CLOSURE TYPE	AS BLDG.
DUCT SMOKE DETECTOR	AS BLDG.
CONNECTION TO SPRINKLER TAMPER SWITCH WITH ADDRESSABLE MODULE	
REMOTE L.C.D. FIRE ALARM ANNUNCIATOR	54"
POWER SUPPLY/CONTROL FOR AUDIOVISUAL DEVICES	46"
TRANSPONDER CABINET	46"
FIRE ALARM CONTROL EXTENDER	
ISOLATION MODULE	WALL
ZONE ADDRESSABLE MODULE	
H.V.A.C. SMOKE DAMPER CONNECTION	
ADDRESSABLE REPLY MODULE	
INDICATES VANDAL-PROOF POLYCARBONATE COVER, REMOVAL PROOF COVERING SHALL BE LISTED FOR USE WITH THE SPECIFIC DEVICE THEY ARE PROTECTING	
INDICATES CHIME AUDIBLE NOTIFICATION	
DEVICE USED FOR ELEVATOR CONTROL	
KEYED, LOCKED PULL STATION - DOUBLE ACTION. STATION SHALL BE OPERABLE VIA KEY IN POSSESSION OF STAFF.	46" TO LEVER
BELL /LIGHT	80"
BELL ONLY	80"
PHOTO-ELECTRIC SMOKE DETECTOR FOR PATROL ROOM MONITORING (SEE BLDG.)	CLG
CARBON MONOXIDE ALARM SINGLE STATION	CLG
CARBON MONOXIDE AUDIVISUAL NOTIFICATION APPLIANCE	WALL
POST INDICATOR VALVE	
GRAPHICS DISPLAY TERMINAL	
FLUSH MOUNTED REMOTE ALARM INDICATING STATION/TEST SWITCH	7'-6"
FIREMANS PHONE JACK	4'-6"
FIREMANS KNOX BOX CONNECTION	

DESCRIPTION	MOUNTING HEIGHT (TO CENTER OF BOX)
<b>LIGHTING</b>	
REFER TO LUMINAIRE SCHEDULE FOR EXACT FIXTURE SPECIFICATIONS. MOUNTING HEIGHTS, ETC.	
SURFACE OR SUSPENDED CEILING FIXTURE (SLASH INDICATES RECESSED)	
POLE MOUNTED AREA LIGHT	
WALL MOUNT FIXTURE	
FLOODLIGHT	
EXIT LIGHT (CEILING, END, WALL MOUNT)	
STRIP FIXTURE	
CROSS-HATCHING INDICATES LIGHT IS POWERED FROM THE EMERGENCY-CRITICAL BRANCH	
PARALLEL HATCHING INDICATES LIGHT IS POWERED FROM THE EMERGENCY-LIFE SAFETY BRANCH	
EMERGENCY BATTERY WALL-PACK	
SURGE/LUXIM LIGHT	
<b>MISCELLANEOUS</b>	
CONDUIT CONCEALED IN WALLS OR IN CEILING SPACE (ARROWS) INDICATES HOME RUN & # OF CIRCUITS. HATCHMARKS INDICATE IF 1/2 CONDUCTORS. DASHED LINE INDICATES CONDUIT BELOW FLOOR	
DISCONNECT SWITCH	5'-0"
MAGNETIC STARTER	5'-0"
MAGNETIC COMBINATION STARTER	5'-0"
VARIABLE FREQUENCY DRIVE	5'-0"
ENCLOSED FLUSH MNT. CIRCUIT BREAKER	5'-0"
PUSHBUTTON STATION	48"
FLUSH COUPLER	48" TO TOP
PANEL BOARD, SURFACE OR FLUSH MOUNTED, HATCHING INDICATES EMERGENCY	
TRANSFORMER	AS NOTED
EQUIPMENT TAG, REFER TO EQUIPMENT SCHEDULE	
<b>TAGGED NOTE</b>	
REVISION TAG	
MECHANICAL EQUIPMENT DESIGNATOR (SEE MECH. SCHEDULES)	
BOX ON ANY DEVICE INDICATES SURFACE MOUNTED	AS SHOWN
LADDER CABLE TRAY, SIZE AS NOTED	AS SHOWN
SLOTTED BOTTOM CABLE TRAY, SIZE AS NOTED	AS SHOWN
LOW VOLTAGE CABLE PATH	
EQUIPMENT HARDWARE CONNECTION (SEE DETAIL)	
MOTOR CONNECTION, REFER TO EQUIPMENT CONNECTION SCHEDULE	
WIREGUARD - PROVIDE MANUFACTURER'S SPECIFIC COVER FOR DEVICE NOTED	
WET WEATHERPOD - NEARBY WET LOCATION LISTED. PROVIDE COVERS, RATINGS, ETC. AS SUITABLE FOR OUTDOORS.	
INDICATES EMERGENCY POWER	
GENERATOR ANNUNCIATOR PANEL - SEE SPECIFICATIONS	46"
THERMIST - PROVIDED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE BACK-COUNT STUD-UP. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS	
CONDUIT UP	
CONDUIT DOWN	
GROUND BUS BAR ON INSULATED STANDOFFS	2'-0"
BOX ON ANY DEVICE INDICATES SURFACE MOUNTED BACKWAX/IREMOLD	
CIRCLE ON ANY DEVICE INDICATES DEVICE FED FROM STUD UP CONDUIT	
WIREWAY WITH REMOVABLE COVER (SIZE AS NOTED)	AS SHOWN
TRENCH DUCT (SIZE AS NOTED)	AS SHOWN
DOORBELL - PUSHBUTTON STATION, PROVIDE COMBINATION OF TRANSFORMER (MOUNT ABOVE CEILING IN CORRIDOR NEAR PUSH-BUTTON) AND ALL ACCESSORIES. PROVIDE FROM NEAREST AVAILABLE 120V NORMAL POWER GENERAL RECEPTACLE CIRCUIT. TYPE AND EQUAL	46"
DOORBELL AUDIOVISUAL STATION, PROVIDE CIRCUIT CONNECTION TO PUSHBUTTON STATION IN AREA. COORDINATE EXACT AUDIO SOUND (CHIME, BUZZER, ETC.) DESIRED WITH OWNER/ARCHITECT. NUTONE OR EQUAL	7'-6"
KITCHEN EQUIPMENT OUTLET COUPLING CONNECTION (SEE DETAIL)	
INDICATES MOUNTING ABOVE COUNTER-TOP, ABOVE BACKSPLASH, NO HIGHER THAN 48"	
EXPLORATION POINT - PROVIDE WIRING METHODS, ENCLOSURES, RATINGS, ETC. AS SUITABLE FOR OUTDOORS	
PUMPING FIXTURE SOLENOID VALVE/ELECTRIC EYE SENSOR CONNECTION. COORDINATE EXACT CONNECTION REQUIREMENTS WITH MANUFACTURER	
PUMPING FIXTURE ELECTRIC EYE TRANSFORMER CONNECTION. TRANSFORMER HAYS 120V/24V. MOUNT ABOVE SUSPENDED ACCESSIBLE CEILING IN J. BOX. PROVIDE ADDITIONAL TRANSFORMERS OF SAME TYPE AND SIZE IF NEEDED	
PROVIDE CONNECTION TO HAND DRYER (SEE SPECIFICATIONS)	VERIFY WITH ARCHITECT
SURGE PROTECTION DEVICE	
BUS DUCT, AMPERAGES AS NOTED	AS SHOWN
<b>SPECIAL OUTLETS</b>	
FLOORBOX, POWER ONLY, AS SCHEDULED	FLOOR
FLOORBOX, COMBINATION POWER AND LOW VOLTAGE, REFER TO FLOORBOX SCHEDULE	FLOOR
FIRE RATED POLE THOUGH FLOOR BOX, COORDINATE EXACT COVER REQUIREMENTS WITH ARCHITECTURAL PROVIDER. REVEALS AS SCHEDULED	FLOOR
AUDIOVISUAL SYSTEM OUTLET WITH DUPLEX RECEPTACLE, REFER TO ASSOCIATED DETAIL FOR ADDITIONAL INFORMATION	1'-6"
COMBINATION POWER AND DATA OUTLET LOCATION, REVEALS ASSOCIATED DETAIL FOR ADDITIONAL INFORMATION	1'-6"
COMBINATION POWER AND DATA OUTLET LOCATION, SLOTTED RECEPTACLE, REFER TO ASSOCIATED DETAIL FOR ADDITIONAL INFORMATION	1'-6"
OVERHEARD PROTRUDING OUTLET WITH DUPLEX RECEPTACLE, ONE DATA, HDMI, 3.5mm AUDIO, AND VGA OUTLET ON (3) PLATES	CLG
SPECIAL VIDEO SYSTEM SIGNAL INPUT	
SURFACE PLUG/MOLD	
SURFACE WIRE/MOLD	
POWER POLE AS NOTED	

DESCRIPTION	MOUNTING HEIGHT (TO CENTER OF BOX)	DRAWING SYMBOL
<b>ABBREVIATIONS</b>		
UNLESS OTHERWISE NOTED		UCON
OWNER FURNISHED CONTRACTOR INSTALLED		OFCON
OWNER FURNISHED - OWNER INSTALLED		OFCON
CONTRACTOR FURNISHED CONTRACTOR INSTALLED		CFCON
CONTRACTOR FURNISHED OWNER INSTALLED		CFCON
INDICATES EMERGENCY POWER		EM
<b>DATA / VOICE</b>		
DATA OUTLET - NUMBER BEHIND OUTLET		
INDICATES NUMBER OF DATA JACKS	1'-6"	
VOICE OUTLET - NUMBER BEHIND OUTLET		
INDICATES NUMBER OF VOICE JACKS	1'-6"	
COMBINATION OUTLET - NUMBER BEHIND OUTLET	1'-6"	
INDICATES NUMBER OF DATA/VOICE JACKS		
MAIN DISTRIBUTION FRAME - REFERENCE DATA SYSTEM SCHEMATICS AND DETAILS FOR ADDITIONAL REQUIREMENTS		
INTERMEDIATE DISTRIBUTION FRAME - REFERENCE DATA SYSTEM SCHEMATICS AND DETAILS FOR ADDITIONAL REQUIREMENTS		
WIRELESS ACCESS POINT WITH PROVISIONS FOR (1 DATA OUTLET FOR ANTENNA, PROVIDE A COMPLETE DATA OUTLET WITH FACEPLATE ABOVE CEILING, MOUNTED AT AN ACCESSIBLE HEIGHT NO MORE THAN 24" ABOVE CEILING, AT EACH OUTLET. PROVIDE A 20' CLO. OF CABLE ABOVE OF THE OUTLET FOR ADJUSTMENT OF FINAL OUTLET LOCATION, THE CONTRACTOR SHALL COORDINATE EXACT LOCATIONS WITH THE OWNER AND ADJUST OUTLET LOCATIONS AT INSTANTANEOUS COMPLETION TO ACCOMMODATE OWNERS W/ALLOUATIONS. WAP'S ARE OWNER-INSTALLED, OWN-INSTALLED		
RF TELEMETRY ANTENNA	CLG	
TELEMETRY ANTENNA	CLG	
OUTLET (VOICE ONLY) - PAYPHONE TYPE	AS REQ'D	
TELECOMMUNICATIONS SYSTEM BACKBOARD.		
PERFORM 96" X 34 1/2" FIRE-RETARDANT PLYWOOD BACKBOARD WITH TWO (2) COATS OF NON-CONDUCTIVE, FIRE-RETARDANT LIGHT GRAY PAINT, 8" TO GROUND (AT THE MAIN SERVICE SWITCHBOARD, 30"FT GROUND BOARD AND 8'-0", AS W/AG PIVOT BOARD, CONTRACTOR INSTALL BOARD AT 2'-0" LENGTH OF BOARD AS INDICATED ON DRAWING)		



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Columbus, Ohio 43215

## CONSULTANTS

## REGISTRATION

## KEYPLAN

## ISSUE / REVISION

[illegible]

OCCC23

## ELECTRICAL GENERAL INFORMATION

# E001



## Greater Columbus Convention Center North Facility Chiller Replacement - 2023-6

CLIENT

**FRANKLIN COUNTY  
CONVENTION FACILITIES  
AUTHORITY**

## REGISTRATION

## ISSUE / REVISION

1	12/04/2023	BID SET
#	Date	Description

OCCC23

## ELECTRICAL DETAILS

**E002**



- A. WHERE DEVICES OF ANY DISCIPLINE ARE LOCATED IN THE SAME GENERAL AREA ON THE PLANS AND ARE SHOWN TO BE MOUNTED AT A SIMILAR HEIGHT, ALIGN HORIZONTALLY ALONG TOP OF DEVICE BACKBOX (AS SHOWN IN DETAIL AND DESCRIBED IN KEY NOTE #2).
- B. WHERE DEVICES OF ANY DISCIPLINE ARE LOCATED IN THE SAME GENERAL AREA ON THE PLANS AND ARE SHOWN MOUNTED AT DIFFERENT HEIGHTS, ALIGN VERTICALLY ALONG THE CENTERLINE OF THE DEVICE BACKBOX (AS SHOWN IN DETAIL).
- C. FOR ANY WALL OTHER THAN PAINTED GYPSUM BOARD OR CMU, DEVICE LOCATIONS MUST BE FIELD APPROVED BY ENGINEER OR ARCHITECT PRIOR TO INSTALLATION OF FINISHES.
- D. ADDITIONAL FINISHES 48" ABOVE FINISH FLOOR FOR FRONT ACCESS. SIDE REACH ACCESS ALLOWS A MAXIMUM OF 54" AND A LOW SIDE REACH OF NO LESS THAN 9" ABOVE FINISH FLOOR. ADA FRONT AND SIDE REACH ACCESS MUST BE MAINTAINED FOR NEW AND EXISTING CONSTRUCTION. NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES.

