DRAWING INDEX

PRO	DJECT DRAWING INDEX
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M001	GENERAL INFORMATION - HVAC
M301	HVAC ENLARGED PLAN - NORTH MER DEMO
M302	HVAC ENLARGED PLANS - NORTH MER NEW WORK
M501	HVAC DIAGRAMS
M502	HVAC PHASING DIAGRAMS
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E001	ELECTRICAL GENERAL INFORMATION
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E301	ELECTRICAL ENLARGED PLAN - DEMO
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S2	ELEVATIONS & DETAILS

GENERAL NOTES

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 REQIURED FOR THE INSTALLATION OF THREE REPLACEMENT CHILLERS SERVING THE GREATER COLUMBUS CONVENTION CENTER'S NORTH FACILITY AND CORRESPONDING PUMPS ASSOCATED WITH THE CHILLED WATER SYSTEM AS CALLED OUT IN THE DRAWINGS AND

PROJECT LOCATION

VICINITY MAP: LOCAL / CAMPUS



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



BUILDING SCIENCE LEADERSHIP



REGISTRATION

FRANKLIN COUNTY CONVENTION **FACILITIES AUTHORITY**

400 North High Street, 4th Floor



ISSUE / REVISION

1 12/04/2023 BID SET # Date

PROJECT NUMBER

SHEET TITLE **COVER SHEET**

SHEET NUMBER

G001

IVIECHA	ANICAL SYMBOLS LIST
NOTE: NO	T ALL SYMBOLS MAY BE USED.
SYMBOL	DESCRIPTION
Θ	HUMIDISTAT WITH ADJUSTABLE CONTROL
T)	THERMOSTAT WITH ADJUSTABLE CONTROL
H	HUMIDITY SENSOR
T	TEMPERATURE SENSOR
H2	HYDROGEN SENSOR
CO2	CARBON DIOXIDE SENSOR
co	CARBON MONOXIDE SENSOR
NO2	NITROGEN DIOXIDE SENSOR
os	OCCUPANCY SENSOR
$\langle 1 \rangle$	KEYNOTE (SEE LEGEND ON SHEET)
	,
	REVISION TRIANGLE
→	AIRFLOW ARROW
	FLOW ARROW
	CONNECT TO EXISTING
	END OF DEMOLITION
	PIPE CAPPED
	PIPE DROP
	PIPE RISE
	PIPE TEE DOWN
	PIPE TEE UP
<u> </u>	PIPE REDUCER
I]I	PIPE UNION
	PIPE GUIDES OR SLEEVES
\longrightarrow	PIPE ANCHOR
	FLEXIBLE PIPE CONNECTION
×	GENERAL SERVICE VALVE (SEE SPECIFICATIONS FOR VALVE TYPE PER APPLICATION)
Ż	CHECK VALVE (ARROW INDICATES DIRECTION OF FLOW)
⋈	MANUAL BALANCING VALVE
(A)	AUTOMATIC BALANCING VALVE
	TWO-WAY CONTROL VALVE
<u> </u>	THREE-WAY CONTROL VALVE
PICBV	TWO-WAY PRESSURE INDEPENDENT
	CONTROL AND BALANCE VALVE
Ø	PRESSURE REDUCING VALVE
A A	STEAM PRESSURE REGULATING VALVE
	STEAM PRESSURE REGULATING VALVE RELIEF VALVE
₩ ₩ ₩	
¾ ★	RELIEF VALVE DRAIN VALVE WITH THREADED
	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION
¾ ★	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK
¾ ★	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK STRAINER WITH BLOW DOWN VALVE
	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK STRAINER WITH BLOW DOWN VALVE AUTOMATIC AIR VENT
MAV	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK STRAINER WITH BLOW DOWN VALVE AUTOMATIC AIR VENT MANUAL AIR VENT TEMPERATURE/PRESSURE TEST PLUG
A A A A A A A A A A A A A A A A A A A	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK STRAINER WITH BLOW DOWN VALVE AUTOMATIC AIR VENT MANUAL AIR VENT TEMPERATURE/PRESSURE TEST PLUG (PETE'S PLUG)
MAV P E	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK STRAINER WITH BLOW DOWN VALVE AUTOMATIC AIR VENT MANUAL AIR VENT TEMPERATURE/PRESSURE TEST PLUG (PETE'S PLUG) SIGHT FLOW INDICATOR
AN DAV PAV PAV PAV PAV PAV PAV PAV PAV PAV P	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK STRAINER WITH BLOW DOWN VALVE AUTOMATIC AIR VENT MANUAL AIR VENT TEMPERATURE/PRESSURE TEST PLUG (PETE'S PLUG)
MAV P E E E E E E E E E E E E E E E E E E	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK STRAINER WITH BLOW DOWN VALVE AUTOMATIC AIR VENT MANUAL AIR VENT TEMPERATURE/PRESSURE TEST PLUG (PETE'S PLUG) SIGHT FLOW INDICATOR
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MAV P Ed Mary May May May May May May Ma	RELIEF VALVE DRAIN VALVE WITH THREADED HOSE CONNECTION REDUCED PRESSURE BACKFLOW PREVENTER PRESSURE GAUGE WITH STOPCOCK STRAINER WITH BLOW DOWN VALVE AUTOMATIC AIR VENT MANUAL AIR VENT TEMPERATURE/PRESSURE TEST PLUG (PETE'S PLUG) SIGHT FLOW INDICATOR STEAM TRAP CLEAN OUT

WAL	L RATING LEGEND
	FIRE RESISTIVE RATED WALLS, 1 HOUR
	FIRE RESISTIVE RATED WALLS, 2 HOUR
	FIRE RATED, SMOKE BARRIER WALLS, 1 HOUR
	FIRE RATED, SMOKE BARRIER WALLS, 2 HOUR

	TALL SYMBOLS MAY BE USED.
SYMBOL	DESCRIPTION TERMINAL BOXES
	VAV TERMINAL BOX (WITH REHEAT)
7	VAV TERMINAL POY (NO DEHEAT)
لگ	VAV TERMINAL BOX (NO REHEAT) TERMINAL BOX NOTES
	IF MIN COOLING CFM IS NOT SHOWN ON PLANS, THEN MIN COOLING CFM IS EQUAL TO
	65% OF MAX COOLING CFM.
	2. HEATING CFM IS EQUAL TO MIN COOLING CFM DUCTWORK PLANS
	TAG MAX COOLING CFM / MIN COOLING CFM
	PIPING PLANS
	TAG
	DUCTWORK PIPING PLANS PLANS
	<u>TAG EXAMPLES:</u> <u>TB1</u> <u>TB1</u> <u>TB1</u> 500/200 500
	SUPPLY AND OUTDOOR AIR
	RECTANGULAR DUCT ELBOW UP
100	OVAL DUCT ELBOW UP
	ROUND DUCT ELBOW UP
	RETURN, RELIEF, AND EXHAUST AIR
	RECTANGULAR DUCT ELBOW UP
	OVAL DUCT ELBOW UP
+ 10	ROUND DUCT ELBOW UP
[x]	SUPPLY AND OUTDOOR AIR RECTANGULAR DUCT ELBOW DOWN
	OVAL DUCT ELBOW DOWN
	ROUND DUCT ELBOW DOWN
	RETURN, RELIEF, AND EXHAUST AIR RECTANGULAR DUCT ELBOW DOWN
	OVAL DUCT ELBOW DOWN
	ROUND DUCT ELBOW DOWN
	NEW WORK DUCTWORK
	EXISTING DUCTWORK
	DEMOLITION DUCTWORK
	NEW WORK PIPING
	EXISTING PIPING
	DEMOLISHED PIPING
	SUPPLY DIFFUSER WITH FLEXIBLE DUCT TAG - NECK SIZE AIRFLOW (CFM) TAG EXAMPLE: S1-6ø 100
	AIRFLOW (CFM) SUPPLY DIFFUSER
	TAG - NECK SIZE TAG FXAMPI F: S1-6ø
	AIRFLOW (CFM) 100 RETURN/EXHAUST GRILLE R1
	TAG TAG EXAMPLE: 500 E1
	SIDEWALL SUPPLY DIFFUSER
│ ─ √→	TAG - NECK SIZE AIRFLOW (CFM) TAG EXAMPLE: S2-12x8 100
	SIDEWALL RETURN/EXHAUST GRILLE R2
-	TAG AIRFLOW (CFM) TAG EXAMPLE: E2 100
	DAMPERS/DUCT ACCESSORIES
BDD	BDD: BACKDRAFT DAMPER FSD: FIRE/SMOKE DAMPER FD: FIRE DAMPER
	FD: FIRE DAMPER MD: MOTORIZED DAMPER SD: SMOKE DAMPER
	VD: VOLUME DAMPER SB: SECURITY BARS
	
	NEW WORK MECHANICAL EQUIPMENT
—	(WITH CLEARANCE SHOWN)
L _ J	
	EXISTING MECHANICAL EQUIPMENT
F - 7	
	DEMOLISHED MECHANICAL EQUIPMENT
(o /	GENERIC FAN
$(\rangle$	GENERIC PUMP

ACCESS DOOR

ABBREVIATION	NOTE: NOT ALL ABBREVIATIONS MAY BE USED. DESCRIPTION
(D)	EXISTING TO BE DEMOLISHED
(E)	EXISTING TO REMAIN
(F) AFF	ABOVE FINISHED FLOOR
AMB	AMBIENT
APD	AIR PRESSURE DROP
AVG	AVERAGE OR AVERAGING
BAS BFP	BUILDING AUTOMATION SYSTEM BACKFLOW PREVENTOR
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
ВОВ	BOTTOM OF BEAM
BOD BOP	BOTTOM OF DUCT BOTTOM OF PIPE
BOS	BOTTOM OF FIFE BOTTOM OF STRUCTURE
BTUH	BRITISH THERMAL UNITS PER HOUR
CFM	CUBIC FEET PER MINUTE
CL CO	CENTER LINE CLEAN OUT
COMPR	COMPRESSOR
COP	COEFFICIENT OF PERFORMANCE
CV	CONSTANT VOLUME
DB	DRY BULB
DDC DN	DIRECT DIGITAL CONTROLS DOWN
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONICALLY COMMUTATED MOTORS
EER	ENERGY EFFICIENCY RATIO
EFF EG	EFFICIENCY ETHYLENE GLYCOL
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
FLA	FULL LOAD AMPS
FPI FPM	FINS PER INCH FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
GAL	GALLONS
GPM	GALLONS PER MINUTE HEAD
HD HP	HORSEPOWER
ID	INNER DIAMETER
IPLV	INTEGRATED PART LOAD VALUE
KW LAT	KILOWATTS LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MFR MOCP	MANUFACTURER MAXIMUM OVERCURRENT PROTECTION
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPLV	NON-STANDARD PART LOAD VALUE
NPSH NTS	NET POSITIVE SUCTION HEAD NOT TO SCALE
OD	OUTSIDE DIAMETER
PD	PRESSURE DROP
PG	PROPYLENE GLYCOL
PPH PPM	POUNDS PER HOUR PARTS PER MILLION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
REFRIG	REFRIGERANT
RH	RELATIVE HUMIDITY DEVOLUTIONS DEP MINUTE
RPM SEER	REVOLUTIONS PER MINUTE SEASONAL ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UNO VAV	VARIABLE AIR VOLUME
VAV	VARIABLE FREQUENCY DRIVE
VOC	VOLATILE ORGANIC COMPOUNDS
VRF	VARIABLE REFRIGERANT FLOW
W	WATTS
WB WG	WET BULB WATER GAUGE
WPD	WATER GAUGE WATER PRESSURE DROP
	<u>-</u>

MECHA	NICAL SYSTEM TYPES AND ABBREVIATIONS
	NOTE: NOT ALL ABBREVIATIONS MAY BE USED.
ABBREVIATION	DESCRIPTION
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DRAIN
EA	EXHAUST AIR
GR	GEOTHERMAL RETURN
GS	GEOTHERMAL SUPPLY
HR	HEAT PUMP RETURN
HS	HEAT PUMP SUPPLY
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
MW	MAKEUP WATER - GENERIC
OA	OUTDOOR AIR
PC	PUMPED CONDENSATE
RA	RETURN AIR
REF	REFRIGERANT
REL	RELIEF AIR
SA	SUPPLY AIR
i /	

MECHANIC	AL STEAM SYSTEM TYPES AND ABBREVIATION
	NOTE: NOT ALL ABBREVIATIONS MAY BE USED.
ABBREVIATION	DESCRIPTION
BBD	STEAM BOILER BOTTOM BLOWDOWN
BD	STEAM BOILER BLOWDOWN
BFW	STEAM BOILER FEEDWATER
CBD	STEAM BOILER CONTINUOUS BLOWDOWN
CF	CHEMICAL FEED
CLPS(PSI)	CLEAN LOW PRESSURE STEAM (PSI)
HPC	HIGH PRESSURE STEAM CONDENSATE
HPS(PSI)	HIGH PRESSURE STEAM (PSI) = 60 PSI AND ABOVE
LPC	LOW PRESSURE STEAM CONDENSATE
LPS(PSI)	LOW PRESSURE STEAM (PSI) = 15 PSI AND BELOW
MPC	MEDIUM PRESSURE STEAM CONDENSATE
MPS(PSI)	MEDIUM PRESSURE STEAM (PSI) = 16 PSI - 59 PSI
PSC	PUMPED STEAM CONDENSATE
SV	STEAM VENT
VSC	VACUUM STEAM CONDENSATE

MECHANICAL GENERAL NOTES

MECHANICAL CONTROLS SYMBOLS LIST

SYMBOL

EPT

ES

HOA

SHEET NUMBER

NOTE: NOT ALL SYMBOLS MAY BE USED.

AIR SWITCH

END SWITCH

FLOW METER

METER

HAND-OFF-AUTO SWITCH

LEVEL TRANSMITTER

PH TRANSMITTER

PRESSURE SWITCH

SMOKE DETECTOR

STARTER

MECHANICAL SHEET INDEX

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HVAC PHASING DIAGRAMS

HVAC SCHEDULES & DETAILS

HVAC DIAGRAMS

PRESSURE TRANSMITTER

TEMPERATURE SWITCH

VARIABLE FREQUENCY DRIVE

SHEET TITLE

VIBRATION TRANSMITTER

WATER FLOW SWITCH

CURRENT SENSOR

DESCRIPTION

DIFFERENTIAL PRESSURE TRANSMITTER

ELECTRONIC PNEUMATIC TRANSDUCER

AIR FLOW MEASURING DEVICE

CONDUCTIVITY TRANSMITTER

- VISIT THE SITE OF THE WORK TO GAIN AN ACCEPTABLE KNOWLEDGE OF CONDITIONS AFFECTING THE EXECUTION OF THE WORK. AFTER VISITING THE SITE, REQUEST SUCH INFORMATION AND/OR CLARIFICATIONS AS NECESSARY TO FULLY UNDERSTAND THE WORK
- REQUIRED AND TO PROPERLY ESTIMATE COSTS. REVIEW ALL DRAWINGS TO VERIFY EXTENT AND SCHEDULING OF ALL DEMOLITION ACTIVITIES PRIOR TO COMMENCING DEMOLITION WORK. FIELD VERIFY ALL SIZES AND LOCATIONS OF EXISTING DUCTWORK AND PIPING TO REMAIN. NOTIFY ARCHITECT/ENGINEER OF DEVIATIONS WHICH AFFECT RENOVATION WORK PRIOR TO PROCEEDING WITH THE WORK. COORDINATE DISPOSAL/SALVAGE OF ALL
- FIXTURES, DEVICES, EQUIPMENT, ETC. (INDICATED FOR DEMOLITION) WITH THE OWNER. ITEMS NOTED TO BE DEMOLISHED INCLUDES BUT IS NOT LIMITED TO ALL ASSOCIATED COMPONENTS, CONTROL WIRING, PIPING. DUCTWORK, ELECTRICAL CONNECTIONS, SUPPORTS, INSULATION, ETC. COORDINATE WITH OTHER TRADES AS REQUIRED.
- ALL WORK IS TO BE PHASED AS INDICATED ON THE ARCHITECTURAL DRAWINGS. CONTRACTOR SHALL COORDINATE PHASING OF ALL DEMOLITION, RENOVATION, AND NEW WORK WITH OTHER TRADES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND PHASE ALL TIE-INS AND INTERRUPTIONS OF EXISTING SERVICES TO MINIMIZE OR ELIMINATE DOWNTIME. CLOSELY COORDINATE PHASING OF WORK WITHIN CORRIDORS WITH THE OWNER. CORRIDORS CANNOT BE COMPLETELY CLOSED OFF TO PEDESTRIAN TRAFFIC. TO ACCOMMODATE PHASING, CORRIDOR ACCESS WORK MAY NEED TO BE PERFORMED DURING OFF PEAK PERIODS. PRIOR TO MOVING ON TO THE NEXT PHASE, ALL WORK IN PREVIOUSLY PHASED AREAS MUST BE COMPLETE AND OPERATIONAL. THE CONTRACTOR SHALL INSTALL ALL NEW SERVICES AND EQUIPMENT AND HAVE THEM TESTED AND FULLY AND RELIABLY FUNCTIONAL PRIOR TO INTERRUPTING. RELOCATING OR REMOVING ANY EXISTING SERVICES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BARE ANY AND ALL COSTS ASSOCIATED WITH THIS PHASING, INCLUDING TEMPORARY SERVICES, TEMPORARY RELOCATION, PREMIUM TIME WORK, ETC.
- ENSURE THAT THE WORK WILL NOT INTERFERE OR INTERRUPT SERVICES TO AREAS OUTSIDE OF THE DESIGNATED CONTRACT AREAS. SCHEDULE ALL WORK AS TO CAUSE MINIMAL SERVICE INTERRUPTIONS FOR THE OWNER. UNAVOIDABLE INTERRUPTIONS ARE TO BE SCHEDULED WITH THE OWNER NO LESS THAN TWO WEEKS PRIOR TO THEIR EXPECTED COMMENCEMENT. WORK SHALL BE PERFORMED AT SUCH TIMES AS DIRECTED BY THE OWNER AND, IF POSSIBLE, ARE TO OCCUR DURING OFF PEAK PERIODS.
- THE CONTRACTOR IS TO VERIFY THE EXACT SERVICE OF ANY EXISTING PIPING OR DUCTWORK PRIOR TO INSTALLING ANY NEW CONNECTIONS. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS OR THE DESIGN INTENT AND ACTUAL CONDITIONS ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY, PRIOR TO FABRICATION OR INSTALLATION.
- CONTRACTOR SHALL REMOVE AND REPLACE EXISTING LAY-IN CEILING GRID AND TILES AS NECESSARY TO COMPLETE ABOVE CEILING WORK. RETURN CEILING TO ORIGINAL CONDITION FOLLOWING COMPLETION OF CONSTRUCTION.
- EACH TRADE SHALL PAY THE GENERAL CONTRACTOR TO PATCH AND REPAIR FLOOR SLAB AND WALL PENETRATIONS TO MATCH EXISTING WHERE THEIR PIPING, DUCT OR EQUIPMENT IS BEING REMOVED OR INSTALLED.

