

**DSA APPLICATION #**  
A# 03-122231

1. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT APPROVED BY THE DIVISION OF THE STATE ARCHITECT (DSA) (AS REQUIRED BY SECTION 4-3380). PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR), NOT WITHSTANDING OTHER PROVISIONS OF THE PROJECT SPECIFICATIONS, COMPLY WITH ALL PROVISIONS OF THE CALIFORNIA BUILDING STANDARDS CODE (CBC) AND THE 2022 IBC. THE 2022 IBC SHALL BE THE BASIS FOR ALL ADDENDUMS AND CONSTRUCTION CHANGE DOCUMENTS.
2. CONSTRUCTION CHANGE DOCUMENTS MUST BE SIGNED BY ALL THE FOLLOWING ARCHITECT OR ENGINEER HAVING GENERAL RESPONSIBLE CHARGE OF THE PROJECT, AND STRUCTURAL ENGINEER OR RECORD OR DELEGATED PROFESSIONAL ENGINEER (WHEN APPLICABLE).  
A. ADDENDUMS AND CONSTRUCTION CHANGE DOCUMENTS MUST BE SIGNED BY THE ARCHITECT OR ENGINEER HAVING GENERAL RESPONSIBLE CHARGE OF THE CONSTRUCTION CHANGE DOCUMENT, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION IN ACCORDANCE WITH DSA IR-6 AND CONSTRUCTION CHANGE (4-3380). PART 1, TITLE 24, CCR. SUBSTITUTIONS SHALL BE FOR ANY MATERIALS, SYSTEMS OR PRODUCT THAT WOULD OTHERWISE BE REGULATED BY DSA.
3. A DSA-CERTIFIED PROJECT INSPECTOR WITH CLASS 3 CERTIFICATION, EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE ARCHITECT AND BY THE DIVISION OF THE STATE ARCHITECT, SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE PROJECT INSPECTOR ARE DEFINED IN DSA-1242, CALIFORNIA CODE OF REGULATIONS (CCR).  
A. A DSA-ACCREDITED TESTING LAB, EMPLOYED BY THE DISTRICT (OWNER), SHALL CONDUCT ALL REQUIRED TESTS AND INSPECTIONS OF THE WORK.  
B. THE DSA-CERTIFIED PROJECT INSPECTOR AND DSA-ACCREDITED TESTING LAB SHALL BE EMPLOYED AND PAID BY THE OWNER (DISTRICT) AND APPROVED BY THE DISTRICT COLLECTIVE BARGAINING AGREEMENT. THE PROJECT INSPECTOR SHALL BE EMPLOYED BY THE DISTRICT OR STRUCTURAL ENGINEER OF RECORD, AND DIVISION OF THE STATE ARCHITECT (DSA). THE INSPECTOR OF RECORD FOR THIS PROJECT SHALL BE CLASS 3 OR BETTER.
4. ALL WORK SHALL CONFORM TO 2019 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).  
A. DSA-CERTIFIED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL OF THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
5. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. ANY VIOLATION OF ANY REQUIREMENT OF THE ALTERATION OR NON-COMPLYING CONSTRUCTION IS TO BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR. A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE DISTRICT (OWNER) PRIOR TO FABRICATION AND INSTALLATION.
6. FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTOR'S DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY DSA. LIST DEFERRED SUBMITTAL ITEMS FOR THIS PROJECT. (IF THIS PROJECT HAS NO DEFERRED SUBMITTAL ITEMS, PLEASE INDICATE AS SUCH).
7. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH THE LOCAL JURISDICTION.
8. THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST AS A FUNCTIONAL PERFORMANCE TEST TO VERIFY THE LIGHTING CONTROL SYSTEMS TO QUALIFY FOR ENERGY STAR QUALIFICATION. THE LIGHTING CONTROL ACCEPTANCE TESTS MUST BE PERFORMED BY CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).  
A. MECHANICAL SYSTEM ACCEPTANCE TEST MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2024.
9. ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR, ENGINEER/ARCHITECT OR RECORD OR THE OWNER'S AGENT.
10. A LISTING OF CERTIFICATES CAN BE FOUND AT [HTTPS://WWW.DSACERTIFICATION.COM/PROGRAMS-AND-TOPICS/PROGRAMS/ACCEPTANCE-TESTING-TECHNICIAN-CERTIFICATION-PROVIDER-PROGRAM-ACCEPTANCE](https://www.dsacertification.com/programs-and-topics/programs/acceptance-testing-technician-certification-provider-program-acceptance).
11. THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION INSTALLATION OF THE SPECIFIED SYSTEMS CONFORMS AND PASS THE REQUIRED ACCEPTANCE CRITERIA.  
A. THE PROJECT INSPECTOR SHALL COLLECTOR THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED AND THE PROJECT HAS BEEN COMPLETED. FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTOR'S DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY DSA. LIST DEFERRED SUBMITTAL ITEMS FOR THIS PROJECT. (IF THIS PROJECT HAS NO DEFERRED SUBMITTAL ITEMS, PLEASE INDICATE AS SUCH)
20. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH THE LOCAL JURISDICTION.



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## GENERAL ABBREVIATIONS

# & @	NUMBER AND AT
ADA	AMERICANS WITH DISABILITY ACT
ADDN	ADDITION OR ADDITIONAL
AFB	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BSMT	BASEMENT
CL	CENTER LINE
CLG	CEILING
CM	CENTIMETER
CONC	CONCRETE
CONN(S)	CONNECTION(S)
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
D	DEPTH
DEG	DEGREE
DEMO	DEMOLISH OR DEMOLITION
DI	DIAMETER
DM	DIMENSION
DIV	SPECIFICATION DIVISION
DN	DOWN
DTL	DETAIL
DWG(S)	DRAWING(S)
E	EAST
EA	EACH
EL	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC	ELECTRICAL
ENG	ENGINEER
EO	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EXST	EXISTING
EXT	EXTERIOR
FN	FINISHED
FL	FLOOR
FT	FEET
FUT	FUTURE
GC	GENERAL CONTRACTOR
GOVT	GOVERNMENT
H	HEIGHT
HORIZ	HORIZONTAL
HT	HEIGHT
I.e.	THAT IS
IBC	INTERNATIONAL BUILDING CODE
INT	INCH
INT	INTERIOR
LB(S)	POUND(S)
M	THOUSAND
M	METER
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETER
N	NORTH
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OPP	OPPOSITE
OVHD	OVERHEAD
PAR	PARALLEL
PENT	PENTHOUSE
PLYWD	PLYWOOD
QTY	QUANTITY
REQ(D)	REQUIRE(D)
REV	REVISION(S)
RM	ROOM
RND	ROUND
S	SOUTH
SCHED	SCHEDULE
SECT	SECTION
SHT	SHEET
SM	SIMILAR
SPEC	SPECIFICATION(S)
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SYM	SYMMETRICAL
TEMP	TEMPORARY
TYP	TYPICAL
UNEX	UNEXCAVATED
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
W	WEST
WTH	WITH
W/O	WITHOUT

## ARCHITECTURAL ABBREVIATIONS

A/E	ARCHITECT/ENGINEER
AB	AIR BARRIER
ABS	ASBESTOS
ACC	ADA ACCESSIBLE
ACR	ACRYLIC
ACT	ACOUSTIC CEILING TILE
AD	ACCESS DOOR
ADJ	ADJUSTABLE
ADJT	ADJACENT
ADMN	ADMINISTRATION
AEC	AUTOMATED EXTERNAL DEFIBRILLATORS
AL	ALUMINUM
ALUM	ALUMINUM
AP	ACCESS PANEL
APC	ACOUSTIC PANEL CEILING
ASPH	ASPHALT
AUTO	AUTOMATIC
AVG	AVERAGE
AWP	ACOUSTIC WALL PANEL
B.O.	BOTTOM OF
BCS	BABY CHANGING STATION
BD	BOARD
BLK	BLOCK
BLKG	BLOCKING
BLKHD	BULKHEAD
BM(S)	BEAM(S)
BOT	BOTTOM
BRG	BRIDGING
BRKT	BRACKET
BT	BATHTUB
BTWN	BETWEEN
CAB	CABINET
CBD	CHALKBOARD
CER	CERAMIC
CF	CUBIC FEET
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFMF	COLD-FORMED METAL FRAMING
CG	CLEAR FLOAT GLASS
CI	CAST IRON
CIG	CLEAR INSULATING GLASS
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CJA	CONTROL JOINT ABOVE
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COM	COMMON
COMB	COMBINATION
COMM	COMMUNICATIONS
COMPR	COMPRESSIBLE
CONF	CONFERENCE
CONFIG	CONFIGURATION
CORR	CORRIDOR
CP	COVER PLATE
CPT	CARPET
CR	CHAIR RAIL
CS	COUNTERSINK
CSTJ	CONSTRUCTION JOINT
CSWK	CASEWORK
CT	CERAMIC TILE
CTG	CLEAR TEMPERED FLOAT GLASS
CTIG	CLEAR TEMPERED INSULATING GLASS
CJ	COPPER
CU	COMBINATION UNIT
CV	CONDOM VENDOR
CY	CUBIC YARD
CYL	CYLINDER
DB	DECIBEL
DBL	DOUBLE
DC	DUST COLLECTOR
DEPR	DEPRESSION(ED)
DEPT	DEPARTMENT
DET	DETENTION
DF	DRINKING FOUNTAIN
DG	DOOR GRILLE
DIAG	DIAGONAL
DRF	DAMP ROOFING
DR	DOOR
DSN	DOWNSPOUT NOZZLE
DW	DISHWASHER
DWL(S)	DOWEL(S)
DWR	DRAWER
EB	EXPANSION BOLT
EE	EACH END
EEWS	EMERGENCY EYE WASH
EFF	EFFICIENCY
EJ	EXPANSION JOINT
ELAS	ELASTOMERIC
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
ENTR	ENTRANCE
ERF	EPOXY RESIN FLOORING
EUI	ENERGY USE INTENSITY
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXP	EXPANSION
EXP	EXPOSED
F	FABRIC
F.O.	FACE OF
FAB	FABRICATE(D)
FB	FACE BRICK
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIG	FIGURE
FIX	FIXTURE
FLASH	FLASHING
FLEX	FLEXIBLE
FLG	FLOORING
FLM	FULL LENGTH MIRROR
FLUOR	FLUORESCENT
FO	FINISH OPENING
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FP	FIREPROOFING
FR	FIRE RESISTANT
FRP	FIBERGLASS REINFORCED PANEL
FRT	FIRE RESISTANCE TREATED
FS	FLOOR SINK
FSS	FOLDING SHOWER SEAT
FTG	FOOTING
FVC	FIRE VALVE CABINET
FWC	FABRIC WALL COVERING
G	GROUT
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GD	GARBAGE DISPOSAL
GEN	GENERAL
GFA	GROSS FLOOR AREA

GL	GLUE LAMINATED
GM	GUARANTEED MAXIMUM PRICE
GR	GUARD RAIL
GR	GRADE
GRS	GALVANIZED RIGID STEEL
GWB	GYPSONIC WALL BOARD
GYP	GYPSONUM
HC	HOLLOW CORE
HD	HAND DRYER
HDB	HIGH DENSITY FIBERBOARD
HDR	HEADER
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HR	HOUR
HR	HANDRAIL
HS	HARDWARE SET
HSS	HOLLOW STRUCTURAL SHAPE
HVAC	HEATING VENTILATING AND AIR CONDITIONING
IAW	IN ACCORDANCE WITH
ID	INSIDE DIAMETER
IF	INSIDE FACE
IFB	INSULATED INFILL PANEL GLASS
IJ	ISOLATION JOINT
IJS	IN JOIST SPACE
INC	INCLUDE(ING)
INSUL	INSULATION
JAN	JANITOR
JBE	JOIST BEARING ELEVATION
JCT	JUNCTION
JFB	JOINT FILLER BOARD
JST	JOIST
JT	JOINT
KCJ	KEYED CONSTRUCTION JOINT
KD	KNOCKDOWN
KH	KITCHENHOOD
KIT	KITCHEN
L	ANGLE
LAB	LABORATORY
LAM	LAMINATED
LAV	LAVATORY
LBR	LUMBER
LDG	LOADING
LF	LENGTH (LONG)
LG	LAMINATED GLASS
LIN	LINEAR
LINO	LINOLEUM
LKR	LOOKER
LOC	LOCATION
LONG	LONGITUDINAL
LSC	LIFE SAFETY CODE
LTG	LIGHTING
LV	LUXURY VINYL TILE
MAG	MAGNETIC
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MATL	MATERIAL
MB	MOP BASIN
MBD	MARKER BOARD
MBH	MOP/BROOM HOLDER
MC	MEDICINE CABINET
MEMB	MEMBRANE
MH	MANHOLE
MHW	MIRROR WITH SHELF
MTD	MOUNTED
MTG	MOUNTING
MUL	MULLION
NC	NOISE CRITERIA
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NOM	NOMINAL
O to O	OUT TO OUT
OVERALL	OVERALL
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFF	OFFICE
OFOI	OWNER FURNISHED OWNER INSTALLED
OPH	OPPOSITE HAND
OPN(S)	OPENING(S)
OSHA	OPERATIONAL SAFETY AND HEALTH ADMINISTRATION
OTB	OPEN TO BELOW
OVFL	OVERFLOW
P	PAINT
PAN B	PANIC BOLT
PB	PARTICLE BOARD
PC	PRECAST CONCRETE
PCD	PAPER CUP DISPENSER
PCT	PORCELAIN CERAMIC TILE
PD	PANIC DEVICE
PERF	PERFORATED
PERP	PERPENDICULAR
PIC	PATTERN GLASS
PIC	PORTABLE INSTRUMENT CONNECTION
PIG	PATTERN INSULATING GLASS
PL	PLATE
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLMB	PLUMBING
PR	PAIR
PREFAB	PREFABRICATED
PROJ	PROJECTION (ION)
PS	PROJECTION SCREEN
PT	POINT
PT	POINT OF TANGENCY
PTD	PAPER TOWEL DISPENSER
PTDR	COMBINATION TOWEL DISPENSER/RECEPTACLE
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
PWL	SOUND POWER LEVEL
QT	QUARRY TILE
QTR RND	QUARTER ROUND
R	RISER
RAD	RADIUS
RB	RUBBER BASE
RC	REMOTE CONTROL
RCP	REFLECTED CEILING PLAN
REF	REFERENCE
REFL	REFLECTED
REM	REMOVABLE
RESIL	RESILIENT
RF	RESILIENT FLOORING
RF	RUBBER FLOOR
RFM	RECESSED FLOOR MAT
RH	ROBE HOOK
R&C	ROUGH IN AND CONNECT
S	SINK
SAT	SPRAYED ACOUSTIC TREATMENT
SAW	SOUND ABSORBING WALL UNITS
SB	SPLASH BLOCK
SC	SOLID CORE
SC	SHOWER CURTAIN
SCD	SEAT COVER DISPENSER
SCH	SHOWER CURTAIN HOOK
SCR	SHOWER CURTAIN ROD
SET	STRUCTURAL CLAY TILE

SD	SOAP DISPENSER
SECY	SECRETARY
SF	SQUARE FEET
SG	SPANDREL GLASS
SGL	SINGLE
SH	SHOWER
SPL	SECURITY HOLLOW METAL
SLNT	SEALANT
SM	SHEET METAL
SND	SANITARY NAPKIN DISPOSAL
SNV	SANITARY NAPKIN VENDOR
SPL	SOUND PRESSURE LEVEL
SQ	SQUARE
SS	SOLID SURFACE
SSA	STORM SHELTER AREA
SSS	STAINLESS STEEL SHELF
SST	STAINLESS STEEL
ST	STONE
ST	STAIR
STAG'D	STAGGERED
STC	SOUND TRANSMISSION CLASS
STR	STRINGER
SUBFL	SUBFLOOR
SURF	SURFACE
SUSP	SUSPENDED
SVF	SHEET VINYL FLOORING
T	TREAD
T&G	TONGUE AND GROOVE
T.O.	TOP OF
TANG	TANGENT
TB	TOWEL BAR
TBD	TACK BOARD
TCP	TOILET COMPARTMENT PARTITION
TERR	TERRAZZO
TG	TINTED FLOAT GLASS
TG	TEMPERED GLASS
TH	THRESHOLD
THK	THICK(NESS)
TI	TENANT IMPROVEMENT
TKH	TINTED INSULATING GLASS
TMR	TILT MIRROR UNIT
TOIL	TOILET
TOP	TOP OF PAVING
TRANS	TRANSVERSE
TT	TERRAZZO TILE
TTD	TOILET TISSUE DISPENSER
TTG	TINTED TEMPERED FLOAT GLASS
TTIG	TINTED TEMPERED INSULATING GLASS
TW	TACK WALL
UL	UNDERWRITERS LABORATORIES
URINAL	URINAL
US	UTILITY SHELF
UTIL	UTILITY
VB	VAPOR BARRIER
VB	VINYL BASE
VCB	VENTED COVE BASE
VFL	VINYL FLOOR
VOC	VOLATILE ORGANIC COMPOUND
VOL	VOLUME
VP	VENEER PLASTER
VT	VINYL TILE
VWC	VINYL WALL COVERING
W	WIDE
WB	WALL BASE
WC	WATER CLOSET
WC	WALL COVERING
WCL	WATER CLOSET/LAVATORY COMBINATION
WD	WOOD
WDF	WOOD FLOORING
WDR	WINDOW
WG	POLISHED WIRE GLASS
WI	WROUGHT IRON
WOM	WALK OFF MAT
WR	WASTE RECEPTACLE
WRB	WEATHER RESISTANT BARRIER
WW	WARM WHITE
WWF	WELDED WIRE FABRIC
YD	YARD