1. MOUNT VISUAL NOTIFICATION APPLIANCES SO THAT ENTIRE LENS IS BETWEEN 80° AND 96° AFF. IF CEILING IS TOO LOW FOR DEVICE TO BE MOUNTED ABOVE 80°, MOUNT SO THAT THE LENS IS WITHIN 0° OF FINISHED CEILING.

2. FOR BACKBOXES OF DEVICES AT 80° MOUNTING HEIGHT INDICATED, MEASURE TO THE CENTER OF THE BACKBOX FOR STANDARD DEVICES. NON-STANDARD BACKBOXES ARE TO BE INSTALLED SUCH THAT THE FINISHED DEVICES ARE ALIGNED ALONG THEIR RESPECTIVE CENTERLINES.

3. MOUNTING HEIGHTS SHOWN ILLUSTRATE DESIGN INTENT AND ARE TO BE FOLLOWED UNLESS CONTRADICTION BY APPLICABLE CODE. WHERE DEVICES ARE SHOWN ADJACENT TO DOOR FRAMES ON PLANS INSTALL 12" FROM FRAME TO AVOID SLUSHED SCENARIOS OR BRACING. SPECIFIC DEVICES ARE SHOWN IN RELATIVE ORDER FROM DOOR FRAME TO BACKBOX TO PROVIDE CLEARANCE FOR DEVICES.

4. THE CONTRACTOR IS TO COORDINATE ALL ROUGH-INS WITH ANY COUNTERTOPS/BACKSPLASHES/WALL PROTECTION TO AVOID CONFLICT. ALIGN DEVICE BACKBOXES IN THE BOTTOM OF THE NEXT FULL BLOCK ABOVE THE BACKSPLASH AS SHOWN. FOR NON-BLOCK WALLS ALIGN BOTTOM OF DEVICE BACKBOXES 2" ABOVE BACKSPLASH. COORDINATE WORK WITH CASEWORK AND KITCHEN SFP DRAWINGS ACCORDINGLY. IF CONFLICT STILL ARISES CONTACT THE ENGINEER FOR DIRECTION ON HOW TO PROCEED.

1) SCALE: NONE



- A. PROVIDE ONE 2" SPARE CONDUIT SLEEVE THROUGH ALL FULL HEIGHT PARTITIONS FOR FUTURE USE. LABEL AS SPARE FOR OWNER'S USE ONLY. REFER TO ARCHITECTURAL PLANS FOR FULL HEIGHT PARTITION LOCATIONS.
- B. USE AT ALL "OPEN" TYPE CABLING PENETRATIONS THROUGH WALLS, FLOORS ETC.

2) SCALE: NONE



- A. PATHWAYS SHALL BE PROVIDED WHERE PENETRATING CEILINGS (RATED OR NOT) FOR EXPOSED CABLE ROUTING TO LADDER TRAY IN MDF/IDF ROOMS. PROVIDE GRID SYSTEMS MOUNT AS REQUIRED.

② PATH)

## ELEC - EQUIPMENT CONNECTION SCHEDULE

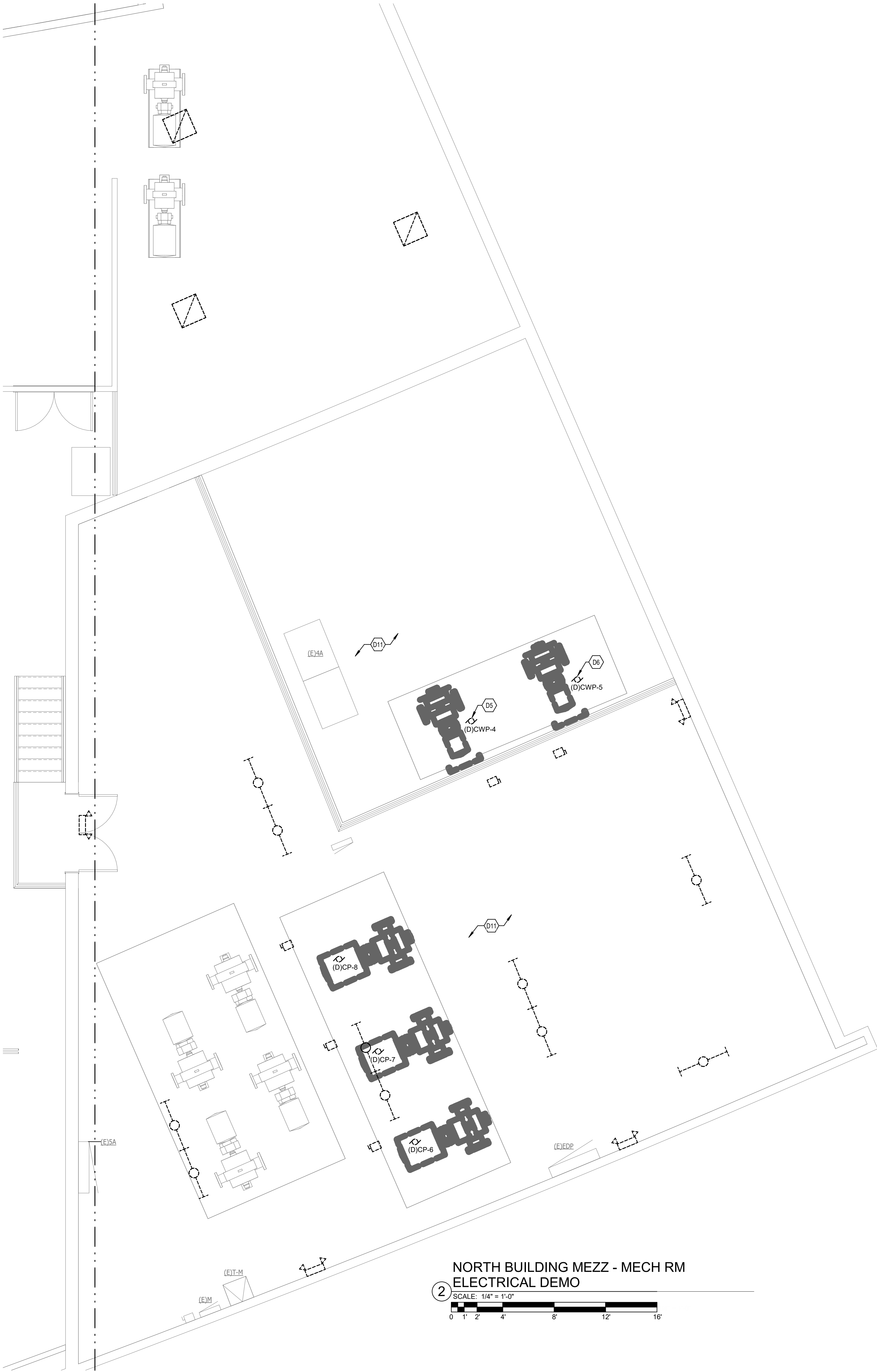
EQUP ID	DESCRIPTION	DISCONNECT MEANS	VOLTAGE	POLES	N/A	HP	POWER (KVA)	MCA
CH-N1	CHILLER 1	UNIT PROVIDED WITH A REMOTE DRIVE. REFER TO NEW WORK PLANS FOR DRIVE LOCATION. E.C. SHALL WIRE AND INSTALL REMOTE DRIVE.	480	3	N/A		911.80	1610
CH-N2	CHILLER 2	UNIT PROVIDED WITH A REMOTE DRIVE. REFER TO NEW WORK PLANS FOR DRIVE LOCATION. E.C. SHALL WIRE AND INSTALL REMOTE DRIVE.	480	3	N/A		911.80	1610
CH-N3	CHILLER 3	UNIT PROVIDED WITH A EQUIPMENT MOUNTED DRIVE. REFER TO NEW WORK PLANS FOR DRIVE LOCATION. E.C. SHALL WIRE AND INSTALL FREQUENCY DRIVE.	480	3	N/A		476.70	793
CHP-N1	PRIMARY PUMP 1	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	100		103.09	124
CHP-N2	PRIMARY PUMP 2	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	100		103.09	124
CHP-N3	PRIMARY PUMP 3	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	100		103.09	124
CHP-N4	PRIMARY PUMP 4	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	50		54.04	65
CHP-N5	PRIMARY PUMP 5	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	50		54.04	65
CWP-N1	CONDENSER PUMP 1	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	125		129.70	156
CWP-N2	CONDENSER PUMP 2	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	125		129.70	156
CWP-N3	CONDENSER PUMP 3	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	125		129.70	156
CWP-N4	CONDENSER PUMP 4	UNIT PROVIDED WITH A VARIABLE FREQUENCY DRIVE (VFD). E.C. SHALL WIRE AND INSTALL VFD.	480	3	125		103.09	124