WORK FOR THIS PROJECT.

- ALL ROOFING MODIFICATIONS SHALL BE DONE BY OWNER'S ROOFING VENDOR TO MAINTAIN ANY AND ALL WARRANTIES. COST TO BE INCLUDED IN THIS CONTRACT UNLESS SPECIFICALLY INCLUDED IN GENERAL TRADES CONTRACTOR'S SCOPE OF WORK. . INSULATE DUCTWORK AND PIPING WHERE EXISTING INSULATION HAS BEEN DAMAGED AND/OR REMOVED IN THE PERFORMANCE OF
- . FOR RENOVATION WORK, IT IS PROHIBITED TO SUSPEND NEW WORK FROM THE EXISTING FLOOR SLAB OR ROOF DECK. 2. THE CONTRACTOR IS HEREBY ADVISED THAT IT IS POSSIBLE THAT ASBESTOS, AND/OR OTHER HAZARDOUS MATERIALS ARE OR WERE PRESENT IN THIS BUILDING(S). ANY WORKER, OCCUPANT, VISITOR, ETC., WHO ENCOUNTERS ANY MATERIAL OF WHOSE CONTENT THEY ARE NOT CERTAIN SHALL PROMPTLY REPORT THE EXISTENCE AND LOCATION OF THAT MATERIAL TO THE OWNER. FURTHERMORE, THE CONTRACTOR SHALL ENSURE THAT NO ONE COMES NEAR TO OR IN CONTACT WITH ANY SUCH MATERIAL OR FUMES THEREFROM UNTIL ITS CONTENT CAN BE ASCERTAINED TO BE NON-HAZARDOUS. CMTA, INC HAS NO EXPERTISE IN THE DETERMINATION OF THE PRESENCE OF ANY HAZARDOUS MATERIAL. THEREFORE, NO ATTEMPT HAS BEEN MADE BY CMTA TO IDENTIFY THE EXISTENCE OR LOCATION OF ANY SUCH HAZARDOUS MATERIAL. FURTHERMORE, CMTA NOR ANY AFFILIATE HEREOF WILL NOT OFFER OR MAKE ANY RECOMMENDATIONS RELATIVE TO THE REMOVAL, HANDLING OR DISPOSAL OF SUCH MATERIAL. IF THE WORK WHICH IS TO BE PERFORMED INTERFACES, CONNECTS OR RELATES IN ANY PHYSICAL WAY WITH OR TO EXISTING COMPONENTS WHICH CONTAIN OR BEAR ANY HAZARDOUS MATERIAL, ASBESTOS BEING ONE, THEN IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO CONTACT THE OWNER AND SO ADVISE THE OWNER IMMEDIATELY. THE CONTRACTOR BY EXECUTION OF THE CONTRACT FOR ANY WORK AND/OR BY THE ACCOMPLISHMENT OF ANY WORK THEREBY AGREE TO BRING NO CLAIM, RELATIVE TO OTHER SUCH ITEM AGAINST CMTA, ITS
- PRINCIPALS, EMPLOYEES, AGENTS OR CONSULTANTS. ALSO, THE CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD CMTA, ITS PRINCIPALS, EMPLOYEES, AGENTS AND CONSULTANTS HARMLESS FROM ANY SUCH RELATED CLAIMS WHICH MAY BE BROUGHT BY ANY SUBCONTRACTORS, SUPPLIERS OR ANY OTHER THIRD PARTIES. 3. INSTALL ALL WORK TO COMPLY WITH ALL LAWS, REGULATIONS, CODES, AND STANDARDS (FEDERAL, STATE, AND LOCAL), AS ADOPTED
- BY THE AGENCIES HAVING JURISDICTION, INCLUDING REASONABLY ANTICIPATED REVISIONS BASED ON EMERGING TRENDS IN BUILDING REGULATIONS. WHERE ANY OF THESE DIFFER, THE MOST STRINGENT SHALL APPLY. THE ENGINEER DOES NOT DEFINE THE SCOPE OF INDIVIDUAL TRADES, SUBCONTRACTORS, MATERIAL SUPPLIERS AND VENDORS. ANY SHEET NUMBERING OR SPECIFICATION NUMBERING SYSTEM USED WHICH IDENTIFIES DISCIPLINES IS SOLELY FOR THE ENGINEER'S CONVENIENCE AND IS NOT INTENDED TO DEFINE A SUBCONTRACTOR'S SCOPE OF WORK. INFORMATION REGARDING INDIVIDUAL TRADES, SUBCONTRACTORS, MATERIAL SUPPLIERS AND VENDORS MAY BE DETAILED, DESCRIBED AND INDICATED AT DIFFERENT LOCATIONS THROUGHOUT THE CONTRACT DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO REQUESTS FOR CHANGE ORDERS FOR FAILURE TO OBTAIN AND REVIEW THE COMPLETE OF CONTRACT DOCUMENTS WHEN PREPARING BIDS, PRICES AND QUOTATIONS.
- RESPONSIBILITY OF THE CONTRACTOR HOLDING THE PRIME CONTRACT. 5. CONTRACT DOCUMENTS FOR MECHANICAL WORK ARE SCHEMATIC IN NATURE AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. ALL OFFSETS, TURNS, FITTINGS, TRIM, DETAIL, ETC., MAY NOT BE INDICATED, BUT SHALL BE PROVIDED AS REQUIRED. WORK SHALL BE INSTALLED FROM FULLY COORDINATED CONTRACTOR GENERATED DIMENSIONED DRAWINGS.

UNLESS STATED OTHERWISE, THE SUBDIVISION AND ASSIGNMENT OF WORK UNDER THE VARIOUS SECTIONS SHALL BE THE

- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE SYSTEMS AS STATED, IMPLIED OR INTENDED IN THE DRAWINGS AND SPECIFICATIONS. INCLUDE IN THE BID AS PART OF THE CONTRACT, ALL NECESSARY AND APPLICABLE SUPPLIES, MATERIALS, AND APPURTENANCES, WHETHER INDICATED OR NOT. IN CASE OF CONFLICTS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR CLARIFICATION AND FINAL DETERMINATION PRIOR TO THE BID.
- ANY DEVIATIONS FROM THE BASIS OF DESIGN THAT REQUIRE ADDITIONAL PROVISIONS SHALL BE THE RESPONSIBILITY OF THE
- COORDINATE THE EXACT REQUIREMENTS AND LOCATION OF WORK WITH THE WORK OF OTHER TRADES PRIOR TO FABRICATION AND INSTALLATION. PROVIDE ADDITIONAL OFFSETS AND SECTIONS IN DUCTWORK AND/OR PIPING REQUIRED TO MEET THE APPLICABLE JOB CONDITION REQUIREMENTS. VERIFY JOB SITE ELEVATIONS, DIMENSIONS, AND CONDITIONS, PRIOR TO FABRICATION OR INSTALLATION OF THE WORK. COORDINATE EXACT ROUTING OF DUCTWORK AND PIPING WITH OTHER TRADES SO THAT NO CONFLICTS OCCUR WITH DUCTWORK, PIPING, LIGHTS, STRUCTURE, ETC. PROVIDE ALL PERTINENT DATA CONCERNING THE LOCATION, DIMENSIONS, ETC., OF THE MECHANICAL EQUIPMENT THAT REQUIRES BASES, CURBS AND SUPPORTS TO THE APPROPRIATE TRADES. WORK NOT APPROPRIATELY COORDINATED SHALL BE REMOVED AND PROPERLY INSTALLED AT THE EXPENSE OF THE RESPONSIBLE CONTRACTOR(S).
-). PRIOR TO ORDERING ANY MATERIALS OR ROUGH-IN OF ANY KIND, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION OF ALL ELECTRICAL REQUIREMENTS (I.E. VOLTAGE, PHASE, CIRCUIT BREAKER, WIRE SIZING, ETC.) WITH THE ELECTRICAL CONTRACTOR. THERE WILL BE NO CHANGE IN THE CONTRACT AMOUNT FOR ANY DISCREPANCIES.
- 20. WHERE CEILINGS ARE INDICATED, ALL DUCTS AND PIPES SHALL BE RAN ABOVE CEILING. IN EXPOSED CONDITIONS, INSTALL DUCTWORK AND PIPING TIGHT TO THE BOTTOM OF STRUCTURE.
- . $\,$ ALL RATED WALL AND FLOOR PENETRATIONS ARE TO BE SEALED WATER TIGHT AND PACKED WITH FIRE STOP MATERIAL.
- 22. ALL ITEMS THAT REQUIRE MAINTENANCE OR ADJUSTMENT MUST BE INSTALLED IN ACCESSIBLE LOCATIONS. PROVIDE AN APPROPRIATELY SIZED ACCESS DOOR AS REQUIRED AT NO ADDITIONAL COST TO OTHERS WHETHER SHOWN OR NOT ON THE PLANS. B. ALL SEALS, BEARINGS, PACKINGS, AND ACCESSORIES FOR ALL EQUIPMENT AND PIPING SPECIALTIES SHALL BE SUITABLE FOR THE

CONTINUOUS OPERATIONAL TEMPERATURES, PRESSURES AND CHARACTERISTICS OF THE SYSTEM THEY SERVE.

- PERFORM A COMPLETE AIR AND WATER SYSTEM FLOW BALANCE FOR ALL EQUIPMENT THAT IS SHOWN, SCHEDULED OR OTHERWISE IDENTIFIED, AT THE END OF CONSTRUCTION. . INSTALL EQUIPMENT, MATERIALS, ETC. IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND DIRECTION.
- PROVIDE STRAIGHT INLET AND OUTLET DUCTS/PIPES BASED ON MANUFACTURER'S RECOMMENDATIONS. IF IN CONFLICT WITH THE DESIGN INDICATED HEREIN, ADVISE THE ENGINEERS PRIOR TO INSTALLATION FOR CLARIFICATION. 6. COORDINATE THE EXACT LOCATIONS OF DIFFUSERS, GRILLES AND REGISTERS WITH ARCHITECTURAL REFLECTED CEILING PLANS, AREA
- SMOKE DETECTORS, SPRINKLERS, LIGHTS AND ELECTRICAL DEVICES. AIR DEVICES SHALL NOT BE WITHIN 3 FEET OF AN AREA SMOKE
- . UNLESS NOTED OTHERWISE, PROVIDE BRANCH DUCT TO DIFFUSERS SAME SIZE AS DIFFUSER NECK. FLEXIBLE DUCT CONNECTION TO THE DIFFUSER SHALL BE NO MORE THAN FIVE FEET IN LENGTH. ALL BRANCH DUCT TAKEOFFS TO AIR DEVICES SHALL HAVE A MANUAL BALANCING DAMPER INSTALLED IN AN ACCESSIBLE LOCATION.
- 28. AIR DEVICES PROVIDED WITH INTEGRAL BALANCE DAMPERS SHALL NOT HAVE AN ADDITIONAL BALANCING DAMPER AT AIR DEVICE
- 29. PROVIDE ROOM TEMPERATURE THERMOSTATS FOR ALL EQUIPMENT THAT MAINTAINS SPACE TEMPERATURE. PREFERRED LOCATIONS ARE SHOWN ON THE PLANS. THERMOSTATS SHALL BE MOUNTED AT 48 INCHES ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE. COORDINATE THE EXACT LOCATIONS OF THERMOSTATS WITH MARKERBOARDS, SWITCHES, AND ANY OTHER WALL MOUNTED FIXTURES
- 30. UNLESS NOTED OTHERWISE, MINIMUM PIPE SIZE TO TERMINAL EQUIPMENT SHALL BE 3/4 INCH AND MINIMUM FLOW SHALL BE 0.5 GPM.
- 1. PROVIDE SHUT-OFF VALVES WITHIN ALL SUPPLY PIPING BRANCH TAKEOFFS FROM MAINS. PROVIDE A MANUAL BALANCE VALVE AND A SEPARATE SHUT-OFF VALVE WITHIN ALL RETURN PIPING BRANCH TAKE-OFFS FROM MAINS. LOCATE VALVES IN ACCESSIBLE LOCATIONS. 32. INSTALL ALL PIPING IN LOCATIONS AND ELEVATIONS SUCH THAT COILS, TUBES, AND FILTERS CAN BE REMOVED AND REPLACED WITHOUT MAJOR PIPING REMOVAL. LOCATE VALVES IN APPROPRIATE PLACES TO ACCOMMODATE MAINTENANCE. FOR GRAVITY FLOW PIPING,
- ADEQUATE SLOPE SHALL BE PROVIDED. INSTALL TWO-WAY CONTROL VALVES ON ALL EQUIPMENT UNLESS NOTED OTHERWISE.
- 34. AT TIME OF ROUGH INSTALLATION, DURING STORAGE ON THE CONSTRUCTION SITE, AND UNTIL FINAL STARTUP OF THE HEATING AND COOLING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE FOR PROTECTION TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF
- DUST OR DEBRIS WHICH MAY COLLECT IN THE SYSTEM(S). 5. IN MECHANICALLY VENTILATED BUILDINGS. PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8 PRIOR TO OCCUPANCY. FILTERS SHALL BE CHANGED PRIOR TO AIR BALANCE AND COMMISSIONING, AND AGAIN AT THE COMPLETION OF CONSTRUCTION JUST PRIOR TO OCCUPANCY OF THE BUILDING WITH FINAL FILTERS PER SPECIFICATIONS. MAINTENANCE RECOMMENDATIONS FOR FILTERS OF
- THE SAME VALUE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL. INSTALLATION OF HVAC, REFRIGERATION, AND FIRE SUPPRESSION EQUIPMENT SHALL NOT CONTAIN ANY CFCS OR HALONS. 7. ALL SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SYSTEMS, AND DEVICES SHALL BE FROM THE BUILDING STRUCTURE.
- SUPPORT FROM STRUCTURAL BRIDGING IS UNACCEPTABLE. 38. DO NOT INSTALL PIPING, CONDUIT, DUCTWORK, ETC., IN A LOCATION OR IN A MANNER THAT WILL ALLOW FREEZING AND/OR THE
- COLLECTION OF CONDENSATION. 39. CONTRACTOR IS RESPONSIBLE FOR DRAINING, FLUSHING, PURGING, AND FILLING ALL PIPING SYSTEMS AS REQUIRED. THESE SYSTEMS INCLUDE (BUT MAY NOT BE LIMITED TO): HEATING HOT WATER SYSTEMS. CHILLED WATER SYSTEMS. BUILDING STEAM SYSTEMS. ALL REQUIRED CHEMICAL TREATMENT SYSTEMS, CONDENSER WATER SYSTEMS (AND COOLING TOWER SUMPS), WATER-SOURCE HEAT

PUMP LOOP SYSTEMS, GROUND-SOURCE HEAT PUMP LOOP SYSTEMS, CONDENSATE SYSTEMS AND MAKE-UP WATER CONNECTIONS.

5455 Rings Road, Suite 450

Dublin, OH 43204 T: 614.992.1500

PROJECT

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

400 North High Street Columbus, OH 43215

FRANKLIN COUNTY

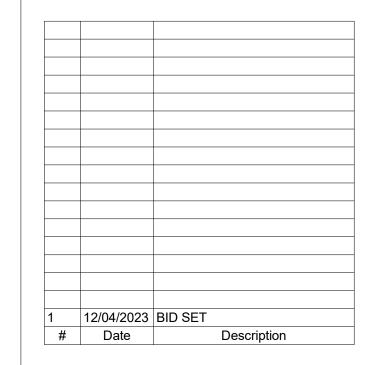
CONVENTION FACILITIES AUTHORITY

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

CONSULANTS

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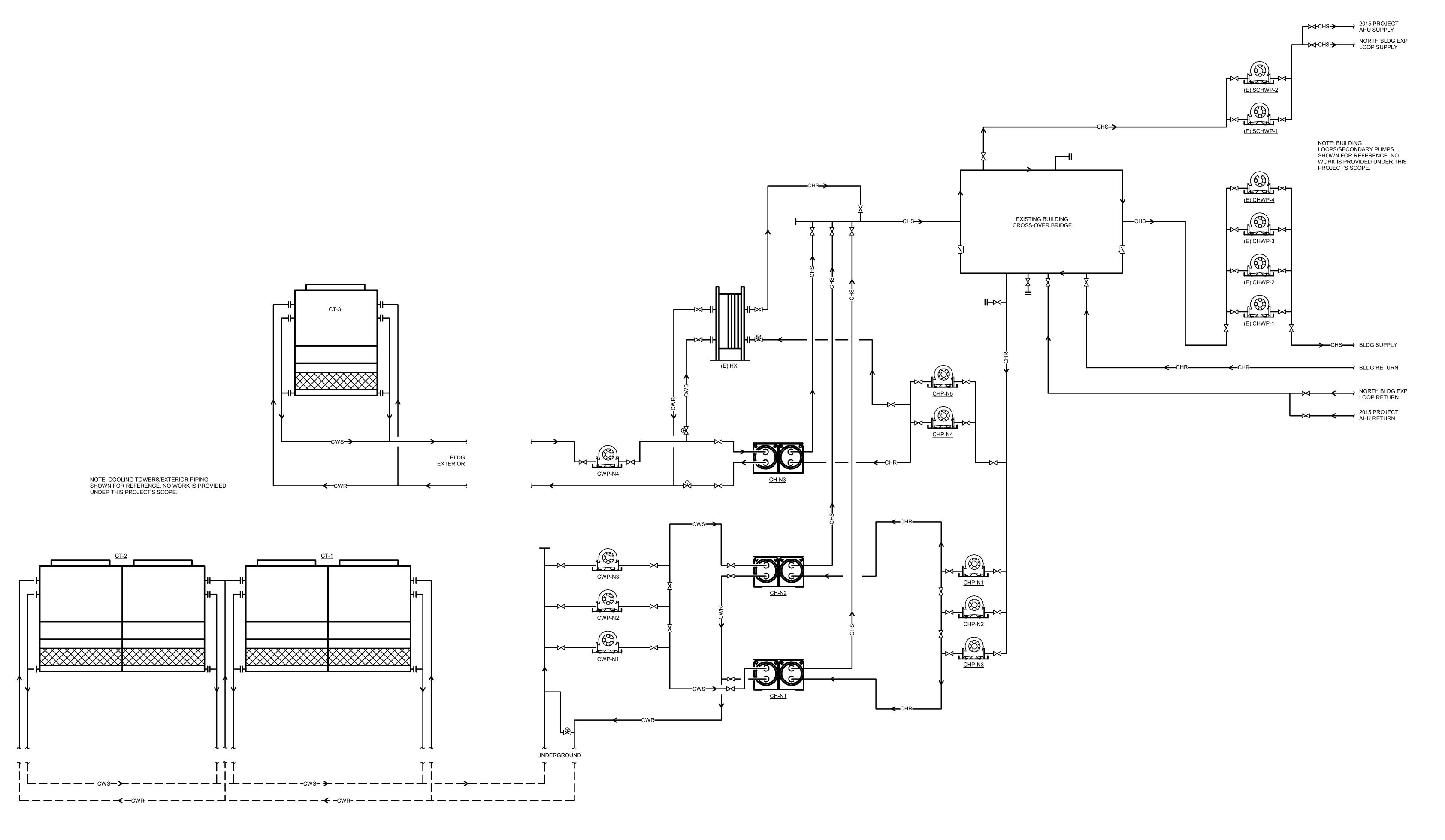
PROJECT NUMBER