## GENERAL SYMBOLS

XX A4.XX XX A12.X XX XX	DETAIL NUMBER CROSS REFERENCE SHEET NUMBER BUILDING ELEVATION INTERIOR ELEVATION SIMILAR OR TYPICAL WALL SECTION DETAIL REFERENCE BUILDING SECTION SHEET NOTE REFERENCE KEYNOTE COLUMN GRID LINE ROOM NAME LEVEL XX XXX-XX TYP FF EL= 100'-0"
XX A4.XX XX A12.X XX XX	EARTH GRAVEL SAND CONCRETE PRECAST CONCRETE STEEL STONE CONCRETE MASONRY UNIT BRICK VENEER STEEL (LARGE SCALE) GYM FLOOR WOOD (CONTINUOUS BLOCKING) WOOD (NON-CONTINUOUS BLOCKING) WOOD (TRIM/FINISH) GLASS SHINGLES PLYWOOD (LARGE SCALE) GYPSUM WALL BOARD BLANKET INSULATION RIGID INSULATION SPRAY FOAM INSULATION MINERAL WOOL INSULATION PROTECTION BOARD CARPET (LARGE SCALE) ACOUSTIC TILE (LARGE SCALE) TILE (LARGE SCALE)

## SITE SYMBOLS

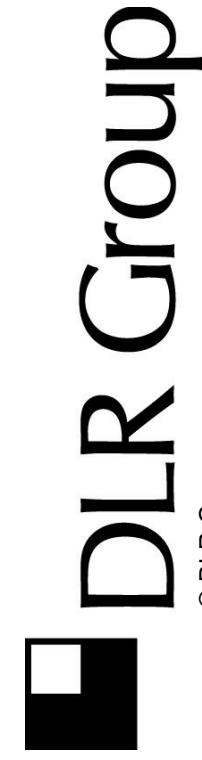
---	PROPERTY LINE	□	AREA INLET
---	LOT LINE	□	CURB INLET
---	EASEMENT LINE	●	MANHOLE
---	BUILDING LINE, EXISTING	(	HEAD WALL
---	BUILDING LINE, NEW W/DOOR OPENING AND STRUCTURAL STOOP	▶	FLARED END
100	PRIMARY CONTOUR, EXISTING	CO	CLEAN OUT
100	PRIMARY CONTOUR, NEW	J	CAP
99	SECONDARY CONTOUR, EXISTING	▶	THRUST BLOCK
99	SECONDARY CONTOUR, NEW	▶	VALVE
1% SLOPE DOWN	SLOPE, PAVEMENT	PIV	POST INDICATOR VALVE
---	DRAINAGE DITCH OR SWALE	□	REDUCER
---	STREET CENTERLINE	FH	FIRE HYDRANT
---	CURB, THICKENED EDGE	✓	POWER POLE
---	CURB, EXISTING	→	LIGHT POLE
---	CURB, NEW	☎	TELEPHONE MANHOLE
---	PAVING CONTRACTION JOINT	☎	TELEPHONE BOX
---	PAVING KEYED CONSTRUCTION JOINT	●	SPRINKLER HEAD, 360°
---	PAVING TIED CONSTRUCTION JOINT	●	SPRINKLER HEAD, 270°
---	PAVING EXPANSION JOINT	●	SPRINKLER HEAD, 180°
---	FENCE, SECURITY	●	SPRINKLER HEAD, 90°
---	FENCE, BARBED WIRE	QC	QUICK COUPLING
---	FENCE, CHAIN LINK	○	TREE, EXISTING DECIDUOUS
---	FENCE, WOOD	○	TREE, EXISTING CONIFER
---	SEED LIMIT	○	SHADE TREE
---	SOD LIMIT	○	ORNAMENTAL TREE
---	FOUNDATION DRAIN, NON-PERFORATED	○	DECIDUOUS TREE
---	FOUNDATION DRAIN, PERFORATED	○	SHRUB
---	SUBDRAIN, PERFORATED	○	CLIPPED SHRUB
---	SANITARY SEWER		
---	FORCE MAIN		
---	WATER		
---	FIRE		
---	GAS		
---	HPS		
---	MPS		
---	LPS		
---	UGEUGT		
---	OVERHEAD POWER		
---	LAWN SPRINKLER HOT LINE		
---	LAWN SPRINKLER LATERAL		

## ARCHITECTURAL SYMBOLS

XX A11.X A110 A124 XX.XX	CASEWORK ELEVATION DOOR NUMBER INTERIOR WINDOW NUMBER EXTERIOR WINDOW / CURTAIN WALL NUMBER WALL TYPE CEILING TYPE CEILING HEIGHT
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## GENERAL NOTES

- GENERAL NOTES APPLY TO ALL SHEETS.
- DIMENSIONS ARE ACTUAL AND ARE TO FACE OF STUDS, FACE OF CONCRETE WALLS, FACE OF CMU WALLS, FACE OF FRAMES, OR CENTERLINE OF COLUMNS, UNLESS NOTED OTHERWISE.
- INCLUDE ALL OWNER-FURNISHED AND INSTALLED ITEMS AND OWNER-FURNISHED AND CONTRACTOR-INSTALLED ITEMS IN THE CONSTRUCTION SCHEDULE, AND SHALL COORDINATE WITH THE OWNER TO ACCOMMODATE THESE ITEMS.
- COORDINATE ALL MECHANICAL CHASE SIZES WITH THE MECHANICAL CONTRACTOR.
- SEE FLOOR PLANS FOR LOCATION OF (E) WALLS OF FIRE-RESISTANCE-RATED CONSTRUCTION. ALL WALLS OF FIRE-RESISTANCE-RATED CONSTRUCTION SHALL EXTEND TO UNDERSIDE OF FLOOR OR ROOF DECK ABOVE.
- ALL PENETRATIONS THROUGH WALLS SHALL BE SEALED WITH PENETRATION FIRE STOPPING MATERIAL AS REQUIRED TO ACHIEVE THE RESPECTIVE FIRE-RESISTANCE RATING AND SMOKE STOPPAGE. SEE SPECIFICATION SECTION 079413.
- COORDINATE WITH MECHANICAL AND ELECTRICAL CONTRACTORS THE SIZE AND LOCATION OF EQUIPMENT PADS SHOWN ON PLANS.
- CONSTRUCTION DOCUMENTS ARE COMPLEMENTARY. SEE DRAWING FOR QUANTITIES AND LOCATION OF WORK. SEE SPECIFICATIONS FOR QUALITIES AND CONDITIONS OF WORK.
- WORK: ALL ASPECTS OF THE WORK AND ITEMS NOT SPECIFICALLY MENTIONED, BUT NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION, SHALL BE INCLUDED AND INDICATED IN THE CONTRACTOR'S BID.
- GENERAL SHEET NOTES ONLY APPLY TO PARTICULAR DRAWING OR SERIES OF DRAWINGS.
- NO ASBESTOS OR PCB CONTAINING MATERIALS SHALL BE USED ON THIS PROJECT.
- DO NOT SCALE DRAWINGS. DIMENSIONS NOTED PREVAIL. NOTIFY ARCHITECT IN CASE OF DISCREPANCY.
- HORIZONTAL AND VERTICAL DIMENSIONS ARE MINIMUM DIMENSIONS. CLEARANCES ARE GIVEN TO FINISH SURFACES. GC TO VERIFY ALL CLEARANCES. NOTIFY ARCHITECT IN CASE OF DISCREPANCY.



MANZANITA ELEMENTARY SCHOOL  
COVID 19- COVINA VALLEY DISTRICT HVAC REPLACEMENT

4131 N INDIANA AVE COVINA, CA 91722

100%  
CONSTRUCTION  
DOCUMENTS  
11/02/2022  
REVISIONS

75-22605-00  
DSA A#03-12231  
DSA File #: 19-25

GENERAL NOTES,  
SYMBOLS AND  
ABBREVIATIONS

G1.1

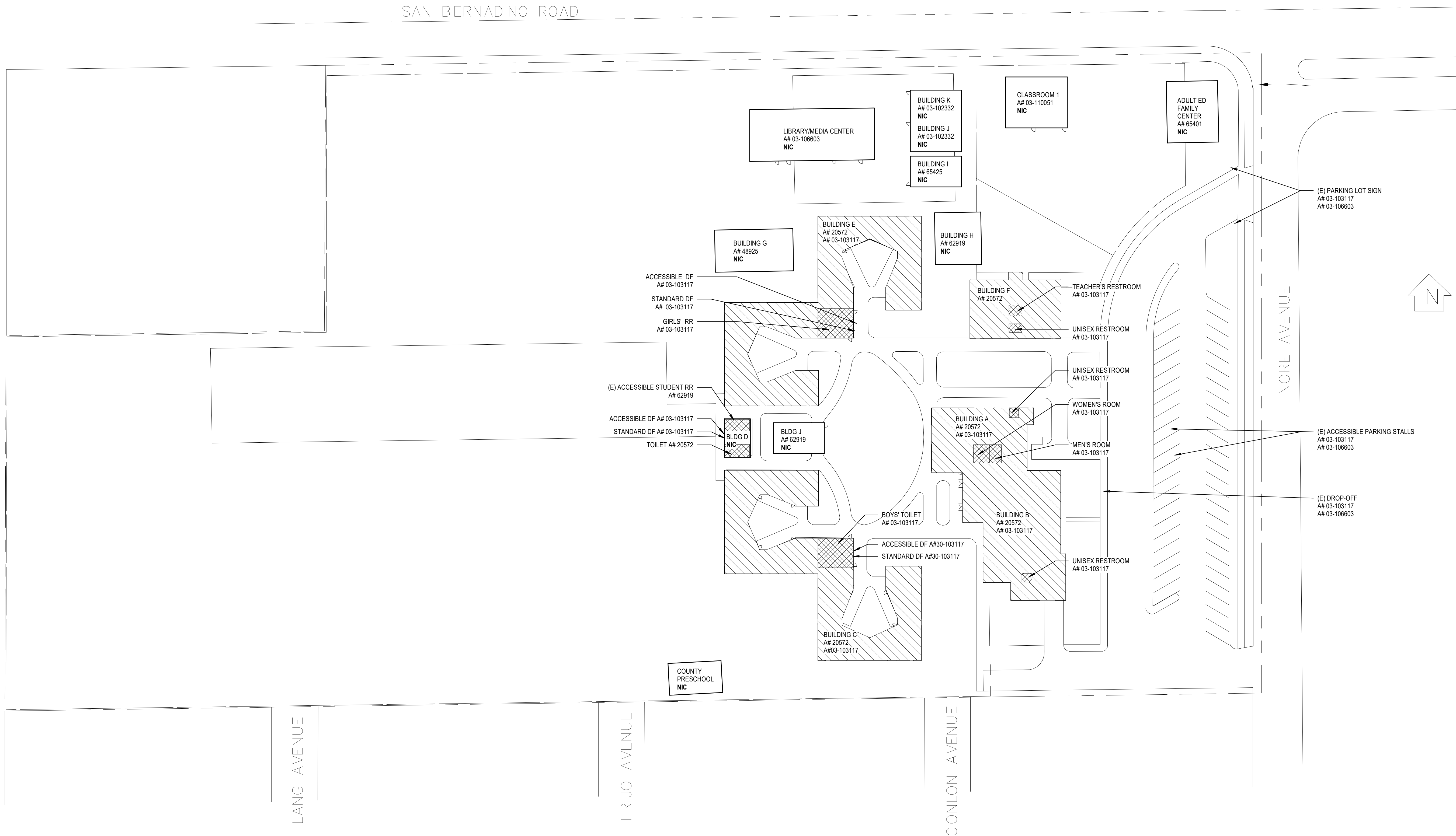


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# ARCHITECTURAL SITE PLAN

SCALE: 1" = 40'-0"



## DSA CERTIFICATION LIST

APPLICATION #	FILE #	APPROVAL YEAR	NOTE
03-20572	19-25	1961	ORIGINAL CAMPUS BUILDINGS
03-62919	19-25	1996	CONSTRUCTION OF RELOCATABLES
03-65401	19-25	1996	CONSTRUCTION OF CLASSROOM BLDG
03-107020	19-25	2006	CONSTRUCTION OF SITE WORK
03-102332	19-25	2006	CONSTRUCTION OF (5) RELOCATABLES, FIRE ALARM UPGRADES
03-110051	19-25	2007	RELOCATION OF TOILET BUILDING (A#04-1101310)
03-106603	19-25	2011	CONSTRUCTION OF SITE IMPROVEMENTS, RELOCATABLE
03-103117	19-25	2012	ALTERATION TO ADMIN/MP BLDG. & 3 CLASSROOM BLDG.