(4) SCALE: NONE

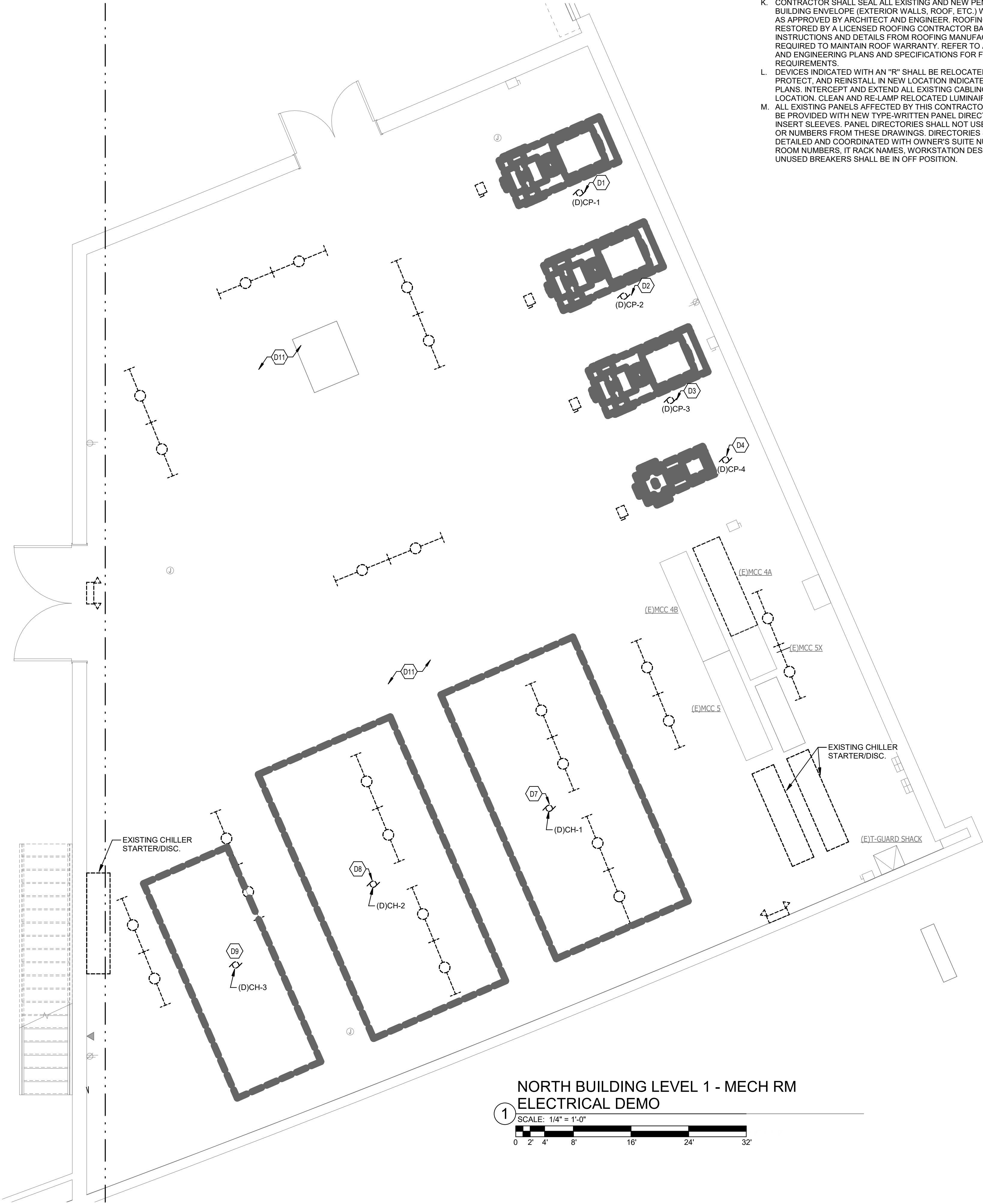


- GENERAL NOTES:**
- A. NORMAL POWER LABELS SHALL BE BLACK WITH WHITE LETTERS.
  - B. EMERGENCY POWER LABELS SHALL BE RED WITH WHITE LETTERS. LABEL SHOULD ALSO INCLUDE THE WORD "EMERGENCY" IN 1/4" LETTERS.
  - C. EMERGENCY POWER LABELS IN HEALTHCARE APPLICATIONS SHOULD INCLUDE SYSTEM SEVERED "LIFE SAFETY," "CRITICAL," OR "EQUIPMENT."
  - D. UTILIZE SCREW-ON TYPE LAMACOID PLATES.
  - E. THIS DETAILS APPLIES TO ALL ELECTRICAL EQUIPMENT INCLUDING PANELS, SWITCHGEAR, DISCONNECTS, TRANSFORMERS, MOTOR STARTERS, VARIABLE FREQUENCY DRIVES (VFD'S), SPECIAL DEVICE PLATES, INVERTER, AND SIMILAR MATERIALS SHALL BE CLEARLY MARKED AS TO THEIR FUNCTION AND USE.

As noted, Owner to coordinate with the Greater Columbus Convention Center (GCC) for the removal of the existing mechanical equipment and the installation of the new equipment. The removal of the existing equipment and the installation of the new equipment shall be completed by the date of the bid opening. The removal of the existing equipment and the installation of the new equipment shall be completed by the date of the bid opening.



**2** NORTH BUILDING MEZZ - MECH RM  
ELECTRICAL DEMO  
SCALE: 1/4\"/>



**1** NORTH BUILDING LEVEL 1 - MECH RM  
ELECTRICAL DEMO  
SCALE: 1/4\"/>

KEYNOTES	#
D1 DISCONNECT/REMOVE EXISTING "CP-1" AND RECONNECT TO NEW "CWP-N1". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY.	
D2 DISCONNECT/REMOVE EXISTING "CP-2" AND RECONNECT TO NEW "CWP-N2". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY.	
D3 DISCONNECT/REMOVE EXISTING "CP-3" AND RECONNECT TO NEW "CWP-N3". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY.	
D4 DISCONNECT/REMOVE EXISTING "CP-4" AND RECONNECT TO NEW "CWP-N4". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY.	
D5 DISCONNECT/REMOVE EXISTING "CWP-5" AND RECONNECT TO NEW "CHP-N5". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY.	
D6 DISCONNECT/REMOVE EXISTING "CWP-6" AND RECONNECT TO NEW "CHP-N6". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY.	
D7 DISCONNECT/REMOVE EXISTING "CH-1" AND RECONNECT TO NEW "CH-1". REMOVE EXISTING CONDUIT AND FEEDER FROM EXISTING UNIT BACK TO SOURCE. ALL UNDERGROUND CONDUIT SHALL BE ABANDONED IN PLACE AND CAPPED. RE-ROUTE ALL (8) CONDUITS OVER ELECTRICAL GEAR AND CORE INTO 2ND FLOOR MEZZANINE AND ROUTE THROUGH OPENING DOWN TO THE FIRST LEVEL. EXTEND TO NEW DRIVE LOCATION SHOWN ON THE NEW WORK PLANS.	
D8 DISCONNECT/REMOVE EXISTING "CH-2" AND RECONNECT TO NEW "CH-2". REMOVE EXISTING CONDUIT AND FEEDER FROM EXISTING UNIT BACK TO SOURCE. ALL UNDERGROUND CONDUIT SHALL BE ABANDONED IN PLACE AND CAPPED. RE-ROUTE ALL (8) CONDUITS OVER ELECTRICAL GEAR AND CORE INTO 2ND FLOOR MEZZANINE AND ROUTE THROUGH OPENING DOWN TO THE FIRST LEVEL. EXTEND TO NEW DRIVE LOCATION SHOWN ON THE NEW WORK PLANS.	
D9 DISCONNECT/REMOVE EXISTING "CH-3" AND RECONNECT TO NEW "CH-3". INTERCEPT EXISTING PATHWAY LOCATED ON THE FIRST LEVEL AND UTILIZE BACK TO SOURCE.	
D11 ADD ALTERNATE 2: REMOVE ALL EXISTING LIGHTING IN THIS SPACE AND REPLACE WITH NEW. REFER TO NEW WORK PLANS FOR FIXTURE TYPES.	

- ELECTRICAL DEMOLITION NOTES:**
- DOTTED LINES INDICATE ITEMS FOR REMOVAL (UON) AND THIN SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.
  - THE CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF EXISTING CIRCUITS THAT CONTAIN DEVICES OR EQUIPMENT THAT ARE TO REMAIN. WHEN DEMOLITION OF AN ELECTRICAL DEVICE (OR CIRCUIT) IS INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL ENSURE THAT OTHER DEVICES OR EQUIPMENT "UPSTREAM" OR "DOWNSTREAM" ON THE CIRCUITS SHALL REMAIN IN "PRE-DEMOLITION" WORKING ORDER. "LEFT-OVER" CIRCUIT BREAKERS SHALL REMAIN, BE SWITCHED TO OFF POSITION, AND BE LABELED AS SPARES IN THEIR PANELS. PROVIDE NEW TYPEWRITTEN DIRECTORIES FOR ALL PANELS AFFECTED.
  - LOCATIONS OF DEVICES, CONNECTIONS, ETC., INDICATED ON THIS DRAWING WERE TAKEN FROM VARIOUS SOURCES. THEY ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO VARIATION FROM EXISTING CONDITIONS. CERTAIN EXISTING ELEMENTS MAY NOT BE INDICATED AT ALL. THE CONTRACTOR PROPOSING TO DO ANY PART OF THE WORK INDICATED HEREON SHALL VISIT THIS SITE AND DETERMINE TO HIS SATISFACTION THAT THEY MAY COMPLETE ALL WORK REQUIRED FOR THE BID WHICH HE PROPOSES.
  - REMOVE ALL ASSOCIATED BACKBOXES, CONDUIT AND CONDUCTORS FOR DEVICES / FIXTURES / ETC. BEING REMOVED (BACK TO SOURCE), WHETHER INDICATED OR NOT (UON). CONTRACTOR SHALL PATCH AND REPAIR ANY EXISTING WALLS, FLOORS OR CEILINGS WHERE DEVICES ARE SHOWN TO BE REMOVED (PATCH AND REPAIR TO RECEIVE NEW FINISHES - SEE ARCHITECTURAL PLANS).
  - COORDINATE DISPOSAL OF ALL FIXTURES, DEVICES, ETC. (INDICATED FOR DEMOLITION) WITH OWNER. TURN OVER ITEMS REMOVED TO OWNER AT THEIR OPTION.
  - COORDINATE WITH OTHER TRADES FOR THE REMOVAL AND/OR RELOCATION OF ELECTRICAL DEVICES AND CONNECTIONS ASSOCIATED WITH THEIR EQUIPMENT.
  - PROVIDE TEMPORARY EMERGENCY EXIT LIGHTS AT CONSTRUCTION BARRIERS AS REQUIRED.
  - CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING WALLS / CEILINGS AS REQUIRED WHERE DEVICES ARE BEING REMOVED OR INSTALLED.
  - UNUSED/ABANDONED CONDUCTORS DISCOVERED ABOVE ACCESSIBLE CEILINGS SHALL BE REMOVED IN ACCORDANCE WITH NEC REQUIREMENTS.
  - EXISTING ELECTRICAL SYSTEMS IN CONFLICT WITH CONSTRUCTION SHALL BE RELOCATED TO PERMIT INSTALLATION OF DEVICES AND EQUIPMENT SHOWN ON PLANS.
  - CONTRACTOR SHALL SEAL ALL EXISTING AND NEW PENETRATIONS OF BUILDING ENVELOPE (EXTERIOR WALLS, ROOF, ETC.) WATER-TIGHT AND AS APPROVED BY ARCHITECT AND ENGINEER. ROOFING SHALL BE RESTORED BY A LICENSED ROOFING CONTRACTOR BASED ON WRITTEN INSTRUCTIONS AND DETAILS FROM ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ROOF WARRANTY. REFER TO ARCHITECTURAL AND ENGINEERING PLANS AND SPECIFICATIONS FOR FURTHER REQUIREMENTS.
  - DEVICES INDICATED WITH AN "R" SHALL BE RELOCATED, REMOVE, PROTECT, AND REINSTALL IN NEW LOCATION INDICATED ON NEW WORK PLANS. INTERCEPT AND EXTEND ALL EXISTING CABLING TO NEW LOCATION. CLEAN AND RE-LAMP RELOCATED LUMINAIRES.
  - ALL EXISTING PANELS AFFECTED BY THIS CONTRACTOR'S WORK SHALL BE PROVIDED WITH NEW TYPE-WRITTEN PANEL DIRECTORIES AND INSERT SLEEVES. PANEL DIRECTORIES SHALL NOT USE ROOM NAMES OR NUMBERS FROM THESE DRAWINGS. DIRECTORIES SHALL BE DETAILED AND COORDINATED WITH OWNER'S SUITE NUMBERS, FINAL ROOM NUMBERS, IT RACK NAMES, WORKSTATION DESIGNATIONS, ETC. UNUSED BREAKERS SHALL BE IN OFF POSITION.