SHEET TITLE

GENERAL INFORMATION - HVAC







CHILLED AND CONDENSER WATER PIPING SCHEMATIC NOT TO SCALE



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1 12/04/2023 BID SET
Date Description

PROJECT NUMBER

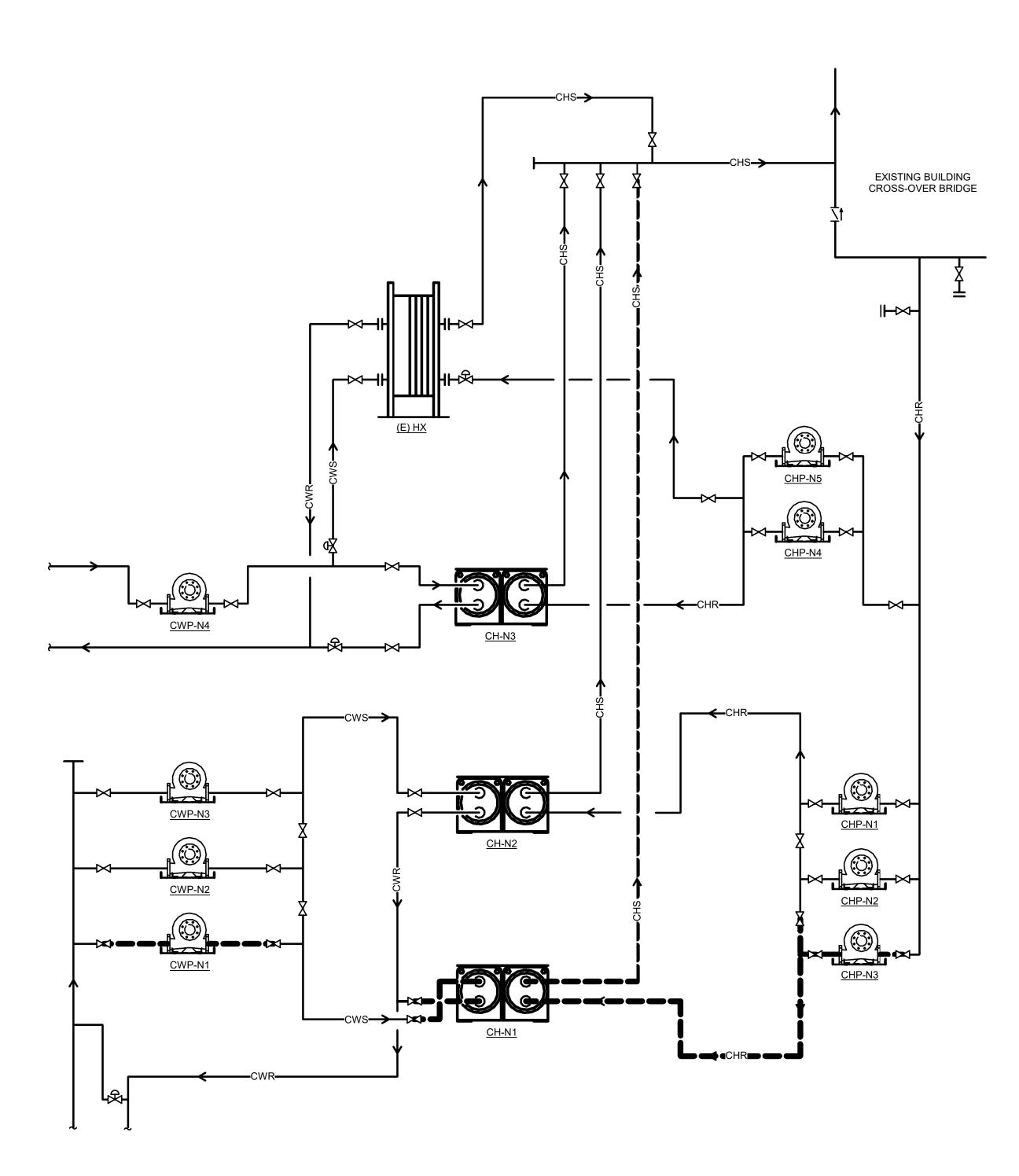
OCCC23
SHEET TITLE

HVAC DIAGRAMS

SHEET NUMBER

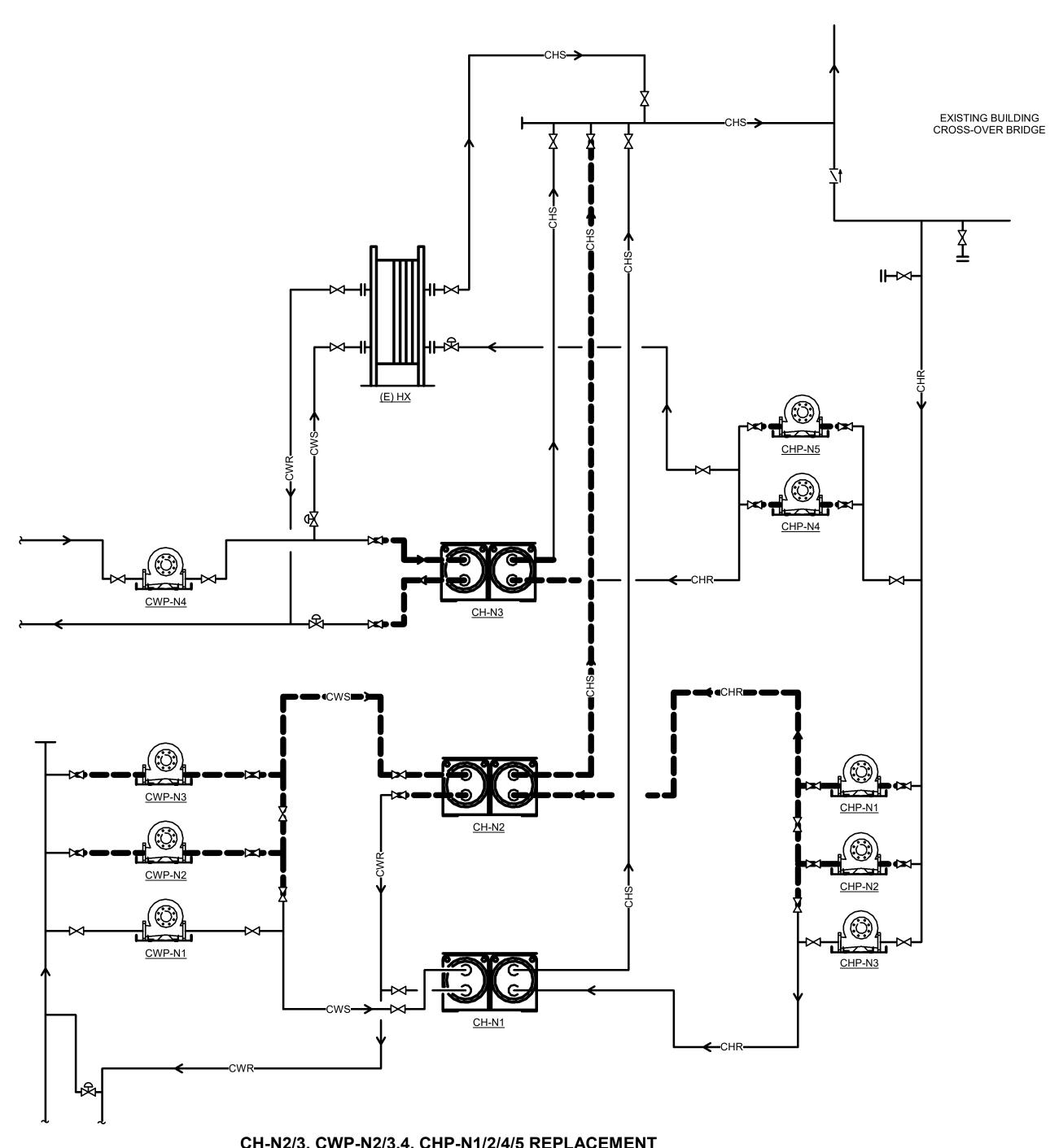
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utodesk Docs://Columbus Convention Center MEP Replacement/OCCC2: วนาภวร อ.สะ.เร กม



CH-N1, CWP-N1, CHP-N3 REPLACEMENT
NOT TO SCALE

EXISTING CH-N1, CWP-N1, AND CHP-N3 ISOLATED FROM OPERATIONAL SYSTEM AND REPLACED. EXISTING CH-N2/3, CWP-N2/3/4, CHP-N1/2/4/5 REMAIN IN OPERATION DURING REPLACEMENT.



CH-N2/3, CWP-N2/3,4, CHP-N1/2/4/5 REPLACEMENT
NOT TO SCALE

EXISTING CH-N2/3, CWP-N2/3/4, CHP-N1/2/4/5 ISOLATED FROM OPERATIONAL SYSTEM AND REPLACED.

NEW CH-N1, CWP-N1, AND CHP-N3 REMAIN IN OPERATION DURING REPLACEMENT.

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1 12/04/2023 BID SET
Date Description

PROJECT NUMBER

SHEET TITLE

OCCC23

HVAC PHASING DIAGRAMS

SHEET NUMBER

M502

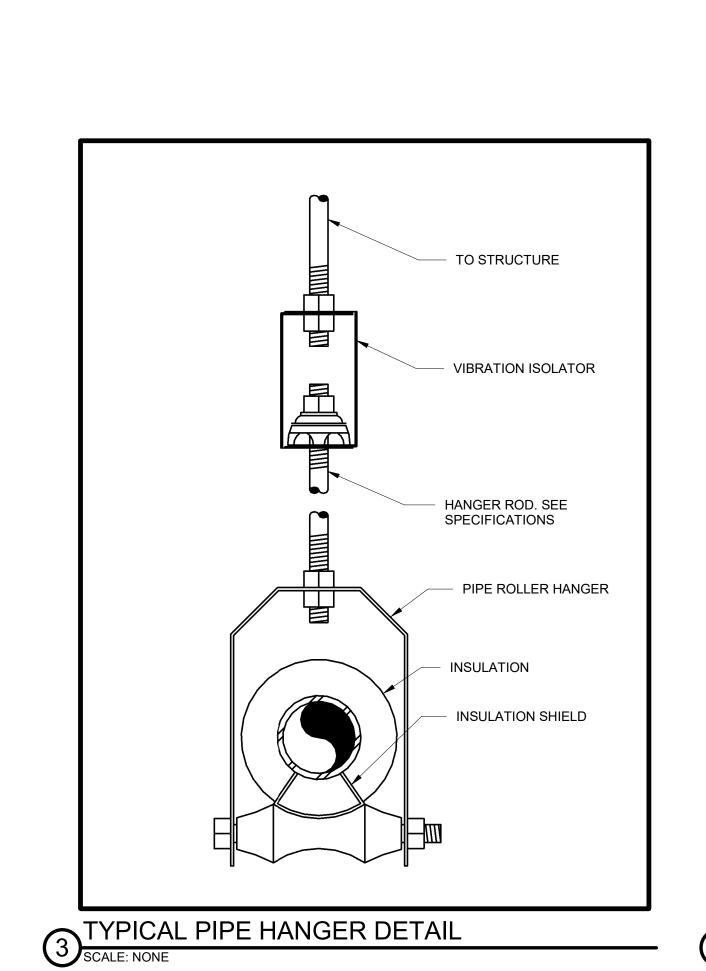
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TAG LOCATION	FUNCTION	MANUFACTURER	MODEL	(TONS)	(KW/TONS)	(KW/TON)	TYPE	TYPE	COMPR	CIRCUITS	(GPM)	(GPM)	(°F)	(°F)	(FT HD)	(GPM)	(°F)	(°F)	(FT HD)	FLA	MCA	MOCP	VOLTS	PHASE	POWER	REDUNDANT	(LBS)	REMARKS	
CH-N1 N.BLDG MER	CHILLED WATER	TRANE	CVHF147	1600.0	0.5699	0.3408	R-514A	CENTR.	1	1	3822.0	917.3	54.0	44.0	23.24	3200.0	85.0	99.1	13.65	1314	1610.0	2500.0	480	3	No	Yes	63792.00	ALL	
CH-N2 N.BLDG MER	CHILLED WATER	TRANE	CVHF147	1600.0	0.5699	0.3408	R-514A	CENTR.	1	1	3822.0	917.3	54.0	44.0	23.24	3200.0	85.0	99.1	13.65	1314	1610.0	2500.0	480	3	No	Yes	63792.00	ALL	
CH-N3 N.BLDG MER	CHILLED WATER	TRANE	CVHF076	800.0	0.5959	0.3617	R-514A	CENTR.	1	1	1911.0	424.1	54.0	44.0	22.24	1600.0	85.0	99.2	13.01	684	793.0	1200.0	480	3	No	No	32927.00	ALL	

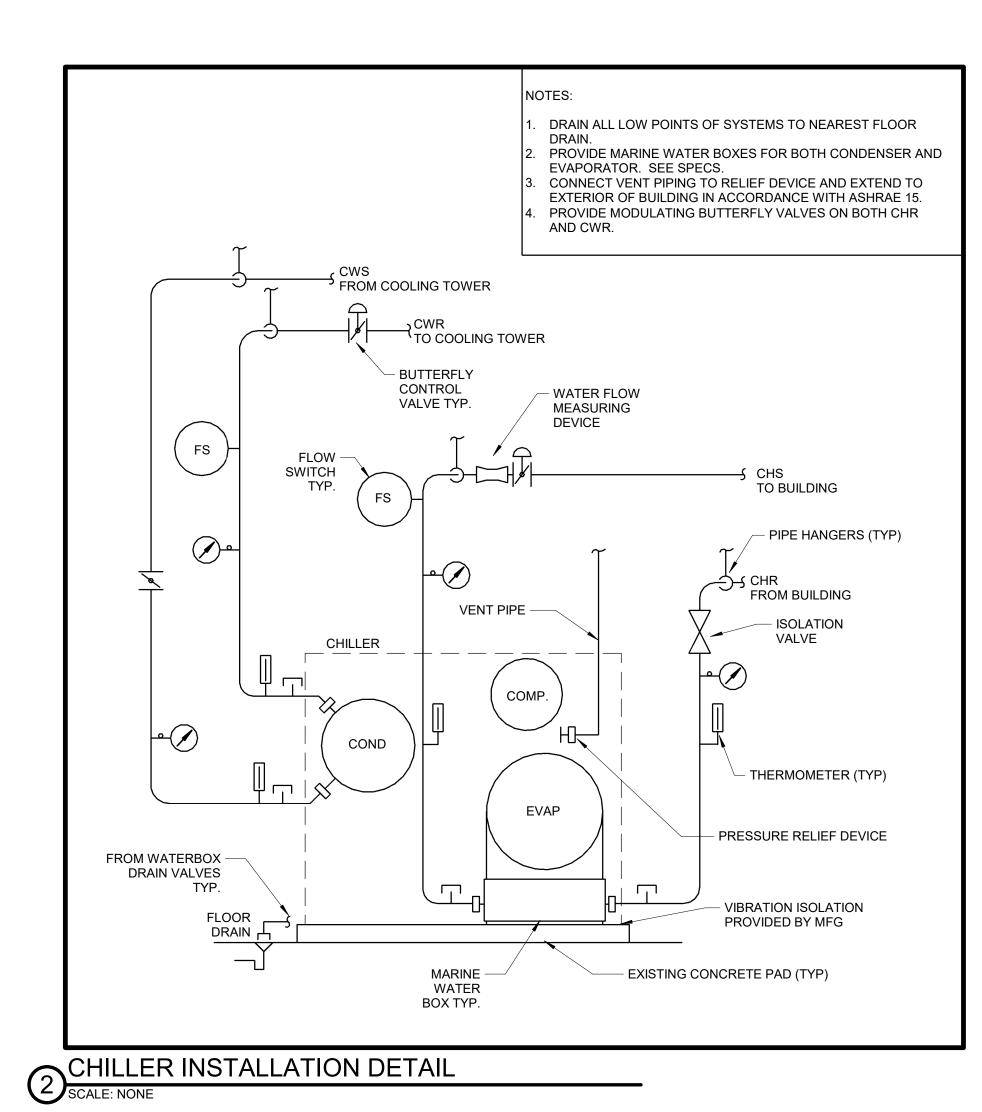
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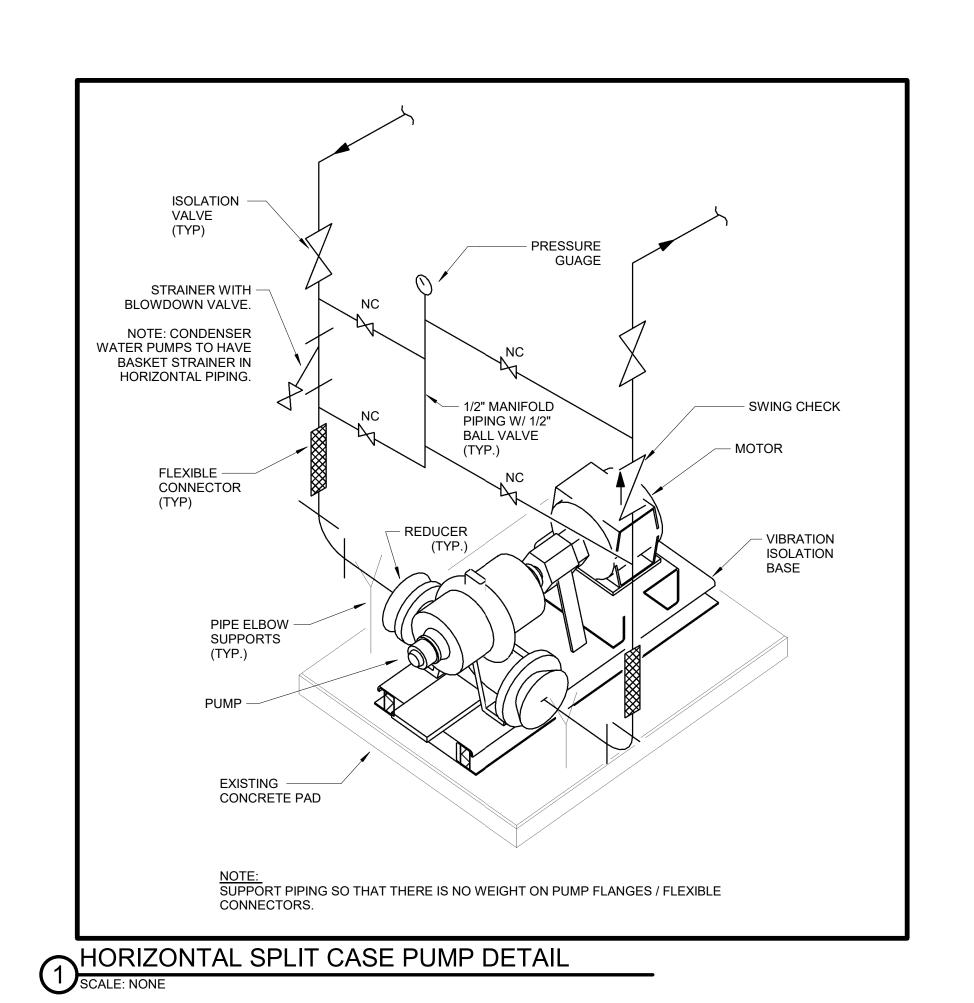
CHILLERS HAVE BEEN PRE-PURCHASED BY OWNER AND ARE SCHEDULED FOR REFERENCE ONLY.
 NEW CHILLERS TO FOLLOW EXISTING SEQUENCE OF OPERATION.

