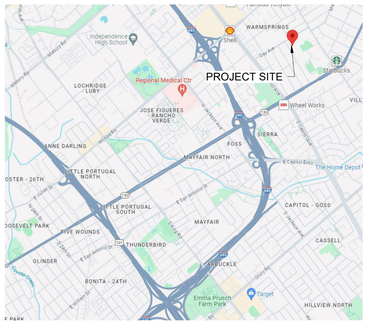
ALUM ROCK UNION SCHOOL DISTRICT

SERVER ROOM HVAC UPGRADES

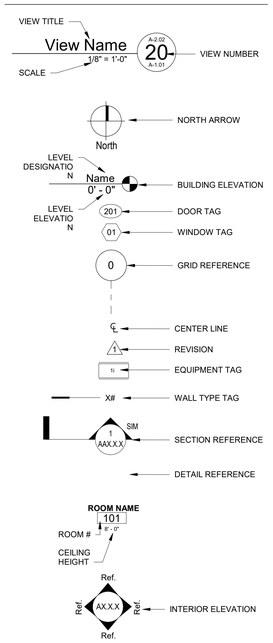
ABBREVIATIONS

ABV	ABOVE
ACOUS	ACOUSTICAL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECT
B.O.	BOTTOM OF
BALC	BALCONY
BD	BOARD
BET	BETWEEN
BLDG	BUILDNG
BLKG	BLOCKING
BLW	BELOW
BM	BEAM
BOT	BOTTOM
BRKT	BRACKET
BULKHD	BULKHEAD
BUR	BUILT UP ROOF
C.G.	CORNER GUARD
CAB	CABINET
CALK	CAULKING
CEM	CEMENT
CER	CERAMIC
CJ	CONTROL JOINT
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR
CO	CASED OPENING
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
DBL	DOUBLE
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWN SPOUT
DW	DISHWASHER
DWG	DRAWING
E	EAST
EA	EACH
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
ELEC	ELECTRIC
ELEV	ELEVATION
EMER	EMERGENCY
ENCL	ENCLOSURE
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EW	EACH WAY
EXP. JT.	EXPANSION JOINT
EXST	EXISTING
F.F.	FINISHED FACE
F.O.	FACE OF
FA	FIRE ALARM
FAP	FIRE ANNUNCIATOR PANEL
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER PANEL
FG	FINISH GROUP
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIN	FINISH
FLR	FLOOR
FLUOR	FLOURESCENT
FMF	FLEXIBLE MEMBRANE FLASHING
FT	FOOT OR FEET
FUR	FURRING
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GL	GLASS
GND	GROUND
GWB	GYPSUM BOARD
GYP	GYPSUM
H.W.H.	HOT WATER HEATER
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
ID	INNER DIAMETER
INCAN	INCANDESCENT
INSUL	INSULATION
INT	INTERIOR
JAN	JANITOR
JST	JOIST
JT	JOINT
LAM	LAMINATE
LAV	LAVATORY
LB(S)	POUNDS
LDG	LANDING
LT	LIGHT
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
O.P.	OVERFLOW PIPE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OH	OPPOSITE HAND
OPG	OPENING
OPP	OPPOSITE
PART	PARTITION
PERM	PERIMETER
PG	PAINT GRADE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLYWD	PLYWOOD
PR	PAIR
PT	PAINT
PTD	PAINTED
R	RISER
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE	REFER
REF	REFRIGERATOR
REINF	REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RF DK	ROOF DECK
RM	ROOM
RO	ROUGH OPENING
RTU	ROOF TOP UNIT (MECH)
S	SOUTH
S.S.D.	SEE STRUCTURAL DRAWINGS
S.T.S.	SELF TAPPING SCREW
SAFB	SOUND ATTENUATION FIBER BATT
SC	SCUPPER
SCHED	SCHEDULE
SEAL	SEALANT
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUPSPENDED
SYM	SYMMMETRICAL
T	TREAD
T&G	TONGUE & GROOVE
TEL	TELEPHONE
TER	TERRAZZO
THK	THICK
THR	THRESHOLD
TO	TOP OF
TYP	TYPICAL
UC	UNDERCUT
UNFIN	UNFINISHED
UNO	ULNESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
UTIL	UTILITY
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VTR	VENT TERMINATION PIPE
VWC	VINYL WALL COVERING
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATERCLOSET
WIN	WINDOW
WP	WATERPROOF
WS	WETSTACK
WSCT	WAINSCOT
WT	WEIGHT

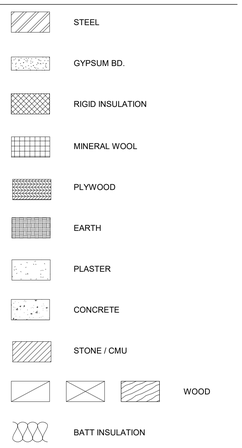
VICINITY MAP



STRUCTURAL NOTES



MATERIALS



INDEX - SHEET LIST		
SHEET NUMBER	SHEET NAME	100% CD
01 - General		
G0.0	COVER SHEET	●
31 - Architectural		
A2.0	DETAILS	●
A6.0	ENLARGED FLOOR PLAN	●
40 - Structural		
S0.0.1	GENERAL NOTES & SPECIAL INSPECTIONS AND TESTING	●
S1.0.1	FOUNDATION PLAN - SERVER ROOM	●
50 - Mechanical		
M0.0.1	MECHANICAL NOTES, LEGEND, AND SCHEDULES	●
M0.0.2	MECHANICAL DETAILS	●
M1.0.0	MECHANICAL SITE PLAN	●
M1.0.1	MECHANICAL FLOOR PLAN	●
60 - Plumbing		
P0.0.1	PLUMBING NOTES, LEGEND, AND SCHEDULES	●
P1.0.0	PLUMBING SITE PLAN	●
P1.0.1	PLUMBING FLOOR PLAN	●
70 - Electrical		
E0.0.1	ELECTRICAL SYMBOL LEGEND, NOTES & ABBREVIATIONS	●
E0.0.2	ELECTRICAL DETAILS	●
E1.0.0	ELECTRICAL SITE PLAN	●
E1.0.1	ELECTRICAL FLOOR PLANS	●
E6.4.2	ELECTRICAL PARTIAL ONE LINE DIAGRAM & PANEL SCHEDULES	●

PARTIAL LIST OF APPLICABLE CODES

CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH:

2022 CALIFORNIA ADMINISTRATIVE CODE, C.C.R., TITLE 24, PART 1.

2022 CALIFORNIA BUILDING CODE (CBC), - C.C.R., TITLE 24, PART 2.
(2021 INTERNATIONAL BUILDING CODE, VOLUMES 1-2, & 2022 CALIFORNIA AMENDMENTS)

2022 CALIFORNIA ELECTRICAL CODE (CEC), - C.C.R., TITLE 24, PART 3.
(2017 NFPA 70, NATIONAL ELECTRICAL CODE, WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA MECHANICAL CODE (CMC), - C.C.R., TITLE 24, PART 4.
(2021 MECHANICAL CODE, WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA PLUMBING CODE (CPC), - C.C.R., TITLE 24, PART 5.
(2021 INTERNATIONAL PLUMBING CODE, WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA ENERGY CODE (CEC), - C.C.R., TITLE 24, PART 6.

2022 CALIFORNIA FIRE CODE, C.C.R., TITLE 24, PART 9.
(2021 INTERNATIONAL FIRE CODE, WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA REFERENCED STANDARDS, C.C.R., TITLE 24, PART 12.

C.C.R., PUBLIC SAFETY CODE, TITLE 19, DIVISION 1, STATE FIRE MARSHAL REGULATIONS

NOTES:
1. WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE REQUIREMENTS OF THESE CODES, INCLUDING REFERENCED STANDARDS WITHIN, AND APPLICABLE LOCAL ORDINANCES. WHERE CONTRACT DOCUMENTS EXCEED SUCH REQUIREMENTS, WITHOUT VIOLATING SUCH CODES, REGULATIONS AND ORDINANCES, CONTRACT DOCUMENTS TAKE PRECEDENCE. WHERE CODES CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 13	INSTALLATION OF SPRINKLER SYSTEMS	2022 EDITION
NFPA 14	INSTALLATION OF STANDPIPE AND HOSE SYSTEMS	2019 EDITION
NFPA 17	DRY CHEMICAL EXTINGUISHING SYSTEMS	2021 EDITION
NFPA 17a	WET CHEMICAL EXTINGUISHER SYSTEMS	2021 EDITION
NFPA 20	INSTL. OF STATIONARY PUMPS FOR FIRE PROTECT.	2019 EDITION
NFPA 72	NATIONAL FIRE ALARM CODE (CA AMENDED) UL STD 1971 FOR VISUAL DEVICES	2022 EDITION
NFPA 80	FIRE DOOR AND OTHER OPENING PROTECTIVES	2019 EDITION
NFPA 92	STANDARD FOR SMOKE CONTROL SYSTEM	2018 EDITION
UL 464	AUDIBLE SIGNAL APPLIANCES	2003 EDITION
UL 521	HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS	1999 EDITION
	ADA STANDARDS FOR ACCESSIBLE DESIGN	2010

REFERENCE CODE SECTION FOR NFPA STANDARDS - 2022 CBC (SFM) CHAPTER 35
SEE CHAPTER 35 FOR STATE OF CALIFORNIA AMENDMENTS TO NFPA STANDARDS

PROJECT SCOPE

DESCRIPTION OF OVERALL SCOPE OF WORK

THIS PROJECT IS LOCATED AT THE ALUM ROCK UNION SCHOOL DISTRICT OFFICE IN SAN JOSE, CA. THE COMPLETE SCOPE OF WORK INCLUDES THE FOLLOWING.

1. HVAC REPLACEMENT AND ASSOCIATED ELECTRICAL UPGRADE RELATED TO SERVER ROOM
2. PATCH AND REPAIRS AND ANCHORAGE RELATED TO SERVER ROOM.

STATEMENT OF GENERAL CONFORMANCE

THE DRAWINGS AND/OR SPECIFICATIONS AND/OR CALCULATIONS FOR THE ITEMS LISTED IN THE SHEET INDEX HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:

1) DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS;

2) COORDINATION WITH MY PLANS AND SPECIFICATIONS AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

THE STATEMENT OF GENERAL CONFORMANCE "SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341 AND 4-344 OF TITLE 24, PART 1 (TITLE 24, PART 1, SECTION 4-317(B))

01/03/24
SIGNATURE OF THE ARCHITECT — DATE
CHRIS VICENCIO, PARTNER, JK ARCHITECTURE

C26985 — 6/25/30
LICENSE NUMBER — EXPIRATION

PROJECT INFORMATION

PROJECT NAME:	ALUM ROCK USD SERVER ROOM HVAC UPGRADES
PROJECT ADDRESS:	2930 GAY AVE SAN JOSE, CA, 95127

PROJECT TEAM

CLIENT:
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TITLE BONDS DIRECTOR
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EMAIL Marc.freitas@arusd.org

ARCHITECT:
JK ARCHITECTURE ENGINEERING
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CONTACT BRIAN WIENS
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EMAIL rnasiri@lpengineers.com

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SEAL



Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
COVER SHEET

Drawn By
VJ
Checked By
HV

NO.	DATE	ISSUE

Project No.
23-525
@Date
01/03/24

DRAWING NO.
G0.0

Autodesk Docs://23-525 Server Room Upgrades/23-525_Server Room Upgrades.rvt
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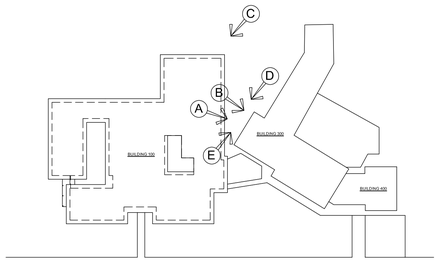
A SERVER ROOM WEST WALL



B SERVER ROOM WEST WALL



C CORNER ROOF EAVE



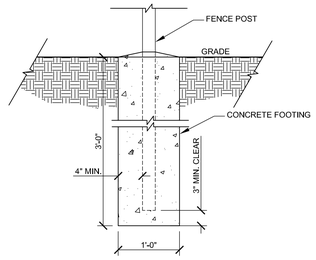


D FLOOR VIEW

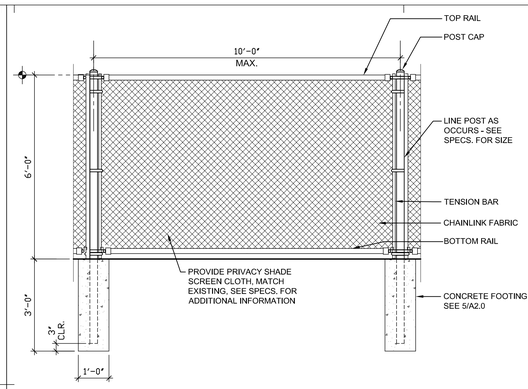


E SERVER ROOM WEST WALL

15 REFERENCE PHOTOS
N.T.S.



FENCE POST FOOTING
SCALE: 1" = 1'-0"
5



CHAIN LINK FENCE
N.T.S.
1

JK ARCHITECTURE ENGINEERING
AUBURN | TAHOE CITY | RENO | SAN JOSE
www.jkaedesign.com

SEAL

LICENSED ARCHITECT
CHRISTOPHER C. HOPPER
NO. C26985
REN. 6-30-25
STATE OF CALIFORNIA

Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
DETAILS

NO.	DATE	ISSUE

Drawn By: VJ
Checked By: HV
Project No.: 23-525
©Date: 01/03/2024
Drawing No.: A2.0

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DEMOLITION PLAN GENERAL NOTES

1. ALL MATERIAL INDICATED TO BE REMOVED IS TO BE DISPOSED OF OFF SITE IN A LEGAL MANNER, UNLESS INDICATED TO BE SALVAGED OR REINSTALLED.
2. CONTRACTOR SHALL PROTECT PORTIONS OF EXISTING CONSTRUCTION NOT INDICATED TO BE DEMOLISHED. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT AND REPAIR OF ITEMS TO REMAIN. CONTRACTOR SHALL FIELD INSPECT ALL EXISTING CONDITIONS WHICH MAY REMAIN. IDENTIFY ANY DAMAGED CONDITIONS AND PROVIDE PATCHING AND REPAIR AS REQUIRED.
3. REFER TO OTHER PLANS FOR ADDITIONAL DEMOLITION WORK.
4. REMOVE ALL EXPOSED PIPING, CONDUIT, AND FIXTURES THAT ARE NOT USED, ABANDONED, OR REPLACED WITH NEW WORK AS A PART OF THIS PROJECT.
5. REFER TO FLOOR PLANS FOR PATCHING AND REINSTALLATION OF EXISTING CONSTRUCTION.
6. DEMOLITION PLAN IS DIAGRAMMATIC. CONTRACTOR SHALL REMOVE EXTENT REQUIRED FOR THE INSTALLATION OF NEW BUILDING SYSTEMS AND NEW CONSTRUCTION WORK. PATCH AND REPAIR ALL CONSTRUCTION TO MATCH EXISTING OR TO RECEIVE NEW WORK/FINISHES. CONTRACTOR IS TO DETERMINE THE EXTENT OF DEMO REQUIRED. SCOPE OF DEMO EXCEEDS THE SPECIFIC WORK SHOWN OR NOTED ON THIS SHEET.
7. REMOVE ANY NON-STRUCTURAL EXPOSED METAL FASTENERS OR WHERE FASTENERS ARE EXPOSED BY DEMOLITION, TYPICAL THROUGHOUT THE ENTIRE BUILDING INTERIOR.
8. CLEAN AND PREPARE ALL EXISTING SURFACES TO RECEIVE NEW WORK.

DEMOLITION PLAN KEYNOTES

02.01 (E) CHAIN LINK FENCE TO REMAIN.
02.02 (E) FENCE END POST.
02.03 (E) CHAIN LINK FENCE TO BE DEMOLISHED UP TO THIS END POST LOCATION.
02.04 EDGE OF (E) BUILDING.
02.05 (E) CHAIN-LINK FENCING BEYOND.

03.01 EXISTING CONCRETE SLAB TO REMAIN.
03.02 EXISTING CONCRETE SLAB EDGE.

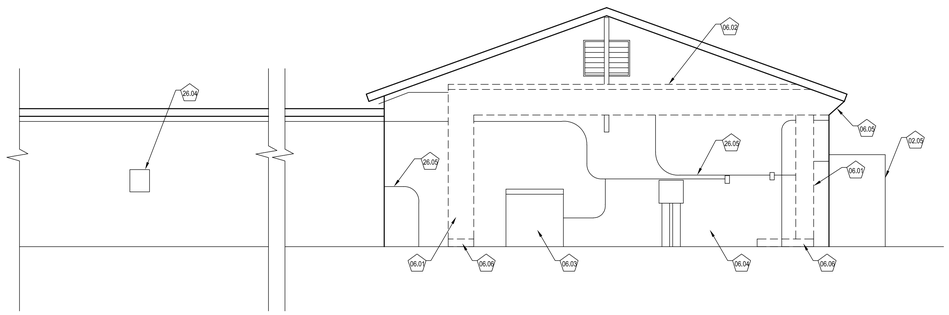
05.01 (E) OVERHEAD PIPE TRAPEZE SUPPORTS TO BE REUSED FOR NEW PIPING, SEE MECHANICAL FOR ADDITIONAL INFORMATION.

06.01 REMOVE (E) VERTICAL WOOD CHASE FURRING AS REQUIRED FOR NEW WORK.
06.02 REMOVE EXISTING WOOD FURRED PIPE CHASE ON WALL ABOVE, SEE EXT ELEVATION.
06.03 (E) EQUIPMENT ENCLOSURE TO REMAIN, NOT ASSOCIATED WITH THE SERVER ROOM, PROTECT AS REQUIRED.
06.04 (E) HORIZONTAL WOOD SIDING AT EXTERIOR WALL.
06.05 REMOVE (E) WOOD CHASE FURRING ALONG NORTH EAVE AS REQUIRED FOR NEW WORK.
06.06 REMOVE EXISTING WOOD CHASE FURRING ALONG FLOOR SLAB AS REQUIRED FOR NEW WORK.

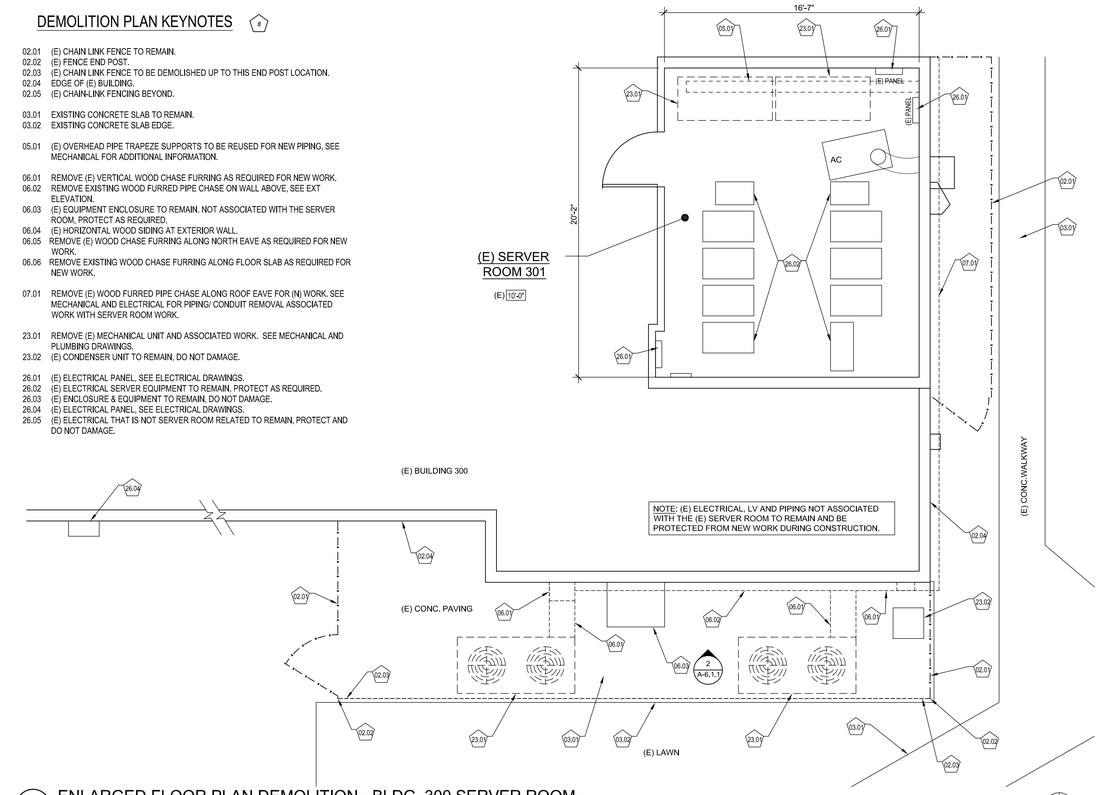
07.01 REMOVE (E) WOOD FURRED PIPE CHASE ALONG ROOF EAVE FOR (N) WORK. SEE MECHANICAL AND ELECTRICAL FOR PIPING/ CONDUIT REMOVAL ASSOCIATED WORK WITH SERVER ROOM WORK.

23.01 REMOVE (E) MECHANICAL UNIT AND ASSOCIATED WORK. SEE MECHANICAL AND PLUMBING DRAWINGS.
23.02 (E) CONDENSER UNIT TO REMAIN, DO NOT DAMAGE.

26.01 (E) ELECTRICAL PANEL, SEE ELECTRICAL DRAWINGS.
26.02 (E) ELECTRICAL SERVER EQUIPMENT TO REMAIN, PROTECT AS REQUIRED.
26.03 (E) ENCLOSURE & EQUIPMENT TO REMAIN, DO NOT DAMAGE.
26.04 (E) ELECTRICAL PANEL, SEE ELECTRICAL DRAWINGS.
26.05 (E) ELECTRICAL THAT IS NOT SERVER ROOM RELATED TO REMAIN, PROTECT AND DO NOT DAMAGE.