## SITE LEGEND

- EXISTING BUILDING NOT IN SCOPE
- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- (E) RESTROOMS - NOT IN SCOPE

## MANZANITA ELEMENTARY SCHOOL

COVID 19- COVINA VALLEY DISTRICT HVAC REPLACEMENT

4131 N NORA AVE COVINA, CA 91722

100%  
CONSTRUCTION  
DOCUMENTS  
11/02/2022  
REVISIONS

75-22605-00  
DSA A#03-122231  
DSA File #: 19-25  
ARCHITECTURAL  
SITE PLAN

A1.1



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A

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C

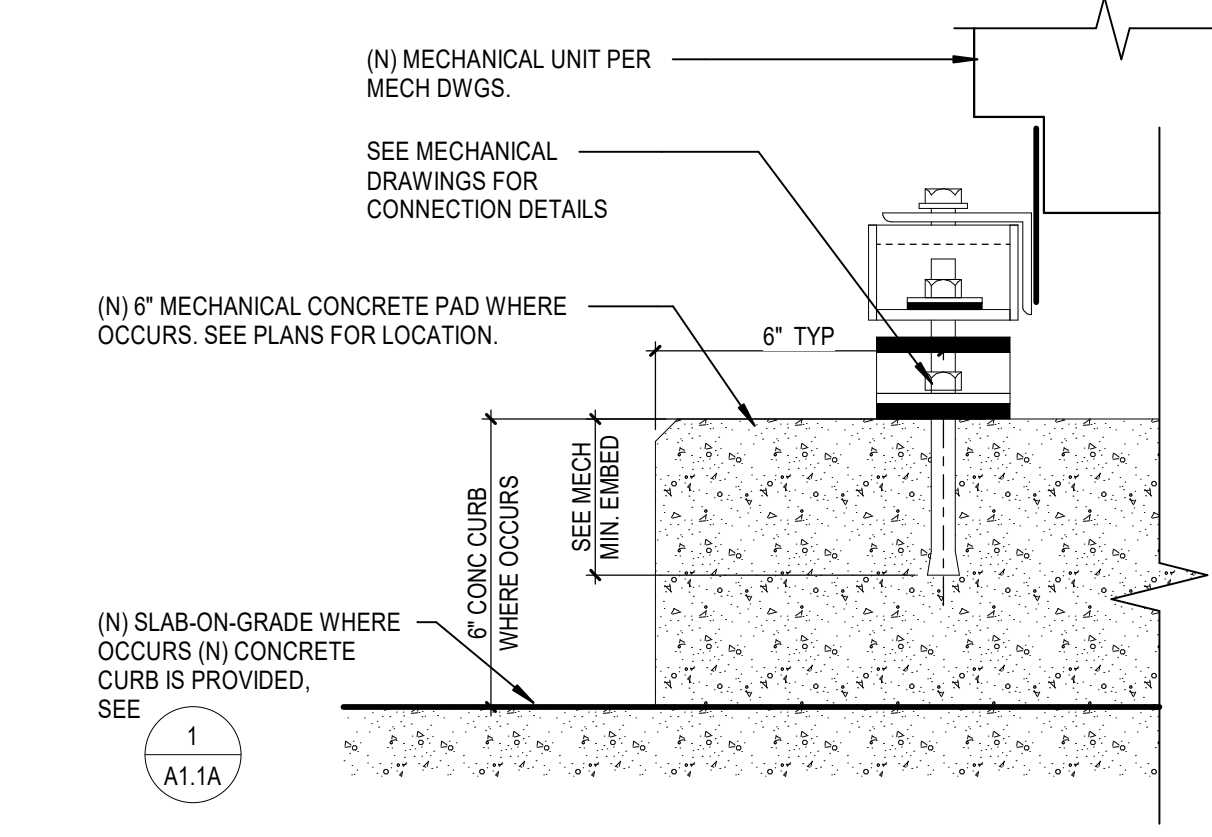
D

E

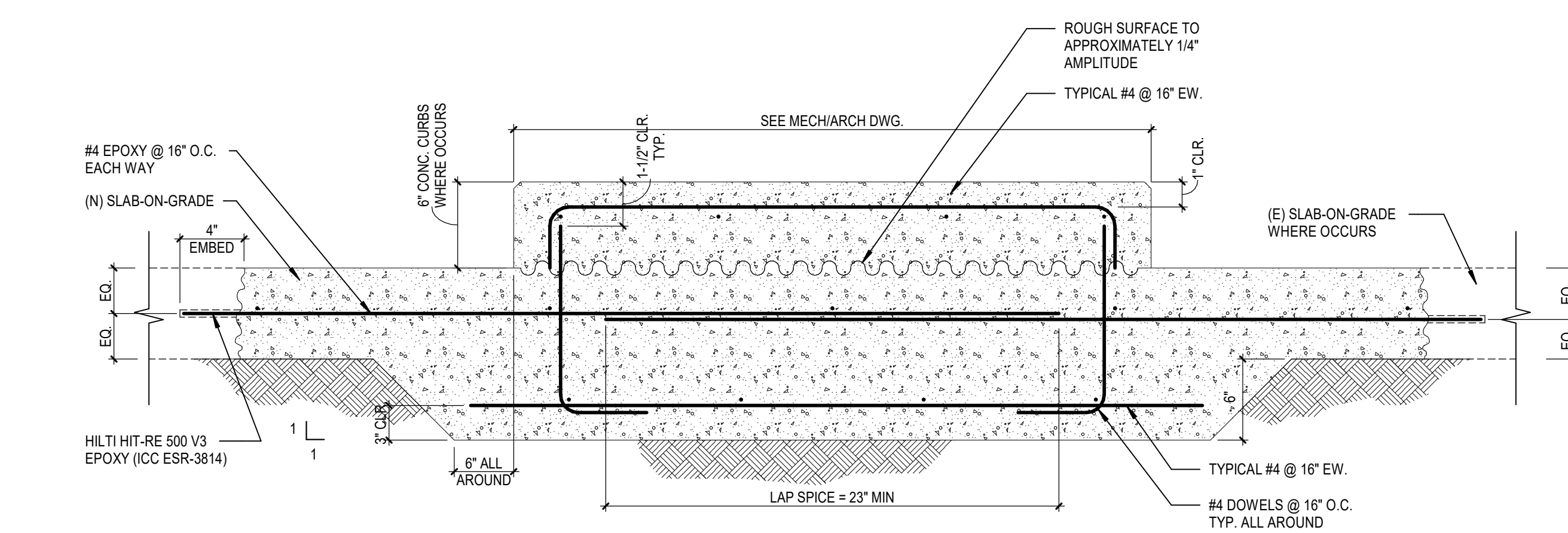
F

ADMIN BUILDING A & B FLOOR PLAN

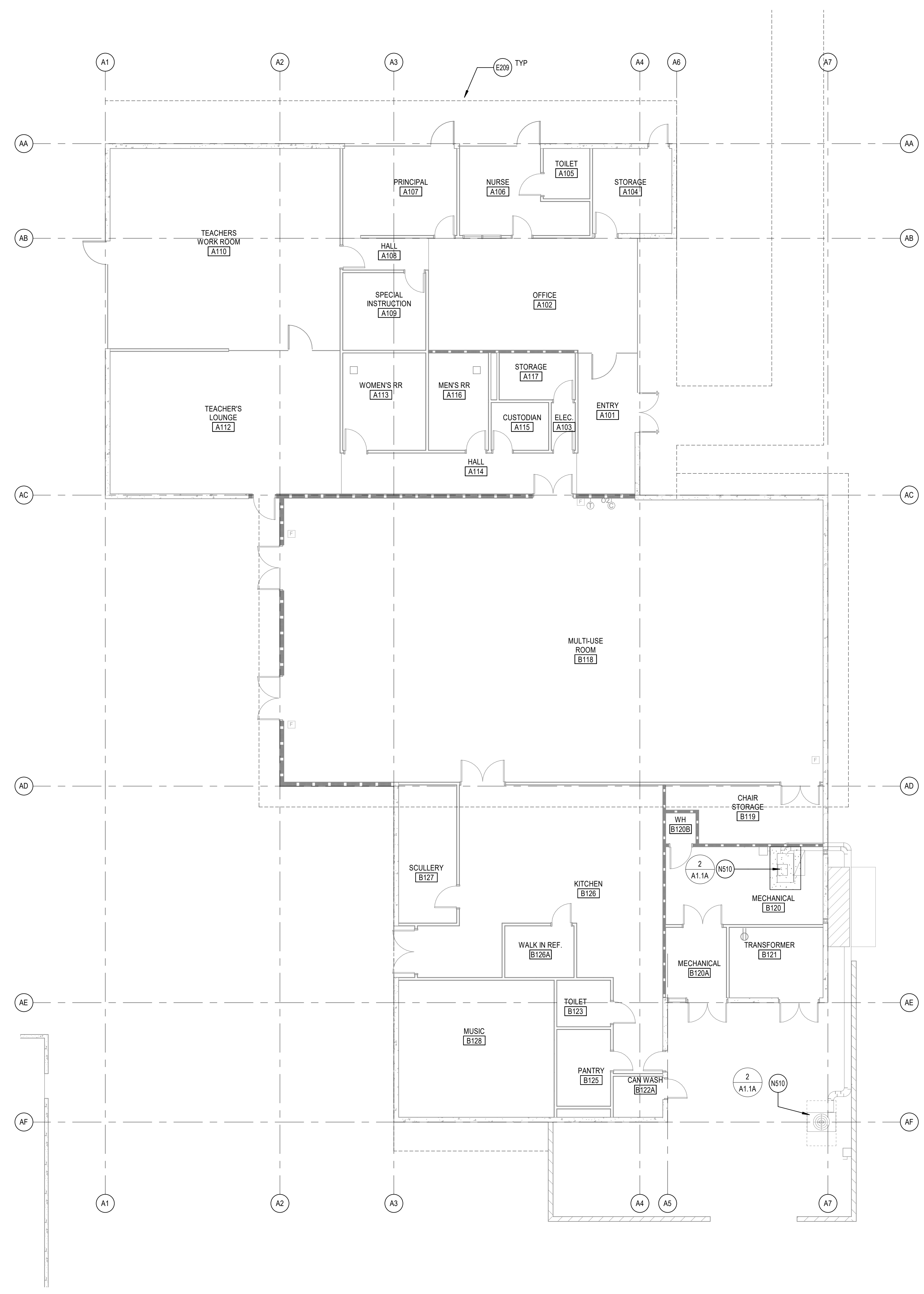
SCALE: 1/8" = 1'-0"



2 MECH. ANCHORAGE AT CONC. CURB  
A1.1A SCALE: 3" = 1'-0"



1 TYPICAL MECH EQUIPMENT CONCRETE PAD AT (E) SLAB ON GRADE  
A1.1A SCALE: 1 1/2" = 1'-0"



REFERENCE KEYNOTES

N510 NEW MECH. EQUIPMENT. SEE MECHANICAL DWGS.

GENERAL ARCHITECTURAL NOTES

1. ALL INTERIOR CMU WALLS SHALL BE TO REMAIN U.N.O.
2. SCRIBE (E) GYPSUM WALL BOARD OF WALLS AND PARTITIONS TO IRREGULARITIES OF DECK ABOVE. SEAL TIGHTLY AROUND ALL PENETRATIONS.

DEMOLITION GENERAL NOTES

- DEMOLITION NOTES APPLY TO ALL DEMOLITION SHEETS.
- THE CONTRACTOR SHALL:
- A. COORDINATE ALL DEMOLITION AND PHASING EFFORTS WITH THE ARCHITECT AND OWNER'S REPRESENTATIVE. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION OF OWNER'S OPERATIONS. EXCESSIVE NOISE OR VIBRATION SHALL BE PRE-APPROVED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE. IN ALL CASES, PROVISIONS SHALL BE MADE FOR USER'S SAFETY.
  - B. COORDINATE ANY DISRUPTION OF UTILITY SERVICES WITH THE OWNER AND AS SPECIFIED.
  - C. CONSTRUCT TEMPORARY CONSTRUCTION PARTITIONS WITHIN THE EXISTING BUILDING WHICH OFFER A ONE-HOUR ENCLOSURE TO ISOLATE ANY DEMOLITION/CONSTRUCTION WORK FROM THE GENERAL PUBLIC AND AS DEEMED NECESSARY BY THE OWNER AND CODE OFFICIAL HAVING JURISDICTION. COORDINATE LOCATIONS WITH THE OWNER AND MAINTAIN MEANS OF EGRESS THROUGHOUT THE WORK.
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  - F. REMOVE IN THEIR ENTIRETY ALL EXISTING WALLS, DOORS, MILLWORK, PLUMBING FIXTURES, CEILINGS, SOFFITS, MARKERBOARDS, AND OTHER ITEMS, AS REQUIRED TO EXECUTE THE DEMOLITION/CONSTRUCTION WORK DESCRIBED BY THE DRAWINGS.
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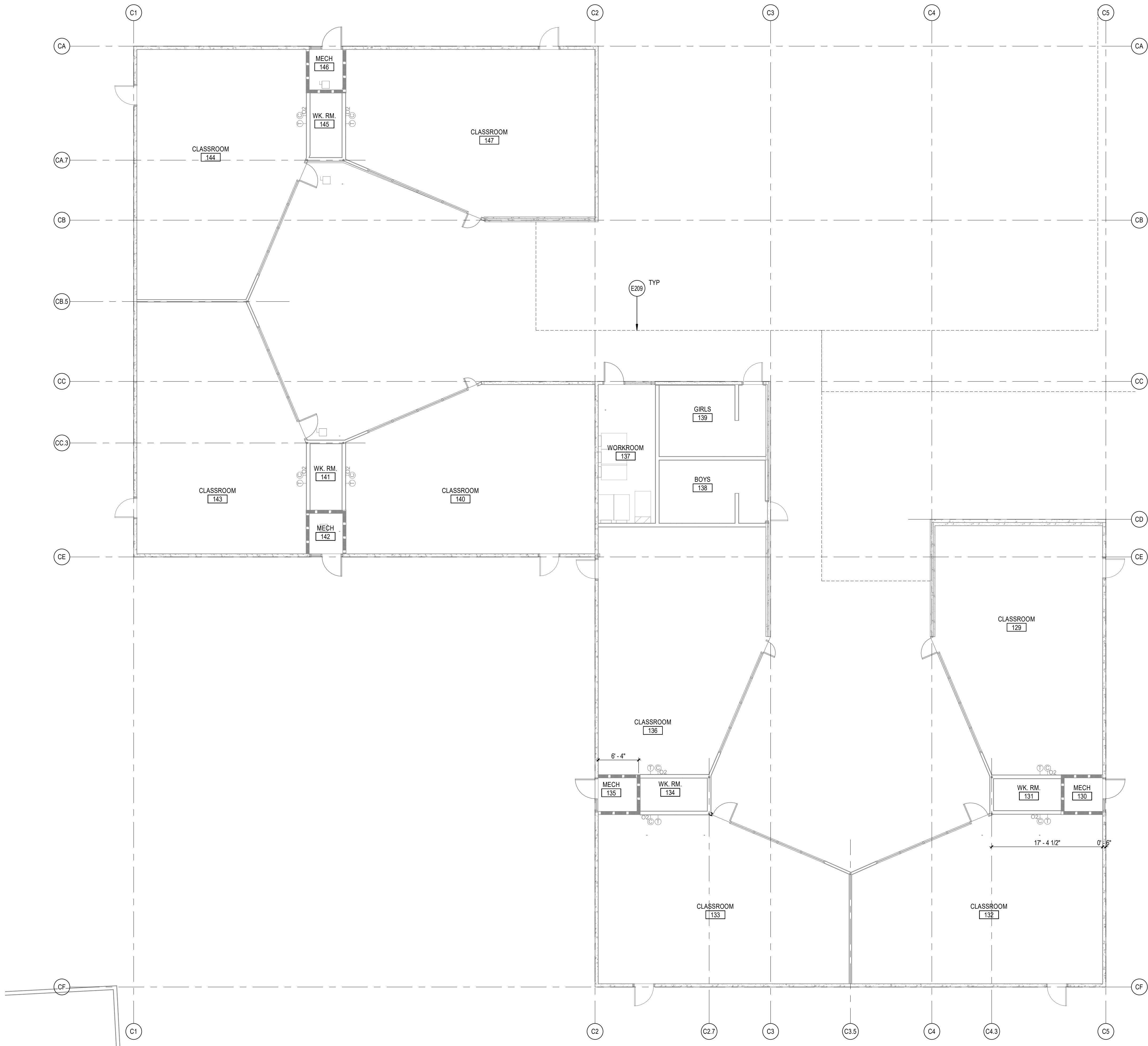
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CONSTRUCTION  
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75-22605-00  
DSA A#03-122231  
DSA File #: 19-25  
ADMIN BUILDINGS  
FLOOR PLAN

A1.1A



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

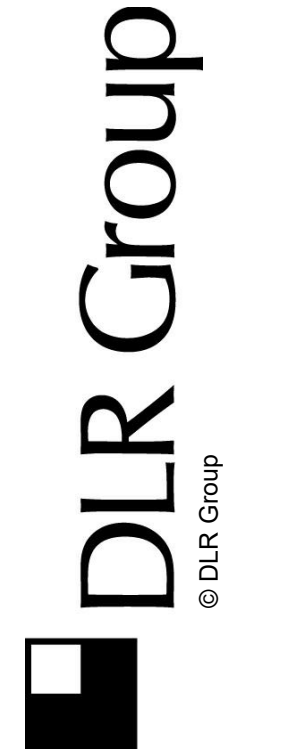
REFERENCE KEYNOTES

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**100% CONSTRUCTION DOCUMENTS**  
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REVISIONS

75-22605-00  
DSA A#03-122231  
DSA File #: 19-25

**BUILDING C FLOOR PLAN**

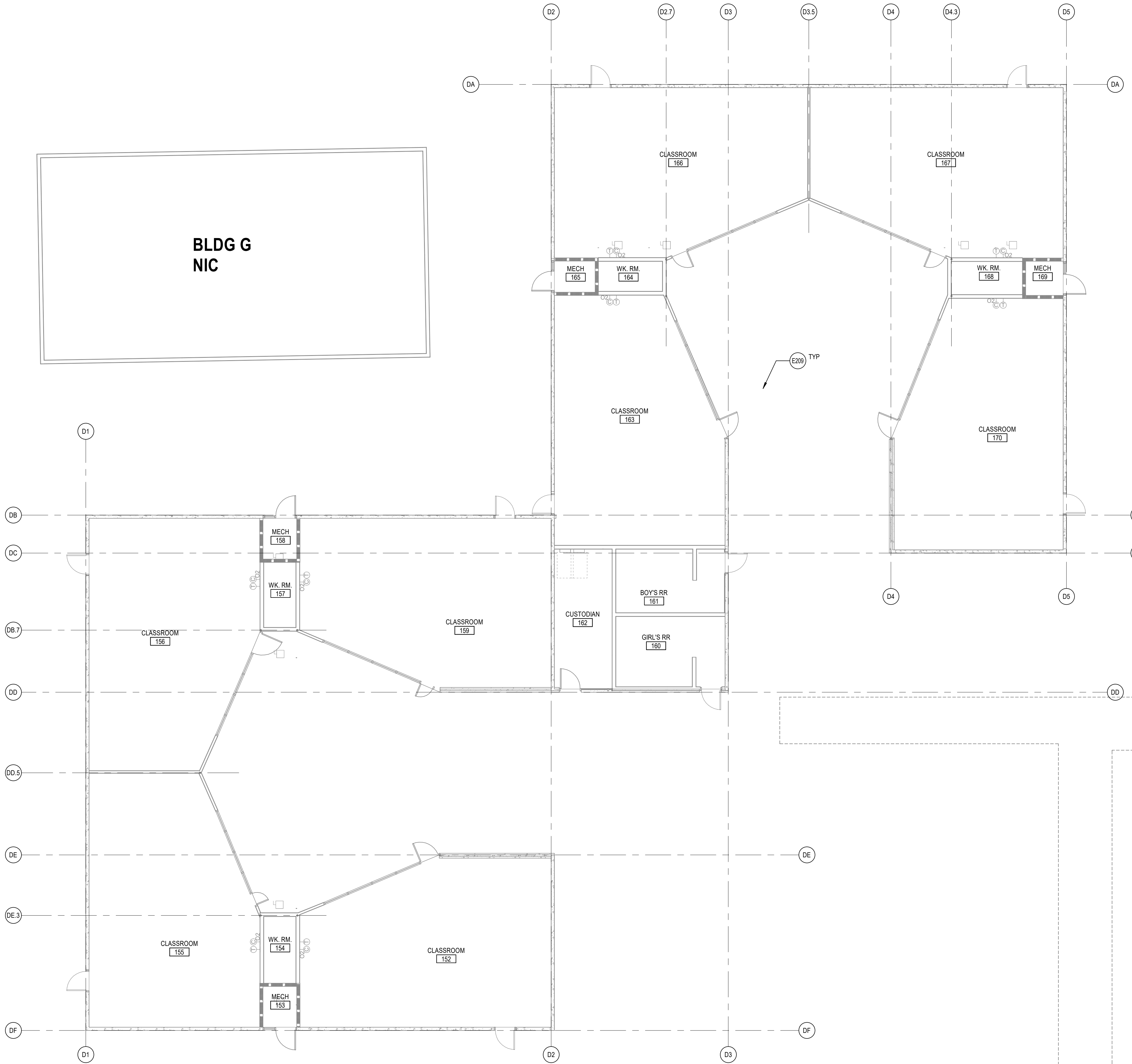
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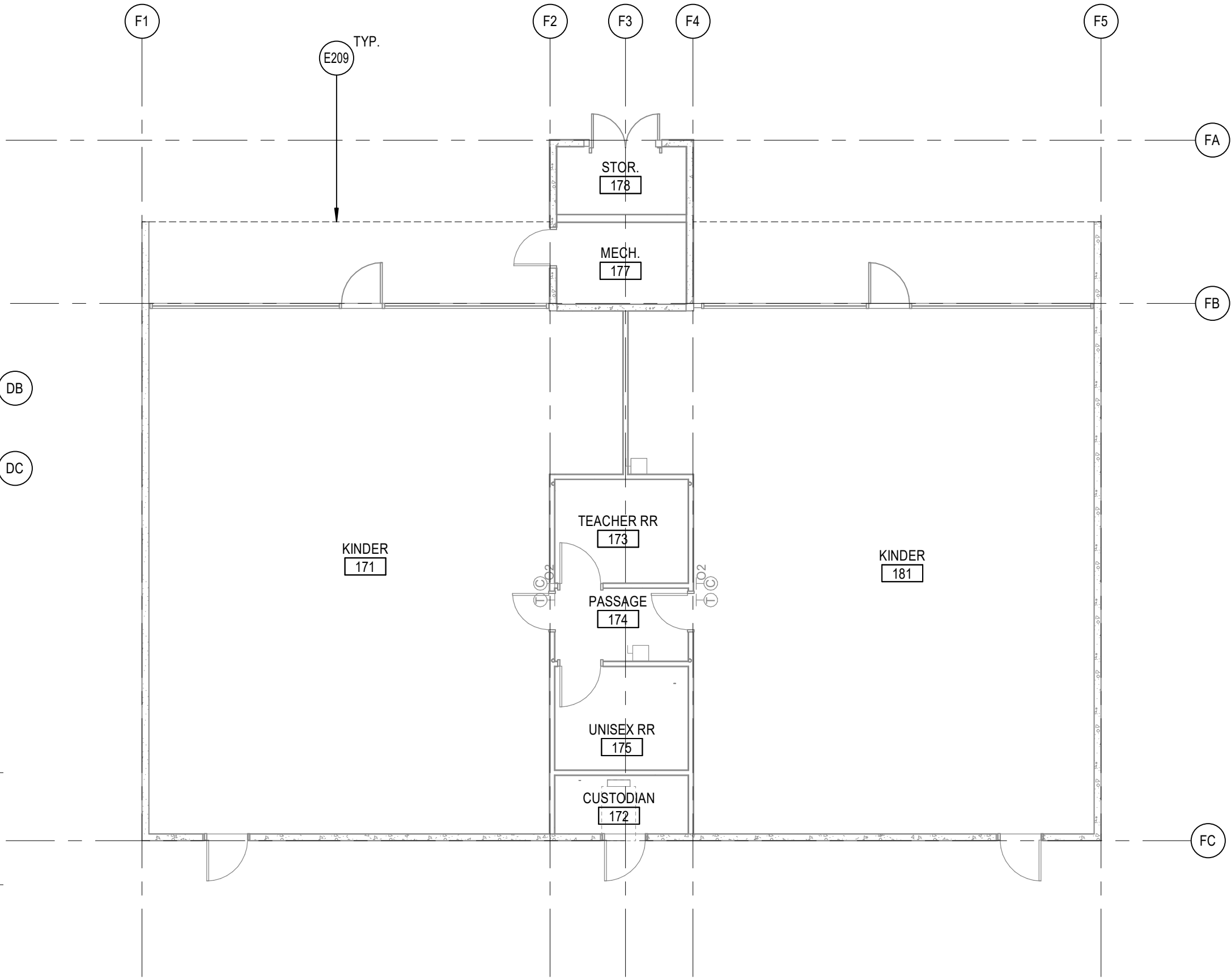
BUILDING E FLOOR PLAN

