

DEE EVENTS CENTER WEBER STATE UNIVERSITY

DFCM PROJECT NUMBER - 10225810



State of Utah—Department of Administrative Services
**DIVISION OF FACILITIES CONSTRUCTION
 AND MANAGEMENT**
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DRAWINGS

- C001 COVER SHEET
- M001 MECHANICAL LEGEND & ABBREVIATIONS
- M100D MECHANICAL ROOM DEMOLITION PLAN
- M100 MECHANICAL ROOM NEW PLAN
- M101 MECHANICAL COOLING TOWER ROOM DEMOLITION & NEW PLAN
- M201 PIPING SCHEMATICS
- M501 MECHANICAL & PLUMBING DETAILS
- M601 MECHANICAL & PLUMBING SCHEDULES
- M701 CONTROL DIAGRAM

ELECTRICAL ENGINEER

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 PHONE: 801.521.8007 FAX: 801.328.2802

DRAWINGS

- E001 GENERAL NOTES, DETAILS AND SCHEDULES
- E002 PANEL SCHEDULES
- E100 MECHANICAL ROOM DEMO AND NEW PLAN - ELECTRICAL
- E101 MECHANICAL ROOM DEMO AND NEW PLAN - ELECTRICAL

REVISIONS:		
NO.	DATE	DESC.

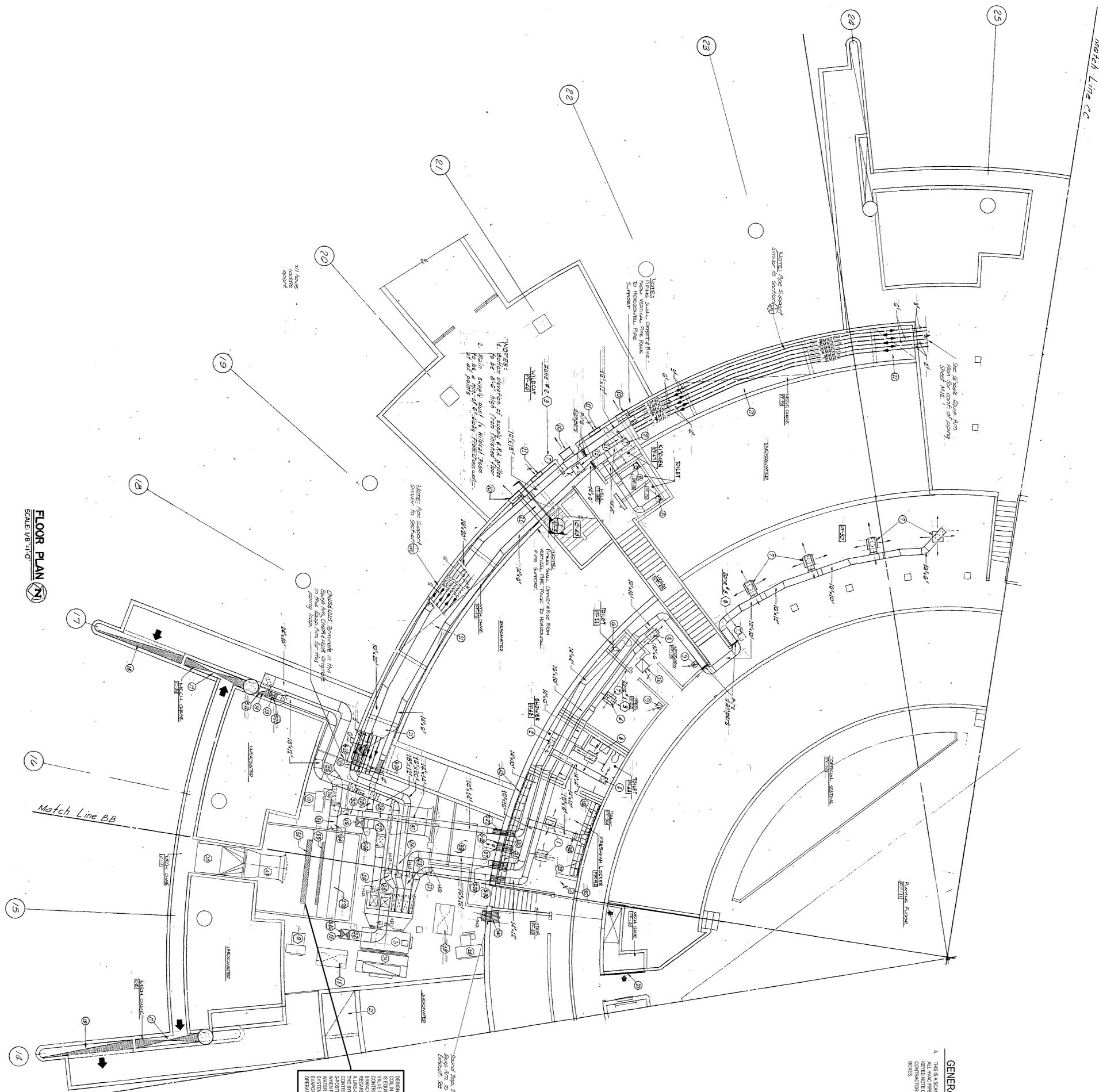
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DATE: 08-22-2011
 SCALE: AS SHOWN
 DRAWN: JAM
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 JOB NO.: 2010-055-00
 FILE NAME: ...

SHEET TITLE
 COVER SHEET

SHEET NO.
 C001



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

GENERAL NOTES
 A. THIS IS A GENERAL ARRANGEMENT DRAWING FOR THE BUILDING. THE EXACT LOCATION OF EQUIPMENT AND THE EXACT CONSTRUCTION SHALL COMPLY WITH THE NEW NOTES IN THE TEXT BOXES.

DESIGN FLOW OF EXISTING CHILLED WATER COIL IN AIR HANDLER IS 364 GPM. THIS COIL IS EQUIPPED WITH AN EXISTING 3WAY CONTROL VALVE. SO FLOW THROUGH THIS BRANCH SHOULD ALWAYS BE 364 GPM. THE LINE SIZE 3WAY MODULATING CONTROL IN THE PRESSURE LINE OF THE EXISTING 3WAY CONTROL VALVE SHOULD BE 1/2" NPT. WHEN FLOW BETWEEN INCHES TOTAL CHILLED WATER FLOW THROUGH THE CHILLER COMPARTMENTS FOR THE NUMBER OF CHILLERS OPERATING. DESIGN FLOW SHALL BE 364 GPM.