4 EXTERIOR ELEVATION DEMOLITION - WEST - BLDG. 300 SERVER ROOM
1/4" = 1'-0"



3 ENLARGED FLOOR PLAN DEMOLITION - BLDG. 300 SERVER ROOM
1/4" = 1'-0"

PAINT COLORS ARE AS FOLLOWS:

WALL: EP-1 - WIND WEAVER (KM4990-1 FLAT)

FLOOR PLAN GENERAL NOTES

1. MODIFY EXISTING PLUMBING PIPING AS REQUIRED TO ACCOMMODATE THE NEW WORK.
2. REFER TO AND COORDINATE WITH ELECTRICAL, PLUMBING AND MECHANICAL DRAWINGS FOR ADDITIONAL SCOPE OF WORK AS APPLICABLE.
3. ALL INTERIOR SURFACES IN THE AREA OF WORK ARE TO BE PATCHED OR REPAIRED TO MATCH (E) MATERIALS TO ACCOMMODATE THE WORK.
4. ALL (E) SYSTEMS ARE TO BE FULLY OPERATIONAL AT COMPLETION OF PROJECT. NOTIFY ARCHITECT OF ANY (E) SYSTEMS WHICH ARE NOT FUNCTIONAL PRIOR TO COMMENCING WORK.
5. CONTRACTOR TO PROTECT ALL EXISTING ITEMS TO REMAIN. APPLY AND MAINTAIN PROTECTIVE PLASTIC SHEETING OR OTHER ACCEPTABLE AND SAFE FORMS OF PROTECTION ON ALL SURFACES TO REMAIN.

FLOOR PLAN KEY NOTES

2.01 CHAIN LINK FENCE. SEE DETAIL 1/A2.0. ADD PRIVACY MESH TO MATCH EXISTING.

3.01 EXISTING CURB TO REMAIN.

5.01 METAL ENCLOSURE PANEL ON WALL, SEE MECHANICAL DRAWINGS.
5.02 METAL ENCLOSURE PANEL ON FLOOR, SEE MECHANICAL DRAWINGS.
5.03 (E) OVERHEAD PIPE TRAPEZE SUPPORTS TO BE REUSED FOR NEW PIPING, SEE MECHANICAL FOR ADDITIONAL INFORMATION.
5.04 INSTALL A METAL ENCLOSURE PANEL ALONG NORTH EAVE TO REPLACE THE EXISTING WOOD CHASE FURRING.

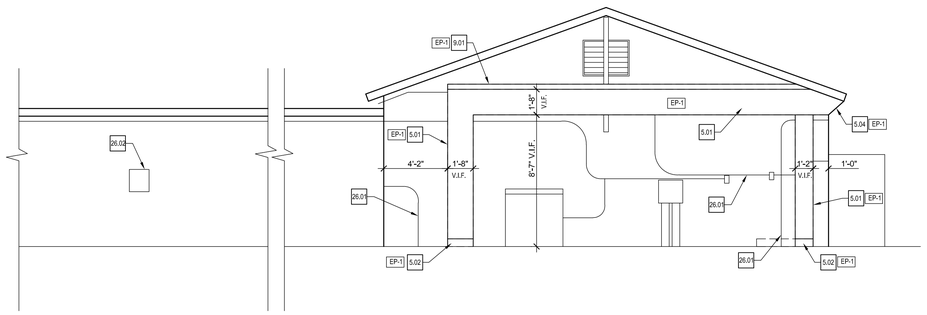
6.01 (E) EQUIPMENT ENCLOSURE TO REMAIN, NOT ASSOCIATED WITH THE SERVER ROOM, PROTECT AS REQUIRED.

7.01 PIPE CHASE/ ENCLOSURE ALONG ROOF EAVE, SEE MECHANICAL DRAWINGS

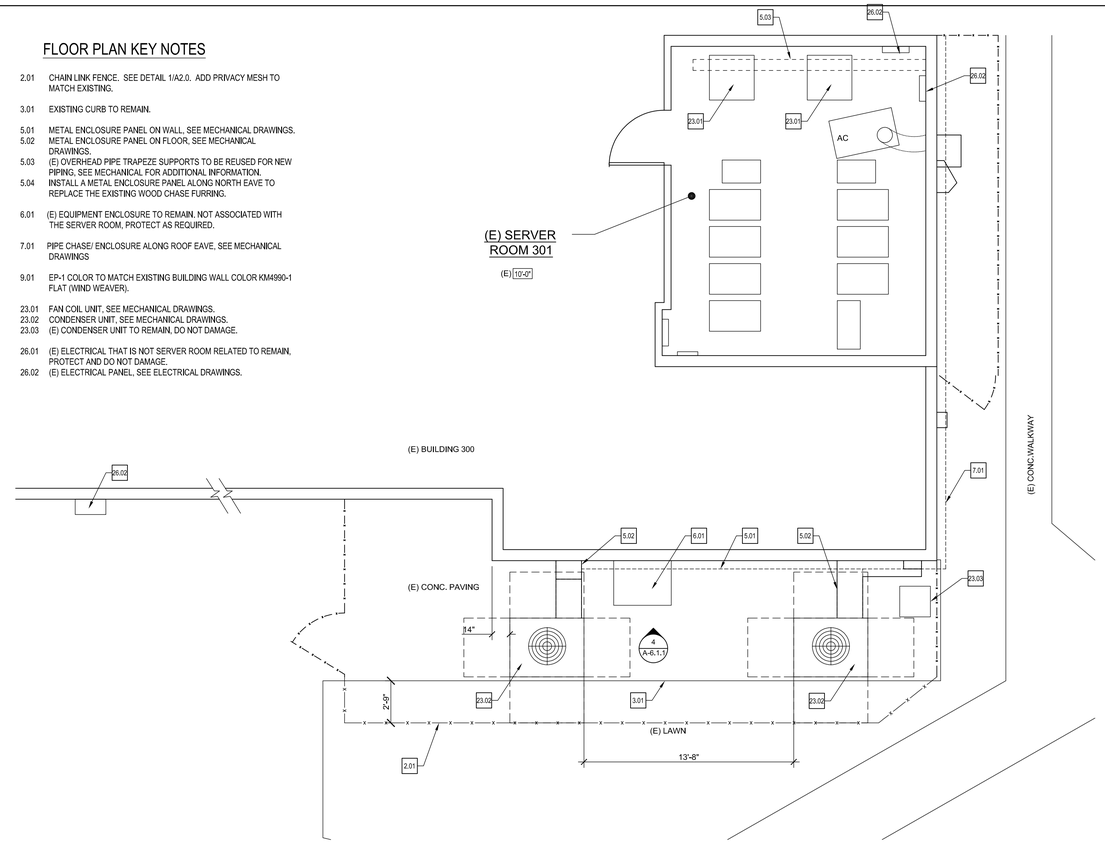
9.01 EP-1 COLOR TO MATCH EXISTING BUILDING WALL COLOR KM4990-1 FLAT (WIND WEAVER).

23.01 FAN COIL UNIT, SEE MECHANICAL DRAWINGS.
23.02 CONDENSER UNIT, SEE MECHANICAL DRAWINGS.
23.03 (E) CONDENSER UNIT TO REMAIN, DO NOT DAMAGE.

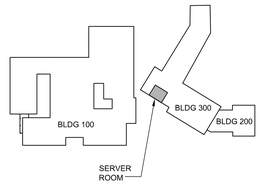
26.01 (E) ELECTRICAL THAT IS NOT SERVER ROOM RELATED TO REMAIN, PROTECT AND DO NOT DAMAGE.
26.02 (E) ELECTRICAL PANEL, SEE ELECTRICAL DRAWINGS.



2 EXTERIOR ELEVATION - WEST - BLDG. 300 SERVER ROOM
1/4" = 1'-0"



1 ENLARGED FLOOR PLAN - BLDG. 300 SERVER ROOM
1/4" = 1'-0"



KEY PLAN

SEAL

LICENSED ARCHITECT
CHRISTOPHER C. IVERSEN
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REN. 6-30-25
STATE OF CALIFORNIA

Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
ENLARGED FLOOR PLAN

NO.	DATE	ISSUE

Drawn By: VJ
Checked By: HV
Project No.: 23-525
Date: 01/03/2024
Drawing No.: A6.0

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GENERAL NOTES

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

GENERAL NOTES
1005N001

1. INTERPRETATION OF DRAWINGS & SPECIFICATIONS
   A. WHERE SPECIFICATIONS HAVE BEEN PREPARED FOR THIS PROJECT, THEY ARE ARRANGED IN SEVERAL SECTIONS, BUT SUCH SEPARATION SHALL NOT BE CONSIDERED AS THE LIMITS OF THE WORK REQUIRED OF ANY SEPARATE TRADE. THE TERMS AND CONDITIONS OF SUCH LIMITATIONS ARE WHOLLY BETWEEN THE CONTRACTOR AND THEIR SUBCONTRACTORS.
   B. IN GENERAL, THE WORKING DETAILS WILL INDICATE DIMENSIONS, POSITION AND KIND OF CONSTRUCTION, AND THE SPECIFICATIONS, QUALITIES AND METHODS. ANY WORK INDICATED ON THE WORKING DETAILS AND NOT MENTIONED IN THE SPECIFICATIONS, OR VICE VERSA, SHALL BE FURNISHED AS THOUGH FULLY SET FORTH IN BOTH. WORK NOT PARTICULARLY DETAILED, MARKED OR SPECIFIED, SHALL BE IDENTICAL OR SIMILAR TO LIKE CASES OF CONSTRUCTION THAT ARE DETAILED, MARKED OR SPECIFIED. IF CONFLICTS OCCUR ON DRAWINGS AND/OR SPECIFICATIONS, THE MOST EXPENSIVE MATERIALS OR METHODS WILL PREVAIL.
   C. SHOULD AN ERROR APPEAR IN THE WORKING DETAILS OR SPECIFICATIONS OR IN WORK DONE BY OTHERS AFFECTING THIS WORK, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AT ONCE AND IN WRITING. IF THE CONTRACTOR PROCEEDS WITH THE WORK SO AFFECTED WITHOUT HAVING GIVEN SUCH WRITTEN NOTICE AND WITHOUT RECEIVING THE NECESSARY APPROVAL, DECISION OR INSTRUCTIONS IN WRITING FROM THE OWNER, THEN THE CONTRACTOR SHALL HAVE NO VALID CLAIM AGAINST THE OWNER, FOR THE COST OF SO PROCEEDING AND SHALL MAKE GOOD ANY RESULTING DAMAGE OR DEFECT. NO VERBAL APPROVAL, DECISION, OR INSTRUCTION SHALL BE VALID OR BE THE BASIS FOR ANY CLAIM AGAINST THE OWNER, ITS OFFICERS, EMPLOYEES OR AGENTS. THE FOREGOING INCLUDES TYPICAL ERRORS IN THE SPECIFICATIONS OR NOTATIONAL ERRORS IN THE WORKING DETAILS WHERE THE INTERPRETATION IS DOUBTFUL OR WHERE THE ERROR IS SUFFICIENTLY APPARENT AS TO PLACE A REASONABLY PRUDENT CONTRACTOR ON NOTICE THAT, SHOULD THE CONTRACTOR ELECT TO PROCEED, THEY ARE DOING SO AT THEIR OWN RISK.
2. CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND REGULATIONS.
3. SHOP DRAWING NOTE:
   A. WHEN NOT ADDRESSED BY DIVISION 1 OF THE SPECIFICATIONS, SUBMITTALS SHALL BE ELECTRONIC PDF FORMAT.
   B. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE STRUCTURAL ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT BY INDICATING WHICH MATERIAL THE CONTRACTOR INTENDS TO FURNISH AND INSTALL, AND BY DETAILING THE FABRICATION AND INSTALLATION METHODS THE CONTRACTOR INTENDS TO USE ON A STAND ALONE SET OF DOCUMENTS. DUPLICATION OF DESIGN DOCUMENTS FOR THE PURPOSE OF SHOP DRAWINGS IS NOT ACCEPTABLE.
   C. PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER. SHOP DRAWING SUBMITTALS SHALL INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, STRUCTURAL STEEL, REINFORCING STEEL, & GLUE-LAMINATED BEAMS.
   D. PRIOR TO SUBMISSION THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SHALL STAMP SUBMITTALS AS BEING "REVIEWED FOR CONFORMANCE".
   E. SHOP DRAWING SUBMITTALS PROCESSED BY THE STRUCTURAL ENGINEER ARE NOT CHANGE ORDERS.
   F. ANY DETAIL ON THE SHOP DRAWINGS THAT DEVIATES FROM THE CONTRACT DOCUMENTS SHALL CLEARLY BE MARKED WITH THE NOTE "THIS IS A CHANGE".
   G. SHOP DRAWINGS OR CALCULATIONS SUBMITTED FOR REVIEW THAT REQUIRE RESUBMITTAL FOR RE-REVIEW SHALL BE BILLED HOURLY FOR SUCH TIME TO THE GENERAL CONTRACTOR. RE-REVIEW WILL NOT PROCEED WITHOUT WRITTEN APPROVAL FROM THE GENERAL CONTRACTOR FOR ADDITIONAL ENGINEERING REVIEW SERVICES.
4. SAFETY NOTE:
   A. IT IS THE CONTRACTORS RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS, AS THEY APPLY TO THIS PROJECT, OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA LATEST EDITION, AND ALL OSHA REQUIREMENTS.
   B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS AND SHORING REQUIRED. SHORING INDICATIONS (LOCATION, DIRECTION, DURATION, ETC.) ARE ONLY SHOWN ON THE STRUCTURAL DWGS WHEN REQUIRED TO IMPLEMENT THE DESIGN INTENT OF THE FINAL WORK PRODUCT. DETERMINATION WHETHER SHORING IS REQUIRED FOR TEMPORARY OR INTERMEDIATE CONDITIONS DURING CONSTRUCTION IS WHOLLY THE RESPONSIBILITY OF THE CONTRACTOR.
   C. THE OWNER AND THE STRUCTURAL ENGINEER DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE REQUIREMENTS.
5. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER WHERE A CONFLICT OR DISCREPANCY OCCURS BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER PORTION OF THE CONTRACT DOCUMENTS OR EXISTING FIELD CONDITIONS. SUCH NOTIFICATION SHALL BE GIVEN IN DUE TIME SO AS NOT TO AFFECT THE CONSTRUCTION SCHEDULE. IN CASE OF A CONFLICT BETWEEN STRUCTURAL DRAWINGS AND SPECIFICATIONS THE MORE RESTRICTIVE CONDITION SHALL TAKE PRECEDENCE UNLESS WRITTEN APPROVAL HAS BEEN GIVEN FOR THE LEAST RESTRICTIVE. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PRIOR TO COMMENCING ANY WORK.
6. WHEN CONSTRUCTION ATTACHES TO OR IS WITHIN AN EXISTING BUILDING, A COMPLETE SET OF DRAWINGS OF THE EXISTING BUILDING SHALL BE KEPT ON THE JOB SITE. CONTRACTOR TO OBTAIN THESE DRAWINGS FROM THE OWNER (IF THEY ARE AVAILABLE).
7. CONTRACTOR SHALL PROVIDE AN ALLOWANCE EQUAL TO 2% OF THE BID FOR STRUCTURAL STEEL, MISC. IRON AND REINFORCING STEEL TO BE USED AT THE DISCRETION OF THE STRUCTURAL ENGINEER. UNUSED AMOUNT TO REVERT TO THE OWNER UPON COMPLETION OF THE JOB.
8. ANY SUBSTITUTIONS FOR STRUCTURAL MEMBERS, HARDWARE OR DETAILS SHALL BE REVIEWED BY THE ARCHITECT AND STRUCTURAL ENGINEER. SUCH REVIEW WILL BE BILLED ON A TIME AND MATERIALS BASIS TO THE GENERAL CONTRACTOR WITH NO GUARANTEE THAT THE SUBSTITUTION WILL BE ALLOWED.
9. DO NOT SCALE DRAWINGS. CONTACT THE ARCHITECT OR STRUCTURAL ENGINEER FOR ANY DIMENSIONS NOT SHOWN.

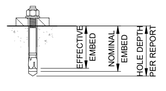
DESIGN CRITERIA
1005N002

1. CODES AND STANDARDS
   2022 CALIFORNIA BUILDING CODE (CBC)
   ASCE 7-16
   ACI 318-19
   AISI S100-16 w/ S2-20, S240-20, S400-20
   2018 NDS, 2021 SDPWS
2. VERTICAL LOADS
   ROOF LIVE LOAD = 20 PSF
   LIVE LOADS ARE REDUCED WHERE PERMITTED BY CODE.
3. LATERAL LOADS
   SEISMIC:
   SITE CLASS D (assumed)
   S_S = 1.94 ; S_{DS} = 1.552
   S_1 = 0.743 ; S_{D1} = N/A
   I_E = 1.0
   I_P = 1.0 TYPICAL
   RISK CATEGORY: II
   SEISMIC DESIGN CATEGORY: D
   WIND:
   V = 92 MPH
   RISK CATEGORY: D
   EXPOSURE CATEGORY: C
   GC_{PI} = ±0.18

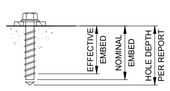
POST-INSTALLED ANCHORS
3005N001

1. FOR CONCRETE CONSTRUCTION, POST-INSTALLED ANCHORS SHALL BE ONE OF THE FOLLOWING:
   A. ADHESIVE ANCHORS FOR THRD ROD & REBAR:
      a. HILTI HIT-HY 200 V3 PER ESR-4868
      b. HILTI HIT-RE500 V3 PER ESR-3814
      c. SIMPSON SET-XP PER ESR-2508
      d. SIMPSON SET-3G PER ESR-4057
      e. DEWALT PURE 110+ ESR-3298
   B. EXPANSION ANCHORS:
      a. HILTI KB-CTZ2 PER ESR-4266
      b. SIMPSON STRONG BOLT 2 PER ESR-3037
      c. DEWALT POWER-STUD+ SD2, SD4 OR SD6 AS NOTED PER ESR-2502
   C. SCREW ANCHORS:
      a. HILTI KWIK HUS-EZ (KH-EZ) PER ESR-3027
      b. SIMPSON TITEN HD PER ESR-2713
      c. DEWALT SCREWBOLT+ PER ESR-3889
2. ANCHOR TYPE, SIZE & EMBEDMENT SHALL BE AS INDICATED IN DRAWINGS. POST-INSTALLED ANCHORS FOR REPAIR SHALL BE EVALUATED ON A CASE BY CASE BASIS. NOTIFY STRUCTURAL ENGINEER FOR REPAIRS.
3. ALL EMBEDMENT DEPTHS CALLED OUT IN DRAWINGS REFER TO EFFECTIVE EMBEDMENT UNLESS OTHERWISE NOTED. SEE DIAGRAM BELOW AND ICC REPORTS.
4. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN THE EVALUATION REPORT. PROVIDE MINIMUM EMBEDMENT PROVIDED IN ICC ESR REPORT UNLESS NOTED OTHERWISE.
5. PROVIDE SPECIAL INSPECTION AS INDICATED IN THE STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS AND TESTING AND THE EVALUATION REPORT.
6. WHEN INSTALLING POST-INSTALLED ANCHORS IN EXISTING CONCRETE OR MASONRY, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING EXISTING REINFORCING BARS. DO NOT INSTALL ANCHORS WITHIN 1 1/2" OF CMU HEAD JOINTS. DO NOT INSTALL ANCHORS IN PRESTRESSED CONCRETE ELEMENTS.
7. THE CONCRETE SHALL HAVE ATTAINED ITS MINIMUM DESIGN STRENGTH PRIOR TO INSTALLATION OF THE ANCHORS.
8. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT THE TIME OF ANCHOR INSTALLATION PER ACI 318, CHAPTER 17.
9. INSTALLER CERTIFICATION AND INSPECTION IS REQUIRED FOR HORIZONTAL AND UPWARDLY INCLINED ADHESIVE ANCHORS SUBJECTED TO SUSTAINED TENSION LOADING IN ACCORDANCE WITH ACI 318, CHAPTER 17.
10. IF TEMPERATURE OF BASE MATERIAL AT TIME OF ADHESIVE ANCHOR INSTALLATION IS 45 DEGREES FARENHEIT OR LOWER, AN "ACRYLIC" OR COLD WEATHER ADHESIVE IS REQUIRED. USE DEWALT PE200+, SIMPSON AT-XP, OR HILTI HIT-HY200 WHEN THIS OCCURS.
11. THE INSPECTION OF THE ANCHORS SHALL BE DONE BY A QUALIFIED INSPECTION AGENCY AND A REPORT OF THE INSPECTION RESULTS SHALL BE SUBMITTED TO THE GOVERNING AGENCY AND ARCHITECT/STRUCTURAL ENGINEER.