					PUN	IP SCHE	DULE										
	UNIT DA	TA	BASIS OF	DESIGN		PERFOR	MANCE D	ATA					MOTO	R DATA			
						FLUID	FLOW	EXT WPD	EFF	IMPELLER							
TAG	LOCATION	FUNCTION	MANUFACTURER	MODEL	PUMP TYPE	TYPE	(GPM)	(FT HD)	(%)	DIA (IN)	HP	BHP	RPM	VOLTS	PHASE	VFD	REMARKS
CHP-N1	N.BLDG MER MEZZ	CH1/CH2 PRIMARY	GRUNDFOS	KP1012-1/2	BASE MTD HORI SPLIT-CASE	WATER	3840.0	75.00	81.04	9.98	100.00	89.71	1780	460	3	Yes	ALL
CHP-N2	N.BLDG MER MEZZ	CH1/CH2 PRIMARY	GRUNDFOS	KP1012-1/2	BASE MTD HORI SPLIT-CASE	WATER	3840.0	75.00	81.04	9.98	100.00	89.71	1780	460	3	Yes	ALL
CHP-N3	N.BLDG MER MEZZ	CH1/CH2 PRIMARY	GRUNDFOS	KP1012-1/2	BASE MTD HORI SPLIT-CASE	WATER	3840.0	75.00	81.04	9.98	100.00	89.71	1780	460	3	Yes	ALL
CHP-N4	N.BLDG MER MEZZ	CH3 PRIMARY	GRUNDFOS	KP6012-3/4	BASE MTD HORI SPLIT-CASE	WATER	1920.0	70.00	82.16	9.44	50.00	41.29	1780	460	3	Yes	ALL
CHP-N5	N.BLDG MER MEZZ	CH3 PRIMARY	GRUNDFOS	KP6012-3/4	BASE MTD HORI SPLIT-CASE	WATER	1920.0	70.00	82.16	9.44	50.00	41.29	1780	460	3	Yes	ALL
CWP-N1	N.BLDG MER LEVEL 1	CH1/CH2 CONDENSER	GRUNDFOS	KP8015-3/4	BASE MTD HORI SPLIT-CASE	WATER	3200.0	110.00	84.05	11.32	125.00	105.70	1780	460	3	Yes	ALL
CWP-N2	N.BLDG MER LEVEL 1	CH1/CH2 CONDENSER	GRUNDFOS	KP8015-3/4	BASE MTD HORI SPLIT-CASE	WATER	3200.0	110.00	84.05	11.32	125.00	105.70	1780	460	3	Yes	ALL
CWP-N3	N.BLDG MER LEVEL 1	CH1/CH2 CONDENSER	GRUNDFOS	KP8015-3/4	BASE MTD HORI SPLIT-CASE	WATER	3200.0	110.00	84.05	11.32	125.00	105.70	1780	460	3	Yes	ALL
CWP-N4	N.BLDG MER LEVEL 1	CH3 CONDENSER	GRUNDFOS	KP8012-5/6	BASE MTD HORI SPLIT-CASE	WATER	2400.0	100.00	84.29	10.53	100.00	71.88	1780	460	3	Yes	ALL

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.







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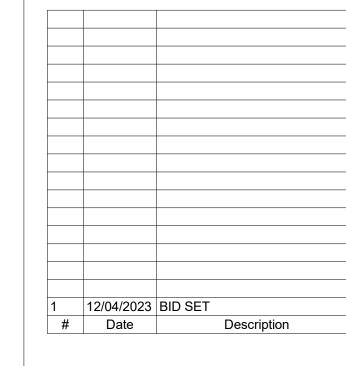
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CONSULANTS

REGISTRATION

KEYPLAN

ISSUE / REVISION



PROJECT NUMBER

OCCC23

SHEET TITLE

HVAC SCHEDULES & DETAILS

SHEET NUMBER

M701

NUN

ELECTRICAL GENERAL NOTES:

TELEVISION, DATA, ETC.).

RESPONSIBLE CONTRACTOR(S).

PREMIUM TIME AS NEEDED.

CONSTRUCTION.

- A. EACH CONTRACTOR, PROPOSER, SUPPLIER AND/OR MANUFACTURER SHALL REFER TO ALL DOCUMENTS PERTAINING TO THIS PROJECT AND COORDINATE ACCORDINGLY SO AS TO ENSURE ADEQUACY OF FIT. COMPLIANCE WITH SPECIFICATIONS, PROPER VOLTAGE AND CURRENT CHARACTERISTICS TO AVOID
- CONFLICT WITH ANY OTHER BUILDINGS SYSTEMS. VERIFY SAME WITH SHOP DRAWINGS. B. ADDITIONAL ELECTRICAL REQUIREMENTS MAY BE SHOWN ON PLANS FROM OTHER DISCIPLINES IN THIS SET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL PLANS AND SPECIFICATIONS FOR A COMPLETE
- UNDERSTANDING OF THE PROJECT REQUIREMENTS. C. WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ALL LOCAL, STATE, AND NATIONAL CODES.
- INCLUDING BUT NOT LIMITED TO NFPA 70 (NEC), NFPA 72, INTERNATIONAL BUILDING CODES, ETC. D. CONTRACTOR SHALL FOLLOW SEISMIC RESTRAINT AND DESIGN REQUIREMENTS CONTAINED IN LATEST ADOPTED STATE AND INTERNATIONAL BUILDING CODES, WITH ALL AMENDMENTS AS ADOPTED BY THE
- CURRENT LEGISLATION. REFER TO ELECTRICAL AND STRUCTURAL SPECIFICATIONS FOR ADDITIONAL E. ALL OFFSETS, TURNS, FITTINGS, TRIM, DETAIL, ETC. MAY NOT BE INDICATED, BUT SHALL BE PROVIDED AS
- REQUIRED. ADDITIONAL ALLOWANCES SHALL BE INCLUDED FOR SAME AT EACH PROPOSER'S DISCRETION. F. INSTALL NO PIPING, CONDUIT, DUCTWORK, ETC. IN A LOCATION OR IN A MANNER WHICH WILL ALLOW FREEZING OR THE COLLECTION OF CONDENSATION THEREON. IF IN DOUBT, CONTACT THE ENGINEER.
- G. ADVISE THE ENGINEER OF ANY CONFLICTS, ERRORS, OMISSIONS, ETC. AT LEAST TEN DAYS PRIOR TO BID DATE, TO ALLOW CLARIFICATION BY WRITTEN ADDENDUM.
- H. WHERE CONFLICTS ARE FOUND BETWEEN DRAWINGS, DETAILS, OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY. NOTIFY ARCHITECT OF DISCREPANCY IN WRITING. I. DEVIATION FROM SPECIFICATIONS OR PLANS REQUIRES PRIOR WRITTEN APPROVAL FROM THE ENGINEERS
- AND MUST BE SUBMITTED IN WRITING NO LATER THAN TEN DAYS PRIOR TO THE BID DATE. I. OBSERVE ALL APPLICABLE CODES, RULES AND REGULATIONS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT. (CITY, COUNTY, LOCAL, STATE, FEDERAL, MUNICIPALITY, UTILITY COMPANY, OSHA, ETC.).
- K. MOUNTING HEIGHTS FOR WALL MOUNTED DEVICES INDICATED ABOVE FINISHED FLOOR ARE TO CENTER OF DEVICE UNO. MOUNTING HEIGHTS TO CEILING SUSPENDED DEVICES ARE TO BOTTOM OF DEVICE UNO. INSTALL EQUIPMENT, MATERIALS, ETC. IN STRICT ACCORDANCE WITH MANUFACTURER'S
- RECOMMENDATIONS AND DIRECTIONS. IF IN CONFLICT WITH THE DESIGN INDICATED IN CONTRACT DOCUMENTS, ADVISE THE ENGINEER PRIOR TO INSTALLATION FOR CLARIFICATION. M. DO NOT RECESS PANELBOARD TUBS OR OTHER FLUSH-MOUNTED EQUIPMENT IN WALLS THAT HAVE A FIRE
- N. THE PURPOSE AND INTENT OF ALL OF THE DOCUMENTS PERTAINING TO THIS PROJECT IS TO PROVIDE A COMPLETE, FUNCTIONAL, SAFE, LIKE-NEW FACILITY. ANYTHING LESS SHALL BE UNACCEPTABLE.

RATING. NO INSTALLATION SHALL DIMINISH OR VOID FIRE RESISTIVE RATINGS IN ANYWAY.

- O. ALL SYSTEMS, EQUIPMENT AND MATERIALS ARE TO BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. WORK NOT MEETING THIS CRITERION SHALL BE REMOVED AND REINSTALLED SATISFACTORILY. FINAL DETERMINATION OF THE ACCEPTABILITY OF THE QUALITY OF WORK RESIDES WITH THE ENGINEER
- P. ALL WORK, MATERIALS, EQUIPMENT, ETC. SHALL BE FULLY GUARANTEED FOR ONE FULL CALENDAR YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION AS DOCUMENTED BY THE ENGINEER, UNLESS LONGER
- WARRANTY PERIODS FOR EQUIPMENT ARE SPECIFIED. Q. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY COMPANY FEES, CASH CONTRIBUTIONS OR OTHER COSTS THAT THE UTILITY COMPANY MAY REQUIRE TO COMPLETE THEIR WORK. (ELECTRIC, TELEPHONE,
- R. ANY VIBRATING, OSCILLATING OR OTHER NOISE OR MOTION PRODUCING EQUIPMENT SHALL BE ISOLATED FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER. NOISY OR STRUCTURALLY DAMAGING INSTALLATIONS SHALL BE SATISFACTORILY REPLACED OR REPAIRED AT THE INSTALLING CONTRACTORS' EXPENSE. THE FINAL DECISION ON THE SUITABILITY OF A PARTICULAR INSTALLATION'S ACCEPTABILITY SHALL S. CHECK ALL THREE PHASE MOTORS WITH A PHASE ROTATION METER, PRIOR TO PLACING IN SERVICE.
- PROVIDE DETAILED SHOP DRAWINGS TO ENGINEER PRIOR TO PURCHASING OR INSTALLING ANY EQUIPMENT U. DEVIATIONS IN SIZES, CAPACITIES, FIT, FINISH, ETC. FOR EQUIPMENT FROM THAT PRIME SPECIFIED SHALL BE THE RESPONSIBILITY OF THE PURCHASER OF THAT EQUIPMENT. ANY PROVISIONS REQUIRED TO ACCOMMODATE A DEVIATION, WHETHER APPROVED BY THE ENGINEER OR NOT, SHALL BE THE RESPONSIBILITY OF THE PURCHASER.
- V. THE CONSTRUCTION MANAGER, GENERAL CONTRACTOR, OR WHOMEVER HOLDS THE PRIME CONTRACT(S) FOR THIS CONSTRUCTION IS RESPONSIBLE FOR THE COORDINATION, APPEARANCE, SCHEDULING AND TIMELINESS OF THE WORK OF ALL TRADES, CONTRACTORS, SUPPLIERS, INSTALLERS, ETC. POOR OR UNTIMELY WORK ON THE PART OF ANY SUBCONTRACTOR SHALL BE RESOLVED BY THE PARTY WHO
- ENGAGED THEM ON THIS PROJECT. W. WHERE MOUNTING HEIGHTS ARE NOT INDICATED OR ARE IN CONFLICT WITH ANY OTHER BUILDING SYSTEM, CONTACT THE ENGINEER BEFORE AFFECTING INSTALLATION. REFER ALSO TO ARCHITECTURAL INTERIOR AND EXTERIOR ELEVATIONS, CEILING HEIGHTS AND OTHER DETAILS OF THESE DOCUMENTS, AS APPLICABLE. X. WHERE FIRE-RATED CEILING ASSEMBLIES ARE NOTED, PROVIDE UL-LISTED FIRE-RATED GYPSUM BOARD OR PRE-MANUFACTURED ENCLOSURES ABOVE LUMINAIRES, CEILING DEVICES, ETC. IN OR ON CEILING, AS REQUIRED TO MAINTAIN CEILING RATINGS.
- Y. COORDINATE THE LOCATION OF DRAINS, ELECTRICAL OUTLETS, GAS OUTLETS, ETC. WITH ALL CASEWORK, KITCHEN EQUIPMENT, MECHANICAL ROOM EQUIPMENT, ETC. PRIOR TO COMMENCING INSTALLATION. WORK NOT SO COORDINATED SHALL BE REMOVED AND PROPERLY INSTALLED AT THE EXPENSE OF THE
- Z. ALL ELECTRICAL COMPONENTS OR EQUIPMENT SHALL BE LISTED AND LABELED BY UNDERWRITER'S LABORATORIES OR OTHER APPROVED LISTING AGENCY. APPROVAL AND LABELING OF INDIVIDUAL COMPONENTS ON AN ASSEMBLY IS NOT ACCEPTABLE AS MEETING THIS REQUIREMENT, UNLESS WAIVED BY THE ENGINEER IN WRITING. AA. ALL WIRING SYSTEMS SHALL BE INSTALLED WITH A MINIMUM OF SPLICES. CONDUCTORS, WHETHER SINGLE
- OR MULTI-PAIR, SHALL BE INSTALLED CONTINUOUS INSOFAR AS POSSIBLE FROM TERMINAL POINT TO TERMINAL POINT. BB. NO CONDUIT, SUPPORTS, ETC. SHALL BE RUN THROUGH ACCESS CLEARANCES OF EQUIPMENT BY OTHER TRADES (I.E. VAV BOXES). COORDINATE WITH ALL TRADES PRIOR TO CONSTRUCTION.
- CC. ALL CONTRACTORS SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE OR SUB-SERVICE FOR SAFETY PURPOSES. PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. VERIFY THE LOCATION, SIZE, TYPE, ETC. OF EACH UNDERGROUND OR OVERHEAD UTILITY, ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, STATE AND/OR LOCAL RULES, REGULATIONS, STANDARD AND SAFETY REQUIREMENTS. UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL
- DD. ALL SUPPORTS FOR EQUIPMENT, DEVICES OR FIXTURES SHALL BE UNIQUE, DIRECTLY FROM THE BUILDING STRUCTURE. DO NOT SUPPORT WORK FROM OTHER TRADES EQUIPMENT OR SUPPORTS WITHOUT WRITTEN PERMISSION FROM THE ENGINEER AND CONSENT OF THE OTHER TRADE, IN WRITING.
- EE. WHERE INTERRUPTING AN EXISTING UTILITY OR SERVICE DELIBERATELY OR ACCIDENTALLY, THE RESPONSIBLE CONTRACTOR SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME, PROVIDING
- FF. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR HIS WORK. ALL CUTTING AND PATCHING SHALL BE IN ACCORDANCE WITH THE ARCHITECT'S STANDARDS FOR SUCH
- GG. ALL WORK SHALL BE CONCEALED UNLESS SPECIFICALLY INDICATED TO BE EXPOSED, OR REQUIRED TO BE EXPOSED. IF IN DOUBT, CONTACT THE ENGINEER FOR CLARIFICATIONS PRIOR TO INSTALLING ANY SUCH
- HH. INTERRUPTION OF ANY EXISTING SERVICES SHALL BE COORDINATED WITH THE OWNER, GENERAL CONTRACTOR, UTILITY COMPANY AS NECESSARY, AND THE ARCHITECT, AT LEAST TWO WEEKS IN ADVANCE OF ANTICIPATED INTERRUPTION. A SCHEDULE FOR THESE OUTAGES SHALL BE DEVELOPED AND AGREED UPON BETWEEN THE PARTIES MENTIONED TO AVOID UNNECESSARY INCONVENIENCE TO THE OWNER OR ANY AFFECTED PARTY. NOTIFY THE UTILITY COMPANY OF ANY ANTICIPATED SERVICES REQUIRED TWO WEEKS IN ADVANCE, IN WRITING. IF UTILITY COMPANY REQUIRES A LONGER NOTIFICATION PERIOD, SO
- II. WHERE BACKBOXES ARE LOCATED IN THE SAME VERTICAL CHANNEL/STUD SPACE ON OPPOSITE SIDES OF THE SAME WALL, PROVIDE SOUND-INSULATING PUTTY AROUND BOXES AS REQUIRED TO ELIMINATE SOUND
- TRANSMISSION FROM ROOM TO ROOM. JJ. JUNCTION BOXES LOCATED ABOVE ACCESSIBLE CEILINGS SHALL BE LOCATED NO MORE THAN 36" ABOVE CEILING LEVEL. LABEL EACH BOX IN AREA OF WORK WITH A PERMANENT MARKER OR IN ACCORDANCE WITH
- SPECIFICATIONS, WHICHEVER IS MORE STRINGENT. KK. ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL COMPLY WITH THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODES, NATIONAL FIRE CODES OF THE NATIONAL FIRE PROTECTION ASSOCIATION, THE REQUIREMENTS OF LOCAL UTILITY COMPANIES, AND WITH THE REQUIREMENTS OF ALL GOVERNMENTAL AGENCIES OR DEPARTMENTS HAVING JURISDICTION. IF ANY CONFLICTS OR DISCREPANCIES OCCUR THE
- MOST STRINGENT SHALL APPLY. LL. DO NOT SCALE FROM DRAWINGS, AS PRINTING DISTORTS SCALE. WORK SHALL BE LAID OUT FROM DIMENSIONED DRAWINGS, OR DIMENSIONS SUPPLIED TO THE CONTRACTOR.
- MM. NOISY WORK. WORK OUTSIDE CONSTRUCTION BARRIERS. WORK IN OCCUPIED AREAS. ETC. SHALL BE PERFORMED AFTER HOURS OR ON WEEKENDS. COORDINATE EXACT SCHEDULING WITH FACILITY PRIOR TO
- NN. ALL ITEMS HAVING KEYED LOCKS/OPERATORS SHALL HAVE CORED LOCKS/OPERATORS. ALL KEYING SHALL MATCH THE OWNER'S EXISTING KEY-WAYS. COORDINATE EXACT REQUIREMENTS WITH OWNER PRIOR TO