PROJECT

**Greater Columbus Convention  
Center North Facility Chiller  
Replacement - 2023-6**

400 North High Street Columbus, Ohio 43215

CLIENT

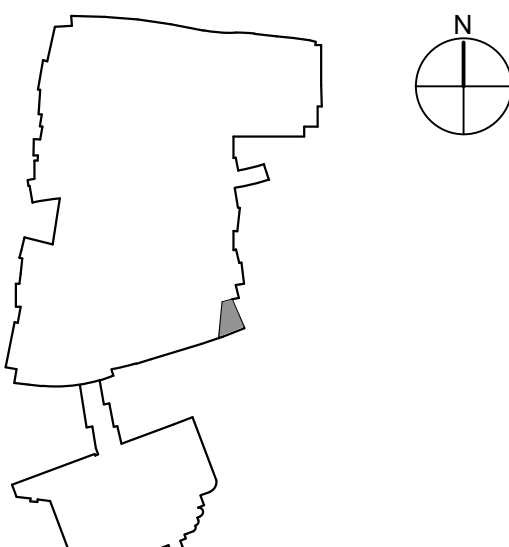
**FRANKLIN COUNTY  
CONVENTION FACILITIES  
AUTHORITY**

400 North High Street, 4th Floor  
Columbus, Ohio 43215

CONSULTANTS

REGISTRATION

KEYPLAN



ISSUE / REVISION

#	Date	BID SET	Description
1	12/04/2023	BID SET	

PROJECT NUMBER

0CCC23

SHEET TITLE

**ELECTRICAL ENLARGED PLANS -  
DEMO**

SHEET NUMBER

**E301**

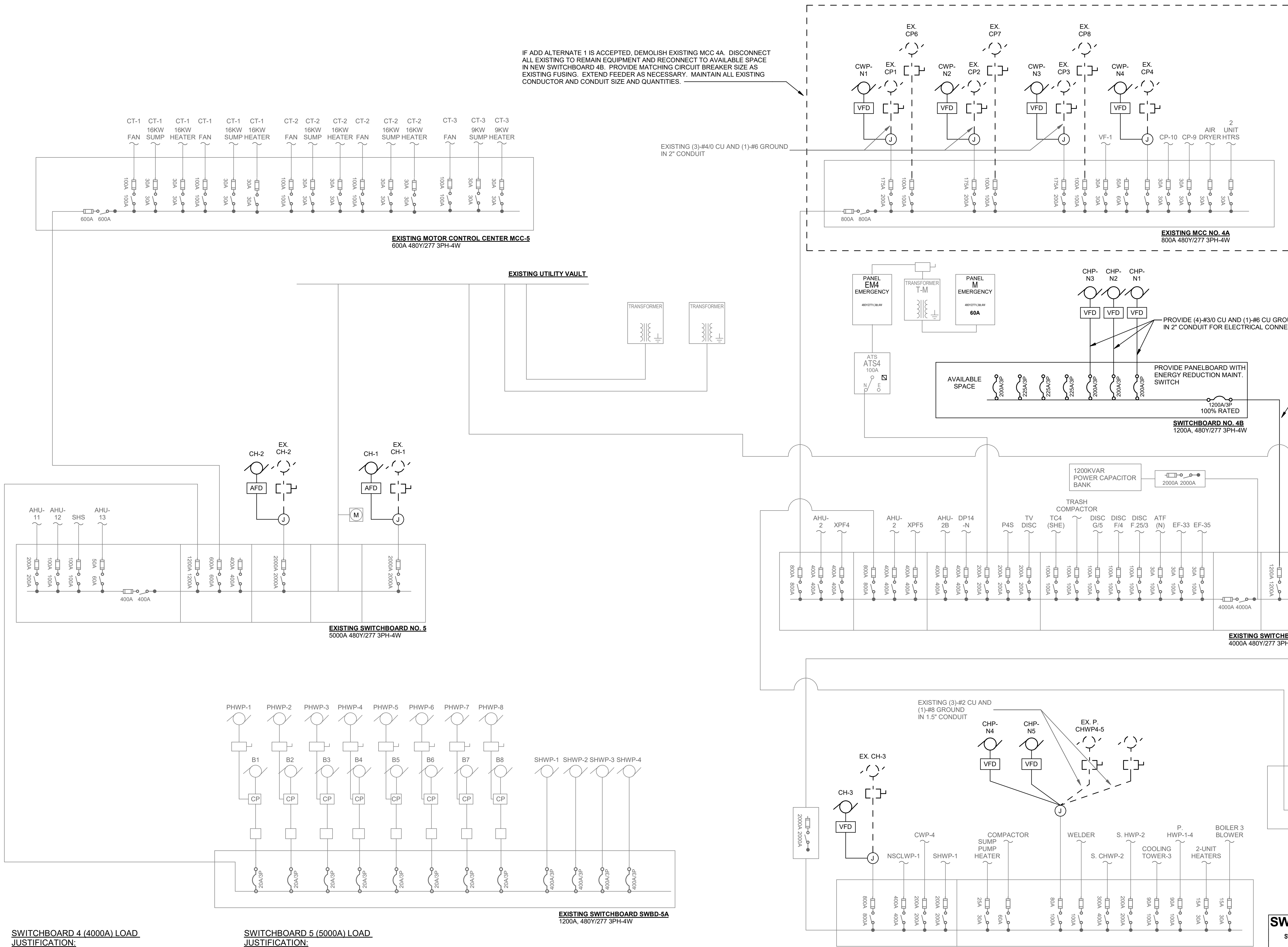




- A. REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CABLEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING CIRCUI TS.
- B. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAYOUT AS, INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CABLE. CONTRACTOR SHALL PROVIDE ALL NEUTRAL CABLES TO BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RUN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CABLES TO THE CAPACITY OF THE CONDUIT. CONTRACTOR SHALL PROVIDE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN NEC 100.2104 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR).
- C. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTABLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. MARK SIDES OF ALL DEVICE BOXES WITH "ELECTRICAL" AND "NEUTRAL".
- D. LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO AVOID ACCESS AND MAINTENANCE OF MECHANICAL AND PLUMBING EQUIPMENT. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OF MECHANICAL ACCESS/MAINTENANCE CLIMBERS OF EQUIPMENT BY OTHER TRADES.

KEYNOTES	49
E1	DISCONNECT/REMOVE EXISTING "CWP-1" AND RECONNECT TO NEW "CWP-1N". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY. IF ALTERNATE 1 IS ACCEPTED: REMOVE EXISTING FEEDERS BACK TO SOURCE AND CONNECT NEW "CWP-1" TO NEW "SWITCHBOARD 4B". PROVIDE A 225A, 3-PHASE CIRCUIT BREAKER IN AVAILABLE SPACE. PROVIDE (3) #4/0 CU GROUND IN 2" CONDUIT FOR ELECTRICAL CONNECTION.
E2	DISCONNECT/REMOVE EXISTING "CWP-2" AND RECONNECT TO NEW "CWP-2N". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY. IF ALTERNATE 1 IS ACCEPTED: REMOVE EXISTING FEEDERS BACK TO SOURCE AND CONNECT NEW "CWP-2" TO NEW "SWITCHBOARD 4B". PROVIDE A 225A, 3-PHASE CIRCUIT BREAKER IN AVAILABLE SPACE. PROVIDE (3) #4/0 CU GROUND IN 2" CONDUIT FOR ELECTRICAL CONNECTION.
E3	DISCONNECT/REMOVE EXISTING "CWP-3" AND RECONNECT TO NEW "CWP-3N". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY. IF ALTERNATE 1 IS ACCEPTED: REMOVE EXISTING FEEDERS BACK TO SOURCE AND CONNECT NEW "CWP-3" TO NEW "SWITCHBOARD 4B". PROVIDE A 225A, 3-PHASE CIRCUIT BREAKER IN AVAILABLE SPACE. PROVIDE (3) #4/0 CU GROUND IN 2" CONDUIT FOR ELECTRICAL CONNECTION.
E4	DISCONNECT/REMOVE EXISTING "CWP-4" AND RECONNECT TO NEW "CWP-4N". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY. IF ALTERNATE 1 IS ACCEPTED: REMOVE EXISTING FEEDERS BACK TO SOURCE AND CONNECT NEW "CWP-4" TO NEW "SWITCHBOARD 4B". PROVIDE A 209A, 3-PHASE CIRCUIT BREAKER IN AVAILABLE SPACE. PROVIDE (3) #3/0 CU GROUND IN 2" CONDUIT FOR ELECTRICAL CONNECTION.
E5	DISCONNECT/REMOVE EXISTING "CWP-5" AND RECONNECT TO NEW "CWP-5N". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY.
E6	DISCONNECT/REMOVE EXISTING "CWP-6" AND RECONNECT TO NEW "CWP-6N". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY.
E7	DISCONNECT/REMOVE EXISTING "CWP-7" AND RECONNECT TO NEW "CWP-7N". UTILIZE EXISTING ELECTRICAL FEEDER, CONDUIT, AND CIRCUITING. EXTEND EXISTING FEEDER TO ACCOMMODATE NEW UNIT AS NEEDED. CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND QUANTITY. IF ALTERNATE 1 IS ACCEPTED: REMOVE EXISTING FEEDERS BACK TO SOURCE AND CONNECT NEW "CWP-7" TO NEW "SWITCHBOARD 4B". PROVIDE A 225A, 3-PHASE CIRCUIT BREAKER IN AVAILABLE SPACE. PROVIDE (3) #4/0 CU GROUND IN 2" CONDUIT FOR ELECTRICAL CONNECTION.
E8	DISCONNECT/REMOVE EXISTING "CH-2" AND RECONNECT TO NEW "CH-2". REMOVE EXISTING CONDUIT AND FEEDER FROM EXISTING UNIT BACK TO SOURCE. ALL EXISTING CONDUIT SHALL BE ABANDONED IN PLACE AND CAPPED. RE-ROUTE ALL (6) CONDUITS OVER ELECTRICAL GEAR AND CORE INTO 2ND FLOOR MEZZANINE AND ROUTE THROUGH OPENING DOWN TO THE FIRST LEVEL. EXTEND TO NEW DRIVE LOCATION SHOWN ON THE NEW WORK PLANS. PROVIDE (6) 500 CU INCH (1) #2 CU GROUND IN 3" CONDUIT FOR ELECTRICAL CONNECTION. E-8: SHALL LAYOUT DRIVE LOCATION FOR ENGINEER APPROVAL PRIOR TO ROUGH-IN AND INSTALLATION.
E9	DISCONNECT/REMOVE EXISTING "CH-2" AND RECONNECT TO NEW "CH-2". REMOVE EXISTING CONDUIT AND FEEDER FROM EXISTING UNIT BACK TO SOURCE. ALL EXISTING CONDUIT SHALL BE ABANDONED IN PLACE AND CAPPED. RE-ROUTE ALL (6) CONDUITS OVER ELECTRICAL GEAR AND CORE INTO 2ND FLOOR MEZZANINE AND ROUTE THROUGH OPENING DOWN TO THE FIRST LEVEL. EXTEND TO NEW DRIVE LOCATION SHOWN ON THE NEW WORK PLANS. PROVIDE (6) 500 CU INCH (1) #2 CU GROUND IN 3" CONDUIT FOR ELECTRICAL CONNECTION. E-9: SHALL LAYOUT DRIVE LOCATION FOR ENGINEER APPROVAL PRIOR TO ROUGH-IN AND INSTALLATION.
E10	DISCONNECT/REMOVE EXISTING "CH-3" AND RECONNECT TO NEW "CH-3". INTERCEPT EXISTING PATHWAY LOCATED ON THE FIRST LEVEL AND UTILIZE BACK TO SOURCE. REPLACE EXISTING FUSES IN HEAD END FUSED SWITCH IN SWITCHBOARD 4A WITH 800A FUSES. PROVIDE (3) #600 CU GROUND IN 3" CONDUIT FOR ELECTRICAL CONNECTION.
E10	PROVIDE 6" HOUSEKEEPING PAD FOR FLOOR MOUNTED AFD.
E11	PROVIDE UNISTRUT STRUCTURE FOR MOUNTING OF PANELBOARD. PROVIDE 45 DEGREE KICKERS AND ALL OTHER REQUIRED COMPONENTS FOR LATERAL SUPPORT AND COMPLETE SYSTEM.
E12	REPLACE EXISTING LIGHTING IN THIS SPACE AND REPLACE WITH NEW MAINTAIN ALL EXISTING CONDUIT, CONDUCTORS, AND CONTROLS. EXTEND FEEDER IF NECESSARY. MAINTAIN EXISTING CONDUIT/CONDUCTOR SIZE AND QUANTITIES. EM1: PROVIDE LITHONIA ELMAL DUAL HEAD EMERGENCY LIGHTING FIXTURE WITH EQUALS HUBBELL, COLUMBIA, DAY-BRITE AND COLUMBIA. CH1: PROVIDE LITHONIA ZL10 150 WATT DUAL HEAD EMERGENCY LIGHTING FIXTURE WITH EQUALS HUBBELL, COLUMBIA, DAY-BRITE AND COLUMBIA. PROVIDE 10W EMERGENCY BATTERY PACK OPTION FOR ALL FIXTURES WITH "EM" DESIGNATION.