INSTALLED ANCHOR DIAGRAMS



EXPANSION ANCHOR



SCREW ANCHOR

WOOD
6005N001

1. ALL STRUCTURAL WOOD SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS:
   SPECIES COMBINATION SHALL BE DOUG FIR - LARCH PER WCLIB GRADING RULES #17 OR WWPA STANDARD GRADING RULES FOR WESTERN LUMBER. DOUGLAS FIR – LARCH (NORTH) AND DOUGLAS FIR (SOUTH) ARE NOT PERMITTED WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER.
   2x, 3x AND 4x MEMBERS - #2 UNO.
   6x AND LARGER MEMBERS - #1 UNO.
   2x DECKING - SELECT DEX
   MEMBERS 3x AND LARGER SHALL BE FREE OF HEART CENTER
   REDWOOD - CALIFORNIA REDWOOD, RIS.
   SHEATHING - US PRODUCT STANDARD PS 1-09 AND PS2-10. APA RATED
   SHEATHING w/ EXTERIOR GLUE @ WALLS, FLOORS, & ROOFS UNO
   PRESSURE TREATED DOUGLAS FIR - TYPE AS APPROPRIATE FOR EXTERIOR ABOVE GROUND USE AS SPECIFIED, BY AWPA.
2. FIELD CUTS AND BOLT HOLES IN PRESSURE TREATED WOOD SHALL BE PROTECTED IN ACCORDANCE WITH AWPA STANDARD M4.
3. THE MOISTURE CONTENT OF 2x MATERIAL AT TIME OF INITIAL USE SHALL BE LESS THAN 19%. THE MOISTURE CONTENT OF LUMBER 3x AND LARGER AT TIME OF INITIAL USE SHALL BE LESS THAN 30% UNO.
4. HOLES FOR BOLTS IN WOOD SHALL BE BORED WITH A BIT OF THE SAME NOMINAL DIAMETER AS THE BOLT PLUS 1/16".
5. HOLES FOR LAG SCREWS SHALL BE FIRST BORED TO THE SAME DIAMETER AND DEPTH AS THE UNTHREADED SHANK. THE THREADED PORTION SHALL BE DRILLED TO 50% OF THE SHANK DIAMETER UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS.
6. LAG SCREWS AND WOOD SCREWS SHALL BE SCREWED AND NOT DRIVEN INTO PLACE. SOAP MAY BE USED TO LUBRICATE SCREWS.
7. ALL BOLTS, LAG SCREWS AND POST-INSTALLED ANCHORS SHALL BE PROVIDED WITH METAL WASHERS UNDER HEADS AND NUTS WHICH BEAR ON WOOD. STEEL WASHERS SHALL BE SIMPSON BP OR BPS TYPE (3" SQ MIN w/ STD CUT WASHER WHERE REQD BY CODE). MALLEABLE IRON (MI) WASHERS SHALL BE ROUND AND CAST. STANDARD FLAT WASHERS SHALL BE PER ANSI B18.22.1 TYPE A - WIDE PATTERN. FOR WASHERS AT SILL ANCHORS, SEE SCHEDULE:

SILL ANCHOR BOLT WASHER SCHEDULE				
WALL TYPE	2x4	2x6	2x8 & LARGER 1 SIDE SHTG	2x8 & LARGER 2 SIDES SHTG
WASHER DESIGNATION	BPS 5/8-3	BPS 5/8-6	BPS 5/8-6	3GA x 3" x STUD WIDTH - 1/2" w/ 11/16"Ø @ CL

13. ALL BOLTS AND LAG SCREWS SHALL BE TIGHTENED ON INSTALLATION AND RETIGHTENED BEFORE CLOSING IN OR AT COMPLETION OF JOB.
14. ALL BOLTS SHALL BE FULL NOMINAL DIMENSION AT UNTHREADED PORTION. NO UPSET THREADED BOLTS ALLOWED.
15. ALL FASTENERS, INCLUDING NUTS AND WASHERS, IN CONTACT w/ PRESERVATIVE-TREATED OR FIRE-RETARDANT MATERIAL SHALL BE HOT-DIPPED GALVANIZED STEEL OR STAINLESS STEEL. BOLTS MAY BE HOT-DIPPED OR MECHANICALLY DEPOSITED ZINC-COATED STEEL. PLAIN CARBON STEEL FASTENERS ARE PERMITTED IN CONTACT w/ SBX/DOT OR ZINC BORATE PRESERVATIVE-TREATED WOOD IN AN INTERIOR, DRY ENVIRONMENT.
16. FRAMING HARDWARE SHOWN ON THE PLANS IS SIMPSON STRONG-TIE. USE FRAMING HARDWARE AS MANUFACTURED BY SIMPSON COMPANY OR EQUIVALENT. PRIOR TO INSTALLATION OF ANY NON-SIMPSON HARDWARE, THE CONTRACTOR SHALL SUBMIT A LIST OF ALL DETAIL REFERENCES WHERE A HARDWARE SUBSTITUTION IS PROPOSED, THE DESIGNATION FOR THE SIMPSON ITEM AND NON-SIMPSON PROPOSED EQUIVALENT AND AN ICC REPORT FOR EACH SUBSTITUTION ITEM.

STRUCTURAL SPECIAL INSPECTIONS AND TESTING

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS AND TESTING
1105N001

1. SPECIAL INSPECTIONS AND TESTING SHALL BE PROVIDED BY A TESTING AND INSPECTION AGENCY, EMPLOYED BY THE OWNER (OR OWNER'S AUTHORIZED AGENT), AND APPROVED BY THE BUILDING OFFICIAL TO PROVIDE SPECIAL INSPECTIONS AND TESTING FOR THE PARTICULAR TYPE OF CONSTRUCTION.
2. TABLES OF SPECIAL INSPECTIONS AND TESTING ARE DERIVED FROM THE STRUCTURAL PROVISIONS OF THE CBC AND REFERENCED STANDARDS AND ARE FOR REFERENCE ONLY. THE INCLUDED TABLES ARE PROVIDED FOR THE CONVENIENCE OF THE OWNER, TESTING AGENCY AND CONTRACTOR IN DEVELOPING THE SCOPE OF WORK FOR REQUIRED TESTING AND INSPECTION OF STRUCTURAL MATERIALS AND COMPONENTS. FINAL DEFINITION OF THIS SCOPE OF WORK IS TO BE DETERMINED BY THE TESTING AGENCY AND THE OWNER (OR OWNER'S AUTHORIZED AGENT).
3. FREQUENCY OF SPECIAL INSPECTIONS AND TESTING SHALL BE, AT A MINIMUM, AS NOTED FOR THE INDIVIDUAL ELEMENTS WITHIN THE TABLES BELOW. THE CONTRACTOR SHALL COORDINATE TIMING OF SPECIAL INSPECTIONS AND TESTING WITH THE SPECIAL INSPECTION AND TESTING AGENCY.
4. PRIOR TO THE START OF CONSTRUCTION, THE TESTING AND INSPECTION AGENCY SHALL PROVIDE DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING OF THE SPECIAL INSPECTORS WHO WILL PERFORM THE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION, IN ACCORDANCE WITH CBC SECTION 1704.2.1.
5. THE TESTING AND INSPECTION AGENCY SHALL SUBMIT REPORTS OF SPECIAL INSPECTIONS AND TESTS TO THE BUILDING OFFICIAL, STRUCTURAL ENGINEER OF RECORD AND THE CONTRACTOR, PER CBC SECTION 1704.2.4. THE REPORTS SHALL INDICATE WHETHER WORK INSPECTED OR TESTED CONFORMED TO THE APPROVED CONSTRUCTION DOCUMENTS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF DISCREPANCIES ARE NOT CORRECTED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE STRUCTURAL ENGINEER OF RECORD.
6. SPECIAL INSPECTION AND TESTING RECORDS SHALL BE RETAINED BY THE CONTRACTOR ON SITE UNTIL COMPLETION OF CONSTRUCTION.
7. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT TO THE BUILDING OFFICIAL ACKNOWLEDGING RESPONSIBILITY FOR CONSTRUCTION OF THE MAIN LATERAL-FORCE RESISTING SYSTEM PRIOR TO COMMENCEMENT OF THAT WORK AS REQUIRED BY CBC SECTION 1704.4.
8. THE OWNER OR THE OWNER'S AUTHORIZED AGENT SHALL SUBMIT TO THE BUILDING OFFICIAL, A FINAL REPORT DOCUMENTING SPECIAL INSPECTIONS AND TESTS PER CBC SECTION 1704.2.4, AND REPORTS AND CERTIFICATES PER CBC SECTION 1704.5.
9. ALL SOILS AND FOUNDATION EXCAVATION INSPECTIONS SHALL BE BY THE GEOTECHNICAL ENGINEER OF RECORD, OR A GEOTECHNICAL FIRM HIRED BY THE OWNER PER CBC SECTION 1705.6.
10. SPECIAL INSPECTION IS REQUIRED FOR ALL SHOP FABRICATED MEMBERS OR ASSEMBLIES UNLESS WAIVED PER THE EXCEPTIONS IN CBC SECTION 1704.2.5.
11. DEFINITIONS:
    a. CONTINUOUS - SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS CONTINUOUSLY PRESENT WHEN AND WHERE THE WORK TO BE INSPECTED IS BEING PERFORMED.
    b. PERIODIC - SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS INTERMITTENTLY PRESENT WHERE THE WORK TO BE INSPECTED HAS BEEN OR IS BEING PERFORMED.
    c. QUALITY ASSURANCE (QA) - MONITORING AND INSPECTION TASKS PERFORMED BY AN AGENCY OR FIRM OTHER THAN THE FABRICATOR OR ERECTOR TO ENSURE THAT THE MATERIAL PROVIDED AND WORK PERFORMED BY THE FABRICATOR AND ERECTOR MEET THE REQUIREMENTS OF THE APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS. QUALITY ASSURANCE INCLUDES THOSE TASKS DESIGNATED 'SPECIAL INSPECTION' BY THE APPLICABLE CODE.
    d. QUALITY CONTROL (QC) - CONTROLS AND INSPECTIONS IMPLEMENTED BY THE FABRICATOR OR ERECTOR, AS APPLICABLE, TO ENSURE THAT THE MATERIAL PROVIDED AND WORK PERFORMED MEET THE REQUIREMENTS OF THE APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.
    e. OBSERVE (O) - OBSERVE THESE ITEMS ON A RANDOM BASIS (DAILY FOR LFRS). OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
    f. PERFORM (P) - PERFORM THOSE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH ITEM OR ELEMENT.
    g. DOCUMENT (D) - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORT NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UP, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION REPORT.
12. SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED DURING CONSTRUCTION ON THE WORK SHOWN IN THE CONSTRUCTION DOCUMENTS AS REQUIRED BY CBC CHAPTER 17. THE TABLES LISTED BELOW, AND THE JURISDICTION'S SPECIAL INSPECTION AND TESTING FORM. IF DISCREPANCIES ARE NOTED, CONTACT THE SEOR. ALL EXCEPTIONS INCLUDED IN CBC CHAPTER 17 ARE PERMITTED TO BE USED.
    - CONCRETE CONSTRUCTION (POST INSTALLED ANCHORS)

CONCRETE CONSTRUCTION - POST-INSTALLED ANCHORS
REQUIRED SPECIAL INSPECTIONS AND TESTS
CBC TABLE 1705.3
1105N302

TYPE	CONTINUOUS	PERIODIC	REFERENCED STANDARD
1. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. a,b			ACI 318: 17.8.2.4, 17.8.2
A. ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	-	
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 1.A.	-	X	

A. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO COMMENCEMENT OF THE WORK.

B. SEE THE POST-INSTALLED ANCHOR NOTES FOR ADDITIONAL INFO.

ABBREVIATIONS
1005N003

(A) - OCCURS ABOVE
AB - ANCHOR BOLT
ABV - ABOVE
ADDL - ADDITIONAL
AHU - AIR HANDLING UNIT
ALT - ALTERNATE
APPROX - APPROXIMATE
ARCH - ARCHITECTURAL
(B) - OCCURS BELOW
BLDG - BUILDING
BLKG - BLOCKING
BLW - BELOW
BM - BEAM
B.O. - BOTTOM OF
BOF - BOTTOM OF FOOTING
BOTT - BOTTOM
BRCG - BRACING
BRG - BEARING
BTWN - BETWEEN
BYND - BEYOND
CC - CENTER TO CENTER
CG - CENTER OF GRAVITY
CJ - CONSTRUCTION JOINT
CJP - COMPLETE JOINT PENETRATION
CL - CENTERLINE
CLG - CEILING
CLR - CLEAR
CMU - CONCRETE MASONRY UNIT
COL - COLUMN
CONC - CONCRETE
CONN - CONNECTION
CONT - CONTINUOUS
CONTR - CONTRACTOR
COORD - COORDINATE
CSK - COUNTERSINK
DBL - DOUBLE
DF - DOUGLAS FIR
DIAG - DIAGONAL
DL - DEAD LOAD
DWG - DRAWING
(E) - EXISTING
EA - EACH
EF - EACH FACE OR EDGE FASTENER
EJ - EXPANSION JOINT
ELEV - ELEVATION
EN - EDGE NAILING
EOS - EDGE OF SLAB
EQ - EQUAL
EW - EACH WAY
FB - FACE OF BLOCK/BRICK OR FLAT BAR
FC - FACE OF CONCRETE
FDN - FOUNDATION
FF - FINISH FLOOR
FRMG - FRAMING
FRT - FIRE RETARDANT TREATED
FS - FACE OF STUD OR FAR SIDE
FTG - FOOTING
GA - GAUGE OR GAGE
GALV - GALVANIZED
GLB - GLUED LAMINATED BEAM
GR - GRADE
GYP - GYPSUM
HD - HOLDOWN
HDR - HEADER
HGR - HANGER
HK - HOOK
HORIZ - HORIZONTAL
HSB - HIGH STRENGTH BOLT
HSS - HOLLOW STRUCTURAL SECTION
HT - HEIGHT
JH - JOIST HANGER
LL - LIVE LOAD
LLH - LONG LEG HORIZONTAL
LLV - LONG LEG VERTICAL
LONGIT - LONGITUDINAL
LS - LAG SCREW
LW - LIGHTWEIGHT
MECH - MECHANICAL
MFR - MANUFACTURER
MI - MALLEABLE IRON
× - MARK
MTL - METAL
(N) - NEW
NIC - NOT IN CONTRACT
NS - NEAR SIDE
NTS - NOT TO SCALE
NW - NORMAL WEIGHT
OI - OVER
OH - OPPOSITE HAND
OPNG - OPENING
OSB - ORIENTED STRAND BOARD
PC - PIECE
PERP - PERPENDICULAR
PJP - PARTIAL JOINT PENETRATION
PL - PLATE
PT - PRESSURE TREATED
PW - PUDDLE WELD
REINF - REINFORCING OR REINFORCEMENT
REQD - REQUIRED
RWD - REDWOOD
SC - SLIP CRITICAL
SCH - SCHEDULE
SEOR - STRUCTURAL ENGINEER OF RECORD
SHTG - SHEATHING
SIM - SIMILAR
SJ - SLAB CONTROL JOINT
SMS - SHEET METAL SCREW
SOG - SLAB-ON-GRADE
SP - STRUCTURAL PANEL
SPCG - SPACING
SQ - SQUARE
STD - STANDARD
STFNR - STIFFENER
STGRD - STAGGERED
STL - STEEL
STRUCT - STRUCTURAL
SW - SHEAR WALL
T&B - TOP & BOTTOM
T&G - TONGUE & GROOVE
THRD - THREADED
TN - TOE NAIL
T.O. - TOP OF
TOC - TOP OF CONCRETE (SLAB UNO)
TOF - TOP OF FOOTING OR TOP OF FRAMING
TOS - TOP OF STEEL
TOW - TOP OF WALL
TRANS - TRANSVERSE
TYP - TYPICAL
UNO - UNLESS NOTED OTHERWISE
VERT - VERTICAL
VIF - VERIFY IN FIELD
WF - WIDE FLANGE
WHS - WELDED HEADED STUD
WP - WORK POINT
WS - WOOD SCREW
WWF - WELDED WIRE FABRIC
XS - EXTRA STRONG
XXS - DOUBLE EXTRA STRONG
Ø - ROUND OR DIAMETER

STRUCTURAL SHEET INDEX

S0.0.1	GENERAL NOTES & SPECIAL INSPECTIONS AND TESTING
S1.0.1	FOUNDATION PLAN - SERVER ROOM

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BRIAN S. WIENS
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STRUCTURAL
STATE OF CALIFORNIA

Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
GENERAL NOTES & SPECIAL INSPECTIONS AND TESTING

Drawn By

Checked By

Project No.
23-525

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01/03/2024

Drawing No.
S0.0.1

NO.	DATE	ISSUE

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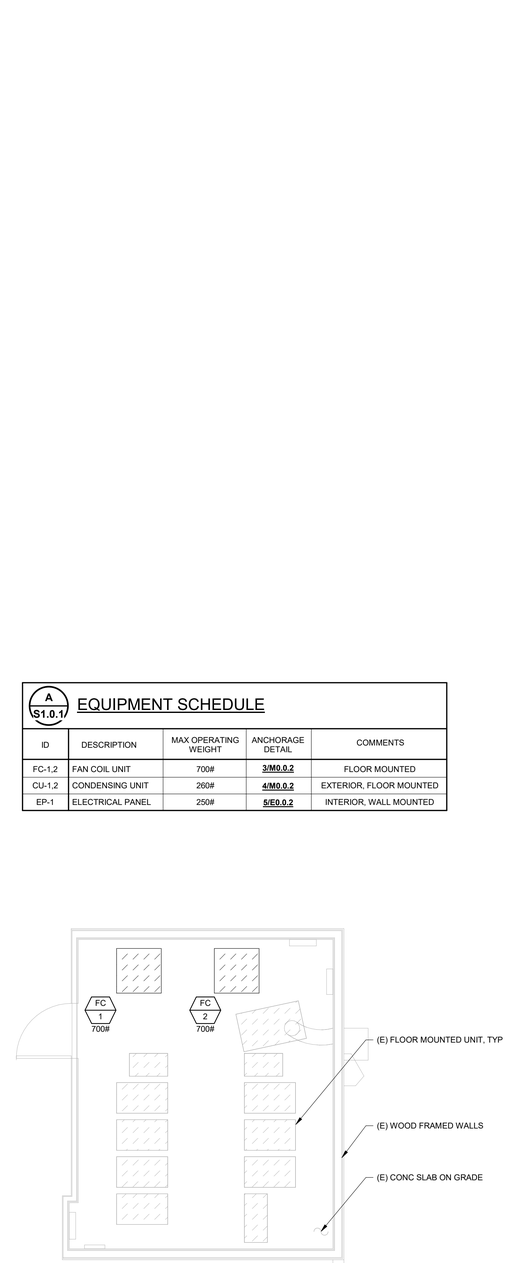
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EQUIPMENT SCHEDULE

(A / S1.0.1)

ID	DESCRIPTION	MAX OPERATING WEIGHT	ANCHORAGE DETAIL	COMMENTS
FC-1,2	FAN COIL UNIT	700#	3/M0.0.2	FLOOR MOUNTED
CU-1,2	CONDENSING UNIT	260#	4/M0.0.2	EXTERIOR, FLOOR MOUNTED
EP-1	ELECTRICAL PANEL	250#	5/E0.0.2	INTERIOR, WALL MOUNTED



FOUNDATION PLAN NOTES

1. NOTES AND DETAILS ON SHEETS LABELED AS "GENERAL" OR "TYPICAL" ARE APPLICABLE TO ALL DRAWINGS, UNO.
2. CONTRACTOR TO NOTIFY ARCHITECT IF EXISTING DAMAGE OR DETERIORATION OF EXISTING STRUCTURE IS ENCOUNTERED.
3. ALL ITEMS ARE EXISTING UNLESS SHOWN OTHERWISE AS NEW.

FOUNDATION PLAN LEGEND

MECHANICAL UNIT. SEE MECHANICAL UNIT SCHEDULE **A/S1.0.1** FOR WEIGHTS AND ATTACHMENT OF UNIT TO STRUCTURE.

XX / X / XX#

PARTIAL PLAN — FOUNDATION PLAN SERVER ROOM

(1 / S1.0.1) 1/4" = 1'-0" FOUNDATION PLAN - SERVER ROOM

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Drawing Title
FOUNDATION PLAN - SERVER ROOM

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S1.0.1

COMPUTER ROOM AIR CONDITIONING UNIT (SPLIT DX) SCHEDULE (OFCI)

TYPE	MARK	NOM. TONS	UNIT ORIENT—ATION	ELECTRICAL					SUPPLY FAN				OSA	COOLING (DX)			HEATING (DX)		FILTER TYPE	OPER. WEIGHT (LBS.)	MANUFACTURER	MODEL NUMBER
				VOLTS	PHASE	FLA	MCA	MOCP	MOTOR BHP	DRIVE	CFM	E.S.P. (IN WC)	MIN CFM	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	E.A. DB/WB (°F)	TOTAL CAP. (MBH)	AUX. HEAT (KW)				
CRAC	1	8.5	UPFLOW	208	3	42.9	50.8	80	3.95	DIRECT	4464	0.5	0	107	107	85/64.4	–	–	MERV–8	700	LIEBERT	PX029UA
CRAC	2	8.5	UPFLOW	208	3	42.9	50.8	80	3.95	DIRECT	4464	0.5	0	107	107	85/64.4	–	–	MERV–8	700	LIEBERT	PX029UA

NOTES:
1. LIEBERT UNITS TO BE OWNER FURNISHED, CONTRACTOR INSTALLED.
2. SEE ELECTRICAL DRAWINGS FOR UNIT DISCONNECT SWITCH.
3. PROVIDE UNITS WITH LIEBERT INTELLIGENT COMMUNICATION AND MONITORING (iCOM) CONTROLS. CRAC–1 AND CRAC–2 TO BE CONNECTED FOR LEAD–LAG CONTROL. LEAD–LAG CONTROL PROGRAMMING TO BE PER LIEBERT FACTORY SETTING.
4. PROVIDE DUCT SMOKE DETECTOR IN THE SUPPLY PLENUM OF EACH UNIT TO SHUT–OFF UPON DETECTION OF SMOKE PER CMC 609.0. COORDINATE WITH ELECTRICAL AND FIRE ALARM CONTRACTOR FOR WIRING AND MONITORING.

COMPUTER ROOM CONDENSING UNIT (SPLIT DX) SCHEDULE (OFCI)

TYPE	MARK	NOM. TONS	ELECTRICAL					COOLING (DX)				OPER. WEIGHT (LBS.)	MANUFACTURER	MODEL NUMBER
			VOLTS	PHASE	FLA	MCA	MOCP	SEER/ EER	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	AMBIENT DB (°F)			
CRCU	1	8.5	208	3	2.3	2.9	15	–/–	107	107	95	260	LIEBERT	MCM040
CRCU	2	8.5	208	3	2.3	2.9	15	–/–	107	107	95	260	LIEBERT	MCM040

NOTES:
1. LIEBERT UNITS TO BE OWNER FURNISHED, CONTRACTOR INSTALLED.
2. SEE ELECTRICAL DRAWINGS FOR UNIT DISCONNECT SWITCH.
3. SEE ELECTRICAL DRAWINGS FOR CONVENIENCE OUTLET.

AIR DISTRIBUTION SCHEDULE

SYMBOL	TYPE	DESCRIPTION
A	SURFACE CEILING SUPPLY	STEEL MODULAR CORE SQUARE CEILING DIFFUSER WITH ADJUSTABLE DISCHARGE PATTERN. FINISH: COLOR BY ARCHITECT. FRAME: FLAT SURFACE. TITUS 271FL.

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.17 THROUGH 1617A.1.20 & 1617A.1.23 AND ASCE 7–16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–16 SECTION 13.3 AS DEFINED IN ASCE 7–16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTION 1617A.1.24 THROUGH 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE–APPROVED INSTALLATION GUIDE (E.G., HCAi OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP MD PP E OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT
☒ ☒ ☐ ☐ SPECIFIC NOTES AND DETAILS.