LIGHT SWITCH:GENERAL PURPOSE DIMMER SWITCH THREE-WAY SWITCH KEYED SWITCH OCCUPANCY OR VACANCY SENSOR SWITCH LOW VOLTAGE SWITCH NON-REVERSING MOTOR STARTER SNAP SWITCH TIMER SWITCH OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT CLG PHOTO-CELL AS NOTED EXAM LIGHT SWITCH NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL FOUR-WAY SWITCH LIGHT SWITCH FOR UNDER-CABINET LIGHTS 46"
THREE-WAY SWITCH KEYED SWITCH OCCUPANCY OR VACANCY SENSOR SWITCH LOW VOLTAGE SWITCH NON-REVERSING MOTOR STARTER SNAP SWITCH TIMER SWITCH OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT CLG PHOTO-CELL AS NOTED EXAM LIGHT SWITCH NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL FOUR-WAY SWITCH 46"
OCCUPANCY OR VACANCY SENSOR SWITCH LOW VOLTAGE SWITCH NON-REVERSING MOTOR STARTER SNAP SWITCH TIMER SWITCH OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT CLG PHOTO-CELL AS NOTED EXAM LIGHT SWITCH NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL FOUR-WAY SWITCH 46"
LOW VOLTAGE SWITCH NON-REVERSING MOTOR STARTER SNAP SWITCH TIMER SWITCH OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT PHOTO-CELL AS NOTED EXAM LIGHT SWITCH NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL FOUR-WAY SWITCH 46" 46"
NON-REVERSING MOTOR STARTER SNAP SWITCH TIMER SWITCH OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT PHOTO-CELL AS NOTED EXAM LIGHT SWITCH NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL FOUR-WAY SWITCH AS NOTED 46" 46"
TIMER SWITCH OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT CLG PHOTO-CELL AS NOTED EXAM LIGHT SWITCH NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL FOUR-WAY SWITCH 46" 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 SURGICAL LIGHT INTENSITY CONTROL 46" FOUR-WAY SWITCH 46"
PHOTO-CELL AS NOTED EXAM LIGHT SWITCH NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL FOUR-WAY SWITCH AS NOTED 46" 46"
EXAM LIGHT SWITCH 46" NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL 46" FOUR-WAY SWITCH 46"
NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL FOUR-WAY SWITCH 46"
SURGICAL LIGHT INTENSITY CONTROL 46" FOUR-WAY SWITCH 46"
FOUR-WAY SWITCH 46"
40
LIGHT SWITCHT OR GIVEL CABINET LIGHTS 146
ILLUMINATED HANDLE LIGHT SWITCH (ILLUMINATED 46"
WHEN LOAD IS OFF) 46"
PILOT LIGHT SWITCH (ILLUMINATED WHEN LOAD IS ON) 46"
MOMENTARY CONTACT SWITCH 46"
HAND-OFF-AUTO 3-POSTION SWITCH 46"
EMERGENCY AUTOMATIC TRANSFER SWITCH FOR LIGHTING CONTROLS (REFER TO DETAIL)
POWER OUTLETS
SIMPLEX RECEPTACLE 1'-6"
DUPLEX RECEPTACLE-SAFETY TYPE, 1'-6"
TAMPER-RESISTANT DUPLEX RECEPTACLE 1'-6"
DUPLEX RECEPTACLE 1'-6" SLASH THROUGH ANY DEVICE INDICATES MOUNTING
ABOVE COUNTERTOP 2" ABOVE BACKSPLASH, OR AT
48" WHERE NO COUNTER IS PRESENT FILLED CENTER BAR INDICATES INTEGRAL GROUND
FILLED CENTER BAR INDICATES INTEGRAL GROUND 1'-6"
FILLED OUTER BARS INDICATES INTEGRAL INTEGRAL USB OUTLETS IN ADDITION TO POWER RECEPTACLES 1'-6"
DUPLEX RECEPTACLE, CEILING MOUNTED CLG
QUADRUPLEX RECEPTACLE 1'-6"
JUNCTION BOX, CEILING OR WALL
VOLTAGE/1PH RECEPTACLE, AS NOTED AS NOTED
VOLTAGE/3PH RECEPTACLE, AS NOTED 1'-6"
GROUND FAULT PROTECTED DUPLEX WITH WEATHER-PROOF "WHILE IN USE" TYPE DIE-CAST 2'-2"
METAL COVERPLATE WITH LOCKABLE ENCLOSURE AT OUTLET - SEE SPECIFICATIONS
DUPLEX FOR ELECTRIC WATER COOLER: PROVIDE
REMOTE, READILY ACCESSIBLE GFI DEVICE AT 48" ADJACENT TO WATER COOLER, COORDINATE EXACT
LOCATION WITH PLUMBING CONTRACTOR TO CONCEAL OUTLET BEHIND COOLER
DEAD FRONT GFCI DEVICE, LABEL AND INSTALL IN
READILY ACCESSIBLE LOCATION GANG RECEPTACLE IN COMBINATION WITH SWITCH 46"
(PROVIDE DIVIDER IF LIGHTING CIRCUIT IS 277V)
WITH ONE DUPLEX RECEPTACLE ON BOTH SIDES ON CNTR.
SS INDICATES SURGE SUPPRESION TYPE OUTLET(S)
FIRE ALARM
MAIN CONTROL PANEL CENTRAL PROCESSING UNIT (CPU) 6'-6" TO TOP
PULL STATION : DOUBLE ACTION 46" TO
LEVER
AUDIO/VISUAL NOTIFICATION APPLIANCE WALL, CL
AUDIO-ONLY NOTIFICATION APPLIANCE WALL, CL
VISUAL-ONLY NOTIFICATION APPLIANCE WALL, CL
·
PHOTO-ELECTRIC SMOKE DETECTOR CLG
PHOTO-ELECTRIC SMOKE DETECTOR CLG PROJECTED BEAM SMOKE DETECTOR; EMITTER (BE) AND RECEIVER (BR)
PROJECTED BEAM SMOKE DETECTOR; EMITTER
PROJECTED BEAM SMOKE DETECTOR; EMITTER (BE) AND RECEIVER (BR)
PROJECTED BEAM SMOKE DETECTOR; EMITTER (BE) AND RECEIVER (BR) HEAT DETECTOR CLG
PROJECTED BEAM SMOKE DETECTOR; EMITTER (BE) AND RECEIVER (BR) HEAT DETECTOR CARBON MONOXIDE DUCT DETECTOR ABV CLG
PROJECTED BEAM SMOKE DETECTOR; EMITTER (BE) AND RECEIVER (BR) HEAT DETECTOR CARBON MONOXIDE DUCT DETECTOR DOOR HOLDER: WALL TYPE WALL
PROJECTED BEAM SMOKE DETECTOR; EMITTER (BE) AND RECEIVER (BR) HEAT DETECTOR CARBON MONOXIDE DUCT DETECTOR DOOR HOLDER: WALL TYPE DOOR HOLDER: CLOSURE TYPE DUCT SMOKE DETECTOR ABV CLG CONNECTION TO SPRINKLER TAMPER
PROJECTED BEAM SMOKE DETECTOR; EMITTER (BE) AND RECEIVER (BR) HEAT DETECTOR CARBON MONOXIDE DUCT DETECTOR DOOR HOLDER: WALL TYPE DOOR HOLDER: CLOSURE TYPE DUCT SMOKE DETECTOR ABV CLG CONNECTION TO SPRINKLER TAMPER SWITCH WITH ADDRESSABLE MODULE
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PROJECTED BEAM SMOKE DETECTOR; EMITTER (BE) AND RECEIVER (BR) HEAT DETECTOR CARBON MONOXIDE DUCT DETECTOR DOOR HOLDER: WALL TYPE DOOR HOLDER: CLOSURE TYPE ABV DOO DUCT SMOKE DETECTOR CONNECTION TO SPRINKLER TAMPER SWITCH WITH ADDRESSABLE MODULE REMOTE L.C.D. FIRE ALARM ANNUNCIATOR POWER SUPPLY/CONTROL FOR AUDIO/VISUAL DEVICES 46"
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FIREMAN'S KNOX BOX CONNECTION

DESCRIPTION	MOUNTIN (TO CENT	DRAWING
LIGHTING		
REFER TO LUMINAIRE SCHEDULE FOR EXACT FIXTURE SPECIFICATIONS, MOUNTING HEIGHTS, ETC.		4 -
SURFACE OR SUSPENDED CEILING FIXTURE (SLASH INDICATES RECESSED)		₩,O, □ , □
POLE MOUNTED AREA LIGHT		₽,Ŷ
WALL MOUNT FIXTURE		₩,Ю
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		
SURGICAL/EXAM LIGHT		(O) SL, >
MISCELLANEOUS		_
CONDUIT CONCEALED IN WALLS OR IN CEILING SPACE: ARROW(S) INDICATE(S) HOME RUN & # OF CIRCUITS: HASHMARKS INDICATE # OF		NE NE
CONDUCTORS. DASHED LINE INDICATES CONDUIT BELOW FLOOR.		
DISCONNECT SWITCH MAGNETIC STARTER	5'-0" 5'-0"	
MAGNETIC COMBINATION STARTER	5'-0"	
VARIABLE FREQUENCY DRIVE ENCLOSED FLUSH MTD. CIRCUIT BREAKER	5'-0" 5'-0"	
PUSHBUTTON STATION	46"	
FLEXIBLE CONDUIT	6'-6" TO TOP	\sim
PANELBOARD, SURFACE OR FLUSH MOUNTED, HATCHING INDICATES EMERGENCY	A0 NOTE:	
TRANSFORMER EQUIPMENT TAG, REFER TO EQUIPMENT SCHEDULE	AS NOTED	EQUIP-
TAGGED NOTE		\bigcirc
REVISION TAG MECHANICAL EQUIPMENT DESIGNATOR		
(SEE MECH. SCHEDULES) WIRE BASKET CABLE TRAY, SIZE AS NOTED	AS SHOWN	
LADDER CABLE TRAY, SIZE AS NOTED	AS SHOWN	
SOLID BOTTOM CABLE TRAY, SIZE AS NOTED LOW VOLTAGE CABLE PATH	AS SHOWN	
EQUIPMENT HARDWIRE CONNECTION (SEE DETAIL)	<u> </u>	①~
MOTOR CONNECTION, REFER TO EQUIPMENT CONNECTION SCHEDULE		∕
WIREGUARD - PROVIDE MANUFACTURER'S SPECIFIC GUARD FOR DEVICE NOTED		WG
WEATHERPROOF - NEMA-3R, WET LOCATION LISTED. PROVIDE COVERS, RATINGS, ETC, AS SUITABLE FOR		WP
OUTDOORS. NDICATES EMERGENCY POWER		E,EM
GENERATOR ANNUNCIATOR PANEL - SEE SPECIFICATIONS	46"	GEN-A
THERMOSTAT PROVIDED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL		
PROVIDE BACK-BOX CONDUIT STUB-UP, REFER TO MECHANICAL DRAWINGS FOR LOCATIONS		(T)
CONDUIT UP CONDUIT DOWN		0
GROUND BUS BAR ON INSULATED STANDOFFS	2'-0"	
BOX ON ANY DEVICE INDICATES SURFACE MOUNTED BACKBOX/WIREMOLD		
CIRCLE ON ANY DEVICE INDICATES DEVICE FED FROM STUB UP CONDUIT		\bigoplus
WIREWAY WITH REMOVABLE COVER (SIZE AS NOTED) TRENCH DUCT (SIZE AS NOTED)	AS SHOWN AS SHOWN	
DOORBELL PUSHBUTTON STATION, PROVIDE COMPLETE WITH TRANSFORMER (MOUNT ABOVE		
CEILING IN CORRIDOR NEAR PUSH-BUTTON) AND ALL ACCESSORIES, POWER FROM NEAREST AVAILABLE 120V NORMAL POWER GENERAL RECEPTACLE CIRCUIT, NUTONE OR EQUAL	46"	DB
DOORBELL AUDIO/VISUAL STATION, PROVIDE PROVIDE CONNECTION TO PUSHBUTTON STATION IN AREA.	7'-6"	DB
COORDINATE EXACT AUDIO SOUND (CHIME, BUZZER, ETC.) DESIRED WITH OWNER/ARCHITECT, NUTONE OR EQUAL		
KITCHEN EQUIPMENT OUTLET COUPLING CONNECTION (SEE DETAIL)		⊕ ~
INDICATES MOUNTING ABOVE COUNTER-TOP, 2" ABOVE BACKSPLASH, NO HIGHER THAN 48"		С
EXPLOSION PROOF - PROVIDE WIRING METHODS, ENCLOSURES, RATINGS, ETC. AS SUITABLE FOR		XP
HAZARDOUS LOCATION. PLUMBING FIXTURE SOLENOID VALVE/ELECTRIC EYE		
SENSOR CONNECTION. COORDINATE EXACT CONNECTION REQUIREMENTS WITH MANUFACTURER. PLUMBING FIXTURE ELECTRIC EYE TRANSFORMER		Ι Ψ
PLUMBING FIXTURE ELECTRIC EYE TRANSFORMER CONNECTION. TRANSFORMER SHALL BE 120V-24V. MOUNT ABOVE SUSPENDED ACCESSIBLE CEILING IN J-		\bigcirc
BOX. PROVIDE ADDITIONAL TRANSFORMERS OF SAME TYPE AS/IF NEEDED		
PROVIDE CONNECTION TO HAND DRYER (SEE ARCHITECTURAL SPECIFICATIONS)	VERIFY WITH ARCHITECT	Ø
SURGE PROTECTION DEVICE		SPD
BUS DUCT, AMPERAGES AS NOTED SPECIAL OUTLETS	AS SHOWN	
FLOORBOX, POWER ONLY, AS SCHEDULED	FLOOR	
FLOORBOX, COMBINATION POWER AND LOW VOLTAGE, REFER TO FLOORBOX SCHEDULE	FLOOR	
FIRE RATED POKE THOUGH FLOOR BOX, COORDINATE EXACT COVER REQUIREMENTS WITH ARCHITECTURAL FINISHES, DEVICES AS SCHEDULED	FLOOR	•
AUDIO/VISUAL SYSTEM OUTLET WITH DUPLEX	1'-6"	
RECEPTACLE, REFER TO ASSOCIATED DETAIL FOR ADDITIONAL INFORMATION	1 -0	AV
COMBINATION POWER AND DATA OUTLET LOCATION, REFER TO ASSOCIATED DETAIL FOR ADDITIONAL INFORMATION	1'-6"	\bowtie
COMBINATION COMBINATION POWER AND DATA OUTLET LOCATION, GFCI DUPLEX RECEPTACLE, REFER TO ASSOCIATED	1'-6"	Θ
DETAIL FOR ADDITIONAL INFORMATION OVERHEAD PROJECTOR: PROVIDE DUPLEX		- T
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		

DESCRIPTION	№ CT)	SYI
ABBREVIATIONS		
UNLESS OTHERWISE NOTED		UON
OWNER FURNISHED CONTRACTOR INSTALLED		OFCI
OWNER FURNISHED OWNER INSTALLED		OFOI
CONTRACTOR FURNISHED CONTRACTOR INSTALLED		CFCI
CONTRACTOR FURNISHED OWNER INSTALLED		CFOI
INDICATES EMERGENCY POWER		EM
DATA / VOICE		
DATA OUTLET : NUMBER BESIDE OUTLET INDICATES NUMBER OF DATA JACKS	1'-6"	#D
VOICE OUTLET : NUMBER BESIDE OUTLET INDICATES NUMBER OF VOICE JACKS	1'-6"	#V
COMBINATION OUTLET : NUMBER BESIDE OUTLET INDICATES NUMBER OF DATA/VOICE JACKS	1'-6"	#D/#V V
MAIN DISTRIBUTION FRAME - REFERENCE DATA SYSTEM SCHEMATICS AND DETAILS FOR ADDITIONAL REQUIREMENTS		MDF
INTERMEDIATE DISTRIBUTION FRAME - REFERENCE DATA SYSTEM SCHEMATICS AND DETAILS FOR ADDITIONAL REQUIREMENTS		IDF
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' COIL OF CABLE AHEAD OF THE OUTLET FOR ADJUSTMENT OF FINAL OUTLET LOCATION. THE CONTRACTOR SHALL COORDINATE EXACT LOCATIONS WITH THE OWNER AND ADJUST OUTLET LOCATIONS AT SUBSTANTIAL COMPLETION TO ACCOMMODATE OWNER'S WAP LOCATIONS. WAP'S ARE OWNER- FURNISHED, OWNER-INSTALLED		WAP
RF TRACKER ANTENNA	CLG	
TELEMETRY ANTENNA	CLG	\ \ <u>\</u>
OUTLET (VOICE ONLY) : PAYPHONE TYPE	AS REQ'D.	PAY
TELECOMMUNICATIONS SYSTEM BACKBOARD. PROVIDE 96"H x 3/4"D FIRE-RETARDENT PLYWOOD BACKBOARD WITH TWO (2) COATS OF NON- CONDUCTIVE, FIRE-RETARDANT LIGHT GRAY PAINT, # 3/0 TO GROUND BAR AT MAIN SERVICE SWITCHBOARD, 30-PT GROUND BAR AND A 6'-0", #3 AWG PIGTAIL AT BACKBOARD. INSTALL BOARD AT 2' AFF. (LENGTH OF BOARD AS INDICATED ON FLOOR PLAN)		TEL