#### SWITCHBOARD 4 (4000A) LOAD JUSTIFICATION:

##### REMOVAL

CP1 (150 HP) - 149.6KW (180A)  
CP2 (150 HP) - 149.6KW (180A)  
CP3 (150 HP) - 149.6KW (180A)  
CP4 (100 HP) - 103.1KW (124A)

CP6 (50 HP) - 54.0KW (64A)  
CP7 (50 HP) - 54.0KW (64A)  
CP8 (50 HP) - 54.0KW (64A)

CWP4 (50HP) - 54.0KW (64A)  
CWP5 (50HP) - 54.0KW (64A)

CH-3 - 438KW (524.4A)

TOTAL: 1257.9KW

##### INSTALLED

CWP-N1 (125HP) - 129.7KW (156A)  
CWP-N2 (125HP) - 129.7KW (156A)  
CWP-N3 (125HP) - 129.7KW (156A)  
CWP-N4 (100HP) - 103.1KW (124A)

CHP-N1 (100HP) - 103.1KW (124A)  
CHP-N2 (100HP) - 103.1KW (124A)  
CHP-N3 (100HP) - 103.1KW (124A)

CHP-N4 (50HP) - 54.0KW (64A)  
CHP-N5 (50HP) - 54.0KW (64A)

CH-3 - 476.7KW (573.4A)

TOTAL: 1386.2KW

NET: +128.3KW (154.3A)

##### FEEDER NOTES:

- REFER TO SPECIFICATIONS FOR CONDUCTOR REQUIREMENTS. ALL FEEDERS SHALL BE COPPER.
- CURRENT CARRYING CONDUCTORS ARE SIZED FROM NEC-2017 TABLE 310.15(B) (16) (75DEG C - FOR THHW/THWN/THWN INSULATION). REFER TO PROJECT SPECIFICATIONS FOR ALLOWABLE CONDUIT AND WIRING METHODS.
- GROUND WIRES ARE SIZED FROM NEC TABLE 250.122.
- HVAC EQUIPMENT FEEDERS AND BRANCH CIRCUITS SHALL BE IN COPPER (UNLESS OTHERWISE NOTED).
- CONDUIT FILL RATES ARE BASED UPON TABLE C.10 (PVC-80 CONDUIT WITH THHN/THWN/THWN-2 WIRE). REFER TO PROJECT SPECIFICATIONS FOR ALLOWABLE CONDUIT AND WIRING METHODS.

#### SWITCHBOARD 5 (5000A) LOAD JUSTIFICATION:

##### REMOVAL

CH-1 - 1108.2KW (1333A)  
CH-2 - 1108.2KW (1333A)

TOTAL: 2216.4KW

##### INSTALLED

CH-1 - 911.8KW (1096.7A)  
CH-2 - 911.8KW (1096.7A)

TOTAL: 1823.6KW

NET: -392.8KW (-472.5A)

#### PANELBOARD AND WIRING SCHEDULE

PANEL: M										PANEL INTERRUPTING RATING: EXISTING										
VOLTAGE: 208Y/120V/3P/4W										LOCATION:										
AMPERES: 125 A										SUPPLY FROM:										
MOUNTING: SURFACE																				
CIRCUIT DESCRIPTION	WIRE	GND	C	OC	P	OKT	A	B	C	OKT	P	OC	G	ND	WIRE	CIRCUIT DESCRIPTION				
EXISTING GAS MONITOR SYSTEM...	15	1	0.5	1.0			1.2	1.0		2	2	20				EXISTING AIR COMPRESSOR				
EXISTING SP	20	3	5						1.2	0.5	6	1	15			EXISTING TEMP CTRL PNL 1ST...				
EXISTING HEAT TRACE 2ND...	50	1	9	0.5			3.0	0.5		10	1	15				EXISTING TEMP CTRL PNL 2ND...				
EXISTING HEAT TRACE 2ND...	50	1	11						3.0	0.5	12	1	15			EXISTING BOILER ROOM INSTAL...				
EXISTING LOADING DOCK HEAT...	20	1	13	0.8	0.5			0.5		14	1	20				CHILLER 3 CONTROLS				
SPACE	--	--	--	--	--	--	--	--	--	16	1	20				CHILLER 1 CONTROLS				
SPACE	--	--	--	--	--	--	--	--	--	0.5	18	1	20			CHILLER 2 CONTROLS				
TOTAL LOAD (KVA):							4.5 KVA	6.2 KVA	5.7 KVA											
TOTAL CURRENT (A):							38 A	53 A	49 A											
LOAD CLASSIFICATION	CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS													
EQUIP	16480 VA		100.00%		16480 VA		TOTAL CONNECTED LOAD: 16480 VA													
											TOTAL ESTIMATED DEMAND: 16480 VA									
											TOTAL CONNECTED CURRENT: 46 A									
											TOTAL ESTIMATED DEMAND CURRENT: 46 A									
NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.																				

#### GENERAL POWER RISER NOTES:

- PROVIDE ENGRAVED LAMACOID LABELS FOR ALL POWER DISTRIBUTION EQUIPMENT FURNISHED OR MODIFIED IN THIS PROJECT. LABELS PER DETAILS AND SPECIFICATIONS.
- SERVICE EQUIPMENT SHALL BE MARKED WITH THE MAXIMUM AVAILABLE FAULT-CURRENT AT THE EQUIPMENT AND THE DATE THE CALCULATION WAS PERFORMED. APPLY A TYPE-WRITTEN ADHESIVE LABEL WITH WHITE BACKGROUND, 1/2" HIGH BLACK LETTERING.
- CONTRACTOR SHALL INSTALL SEPARATE CONDUITS, PULL BOXES, ETC. FOR EACH EMERGENCY POWER BRANCH & NORMAL POWER PER NEC FOR COMPLETE SEPARATION OF POWER SERVICES.
- ALL CIRCUIT BREAKERS AND/OR DISCONNECTS SERVING THE PRIMARY SIDE OF A TRANSFORMER WHICH ARE NOT WITHIN SITE OF THE TRANSFORMER SHALL BE PROVIDED WITH PERMANENTLY INSTALLED MEANS TO LOCK THE BREAKER IN THE OFF POSITION. SUCH TRANSFORMERS SHALL HAVE THE ROOM NAME AND NUMBER OF THE PRIMARY DISCONNECTING MEANS ENGRAVED ON THE EQUIPMENT NAMEPLATE.
- ALL SPARE BREAKERS SHALL BE SO LABELED IN CIRCUIT DIRECTORIES AND SHALL BE LEFT IN THE OFF POSITION.
- MINIMUM PANEL MOUNTING SPACE IS NOTED ON DRAWINGS AND SCHEDULES. ALL MOUNTING SPACE SHALL BE PREPARED TO ACCEPT FUTURE BREAKERS.
- NO CONDUIT SHALL BE INSTALLED UNDERGROUND, EXCEPT FOR DISTRIBUTION EQUIPMENT FEEDERS, EXTERIOR CONDUITS, PARKING LOT ISLANDS, UNLESS REQUIRED FOR THE APPLICATION (FLOOR BOXES, ISLANDS, ETC.) OR SPECIFICALLY INDICATED AS SUCH IN CONSTRUCTION DOCUMENTS. NO CONDUIT SHALL BE INSTALLED WITHIN CONCRETE SLABS.
- SEE SPECIFICATIONS FOR POWER STUDY REQUIREMENTS.
- PROVIDE ELECTRONIC TRIP BREAKERS ON ALL EMERGENCY BRANCH CIRCUITS WHERE REQUIRED FOR SELECTIVE COORDINATION.
- E.C. SHALL VERIFY ALL EXISTING CONDUIT AND CONDUCTOR SIZES AND QUANTITIES OF EQUIPMENT IN THE SCOPE OF WORK PRIOR TO ROUGH-IN.

#### SWITCHBOARD AND WIRING SCHEDULE

SWITCHBOARD: 4B						MAINS TYPE: 1200A MCB				KAIC RATING: 65KAIC			
VOLTAGE: 480Y/277V 3P/4W						SPD: No				LOCATION:			
AMPERES: 1200 A						MOUNTING: SURFACE				SUPPLY FROM:			
CKT	CIRCUIT DESCRIPTION	SETS	WIRE	GND	COND	POLES	FRAME	TRIP	LOAD (KVA)	REMARKS			
1	CHP-N1					3	200 A	200 A	103.1				
2	CHP-N2					3	200 A	200 A	103.1				
3	CHP-N3					3	200 A	200 A	103.1				
4	SPARE	--	--	--	--	1	400 A	225 A	0.0				
5	SPARE	--	--	--	--	1	400 A	225 A	0.0				
6	SPARE	--	--	--	--	1	400 A	225 A	0.0				
7	SPARE	--	--	--	--	1	400 A	225 A	0.0				
8	SPACE	--	--	--	--	1	--	--	--				
9	SPACE	--	--	--	--	1	--	--	--				
10	SPACE	--	--	--	--	1	--	--	--				
11	SPACE	--	--	--	--	1	--	--	--				
12	SPACE	--	--	--	--	1	--	--	--				
13	SPACE	--	--	--	--	1	--	--	--				
14	SPACE	--	--	--	--	1	--	--	--				
15	SPACE	--	--	--	--	1	--	--	--				
16	SPACE	--	--	--	--	1	--	--	--				
17	SPACE	--	--	--	--	1	--	--	--				
18	SPACE	--	--	--	--	1	--	--	--				
19	SPACE	--	--	--	--	1	--	--	--				
20	SPACE	--	--	--	--	1	--	--	--				
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS					
EQUIP		306273 VA		100.0%		309273 VA		TOTAL CONN. LOAD:		309 KVA			
								TOTAL EST. DEMAND:		309 KVA			
								TOTAL CONN. CURRENT:		372 A			
								TOTAL EST. DEMAND CURRENT:		372 A			
NOTES:													

#### PROJECT

Greater Columbus Convention  
Center North Facility Chiller  
Replacement - 2023-6

400 North High Street Columbus, Ohio 43215

#### CLIENT

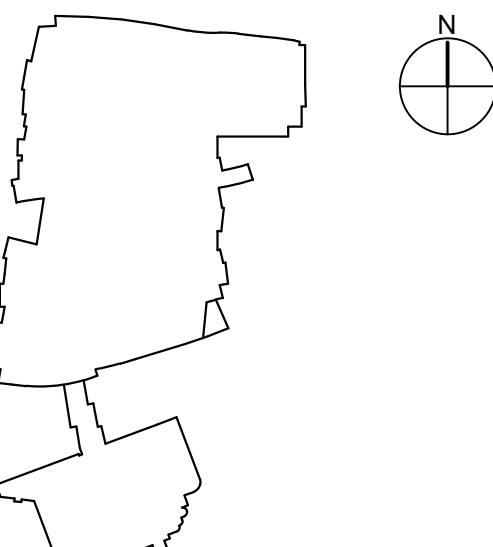
FRANKLIN COUNTY  
CONVENTION FACILITIES  
AUTHORITY

400 North High Street, 4th Floor  
Columbus, Ohio 43215

#### CONSULTANTS

#### REGISTRATION

#### KEYPLAN



#### ISSUE / REVISION

#	Date	Description
1	12/04/2023	BID SET

#### PROJECT NUMBER

OCCC23

#### SHEET TITLE

ELECTRICAL SINGLE LINE

#### SHEET NUMBER

E501



**CAST-IN-PLACE CONCRETE AND REINFORCEMENT**

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318.

2. CONCRETE SHALL HAVE THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS:  
CAST-IN-PLACE CONCRETE ..... 4,000 PSI

3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.

4. ALL WELDED WIRE REINFORCING SHALL CONFORM TO ASTM A185, A1064 PROVIDED IN FLAT SHEETS OR ROLLS.

5. ADMIXTURES SHALL CONTAIN NO MORE THAN 0.05% CHLORIDE IONS BY WEIGHT OF CEMENT WHEN TESTED IN ACCORDANCE WITH ASTM T260.

6. ALL REINFORCING DETAILS SHALL CONFORM TO "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" ACI 315, UNLESS DETAILD OTHERWISE OR THE STRUCTURAL DRAWINGS.

7. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS CONFORMING TO THE FOLLOWING EXPOSURE CATEGORIES:

CATEGORY	SEVERITY	CLASS
FREEZE AND THAWING.....	MODERATE.....	F30
SULFATE.....	MODERATE.....	S80
PERMEABILITY.....	REQUIRED.....	P30
CORROSION PROTECTION.....	REQUIRED.....	C1

8. THE OWNER SHALL EMPLOY A TESTING LABORATORY APPROVED BY THE ENGINEER TO PERFORM THE TESTING SPECIFIED IN PARAGRAPH 1.6.4 OF ACI 318. THE TESTING LABORATORY SHALL MEET THE REQUIREMENTS OF ASTM E2329. TESTING SHALL BE MADE BY AN ACI CONCRETE FIELD TESTING TECHNICIAN GRADE 1 OR APPROVED EQUIVALENT. A TECHNICIAN GRADE 1 SHALL BE PRESENT DURING ALL CONCRETE PLACEMENT.