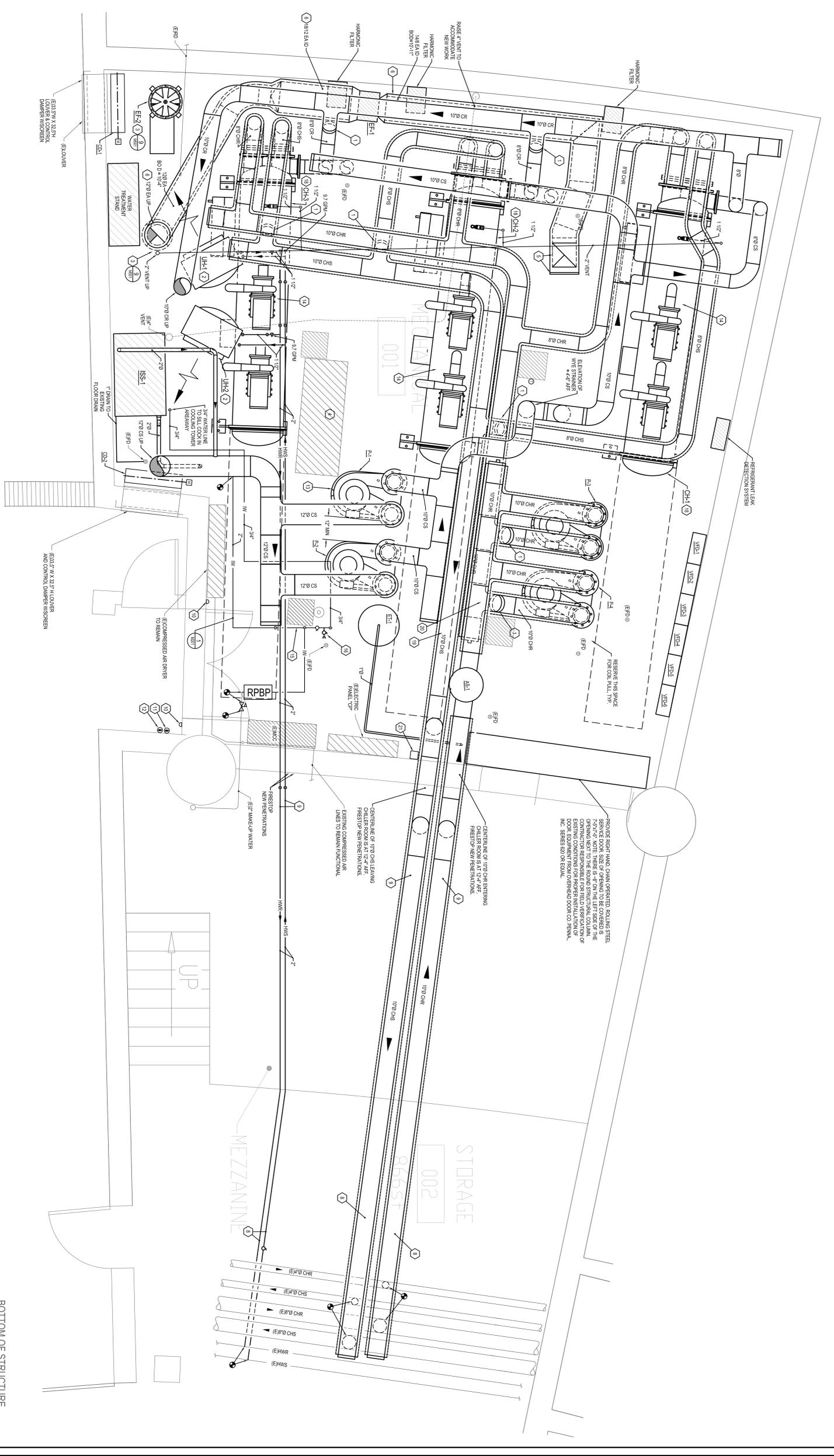
Sound Test Sample taken at 10:00 AM on 08-12-2011. Excavator see sheet M-4.

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 SHEET NO. M402
 SHEET TITLE: SOUTHWEST QUADRANT



1 MECHANICAL ROOM PLAN
SCALE: 1/2" = 1'-0"

FIRE SPRINKLER GENERAL NOTES

1. FIRE SPRINKLER WANG RUN IN THE SOUTH SIDE OF THE CHILLER ROOM AND ARE TO REMAIN IN THEIR EXISTING CONDITIONS.
2. FIRE SPRINKLER BRANCHES IN THE ROOM ARE TO BE RELOCATED AS NECESSARY TO ACCOMMODATE NEW WORK.

GENERAL NOTES

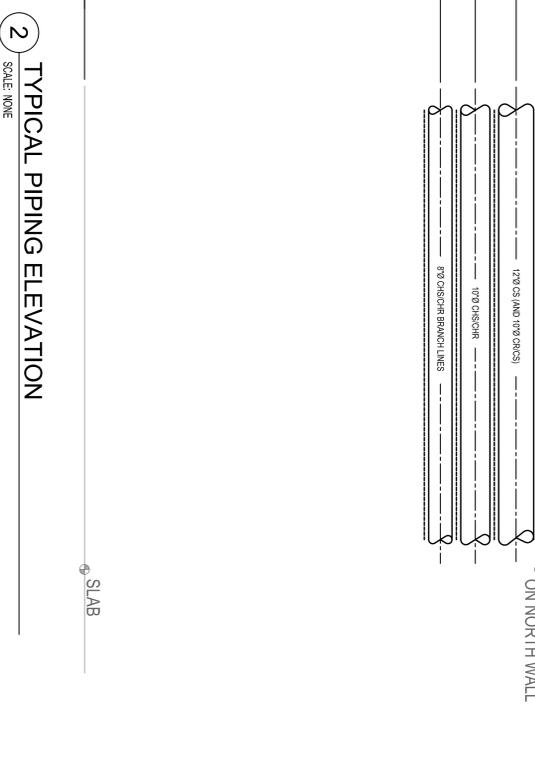
- A. REMOVE WALKIE HANDLES FROM BATTERY VALVES USED FOR BALANCING PURPOSES AFTER ALL BALANCE WORK IS COMPLETE AND RETURN WALKIE HANDLES TO RSU.
- B. INSTALL CHILLERS CHILLER HANDMADE FILTERS, PUMPS, IN-TANK SIZES SEPARATOR, VPS AND EXPANSION TANK ON THE EQUIPMENT BY IN ALL DIRECTIONS.

KEYED NOTES

1. ABLE AT 40' TO ALLOW HOISTING BENEATH NEIGHBORING PIPE.
2. TOP OF UNIT HANGERS SHALL BE INSTALLED AT 10'-0" ABOVE FINISHED FLOOR. PREP-DRAW DETAIL 11/20 SHEET 1401.
3. SEE GENERAL AND EMERGENCY EXHAUST DETAIL ON SHEET 1401.
4. EXISTING AIR COMPRESSOR AND PIPING REMAIN OPERATIONAL.
5. CAP END OF DUCT AND CUT 4" X 4" OPENING IN TOP OF DUCT DUCT LINED WITH 1 1/2" URETH.
6. CENTRAL AIR DUCT IS AT 12'-0" ABOVE FINISHED FLOOR.
7. CONTRACTOR RESPONSIBLE FOR CUT, PATCH, REPAIR, AND PAINTING TO MATCH EXISTING PIPE TUNNEL ENCLOSURE.
8. CONTRACTOR RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS. NEW WORK MUST BE UP AS HIGH AS POSSIBLE TO AVOID FIELD CONDITIONS. NEW WORK SHALL BE INSTALLED OVER THE TOP OF EXISTING PIPES. CONTRACTOR SHALL INSTALL PIPING AS HIGH AS POSSIBLE (MINIMUM 8'-0" TO 15'-0" AFF). INSTALL REFRIGERANT LEAK DETECTOR REMOVE ABOVE REFRIGERANT ALARM AT THIS LOCATION, 7'-0" ABOVE FINISHED FLOOR.
9. REMOVE WATER RESISTANT BREAK GLASS SWITCH TO SIGN FASTENED TO WALL WITH SCREWS.
10. REMOVE WATER RESISTANT BREAK GLASS SWITCH TO SIGN FASTENED TO WALL WITH SCREWS.
11. REMOVE WATER RESISTANT BREAK GLASS SWITCH TO SIGN FASTENED TO WALL WITH SCREWS.
12. REMOVE WATER RESISTANT BREAK GLASS SWITCH TO SIGN FASTENED TO WALL WITH SCREWS.
13. LOCATE EDGE OF NEW PUMP P1 IN THIS LOCATION AS CLOSE TO EXISTING AIR COMPRESSOR AS POSSIBLE.
14. DO NOT ROUTE PIPING ABOVE COMPRESSORS OR CHILLERS.
15. INSTALL COMPRESSOR WATER MAKEUP VALVE MANUAL ISOLATION VALVE, AND MANUAL DRAIN VALVE AT 4'-0" ABOVE FLOOR AGAINST COLUMN.
16. 3/4" WATER LINE TO SILL COCK IN COOLING TOWER ASSEMBLY. PROVIDE MANUAL BALL VALVE AND DRAIN VALVE WITH HOSE AND REPAIR COMPRESSOR WATER MAIN.
17. INSTALL REDUCED PRESSURE BACKFLOW PREVENTER IN EXISTING 2" WATER LINE TO COOLING TOWER.
18. CONTRACTOR IS RESPONSIBLE FOR MOVING OWNER FINISHED CHANGES CHILLER PLANT TO THE LOCATION SHOWN ON THESE DRAWINGS. CONTRACTOR'S BID PRICE SHALL INCLUDE MOVING THE SAME FROM WORKMENT SERVICE ON CHILLERS AS SHOWN ON THESE DRAWINGS. CONTRACTOR SHALL VERIFY WORK PERFORMED AS PART OF THE PROJECT.
19. INSTALL ROOM/TEMPERATURE SENSOR FOR RPU/ENTER IN STRAIGHT PIPE.
20. INSTALL TEMPERATURE SENSOR FOR SHUTTER IN COMMON PIPE.
21. INSTALL RTU WATER DRAIN ON WALL AT 4'-0" ABOVE FLOOR.