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



BUILDING F FLOOR PLAN

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



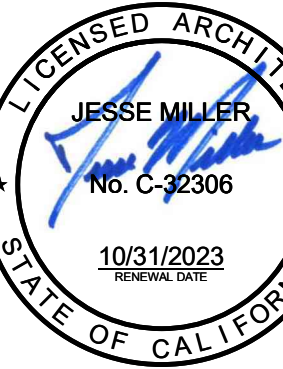
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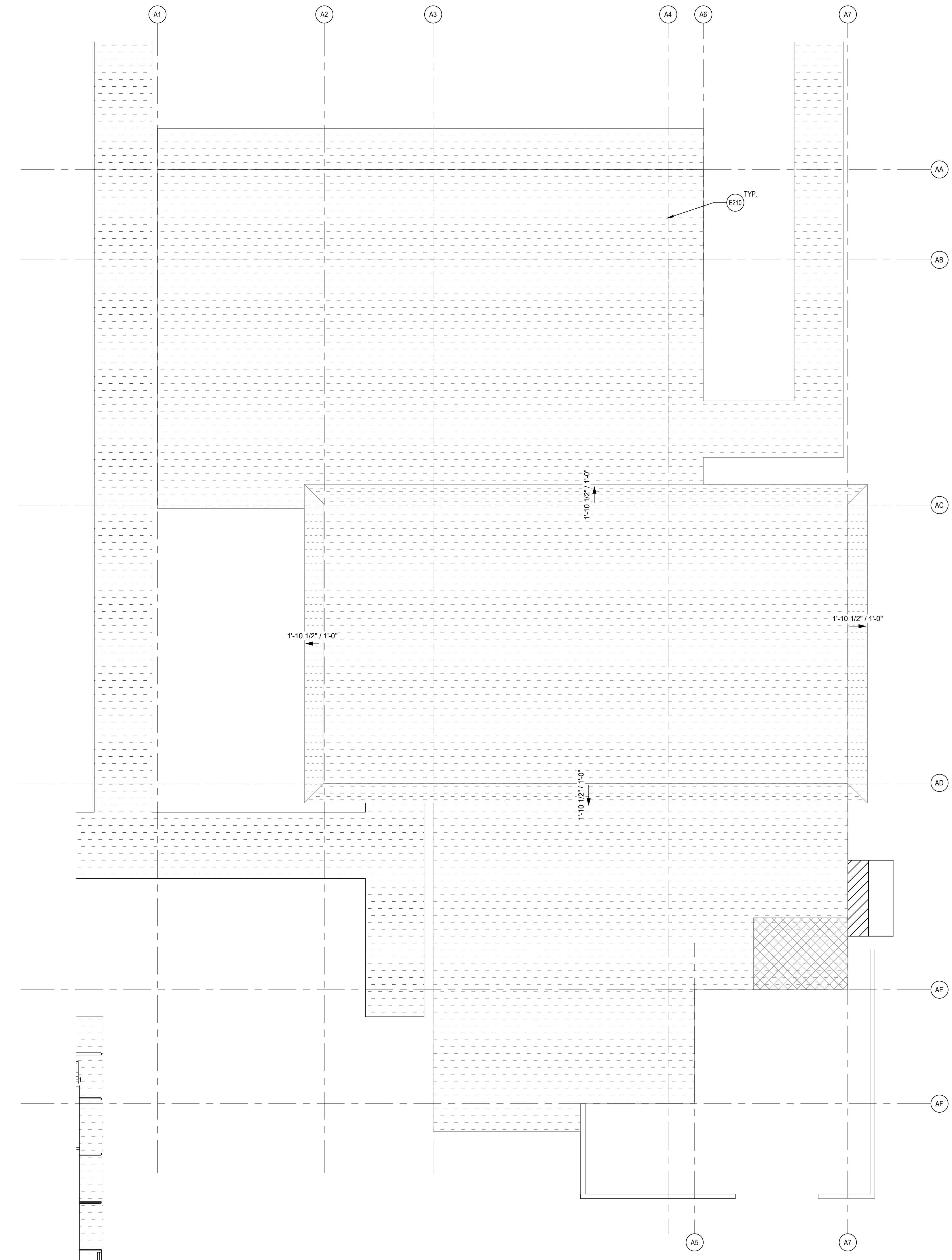
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ADMIN BUILDING A & B ROOF PLAN  
SCALE: 1/8" = 1'-0"

REFERENCE KEYNOTES

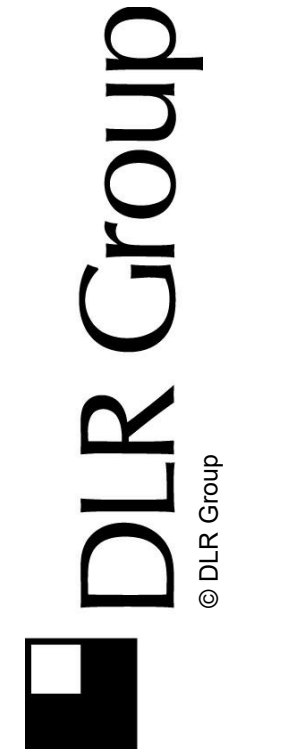
E210 LINE OF (E) BLDG BELOW SHOWN DASHED

ROOF PLAN GENERAL NOTES

- A. ROOF PLAN GENERAL NOTES APPLY TO ALL ROOF PLAN SHEETS.
- B. ROOF SLOPES ARE CREATED BY SLOPING THE ROOF STRUCTURE UNLESS NOTED OTHERWISE. SEE STRUCTURAL DRAWINGS FOR ELEVATIONS OF THE HIGH AND LOW POINTS TO DETERMINE PROPER TAPER IN INSULATION.
- C. TAPERED INSULATION SHALL PROVIDE A MINIMUM OF 1/4-INCH PER FOOT OF SLOPE TO ROOF DRAINS, UNLESS NOTED OTHERWISE.
- D. AREAS MARKED WITH A HATCHED PATTERN INDICATE TAPERED INSULATION.
- E. ALL ROOF CURBS TO BE A MINIMUM OF 8 INCHES ABOVE ROOFING LEVELS. PROVIDE TAPERED INSULATION ROOF SADDLES AT ROOF CURBS TO PROVIDE DRAINAGE AROUND CURB.
- F. SEE STRUCTURAL DRAWINGS FOR FRAMING AROUND ROOF PENETRATIONS.
- G. COORDINATE THE SIZE AND LOCATION OF ROOF PENETRATIONS FOR MECHANICAL AND ELECTRICAL EQUIPMENT. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR PENETRATIONS NOT SHOWN ON THIS DRAWING.
- H. FLASH DRAINS, CURBS, VENTS AND STACKS PER MANUFACTURER'S RECOMMENDATIONS IF DETAIL NOT SHOWN ON DRAWINGS.
- I. NO ROOF PENETRATIONS ALLOWED WITHIN 4'-0" EACH SIDE OF FIREWALL. SEE CODE PLAN FOR FIRE WALL LOCATIONS.

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75-22605-00  
DSA A#03-122231  
DSA File #: 19-25  
ADMIN BUILDINGS  
ROOF PLAN

A1.3A



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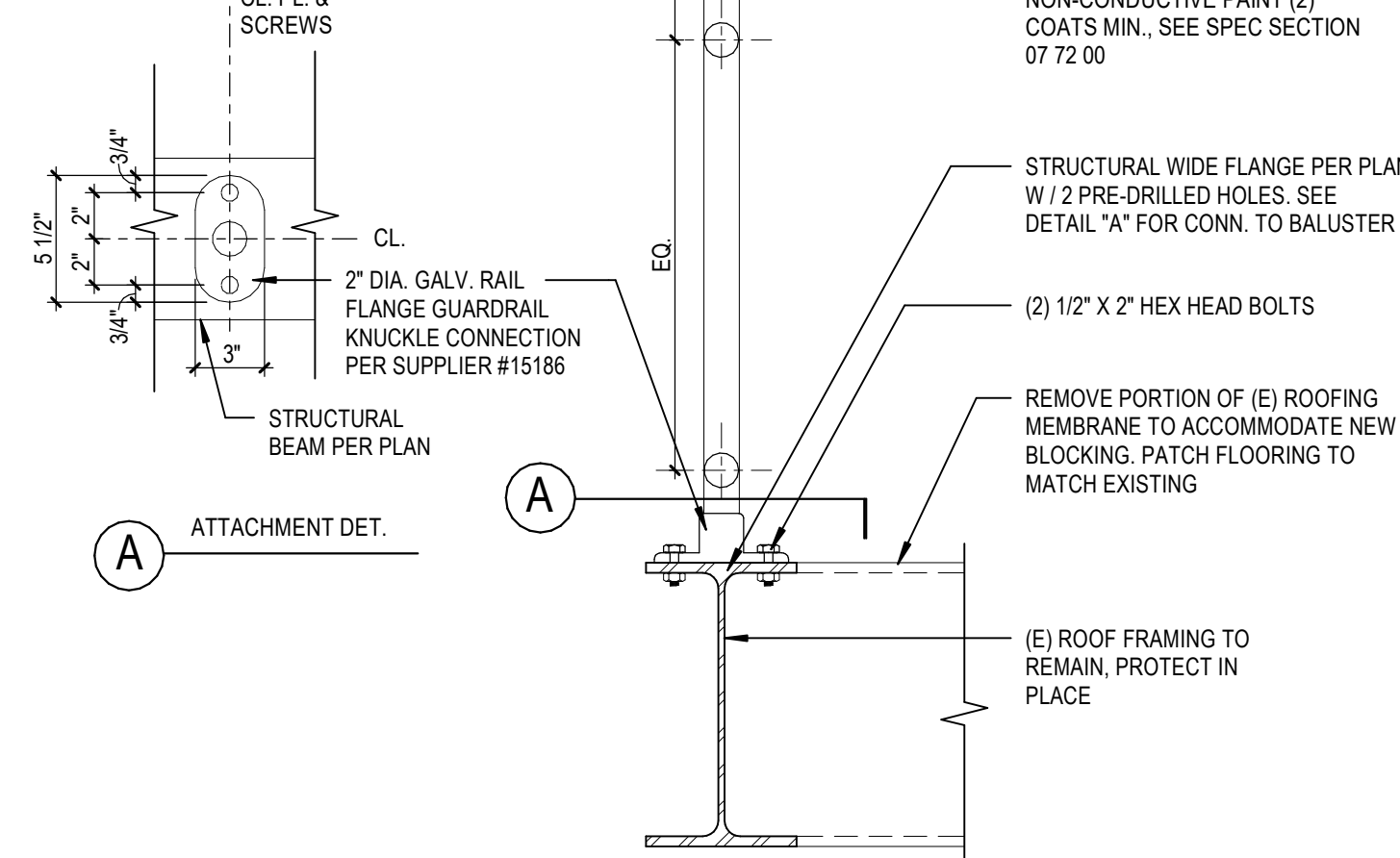
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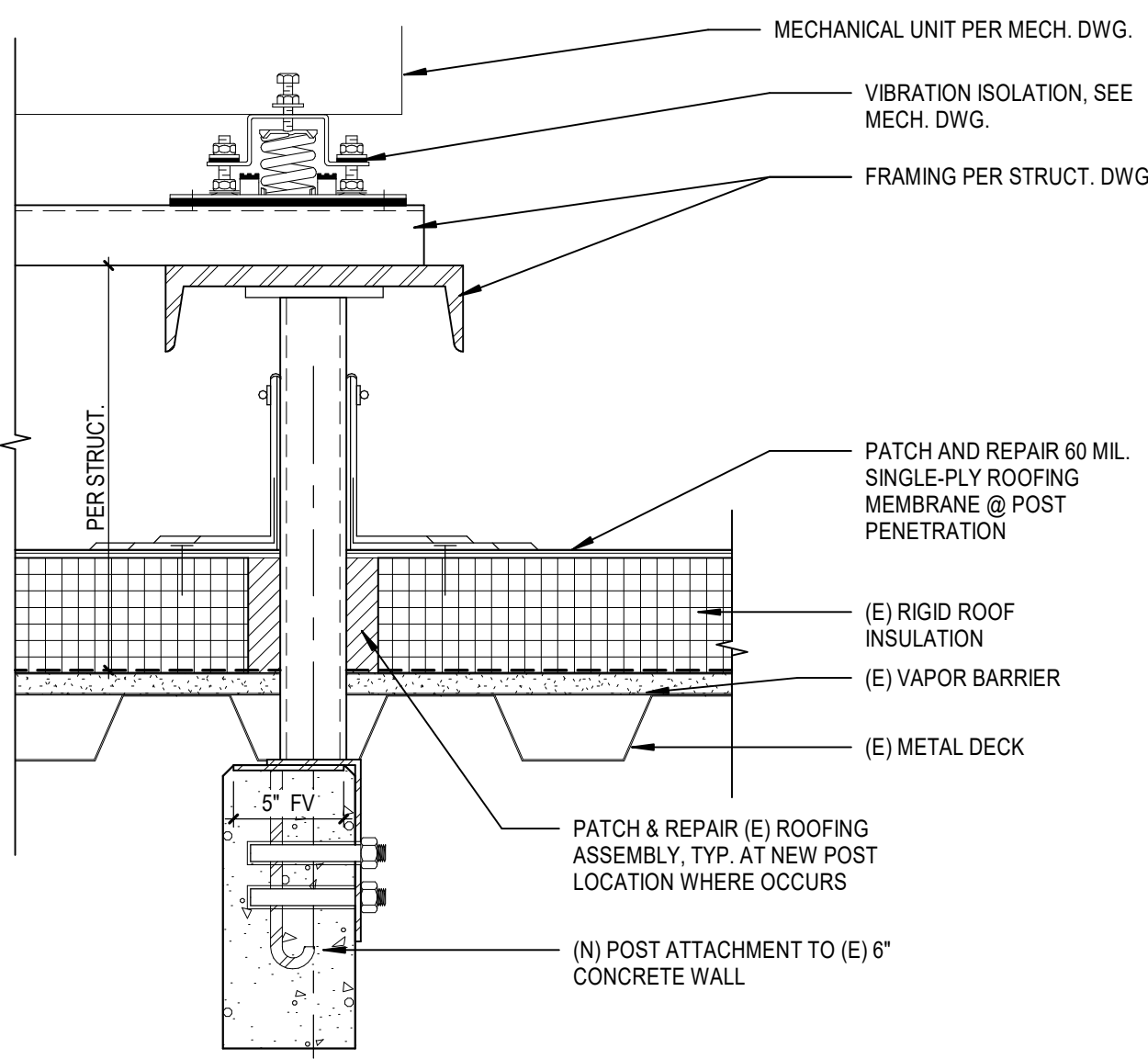
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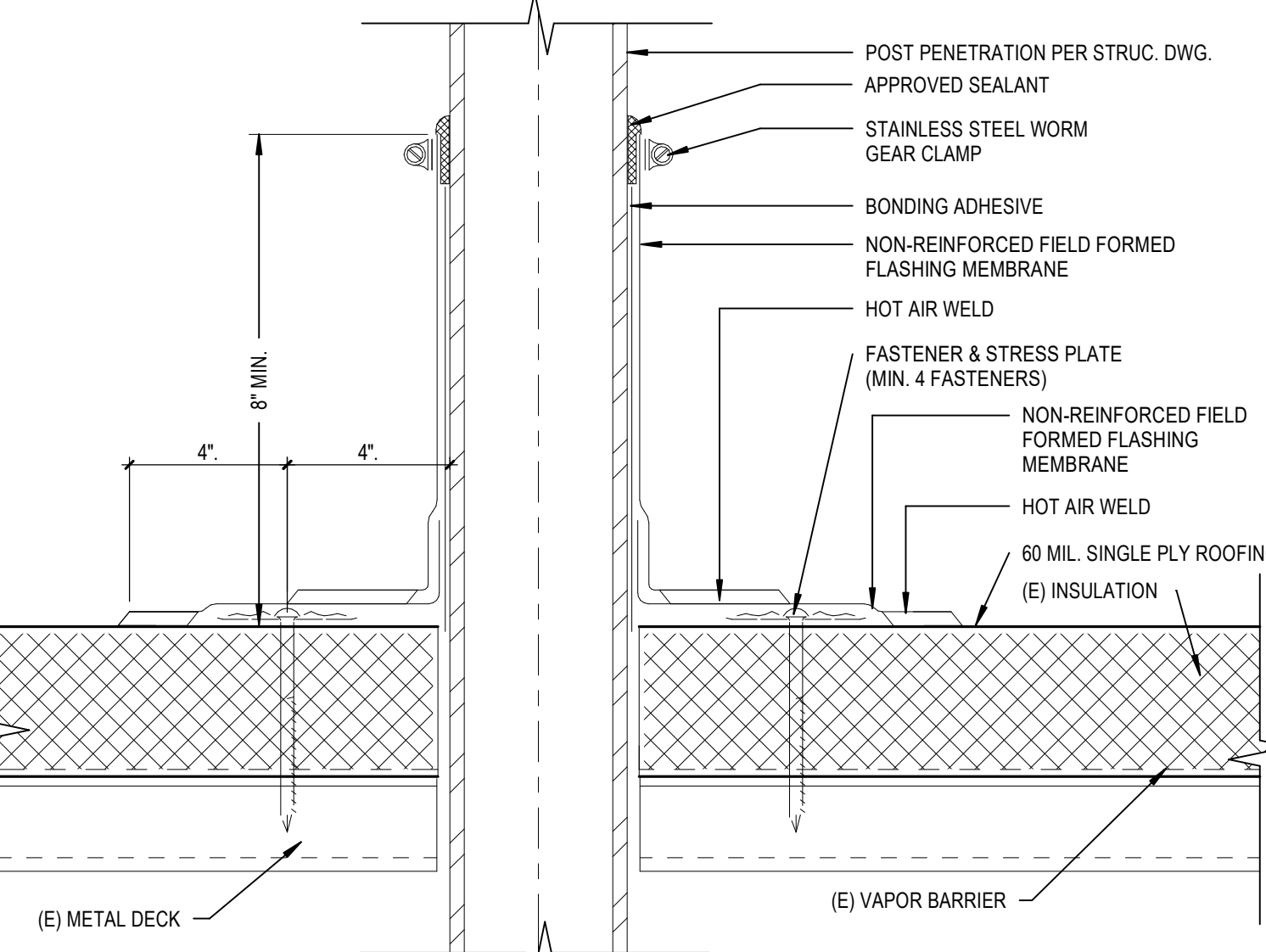
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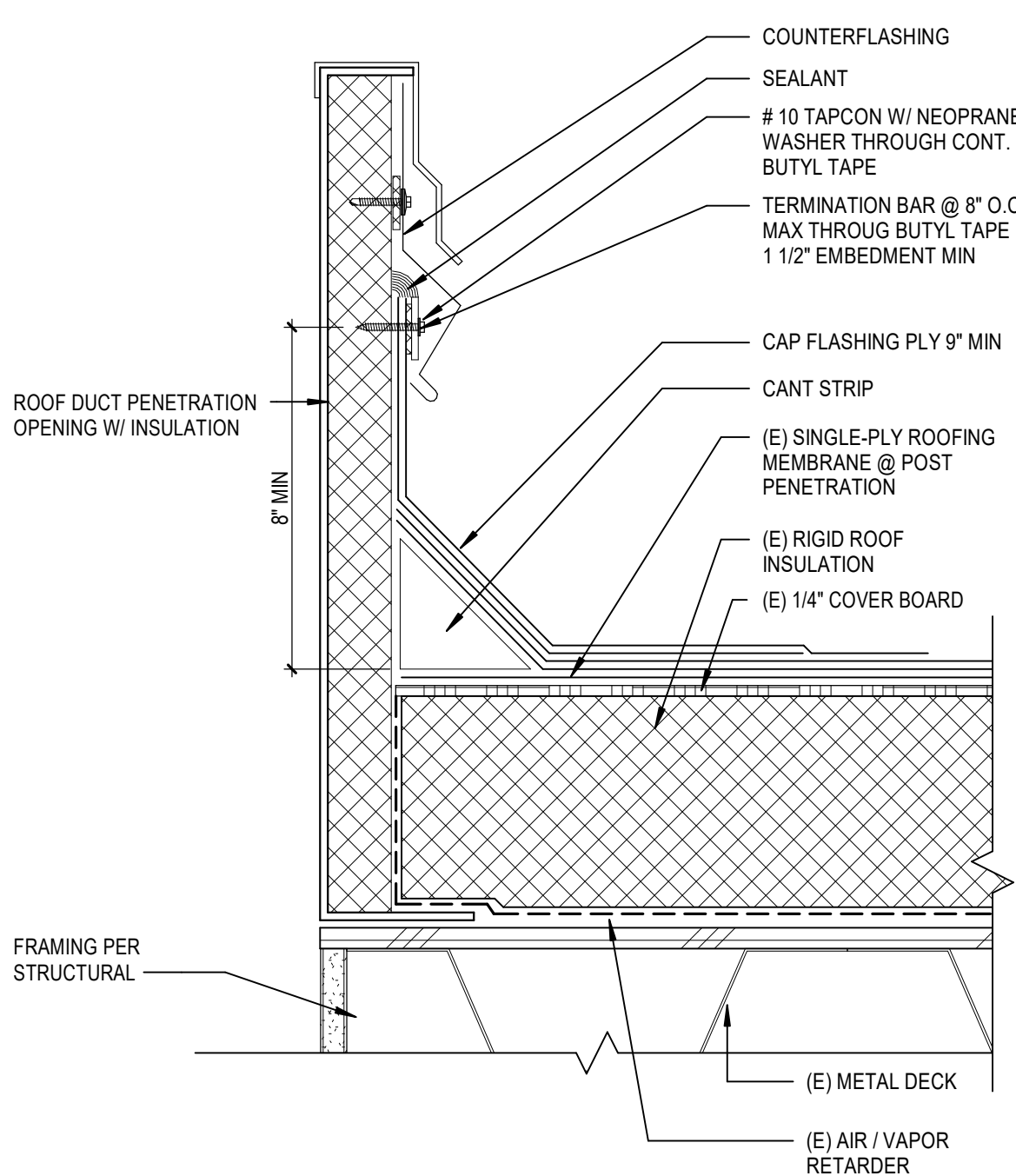
5 HVAC ROOF GUARDRAIL - STL FRAMING  
SCALE: 1 1/2" = 1'-0"