9. SUBMIT SHOP DRAWINGS FOR REVIEW. THESE DRAWINGS SHALL SHOW ALL CONCRETE MEMBER DIMENSIONS AND DOWELS FOR MASONRY WALLS.

10. PROVIDE CLASS "B" TENSION LAP SPlice OR FULL MECHANICAL SPlice (ACI 318, SECT. 12.14.3) FOR ALL STEEL IN SLABS. SEE LAP SCHEDULE ON SHEET SO FOR LAP LENGTHS, U.N.O.

11. PROVIDE ADEQUATE BOLSTERS, H-CHAIRS, SUPPORT BARS, ETC., TO MAINTAIN SPECIFIED CLEARANCES FOR THE ENTIRE LENGTH OF ALL REINFORCING BARS.

12. PROVIDE 3/4-INCH CHAMFER ON ALL EXPOSED CORNERS OF SLABS UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL BE MAINTAINED.

13. CURE ALL CONCRETE FOR A MINIMUM 7-DAYS. APPLY CURING COMPOUND AT THE MAXIMUM COVERAGE RATE OF 300 SQUARE FEET PER GALLON. USE PRODUCT IN STRICT ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS.

14. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS NOT INDICATED ON THE DRAWINGS FOR REVIEW BY THE ENGINEER/ARCHITECT.

15. ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED WITH GRAY EPOXY PRIMER, APPROVED BY THE ENGINEER.

16. FORMWORK FOR ALL CONCRETE THAT WILL BE EXPOSED IN THE COMPLETED STRUCTURE, SHALL BE CONSTRUCTED FROM A METAL OR SUITABLE SURFACE PLYWOOD THAT WILL PRODUCE AN ACCEPTABLY SMOOTH SURFACE.

17. PITCH CONCRETE SLABS TO FLOOR DRAINS SHOWN ON MECHANICAL, PROCESS, OR ARCHITECTURAL DRAWINGS.

18. CONCRETE PROTECTION (CLEAR COVER) FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

a. SLABS

    • 3/4 INCHES TO REINFORCEMENT

19. LAP SPICE WELDED WIRE FABRIC ONE SPACE PLUS 2 INCHES AT EDGES AND ENDS AND PROVIDE ADDITIONAL REINFORCING WHERE SHOWN ON DRAWINGS. PLACE MESH 2 INCHES FROM TOP OF SLAB FOR SLABS ON GROUND AND 1 INCH FROM TOP OF SUPPORTED SLABS UNLESS NOTED OTHERWISE.

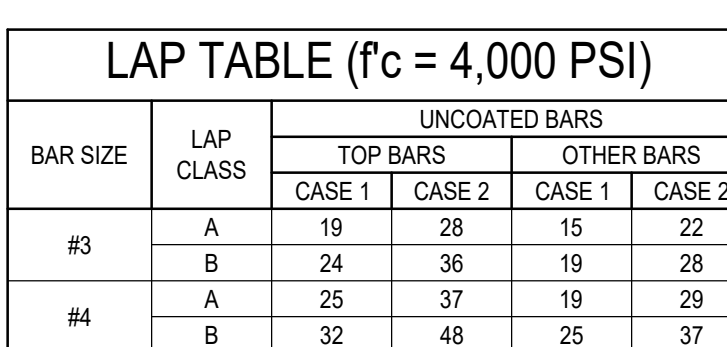
20. ALL HOOKS SHALL BE ACI STANDARD HOOKS UNLESS DIMENSIONED OTHERWISE.

**SPECIAL INSPECTIONS**

PER THE IBC SECTION 1704, SPECIAL INSPECTIONS ARE REQUIRED FOR THE FOLLOWING ITEMS:

1. **STRUCTURAL STEEL:**
  - a. MATERIAL VERIFICATION OF HIGH STRENGTH BOLTS, NUTS AND WASHERS. (PERIODIC)
  - b. INSPECTION DURING THE TIGHTENING OF HIGH STRENGTH BOLTS IN:
    - BEARING-TYPE CONNECTIONS (PERIODIC)
  - c. MATERIAL VERIFICATION OF STRUCTURAL STEEL
  - d. MATERIAL VERIFICATION OF WELD FILLER MATERIALS
  - e. VISUAL INSPECTION OF FIELD WELDS
    - COMPLETE AND PARTIAL PENETRATION GROOVE WELDS (CONTINUOUS)
    - MULTIPASS FILLET WELDS (CONTINUOUS)
    - SINGLE-PASS FILLET WELDS  $\leq 5/16"$  (CONTINUOUS)
    - SINGLE-PASS FILLET WELDS  $\leq 5/16"$  (PERIODIC)
  - f. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS. (PERIODIC)
  - g. SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WORK DONE ON THE PREMISES OF AN APPROVED FABRICATOR.
2. **DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:**
  - a. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS TO THE APPROVED CONSTRUCTION DOCUMENTS.
  - b. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL, IN CHARGE.
  - c. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL, IN CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.
  - d. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
  - e. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL PROVIDE STATEMENT OF SPECIAL INSPECTIONS ACKNOWLEDGING THE REQUIREMENTS OF IBC SECTION 1710.

LAP TABLE ( $f'_c = 4,000$ PSI)					
BAR SIZE	LAP CLASS	UNCOATED BARS			
		TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2
#3	A	19	28	15	22
	B	24	36	19	28
#4	A	24	37	19	29
	B	32	48	25	37
#5	A	31	47	24	36
	B	40	60	31	47
#6	A	37	56	29	43
	B	48	72	37	56
#7	A	54	81	42	63
	B	70	106	54	81
#8	A	62	93	48	71
	B	80	121	62	93
#9	A	70	105	54	81
	B	91	136	70	105
#10	A	79	118	61	91
	B	102	153	79	118
#11	A	87	131	67	101
	B	113	170	87	131
#14	N/A	105	157	81	121
#18	N/A	139	209	107	161



#5	A	31	47	24	36
	B	40	60	31	47
#6	A	37	56	29	43
	B	48	72	37	56
#7	A	54	81	42	63
	B	70	106	54	81
#8	A	62	93	48	71
	B	80	121	62	93
#9	A	70	105	54	81
	B	91	136	70	105
#10	A	79	118	61	91
	B	102	153	79	118
#11	A	87	131	67	101
	B	113	170	87	131
#14	N/A	105	157	81	121
#18	N/A	139	209	107	161

NOTES:

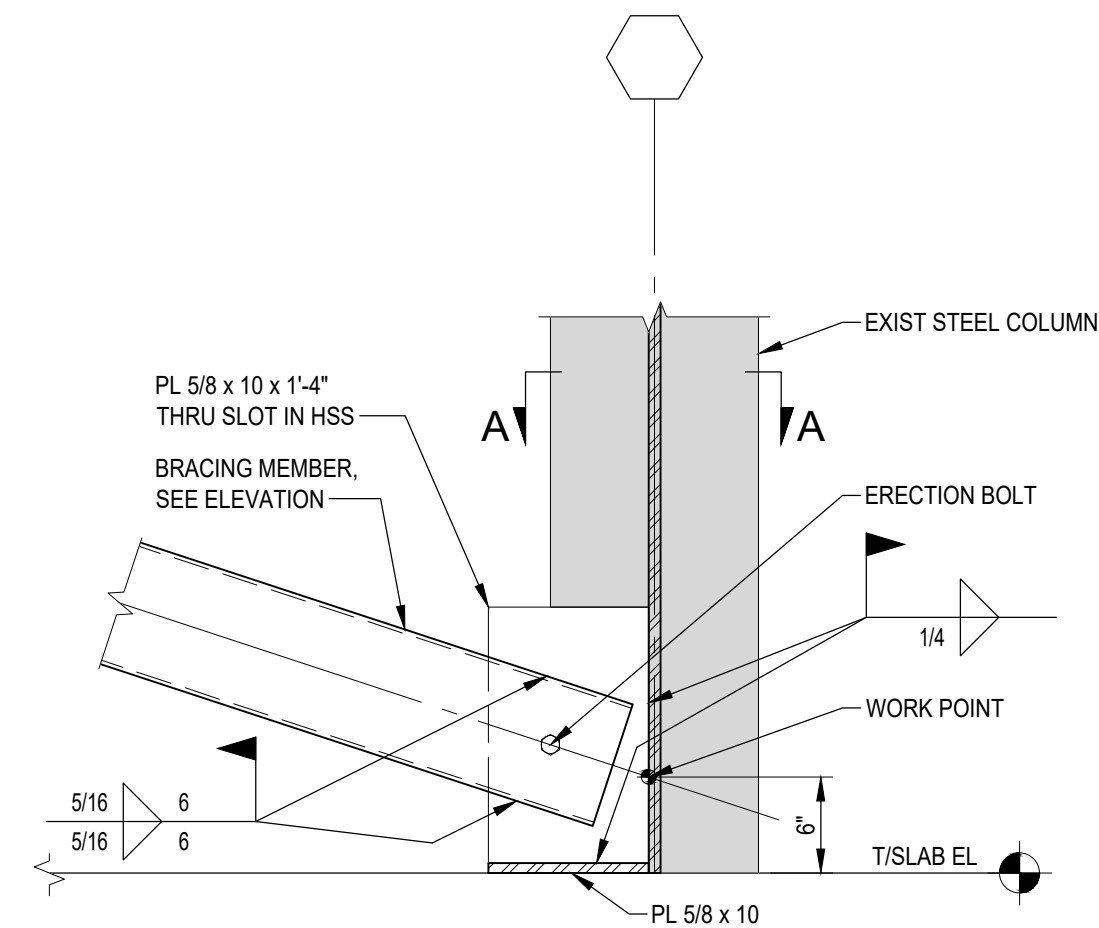
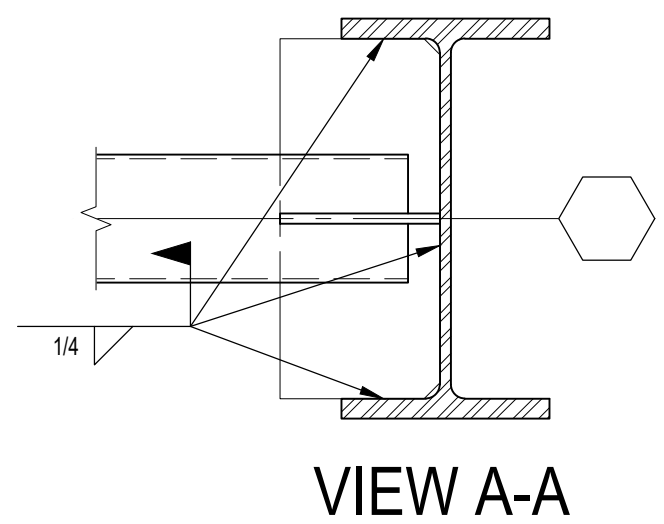
1. TABULATED VALUES ARE BASED ON A MINIMUM YIELD STRENGTH OF 60,000 PSI [420 MPa]. LENGTHS ARE IN INCHES.
2. CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURE, MEMBER, CONCRETE COVER, AND OC SPACING OF THE BARS ARE DEFINED AS:  
BEAMS AND COLUMNS
  - CASE 1: CONCRETE COVER AT LEAST 1.0d, AND OC SPACING AT LEAST 2.0 d.
  - CASE 2: CONCRETE COVER LESS THAN 1.0d, OR OC SPACING LESS THAN 2.0 d.
3. ALL OTHER ELEMENTS
  - CASE 1: CONCRETE COVER AT LEAST 1.0d, AND OC SPACING AT LEAST 3.0 d.
  - CASE 2: CONCRETE COVER LESS THAN 1.0d, OR OC SPACING LESS THAN 3.0 d.
4. TENSION LAP SPICES OF #14 OR #16 (BARS OR #57 BARS) ARE NOT PERMITTED. THE TABLES OF #11 OR #13 BARS FOR THESE BAR SIZES ARE TENSION DEVELOP LENGTHS.
5. ALL DEVELOP LENGTHS ARE IN INCHES. FOR MORE THAN 2 INCHES [50 mm] OF CONCRETE CAST BELOW THE BARS.