REMOVE RIGHT HAND CHAIN OPERATED ROLLING STEEL SERVICE DOOR. SIZE OF OPENING TO BE COVERED IS 7'-5 1/2" X 2". NOTE: THERE IS A 4" ON THE LEFT SIDE OF THE OPENING. CONTRACTOR RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITIONS FOR PROPER INSTALLATION OF DOOR. EQUIPMENT FROM OVERHEAD DOOR CO. DENVER, CO. SERIAL 100-015344.



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DATE: 08-12-2011
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SHEET TITLE
MECHANICAL ROOM PLAN

SHEET NO.
M100

DRAWING INDEX

SHEET NUMBER	SHEET TITLE
0001	COVER SHEET
M001	MECHANICAL LEGEND & ABBREVIATIONS
M000	MECHANICAL ROOM RENOVATION PLAN
M000	MECHANICAL ROOM NEW PLAN
M011	MECHANICAL COOLING TOWER ROOM RENOVATION & NEW PLAN
M020	Piping SCHEDULES
M001	MECHANICAL & PLUMBING DETAILS
M001	MECHANICAL & PLUMBING SCHEDULES
M011	CONTROL DIAGRAM

ABBREVIATIONS

#	ROUND OR DIAMETER
AD	ACCESS DOOR
AF	ABRILL
AFT	ABOVE FINISHED FLOOR
ALT	ALTERNATE
BI	BAROMETRIC INCHES
BOD	BOTTOM OF DUCT
BTU/H	BRITISH THERMAL UNITS PER HOUR
CA	CAPACITY
CFM	CUBIC FEET PER MINUTE
CV	CONSTANT VOLUME
DB	DRY BULB
DN	DOWN
DM	DIMETER
DWA	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHW	DOMESTIC HOT WATER COND.
DWC	DOWN SPOUT NOZZLE
DSN	DISHWASHER
EW	EXHAUST
EA	EXHAUST AIR
EAT	EXHAUST AIR TEMPERATURE
EFT	EFFECTENCY
ELEV	ELEVATION
ENCL	ENCLOSURE
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EMC	ELECTRIC WATER COOLER
ENT	ENTERING WATER TEMPERATURE
F00	FLOOR CLEANOUT
FD	FLOOR DRAIN
FM	FLOOR FINISH
FPM	FEET PER MINUTE
FS	FLOOR SINK
FT	FEET
FV	FACE VELOCITY
GA	GAUGE
GAL	GALLON
GD	GARAGE DRAIN
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HR	HOOR
HT	HEIGHT
IN	INCH
INHC	INCHES OF WATER COLUMN
INWG	INCHES OF WATER GAUGE
L	LAVATORY OR LOOSEN
LAT	LEAVING AIR TEMPERATURE
LES	LEAKS
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBSH	THOUSAND BRITISH THERMAL UNITS/HOUR
MCH	MECHANICAL
MIN	MINIMUM
NC	NOSE CENTER OR NORMALLY CLOSED
NC	NOT IN CONTACT
NO	NUMBER
NOM	NOMINAL
NIS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OD	OVERFLOW DRAIN
OFI	OWNER FINISHED CONTRACTOR INSTALLED
OFI	OWNER FINISHED, OWNER INSTALLED
PD	PRESSURE DROP
PDC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RAO	RADIUS
RD	ROOF DRAIN
RPP	REDUCED PRESSURE BACKFLOW PREVENTER
SA	SUPPLY AIR
SEN	SENSIBLE
SN	SMALL
SL	SEA LEVEL
SP	STATIC PRESSURE
SQ FT	SQUARE FEET
SS	SERVICE SINK OR STAINLESS STEEL
TDD	TOP OF DUCT
TSP	TOTAL STATIC PRESSURE
U	TYPICAL
V	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VTR	VENT THROUGH ROOF
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER CLOSET
MAD	MANUAL VOLUME DAMPER
WOD	WALL CLEANOUT
WPD	WATER PRESSURE DROP
WT	WEIGHT

MECHANICAL LEGEND

NOTE: ALL ITEMS MAY NOT APPEAR ON DRAWINGS

CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
CS	GROUND LOOP SUPPLY
CR	GROUND LOOP RETURN
CS	HEATING WATER SUPPLY
CHR	HEATING WATER RETURN
FRS	RADIANT FLOOR SUPPLY
FRR	RADIANT FLOOR RETURN
SNR	SNOW MELT SUPPLY
SNR	SNOW MELT RETURN
SS	STEAM
SSR	STEAM CONDENSATE RETURN
WT	WATER TREATMENT
FS	FUEL OIL SUPPLY
FR	FUEL OIL RETURN
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
HS	HOT GAS
HBP	HOT GAS BYPASS
V	VACUUM
VA	VENTILATOR
O2	OXYGEN
N2	NITROGEN
N	NITROGEN
H	HYDROGEN
HE	HELIUM
CO2	CARBON DIOXIDE
AR	ARGON
DU	DUCT SIZE (IN), FIRST FIGURE IS SIDE SLOPE
UB	BARRED OR UNDERLOOR DUCT
AD	DUCT W/ ACUSTICAL LINING
FD	FLEXIBLE DUCT (FELICA)
SP	SPRAY FITTING W/ AIR
FC	FLEXIBLE DUCT CONNECTION
SD	SPRAY SCOT DIFFUSER
DF	SPRAY DIFFUSER
RG	RETURN GRILLE
RS	RADIANT SUPPLY DIFFUSERS
RS	RETURN AIR DUCT SECTION
RS	RETURN AIR DUCT UP
RS	RETURN AIR DUCT DOWN
RS	SPRAY AIR DUCT SECTION
RS	SPRAY AIR DUCT UP
RS	SPRAY AIR DUCT DOWN
RS	EXHAUST AIR DUCT SECTION
RS	EXHAUST AIR DUCT UP
RS	EXHAUST AIR DUCT DOWN
RS	ACCESS PANEL
RS	MANUAL VOLUME DAMPER
RS	GRANITY BACKCSETT DAMPER
RS	MOTORIZED DAMPER
RS	AIR FLOW STATION
RS	FIRE DAMPER
RS	SAME DAMPER
RS	COMBINATION FIRE/SMOKE DAMPER
RS	DUCT TRANSITION
RS	ELBOW W/ TURNING VANES
RS	TEE W/ 45° ENTRY
RS	TEE W/ 45° ENTRY
RS	THROUGHT OR TEEP SENSOR
RS	HUMIDISTAT OR HUMIDITY SENSOR
RS	CARBON MONOXIDE SENSOR
RS	CARBON DIOXIDE SENSOR
RS	NITROGEN DIOXIDE SENSOR
RS	POINT OF REMOVAL FROM EXISTING
RS	POINT OF CONNECTION TO EXISTING
RS	DETAIL TAG
RS	KEYED NOTE
RS	SECTION NO.
RS	DRAWING NO.
RS	SECTION CUT LINE