MP MD PP E OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE–APPROVAL
☐ ☐ ☐ ☐ (OPM#) #0043–13.

MECHANICAL LEGEND

SYMBOL	ITEM	ABBR.
	SUPPLY AIR	SA
	RETURN AIR	RA
	EXHAUST AIR	EA
	OUTSIDE AIR	OSA
	TRANSFER AIR	TA
1 / M–1	DETAIL DESIGNATION DETAIL NUMBER SHEET NO. WHERE SHOWN	
AC–1	EQUIPMENT DESIGNATION UNIT ABBREVIATION NUMBER	
A 10x10–3 120, 70	GRILLE DESIGNATION NECK SIZE & BLOW (4 UON) FIRE DAMPER WHERE REQ'D CFM	
	ACOUSTIC LINED DUCT	L
	TURNING VANES	TV
	DUCT FLEXIBLE CONNECTION	
	DUCT RISER	
	DUCT DROP	
	RECTANGULAR TO ROUND FITTING	
	VOLUME CONTROL DAMPER	VD
FD	FIRE DAMPER W/ ACCESS	FD
FSD	FIRE SMOKE DAMPER W/ ACCESS	FSD
	OPPOSED BLADE DAMPER	OBD
	BACKDRAFT DAMPER	BDD
M	MOTORIZED DAMPER	
T	THERMOSTAT @ +48" AFF	T–STAT
S	SENSOR @ +48" AFF	
TC	TIMECLOCK @ +48" AFF	
TCP	TEMPERATURE CONTROL PANEL	TCP
SD	DUCT SMOKE DETECTOR	SD
	PIPE RISER/DROP	(R)/(D)
	ABOVE FINISHED FLOOR	AFF
	UNLESS OTHERWISE NOTED	UON
	TYPICAL	(TYP)
	BOTTOM OF DUCT	BOD
	BOTTOM OF PIPE	BOP
	AUTOMATIC AIR VENT	AAV
	MANUAL AIR VENT	MAV
	TEMP. CONTROL CONTRACTOR	TCC
	TEMPERATURE CONTROL VALVE	TCV
	COMBUSTION AIR	CA
	NEW	(N)
	EXISTING	(E)
	POINT OF DIS/CONNECTION	POD/POC
	HEATING HOT WATER SUPPLY	HHWS
	HEATING HOT WATER RETURN	HHWR
	2–WAY CONTROL VALVE	
	BACKFLOW PREVENTER	BFP
	BALL VALVE	
	BUTTERFLY VALVE	
	CAP	
	CHECK VALVE	
	AUTOMATIC BALANCE VALVE (B&G ULTRA SET)	ABV
	AUTOMATIC BALANCE VALVE (B&G CIRCUIT SETTER)	CBV
	CONTROL VALVE (2–WAY)	
	FLEX CONNECTOR	FC
	FLOW ARROW	
	GATE VALVE	
	PRESSURE GAUGE	
	PLUG VALVE	
	REDUCER	
	STRAINER	
TS	TEMPERATURE SENSOR	TS
	TEST PORT (PETE'S PLUG)	PP
	THERMOMETER	
	TRIPLE DUTY VALVE	

MECHANICAL SPECIFICATIONS

A. THIS CONTRACTOR SHALL COMPLY WITH ALL CODES AND REGULATIONS IN EFFECT AT THE JOB SITE, INCLUDING, BUT NOT LIMITED TO:
A.1. 2022 CALIFORNIA BUILDING CODE
A.2. 2022 CALIFORNIA MECHANICAL CODE
A.3. 2022 CALIFORNIA PLUMBING CODE
A.4. 2022 CALIFORNIA ELECTRICAL CODE
A.5. 2022 CALIFORNIA GREEN BUILDING STANDARDS
A.6. 2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS – TITLE 24
A.7. NATIONAL FIRE PROTECTION ASSOCIATION
A.8. CALIFORNIA STATE FIRE MARSHAL

B. ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE GUARANTEED FREE FROM ALL MECHANICAL, ELECTRICAL AND WORKMANSHIP DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ALL DAMAGED ITEMS INSTALLED UNDER THIS CONTRACT WITHOUT ADDITIONAL COST TO OWNER.

C. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE OWNER COPIES OF OPERATION, MAINTENANCE AND PREVENTATIVE MAINTENANCE MANUALS FOR EACH MODEL AND TYPE OF MECHANICAL EQUIPMENT.

D. CHECK AND VERIFY EXISTING CONDITIONS AT THE JOB SITE BEFORE BEGINNING WORK. ADJUST THE LOCATION AND CONFIGURATION OF THE WORK NECESSARY TO SUIT ACTUAL CONDITIONS AND OTHER TRADES. ANY CHANGES REQUIRED MUST FIRST BE APPROVED BY THE ARCHITECT OR ENGINEER.

E. THE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK AND SYSTEMS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. CHANGES REQUIRED TO SUIT EXISTING CONDITIONS AND DUE TO COORDINATION WITH OTHER TRADES SHALL BE MADE AT NO EXTRA COST TO THE OWNER.

F. SUBMIT MANUFACTURER'S PRODUCT DATA INCLUDING NAME OF MANUFACTURER, TRADE NAME, MODEL, CAPACITY, OPTIONS, DIMENSIONS, WEIGHTS, INSTALLATION AND STARTUP DATA. EQUIPMENT PERFORMANCES SCHEDULED ARE MINIMUM CAPACITY, AIR FLOW, EFFICIENCY, ETC. REQUIRED. WEIGHTS AND ELECTRICAL DATA SCHEDULED IS MAXIMUM AVAILABLE OR ALLOWABLE.

G. ALL EQUIPMENT IS TO BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER. USING ALL ACCESSORY EQUIPMENT AVAILABLE FROM THE MANUFACTURER FOR SUPPORTS, CONTROLS, ETC., TO MAKE A COMPLETE SYSTEM. ALL EQUIPMENT OR ACCESSORIES NEEDED AND NOT SHOWN OR SPECIFIED SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. ADJUST THE EQUIPMENT FOR PROPER OPERATION, CHECK ALL CONTROLS AND VERIFY THAT ALL SAFETY DEVICES ARE FUNCTIONING PROPERLY.

H. PROVIDE ACCESS DOORS WHERE ACCESS THROUGH FLOORS, WALLS OR CEILINGS IS REQUIRED TO ACCESS MECHANICAL CONTROL SYSTEM COMPONENTS, FIRE/SMOKE DAMPERS, SMOKE DETECTORS, ETC., OR OTHER SYSTEMS REQUIRING ACCESS FOR MAINTENANCE, TESTING OR OBSERVATION. COORDINATE THE EXACT TYPE AND LOCATION OF ACCESS DOORS TO PROVIDE PROPER ACCESS TO THE ITEM CONCEALED.

I. CHECK ALL PIPE AND DUCTWORK FOR LEAKS AND EXCESSIVE AIR LOSS AND NOISE. CORRECT ANY DEFICIENCIES AS SOON AS DISCOVERED. OPERATE THE SYSTEMS AS A TEST AND DEMONSTRATE TO THE OWNER AND ARCHITECT OR ENGINEER THAT THE SYSTEM IS FUNCTIONING PROPERLY.

J. GALVANIZED STEEL DUCTS SHALL BE ASTM A 653/A 653M GALVANIZED STEEL SHEET, FORMING STEEL (FS) DESIGNATION, WITH G90/Z275 ZINC COATING.

K. FABRICATE, SUPPORT AND SEAL DUCTWORK IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAGES, REINFORCING, AND SEALING FOR 4" STATIC PRESSURE UPSTREAM OF TERMINAL UNITS (VAV, CAV BOXES) AND 2" STATIC PRESSURE DOWNSTREAM OF TERMINAL UNITS (VAV, CAV BOXES).

L. CONSTRUCT DUCTWORK T'S, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1–1/2 TIMES WIDTH OF DUCT ON CENTERLINE. WHERE NOT POSSIBLE RECTANGULAR ELBOWS MUST BE USED, PROVIDE AIR FOIL TURNING VANES. WHERE ACOUSTICAL LINING IS INDICATED, PROVIDE TURNING VANES OF PERFORATED METAL WITH GLASS FIBER INSULATION.

M. COMBINATION FIRE AND SMOKE DAMPERS SHALL MEET THE REQUIREMENTS OF NFPA 90A, UL 555, UL 555S, AND AS INDICATED. PROVIDE FACTORY SLEEVE AND COLLAR FOR EACH DAMPER.

N. ALL INSULATION AND LINER PRODUCTS SURFACE BURNING CHARACTERISTICS: FLAME SPREAD/SMOKE DEVELOPED INDEX OF 25/50, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E 84, NFPA 255, OR UL 723.

O. DUCT INSULATION BLANKET (INTERIOR APPLICATIONS):
O.1. INSULATION: ASTM C553; FLEXIBLE, NONCOMBUSTIBLE BLANKET. 'K' ('KSI') VALUE: 0.31 AT 75 DEGREES F (0.045 AT 24 DEGREES C), WHEN TESTED IN ACCORDANCE WITH ASTM C 518. MAXIMUM SERVICE TEMPERATURE: 250 DEGREES F (121 DEGREES C). MAXIMUM MOISTURE ABSORPTION: 0.20 PERCENT BY VOLUME. DUCT APPLICATION: 2" THICK, 3/4 LB. DENSITY.
O.2. VAPOR BARRIER JACKET: KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM. MOISTURE VAPOR TRANSMISSION: ASTM E 96; 0.02 PERM. SECURE WITH PRESSURE SENSITIVE TAPE.

P. DUCT INSULATION BOARD (EXTERIOR APPLICATIONS):
P.1. INSULATION: ASTM C 612; RIGID, NONCOMBUSTIBLE BLANKET. 'K' ('KSI') VALUE: 0.24 AT 75 DEGREES F (0.036 AT 24 DEGREES C), WHEN TESTED IN ACCORDANCE WITH ASTM C 518. MAXIMUM SERVICE TEMPERATURE: 250 DEGREES F (121 DEGREES C). MAXIMUM MOISTURE ABSORPTION: 0.20 PERCENT BY VOLUME. DENSITY: 3.0 LB/CU FT (48 KG/CU M).
P.2. VAPOR BARRIER JACKET: KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM. MOISTURE VAPOR TRANSMISSION: ASTM E 96; 0.04 PERM. SECURE WITH PRESSURE SENSITIVE TAPE.
P.3. ALUMINUM JACKET: ASTM B 209 (ASTM B 209M). THICKNESS: 0.016 INCH (0.40 MM) SHEET. FINISH: SMOOTH. JOINING: LONGITUDINAL SLIP JOINTS AND 2 INCH (50 MM) LAPS. FITTINGS: 0.016 INCH (0.4 MM) THICK DIE SHAPED FITTING COVERS WITH FACTORY ATTACHED PROTECTIVE LINER. METAL JACKET BANDS: 3/8 INCH (10 MM) WIDE; 0.015 INCH (0.38 MM) THICK ALUMINUM.

Q. DUCT LINER:
Q.1. INSULATION: INCOMBUSTIBLE GLASS FIBER COMPLYING WITH ASTM C 1071; FLEXIBLE BLANKET; WITH ACRYLIC POLYMER SHOWN TO BE FUNGUS AND BACTERIA RESISTANT BY TESTING TO ASTM G 21 IMPREGNATED SURFACE AND EDGE COAT. APPARENT THERMAL CONDUCTIVITY: MAXIMUM OF 0.31 AT 75 DEGREES F (0.045 AT 24 DEGREES C). DUCT APPLICATION: 1–1/2" THICK, 1–1/2 POUND DENSITY. SERVICE TEMPERATURE: UP TO 250 DEGREES F (121 DEGREES C). RATED VELOCITY ON COATED AIR SIDE FOR AIR EROSION: 5,000 FPM (25.4 M/S), MINIMUM.
Q.2. LINER FASTENERS: GALVANIZED STEEL, SHEET METAL WELD PINS OR CLINCH PINS AND WASHERS.

R. INSULATED FLEXIBLE DUCTS
R.1. FLEXIBLE DUCTS SHALL BE U.L. LISTED AND SHALL COMPLY WITH UMC STANDARD 6–1.
R.2. THE MAXIMUM LENGTH OF FLEXIBLE DUCTWORK SHALL BE 5 FEET PER CMC SECTION 603.4.1 DUCTWORK SHALL BE EXTENDED TO FULL LENGTH WHENEVER POSSIBLE WITHOUT SEVERE BENDS OR KINKS. BENDS SHALL BE MADE TO MAINTAIN R/W EQUAL TO 1.5.
R.3. BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE; FIBERGLASS INSULATION; POLYETHYLENE VAPOR BARRIER FILM.
R.3.1. PRESSURE RATING: 4 INCHES WG POSITIVE PRESSURE AND 1 INCH NEGATIVE PRESSURE.
R.3.2. INSULATION SHALL BE 1–1/2 INCH THICK FIBERGLASS.
R.3.3. MAXIMUM VELOCITY: 4000 FPM (20.3 M/SEC).
R.3.4. TEMPERATURE RANGE: –20 DEGREES F TO 175 DEGREES F (–28 DEGREES C TO 79 DEGREES C).

S. SEAL ALL STANDING SEAMS AND TRANSVERSE JOINTS IN ALL SHEETMETAL DUCTWORK WITH HARDCAST IRON GRIP PREMIUM FLEXIBLE WATER BASED DUCT SEALANT.

T. DURING CONSTRUCTION PROVIDE TEMPORARY CLOSURES OF METAL OR TAPED POLYETHYLENE ON OPEN DUCTWORK TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM.

U. ALL BRANCH DUCTS SHALL HAVE BALANCING DAMPERS WITH ACCESSIBLE LOCKING TYPE QUADRANT. WHERE DAMPER IS INACCESSIBLE, PROVIDE YOUNG REGULATOR MODEL 270–301 CABLE KIT WITH EITHER 830A–CC (RECTANGULAR) OR 5020–CC (ROUND) DAMPER.

V. PERFORM TOTAL SYSTEMS BALANCE IN ACCORDANCE WITH AABC, ASHRAE STD 111, OR NEBB PROCEDURAL STANDARDS FOR TESTING, BALANCING AND ADJUSTING OF ENVIRONMENTAL SYSTEMS.

W. THE INSTALLATION OF DUCT SMOKE DETECTORS FOR AUTOMATIC SHUTDOWN OF AIR MOVING SYSTEMS AS REQUIRED BY CMC SECTION 609 OR AS REQUIRED FOR THE OPERATION OF FIRE SMOKE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF THE LOCAL FIRE DEPARTMENT'S STANDARD "FIRE PROTECTION DESIGN GUIDELINES FOR SMOKE CONTROL WITHIN BUILDINGS". WHERE AIR DUCT SMOKE DETECTORS SERVING AIR–MOVING SYSTEMS ARE INSTALLED WITHIN CONDCEALED SPACES, AND/OR DROP CEILING AREAS, THE DETECOR SHALL BE PROVIDED WITH THE UNIT SERVED. SAID REMOTE ALARM LED DEVICE SHALL BE LABELED TO CLEARLY IDENTIFY THE UNIT SERVED (AC–1, ETC.). WHERE AIR DUCT SMOKE DETECTORS SERVING AIR–MOVING SYSTEMS ARE INSTALLED IN CONCEALED SPACES, AND/OR DROP CEILING AREAS MORE THAN 10 FEET ABOVE THE FINISHED FLOOR, THE DETECTOR SHALL BE PROVIDED WITH A REMOTE TEST AND RESET SWITCH, SAID REMOTE TEST AND RESET SWITCH SHALL BE ATTACHED TO AN ADJACENT WALL OR STRUCTURAL COLUMN AT A MAXIMUM HEIGHT OF 6 FEET ABOVE FINISHED FLOOR. PRIOR TO MECHANICAL PERMIT FINAL, A SMOKE DETECTOR SHUT–OFF TEST WILL BE REQUIRED.

MECHANICAL SHEET INDEX

SHEET NO.	SHEET TITLE
M0.0.1	MECHANICAL NOTES, LEGEND AND SCHEDULES
M0.0.2	MECHANICAL DETAILS
M1.0.0	MECHANICAL SITE PLAN
M1.0.1	MECHANICAL FLOOR PLAN

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SERVER ROOM HVAC UPGRADES

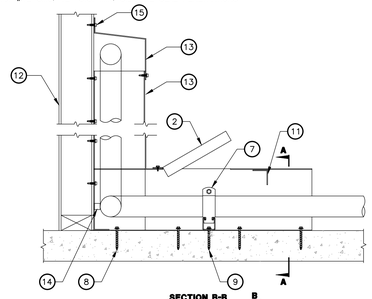
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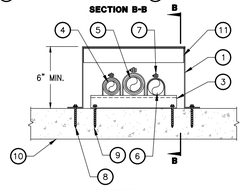
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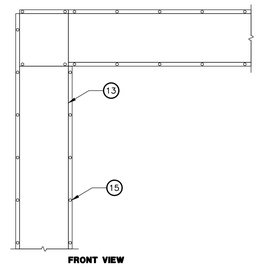
1. 14 GA GALVANIZED COVER PLATE ALL AROUND PIPING AND CONDUIT UP TO WALL PENETRATION
2. PROVIDE HINGED ACCESS IN GALVANIZED COVER PLATE FOR ANY CONCEALED ACCESSORIES
3. UNISTRUT P1000 CHANNEL, 4'-0" O.C. MAX.
4. REFRIGERANT LIQUID LINE PER MFGR'S REQUIREMENTS, TYP.
5. REFRIGERANT SUCTION LINE PER MFGR'S REQUIREMENTS, TYP.
6. CONTROL AND ELECTRICAL CONDUIT BY OTHERS, COORDINATE SPACE REQUIREMENTS, TYP.
7. PIPE CLAMP WITH INSULATION SHIELD
8. "TAPCON" CONCRETE SCREW WITH 1" EMBED. AT 8" O.C.
9. "TAPCON" CONCRETE SCREW WITH 1" EMBED, (2) PER CHANNEL
10. CONCRETE PAD
11. 2" x 2" x 1/8" ANGLE WELDED TO UNDERSIDE IF WIDTH EXCEEDS 18"
12. EXTERIOR WALL
13. SHEET METAL ENCLOSURE
14. UNISTRUT ATTACHMENT PIPE TO WALL
15. #12 SMS, 12" O.C. MIN, SILICONE SEAL PENETRATIONS



SECTION B-B



SECTION A-A

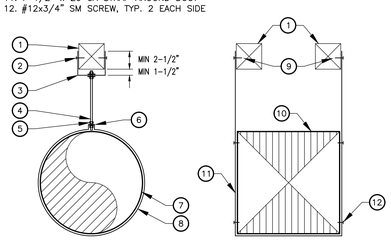


FRONT VIEW

MPSA08A

REFRIGERANT PIPE MOUNTING | NTS | 5

1. 4x4 BLOCKING BETWEEN JOISTS WITH U44 HANGERS AT EACH END, TYP.
2. #12x1-1/2" WOOD SCREWS, 2 PER SIDE
3. 3 WIDE x 16 GA BENT PLATE
4. 3/8"ø THREADED ROD
5. 3/8" NUT & 2" WASHER, TYP. TOP AND BOTTOM OF FLANGE
6. 2-1/2" WIDE X 20 GA STRAP WITH MIN. 3"x2" HIGH FLANGE, TYP.
7. ROUND DUCT
8. 2-1/2" x 20 GA STRAP
9. 1/4"ø x 1-1/4" LAG BOLT, TYP. 2 EACH END
10. RECTANGULAR DUCT
11. 1-1/2" x 20 GA STRAP AROUND DUCT
12. #12x3/4" SM SCREW, TYP. 2 EACH SIDE

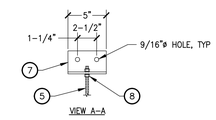


NOTE:
1. SUPPORT DUCTWORK AT 8'-0" O.C.
2. BLOCKING CONDITION IS SHOWN, 2x JOIST CONDITION IS SIMILAR WITH STRAPS AND LAG BOLTS ATTACHING DIRECTLY TO 2x ROOF JOISTS.
3. PER 2010 CBC, SEISMIC RESTRAIN IS NOT REQUIRED FOR RECTANGULAR DUCTS LESS THAN 6 SQ. FT. CROSS SECTION OR ROUND DUCTS LESS THAN 28"ø.

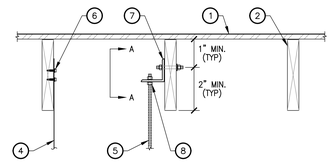
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TYPICAL DUCT SUPPORT DETAIL | NTS | 6

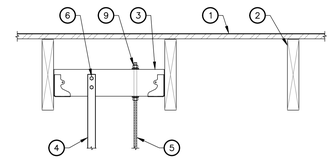
1. FLOOR/ROOF, SEE STRUCTURAL DRAWINGS
2. FLOOR/ROOF FRAMING, SEE STRUCTURAL DRAWINGS
3. 4x4 BLOCKING BETWEEN JOISTS W/ U44 HANGERS AT EACH END, TYP.
4. 1" x 20 GA. GALV. SHEET METAL STRAP
5. 3/8"ø THREADED ROD, B-LINE ATR OR EQUAL
6. (2) #12 x 1" SMS, 2" O.C. MIN.
7. 3"x3"x1/4" x 5" LONG GALVANIZED STEEL ANGLE, ATTACH TO FRAMING WITH (2) 1/2"ø BOLTS OR THREADED ROD WITH NUTS AND WASHER
8. NUT, TOP AND BOTTOM
9. NUT AND WASHER, TOP AND BOTTOM



VIEW A-A



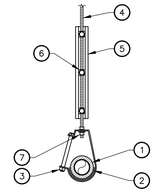
AT FRAMING MEMBERS



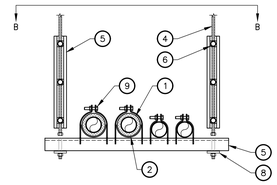
BETWEEN FRAMING MEMBERS

HANGER UPPER ATTACHMENTS (WOOD) | NTS | 1

1. PIPE, SEE PLAN FOR SIZE AND ROUTING
2. PIPE INSULATION WHERE APPLICABLE, SEE SPECIFICATIONS. PROVIDE INSULATION PROTECTION SADDLE, MIN. 12" LONG, B-LINE B3151 OR EQUAL. MAY BE SUBSTITUTED FOR PRE-INSULATED CALCIUM SILICATE SHIELD SUPPORT, B-LINE B338 OR EQUAL.
3. ADJUSTABLE 'J' PIPE HANGER, COATED OR PLATED TO ISOLATE HANGER FROM DISSIMILAR METAL PIPING, B-LINE B3690 OR EQUAL
4. 3/8"ø THREADED ROD, B-LINE ATR OR EQUAL
5. 1-5/8"x1-5/8"x12 GA UNISTRUT CHANNEL, B-LINE B22 OR EQUAL
6. ROD STIFFENER, B-LINE MODEL 98B OR EQUAL, MIN. 1" FROM TOP AND BOTTOM OF UNISTRUT AND MAX. 28" O.C., TORQUE TO 10 FT-LBS
7. NUT AND WASHER, TOP AND BOTTOM
8. NUT, TOP AND BOTTOM WITH UNISTRUT SQUARE WASHER, B-LINE MODEL B201ZN OR EQUAL
9. PIPE CLAMP, B-LINE SERIES B2000 OR EQUAL



NON-SEISMIC SUPPORT

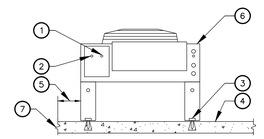


SEISMIC TRAPEZE SUPPORT

NOTES:
A. REUSE EXISTING PIPE HANGERS AND SUPPORTS WHERE POSSIBLE.
B. HANGER SPACING TO BE PER SPECIFICATIONS. MAXIMUM SPACING MAY NOT EXCEED 2022 CPC TABLE 313.3.
C. PROVIDE ROD STIFFENERS ONLY WHERE ROD LENGTH FROM SEISMIC BRACING TO UPPER ATTACHMENT EXCEEDS 18".