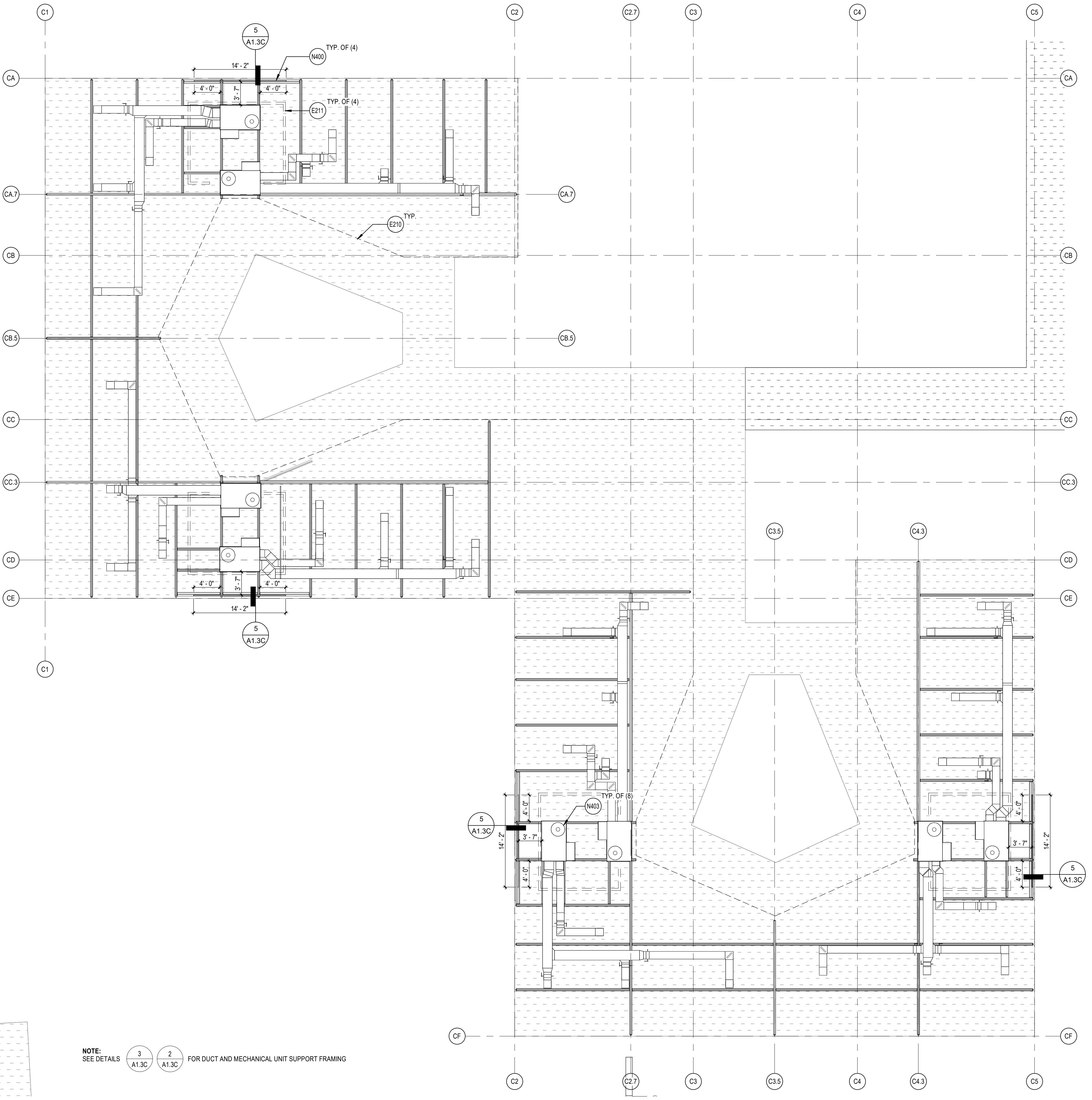
3 MECH UNIT/DUCT SUPPORT @ WALL  
SCALE: 1 1/2" = 1'-0"



2 FIELD FABRICATED PIPE FLASHING  
SCALE: 12" = 1'-0"



4 TYPICAL MECH. DUCT PENETRATION FLASHING  
SCALE: 3" = 1'-0"



BUILDING C ROOF PLAN  
SCALE: 1/8" = 1'-0"

NOTE:  
SEE DETAILS 3 2  
A1.3C A1.3C FOR DUCT AND MECHANICAL UNIT SUPPORT FRAMING

REFERENCE KEYNOTES

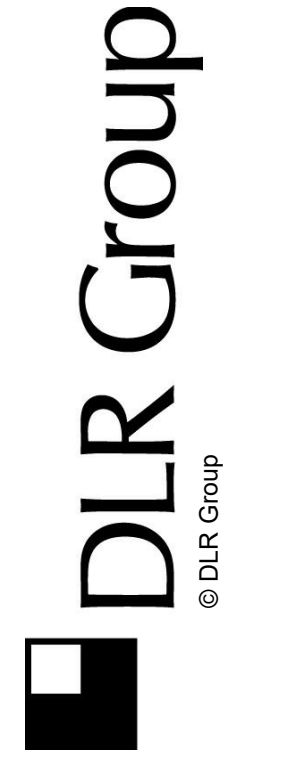
- E210 LINE OF (E) BLDG BELOW SHOWN DASHED  
E211 DEMO (E) MECHANICAL SCREEN AND CAP ANY EXPOSED PIPES AND ACCESSORY ITEMS  
N400 NEW FREESTANDING METAL GUARDRAIL SYSTEM. SEE SUPPLIER FOR ANCHORAGE AND SPEC SECTION 07 72 00  
N403 (N) MECHANICAL UNITS ATTACHED TO THE (E) UNIT CURB. SEE MECHANICAL DRAWING SHEET M1.5B & M1.3D

ROOF PLAN GENERAL NOTES

- A. ROOF PLAN GENERAL NOTES APPLY TO ALL ROOF PLAN SHEETS.  
B. ROOF SLOPES ARE CREATED BY SLOPING THE ROOF STRUCTURE UNLESS NOTED OTHERWISE. SEE STRUCTURAL DRAWINGS FOR ELEVATIONS OF THE HIGH AND LOW POINTS TO DETERMINE PROPER TAPER IN INSULATION.  
C. TAPERED INSULATION SHALL PROVIDE A MINIMUM OF 1/4-INCH PER FOOT OF SLOPE TO ROOF DRAINS, UNLESS NOTED OTHERWISE.  
D. AREAS MARKED WITH A HATCHED PATTERN INDICATE TAPERED INSULATION.  
E. ALL ROOF CURBS TO BE A MINIMUM OF 8 INCHES ABOVE ROOFING LEVELS. PROVIDE TAPERED INSULATION ROOF SADDLES AT ROOF CURBS TO PROVIDE DRAINAGE AROUND CURB.  
F. SEE STRUCTURAL DRAWINGS FOR FRAMING AROUND ROOF PENETRATIONS.  
G. COORDINATE THE SIZE AND LOCATION OF ROOF PENETRATIONS FOR MECHANICAL AND ELECTRICAL EQUIPMENT. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR PENETRATIONS NOT SHOWN ON THIS DRAWING.  
H. FLASH DRAINS, CURBS, VENTS AND STACKS PER MANUFACTURER'S RECOMMENDATIONS IF DETAIL NOT SHOWN ON DRAWINGS.  
I. NO ROOF PENETRATIONS ALLOWED WITHIN 4'-0" EACH SIDE OF FIREWALL. SEE CODE PLAN FOR FIRE WALL LOCATIONS.

DEMOLITION GENERAL NOTES

- DEMOLITION NOTES APPLY TO ALL DEMOLITION SHEETS.  
THE CONTRACTOR SHALL:  
A. COORDINATE ALL DEMOLITION AND PHASING EFFORTS WITH THE ARCHITECT AND OWNER'S REPRESENTATIVE. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION OF OWNER'S OPERATIONS. EXCESSIVE NOISE OR VIBRATION SHALL BE PRE-APPROVED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE. IN ALL CASES, PROVISIONS SHALL BE MADE FOR USER'S SAFETY.  
B. COORDINATE ANY DISRUPTION OF UTILITY SERVICES WITH THE OWNER AND AS SPECIFIED.  
C. CONSTRUCT TEMPORARY CONSTRUCTION PARTITIONS WITHIN THE EXISTING BUILDING WHICH OFFER A ONE-HOUR ENCLOSURE TO ISOLATE ANY DEMOLITION/CONSTRUCTION WORK FROM THE GENERAL PUBLIC AND AS DEEMED NECESSARY BY THE OWNER AND CODE OFFICIAL HAVING JURISDICTION. COORDINATE LOCATIONS WITH THE OWNER AND MAINTAIN MEANS OF EGRESS THROUGHOUT THE WORK.  
D. MAINTAIN A SECURE, WEATHER-TIGHT ENCLOSURE AT ALL TIMES.  
E. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.  
F. REMOVE IN THEIR ENTIRETY ALL EXISTING WALLS, DOORS, MILLWORK, PLUMBING FIXTURES, CEILINGS, SOFFITS, MARKERBOARDS, AND OTHER ITEMS, AS REQUIRED TO EXECUTE THE DEMOLITION/CONSTRUCTION WORK DESCRIBED BY THE DRAWINGS.  
G. THE OWNER SHALL RESERVE THE RIGHT TO SALVAGE ANY MATERIALS.  
H. PROVIDE PROTECTION FOR ALL EXISTING BUILDING MATERIALS AND EQUIPMENT FROM DAMAGE DUE TO ANY DEMOLITION OR CONSTRUCTION-RELATED INCIDENT PERFORMED UNDER THIS CONTRACT.  
I. REPAIR OR REPLACE ITEMS THAT ARE DAMAGED AS A RESULT OF DEMOLITION OR CONSTRUCTION TO MATCH EXISTING FINISH AND/OR CONDITION.  
J. EXISTING MATERIALS SHALL NOT BE REUSED UNLESS NOTED OTHERWISE OR AS AUTHORIZED BY ARCHITECT.  
K. VERIFY AND MAINTAIN THE LOCATION OF EXISTING POWER, COMMUNICATION AND DATA CABLES TO PREVENT INTERRUPTION OF THEIR SERVICE.  
L. PATCH FLOOR, WALL AND CEILING PENETRATIONS RESULTING FROM REMOVAL OR RE-ROUTING OF NEW OR EXISTING PIPING, DUCTWORK, CONDUIT, AND OTHER ITEMS, AS REQUIRED TO MAINTAIN FIRE-RESISTANCE-RATED SEPARATIONS. FINISH AS REQUIRED FOR NEW OR EXISTING ADJACENT SURFACES.  
M. CAP ALL DISCONNECTED MECHANICAL PIPING LINES WITHIN THE WALL OR FLOOR. PATCH AND FINISH AS REQUIRED TO MATCH NEW OR EXISTING ADJACENT SURFACES.  
N. SEE MECHANICAL AND ELECTRICAL DRAWINGS AND NOTES FOR FURTHER SEQUENCING AND SCOPE OF WORK.  
O. AVOID ANY DISTURBANCE OF SOILS WITHIN THE ZONE OF INFLUENCE AROUND EXISTING FOOTINGS AND FLOOR SLABS AS DIRECTED BY GEOTECHNICAL ENGINEER.  
P. WHERE CMU WALLS ARE INDICATED TO BE REMOVED, PREPARE ADJACENT WALLS TO RECEIVE NEW PATCH/FINISH BY REMOVING CMU IN TOOTH-IN PATTERN BOTH SIDES OF DEMOLITION FOR CONTRACTOR TO TOOTH-IN NEW CMU PATCHES.  
Q. WHERE PLASTER/STUCCO WALLS ARE INDICATED TO BE REMOVED, PREPARE ADJACENT WALLS TO RECEIVE NEW PATCH/FINISH BY SAWCUTTING ADJACENT PLASTER FINISH A MINIMUM OF 1'-0" BEYOND DEMOLITION.