REVISIONS:

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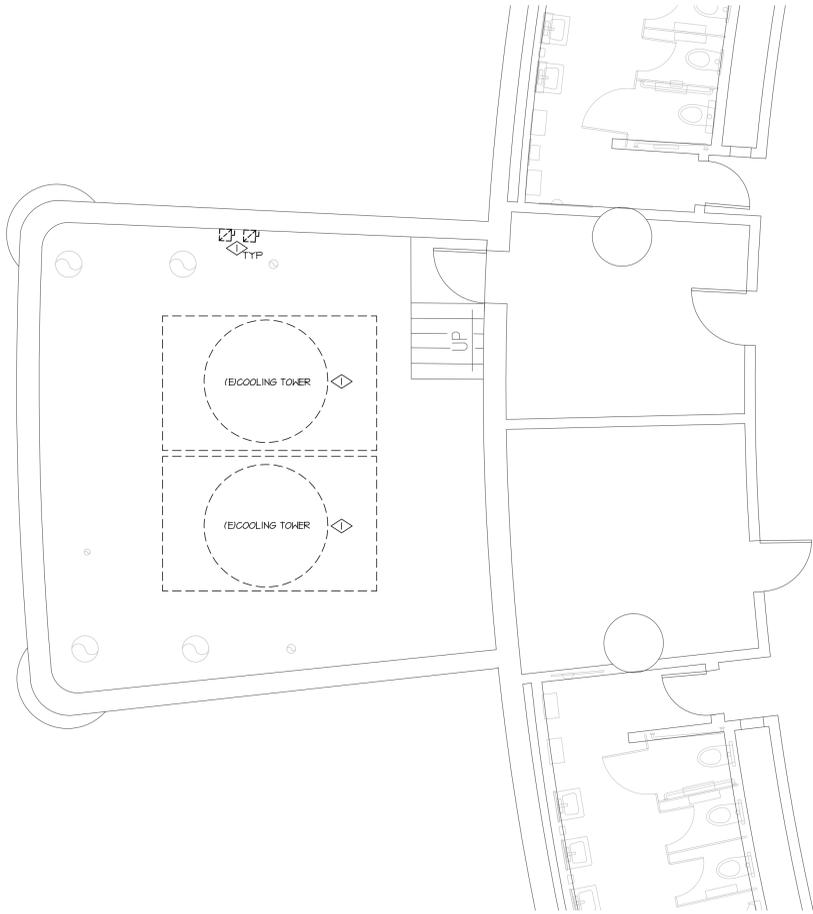
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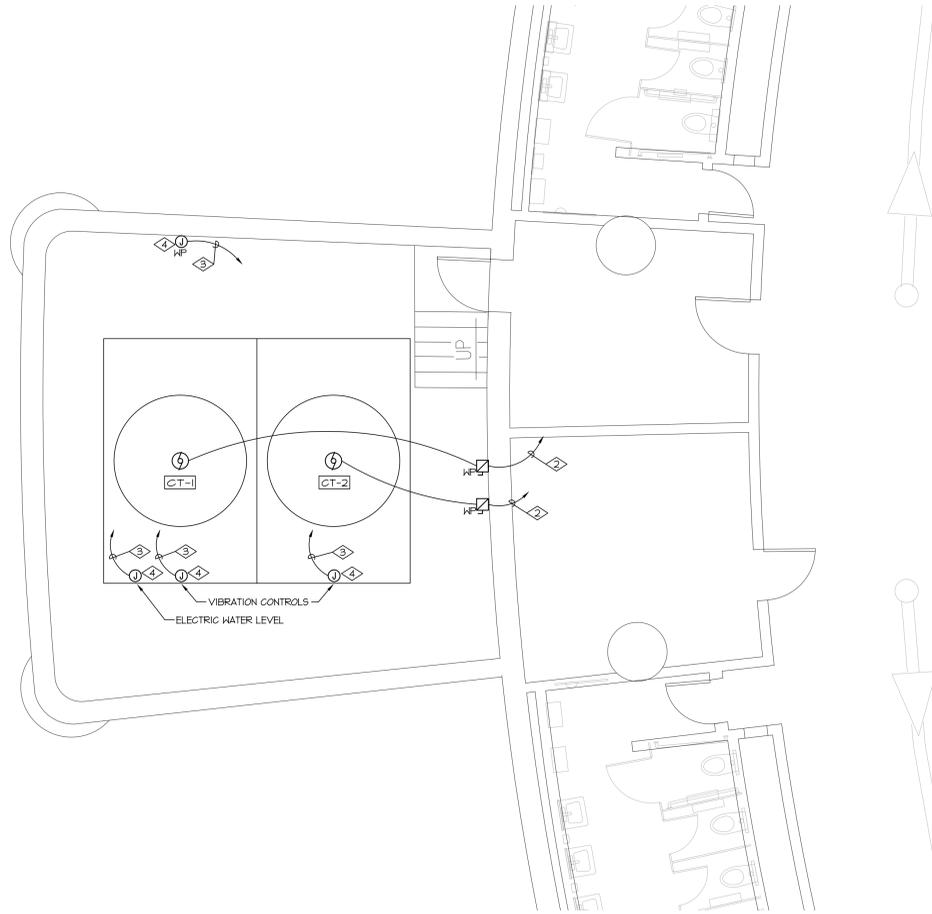
SHEET TITLE
MECHANICAL LEGEND & ABBREVIATIONS

SHEET NO.
M001

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COOLING PLAN MECHANICAL DEMOLITION PLAN - ELECTRICAL
SCALE: 1/4" = 1'-0"



COOLING TOWER MECHANICAL PLAN - ELECTRICAL
SCALE: 1/4" = 1'-0"

- REFERENCE NOTES:**
- ◇ EXISTING MECHANICAL EQUIPMENT SHALL BE REMOVED BY THE MECHANICAL CONTRACTOR. REMOVE THE ASSOCIATED CONDUIT, CONDUCTORS, ETC. ALL THE WAY TO SOURCE. COORDINATE TIMING OF REMOVAL WITH THE MECHANICAL CONTRACTOR.
 - ◇ TIE THE NEW COOLING TOWER TO THE VFD BELOW. TIE THE INTERLOCK TO THE VFD SAFETY TERMINALS. UTILIZE #2 AWG IN A SEPARATE 3/4" CONDUIT FOR INTERLOCK.
 - ◇ TIE TO A SPARE 20A, 1-POLE CIRCUIT BREAKER IN THE EXISTING PANEL "A". PROVIDE CONDUIT, CONDUCTORS, J-BOXES, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION.
 - ◇ FURNISH AND INSTALL J-BOXES IN THE APPROXIMATE LOCATION SHOWN FOR CONTROLS POWER. COORDINATE THE EXACT LOCATION WITH CONTROLS CONTRACTOR.