PIPE HANGER DETAIL | NTS | 2

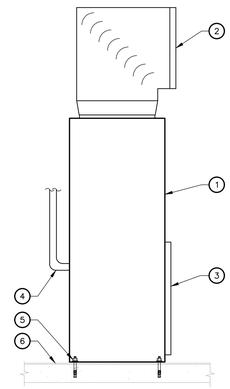
1. REFRIGERANT SUCTION LINE
2. REFRIGERANT SUPPLY LINE
3. 3/8"ø "HILTI" KB-TZ2 STAINLESS STEEL EXPANSION ANCHORS, 1-1/2" EFFECTIVE EMBEDMENT, ESR-4266. (TYP. 4). TORQUE TO 30 FT-LBS PER ICC ESR-4266, (1) AT EACH CORNER OF UNIT, (4) TOTAL
4. (E) CONCRETE SLAB ON GRADE.
5. MIN. 6" ALL AROUND UNIT.
6. CRCU UNIT – OFCI
7. EDGE OF CONCRETE



MCDSA02B

CONDENSING UNIT MOUNTING DETAIL | NTS | 4

1. COMPUTER ROOM FAN COIL, SEE SCHEDULES
2. SUPPLY AIR DISCHARGE FROM UNIT WITH MITERED ELBOW WITH TURNING VANES
3. UNIT FACTORY RETURN AIR OPENING
4. REFRIGERANT PIPING CONNECTIONS TO UNIT. PROVIDE INSULATION PER TITLE 24 REQUIREMENTS WITH PVC JACKETING WHERE EXPOSED INDOORS.
5. 3/8"ø HILTI KB-TZ2 EXPANSION ANCHOR WITH 1-1/2" EFFECTIVE EMBED., TORQUE TO 30 FT-LBS PER ICC ESR-4266, (1) AT EACH CORNER OF UNIT, (4) TOTAL THROUGH MANUFACTURER PROVIDED CORNER BRACKETS.
6. (E) CONCRETE SLAB ON GRADE.



NOTES:
1. INSTALL FAN COIL UNIT PER MANUFACTURER'S REQUIREMENTS.
2. COORDINATE CLEARANCES WITH EXISTING CONDITIONS AND SERVICE REQUIREMENTS.

COMPUTER ROOM FAN COIL MOUNTING | NTS | 3

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Job #: 23-2138

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JORDAN EARLY
M 41413
REN. 03-31-25
MECHANICAL
STATE OF CALIFORNIA

Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

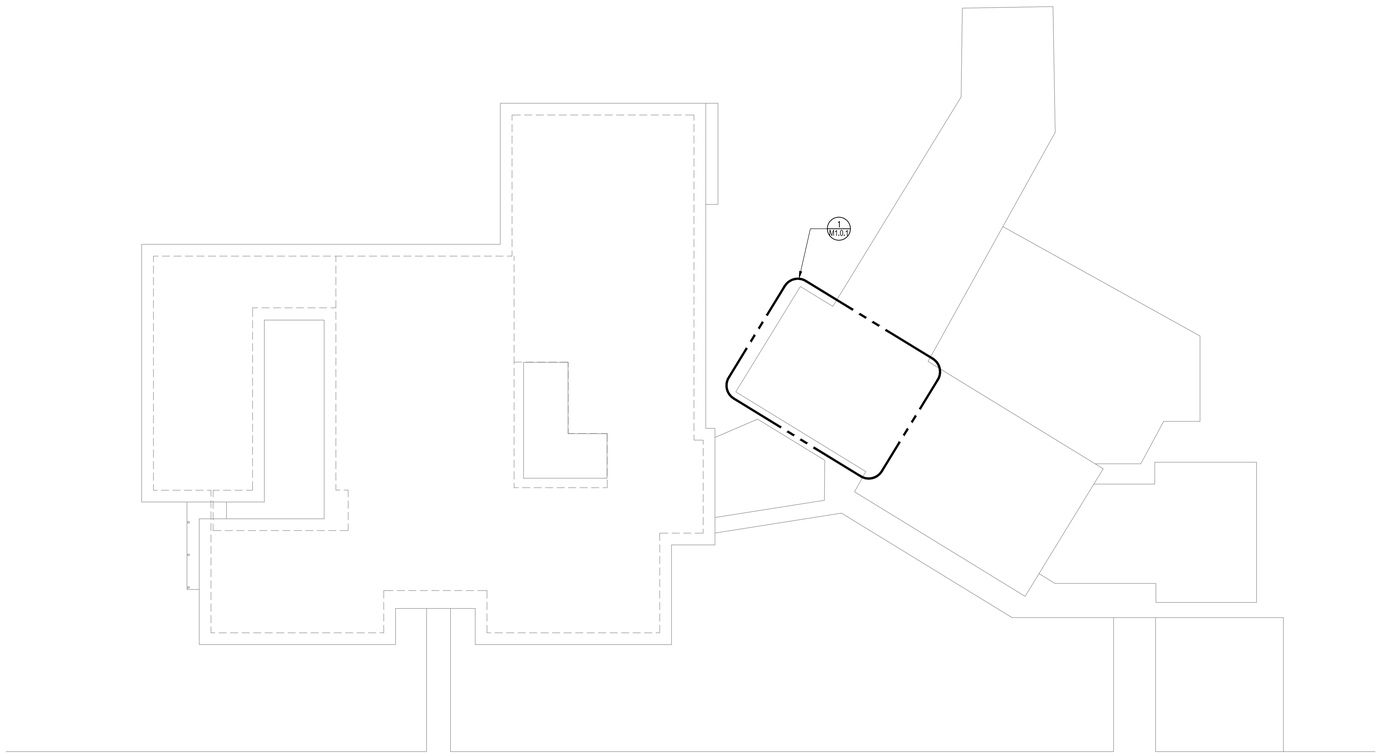
Drawing Title
MECHANICAL DETAILS

Drawn By
Checked By

NO.	DATE	ISSUE

Project No.
23-525
Date
01/03/2024
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GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

1 **MECHANICAL SITE PLAN**
SCALE: 1" = 20'

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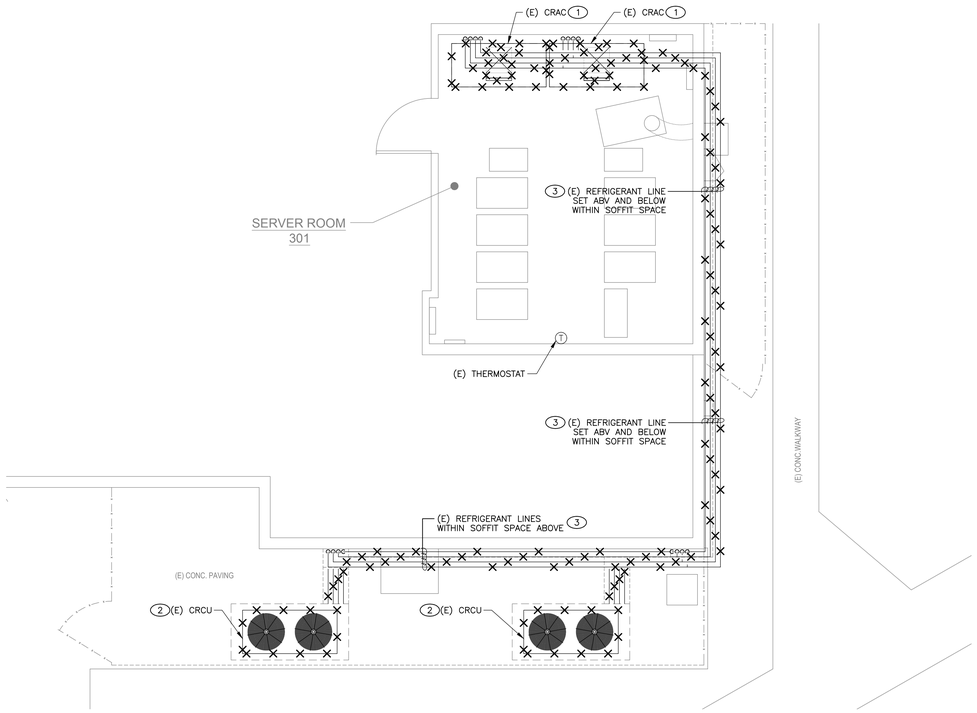
Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
MECHANICAL SITE PLAN

Drawn By
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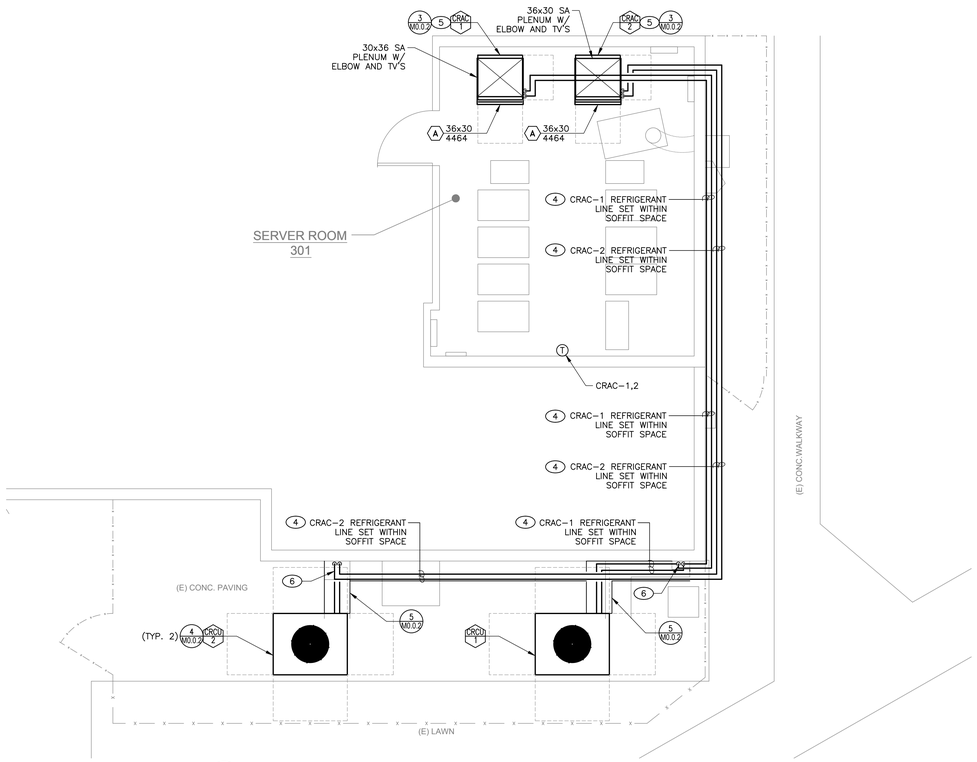
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Drawing No.
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1 MECHANICAL DEMO FLOOR PLAN - BLDG 300 SERVER ROOM

SCALE: 1/4" = 1'-0"



2 MECHANICAL FLOOR PLAN - BLDG 300 SERVER ROOM

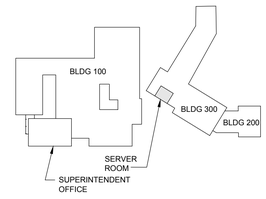
SCALE: 1/4" = 1'-0"

KEY NOTES

1. REMOVE EXISTING COMPUTER ROOM FAN COIL AND RELATED DUCTWORK SHOWN HATCHED.
2. REMOVE EXISTING COMPUTER ROOM CONDENSING UNIT SHOWN HATCHED.
3. REMOVE EXISTING REFRIGERANT PIPING SHOWN HATCHED. PIPING TO BE REPLACED WITH NEW IN SAME LOCATION. FOLLOW EXISTING MOUNTING POINTS WITH NEW PIPING.
4. NEW REFRIGERANT PIPING FROM OUTDOOR CONDENSER TO INDOOR EVAPORATOR. INSTALL PER MANUFACTURER'S REQUIREMENTS. PIPING INSULATION TO BE PER TITLE 24 REQUIREMENTS.
5. INSTALL NEW COMPUTER ROOM FAN COIL UNIT ON FLOOR PER MANUFACTURER'S RECOMMENDATIONS. MAINTAIN MINIMUM REQUIRED CLEARANCES FOR SERVICING.
6. PROVIDE SHEET METAL COVER ON WALL TO PROTECT REFRIGERANT LINES AND EXISTING CONDUITS.

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.



KEY PLAN

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Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
MECHANICAL FLOOR PLAN

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EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.17 THROUGH 1617A.1.20 & 1617A.1.23 AND ASCE 7–16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–16 SECTION 13.3 AS DEFINED IN ASCE 7–16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24 THROUGH 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE–APPROVED INSTALLATION GUIDE (E.G., HCAI OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP MD PP E OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT
☐ ☐ ☒ ☐ SPECIFIC NOTES AND DETAILS.

MP MD PP E OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE–APPROVAL
☐ ☐ ☐ ☐ (OPM#) #0043–13.

PLUMBING LEGEND

SYMBOL	ITEM	ABBR.
WC-1	FIXTURE DESIGNATION - UNIT ABBREVIATION - NUMBER	
1 P-1	DETAIL DESIGNATION - DETAIL NUMBER - SHEET NO. WHERE SHOWN	
-CW-	DOMESTIC COLD WATER	CW
-HW-	DOMESTIC HOT WATER	HW
	DOMESTIC HOT WATER SUPPLY	HWS
	DOMESTIC HOT WATER RETURN	HWR
-V-	VENT	V
G	GAS	G
MG	MEDIUM PRESSURE GAS	MG
LPG	LIQUID PROPANE GAS	LPG
S	SEWER	S
GW	GREASE WASTE	GW
OS	OIL/SAND WASTE	OS
AW	ACID WASTE	AW
SD	STORM DRAIN	SD
RD	ROOF DRAIN	RD
OD	OVERFLOW DRAIN	OD
C	CONDENSATE DRAIN	C
SCD	SECONDARY DRAIN	SCD
D	DRAIN	D
T&P	TEMPERATURE & PRESSURE RELIEF	T&P
FS	FIRE SPRINKLER	FS
	PIPE CAP	
	PIPE RISER/DROP	(R)/(D)
	SHUT–OFF VALVE IN BOX	SOV
FCO	FLOOR CLEANOUT	FCO
COTG	CLEANOUT TO GRADE	COTG
	WALL CLEANOUT	WCO
	CLEANOUT	CO
	HOSE BIBB	HB
	OVERFLOW DRAIN OUTLET	
	BALL VALVE	BV
	GATE VALVE	GV
	CHECK VALVE	CHK.V
	MIXING VALVE	TMV
	SHUT–OFF COCK	SOC
	CIRCULATION PUMP	CP
	BALANCING VALVE	BLV
	TRAP PRIMER	TP
	TYPICAL	(TYP)
	VENT THRU ROOF	VTR
	UNDERGROUND	UG
	UNDER FLOOR	UF
	ABOVE CEILING	AB.C.
	TO ABOVE/BELOW	TA/TB
	FROM ABOVE/BELOW	FA/FB
	CONTINUATION	CONT.
	NEW	(N)
	EXISTING	(E)
	POINT OF DIS/CONNECTION	POD/POC

PLUMBING SPECIFICATIONS

A. THIS CONTRACTOR SHALL COMPLY WITH ALL CODES AND REGULATIONS IN EFFECT AT THE JOB SITE, INCLUDING, BUT NOT LIMITED TO:
- A.1. 2022 CALIFORNIA BUILDING CODE
- A.2. 2022 CALIFORNIA MECHANICAL CODE
- A.3. 2022 CALIFORNIA PLUMBING CODE
- A.4. 2022 CALIFORNIA ELECTRICAL CODE
- A.5. 2022 CALIFORNIA GREEN BUILDING STANDARDS
- A.6. 2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS – TITLE 24
- A.7. NATIONAL FIRE PROTECTION ASSOCIATION
- A.8. CALIFORNIA STATE FIRE MARSHAL

B. ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE GUARANTEED FREE FROM ALL MECHANICAL, ELECTRICAL AND WORKMANSHIP DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ALL DAMAGED ITEMS INSTALLED UNDER THIS CONTRACT WITHOUT ADDITIONAL COST TO OWNER.

C. THE PLUMBING CONTRACTOR SHALL PROVIDE THE OWNER COPIES OF OPERATION, MAINTENANCE AND PREVENTATIVE MAINTENANCE MANUALS FOR EACH MODEL AND TYPE OF PLUMBING EQUIPMENT.

D. CHECK AND VERIFY EXISTING CONDITIONS AT THE JOB SITE BEFORE BEGINNING WORK. ADJUST THE LOCATION AND CONFIGURATION OF THE WORK NECESSARY TO SUIT ACTUAL CONDITIONS AND OTHER TRADES. ANY CHANGES REQUIRED MUST FIRST BE APPROVED BY THE ARCHITECT OR ENGINEER.

E. THE LOCATIONS OF EQUIPMENT, PIPING, AND SYSTEMS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. CHANGES REQUIRED TO SUIT EXISTING CONDITIONS AND DUE TO COORDINATION WITH OTHER TRADES SHALL BE MADE AT NO EXTRA COST TO THE OWNER.

F. SUBMIT MANUFACTURER'S PRODUCT DATA INCLUDING NAME OF MANUFACTURER, TRADE NAME, MODEL, CAPACITY, OPTIONS, DIMENSIONS, WEIGHTS, INSTALLATION AND STARTUP DATA. EQUIPMENT PERFORMANCES SCHEDULED ARE MINIMUM CAPACITY, FLOW, EFFICIENCY, ETC. REQUIRED. WEIGHTS AND ELECTRICAL DATA SCHEDULED IS MAXIMUM AVAILABLE OR ALLOWABLE.

G. ALL EQUIPMENT IS TO BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER. USING ALL ACCESSORY EQUIPMENT AVAILABLE FROM THE MANUFACTURER FOR SUPPORTS, CONTROLS, ETC., TO MAKE A COMPLETE SYSTEM. ALL EQUIPMENT OR ACCESSORIES NEEDED AND NOT SHOWN OR SPECIFIED SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. ADJUST THE EQUIPMENT FOR PROPER OPERATION, CHECK ALL CONTROLS AND VERIFY THAT ALL SAFETY DEVICES ARE FUNCTIONING PROPERLY.

H. PROVIDE ACCESS DOORS WHERE ACCESS THROUGH FLOORS, WALLS OR CEILINGS IS REQUIRED TO ACCESS PLUMBING COMPONENTS OR OTHER SYSTEMS REQUIRING ACCESS FOR MAINTENANCE, TESTING OR OBSERVATION. COORDINATE THE EXACT TYPE AND LOCATION OF ACCESS DOORS TO PROVIDE PROPER ACCESS TO THE ITEM CONCEALED.

I. CHECK ALL SYSTEMS FOR LEAKS. CORRECT ANY DEFICIENCIES AS SOON AS DISCOVERED. OPERATE THE SYSTEMS AS A TEST AND DEMONSTRATE TO THE OWNER AND ARCHITECT OR ENGINEER THAT THE SYSTEM IS FUNCTIONING PROPERLY.

J. BEFORE COMMENCING WORK CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS AND ENSURE THAT THESE CAN BE PROPERLY CONNECTED WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. VERIFY THE LOCATION OF ALL SERVICES. NO EXTRA COSTS SHALL BE ALLOWED IF SERVICES ARE NOT AS SHOWN.

K. COORDINATE ALL NEW OR CHANGING UTILITY SERVICES WITH UTILITY PROVIDER AS SOON AS POSSIBLE. ALL WORK PERFORMED NOT IN ACCORDANCE WITH THE UTILITY COMPANIES REQUIREMENTS PRIOR TO COORDINATING WITH THE UTILITY COMPANY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

L. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

M. MAKE ALL CONNECTIONS TO EQUIPMENT AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER AS FAR AS TRAPS, DRAINS, FLEXIBLE CONNECTIONS, ETC. AND AS REQUIRED BY THE EQUIPMENT AND LOCATION.

N. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS, FIXTURE MOUNTING HEIGHTS AND ADA ACCESSIBILITY REQUIREMENTS.