MANZANITA ELEMENTARY SCHOOL  
COVID 19- COVINA VALLEY DISTRICT HVAC REPLACEMENT  
4131 N NORRA AVE COVINA, CA 91722

100%  
CONSTRUCTION  
DOCUMENTS  
11/02/2022  
REVISIONS

75-22605-00  
DSA A#03-12231  
DSA File #: 19-25  
BUILDING C ROOF  
PLAN

A1.3C



Autodesk Docu775-22605-40 CVUSD - District Wide HVAC Replacement/75-22605-40 CVUSD - Manzanita ES\_AR\_2020.vrt  
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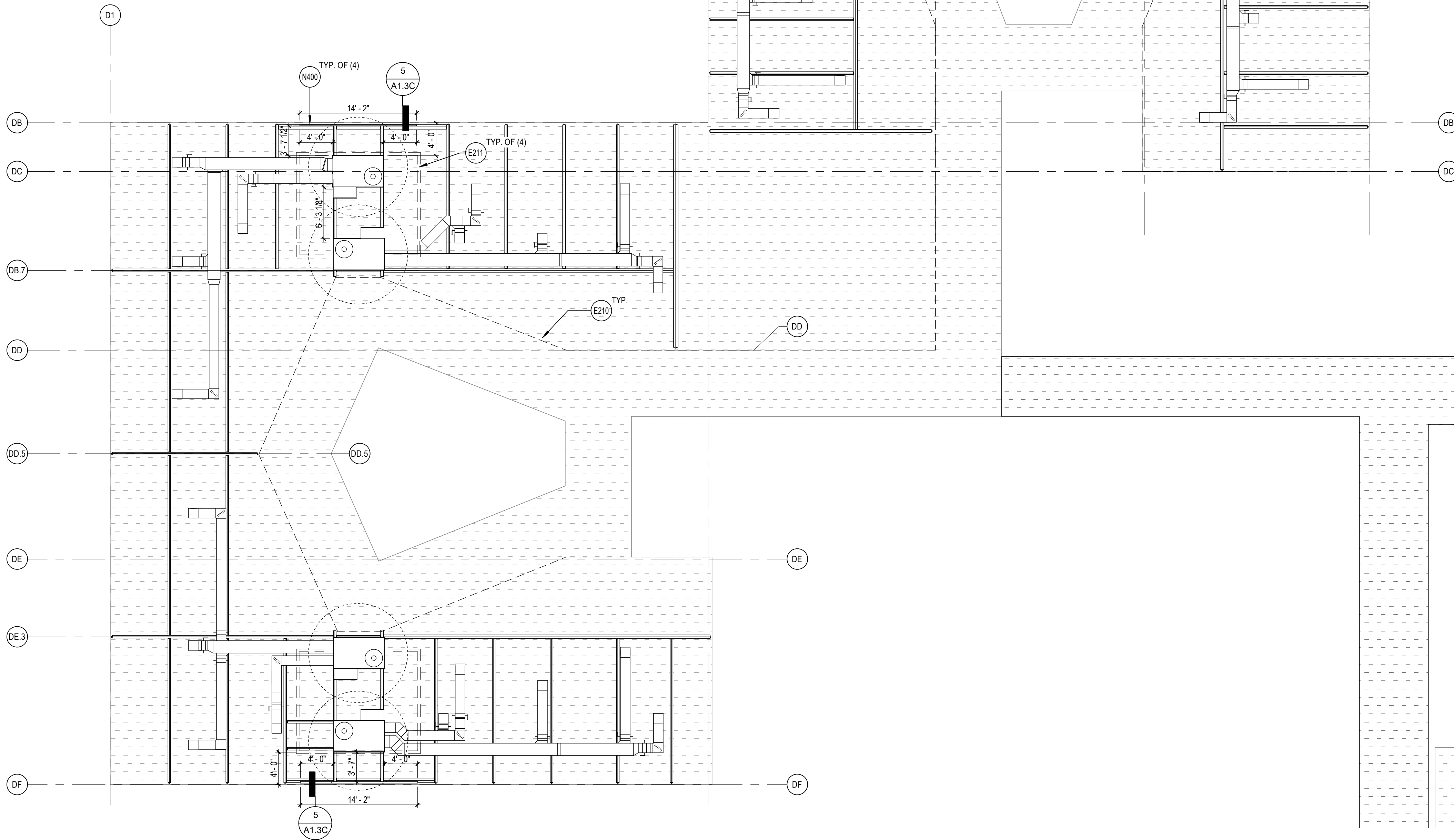
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

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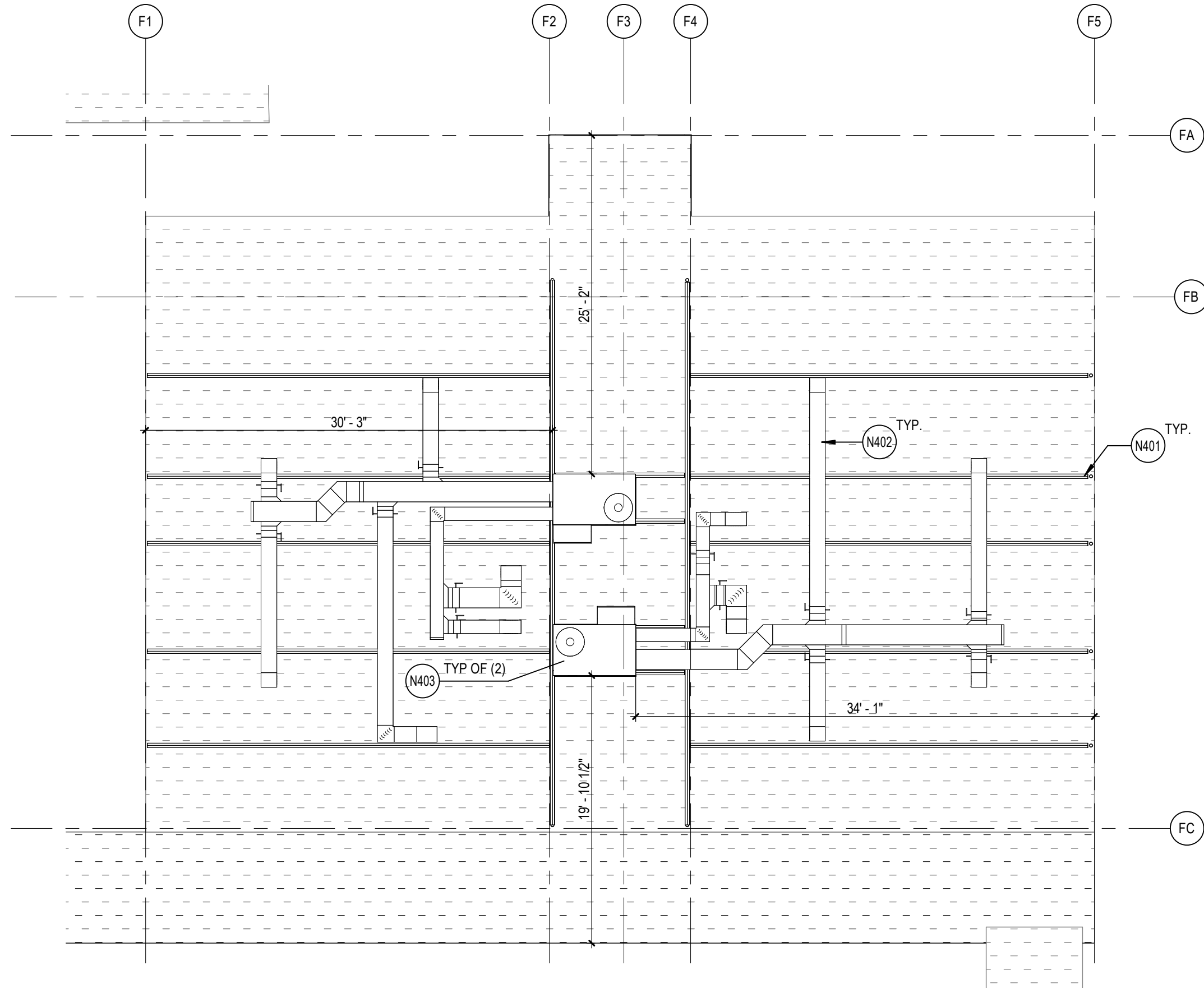
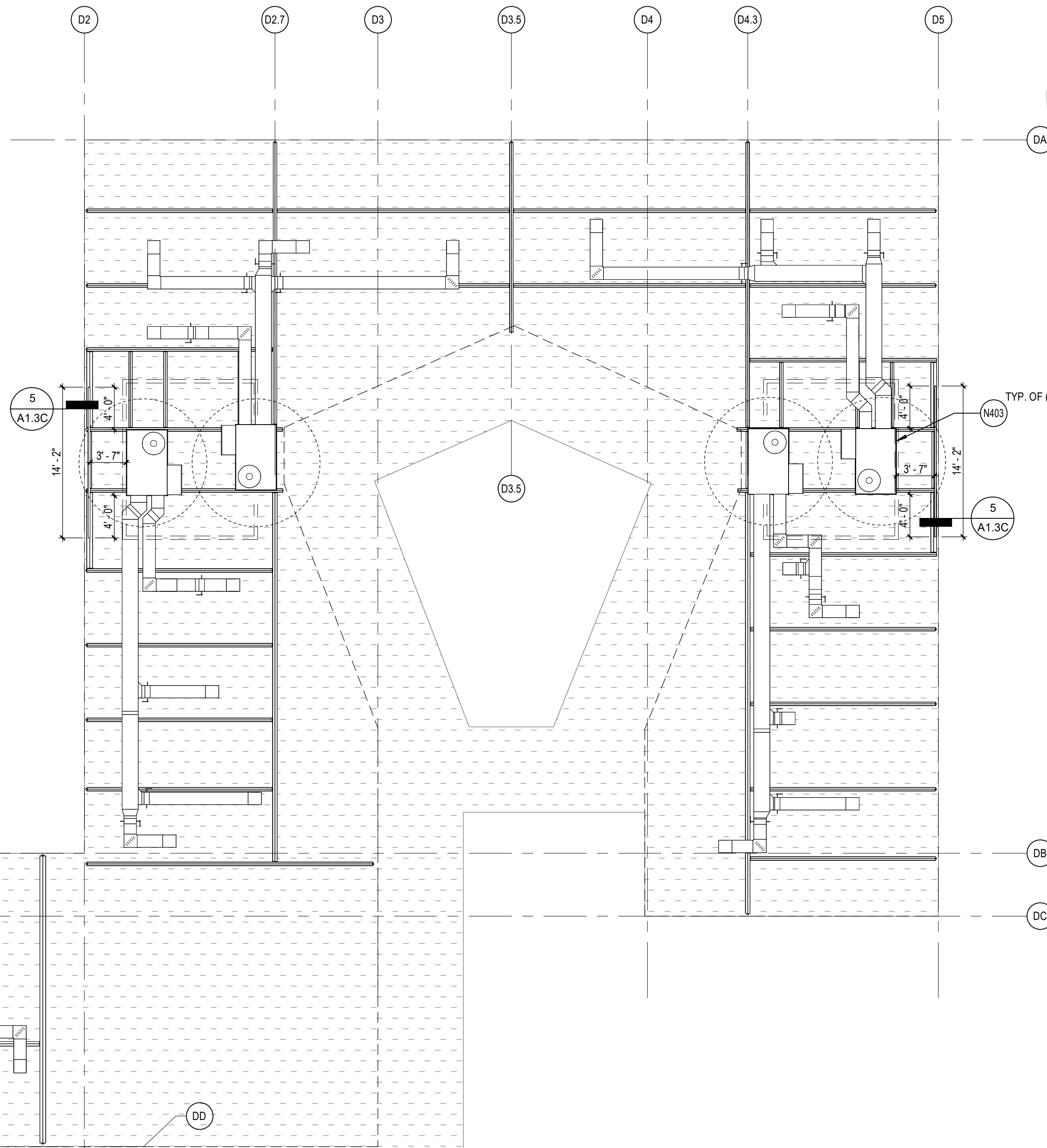
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NOTE:  
SEE DETAILS   FOR DUCT AND MECHANICAL UNIT SUPPORT FRAMING

## BUILDING E ROOF PLAN

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



## BUILDING F ROOF PLAN

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

### REFERENCE KEYNOTES

- E210 LINE OF (E) BLDG BELOW SHOWN DASHED  
E211 DEMO (E) MECHANICAL SCREEN AND CAP ANY EXPOSED PIPES AND ACCESSORY ITEMS  
N400 NEW FREESTANDING METAL GUARDRAIL SYSTEM. SEE SUPPLIER FOR ANCHORAGE AND SPEC. SECTION 07 72 00  
N401 NEW STRUCTURAL POST AND BEAM SUPPORT FRAMING. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION  
N402 NEW DUCTWORK. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION  
N403 (N) MECHANICAL UNITS ATTACHED TO THE (E) UNIT CURB. SEE MECHANICAL DRAWING SHEET M1.3B & M1.3D

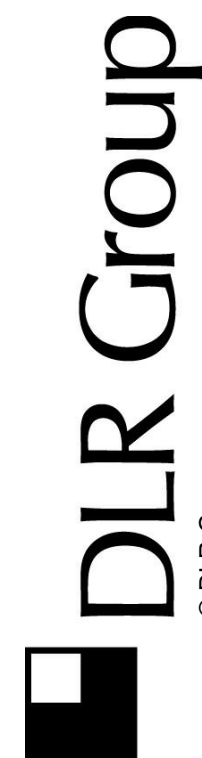
### ROOF PLAN GENERAL NOTES

- A. ROOF PLAN GENERAL NOTES APPLY TO ALL ROOF PLAN SHEETS.  
B. ROOF SLOPES ARE CREATED BY SLOPING THE ROOF STRUCTURE UNLESS NOTED OTHERWISE. SEE STRUCTURAL DRAWINGS FOR ELEVATIONS OF THE HIGH AND LOW POINTS TO DETERMINE PROPER TAPER IN INSULATION.  
C. TAPERED INSULATION SHALL PROVIDE A MINIMUM OF 1/4-INCH PER FOOT OF SLOPE TO ROOF DRAINS. UNLESS NOTED OTHERWISE.  
D. AREAS MARKED WITH A HATCHED PATTERN INDICATE TAPERED INSULATION.  
E. ALL ROOF CURBS TO BE A MINIMUM OF 8 INCHES ABOVE ROOFING LEVELS. PROVIDE TAPERED INSULATION ROOF SADDLES AT ROOF CURBS TO PROVIDE DRAINAGE AROUND CURB.  
F. SEE STRUCTURAL DRAWINGS FOR FRAMING AROUND ROOF PENETRATIONS.  
G. COORDINATE THE SIZE AND LOCATION OF ROOF PENETRATIONS FOR MECHANICAL AND ELECTRICAL EQUIPMENT. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR PENETRATIONS NOT SHOWN ON THIS DRAWING.  
H. FLASH DRAINS, CURBS, VENTS AND STACKS PER MANUFACTURER'S RECOMMENDATIONS IF DETAIL NOT SHOWN ON DRAWINGS.  
I. NO ROOF PENETRATIONS ALLOWED WITHIN 4'-0" EACH SIDE OF FIREWALL. SEE CODE PLAN FOR FIRE WALL LOCATIONS.

### DEMOLITION GENERAL NOTES

DEMOLITION NOTES APPLY TO ALL DEMOLITION SHEETS.