NO.	DATE	REVISIONS, DESC.

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SHEET TITLE
MECHANICAL COOLING TOWER ROOM DEMO AND NEW PLAN - ELECTRICAL

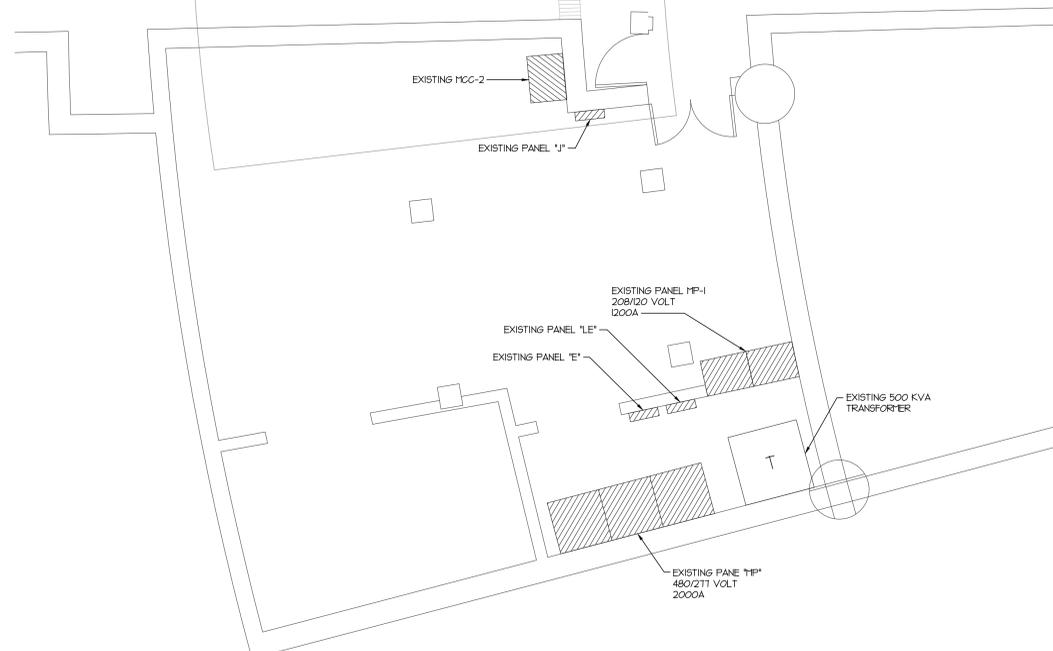
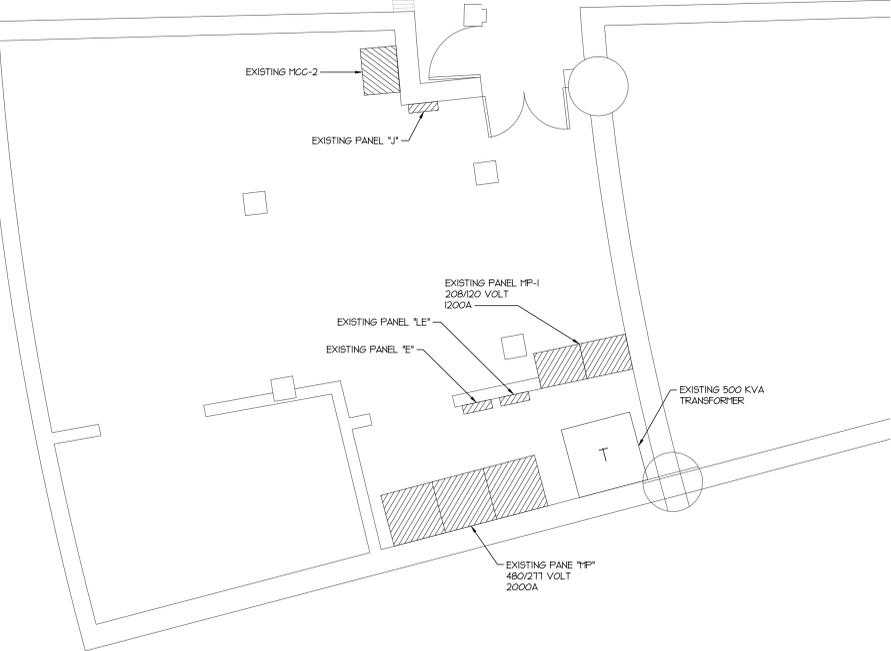
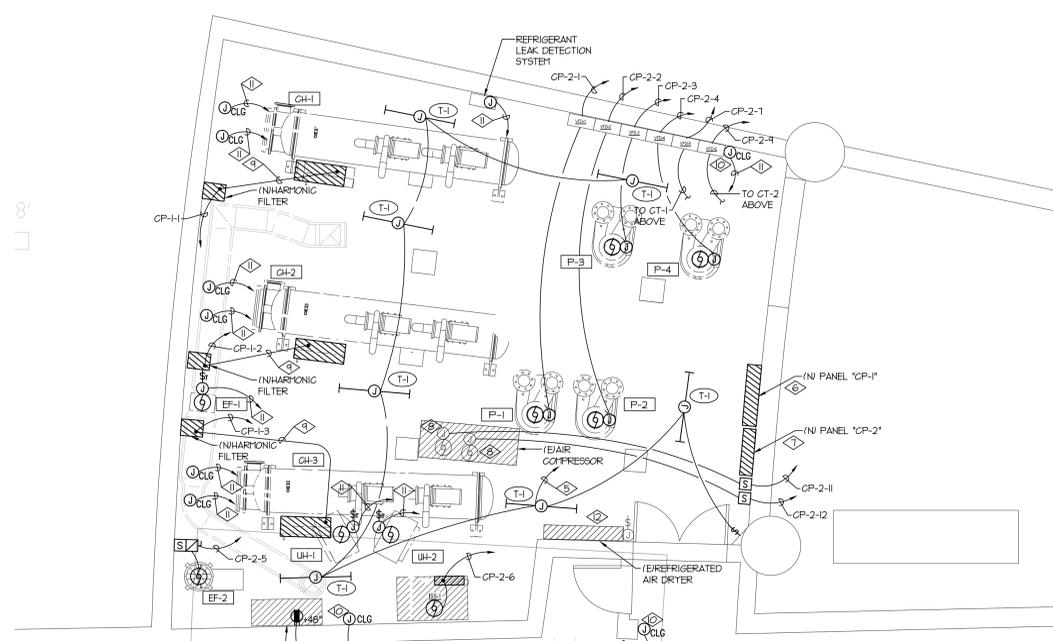
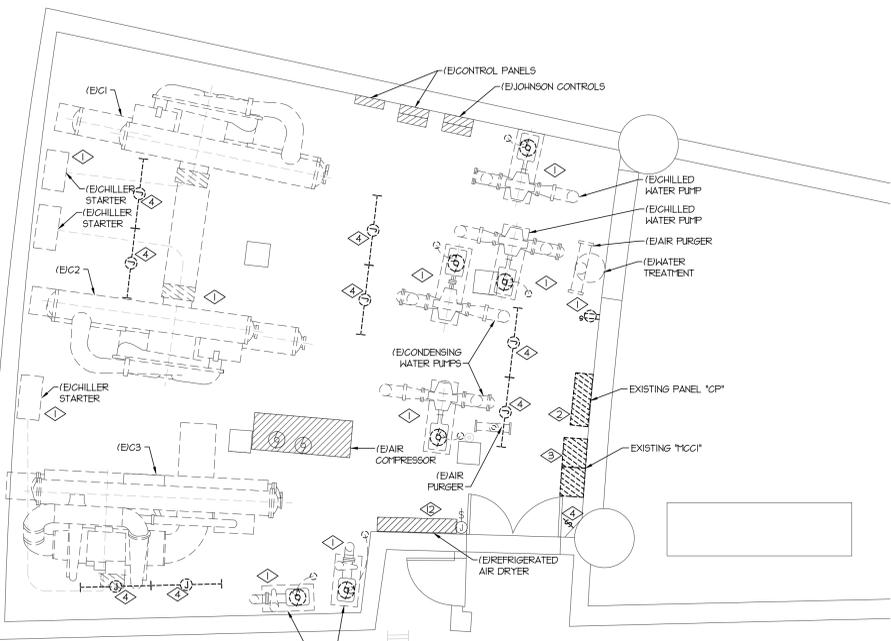
SHEET NO.
E101