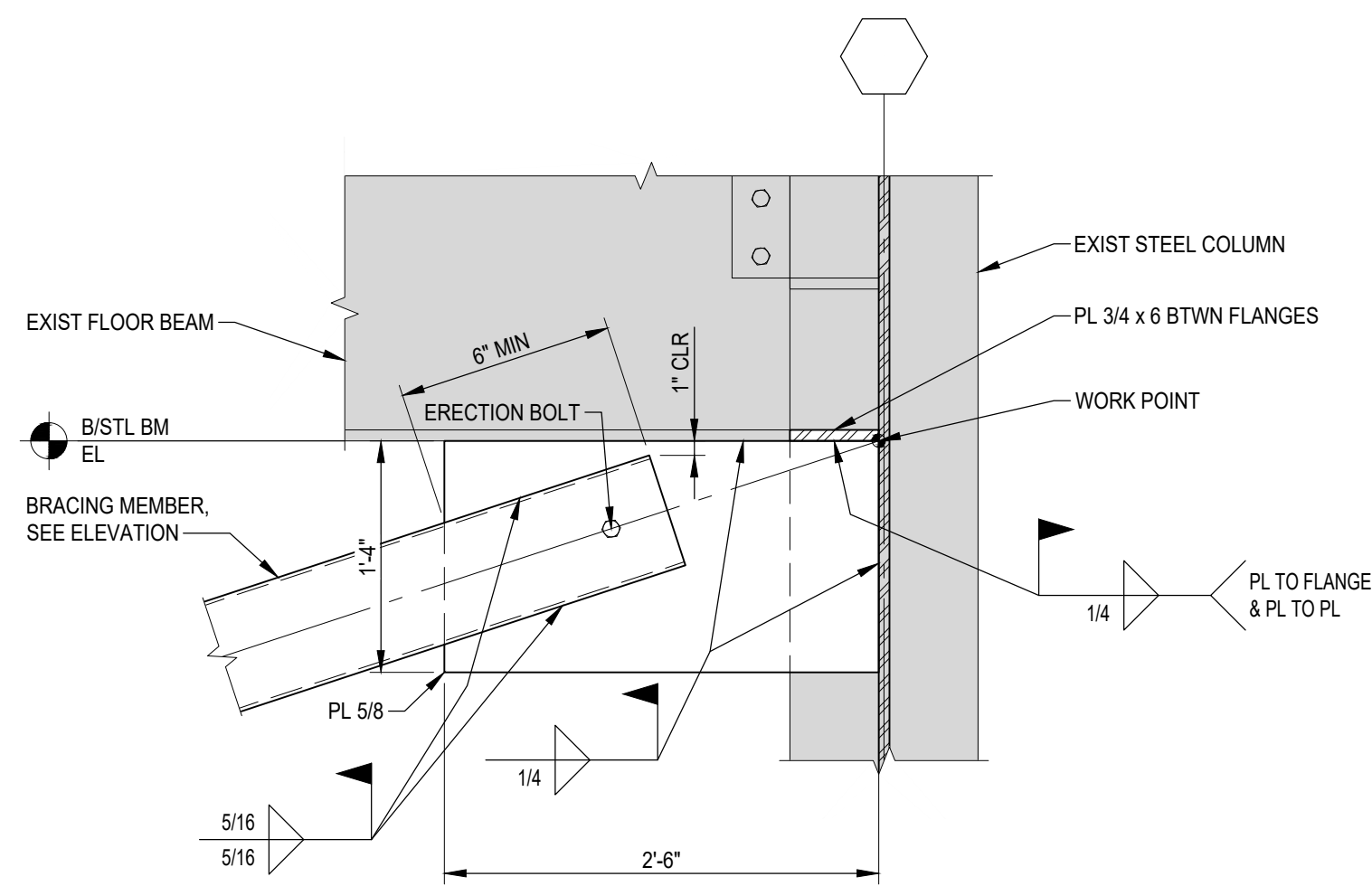




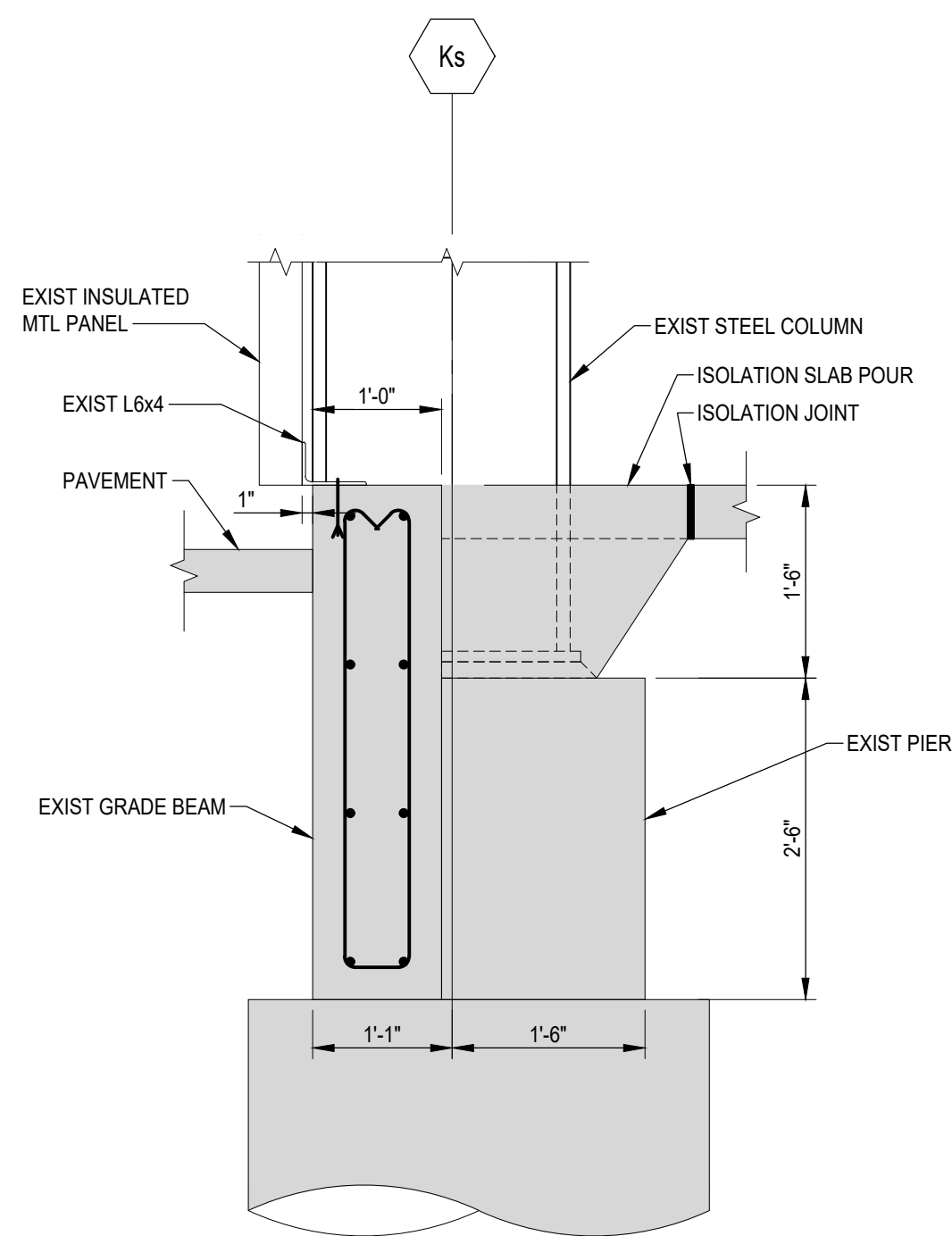




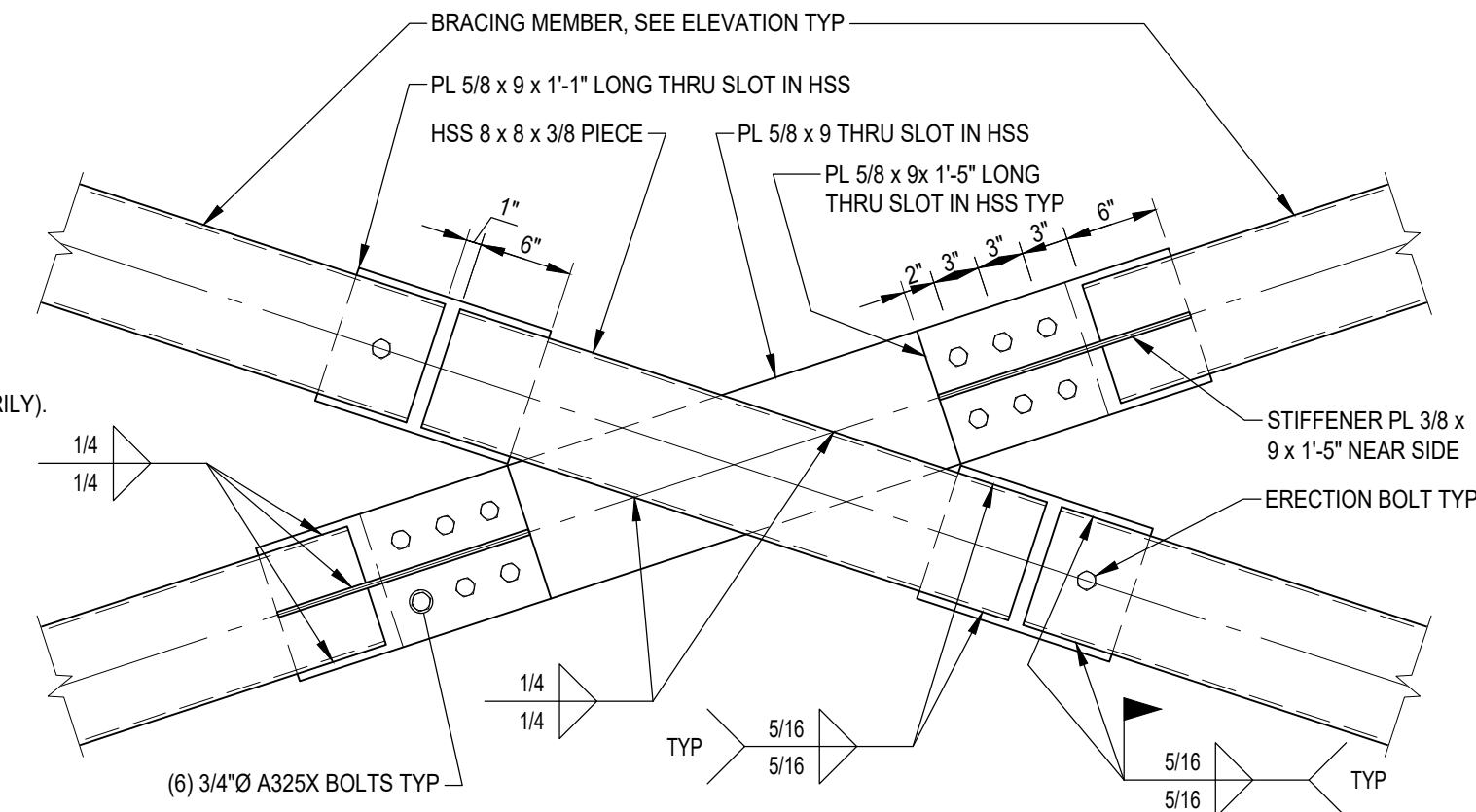
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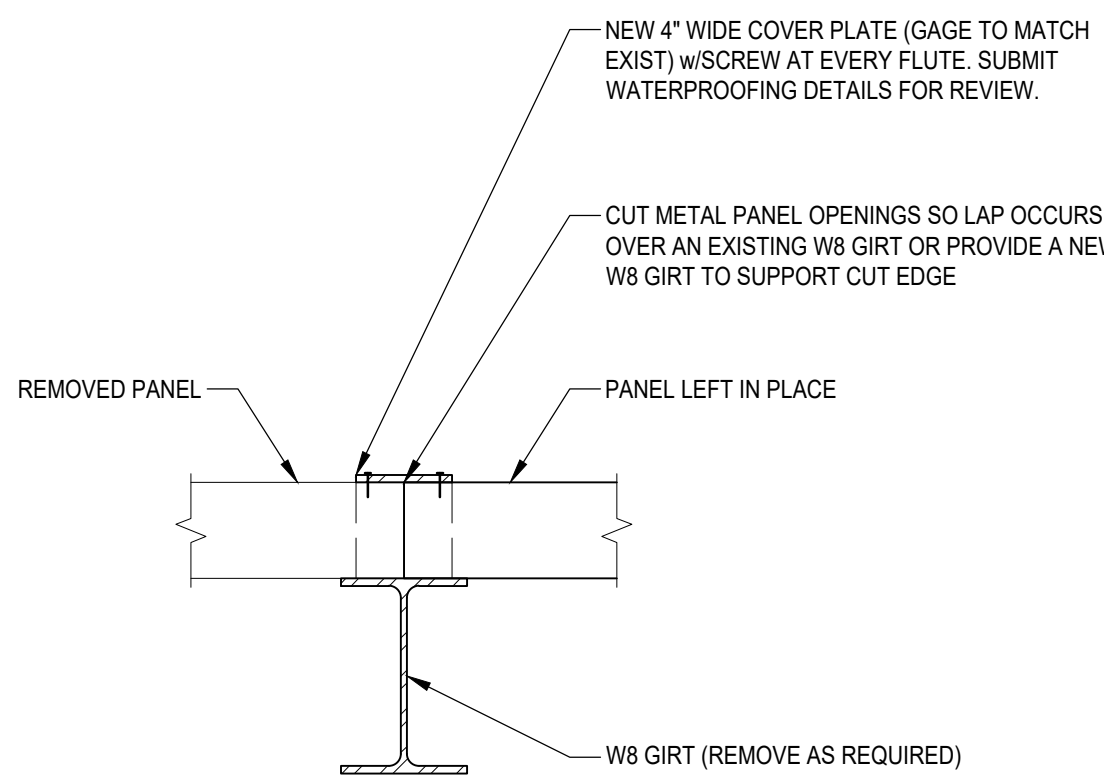
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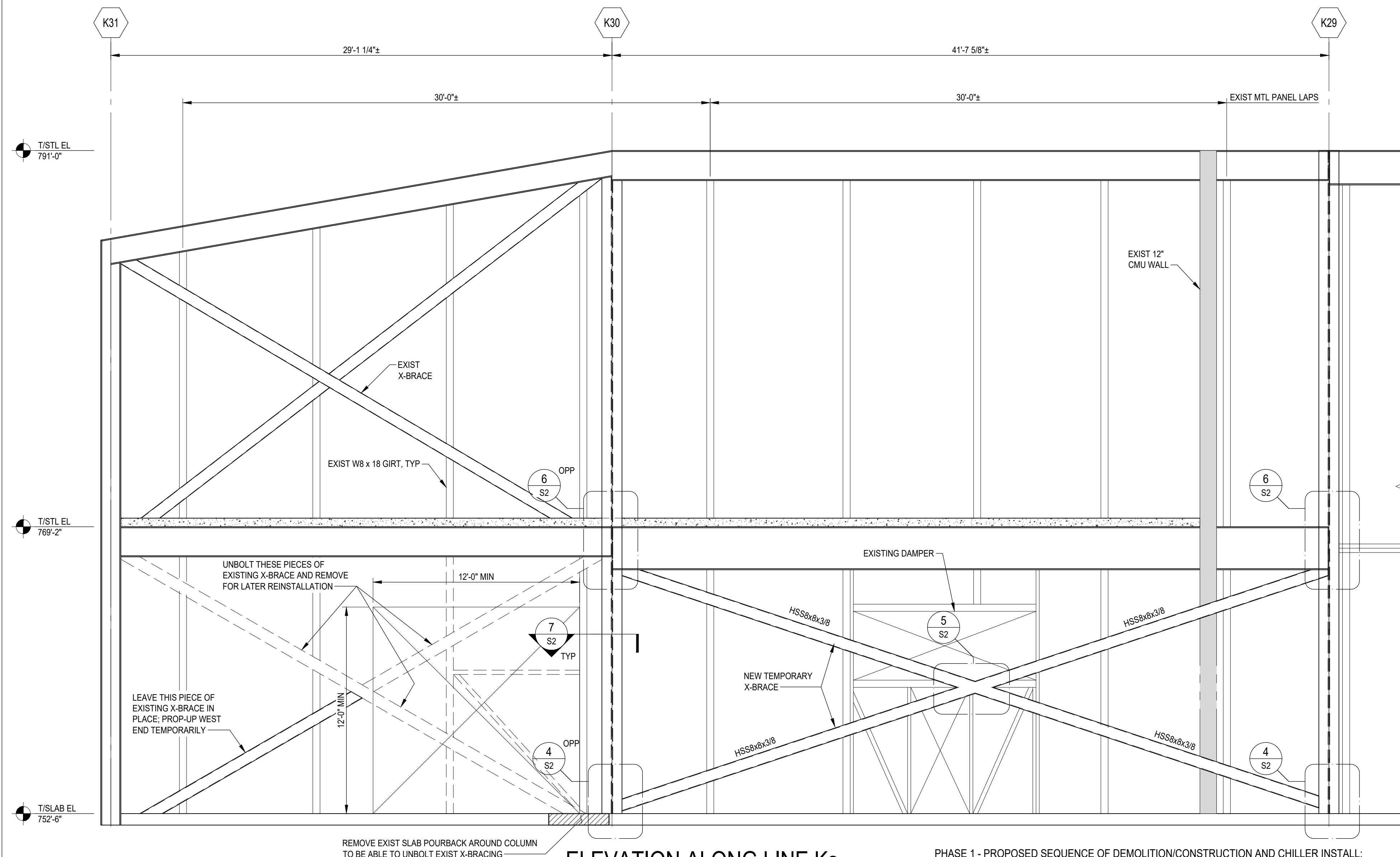
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DETAIL 5  
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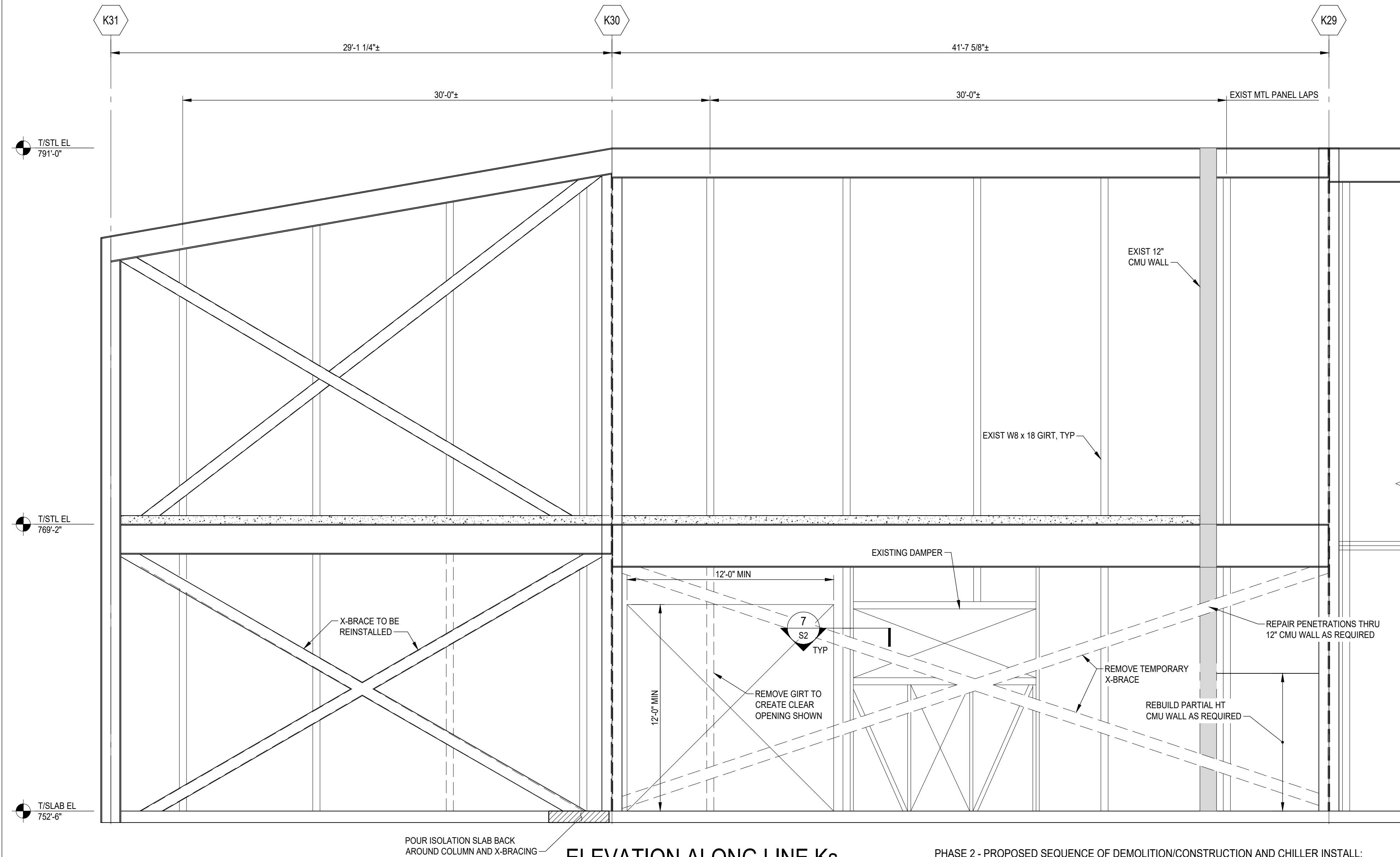


PLAN DETAIL 7  
SCALE: 1 1/2\"/>



ELEVATION ALONG LINE Ks  
- PHASE 1 CONSTRUCTION 1  
SCALE: 1/4\"/>

- PHASE 1 - PROPOSED SEQUENCE OF DEMOLITION/CONSTRUCTION AND CHILLER INSTALL:
1. INSTALL TEMPORARY X-BRACE BETWEEN LINES K29 AND K30. MAY BE NECESSARY TO REMOVE EXISTING DAMPER TEMPORARILY.
  2. REMOVE VERTICAL W8 GIRT AND PORTION OF LOWER X-BRACE BETWEEN LINES K30 AND K31.