	• •
t List - Electrical	
SHEET NAME	
ELECTRICAL GENERAL INFORMATION	
ELECTRICAL DETAILS	
ELECTRICAL ENLARGED PLANS - DEMO	A
ELECTRICAL ENLARGED PLANS - NEW WORK	5455 Rir
ELECTRICAL SINGLE LINE	Du

Sheet List

ELECTRICAL E



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

CONSULANTS

REGISTRATION

KEYPLAN

ISSUE / REVISION

1 12/04/2023 BID SET # Date

PROJECT NUMBER OCCC23

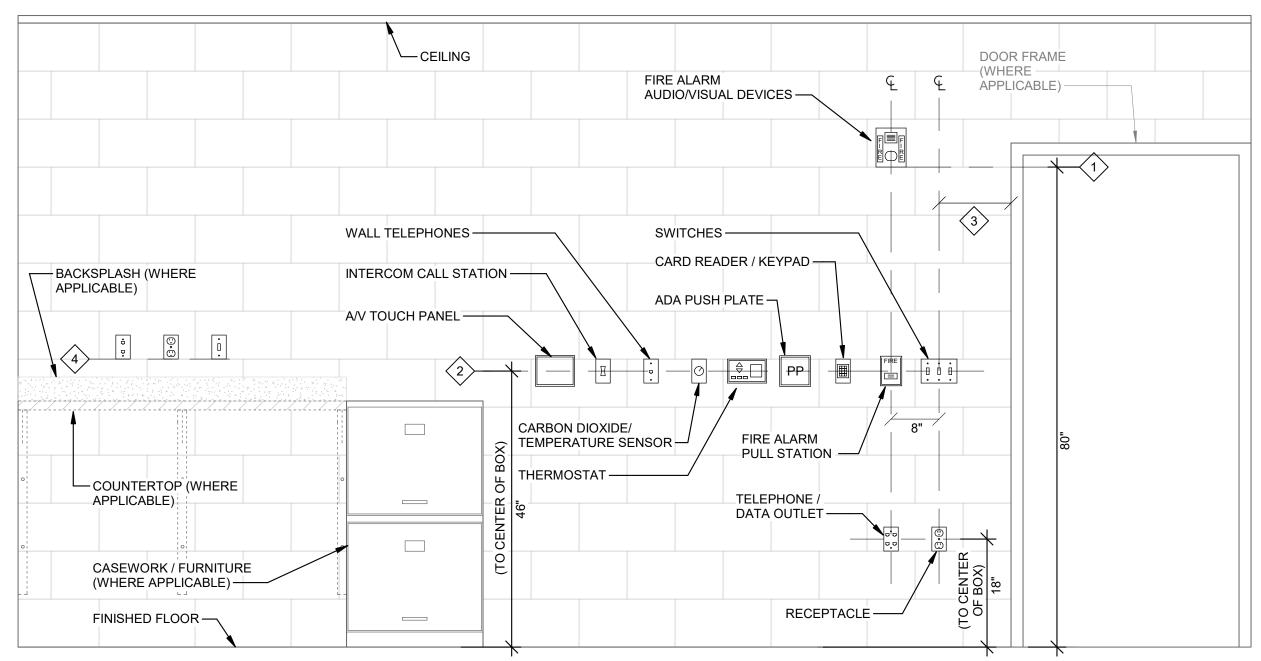
SHEET TITLE **ELECTRICAL GENERAL**

SHEET NUMBER

INFORMATION

E001

DEGODIDATION	MOUNTING HEI (TO CENTER OF	DRAWING SYMBOL	DEG
DESCRIPTION	≥ C	<u> </u>	DES
SWITCHES LIGHT SWITCH:GENERAL PURPOSE	46"	\$	LIGI REFE
DIMMER SWITCH	46"	\$D	SPE
THREE-WAY SWITCH	46"	\$3	SURI
OCCUPANCY OR VACANCY SENSOR SWITCH	46"	\$K \$0s \$vs	POLE
LOW VOLTAGE SWITCH	46"	\$05,\$VS \$LV _. \$LV#	WAL
NON-REVERSING MOTOR STARTER SNAP SWITCH	AS NOTED	\$ M	FLO
TIMER SWITCH	46"	\$ T	EXIT
OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT	CLG	(08) ,(VS)	STRI
PHOTO-CELL AS NOTED EXAM LIGHT SWITCH	AS NOTED 46"	(PC) \$X	CRO FRO
NIGHT LIGHT SWITCH WITH CONSTANTLY	46"	φ^ \$ N	PAR
ILLUMINATED HANDLE SURGICAL LIGHT INTENSITY CONTROL	46"	\$SL	BRAI
FOUR-WAY SWITCH	46"	\$4	EME
LIGHT SWITCH FOR UNDER-CABINET LIGHTS	46"	\$ U	SUR
ILLUMINATED HANDLE LIGHT SWITCH (ILLUMINATED WHEN LOAD IS OFF)	46"	\$IL	CON
PILOT LIGHT SWITCH (ILLUMINATED WHEN LOAD IS ON)	46"	\$PL	SPA(
MOMENTARY CONTACT SWITCH	46"	\$ MC	CON
HAND-OFF-AUTO 3-POSTION SWITCH	46"	\$ HOA	DISC
EMERGENCY AUTOMATIC TRANSFER SWITCH FOR LIGHTING CONTROLS (REFER TO DETAIL)		ER	MAG
POWER OUTLETS			MAG
SIMPLEX RECEPTACLE	1'-6"	Θ	VARI
DUPLEX RECEPTACLE-SAFETY TYPE, TAMPER-RESISTANT	1'-6"	⊕ s	PUSI
DUPLEX RECEPTACLE	1'-6"	\ominus	FLEX
SLASH THROUGH ANY DEVICE INDICATES MOUNTING ABOVE COUNTERTOP 2" ABOVE BACKSPLASH, OR AT		<u></u>	PANI HAT(
48" WHERE NO COUNTER IS PRESENT		× , ×	TRAN
FILLED CENTER BAR INDICATES INTEGRAL GROUND FAULT PROTECTION (GFCI)	1'-6"	-	EQU
FILLED OUTER BARS INDICATES INTEGRAL INTEGRAL USB OUTLETS IN ADDITION TO POWER RECEPTACLES	1'-6"	—	TAG
DUPLEX RECEPTACLE, CEILING MOUNTED	CLG		REVI
QUADRUPLEX RECEPTACLE	1'-6"	 	MEC (SEE
JUNCTION BOX, CEILING OR WALL		<u>(</u>),(()	WIRE
VOLTAGE/1PH RECEPTACLE, AS NOTED	AS NOTED	₩	SOLI
GROUND FAULT PROTECTED DUPLEX WITH	1-0	₩	LOW
WEATHER-PROOF "WHILE IN USE" TYPE DIE-CAST METAL COVERPLATE WITH LOCKABLE	2'-2"	⊕ WP	EQU
ENCLOSURE AT OUTLET - SEE SPECIFICATIONS DUPLEX FOR ELECTRIC WATER COOLER: PROVIDE			MOT CON
REMOTE, READILY ACCESSIBLE GFI DEVICE AT 48" ADJACENT TO WATER COOLER, COORDINATE EXACT		€ EWC	WIRE
LOCATION WITH PLUMBING CONTRACTOR TO CONCEAL OUTLET BEHIND COOLER		EWC	WEA
DEAD FRONT GFCI DEVICE, LABEL AND INSTALL IN		Θ	PRO' OUTI
READILY ACCESSIBLE LOCATION GANG RECEPTACLE IN COMBINATION WITH SWITCH	46"	C/S	INDIO
(PROVIDE DIVIDER IF LIGHTING CIRCUIT IS 277V) "DOG-HOUSE" TYPE TWIN DUPLEX RECEPTACLE	ON CNTR.	O DP	SPE
WITH ONE DUPLEX RECEPTACLE ON BOTH SIDES SS INDICATES SURGE SUPPRESION TYPE OUTLET(S)	ON CIVIR.	SS SS	THE CON
FIRE ALARM		- 33	PRO MEC
MAIN CONTROL PANEL CENTRAL PROCESSING	6'-6" TO	FACP	CON
UNIT (CPU)	TOP		CON
PULL STATION : DOUBLE ACTION	46" TO LEVER	F A G A	GRC BOX
AUDIO/VISUAL NOTIFICATION APPLIANCE	WALL, CLG	F (F)	BACI
AUDIO-ONLY NOTIFICATION APPLIANCE	WALL, CLG	A , (A)	STU
VISUAL-ONLY NOTIFICATION APPLIANCE	WALL, CLG	\bigvee , \bigvee	WIRE
PHOTO-ELECTRIC SMOKE DETECTOR PROJECTED BEAM SMOKE DETECTOR; EMITTER	CLG	SD	DOO
(BE) AND RECEIVER (BR)		BE , BR	COM CEIL
HEAT DETECTOR	CLG	HD	ACCI 120V
CARBON MONOXIDE DUCT DETECTOR	ABV CLG	CD	DOO
DOOR HOLDER : WALL TYPE DOOR HOLDER : CLOSURE TYPE	ABV DOOR	DH C	CON
DUCT SMOKE DETECTOR	ABV CLG	DD Du C	ETC.
CONNECTION TO SPRINKLER TAMPER	, LUV OLG	FS	EQU/ KITC
SWITCH WITH ADDRESSABLE MODULE REMOTE L.C.D. FIRE ALARM ANNUNCIATOR	54"	FAA	CON
POWER SUPPLY/CONTROL FOR AUDIO/VISUAL DEVICES	46"	NAC	2" AE EXPl
TRANSPONDER CABINET	46"	TRAN	ENCI HAZA
FIRE ALARM CONTROL EXTENDER		EXT	PLUI SEN
ISOLATION MODULE	WALL		CON
ZONE ADDRESSABLE MODULE		Z	PLUI CON
H.V.A.C. SMOKE DAMPER CONNECTION		SM	MOL BOX
ADDRESSABLE RELAY MODULE		R	TYPI PRO
INDICATES VANDAL-PROOF POLYCARBONATE COVER, VANDAL PROOF COVERS SHALL BE UL LISTED FOR USE		PC	ARC
WITH THE SPECIFIC DEVICE THEY ARE PROTECTING		CLI	SUR
DEVICE USED FOR ELEVATOR CONTROL		CH EL	BUS SPE
DEVICE USED FOR ELEVATOR CONTROL KEYED, LOCKED PULL STATION : DOUBLE ACTION.	40" TO		FLO
STATION SHALL ONLY BE OPERABLE VIA KEY IN POSSESSION OF STAFF.	46" TO LEVER	FK	FLO0
BELL / LIGHT	80"	BL	FIRE
BELL ONLY	80"	В	EXA(FINIS
PHOTO-ELECTRIC SMOKE DETECTOR FOR	CLG	SD P	AUDI RECI
PATIENT ROOM MONITORING (SEE RISER) CARBON MONOXIDE ALARM: SINGLE STATION	CLG	СМ	ADD
W/SOUNDER BASE CARBON MONOXIDE AUDIO/VISUAL NOTIFICATION	WALL	F	REFE
APPLIANCE POST INDICATOR VALVE	<u>-</u>	LEN _{CM}	INFO COM
GRAPHICS DISPLAY TERMINAL		GDT	GFCI DETA
FLUSH MOUNTED REMOTE ALARM INDICATING	7'-6"	RI	OVEI RECI
STATION/TEST SWITCH FIREMAN'S PHONE JACK	4'-6"	FP	AND



DEVICE MOUNTING DETAIL - GENERAL NOTES:

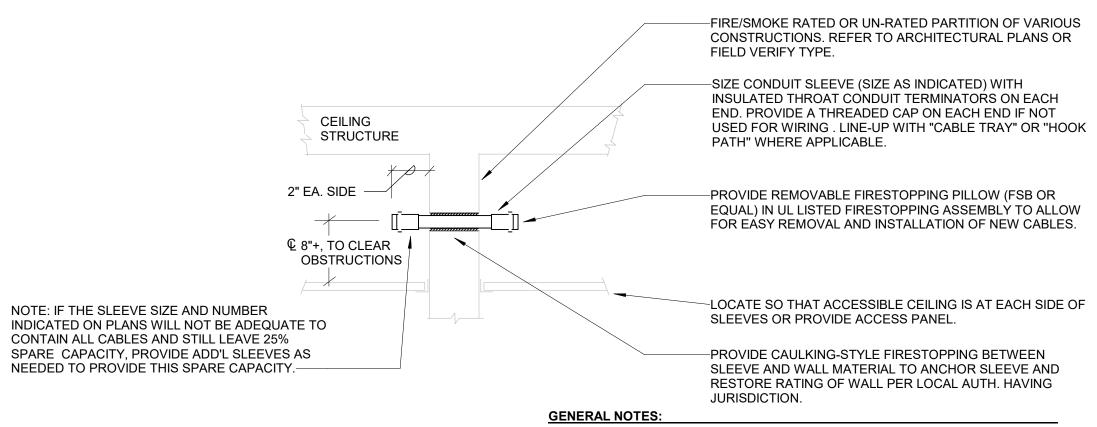
- A. WHERE DEVICES OF ANY DISCIPLINE ARE LOCATED IN THE SAME GENERAL AREA ON THE PLANS AND ARE SHOWN TO BE MOUNTED AT A SIMILAR HEIGHT, ALIGN HORIZONTALLY ALONG TOP OF DEVICE BACKBOX (AS SHOWN IN DETAIL AND DESCRIBED IN KEY NOTE #2).
- B. WHERE DEVICES OF ANY DISCIPLINE ARE LOCATED IN THE SAME GENERAL 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
- D. ADA REQUIRES 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.

X DEVICE MOUNTING DETAIL - KEY NOTES:

- 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 6" OF FINISHED CEILING. 2. ALIGN BACKBOXES OF DEVICES AT THE MOUNTING HEIGHT INDICATED. MEASURE TO THE CENTER OF THE BACKBOX FOR STANDARD OUTLET BOXES. 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 CONTRADICTED BY APPLICABLE CODE. WHERE DEVICES ARE SHOWN
- ADJACENT TO DOOR FRAMES ON PLANS INSTALL 12" FROM FRAME TO AVOID SLUSHED SECTIONS OR BRACING. SPECIFIC DEVICES ARE SHOWN IN RELATIVE ORDER FROM DOOR FRAME; WHERE THESE DEVICES ARE NOT PRESENT AT A PARTICULAR LOCATION, ADJUST LOCATIONS CLOSER TO DOOR ACCORDINGLY.
- 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 SHOP DRAWINGS ACCORDINGLY. IF CONFLICT STILL ARISES CONTACT THE ENGINEER FOR DIRECTION ON HOW TO PROCEED.

TYPICAL WALL DEVICE MOUNTING DETAIL

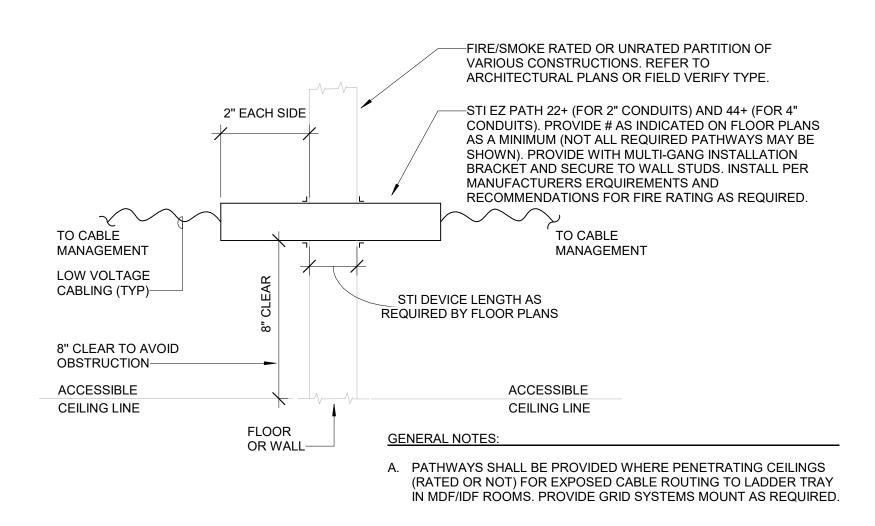
SCALE: NONE



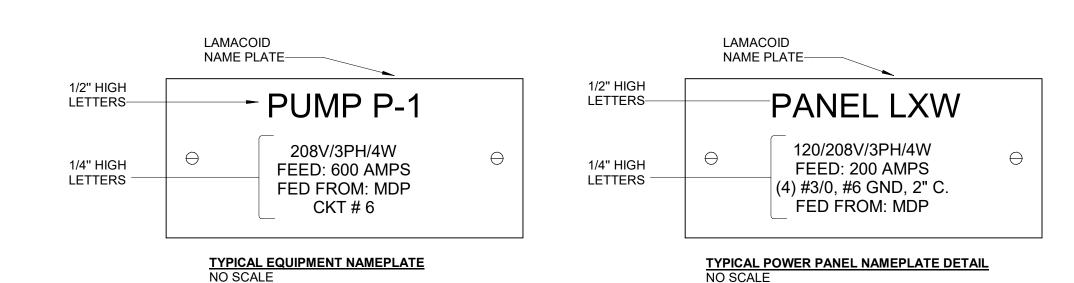
A. PROVIDE ONE 2" SPARE CONDUIT SLEEVE THROUGH ALL FULL HEIGHT

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,

CONDUIT WALL SLEEVE INSTALLATION SCALE: NONE







GENERAL NOTES:

A. NORMAL POWER LABELS SHALL BE BLACK WITH WHITE LETTERS.

TYPICAL EQUIPMENT NAMEPLATE
NO SCALE

- 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 (VDF'S), SPECIAL DEVICE PLATES, INVERTER, AND SIMILAR MATERIALS SHALL BE CLEARLY MARKED AS TO THEIR FUNCTION AND USE.