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- REFERENCE NOTES:**
- 1. EXISTING MECHANICAL EQUIPMENT SHALL BE REMOVED BY THE MECHANICAL CONTRACTOR. REMOVE THE ASSOCIATED CONDUIT, CONDUCTORS, DISCONNECTS, STARTERS, ETC. ALL THE WAY TO SOURCE. COORDINATE TYPING OF REMOVAL WITH THE MECHANICAL CONTRACTOR.
 - 2. REMOVE EXISTING PANEL CP. UTILIZE THE EXISTING CONDUIT AND CONDUCTORS AS POSSIBLE.
 - 3. REMOVE THE EXISTING MCC-1. REMOVE THE ASSOCIATED CONDUIT AND CONDUCTORS BACK TO SOURCE. TRANSFER THE FEEDS TO THE TWO AIR COMPRESSOR CIRCUITS TO THE NEW CIRCUITS IN PANEL "CP-2". UTILIZE THE EXISTING CONDUIT AND CONDUCTORS AS POSSIBLE FOR THE AIR COMPRESSOR.
 - 4. REMOVE EXISTING LIGHT FIXTURE, LIGHT SWITCH, ASSOCIATED CONDUIT AND CONDUCTORS ALL THE WAY BACK TO NEAREST J-BOX. UTILIZE EXISTING LIGHTING CIRCUIT FOR NEW LIGHT FIXTURES.
 - 5. TIE THE NEW LIGHT FIXTURES TO THE EXISTING LIGHTING CIRCUIT IN THE ROOM THROUGH NEW LIGHT SWITCH.
 - 6. FURNISH AND INSTALL NEW PANEL "CP-1" IN THE APPROXIMATE LOCATION SHOWN. TIE TO THE EXISTING 800A CIRCUIT BREAKER IN EXISTING PANEL "HP". UTILIZE THE EXISTING CONDUIT AND CONDUCTORS AS POSSIBLE. REFER TO THE PARTIAL POWER SINGLE LINE DIAGRAM AND PANEL SCHEDULES FOR MORE INFORMATION.
 - 7. FURNISH AND INSTALL NEW PANEL "CP-2" IN THE APPROXIMATE LOCATION SHOWN. TIE TO THE EXISTING 225A, 3-POLE CIRCUIT BREAKER IN EXISTING PANEL "HP". UTILIZE THE EXISTING CONDUIT AS POSSIBLE. PROVIDE ADDITIONAL CONDUIT CONDUCTORS AS REQUIRED FOR A COMPLETE INSTALLATION.
 - 8. TIE THE EXISTING AIR COMPRESSOR TO NEW CIRCUITS INDICATED THROUGH NEW STARTERS INSTALLED AS SHOWN. UTILIZE THE EXISTING CONDUIT AND CONDUCTORS AS POSSIBLE. PROVIDE ADDITIONAL CONDUIT, CONDUCTORS, STARTERS, ETC., AS REQUIRED.
 - 9. TIE THE NEW CHILLER TO THE NEW HARMONIC FILTER. REFER TO THE MECHANICAL EQUIPMENT SCHEDULE FOR MORE INFORMATION.
 - 10. FURNISH AND INSTALL A J-BOX AT THE CEILING DECK FOR CONTROLS POWER IN THE APPROXIMATE LOCATION SHOWN. COORDINATE THE EXACT LOCATION WITH CONTROLS CONTRACTOR.
 - 11. TIE TO A SPARE 20A, 1-POLE CIRCUIT BREAKER IN THE EXISTING PANEL "J". PROVIDE CONDUIT, CONDUCTORS, J-BOXES, ETC., AS REQUIRED FOR A COMPLETE INSTALLATION.
 - 12. THE EXISTING COMPRESSED AIR DRYER SHALL REMAIN. MAKE ANY MODIFICATIONS REQUIRED TO MAINTAIN CIRCUIT INTEGRITY.



MECHANICAL ROOM DEMOLITION PLAN - ELECTRICAL
SCALE: 1/4" = 1'-0"

MECHANICAL ROOM PLAN - ELECTRICAL
SCALE: 1/4" = 1'-0"

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SHEET TITLE
 MECHANICAL ROOM DEMO AND NEW PLAN - ELECTRICAL

SHEET NO.
 E100

LIGHTING FIXTURE SCHEDULE				
SYMBOL	DESCRIPTION	LAMPS	APPROVED MANUFACTURERS	CATALOG NUMBER
(T1)	4' FLUORESCENT STRIP LIGHT FIXTURE, CHAIN HUNG WITH WIRE GUARD.	2F28 T8	LITHONIA COLUMBIA METALIX LIGHTOLIER HE HILLIARYS DAY BRITE	C 2 32 1VOLT ADOFRL H6QJN 14C36 C54-232-EPL4J-C5H64-C5H4 55-252-UNV-ERB1 / H6/55-4FT / ATC-CHAIN SH45232HFF-UNV-HI / AH63KCSF / AH5CSP T232-UNV-IQ-EBIOR-.18-C64-FK126

- NOTES:
- ALL FLUORESCENT LIGHTS SHALL HAVE ELECTRONIC PROGRAM START BALLASTS WITH .18 BALLAST FACTOR. BALLASTS TO HAVE 5 YEAR WARRANTY.
 - ALL FLUORESCENT LAMPS SHALL HAVE 4100° COLOR TEMPERATURE UNLESS INDICATED OTHERWISE.
 - CONTRACTOR TO VERIFY ALL LIGHTING VOLTAGES PRIOR TO RELEASE OF THE LIGHT FIXTURES.
 - THE WRITTEN CRITERIA OF THE FIXTURE DESCRIPTION TAKES PRECEDENCE OVER THE CATALOG NUMBER.
 - ALL LED LIGHT FIXTURES SHALL HAVE 5 YEARS WARRANTY WITH 1 YEAR PARTS AND LABOR.