- THE CONTRACTOR SHALL:  
A. COORDINATE ALL DEMOLITION AND PHASING EFFORTS WITH THE ARCHITECT AND OWNER'S REPRESENTATIVE. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION OF OWNER'S OPERATIONS. EXCESSIVE NOISE OR VIBRATION SHALL BE PRE-APPROVED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE. IN ALL CASES, PROVISIONS SHALL BE MADE FOR USER'S SAFETY.  
B. COORDINATE ANY DISRUPTION OF UTILITY SERVICES WITH THE OWNER AND AS SPECIFIED.  
C. CONSTRUCT TEMPORARY CONSTRUCTION PARTITIONS WITHIN THE EXISTING BUILDING WHICH OFFER A ONE-HOUR ENCLOSURE TO ISOLATE ANY DEMOLITION/CONSTRUCTION WORK FROM THE GENERAL PUBLIC AND AS DEEMED NECESSARY BY THE OWNER AND CODE OFFICIAL HAVING JURISDICTION. COORDINATE LOCATIONS WITH THE OWNER AND MAINTAIN MEANS OF EGRESS THROUGHOUT THE WORK.  
D. MAINTAIN A SECURE, WEATHER-TIGHT ENCLOSURE AT ALL TIMES.  
E. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.  
F. REMOVE IN THEIR ENTIRETY ALL EXISTING WALLS, DOORS, MILLWORK, PLUMBING FIXTURES, CEILINGS, SOFFITS, MARKERBOARDS, AND OTHER ITEMS, AS REQUIRED TO EXECUTE THE DEMOLITION/CONSTRUCTION WORK DESCRIBED BY THE DRAWINGS.  
G. THE OWNER SHALL RESERVE THE RIGHT TO SALVAGE ANY MATERIALS.  
H. PROVIDE PROTECTION FOR ALL EXISTING BUILDING MATERIALS AND EQUIPMENT FROM DAMAGE DUE TO ANY DEMOLITION OR CONSTRUCTION-RELATED INCIDENT PERFORMED UNDER THIS CONTRACT.  
I. REPAIR OR REPLACE ITEMS THAT ARE DAMAGED AS A RESULT OF DEMOLITION OR CONSTRUCTION TO MATCH EXISTING FINISH AND/OR CONDITION.  
J. EXISTING MATERIALS SHALL NOT BE REUSED UNLESS NOTED OTHERWISE OR AS AUTHORIZED BY ARCHITECT.  
K. VERIFY AND MAINTAIN THE LOCATION OF EXISTING POWER, COMMUNICATION AND DATA CABLES TO PREVENT INTERRUPTION OF THEIR SERVICE.  
L. PATCH FLOOR, WALL AND CEILING PENETRATIONS RESULTING FROM REMOVAL OR RE-ROUTING OF NEW OR EXISTING PIPING, DUCTWORK, CONDUIT, AND OTHER ITEMS, AS REQUIRED TO MAINTAIN FIRE-RESISTANCE-RATED SEPARATIONS. FINISH AS REQUIRED FOR NEW OR EXISTING ADJACENT SURFACES.  
M. CAP ALL DISCONNECTED MECHANICAL PIPING LINES WITHIN THE WALL OR FLOOR. PATCH AND FINISH AS REQUIRED TO MATCH NEW OR EXISTING ADJACENT SURFACES.  
N. SEE MECHANICAL AND ELECTRICAL DRAWINGS AND NOTES FOR FURTHER SEQUENCING AND SCOPE OF WORK.  
O. AVOID ANY DISTURBANCE OF SOILS WITHIN THE ZONE OF INFLUENCE AROUND EXISTING FOOTINGS AND FLOOR SLABS AS DIRECTED BY GEOTECHNICAL ENGINEER.  
P. WHERE CMU WALLS ARE INDICATED TO BE REMOVED, PREPARE ADJACENT WALLS TO RECEIVE NEW PATCH/FINISH BY REMOVING CMU IN TOOTH-IN PATTERN BOTH SIDES OF DEMOLITION FOR CONTRACTOR TO TOOTH-IN NEW CMU PATCHES.  
Q. WHERE PLASTER/STUD WALLS ARE INDICATED TO BE REMOVED, PREPARE ADJACENT WALLS TO RECEIVE NEW PATCH/FINISH BY SAWCUTTING ADJACENT PLASTER FINISH A MINIMUM OF 1'-0" BEYOND DEMOLITION.



MANZANITA ELEMENTARY SCHOOL  
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DSA A#03-12231  
DSA File #: 19-25

BUILDING E & F  
ROOF PLAN

A1.3E



REFLECTED CEILING PLAN  
GENERAL NOTES

E209 LINE OF (E) ROOF ABOVE SHOWN DASHED  
N510 NEW MECH. EQUIPMENT. SEE MECHANICAL DWGS

A REFLECTED CEILING PLAN GENERAL NOTES APPLY TO ALL REFLECTED CEILING PLAN SHEETS

B ALL DIMENSIONS MUST BE CENTERED IN EACH ROOM UNLESS NOTED OTHERWISE

C (1) CEILING HEIGHTS ARE TO REMAIN IN 0. REFLECTED CEILING PLANS ARE MEASURED FROM THE FINISHED FLOOR TO THE ROOM.

D IN ACoustICAL CEILING PANELS WITH SCORE IN THE CENTER OF THE PANEL, THE SCORE IN THE CENTER OF THE PANEL IS TO BE USED ON THE SCORE. FOR ACP WITH MULTIPLE SCORE PATTERNS, COORDINATE LOCATION WITH THE ARCHITECT

E ALL SURVEYING INSTRUMENTS, INCLUDING THEODOLITE, OPTICAL FIXTURES, MECHANICAL GRILLES, DIFFUSERS, AND OTHER CEILING MOUNTED DEVICES AT ACoustICAL PANEL CEILING ARE TO BE SHOWN ON THE REFLECTED CEILING PLAN. THESE ARE TO BE THE FOLLOWING UNLESS NOTED OTHERWISE:

A. FACE OF FINISHED WALL

B. FACE OF FINISHED FLOOR

C. CENTERLINE OF COLUMNS

D. CENTERLINE OF TEES

E. AND WAS EXPOSED TO STRUCTURE CEILING, COORDINATE EXACT LOCATIONS OF MECHANICAL GRILLES, DIFFUSERS, DUCTWORK AND ELECTRICAL FIXTURES WITH EACH ARCHITECTURAL SITE DRAWING

## DEMOLITION GENERAL NOTES

DEMOLITION NOTES APPLY TO ALL DEMOLITION SHEETS

THE CONTRACTOR SHALL:

- G. COORDINATE ALL DEMOLITION AND PHASING EFFORTS WITH ARCHITECT AND OWNER'S REPRESENTATIVE. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION TO ADJACENT OPERATIONS. EXCESSIVE NOISE OR VIBRATION SHALL BE PREVENTED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE. ALL CASES PROVIDED SHALL BE MADE FOR USER'S SAFETY.
- H. COORDINATE ANY DISRUPTION OF UTILITY SERVICES WITH THE OWNER AND AS REQUIRED BY PERMITS.
- I. CONSTRUCT TEMPORARY CONSTRUCTION PARTITIONS WITHIN THE EXISTING BUILDING WHICH OFFER A ONE-HOUR ENCLOSURE TO PREVENT THE PENETRATION OF DUST OR NON WORKING GENERAL PUBLIC AND AS DEEMED NECESSARY BY THE OWNER AND AS REQUIRED BY PERMITS.
- J. MAINTAIN ACCESS TO ALL ADJACENT AREAS AND ADJACENT LOCATIONS WITH THE OWNER AND MAINTAIN MEANS OF EGRESS THROUGHOUT THE WORK.
- K. MAINTAIN A SECURE, WEATHER-TIGHT ENCLOSURE AT ALL TIMES.
- L. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND MATERIALS PRIOR TO DEMOLITION TO AVOID ANY PART DISCREPANCIES.
- M. REMOVE IN THEIR ENTIRETY ALL EXISTING WALLS, DOORS, MOLDING, PLUMBING AND ELECTRICAL MATERIALS, PARTS, MARKERBOARDS, AND OTHER ITEMS, AS REQUIRED TO EXECUTE THE DEMOLITION CONSTRUCTION WORK DESCRIBED BY THE DRAWINGS.
- N. THE OWNER SHALL RESERVE THE RIGHT TO SALVAGE ANY MATERIALS.
- O. PROVIDE PROTECTION FOR ALL EXISTING BUILDING MATERIALS AND EQUIPMENT FROM DAMAGE DUE TO ANY DEMOLITION OR CONSTRUCTION-RELATED INCIDENT PERFORMED UNDER THIS AGREEMENT.
- P. REPAIR OR REPLACE ITEMS THAT ARE DAMAGED AS A RESULT OF THE DEMOLITION OR CONSTRUCTION TO MATCH EXISTING FINISH AND/OR CONDITION.
- Q. EXISTING MATERIALS SHALL NOT BE REUSED UNLESS NOTED OTHERWISE BY THE ARCHITECT.
- R. VERIFY AND MAINTAIN THE LOCATION OF EXISTING POWER, COMMUNICATION AND DATA CABLES TO PREVENT DAMAGE TO OR INTERRUPTION OF SERVICE.
- S. PATCH FLOOR, WALL AND CEILING PENETRATIONS RESULTING FROM REMOVAL OR RE-ROUTING OF NEW OR EXISTING PIPING, ELECTRICAL OR MECHANICAL SYSTEMS TO MATCH EXISTING MAINTAIN FIRE-RESISTANCE RATED SEPARATIONS. FINISH AS REQUIRED FOR NEW OR EXISTING ADJACENT SURFACES.
- T. PATCH AND DISCREPANCY AREAS WITHIN EXISTING WALLS, FLOOR, WALL OR FLOOR. PATCH AND FINISH AS REQUIRED TO MATCH NEW OR EXISTING ADJACENT SURFACES.
- U. NOTIFY ALL ADJACENT BUILDINGS AND NOTES FOR ANY FURTHER DISTURBANCE AND SCOPE OF WORK.
- V. AVOID OVER EXPOSURE OF SOILS WITHIN THE ZONE OF INFLUENCE AROUND EXISTING FOOTINGS AND FLOOR SLABS AS DIRECTED BY GEOTECHNICAL ENGINEER.
- W. REMOVE EXISTING MATERIALS TO BE REMOVED, PREPARE ADJACENT WALLS TO RECEIVE NEW PATCHFINISH BY REMOVAL CURE IN TYPICAL PATTERN BOTH SIDES OF DEMOLITION FOR A MINIMUM OF TWO (2) INCHES.
- X. WHERE PLASTER/STUCCO WALLS ARE INDICATED TO BE REMOVED, PREPARE ADJACENT WALLS TO RECEIVE NEW PATCHFINISH BY REMOVAL CURE IN TYPICAL PATTERN BOTH SIDES OF DEMOLITION FOR A MINIMUM OF TWO (2) INCHES.
- Y. BEYOND DEMOLITION.



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



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**BUILDING C REFLECTED CEILING PLAN**

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



**REFERENCE KEYNOTES**

E209 LINE OF (E) ROOF ABOVE SHOWN DASHED

**REFLECTED CEILING PLAN  
GENERAL NOTES**

- REFLECTED CEILING PLAN GENERAL NOTES APPLY TO ALL REFLECTED CEILING PLAN SHEETS.
- ALL CEILING GRID/PANELS SHALL BE CENTERED IN EACH ROOM UNLESS NOTED OTHERWISE.
- (E) CEILING HEIGHTS ARE TO REMAIN U.N.O. REFLECTED CEILING PLANS ARE MEASURED FROM THE FINISHED FLOOR OF THE ROOM.
- IN ACOUSTICAL CEILING PANELS WITH SCORE IN THE CENTER, CENTER DEVICES IN ONE HALF OF THE TILE. DO NOT LOCATE ON THE SCORE. FOR ACP WITH MULTIPLE SCORED PATTERNS, COORDINATE LOCATION WITH THE ARCHITECT.
- PROVIDE SUSPENSION SYSTEM AROUND ELECTRICAL FIXTURES, MECHANICAL GRILLES, DIFFUSERS, AND OTHER CEILING MOUNTED DEVICES. AT ACOUSTICAL PANEL CEILINGS.
- ALL DIMENSIONS ON REFLECTED CEILING PLANS ARE ACTUAL AND ARE TO THE FOLLOWING UNLESS NOTED OTHERWISE:
  - FACE OF FINISHED WALL
  - FACE OF FINISHED BULKHEADS
  - CENTERLINE OF COLUMNS
  - CENTERLINE OF TEES
- IN AREAS WITH EXPOSED STRUCTURE CEILINGS, COORDINATE EXACT LOCATIONS OF MECHANICAL GRILLES, DIFFUSERS, DUCTWORK AND ELECTRICAL FIXTURES WITH EACH REPRESENTATIVE SUBCONTRACTOR.

**DEMOLITION GENERAL NOTES**

DEMOLITION NOTES APPLY TO ALL DEMOLITION SHEETS.

- THE CONTRACTOR SHALL:
- COORDINATE ALL DEMOLITION AND PHASING EFFORTS WITH THE ARCHITECT AND OWNER'S REPRESENTATIVE. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION OF OWNER'S OPERATIONS. EXCESSIVE NOISE OR VIBRATION SHALL BE PRE-APPROVED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE. IN ALL CASES, PROVISIONS SHALL BE MADE FOR USER'S SAFETY.
  - COORDINATE ANY DISRUPTION OF UTILITY SERVICES WITH THE OWNER AND AS SPECIFIED.
  - CONSTRUCT TEMPORARY CONSTRUCTION PARTITIONS WITHIN THE EXISTING BUILDING WHICH OFFER A ONE-HOUR ENCLOSURE TO ISOLATE ANY DEMOLITION/CONSTRUCTION WORK FROM THE GENERAL PUBLIC AND AS DEEMED NECESSARY BY THE OWNER AND CODE OFFICIAL HAVING JURISDICTION. COORDINATE LOCATIONS WITH THE OWNER AND MAINTAIN MEANS OF EGRESS THROUGHOUT THE WORK.
  - MAINTAIN A SECURE, WEATHER-TIGHT ENCLOSURE AT ALL TIMES.
  - VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
  - REMOVE IN THEIR ENTIRETY ALL EXISTING WALLS, DOORS, MILLWORK, PLUMBING FIXTURES, CEILINGS, SOFFITS, MARKERBOARDS, AND OTHER ITEMS, AS REQUIRED TO EXECUTE THE DEMOLITION/CONSTRUCTION WORK DESCRIBED BY THE DRAWINGS.
  - THE OWNER SHALL RESERVE THE RIGHT TO SALVAGE ANY MATERIALS.
  - PROVIDE PROTECTION FOR ALL EXISTING BUILDING MATERIALS AND EQUIPMENT FROM DAMAGE DUE TO ANY DEMOLITION OR CONSTRUCTION-RELATED INCIDENT PERFORMED UNDER THIS CONTRACT.
  - REPAIR OR REPLACE ITEMS THAT ARE DAMAGED AS A RESULT OF DEMOLITION OR CONSTRUCTION TO MATCH EXISTING FINISH AND/OR CONDITION.
  - EXISTING MATERIALS SHALL NOT BE REUSED UNLESS NOTED OTHERWISE OR AS AUTHORIZED BY ARCHITECT.
  - VERIFY AND MAINTAIN THE LOCATION OF EXISTING POWER, COMMUNICATION AND DATA CABLES TO PREVENT INTERRUPTION OF THEIR SERVICE.
  - PATCH FLOOR, WALL AND CEILING PENETRATIONS RESULTING FROM REMOVAL OR RE-ROUTING OF NEW OR EXISTING PIPING, DUCTWORK, CONDUIT, AND OTHER ITEMS, AS REQUIRED TO MAINTAIN FIRE-RESISTANCE-RATED SEPARATIONS. FINISH AS REQUIRED FOR NEW OR EXISTING ADJACENT SURFACES.
  - CAP ALL DISCONNECTED MECHANICAL PIPING LINES WITHIN THE WALL OR FLOOR. PATCH AND FINISH AS REQUIRED TO MATCH NEW OR EXISTING ADJACENT SURFACES.
  - SEE MECHANICAL AND ELECTRICAL DRAWINGS AND NOTES FOR FURTHER SEQUENCING AND SCOPE OF WORK.
  - AVOID ANY DISTURBANCE OF SOILS WITHIN THE ZONE OF INFLUENCE AROUND EXISTING FOOTINGS AND FLOOR SLABS AS DIRECTED BY GEOTECHNICAL ENGINEER.
  - WHERE CMU WALLS ARE INDICATED TO BE REMOVED, PREPARE ADJACENT WALLS TO RECEIVE NEW PATCH/FINISH BY REMOVING CMU IN TOOTH-IN PATTERN BOTH SIDES OF DEMOLITION FOR CONTRACTOR TO TOOTH-IN NEW CMU PATCHES.
  - WHERE PLASTER/STUD WALLS ARE INDICATED TO BE REMOVED, PREPARE ADJACENT WALLS TO RECEIVE NEW PATCH/FINISH BY SAWCUTTING ADJACENT PLASTER FINISH A MINIMUM OF 1'-0" BEYOND DEMOLITION.