ELEC - EQUIPMENT CONNECTION SCHEDULE

EQUIP ID	DESCRIPTION	DISCONNECT MEANS	VOLTAGE	POLES	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				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	100	103.09	124

5455 Rings Road, Suite 450 Dublin, OH 43204

T: 614.992.1500

PROJECT

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

400 North High Street Columbus, Ohio 43215

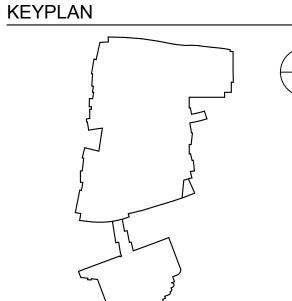
CLIENT

FRANKLIN COUNTY **CONVENTION FACILITIES AUTHORITY** 400 North High Street, 4th Floor

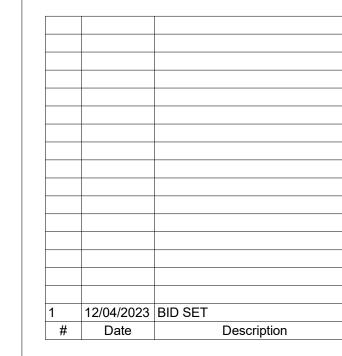
CONSULANTS

Columbus, Ohio 43215

REGISTRATION



ISSUE / REVISION



PROJECT NUMBER

SHEET TITLE **ELECTRICAL DETAILS**

SHEET NUMBER

OCCC23

E002



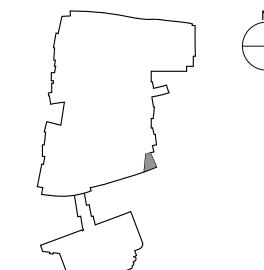


5455 Rings Road, Suite 450 Dublin, OH 43204

Greater Columbus Convention Center North Facility Chiller

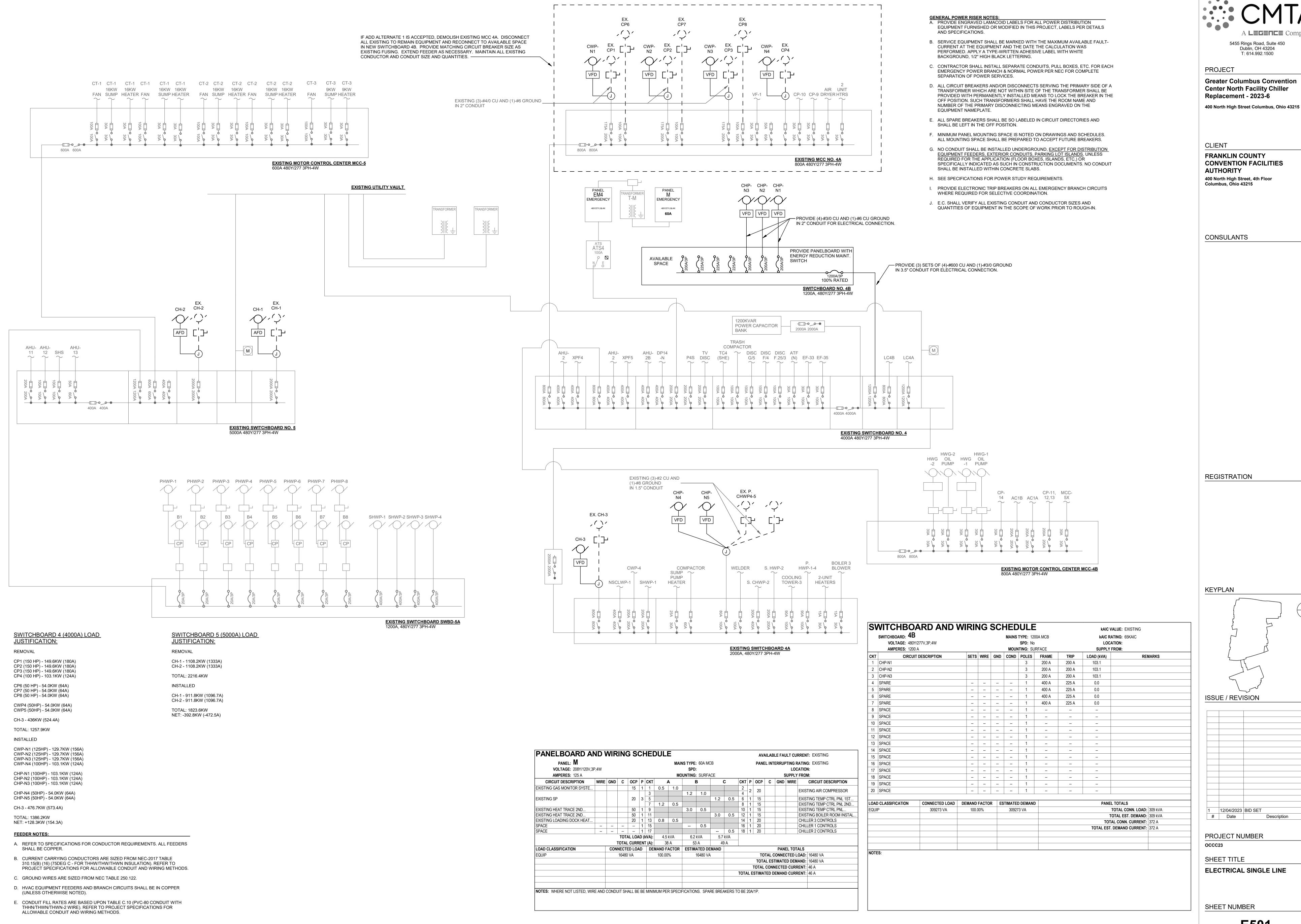
400 North High Street Columbus, Ohio 43215

CONVENTION FACILITIES





ELECTRICAL ENLARGED PLANS -



Description

E501

THESE NOTES. THE CONTRACTOR SHALL CONTACT THE ARCHITECT/ENGINEER FOR CLARIFICATION.

3. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS ARE NOT IN AGREEMENT WITH

4. TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON THE PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

5. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED AND APPROVED BY THE

ONLY FOR CONFORMANCE WITH DESIGN CONCEPT. NO WORK AFFECTED BY THE SHOP DRAWINGS SHALL BE

GENERAL CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER. 6. SHOP DRAWINGS PREPARED BY THE CONTRACTORS, SUPPLIERS, ETC., WILL BE REVIEWED BY THE ENGINEER

STARTED WITHOUT SUCH REVIEW. 7. THE GENERAL CONTRACTOR SHALL COORDINATE ALL REVISIONS, CORRECTIONS, AND COMMENTS INDICATED ON THE SHOP DRAWINGS BY THE ENGINEER.

8. FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE PROCEEDING WITH THE WORK. 7. STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE NOTED: EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONSTRUCTION MANAGER, GENERAL CONTRACTOR, CONTRACTOR, SUB-CONTRACTOR AND/OR SUPPLIER PRIOR TO DETAILING, FABRICATION, ERECTION OR CONSTRUCTION OF ANY ELEMENT. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE ACTUAL FIELD CONDITIONS MUST BE REPORTED IMMEDIATELY TO THE ENGINEER.

SUPPORT, BRACE, AND SECURE EXISTING STRUCTURES AS REQUIRED TO PREVENT DAMAGE AND MOVEMENT. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF EXISTING STRUCTURES DURING

10. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR.

11. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.

12. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.

13. ALL STRUCTURES ARE DESIGNED TO BE STABLE AND SELF-SUPPORTING AT THE COMPLETION OF CONSTRUCTION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE STABILITY AND SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL IS NOT INDICATED ON THE DRAWINGS AND, IF PROVIDED, SHALL BE REMOVED, AS CONDITIONS PERMIT AND REMAIN THE PROPERTY OF THE CONTRACTOR.

14. ALL MATERIALS AND EQUIPMENT FURNISHED WILL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT BEING SUBSTITUTED.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

16. COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR PIPE SLEEVES, FLOOR DRAINS, INSERTS, HANGERS, AND SLAB OPENINGS, SIZE AND LOCATION OF MACHINE OR EQUIPMENT SUPPORTS, BASE AND ANCHOR BOLTS, ETC.

17. WATER PROOFING. PERIMETER INSULATION, MASONRY AND OTHER REQUIRED NON-STRUCTURAL ITEMS ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. RETURN BUILDING TO MATCH EXISTING CONDITIONS.

GOVERNING CODES AND SPECIFICATIONS

OBC	-OHIO BUILDING CODE, 2017 EDITION
IEBC	-INTERNATIONAL EXISTING BUILDING CODE, 2015 EDITION
ASCE 7	-MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2010 ED
ACI 318	-BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 2014 EDITIO
ACI 301	-SPECIFICATIONS FOR STRUCTURAL CONCRETE, 2010 EDITION
ACI 305R	-HOT WEATHER CONCRETING, 2010 EDITION
ACI 306R	-COLD WEATHER CONCRETING, 2010 EDITION
ACI SP-66	-ACI DETAILING MANUAL, 2004
ACI 530	-BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, 2013 EDITION
ACI 530.1	-SPECIFICATIONS FOR MASONRY STRUCTURES, 2013 EDITION
AISC 360	-STEEL CONSTRUCTION MANUAL, 14TH EDITION
AWS D1.1	-STRUCTURAL WELDING CODE - STEEL, 2010 EDITION

-STRUCTURAL WELDING CODE - SHEET STEEL, 2008 EDITION

-STEEL DECK INSTITUTE FLOOR DECK DESIGN MANUAL, FIRST EDITION

DESIGN LOADS

AWS D1.3

SDI-FDDM

1	. WI	ND LOADS:
	a.	ULTIMATE DESIGN WIND SPEED (3-SECOND GUST), MPH
		NOMINAL DESIGN WIND SPEED (3-SECOND GUST), MPH
	C.	RISK CATEGORY
	d.	WIND EXPOSURE B
	e.	DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING SHALL BE
		COMPUTED PER GOVERNING BUILDING CODE USING EXPOSURE B

f. INTERNAL PRESSURE COEFFICIENT (ENCLOSED) . .

2. EARTHQUAKE DESIGN DATA: a. OCCUPANCY RISK CATEGORY b. SEISMIC IMPORTANCE FACTOR, I_F. c. MAPPED SPECTRAL RESPONSE ACCELERATIONS. $S_S = 0.119$ $S_1 = 0.062$ d. SITE CLASS . e. DESIGN SPECTRAL RESPONSE ACCELERATIONS. $S_{DS} = 0.127$

 $S_{D1} = 0.099$ f. SEISMIC DESIGN CATEGORY... STEEL SYSTEM NOT SPECIFICALLY g. BASIC SEISMIC RESISTING SYSTEM . DETAILED FOR SEISMIC RESISTANCE

CAST-IN-PLACE CONCRETE AND REINFORCEMENT

PERMEABILITY.

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 AASHTO T260.

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

7. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS CONFORMING TO THE FOLLOWING EXPOSURE CATEGORIES: CATEGORY FREEZE AND THAWING. .MODERATE. SULFATE.. . .MODERATE. .

CORROSION PROTECTIONMODERATE.. 8. THE OWNER SHALL EMPLOY A TESTING LABORATORY APPROVED BY THE ENGINEER TO PERFORM THE TESTING SPECIFIED PER PARAGRAPH 1.6.4 OF ACI 301. THE TESTING LABORATORY SHALL MEET THE REQUIREMENTS OF ASTM E329. 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.

.REQUIRED. .

). 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, HI-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 MANUFACTURER'S

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

16. FORMWORK, FOR ALL CONCRETE THAT WILL BE EXPOSED IN THE COMPLETED STRUCTURE, SHALL BE

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

CONSTRUCTED FROM A METAL OR SUITABLE SURFACE PLYWOOD THAT WILL PRODUCE AN ACCEPTABLY SMOOTH

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

32. LAP SPLICE 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.

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

STRUCTURAL STEEL

1. STRUCTURAL STEEL WORK SHALL CONFORM TO THE "STEEL CONSTRUCTION MANUAL, AISC 360."

2. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS , THE FOLLOWING NOTES SHALL APPLY TO 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MEMBERS AND CONNECTIONS FOR ANY PORTION OF THE STRUCTURE NOT INDICATED ON THE PLANS. ALL SPECIAL CONDITIONS AND CONNECTIONS SHALL BE CAREFULLY AND COMPLETELY DETAILED AND SUBMITTED FOR APPROVAL.

> 3. CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND SIZE OF ALL OPENINGS FOR MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR PRIOR TO FABRICATION OF MATERIALS.

4. ANY STEEL SHOWN ON DRAWINGS FOR SUPPORTING OR CONNECTING MECHANICAL, ELECTRICAL, OR PLUMBING EQUIPMENT IS FOR BID PURPOSES ONLY. CONTRACTOR SHALL COORDINATE EXACT SIZE AND LOCATION PRIOR TO PROCEEDING WITH CONSTRUCTION.

5. UNLESS SHOWN ON STRUCTURAL DRAWINGS, CONTRACTOR SHALL NOT CUT ANY HOLES IN STRUCTURAL STEEL MEMBERS WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.

6. THE STEEL FRAME AS DESIGNED IS A NON-SELF SUPPORTING STEEL FRAME. CONTRACTOR SHALL COORDINATE THE ERECTION WITH THE INSTALLATION OF OTHER BUILDING ELEMENTS REQUIRED FOR THE STRUCTURES STABILITY. THESE ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO, SLABS, METAL DECK, AND MASONRY WALLS.

a. W-SHAPES: ASTM A992 b. ANGLES, PLATES, RODS, ETC: ASTM A36 c. CHANNELS: ASTM A36

d. PIPES: ASTM A53, GRADE B e. STRUCTURAL TUBING:

ROUND - ASTM A500, GRADE C, 46 KSI SQUARE & RECTANGULAR, ASTM A500, GRADE C, 50 KSI

f. ANCHOR RODS: ASTM F1554, GRADE 36 g. SHEAR STUD CONNECTORS: ASTM A108

8. WELDED CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY, AWS D1.1. WELDING ELECTRODE MATERIAL SHALL BE E70XX.

WELDING OF SHEAR STUD CONNECTORS SHALL CONFORM TO AWS D1.1 SECTION 7.

10. ALL WELDED CONNECTIONS SHALL BE DESIGNED TO BE FULLY EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS FOR THE SAME SIZE BEAM.

11. MINIMUM WELDS, WHERE NOT SHOWN ON DRAWINGS, SHALL BE 3/16 INCH FILLET WELD, ALL AROUND.

12. IN GENERAL, IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT ALL SHOP CONNECTIONS BE WELDED OR BOLTED AND ALL FIELD CONNECTIONS BE BOLTED EXCEPT WHERE NOTED OTHERWISE.

13. ALL CONNECTIONS SHALL BE MADE WITH 3/4-INCH ASTM A325 BOLTS TIGHTENED TO SNUG-TIGHT CONDITION UNLESS OTHERWISE NOTED.

14. ALL CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR UTILIZING THE REQUIREMENTS IN AISC 360, AND THE CONTRACT DOCUMENTS. THE FABRICATOR SHALL USE ALLOWABLE STRESS DESIGN METHODOLOGY TO COMPLETE ALL CONNECTION DESIGNS INCLUDING THE FOLLOWING GUIDELINES.

a. DETAIL ALL BOLTED CONNECTIONS AS BEARING TYPE CONNECTIONS WITH THREADS IN THE SHEAR PLANE, EXCEPT THE FOLLOWING CONNECTIONS, WHICH SHALL BE DESIGNED AS SLIP-CRITICAL CONNECTIONS:

 ALL CONNECTIONS IN DIRECT TENSION. THE WEB SHEAR CONNECTION OF ALL MOMENT CONNECTIONS.

 ALL BEAM OR GIRDER CONNECTIONS USING OVERSIZED HOLES OR LONG SLOTS. ANY CONNECTION NOTED ON THE CONTRACT DRAWINGS AS SLIP-CRITICAL CONNECTION.

15. PROVIDE 1/4" MIN CLOSURE PLATES TO ALL HOLLOW STRUCTURAL SECTIONS WITH A 1/4" FILLET WELD ALL

AROUND.

16. PROVIDE HARDENED STEEL WASHERS CONFORMING TO ASTM F436 AND HEAVY HEX NUTS ON ANCHOR RODS. 17. STEEL THAT EXTENDS BELOW GRADE SHALL BE ENCASED IN CONCRETE WITH A MINIMUM OF 3-INCHES OF CLEAR

18. CONNECTIONS FOR BRACING SHALL DEVELOP THE TENSILE CAPACITY OF THE BRACING MEMBER.

POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS.

2. INSTALL BOLTS AND FASTENERS TO MISS REINFORCING.

PRIOR TO DRILLING FOR THE ANCHOR CONCRETE REINFORCING STEEL SHALL BE LOCATED WITH A MAGNETIC BAR

4. FASTENERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS AND AS GIVEN BELOW. NOTIFY THE ENGINEER IF CONFLICTS EXIST BETWEEN THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS AND THE BELOW REQUIREMENTS.

5. FASTENERS SHALL BE INSTALLED AT NOT LESS THAN THE MANUFACTURER'S MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE, UNLESS INDICATED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER OF RECORD.

6. DRILL HOLES USING ROTARY PERCUSSION DRILL WITH A DEPTH GAGE. DO NOT DRILL THROUGH FULL THICKNESS OF CONCRETE. CLEAN HOLES BY VIGOROUSLY BRUSHING AND THEN BLOW OUT LOOSE MATERIAL USING OIL-FREE COMPRESSED AIR. THE BRUSH SHALL HAVE THE STIFF NON-METALLIC BRISTLES OF TYPE AND DIAMETER RECOMMENDED BY THE ADHESIVE MANUFACTURER. IF CONCRETE IS DAMP BLOW DRY HOLE WITH OIL-FREE COMPRESSED AIR. CLEAN WITH WATER ONLY IF RECOMMENDED BY MANUFACTURER. ADHESIVE ANCHORS MAY NOT BE SET IF WATER IS SEEPING INTO HOLE; NOTIFY THE ENGINEER.