DISCONNECTS/CIRCUIT BREAKER SYMBOL LIST	
SYMBOL	DESCRIPTION
□	NON FUSED DISCONNECT SWITCH - SIZE AS REQUIRED
⊞	FUSED DISCONNECT SWITCH - SIZE AS REQUIRED
S	STARTER DISCONNECT SWITCH - SIZE AS REQUIRED
⊞S	COMBINATION STARTER/FUSED DISCONNECT SWITCH - SIZE AS REQUIRED
⊞	MOTOR LOCATION
⊞⊞	ELECTRICAL PANEL LOCATION

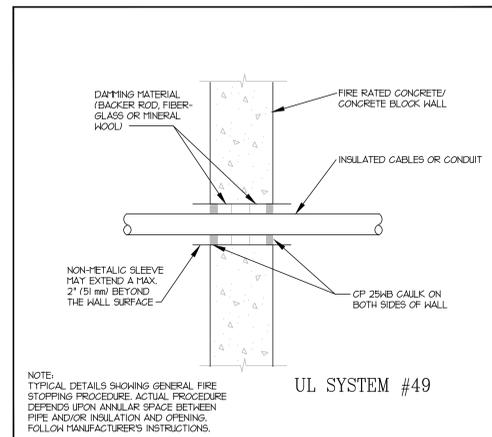
LIGHTING SYSTEMS SYMBOL LIST	
SYMBOL	DESCRIPTION
⊞	FLUORESCENT STRIP LIGHT FIXTURE

SWITCHES SYMBOL LIST	
SYMBOL	DESCRIPTION
⊞	SINGLE POLE TOGGLE SWITCH - 20 AMP
⊞r	MANUAL DISCONNECT WITH THERMAL OVERLOAD PROTECTION

CALLOUT SYMBOL LIST	
SYMBOL	DESCRIPTION
(T-X)	LIGHTING FIXTURE CALLOUT NUMBER INDICATES A SUGGESTED QUANTITY - TO BE VERIFIED
XX-X	MECHANICAL EQUIPMENT CALLOUT
⊞	REFERENCE NOTE CALLOUT

ABBREVIATIONS SYMBOL LIST	
SYMBOL	DESCRIPTION
WP	INDICATES WEATHER PROOF EQUIPMENT
MLO	MAIN LUG ONLY
MCB	MAIN CIRCUIT BREAKER
(E)	INDICATES EXISTING EQUIPMENT
(N)	INDICATES NEW EQUIPMENT

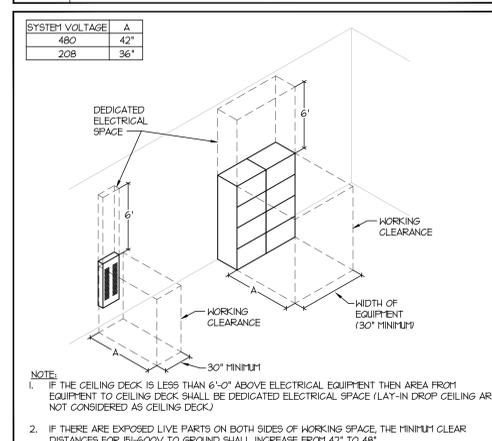
RECEPTACLES SYMBOL LIST	
SYMBOL	DESCRIPTION
⊞	DUPLEX CONVENIENCE OUTLET - 20 AMP
⊞	JUNCTION BOX - SIZE AND FUNCTION AS REQUIRED



NOTE: TYPICAL DETAILS SHOWING GENERAL FIRE STOPPING PROCEDURE. ACTUAL PROCEDURE DEPENDS UPON ANNULAR SPACE BETWEEN PIPE AND/OR INSULATION AND OPENING. FOLLOW MANUFACTURER'S INSTRUCTIONS.

SCALE: N.T.S.

UL SYSTEM #49

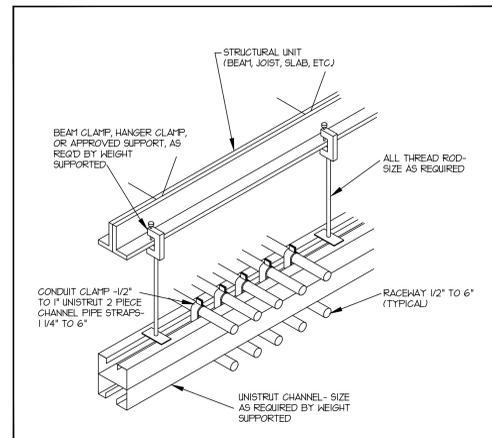


NOTE: 1. IF THE CEILING DECK IS LESS THAN 6"-0" ABOVE ELECTRICAL EQUIPMENT THEN AREA FROM EQUIPMENT TO CEILING DECK SHALL BE DEDICATED ELECTRICAL SPACE (LAY-IN DROP CEILING ARE NOT CONSIDERED AS CEILING DECK).

2. IF THERE ARE EXPOSED LIVE PARTS ON BOTH SIDES OF WORKING SPACE, THE MINIMUM CLEAR DISTANCES FOR 60-600V TO GROUND SHALL INCREASE FROM 42" TO 48".

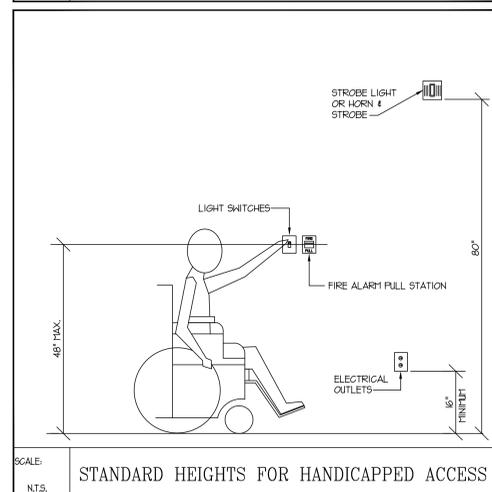
SCALE: N.T.S.

TYPICAL PANELBOARD CLEARANCE REQUIREMENTS



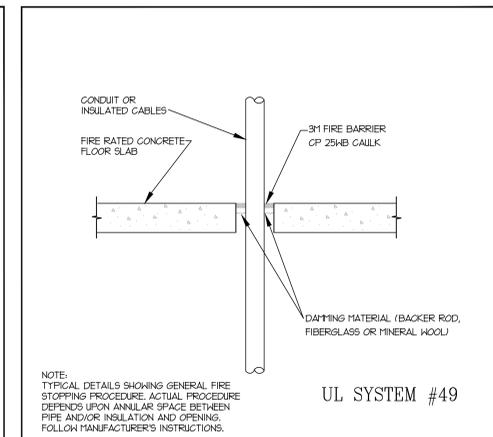
SCALE: N.T.S.

TYPICAL CONDUIT RACK DETAIL



SCALE: N.T.S.

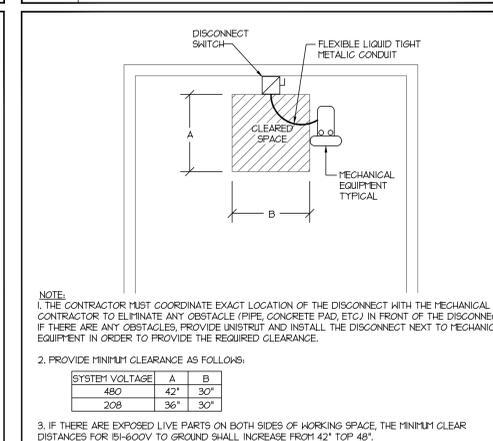
STANDARD HEIGHTS FOR HANDICAPPED ACCESS



NOTE: TYPICAL DETAILS SHOWING GENERAL FIRE STOPPING PROCEDURE. ACTUAL PROCEDURE DEPENDS UPON ANNULAR SPACE BETWEEN PIPE AND/OR INSULATION AND OPENING. FOLLOW MANUFACTURER'S INSTRUCTIONS.

SCALE: N.T.S.

TYPICAL FIRESTOP FOR CABLES/CONDUIT THROUGH CONCRETE FLOORING



NOTE: 1. THE CONTRACTOR MUST COORDINATE EXACT LOCATION OF THE DISCONNECT WITH THE MECHANICAL CONTRACTOR TO ELIMINATE ANY OBSTACLE (PIPE, CONCRETE PAD, ETC.) IN FRONT OF THE DISCONNECT. IF THERE ARE ANY OBSTACLES, PROVIDE UNISTRUT AND INSTALL THE DISCONNECT NEXT TO MECHANICAL EQUIPMENT IN ORDER TO PROVIDE THE REQUIRED CLEARANCE.