O. PIPING INSULATION (INTERIOR APPLICATIONS):
- O.1. GLASS FIBER INSULATION: ASTM C 547 AND ASTM C 795. 'K' ('KSI') VALUE: 0.24 AT 75 DEGREES F, WHEN TESTED IN ACCORDANCE WITH ASTM C 177. MAXIMUM SERVICE TEMPERATURE: 850 DEGREES F. MAXIMUM MOISTURE ABSORPTION: 0.20 PERCENT BY VOLUME.
- O.2. VAPOR BARRIER JACKET: WHITE KRAFT PAPER WITH GLASS FIBER YARN, BONDED TO ALUMINIZED FILM; MOISTURE VAPOR TRANSMISSION WHEN TESTED IN ACCORDANCE WITH ASTM E 96/E 96M OF 0.02.
- O.3. INSULATION THICKNESS SCHEDULES:
  - O.3.1. DOMESTIC HOT AND TEMPERED WATER SUPPLY:
    - O.3.1.1. 2 INCH THICKNESS FOR PIPING 2 INCH AND LARGER.
    - O.3.1.2. 1–1/2 INCH THICKNESS FOR PIPING 1 INCH TO 1–1/2 INCH.
    - O.3.1.3. 1 INCH THICKNESS FOR PIPING LESS THAN 1 INCH.
  - O.3.2. DOMESTIC COLD WATER LOCATED IN UNHEATED AREAS:
    - O.3.2.1. 1 INCH THICKNESS FOR PIPING 1–1/2 INCHES AND LARGER.
    - O.3.2.2. 3/4 INCH THICKNESS FOR PIPING 1 INCHES AND SMALLER.

P. INSULATE DOMESTIC HOT WATER, TEMPERED WATER AND WASTE PIPING BELOW HANDICAPPED PLUMBING FIXTURES WITH MOLDED SINGLE PIECE REMOVABLE INSULATION COVERS, FOAM, FIRE RESISTANT, TRUEBRO, OR EQUAL. INSTALL INSULATION COVERS IN ACCORDANCE WITH CBC ACCESS REQUIREMENTS.

Q. FIXTURES, DOMESTIC WATER PIPING AND COMPONENTS SHALL BE PROVIDED AND INSTALLED IN COMPLIANCE WITH CALIFORNIA AB 1953 LEGISLATION WHICH LIMITS THE ALLOWABLE LEAD CONTENT IN CERTAIN DOMESTIC WATER SYSTEM COMPONENTS.

R. PROVIDE COMPRESSION SHUTOFF CONTROL STOP VALVES WITH IPS INLETS AND THREADED BRASS NIPPLES AT PIPE CONNECTION ON WATER SUPPLIES TO EACH FIXTURE.

S. PROVIDE CHROMIUM–PLATED FINISH ON FITTINGS AND ACCESSORIES EXPOSED TO VIEW.

T. FIXTURE FITTINGS AND TRIM: CONFORM TO ASME A112.18.1M AND ASME A112.19.5, AS APPLICABLE.

U. PROVIDE WATER HAMMER ARRESTORS AT END OF PIPE RUNS TO TWO OR MORE FIXTURES, PROPERLY SIZED WITH SUFFICIENT DISPLACEMENT VOLUME TO DISSIPATE CALCULATED ENERGY IN THE PIPING SYSTEMS. WATER HAMMER ARRESTORS SHALL BE STAINLESS STEEL SHELL WITH STAINLESS STEEL BELLOWS CONTAINED WITHIN THE CASING.

V. PROVIDE PIPE SLEEVES WHERE PIPES AND TUBING PASS THROUGH WALLS, FLOORS, ROOFS, AND PARTITIONS. FINISH FLUSH AT BOTH ENDS. EXTEND 2 INCHES (50 MM) ABOVE FINISHED FLOORS. PACK SPACE BETWEEN PIPE OR TUBING AND SLEEVE, AND CALK.

W. IDENTIFY PIPING WITH TAPE AND DECALS. INSTALL LABELING ON PIPE AT INTERVALS OF NOT MORE THAN 20 FEET (6 METERS) AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY PIPELINE.

X. PROVIDE NON–CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.

Y. ALL PLUMBING VENTS SHALL TERMINATE NOT LESS THAN 10' FROM ANY OUTSIDE AIR INTAKE OR OPENING TO THE BUILDING.

Z. ALL EXPOSED MATERIAL SHALL BE PREPARED WITH A PRIME COAT AND THEN PAINTED.

PLUMBING SHEET INDEX

SHEET NO.	SHEET TITLE
P0.0.1	PLUMBING NOTES, LEGEND, DETAILS AND SCHEDULES
P1.0.0	PLUMBING SITE PLAN
P1.0.1	PLUMBING FLOOR PLAN

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STATE OF CALIFORNIA

Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
PLUMBING NOTES, LEGEND, AND SCHEDULES

Drawn By

Checked By

NO.	DATE	ISSUE

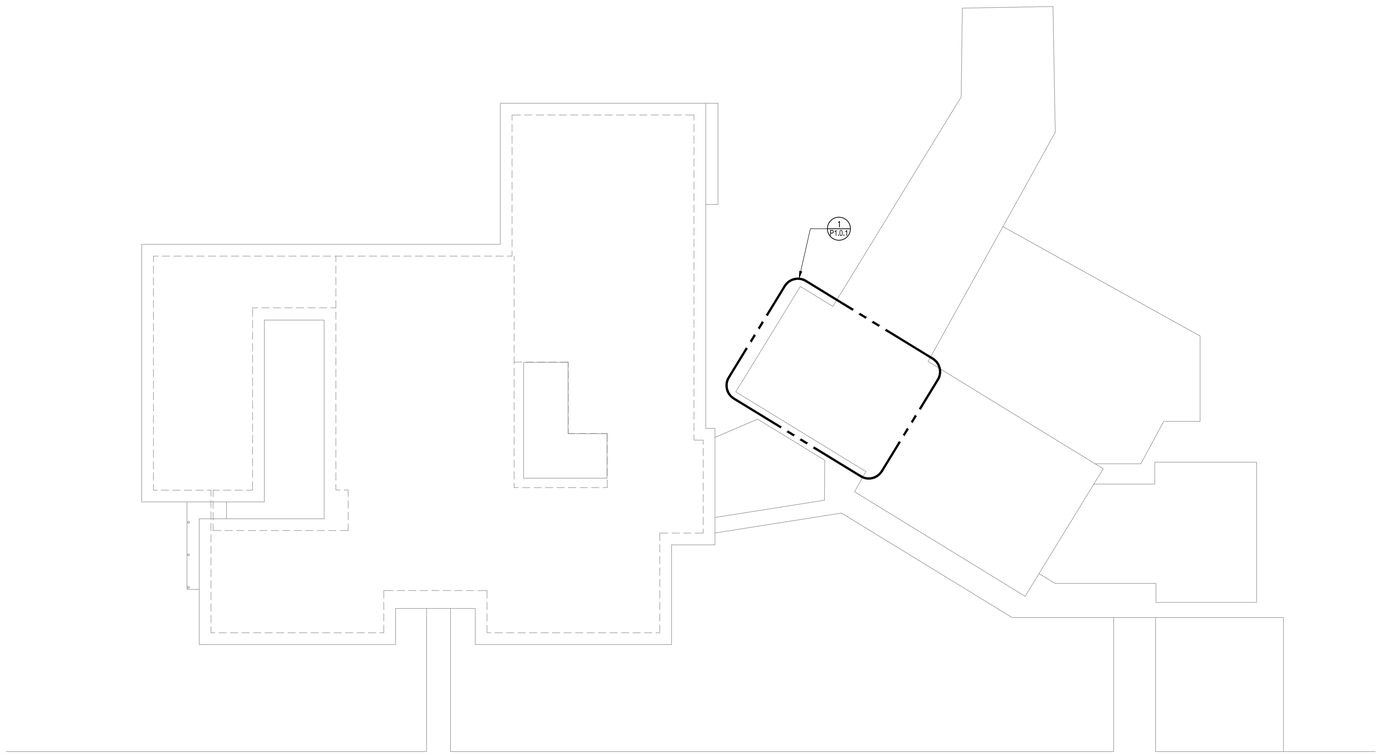
Project No.
23-525

Date
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Drawing No.
P0.0.1

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GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

1 **PLUMBING SITE PLAN**
SCALE: 1" = 20'

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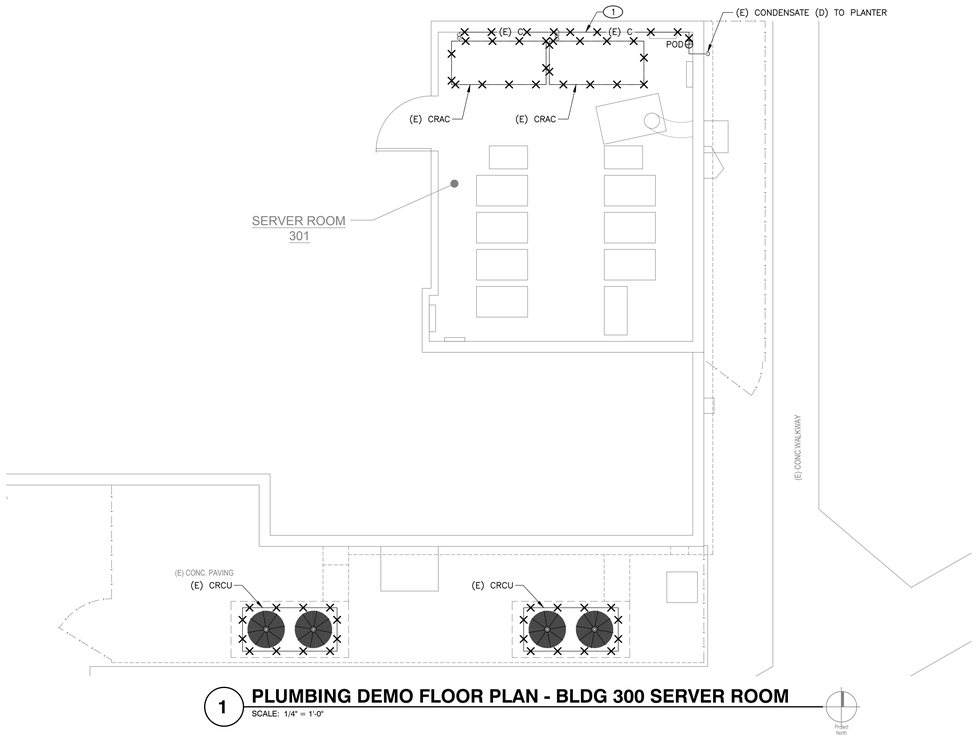
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Drawing Title
PLUMBING SITE PLAN

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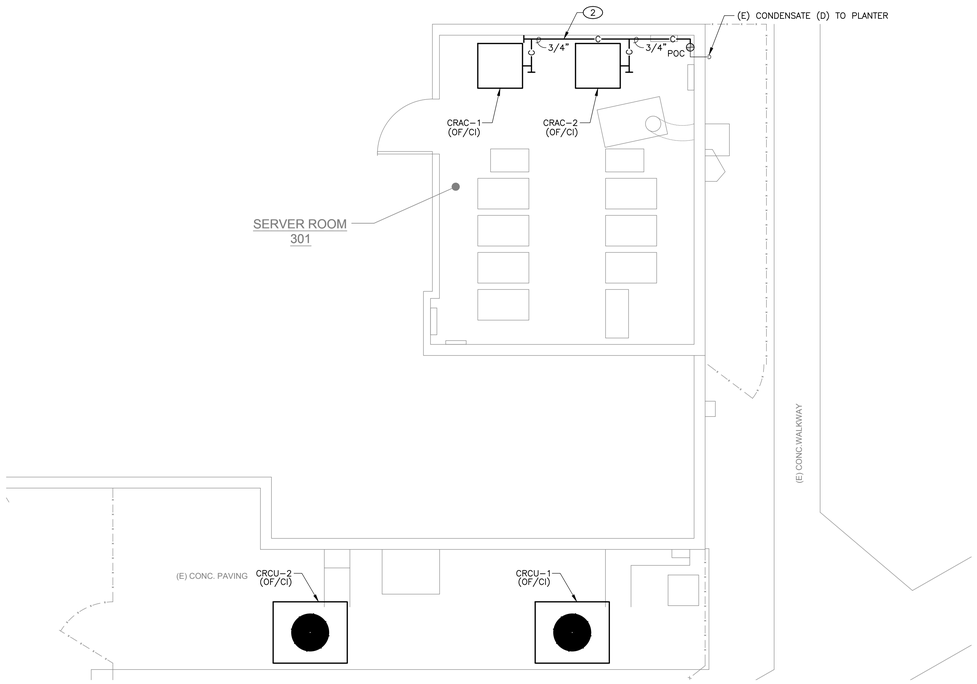
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P1.0.0



1 PLUMBING DEMO FLOOR PLAN - BLDG 300 SERVER ROOM

SCALE: 1/4" = 1'-0"



2 PLUMBING FLOOR PLAN - BLDG 300 SERVER ROOM

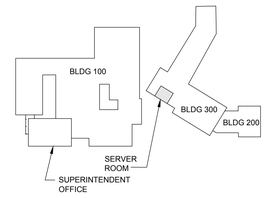
SCALE: 1/4" = 1'-0"

KEY NOTES

1. REMOVE EXISTING PIPING SHOWN HATCHED BACK TO POINT OF DISCONNECT.
2. RACK NEW CONDENSATE PIPING ON INTERIOR WALL WITH UNISTRUT.

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.



KEY PLAN

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PLUMBING FLOOR PLAN

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ELECTRICAL SYMBOL LEGEND

ALL SYMBOLS SHOWN IN THIS LEGEND ARE NOT NECESSARILY USED ON PLANS IF NOT REQUIRED.

SYMBOL	DESCRIPTION
	POWER
	MAIN SWITCHBOARD OR DISTRIBUTION BOARD, PAD OR FLOOR MOUNTED AS NOTED.
	RECESSED MOUNTED LIGHTING OR DISTRIBUTION PANEL
	SURFACE MOUNTED LIGHTING OR DISTRIBUTION PANEL
	RECESSED TERMINAL CABINET WITH 3/4"C PLYWOOD BACKBOARD, DUPLEX RECEPTACLE & #6 CU GND, UNO.
	SURFACE MOUNTED TERMINAL CABINET WITH 3/4"C PLYWOOD BACKBOARD, DUPLEX RECEPTACLE & #6 CU GND, UNO.
T	DISTRIBUTION TRANSFORMER, MOUNTING AND SIZE AS NOTED
	NON-FUSED DISCONNECT SWITCH
	ENCLOSED CIRCUIT BREAKER DISCONNECT SWITCH
F	FUSED DISCONNECT SWITCH; SIZE DISCONNECT AND FUSES PER UNIT LABEL
F	NON-FUSED / FUSED DISCONNECT; SEE DISCONNECT SWITCH SCHEDULE
	MOTOR STARTER/CONTROLLER
	COMBINATION CIRCUIT BREAKER DISCONNECT/MOTOR STARTER.
	COMBINATION FUSIBLE DISCONNECT/MOTOR CONTROLLER; PROVIDE FUSES PER MANUFACTURER'S REQUIREMENTS. N.F. INDICATES NON-FUSED.
	WALL MOUNTED JUNCTION BOX – SIZE AS REQUIRED BY CODE.
	CEILING MOUNTED JUNCTION BOX – SIZE AS REQUIRED BY CODE.
	FLOOR MOUNTED JUNCTION BOX – SIZE AS REQUIRED BY CODE.
	PLUGMOLD
	POWER POLE
	FLOOR MOUNTED COMBO DUPLEX RECEPTACLE / TELEPHONE/DATA
	FLOOR MOUNTED COMBO DOUBLE DUPLEX RECEPTACLE / TELEPHONE/DATA
PLD	PRODUCTION LIGHTING DEVICE
EV EV	ELECTRIC VEHICLE CHARGING STATION, DUAL PORT & SINGLE PORT
	CIRCUITS
	STUB
	CONTINUATION
	CONDUIT RISER – UP
	CONDUIT DROP – DOWN
	CONDUIT CONCEALED IN CEILING OR WALL.
	CONDUIT CONCEALED IN UNDERFLOOR OR UNDERGROUND
	EXISTING CONDUIT TO REMAIN.
	CONDUIT & CONDUCTORS FOR LOW VOLTAGE MOTION SENSORS
	EXISTING CONDUIT & CONDUCTORS TO REMAIN FOR LOW VOLTAGE MOTION SENSORS
	EXISTING CONDUIT AND/OR CONDUCTORS TO BE REMOVED. UNDERGROUND CONDUIT MAY BE ABANDONED IN PLACE.
	HOMERUN TO PANELBOARD OR TERMINAL CABINET WITH CONDUCTORS AS NOTED
#	CIRCUIT CONDUCTORS: LONG TICK INDICATES NEUTRAL CONDUCTOR; SHORT TICKES INDICATE PHASE CONDUCTORS; CURVED TICK INDICATES EQUIPMENT GROUNDING CONDUCTOR; ADDITIONAL CURVED TICK INDICATES ISOLATED GROUNDING CONDUCTOR. NUMBER BY TICKES INDICATE WIRE GAUGE OTHER THAN 12 AWG CU. NO TICKS INDICATE 2#12 CU, 1#12 CU GND, IN 1/2" CONDUIT. OTHERS AS NOTED ON PLAN. NOTE: PROVIDE A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS FOR THIS PROJECT, WHETHER SHOWN ON PLAN OR NOT.
	FLEXIBLE CONDUIT, 6'-0" LONG MAX. WITH #12 CU GROUND, UNO.
	LEADERS
	BRACKET
	LEADERS
	LIGHTING
	LUMINAIRE – SURFACE
	LUMINAIRE – WALL
	SPOT/FLOOD LUMINAIRE – GROUND MOUNTED. FOR BLDG WALL MOUNTED AS WELL.
	EXTERIOR POLE FIXTURE – SINGLE HEAD
	EXTERIOR POLE FIXTURE – TWIN HEAD
	EXTERIOR PATHWAY POST TOP POLE FIXTURE
	TAGS
X	KEYNOTE SHOWN ON SAME SHEET
'XX' XX–Xx	LIGHT FIXTURE TAG: FIXTURE TAG 'XX' CIRCUIT NUMBER; PANEL XX–Xx SWITCH LEG
X	FEEDER DESIGNATION TAG
X	FOOD SERVICE EQUIPMENT DESIGNATION TAG
X Ex.1	DETAIL DESIGNATION: TOP LETTER INDICATES DETAIL, BOTTOM LETTER/NUMBER INDICATES SHEET
REF x	MECHANICAL EQUIPMENT I.D. TAG – MP&S

FOOTNOTE:

[1] PROVIDE 44" MAX. TO TOP OF BOX AT AREAS WITH FORWARD ACCESSIBLE APPROACH KNEE CLEARANCE, OR PROVIDE 46" MAX. TO TOP OF BOX AT AREAS WITH PARALLEL ACCESSIBLE APPROACH (PER CBC 11B–308).

SYMBOL	DESCRIPTION
	ONE LINE DIAGRAM
(N) PANEL "A"	PANEL IDENTIFICATION
100A 3P	CIRCUIT BREAKER
100A 3P	FUSED SWITCH
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	GROUND
	UNDERGROUND TERMINATION SERVICE LUG
M	UTILITY METER WITH CURRENT TRANSFORMER COMPARTMENT METER SOCKET
M	CUSTOMER–OWNED MULTIFUNCTION METER WITH CURRENT TRANSFORMERS
	MOTOR
	TRANSFORMER WITH GROUND
	UFER GROUND
	BOND TO COLD WATER PIPE, GAS PIPE, BUILDING STEEL
	AUTOMATIC TRANSFER SWITCH
	NEUTRAL LINK
SPD	SURGE PROTECTIVE DEVICE

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.17 THROUGH 1617A.1.20 & 1617A.1.23 AND ASCE 7–16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–16 SECTION 13.3 AS DEFINED IN ASCE 7–16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24,1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE–APPROVED INSTALLATION GUIDE (E.G., HCAI OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP MD PP E ☐ ☐ ☐ ☒ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP MD PP E ☐ ☐ ☐ ☐ OPTION 2: SHALL COMPLY WITH HCAI (OSHPD) PRE–APPROVAL INCLUDED IN THESE DRAWINGS WITH PROJECT–SPECIFIC NOTES AND DETAILS.

GENERAL NOTES

ALL GENERAL NOTES SHOWN BELOW ARE NOT NECESSARILY USED ON PLANS IF NOT REQUIRED.