7. FOR EXPANSION ANCHORS: DRILL HOLE TO NOMINAL DIAMETER OF ANCHOR. IF METRIC ANCHORS ARE USED, METRIC BITS MUST BE USED. INSTALL ANCHOR AND TIGHTEN TO RECOMMENDED TORQUE.

8. EXPANSION BOLTS IN CONCRETE SHALL BE "KWIK BOLT 3" BY HILTI, "WEDGE-ALL" BY SIMPSON STRONG TIE OR APPROVED EQUAL.

9. ADHESIVE DOWELS AND ANCHORS IN CONCRETE SHALL BE OF THE TYPE SHOWN AND INSTALLED USING "HIT-HY 200" BY HILTI, "SET" BY SIMPSON STRONG TIE OR APPROVED EQUAL.

10. CONTRACTOR SHALL SUBMIT MANUFACTURERS LITERATURE FOR THE ANCHOR SYSTEM TO BE USED. THIS LITERATURE SHALL INCLUDE ANCHOR MATERIAL, STRENGTH DATA, EMBEDMENT LENGTH, DRILL BIT SIZE AND THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. FOR ADHESIVE ANCHORS INCLUDE ADHESIVE

SPECIAL INSPECTIONS

PER THE IBC SECTION 1704, SPECIAL INSPECTIONS ARE REQUIRED FOR THE FOLLOWING ITEMS: 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 > 5/16" (CONTINUOUS)

 SINGLE-PASS FILLET WELDS ≤ 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

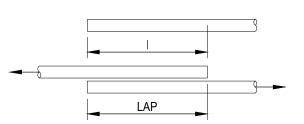
APPROVED CONSTRUCTION DOCUMENTS. b. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN CHARGE.

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.

STRUCTURAL DRAWING ABBREVIATIONS

ADDL ADJ	ADDITIONAL ADJACENT	LBS LF	POUNDS LINEAL FEET
AESS	ARCH EXPOSED STRUCTURAL STEEL	LG	LONG
ALT	ALTERNATE	LL	LIVE LOAD
&	AND	LLH	LONG LEG HORIZONTAL
APPROX ARCH	APPROXIMATELY ARCHITECT or ARCHITECTURAL	LLV LOC	LONG LEG VERTICAL LOCATION
@	AT or SPACING	LONG	LONGITUDINAL
•		LSH	LONG SIDE HORIZONTAL
B/	BOTTOM OF	LSV	LONG SIDE VERTICAL
BL	BUILDING LINE	LT WT	LIGHT WEIGHT
BLDG BLKG	BUILDING BLOCKING	MANUF	MANUFACTURER
BM	BEAM	MAS	MASONRY
BRDG	BRIDGING	MATL	MATERIAL
BRG	BEARING	MAX	MAXIMUM
BTWN BOT	BETWEEN BOTTOM	MECH MEZZ	MECHANICAL MEZZANINE
	20	MFR	MANUFACTURER
CANT	CANTILEVER	MIN	MINIMUM
CL CLR	CENTERLINE CLEAR	MISC MK	MISCELLANEOUS MARK
CTR	CENTER	MTL	METAL
COL	COLUMN		
CONC	CONCRETE	NO. or #	
CONN CONST	CONNECTION CONSTRUCTION	NOM NS	NOMINAL NEARSIDE
CONST	CONTINUOUS	NTS	NOT TO SCALE
CJ	CONTROL/CONSTRUCTION JOINT		
CMU	CONCRETE MASONRY UNIT	OC	ON CENTER
CONT	CONTINUOUS	OD OF	OUTSIDE DIAMETER
CUFT CY	CUBIC FEET CUBIC YARDS	0F 0/0	OUTSIDE FACE OUT TO OUT
J 1	33513 1711103	OPNG	OPENING
DBL	DOUBLE	OPP	OPPOSITE
	DEGREE	PAF	POWDER ACTUATED FASTENE
DEMO DET	DEMOLITION DETAIL	PAF	PARALLEL PARALLEL
DF	DOUGLAS FIR LARCH	PC	PRECAST
	DIAGONAL	PERP	PERPENDICULAR
	DIAMETER	PL	PLATE POUNDS PER LINEAL FOOT
DIM DO	DIMENSION DITTO	PLF PLYWD	PLY WOOD
DN	DOWN		PREFABRICATED
	DEEP		POUNDS PER SQUARE FOOT
	DRAWING		POUNDS PER SQUARE INCH
DWL	DOWEL	PT PTR	POST TENSIONED PRESSURE TREATED
EA	EACH	FIIX	FILOSOIL IILAILD
EF	EACH FACE	QL	SEISMIC LOAD
EJ	EXPANSION JOINT	QTY	QUANTITY
H L	ELEVATION ELECTRICAL	RAD	RADIUS
	EMBEDDED, EMBEDMENT		REFERENCE
EQ	EQUAL	REINF	REINFORCEMENT, REINFORCI
	EQUIPMENT	DEOD	REINFORCED
	EACH SIDE EACH WAY	REQD	REQUIRED
	EXISTING	SCHED	SCHEDULE
EXP	EXPANSION	SECT SF	SECTION
EXT	EXTERIOR	SF SHT	SQUARE FOOT
FAB	FABRICATE	SHI SIM	SHEET SIMILAR
FDN	FOUNDATION	SOG	
FIN	FINISH	SPA	SPACING
FLG	FLANGE		SPECIFICATION(S)
FLR FS	FLOOR FARSIDE	SPF SO	SPRUCE PINE FIR SQUARE
FS FT	FARSIDE FOOT, FEET	SQ SS	STAINLESS STEEL
FTG	FOOTING	SS STD STIFF	STANDARD
0.	0.4.0.5	STIFF	STIFFENER
GA GAL	GALLON	STL STR	
GALV	GALLON GALVANIZED		STRUCTURAL
GC	GENERAL CONTRACTOR	SUP	SUPPORT
GEN	GENERAL	SYM	SYMMETRICAL
GLB	GLUE LAMINATED BEAM	SYP	SOUTHERN YELLOW PINE
GR GYP BD	GRADE GYPSUM BOARD	Т	TOP
טט ווי		T/	TOP OF
HC	HOLLOW CORE	T&B	TOP AND BOTTOM
HORIZ	HORIZONTAL	T&G	TONGUE AND GROOVE
HS HT	HIGH STRENGTH HEIGHT	TEMP THD	TEMPERATURE STEEL THREAD
HVY	HEAVY	THK	THICK
		THRU	THROUGH
ID	INSIDE DIAMETER	TOL	TOLERANCE
IF IN	INSIDE FACE INCH	TRANS TYP	TRANSVERSE TYPICAL
IN INFO	INCH INFORMATION	117	ITTIOAL
INT	INTERIOR	UN or UN	O UNLESS NOTED (OTHERWI
INV	INVERT		,
ICT	IOIOT	VERT	VERTICAL VERIEV IN FIELD
JST JT	JOIST JOINT	VIF	VERIFY IN FIELD
J I	JOINT	W/	WITH
	MDO	W/O	WITHOUT
K	KIPS		
KSF	KIPS PER SQUARE FOOT	WD	WOOD
			WOOD WORKPOINT WEIGHT



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

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 STRUCTURAL MEMBER, CONCRETE COVER, AND OC SPACING OF THE BARS

ARE DEFINED AS: BEAMS AND COLUMNS

 CASE 1: CONCRETE COVER AT LEAST 1.0d_b AND OC SPACING AT LEAST 2.0 d_h

 CASE 2: CONCRETE COVER LESS THAN 1.0db OR OC SPACING LESS THAN 2.0 d_h ALL OTHER ELEMENTS

 CASE 1: CONCRETE COVER AT LEAST 1.0d_b AND OC SPACING AT LEAST 3.0 d_h

 CASE 2: CONCRETE COVER LESS THAN 1.0d, OR OC SPACING LESS THAN 3.0 d_b TENSION LAP SPLICES OF #14 OR #18 [#43 OR #57] BARS ARE

NOT PERMITTED. THE TABLE VALUES FOR THOSE BAR SIZES

ARE TENSION DEVELOP LENGTHS. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES

[300 mm] OF CONCRETE CAST BELOW THE BARS.

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PROJECT

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

400 North High Street Columbus, OH 43215

CLIENT

FRANKLIN COUNTY **CONVENTION FACILITIES AUTHORITY**

400 North High Street, 4th Floor

Columbus, Ohio 43215

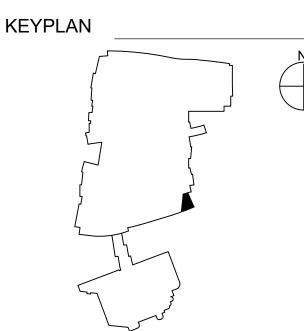
CONSULANTS

A00023-0265

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REGISTRATION





ISSUE / REVISION

1	12/04/2023	REVISION 1
#	Date	Description

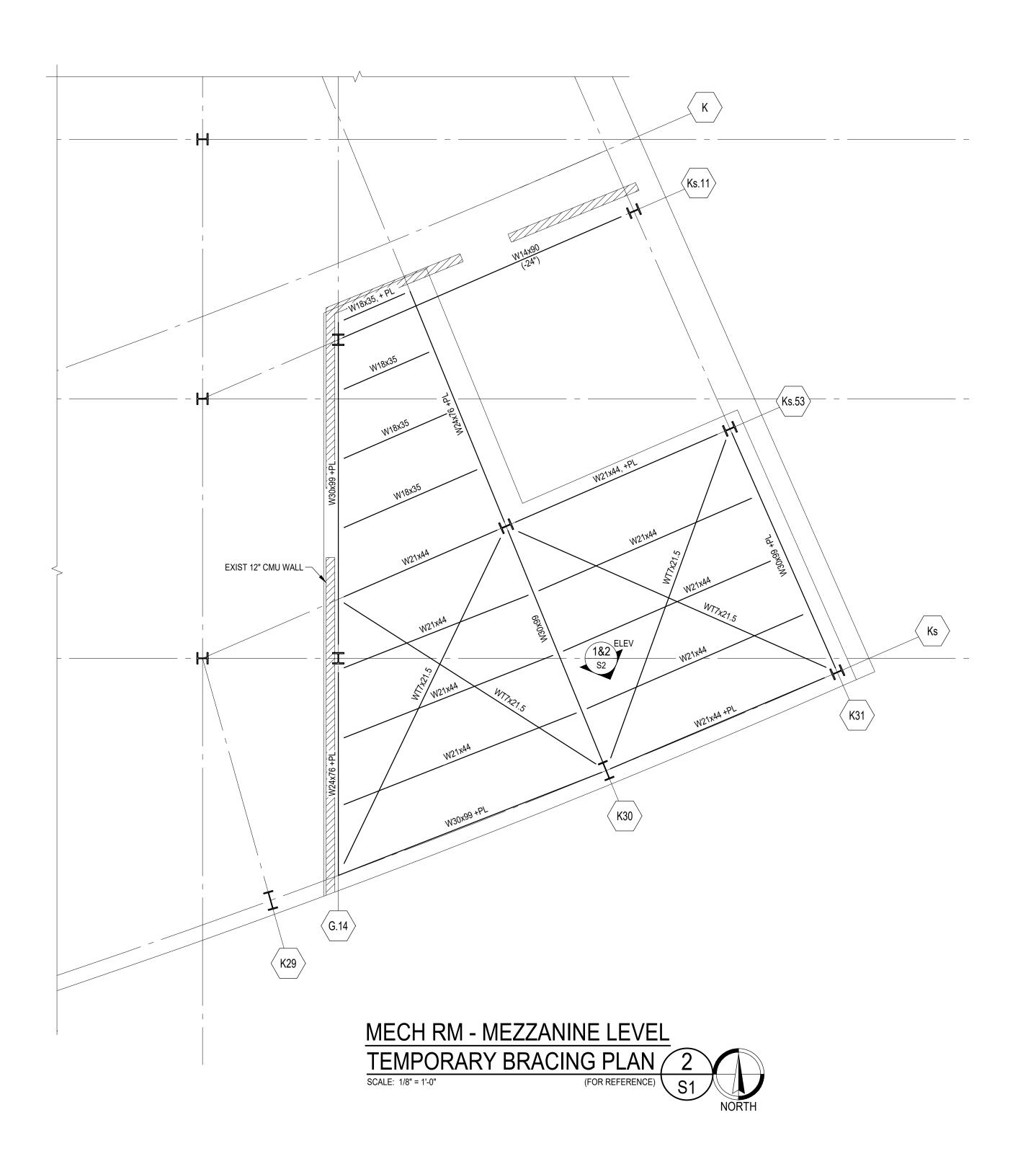
PROJECT NUMBER OCCC23

SHEET TITLE **GENERAL NOTES**



1. SEE SHEET S0 FOR GENERAL NOTES. 2. PROPOSED SEQUENCE OF DEMOLITION AND RECONSTRUCTION IS SHOWN ON SHEET S2. CONTRACTOR SHALL REVIEW THIS AND SUBMIT ANY PROPOSED DEVIATIONS TO THE ENGINEER FOR REVIEW AND APPROVAL.

- 3. TEMPORARY OPENINGS SHOWN ARE MINIMUM SIZE. CONTRACTOR IS RESPONSIBLE FOR REMOVING, SALVAGING AND REPLACING INSULATED METAL PANEL IN KIND. ANY LAPS IN THE METAL PANEL SHALL OCCUR OVER A W8 VERTICAL GIRT.
- 4. EXISTING HOUSEKEEPING PADS ARE LARGE ENOUGH TO SUPPORT BASIS OF DESIGN CHILLERS. IF DIFFERENT CHILLERS ARE SUBSTITUTED AND APPROVED, CONTRACTOR IS RESPONSIBLE TO ENLARGE THE HOUSEKEEPING PADS, AS REQUIRED, PER THE ENGINEERS



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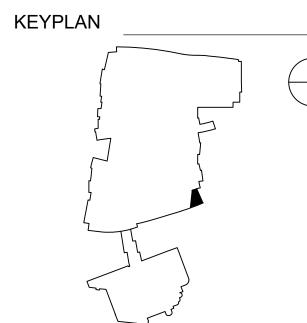
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CONSULANTS

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REGISTRATION





ISSUE / REVISION

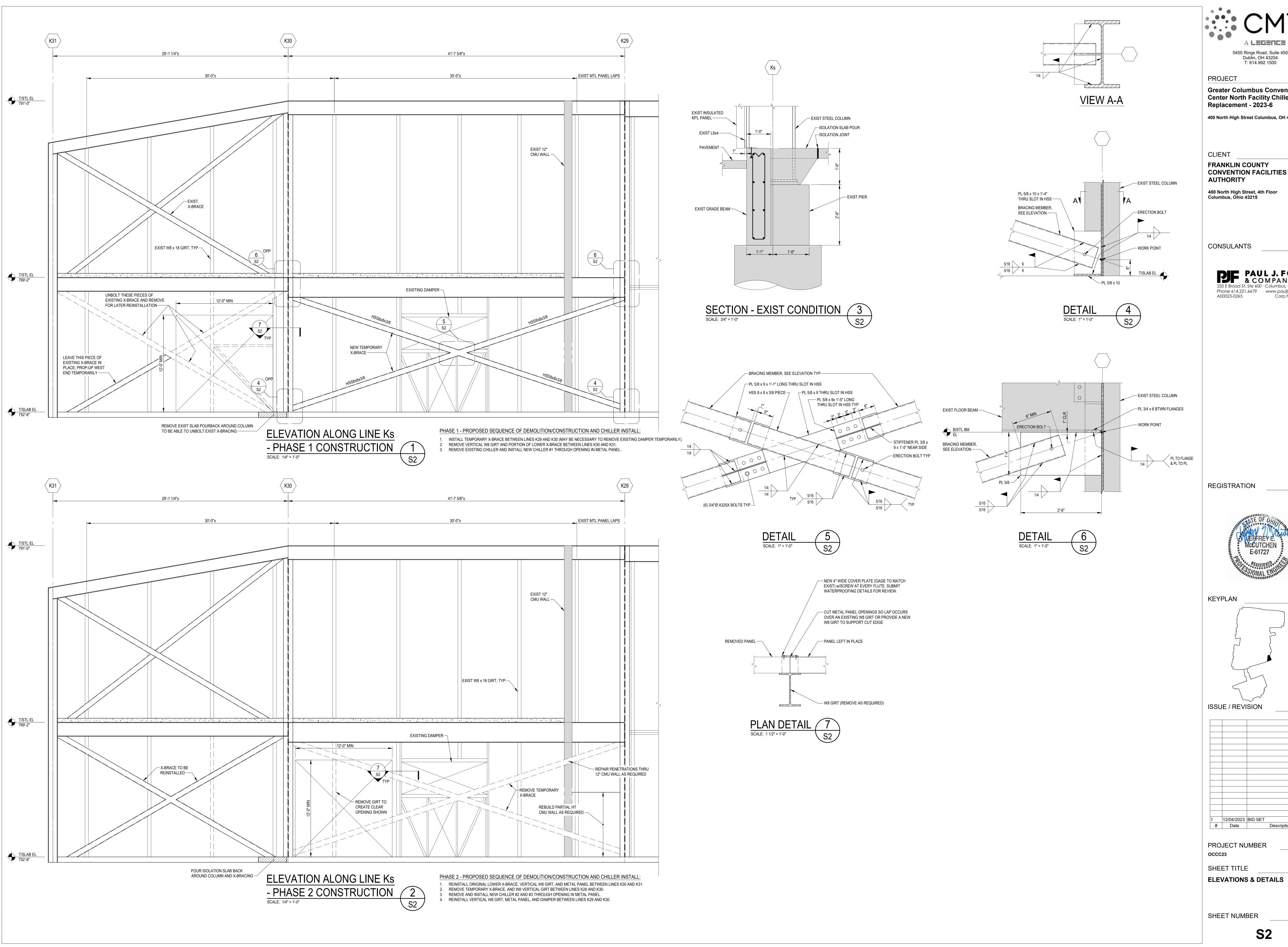
1 12/04/2023 BID SET
Date Description

PROJECT NUMBER

SHEET TITLE

OCCC23

TEMPORARY BRACING PLANS



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

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AUTHORITY

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REGISTRATION



PROJECT NUMBER

ELEVATIONS & DETAILS