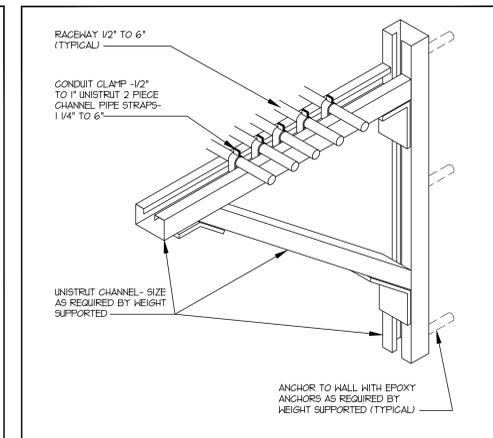
2. PROVIDE MINIMUM CLEARANCE AS FOLLOWS:

SYSTEM VOLTAGE	A	B
480	42"	30"
208	36"	30"

3. IF THERE ARE EXPOSED LIVE PARTS ON BOTH SIDES OF WORKING SPACE, THE MINIMUM CLEAR DISTANCES FOR 60-600V TO GROUND SHALL INCREASE FROM 42" TO 48".

SCALE: N.T.S.

TYPICAL DISCONNECT CLEARANCE REQUIREMENTS



SCALE: N.T.S.

TYPICAL CONDUIT RACK DETAIL (WALL MOUNTED)

- GENERAL NOTES:
- ALL MATERIALS ARE TO BE REMOVED AND RETURNED TO THE OWNER. MATERIALS WHICH THE OWNER DECIDES NOT TO KEEP SHALL BE SALVAGED AND REMOVED FROM THE SITE BY THE CONTRACTOR.
 - ALL CONCEALED CONDUIT THAT CANNOT BE REMOVED SHALL BE CUT FLUSH WITH THE FINISH SURFACES AND CAFFED OFF AFTER THE WIRING HAS BEEN DISCONNECTED AT THE PANEL AND REMOVED FROM THE CONDUIT.
 - IN AREAS WHERE CIRCUIT CONTINUITY IS INTERRUPTED, BUT MUST BE MAINTAINED TO THE DEVICES WHICH ARE TO REMAIN, MAKE ALL THE NECESSARY MODIFICATIONS TO THE CIRCUITS IN ORDER TO MAINTAIN THE CIRCUIT INTEGRITY.
 - THE CONTRACTOR SHALL PATCH THE WALLS AND CEILINGS WHERE THE DEVICES ARE REMOVED TO MATCH THE EXISTING WALLS AND CEILINGS. COORDINATE WITH GENERAL CONTRACTOR.
 - PRIOR TO SUBMITTING A BID THE ELECTRICAL CONTRACTOR SHALL INSPECT THE SITE AND INCLUDE IN HIS BID PACKAGE ALL CHARGES DUE TO EXISTING CONDITIONS. SHOP DRAWINGS ARE REQUIRED. ALL LABOR, MATERIAL AND WORKSMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF 1 YEAR FROM THE DATE OF ACCEPTANCE BY THE TENANT. REPAIR OR REPLACE ALL DEFECTS DURING THE GUARANTEED PERIOD.
 - REFER TO THE MECHANICAL SHEETS FOR THE EXACT LOCATION OF THE MECHANICAL EQUIPMENT.
 - THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE MECHANICAL CONTRACTOR SO THAT NO PIPING, DUCTS, OR OTHER EQUIPMENT SHALL BE INSTALLED IN ENTRY OR PASS THROUGH ELECTRICAL ROOM OR SPACES ABOVE OR BELOW ELECTRICAL PANELS.
 - ELECTRICAL CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENT, ETC.) OF EQUIPMENT FURNISHED UNDER OTHER DIVISIONS WITH APPROVED SHOP DRAWINGS PRIOR TO BEGINNING ROUGH-IN.
 - MINIMUM SIZE OF CONDUIT TO BE 3/4". ALUMINUM CONDUITS SHALL NOT BE USED.
 - USE RIGID STEEL SET SCREW TYPE FITTINGS ONLY. DIE CAST FITTINGS SHALL NOT BE USED.
 - RUN A NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR (EACH CIRCUIT) IN A CONDUIT. NOT MORE THAN THREE (3) CIRCUITS IN A CONDUIT. THREE (3) PHASE CONDUCTORS, THREE (3) NEUTRAL CONDUCTORS (ONE FOR EACH PHASE) AND ONE (1) GROUND CONDUCTOR FOR A TOTAL OF SEVEN (7) CONDUCTORS.
 - THE MINIMUM SIZE OF THE CONDUCTORS ARE TO BE #12 AWG THIN COPPER, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
 - ALL J-BOXES SHALL HAVE MINIMUM DEPTH OF 2-1/8" UNLESS OTHERWISE SPECIFIED. SECURE ALL J-BOXES AS SHOWN IN THE DETAILS. FURNISH AND INSTALL PROPER RUD RINGS.
 - ALL NEW EXPOSED CONDUIT MUST RUN AGAINST THE WALLS OR CEILINGS. DO NOT PENDANT MOUNT ANY CONDUIT FROM THE CEILINGS.
 - SEAL AROUND ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS AND CEILINGS WITH FIRE RATED MATERIAL. 3M IS AN APPROVED MANUFACTURER.
 - ALL ELECTRICAL WIRING MUST BE IN CONDUIT (RONSEX AND MC CABLE NOT PERMITTED).
 - FLEXIBLE CONDUITS CAN ONLY BE USED FOR SHORT RUNS (6' MAXIMUM).
 - NO CONDUITS SHALL RUN IN DUCT WORK.
 - ALL CONDUITS EXPOSED TO THE WEATHER SHALL BE GALVANIZED RIGID STEEL, UNLESS OTHERWISE NOTED.
 - ALL PANELBOARDS SHALL HAVE FULL SIZE ISOLATED NEUTRAL AND GROUND COPPER BUS BARS.
 - USE EPOXY ANCHORS TO SUPPORT THE ELECTRICAL EQUIPMENT. EXPANSION ANCHOR BOLTS ARE NOT ACCEPTED.
 - NEW PANELBOARDS SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED 50 AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT. (NEC 110-16)
 - PROVIDE UPDATED, TYPED WRITTEN PANEL SCHEDULES FOR NEW AND EXISTING PANELBOARDS SHOWING CIRCUIT CHANGES MADE DURING THIS PROJECT.
 - ALL DISCONNECTS, J-BOXES AND CONDUITS EXPOSED TO THE OUTSIDE WEATHER SHALL BE NON-CORROSIVE, WEATHER PROOF TYPE.
 - ALL DISCONNECTS SHALL BE HEAVY DUTY TYPE.
 - ALL NEW WORK MUST MEET THE CURRENT ADOPTED NATIONAL ELECTRICAL CODE.
 - ALL MATERIALS USED IN THIS INSTALLATION SHALL BE UL APPROVED AND NEW.
 - CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE OVER SHOP DRAWINGS UNLESS SPECIFICALLY NOTED OTHERWISE.
 - ELECTRICAL CONTRACTOR SHALL HAVE PRE-CONSTRUCTION MEETING WITH ELECTRICAL SHOP SUPERVISOR.

NO.	DATE	DESC.

SYMBOL	DESCRIPTION

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FILE NAME	-

SHEET TITLE
 GENERAL NOTES, SCHEDULES AND DETAILS

SHEET NO.
 E001



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