1. THESE GENERAL NOTES ARE INTENDED TO ASSIST THE CONTRACTOR IN THE EXECUTION OF THE ELECTRICAL WORK AND TO BE INCLUDED IN CONJUNCTION WITH THE CONTRACT DOCUMENT DRAWINGS AND SPECIFICATION REQUIREMENTS. SOME OF THE GENERAL NOTES ARE EXCERPTS FROM THE SPECIFICATION.
2. COORDINATE ALL ELECTRICAL SERVICES WITH THE RESPECTIVE UTILITY COMPANIES AND PROVIDE ALL TRENCHING, CONDUITS, WIRING, METER FACILITIES AND OUTLETS REQUIRED BY THEM.
3. WORKMANSHIP SHALL BE OF THE HIGHEST GRADE. DEFECTIVE EQUIPMENT OR EQUIPMENT DAMAGED IN THE COURSE OF INSTALLATION OR TEST SHALL BE REPLACED OR REPAIRED IN A MANNER MEETING WITH THE ACCEPTANCE OF THE ARCHITECT.
4. INSTALL ALL EQUIPMENT, CONDUITS, OUTLETS, AND FIXTURES IN STRICT ACCORDANCE WITH THE CURRENT EDITION OF ALL APPLICABLE CODES (CEC, STATE, COUNTY AND CITY).
5. DO NOT SCALE PLANS FOR FIXTURES, DEVICES, OR APPLIANCE LOCATIONS. USE FIGURED DIMENSIONS IF GIVEN OR CHECK MECHANICAL AND ARCHITECTURAL PLANS. ALSO REFER TO ACTUAL ON–SITE CONDITIONS.
6. ALL MATERIAL AND EQUIPMENT IS TO BE LISTED AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND CEC 110.3.
7. ALL ELECTRICAL DEVICES AND EQUIPMENT, FIXTURES, CONDUITS AND WIRING SHOWN ON THESE PLANS ARE NEW, UNLESS OTHERWISE NOTED.
8. OUTLET BOXES INSTALLED IN FIRE WALLS SHALL BE ONE–PIECE STEEL AND INSTALLED IN SEPARATE (STAGGERED) STUD PENETRATIONS, MINIMUM 24 INCHES HORIZONTAL SEPARATION. FIRE WALLS SHALL BE MADE IN ACCORDANCE WITH CBC AND ELECTRICAL CODES.
9. THE FINAL LOCATION OF ALL OUTLETS SHALL BE VERIFIED WITH THE ARCHITECT AND/OR OWNER AT TIME OF CONSTRUCTION.
10. ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE WEATHER–PROTECTED.
11. CONTRACTOR SHALL VERIFY THAT ALL LIGHTING FIXTURES, CEILING TRIMS, AND FRAMES ARE COMPATIBLE WITH CEILING SYSTEM INSTALLED.
12. CONTRACTOR SHALL COORDINATE LIGHT FIXTURE LOCATIONS AND INSTALLATIONS WITH THE MECHANICAL CONTRACTOR. MAINTAIN REQUIRED CLEARANCES (MINIMUM 3 INCHES) BETWEEN THE LIGHT FIXTURES AND MECHANICAL DUCTS OR EQUIPMENT FOR PROPER OPERATION, INSTALLATION AND/OR REMOVAL OF FIXTURES.
13. ALL CONDUIT SHALL BE ROUTED CONCEALED UNLESS NOTED ON PLAN OR ACCEPTED BY THE ARCHITECT.
14. PROVIDE ALL NECESSARY SLEEVES AND INSERTS FOR ALL WORK PASSING THROUGH OR ATTACHING TO WALLS, FLOORS, OR CEILINGS.
15. ALL WIRING SHALL BE INSTALLED IN RIGID METALLIC CONDUIT, UNLESS OTHERWISE NOTED. CONDUITS INSTALLED CONCEALED IN WALL AND CEILING MAY BE EMT WITH STEEL COMPRESSION TYPE FITTINGS. PVC WHERE INSTALLED UNDERGROUND AND/OR UNDER SLAB. ALL EXPOSED CONDUITS SHALL BE RIGID STEEL CONDUITS WITH THREADED TYPE FITTINGS. INSTALL ALL CONDUITS IN ACCORDANCE WITH CECA STANDARDS OF INSTALLATION.
16. ELECTRICAL NON–METALLIC TUBING (ENT) AND MC CABLE ARE NOT PERMITTED TO BE USED FOR THIS PROJECT, NO EXCEPTIONS.
17. WHERE EXISTING CONDUITS, CONCEALED OR EXPOSED, AND (WIREMOLD) SURFACE RACEWAY IS NOT IN PLACE AS SHOWN ON PLANS, PROVIDE NEW CONDUITS AND (WIREMOLD) SURFACE RACEWAY FOR THE NEW WORK. VERIFY EXISTING CONDITION ON SITE AND PROVIDE ALL NECESSARY NEW MATERIAL, APPARATUS, AND WORK THAT ARE REQUIRED TO BE INCLUDED IN THE BID PACKAGE.
18. CONDUCTORS, #8 AND LARGER, SHALL BE STRANDED COPPER WITH THNN/THWN INSULATION, UNLESS OTHERWISE NOTED.
19. PROVIDE WORKING CLEARANCE PER CEC 110.26 FOR SERVICE PANEL, SUBPANELS, MOTOR DISCONNECT SWITCHES, CONTROL SECTIONS. HVAC EQUIPMENT, APPLIANCES, ETC.
20. PROVIDE A WARNING LABEL (SIGN) CLEARLY VISIBLE TO QUALIFIED PERSONS TO COMPLY WITH NEC AND CEC 110.16 OF POTENTIAL ELECTRIC ARC FLASH HAZARDS AT SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS AND MOTOR CONTROL CENTERS THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH THE MAXIMUM AVAILABLE FAULT CURRENT PER CEC SECTION 110.24(A).
21. BUILDING SERVICE AND SUBPANELS TO COMPLY WITH CEC 110.9 AND 110.10 INTERRUPTING RATING AND BRACING. PROVIDE A.I.C. CALCULATIONS FOR SUBPANELS IF INTERRUPTING RATING TO BE USED IS LOWER THAN MAIN SERVICE RATING.
22. ALL APPLIANCES SHALL COMPLY WITH CEC ARTICLE 422. APPLIANCE CONTROL AND PROTECTION PER CEC 422–III; BRANCH CIRCUITS PER 422–II.
23. BUILDING EXPANSION JOINTS MAY OR MAY NOT BE INDICATED ON THE ELECTRICAL DRAWINGS. VERIFY THE LOCATIONS OF ALL APPLICABLE BUILDING EXPANSION JOINTS WITH THE ARCHITECTURAL DRAWINGS. WIRING METHODS ACROSS EXPANSIONS JOINTS SHALL INCLUDE USE OF FLEXIBLE FITTINGS OR OTHER DEVICES AS APPROPRIATE TO EACH APPLICATION. IN NO CASE SHALL CONDUIT CROSS SUCH A JOINT IN BUILDING CONSTRUCTION WITHOUT USE OF THE APPROPRIATE WIRING METHODS.
24. CONTRACTOR SHALL SIZE ALL THE INTERIOR AND EXTERIOR BUILDING PULL BOXES AND UNDERGROUND PULL BOXES PER CEC 314.16 AND COMPLY WITH CEC 314.28 FOR INSTALLATION OF RACEWAYS AND WIRING AS REQUIRED BY CODE, UNLESS OTHERWISE NOTED.
25. WHERE ACCESSIBILITY IS NOT AVAILABLE TO ELECTRICAL OUTLETS, DEVICES AND/OR EQUIPMENT, COORDINATE WITH THE ARCHITECT FOR PROVISIONS TO PROVIDE ACCESSIBILITY TO THEM.
26. CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE MECHANICAL DRAWINGS AND PROVIDES ALL CONDUITS AND CONTROL WIRING AND POWER WIRING SHOWN ON THE MECHANICAL DRAWINGS THAT IS NOT SHOWN ON THE ELECTRICAL PLANS.
27. CONTRACTOR SHALL REFER TO THE MECHANICAL DRAWINGS AND COORDINATE FOR THE EQUIPMENT LOCATIONS. COORDINATE ROOF PENETRATION WITH THE MECHANICAL CONTRACTOR FOR MECHANICAL CONNECTIONS. ENTER ROOF MOUNTED UNITS THROUGH EQUIPMENT MOUNTING CURBS WHERE POSSIBLE. VERIFY ON–SITE.
28. PROVIDE CONVENIENCE OUTLET WITHIN 25 FEET OF MECHANICAL EQUIPMENT PER U.M.C. WHERE LOCATED OUTSIDE, PROVIDE WEATHER PROOF AND GFCI CONVENIENCE OUTLET. SECURE ROOF MOUNTED OUTLET TO THE MECHANICAL EQUIPMENT. VERIFY LOCATION IN FIELD WITH THE MECHANICAL CONTRACTOR.
29. VERIFY SINGLE–POINT CONNECTIONS TO ROOF MOUNTED HVAC UNITS WITH MECHANICAL CONTRACTOR ON–SITE PRIOR TO ELECTRICAL ROUGH–IN. PROVIDE DUAL DISCONNECTS IF TWO–POINT CONNECTIONS ARE REQUIRED, WHETHER SHOWN ON PLANS OR NOT.
30. SWITCH DEVICES CONTROLLING MECHANICAL EQUIPMENT SHALL BE SIZE AND TYPE REQUIRED AND SHALL BE SERVED WITH QUANTITY OF WIRES AS REQUIRED. REFER TO DIVISION 23 MECHANICAL PLANS AND SPECIFICATIONS.
31. COORDINATE THE HVAC EQUIPMENT FOR FUSES REQUIRE. WHERE FUSES ARE REQUIRED, VERIFY FUSE SIZE ON–SITE AND PROVIDE FOR HVAC EQUIPMENT PER UNIT NAMEPLATE SPECIFICATIONS.
32. MOTOR DISCONNECT SWITCHES SHALL COMPLY WITH CEC 430–IX AND 440.II.
33. MOTOR STARTERS FOR HVAC EQUIPMENT ARE PROVIDED BY MECHANICAL CONTRACTOR AND CONNECTED BY ELECTRICAL CONTRACTOR, UNLESS NOTED OTHERWISE.
34. ALL CONNECTIONS FROM THE DISCONNECT SWITCHES TO HVAC UNITS SHALL BE COPPER CONDUCTORS. MOTOR DISCONNECT SWITCHES SHALL COMPLY WITH CEC 430–VII, 430–VIII, AND 440–II.
35. VERIFY LOCATION AND HEIGHT OF ALL MECHANICAL OR FIXTURE EQUIPMENT OUTLETS WITH SUPPLIER PRIOR TO ANY ROUGH–IN WORK. PROVIDE ALL RUNS AND CONNECTIONS TO EQUIPMENT.
36. ALL TERMINATION PROVISIONS OF EQUIPMENT, INCLUDING CIRCUITS RATED 100 AMPERES OR LESS, SHALL BE RATED AT 60 DEGREE, CENTIGRADE PER CEC 110.14(c).
37. ALL CONDUITS SHALL BE CONCEALED BELOW SLAB, IN WALLS AND/OR ABOVE CEILINGS EXCEPT IN ELECTRICAL ROOMS, MECHANICAL ROOMS, AND OTHER SIMILAR UTILITY ROOMS AS APPROVED BY THE ARCHITECT. NO CONDUIT SHALL BE EXPOSED ON EXTERIOR BUILDING SURFACES WITHOUT PRIOR APPROVAL FROM THE ARCHITECT.
38. PROVIDE A CODE SIZED GROUND CONDUCTOR IN ALL CONDUITS WHETHER INDICATED ON PLANS OR NOT.

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTIONS
AC	ABOVE COUNTER
AF	AMPERE FRAME OR FUSE
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFS	AUTOMATIC FIRE SPRINKLER
AIC	AMPS INTERRUPTING CAPACITY RATING
AMP, A	AMPERES
APPR	APPROVED
AS	AMPERE SWITCH RATING
AT	AMPERE TRIP RATING OF BREAKER
AUTO	AUTOMATIC
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BFC	BELOW FINISHED CEILING
BMS	BUILDING MANAGEMENT SYSTEM
BKR	BREAKER
C	CONDUIT
cd	CANDELA
CEC	CALIFORNIA ELECTRICAL CODE
CFL	COMPACT FLUORESCENT
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CKT	CIRCUIT
CNTRL	CONTROL
CO	CONDUIT ONLY w/PULL STRING
CSFM	CALIFORNIA STATE FIRE MARSHALL
CT	CURRENT TRANSFORMER
CU	COPPER
CWP	COLD WATER PIPE
DEF	DEFROST
DISC	DISCONNECT
DIST	DISTRIBUTION
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EDF	ELECTRIC DRINKING FOUNTAIN
EL	EVENING LIGHT
ELEV	ELEVATION
EM	EMERGENCY LIGHT
EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE RESISTOR
EP	EMERGENCY POWER
EQPT	EQUIPMENT
EXH	EXHAUST
(E)	EXISTING
(ED)	EXISTING TO BE DEMOLISHED
(F)	FUTURE
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FF	FINISHED FLOOR
FG	FINISHED GRADE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
GFCI	GROUND FAULT CURRENT INTERRUPTER
GND	GROUND
HP	HORSE POWER
HZ	HERTZ
IG	ISOLATED GROUND
INC	INCANDESCENT
ISC	SHORT CIRCUIT CURRENT
ISOL	ISOLATED
JBOX	JUNCTION BOX
kcmil	THOUSAND CIRCULAR MILS
kV	KILOVOLTS
kW	KILOWATTS
kVA	KILOVOLT AMPERES
LT, LTS	LIGHT, LIGHTS
LTG	LIGHTING
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUG ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MPOE	MAIN POINT OF ENTRY
MS	MOTION SENSOR
MSB	MAIN SWITCHBOARD
MT	CONDUIT ONLY w/PULL STRING
MTD	MOUNTED
(N)	NEW
NEMA	NATIONAL ELECTRIC MANUFACTURER ASSOCIATION
NIES	NOT IN ELECTRICAL SECTION OF THESE PLANS & SPECIFICATIONS
N.I.C.	NOT IN CONTRACT
NL	NIGHT LIGHT
NT	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OL	OVERLOAD
PH, P	PHASE OR POLE
PB	PULLBOX
PFB	PROVIDE FOR FUTURE BREAKER
PIV	POST INDICATOR VALVE
PNL	PANEL
PVC	POLYVINYL CHLORIDE
PWR	POWER
(R)	RELOCATED
RCP	REFLECTED CEILING PLAN
RECPT	RECEPTACLE
REQD	REQUIRED
RGSC	RIGID GALVANIZED STEEL CONDUIT
SHLD	SHIELDED
SHT	SHEET
SPD	SURGE PROTECTION DEVICE
SPECS	SPECIFICATIONS
SW	SWITCH
SYM	SYMMETRICAL
TEMP	TEMPERATURE
TOF	TIMED OFF DELAY
TS	TAMPER SWITCH
TSTAT	THERMOSTAT
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UGPS	UNDERGROUND PULL SECTION
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTABLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE
V	VOLTS
VL	VERIFY LOCATION
W	WATTS
w/	WITH
WP	WEATHERPROOF
WPL	WEATHERPROOF LOCKING
WPU	WEATHERPROOF WHILE IN USE
(X)	REMOVE
XFMR	TRANSFORMER

ELECTRICAL SHEET INDEX

SHEET NO.	SHEET TITLE
E0.0.1	ELECTRICAL SYMBOL LEGEND,NOTES & ABBREVIATIONS
E0.0.2	ELECTRICAL DETAILS
E1.0.0	ELECTRICAL SITE PLAN
E1.0.1	ELECTRICAL FLOOR PLANS
E6.4.2	ELECTRICAL PARTIAL ONE LINE DIAGRAM & PANEL SCHEDULES

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Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
ELECTRICAL SYMBOL LEGEND,NOTES & ABBREVIATIONS

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Project No.
23-525

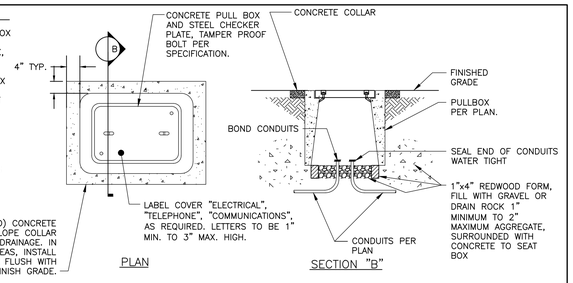
Date
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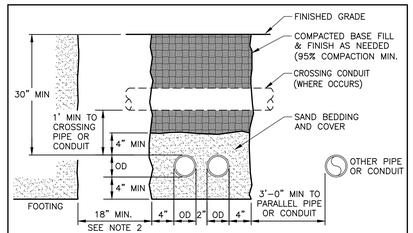
NOTES:

1. ALL SPLICES WITH-IN THE CONCRETE PULLBOX ARE TO BE SEALED WITH AN INSULATING AND ENCAPSULATING RESIN PACK, SCOTCHCAST 4 OR EQUAL.
2. ALL CONDUIT WITHIN THE CONCRETE PULLBOX ARE TO BE SEALED WITH RTV DUCT SEAL TO PREVENT WATER ENTERING CONDUIT SYSTEM.
3. ALL CONDUCTORS AND CABLES ARE TO BE GROUPED AND WIRE TIED EVERY 6" PER CONDUIT FILL.
4. PROVIDE TWO 12" EXTENSION RINGS UNLESS NOTED OTHERWISE



FILENAME

TYPICAL UNDERGROUND CONCRETE PULLBOX DETAIL | NTS | 6

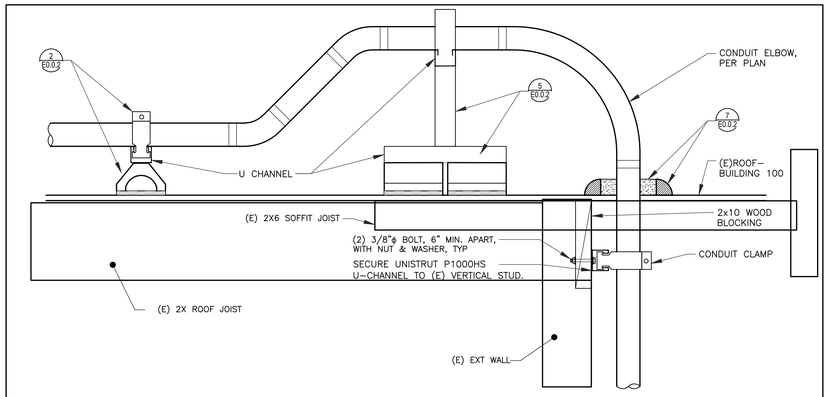


NOTES:

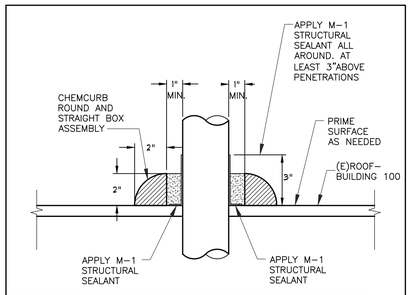
1. TRENCHING LOCATED IN PAVED AREAS – ALL EARTHWORK AND REPAIR SHALL BE IN ACCORDANCE WITH AGENCY THAT HAS JURISDICTION.
2. ALL PIPES AND TRENCHES MUST ALSO CONFORM WITH CBC 1809A.14

FILENAME

TYPICAL TRENCH DETAIL | NTS | 4



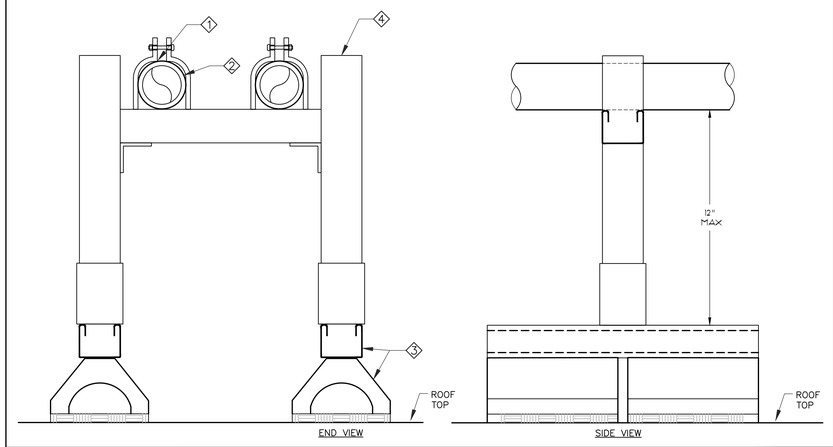
ROOF CONDUIT SUPPORT / PENETRATION DETAIL | NTS | 1



CONDUIT PENETRATION CROSS SECTION | NTS | 7

KEY NOTES:

1. HOT-DIPPED GALVANIZED UNISTRUT CONDUIT CLAMP. SIZE AS REQUIRED.
2. CONDUIT AS NOTED ON DRAWINGS.
3. ROOFTOP SUPPORT BASE, B-LINE DB_DS SERIES WITH HOT-DIPPED GALVANIZED CHANNEL. SECURE TO ROOF WITH A FULL BED OF NON-HARDENING ADHESIVE TYPE MASTIC.
4. B-LINE "DURA-BLOK" DB_DS SERIES, SH RISER CHANNEL 1 5/8" x 1 5/8". PACKAGE MODEL# DB2318DS



FILENAME

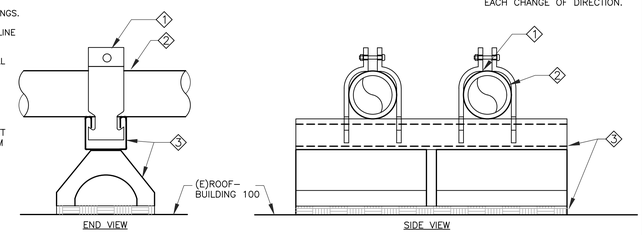
ROOF CONDUIT HIGH SUPPORT DETAIL | NTS | 5

KEY NOTES:

1. HOT-DIPPED GALVANIZED UNISTRUT CONDUIT CLAMP. SIZE AS REQUIRED.
2. CONDUIT AS NOTED ON DRAWINGS.
3. ROOFTOP SUPPORT BASE, B-LINE C6 SERIES WITH HOT-DIPPED GALVANIZED B12 CHANNEL. SECURE TO ROOF WITH A FULL BED OF NON-HARDENING ADHESIVE TYPE MASTIC.

NOTE:
ALL SUPPORTS TO BE MAX 10 FT ON CENTER AND MAX 3 FT FROM ALL CONDUIT TERMINATIONS WHERE OCCURS.

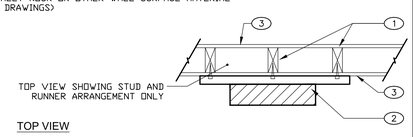
NOTE:
INSTALL SUPPORT BLOCK 8'-0" O.C. MAX, WITHIN 36" OF A BOX CONNECTION, AND AT EACH CHANGE OF DIRECTION.