  3. REMOVE EXISTING CHILLER AND INSTALL NEW CHILLER #1 THROUGH OPENING IN METAL PANEL.



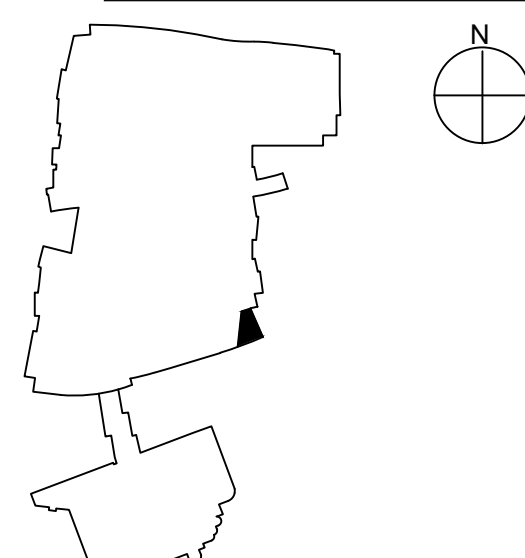
ELEVATION ALONG LINE Ks  
- PHASE 2 CONSTRUCTION 2  
SCALE: 1/4\"/>

- PHASE 2 - PROPOSED SEQUENCE OF DEMOLITION/CONSTRUCTION AND CHILLER INSTALL:
1. REINSTALL ORIGINAL LOWER X-BRACE, VERTICAL W8 GIRT, AND METAL PANEL BETWEEN LINES K30 AND K31.
  2. REMOVE TEMPORARY X-BRACE, AND W8 VERTICAL GIRT BETWEEN LINES K29 AND K30.
  3. REMOVE AND INSTALL NEW CHILLER #2 AND #3 THROUGH OPENING IN METAL PANEL.
  4. REINSTALL VERTICAL W8 GIRT, METAL PANEL, AND DAMPER BETWEEN LINES K29 AND K30.

REGISTRATION



KEYPLAN



ISSUE / REVISION

#	Date	Description
1	12/04/2023	BID SET

PROJECT NUMBER  
occc23

SHEET TITLE  
**ELEVATIONS & DETAILS**

SHEET NUMBER