ROOF CONDUIT LOW SUPPORT DETAIL | NTS | 2

KEY NOTES:

1. WOOD STUD EXISTING
2. SURFACE MOUNTED PANEL CABINET (SEE NOTE A FOR PANEL WEIGHT)
3. EXISTING SHEET ROCK OR OTHER WALL SURFACE MATERIAL (SEE ARCH. DRAWINGS)



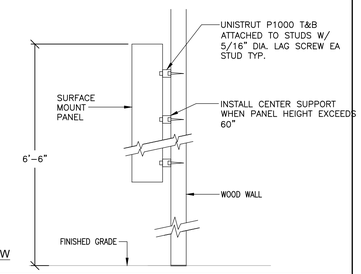
TOP VIEW

NOTES:

A. PANEL WEIGHT:
REGULAR: 150 LBS.
LARGE: 250LBS. MAX

B. REFER TO PANEL SCHEDULE SHEET FOR SIZES OF PANELS.

C. CENTER OF GRAVITY OF CABINET FROM TOP OF FLOOR = ±50".



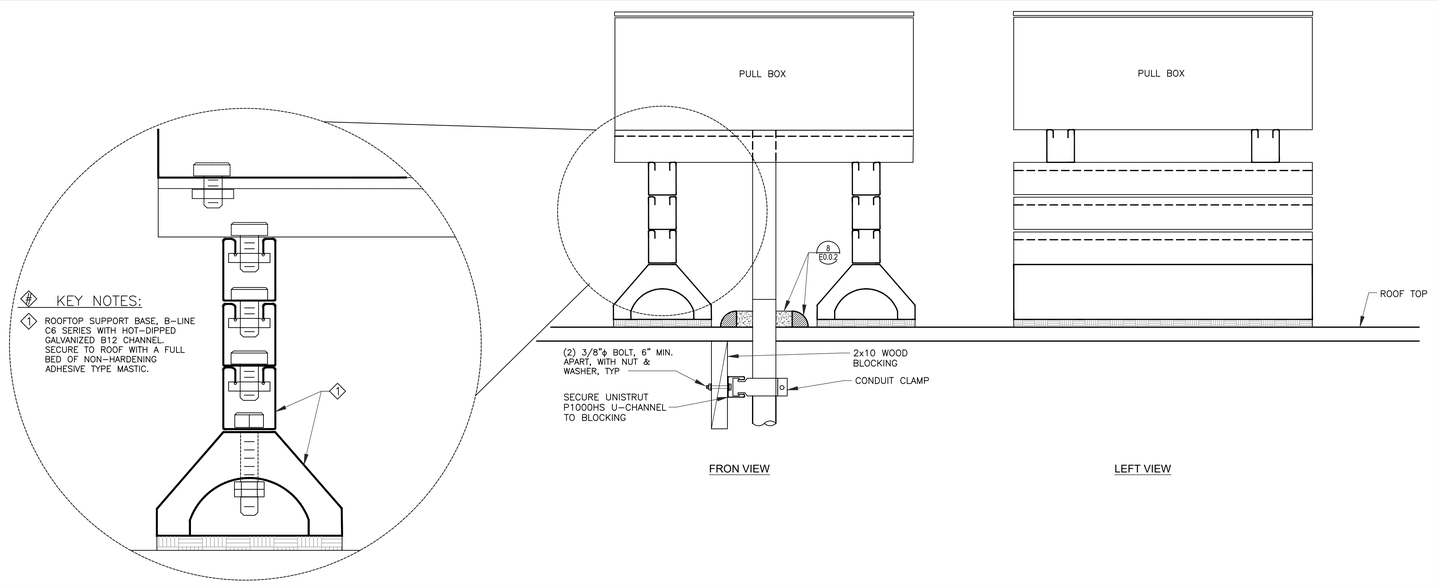
SIDE VIEW

FILENAME

SURFACE PANELBOARD/CABINET WOOD FRAMING MOUNTING DETAIL | NTS | 8

KEY NOTES:

1. ROOFTOP SUPPORT BASE, B-LINE C6 SERIES WITH HOT-DIPPED GALVANIZED B12 CHANNEL. SECURE TO ROOF WITH A FULL BED OF NON-HARDENING ADHESIVE TYPE MASTIC.



ROOF PULL BOX SUPPORT DETAIL | NTS | 3

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Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
ELECTRICAL DETAILS

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GENERAL NOTES

A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING ANY WORK. SHOULD ANY DISCREPANCY EXIST, CONTRACTOR SHALL NOTIFY ENGINEER AND SCHOOL DISTRICT REPRESENTATIVE.

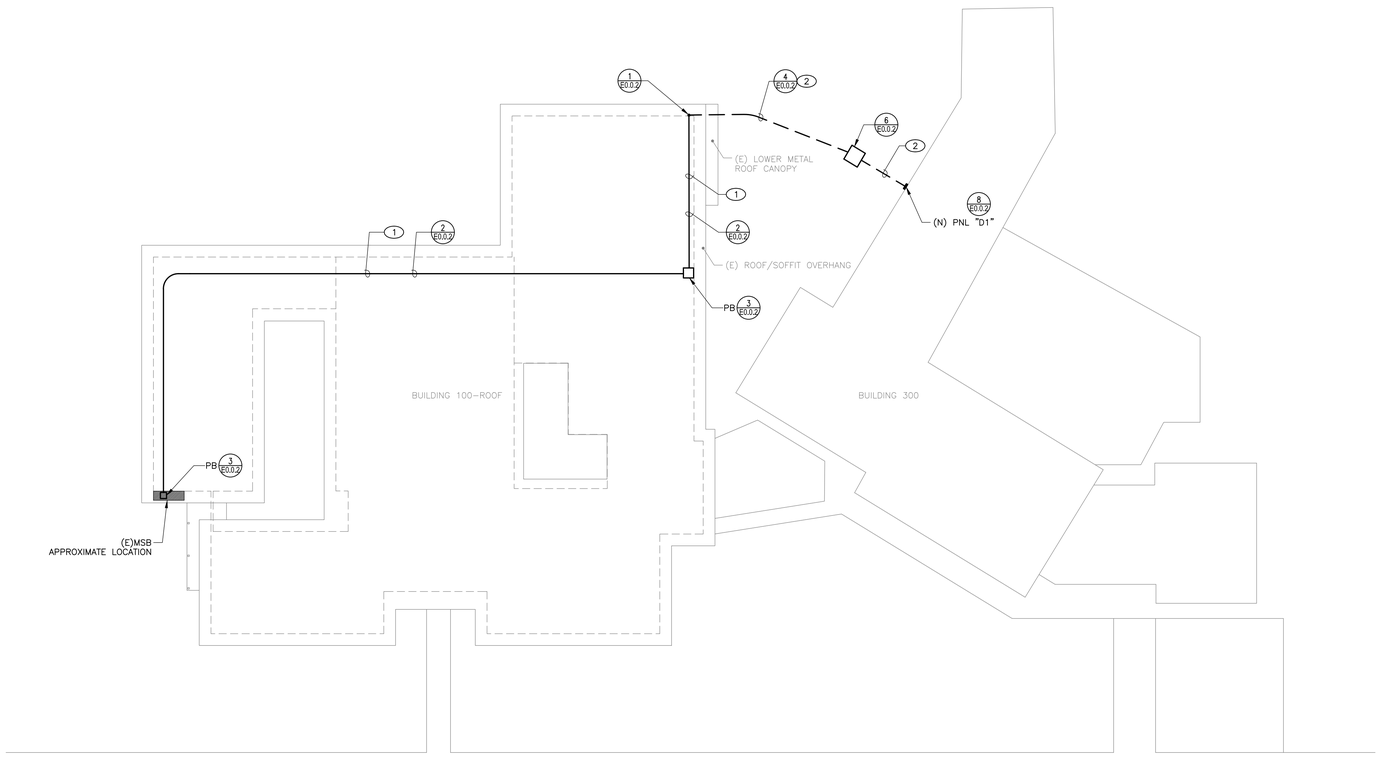
B. ALL NEW EXPOSED CONDUITS IN A SCOPE OF WORK SHALL BE IMC TYPE WITH THREADED CONNECTORS AND FITTINGS.

C. IN INSTANCES WHERE MORE THAN 3 CURRENT–CARRYING CONDUCTORS SHARE A COMMON RACEWAY CONDUCTOR AMPACITIES SHALL BE ADJUSTED IN ACCORDANCE WITH CEC 310.15(B)(3)(a) AND 310.15(B)(2)(a).

D. CONTRACTOR SHALL UPDATE ELECTRICAL PANELBOARD DIRECTORIES TO REFLECT ANY CHANGES MADE TO A CIRCUIT ARRANGEMENT.

KEY NOTES

1. CONDUCTORS ON THE ROOF IN CONDUIT, SEE ONE LINE DIAGRAM FOR MORE INFORMATION.
2. PROVIDE (N) UNDERGROUND CONDUITS AND CONDUCTORS TO (N) PANEL "D". REFER TO ONE LINE DIAGRAM ON SHEET E6.4.2 FOR MORE INFO. SEE 4/E0.0.2 FOR TYPICAL TRENCH DETAIL.



1 ELECTRICAL SITE PLAN
SCALE: 1" = 20'

TRUE NORTH
PROJECT NORTH

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Drawing Title
ELECTRICAL SITE PLAN

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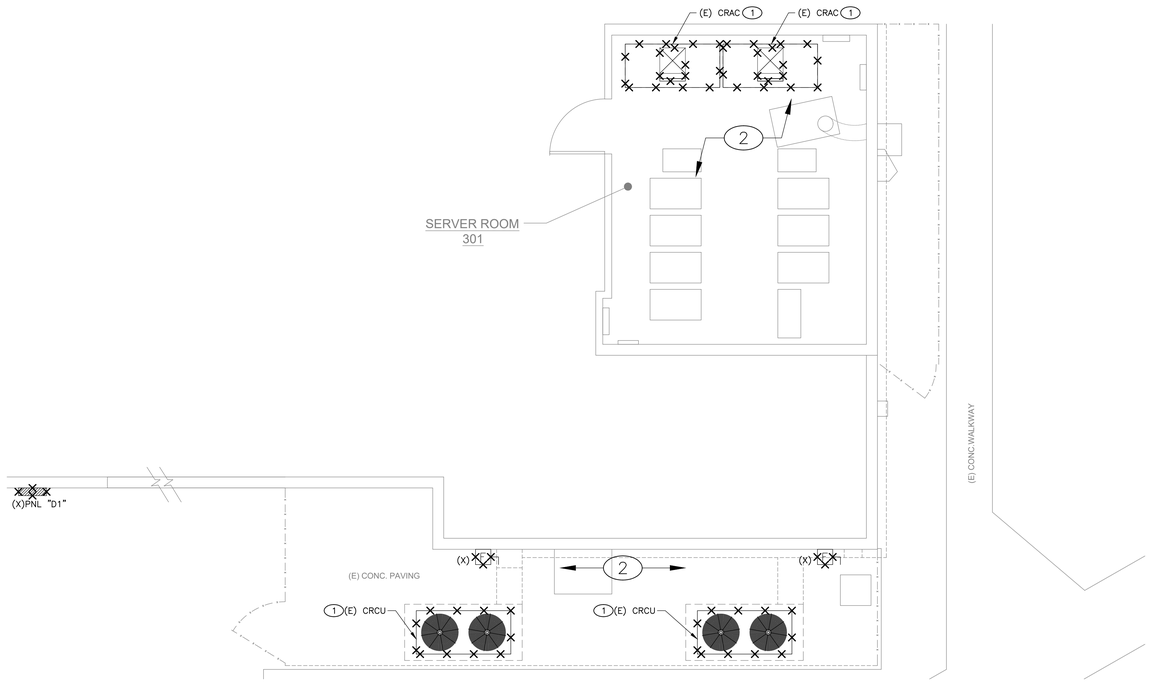
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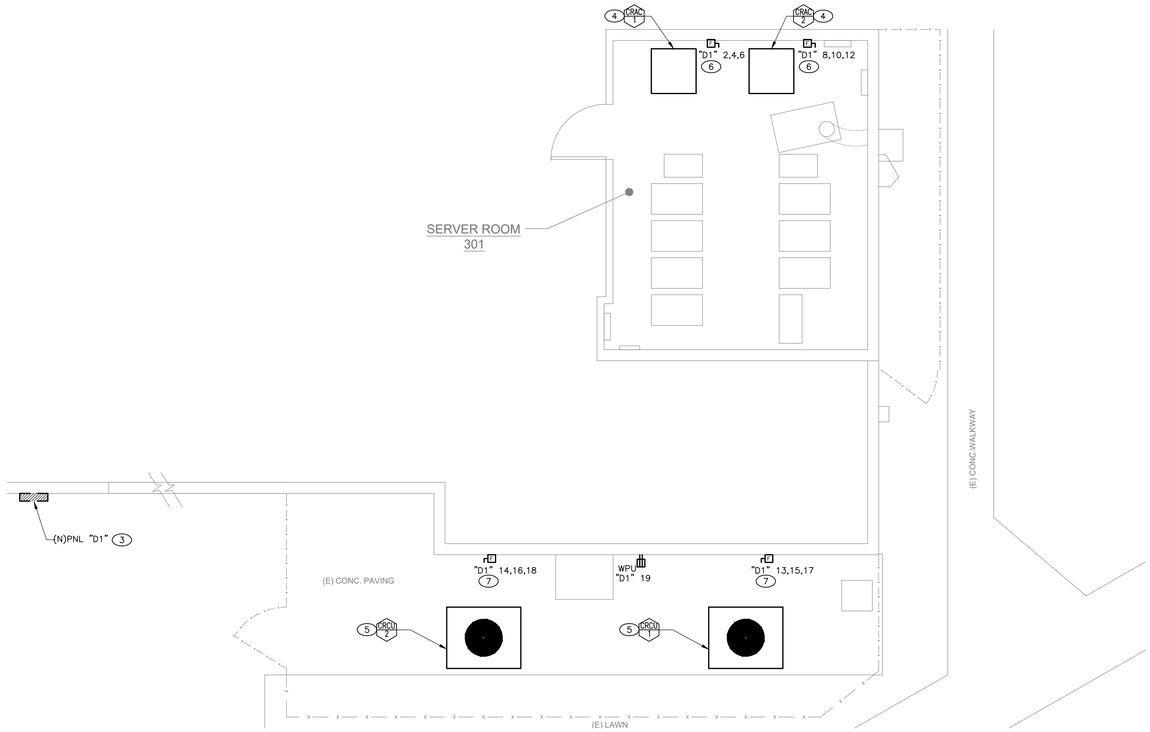
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1 ELECTRICAL DEMO FLOOR PLAN - SERVER ROOM

SCALE: 1/4" = 1'-0"

BLDG # 300



2 ELECTRICAL FLOOR PLAN - SERVER ROOM

SCALE: 1/4" = 1'-0"

BLDG # 300

GENERAL NOTES

A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING ANY WORK. SHOULD ANY DISCREPANCY EXIST, CONTRACTOR SHALL NOTIFY ENGINEER AND SCHOOL DISTRICT REPRESENTATIVE.

B. ALL NEW EXPOSED CONDUITS IN A SCOPE OF WORK SHALL BE IMC TYPE WITH THREADED CONNECTORS AND FITTINGS.

C. EACH NEW DISCONNECT SWITCH SHALL BE PERMANENTLY MARKED WITH CORRESPONDING CIRCUIT NUMBER SERVING THAT UNIT.

D. IN INSTANCES WHERE MORE THAN 3 CURRENT–CARRYING CONDUCTORS SHARE A COMMON RACEWAY CONDUCTOR AMPACITIES SHALL BE ADJUSTED IN ACCORDANCE WITH CEC 310.15(B)(3)(a) AND 310.15(B)(2)(a).

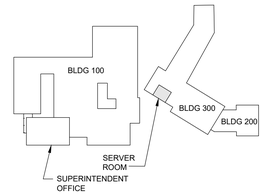
E. CONTRACTOR SHALL UPDATE ELECTRICAL PANELBOARD DIRECTORIES TO REFLECT ANY CHANGES MADE TO A CIRCUIT ARRANGEMENT.

F. RECEPTACLES OF 15 AND 20 AMPERES, 125 AND 250 VOLTS INSTALLED IN A WET LOCATION SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. AN OUTLET BOX HOOD INSTALLED FOR THIS PURPOSE SHALL BE LISTED AND SHALL BE IDENTIFIED AS "EXTRA–DUTY" PER CEC 406.9(B)(1).

KEY NOTES

1. REMOVE ALL ELECTRICAL DEVICES, APPURTENANCES AND WIRING ASSOCIATED WITH MECHANICAL DEMO EQUIPMENT. REMOVE CONDUCTORS UP TO THE SUPPLY SOURCE. REMOVE ACCESSIBLE CONDUITS AS POSSIBLE. MAINTAIN CIRCUIT CONTINUITY FOR THE DEVICES TO REMAIN. COORDINATE WITH MECHANICAL DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.
2. MAINTAIN PROTECT ALL ELECTRICAL CONDUITS, EQUIPMENT, SWITCHES, BOXES AND DEVICES TO REMAIN AND ARE NOT ASSOCIATED WITH DEMO MECHANICAL UNITS.
3. PROVIDE (N) OUTDOOR RATED PANEL "D" SEE ONE LINE DIAGRAM AND PANEL SCHEDULE ON SHEET E6.4.2 FOR MORE INFO. SEE 8/E0.0.2 FOR MOUNTING DETAIL.
4. CRAC: 208V/3PH, 42.9 FLA, 50.8 MCA, 80 MOCP. PROVIDE 80AF/3P/100AS HEAVY DUTY WEATHERPROOF FUSIBLE DISCONNECT SWITCH.
5. CRCU: 208V/3PH, 2.3 FLA, 2.9 MCA, 15 MOCP. PROVIDE 15AF/3P/30AS HEAVY DUTY WEATHERPROOF FUSIBLE DISCONNECT SWITCH.
6. PROVIDE 1–1/4"C – 3#2 CU + 1#8 CU GND.
7. PROVIDE 3/4"C – 3#10 CU + 1#10 CU GND.

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SERVER ROOM HVAC UPGRADES

Drawing Title
ELECTRICAL FLOOR PLANS

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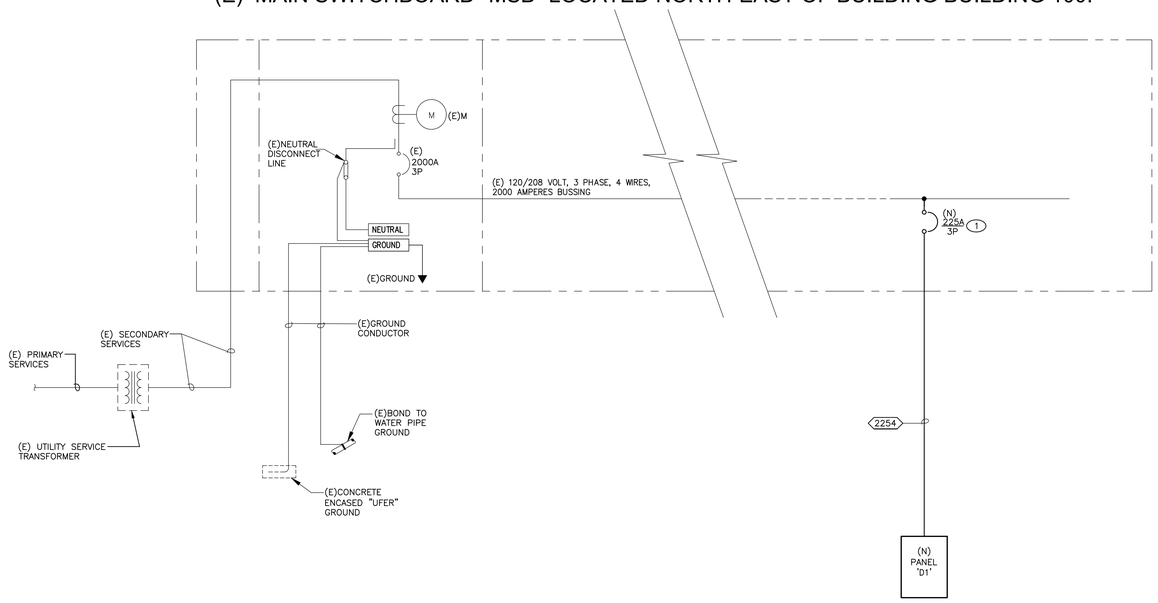
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GENERAL NOTES

A. PROVIDE ALL NECESSARY AUXILIARY EQUIPMENT AND ACCESSORIES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

(E) MAIN SWITCHBOARD "MSB" LOCATED NORTH-EAST OF BUILDING BUILDING 100.



KEY NOTES

1. PROVIDE NEW CIRCUIT BREAKERS INSIDE THE (E) MAIN SWITCHBOARD "MSB" FOR (N) PANEL "D1" MATCH THE (E) AIC. RATING.

FEEDERS SCHEDULE		
TAG	RATING	CONDUIT/CONDUCTOR
2254	225A/3P/3W	(1) 3" C - 4 # 4/0 CU + 1 # 4 CU GND.

PANEL "D1"

120/208 Volt, 3 Phase, 4 Wire
225 Amp BUS CU.
225 Amp MCB
Amp MLO

FED FROM MSB at BLDG 100
22,000 AIC
NEMA 3R Type

			PHASE SUMMARY (WATTS)								
CKT.	BKR	DESCRIPTION	A	B	C	A	B	C	DESCRIPTION	BKR	CKT.
1	[E] 20/2	(E) LOAD	1,920			5,152			CRAC-1	80/3	2
3	[E] 20/1	(E) LOAD		1,920			5,152		-	-	4
5	[E] 20/1	(E) LOAD			1,920			5,152	-	-	6
7	[E] 70/3	(E) LOAD	4,803			5,152			CRAC-2	80/3	8
9	-	-		4,803			5,152		-	-	10
11	-	-			4,803			5,152	-	-	12
13	15/3	CRCU-1	276			276			CRCU-2	15/3	14
15	-	-		276			276		-	-	16
17	-	-			276			276	-	-	18
19	20/1	RECEPT	180						SPACE	PFB	20
21	PFB	SPACE							SPACE	PFB	22
23	PFB	SPACE							SPACE	PFB	24
25	PFB	SPACE							SPACE	PFB	26
27	PFB	SPACE							SPACE	PFB	28
29	PFB	SPACE							SPACE	PFB	30
31	PFB	SPACE							SPACE	PFB	32
33	PFB	SPACE							SPACE	PFB	34
35	PFB	SPACE							SPACE	PFB	36
37	PFB	SPACE							SPACE	PFB	38
39	PFB	SPACE							SPACE	PFB	40
41	PFB	SPACE							SPACE	PFB	42
		PHASE TOTALS	A	B	C						
			17,759	17,579	17,579						

PANEL AND CIRCUIT BREAKER NOTES:
[1]
[2]

DEMAND LOADS		
LIGHTING / CONTINUOUS LOAD x 125%		Watts
RECEPTACLES / OTHER x 100%	52,917	Watts
LARGEST MOTOR x 25%		Watts
TOTAL DEMAND LOADS	52,917	Watts
TOTAL DEMAND AMPS	147	AMPS

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Project
ALUM ROCK UNION SCHOOL DISTRICT
SERVER ROOM HVAC UPGRADES

Drawing Title
ELECTRICAL PARTIAL ONE LINE DIAGRAM & PANEL SCHEDULES

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NO.	DATE	ISSUE

Project No.
23-525

Date
01/03/2024

Drawing No.
E6.4.2

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