**DLR Group**  
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COVID 19- COVINA VALLEY DISTRICT HVAC REPLACEMENT

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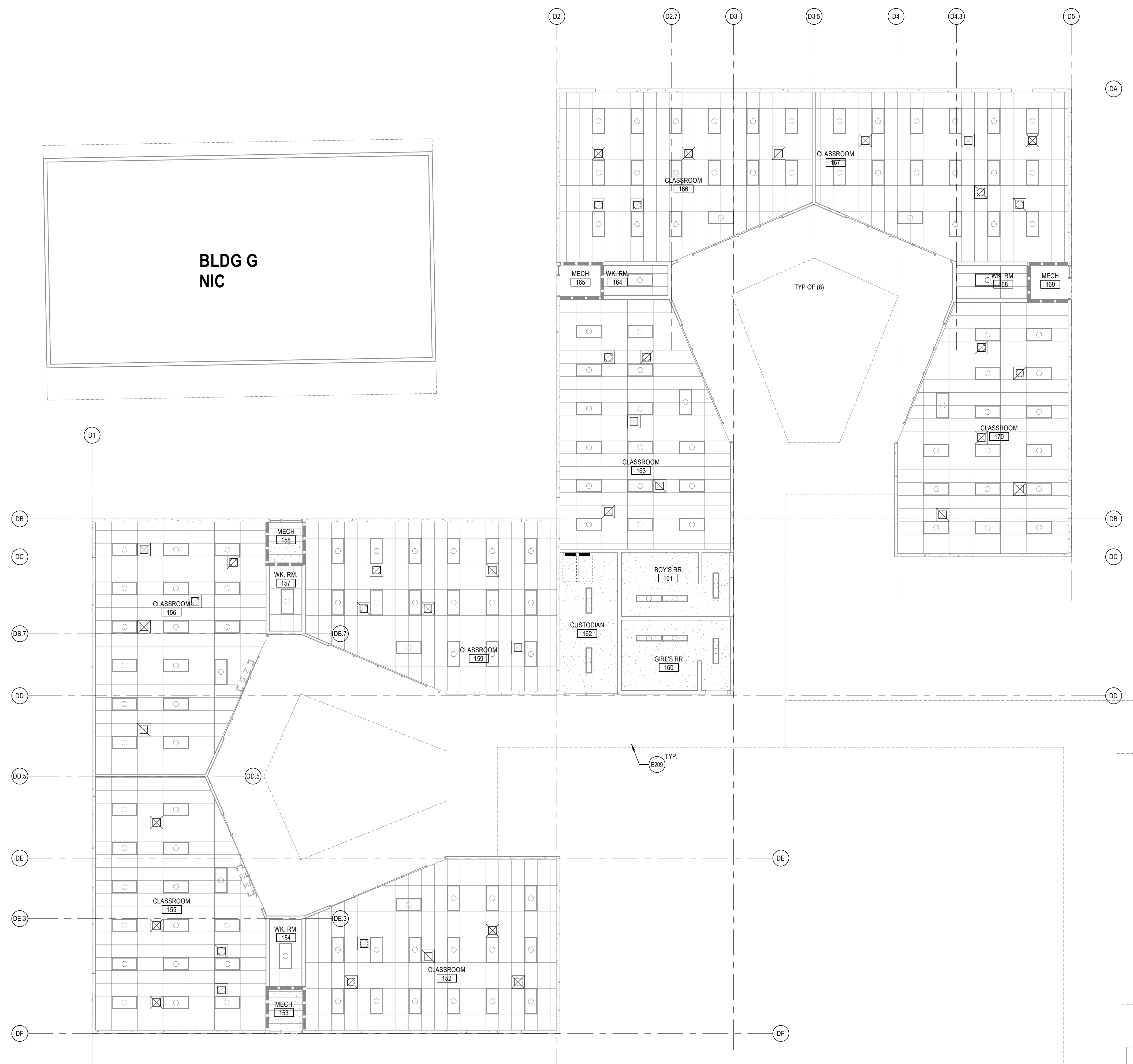
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CONSTRUCTION  
DOCUMENTS**  
11/02/2022  
REVISIONS

75-22605-00  
DSA A#03-12231  
DSA File #: 19-25

**BUILDING C  
REFLECTED  
CEILING PLAN**

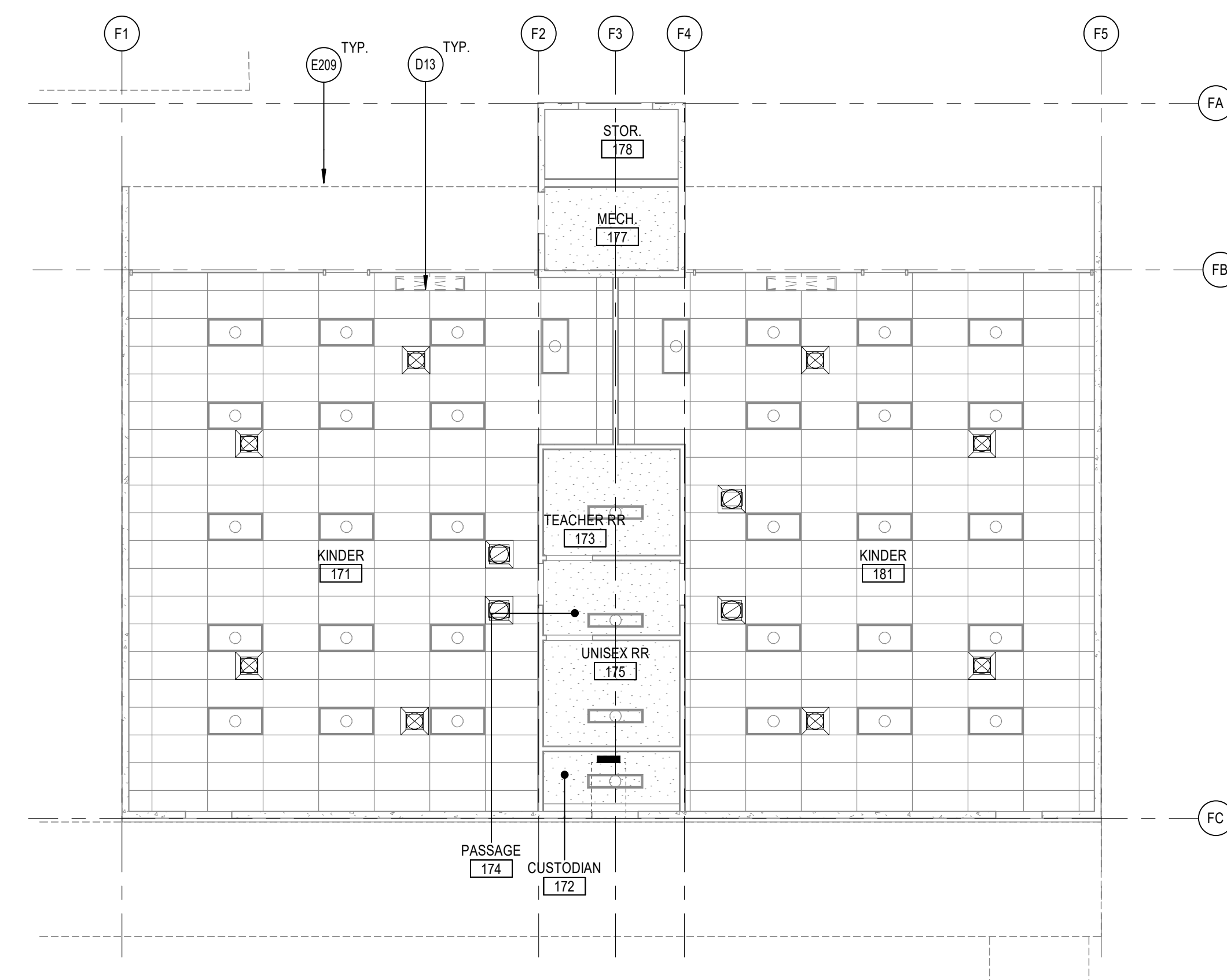
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BUILDING E REFLECTED CEILING PLAN

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



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

## REFERENCE KEYNOTES

D13	REMOVE (E) CEILING MOUNTED FAN COIL UNIT - SEE MECHANICAL DRAWINGS
E209	LINE OF (E) ROOF ABOVE SHOWN DASHED

REFLECTED CEILING PLAN  
GENERAL NOTES

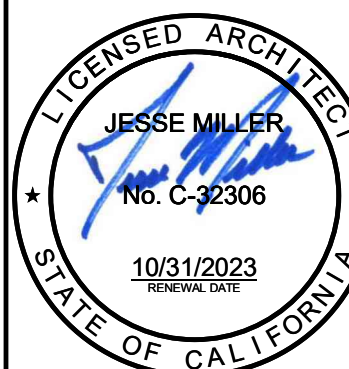
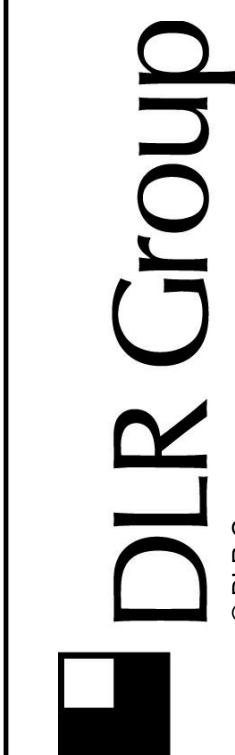
- A. REFLECTED CEILING PLAN GENERAL NOTES APPLY TO ALL REFLECTED CEILING PLAN SHEETS.
- B. REFLECTED CEILING GRID/PANELS SHALL BE CENTERED IN EACH ROOM UNLESS NOTED OTHERWISE.
- C. (E) CEILING HEIGHTS ARE TO REMAIN UNO. REFLECTED CEILING PLANS ARE MEASURED FROM THE FINISHED FLOOR OF THE LEVEL.
- D. IN ACoustICAL CEILING PANELS WITH SCORE IN THE CENTER, THE SCORE LINES IN ONE OF THE TEE JOINTS MUST BE SHOWN ON THE SCORE. FOR ACP WITH MULTIPLE SCORE PATTERNS, COORDINATE LOCATION WITH THE ARCHITECT.
- E. PROVIDE SCHEDULES ON REFLECTED CEILING PLANS FOR ALL FIXTURES, MECHANICAL GRILLES, DIFFUSERS, AND OTHER CEILING MOUNTED DEVICES AT ACoustICAL PANEL CEILING. PROVIDE SCHEDULES ON REFLECTED CEILING PLANS FOR ALL AND ARE TO THE FOLLOWING UNLESS NOTED OTHERWISE:
  - a. FACE OF FINISHED WALL
  - b. FACE OF FINISHED CEILING
  - c. CENTERLINE OF WALLS
  - d. CENTERLINE OF COLUMNS
  - e. CENTERLINE OF TEES
- F. AREAS EXPOSED TO STRUCTURE GRILLES COORDINATE EXACT LOCATIONS OF MECHANICAL GRILLES; DIFFUSERS, DUCTWORK AND ELECTRICAL FIXTURES WITH EACH REPRESENTATIVE SUBMITTAL.

DEMOLITION GENERAL NOTES

DEMOLITION NOTES APPLY TO ALL DEMOLITION SHEETS

THE CONTRACTOR SHALL:

- A. COORDINATE ALL DEMOLITION AND PHASING EFFORTS WITH THE ARCHITECT AND OWNER'S REPRESENTATIVE. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION OF OWNER'S OPERATIONS. EXCESSIVE NOISE, VIBRATION, AND AIR POLLUTION SHALL BE PRE-APPROVED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE. IN ALL CASES, PROVISIONS SHALL BE MADE TO MAINTAIN SAFETY.
- B. COORDINATE ANY DISRUPTION OF UTILITY SERVICES WITH THE OWNER AND AS SPECIFIED.
- C. DEMOLITION OF CONSTRUCTION PARTITIONS WITHIN THE EXISTING BUILDING WHICH OFFER A ONE-HOUR ENCLOSURE TO THE EXISTING BUILDING CONSTRUCTION FROM THE GENERAL PUBLIC AND A DEMOLITION CONTRACTOR SHALL BE REQUIRED. ANY DEMOLITION CONSTRUCTION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF LOS ANGELES ORDINANCES AND CODE OFFICIAL HAVING JURISDICTION. COORDINATE WITH THE ARCHITECT AND OWNER AND MAINTAIN MEANS OF EGRESS THROUGHOUT THE WORK.
- D. MAINTAIN A SECURE, WEATHER-TIGHT ENCLOSURE AT ALL TIMES.
- E. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
- F. REMOVE IN THEIR ENTIRETY ALL EXISTING WALLS, DOORS, MILLWORK, FLOORING FIXTURES, CEILING, SOFFITS, PARTITIONS, ROOFING, AND ALL OTHER MATERIALS TO BE EXECUTED THE DEMOLITION/CONSTRUCTION WORK DESCRIBED BY THE DRAWINGS.
- G. THE OWNER SHALL RESERVE THE RIGHT TO SALVAGE ANY MATERIALS.
- H. PROVIDE PROTECTION FOR ALL EXISTING BUILDING MATERIALS AND EQUIPMENT FROM DAMAGE DUE TO ANY DEMOLITION OR CONSTRUCTION-RELATED INCIDENT PERFORMED UNDER THIS CONTRACT.
- I. REPAIR OR REPLACE ITEMS THAT ARE DAMAGED AS A RESULT OF DEMOLITION OR CONSTRUCTION TO MATCH EXISTING FINISH AND FUNCTION.
- J. EXISTING MATERIALS SHALL NOT BE REUSED UNLESS NOTED OTHERWISE AND AS AUTHORIZED BY ARCHITECT.
- K. PROVIDE AN ANTENNA TOWER FOR TELEPHONE POWER, COMMUNICATION AND DATA CABLES TO PREVENT INTERRUPTION OF THEIR SERVICE.
- L. REMOVE ALL WALLS AND CONCRETE GENERATIONS RESULTING FROM REMOVAL OR RE-ROUTING OF NEW OR EXISTING PIPING, DUCTWORK, CONDUCIT, AND OTHER ITEMS, AS REQUIRED TO PROVIDE UNOBSTRUCTED ACCESS TO ALL AREAS AS REQUIRED FOR NEW OR EXISTING ADJACENT SURFACES.
- M. CAP ALL EXISTING MECHANICAL PIPING LINES WITHIN THE MASONRY PARTITION WALLS TO PREVENT FLOODING AND TO MATCH NEW OR EXISTING ADJACENT SURFACES.
- N. PROVIDE PROTECTION FOR EXISTING FOUNDINGS AND TO MATCH/FURTHER SECUREMENT AND SCOPE OF WORK.
- O. AVOID ANY DISTURBANCE OR SOILS WITHIN THE ZONE OF EXISTING FOUNDING EXCEPT AS SPECIFIED AND AS DIRECTED BY GEOTECHNICAL ENGINEER.
- P. WHERE CMU WALLS ARE INDICATED TO BE REMOVED, PREPARE PLASTER PATCHES TO RECONSTRUCT THE REMOVED CMU IN TIGHT-UP PATTERN BOTH SIDES OF DEMOLITION FOR CONTRACTOR TO TIGHTEN-UP NEW CMU PATCHES.
- Q. REMOVE ALL EXISTING PLASTER TO BE REMOVED. PREPARE ADJACENT WALLS TO RECEIVE NEW PATCHFINISH BY SAWCUTTING EXISTING PLASTER FINISH A MINIMUM OF 1'-0" FROM THE JOINT.



MANZANITA ELEMENTARY SCHOOL  
COVID 19- COVINA VALLEY DISTRICT HVAC REPLACEMENT

4424 NUNDA AVE COVILIA CA 94702

100%  
CONSTRUCTION  
DOCUMENTS  
11/02/2022  
REVISIONS

75-22605-00  
DSA A#03-122231  
DSA File #: 19-25

BUILDING E & F  
REFLECTED  
CEILING PLAN

A3.1E



STRUCTURAL SHEET LIST	
SHEET NUMBER	SHEET NAME
S0.1	GENERAL STRUCTURAL NOTES
S0.2	GENERAL STRUCTURAL NOTES & SPECIAL INSPECTIONS
S1.0	ISOMETRIC VIEWS
S1.1	ROOF FRAMING PLAN UNIT F
S1.2	ROOF FRAMING PLAN UNIT C
S1.3	ROOF FRAMING PLAN UNIT E
S1.4	ROOF FRAMING DETAILS

GENERAL	
1.	THE DRAWINGS REPRESENT THE FINISHED STRUCTURE, NOT THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED. THE RESEARCH, DESIGN, SAFETY, ADEQUACY, AND INSPECTION OF ERECTION BRACING, SHORING, GUYING, TEMPORARY SUPPORTS, ETC. IS THE RESPONSIBILITY OF THE CONTRACTOR.
2.	THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS AND METHODS. SEQUENCES OF CONSTRUCTION, OR CONSTRUCTION TECHNIQUES USED TO PERFORM THE WORK. OBSERVATION VISITS TO THE SITE WILL NOT INVOLVE REVIEW OF THESE ITEMS.
3.	THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PROGRAM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL SAFETY PRECAUTIONS AND REGULATIONS DURING THE WORK. THE ENGINEER WILL NOT ADVISE ON NOR ISSUE DIRECTION AS TO SAFETY PRECAUTIONS AND PROGRAMS. OBSERVATION VISITS TO THE SITE WILL NOT INVOLVE REVIEW OF THESE ITEMS.
4.	CONTRACTOR IS TO ESTABLISH AND VERIFY OPENINGS AND INSERTS FOR ITEMS TO BE INSTALLED BY OTHER TRADES PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND CONSTRUCTION.
5.	CONSTRUCTION MATERIAL AND EQUIPMENT LOADS PLACED ON THE STRUCTURE DURING THE CONSTRUCTION PROCESS SHALL NOT EXCEED THE DESIGN LIVE LOAD OF THE STRUCTURE NOTED IN THESE DRAWINGS. THE ENGINEER SHALL NOT BE RESPONSIBLE TO INVESTIGATE, NOR APPROVE, THE STRUCTURE FOR CONSTRUCTION MATERIAL OR EQUIPMENT LOADING. ERECTION OR CONSTRUCTION LOADS ARE NOT TO BE APPLIED UNTIL PROPER STRUCTURAL FRAMING CONNECTIONS ARE MADE, AND ALL TEMPORARY BRACING IS IN PLACE. THE CONTRACTOR SHALL DESIGN AND PROVIDE TEMPORARY BRACING OF THE STRUCTURE WHERE NECESSARY FOR CONSTRUCTION LOADS.
6.	DETAILS THAT ARE NOTED AS "TYPICAL OR TYP" ON DETAIL TITLES ARE TO BE APPLIED TO THE PROJECT CONSTRUCTION AS GENERAL CONSTRUCTION METHODS UNLESS NOTED OTHERWISE. THESE DETAILS ARE NOT OUT AT ALL LOCATIONS WHERE THEY OCCUR, AND THEY MAY NOT BE OUT AT ALL. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR CONDITIONS ELSEWHERE ON THE PROJECT, SUBJECT TO APPROVAL OF THE ENGINEER.
7.	DO NOT SCALE DRAWINGS. CONTRACTOR IS TO VERIFY ALL DIMENSIONS RELATIVE TO ARCHITECTURAL OR OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.
8.	WHERE DISCREPANCIES OCCUR BETWEEN GENERAL NOTES, PLANS, DETAILS, AND SPECIFICATIONS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN, UNLESS APPROVED OTHERWISE BY THE ENGINEER IN WRITING PRIOR TO CONSTRUCTION.
9.	THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES AND SPECIFICATIONS. THE CONTRACTOR SHALL ESTABLISH AND VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHANGES, HANGERS, INSERT ANCHORS, HOLES, AND OTHER ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK. DO NOT PENETRATE ANY STRUCTURAL ELEMENTS (BEAMS, COLUMNS, WALLS, SLABS, STEEL DECK, ETC) WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER.
10.	IF THE ENGINEER'S SEAL AND SIGNATURE IS NOT AFFIXED TO THESE DRAWINGS, THESE DRAWINGS ARE INTENDED FOR PRELIMINARY PURPOSES ONLY AND SHALL NOT BE USED FOR CONSTRUCTION.
11.	STRUCTURAL JOINT DIMENSIONS SHOWN ON PLANS AND DETAILS (EXPANSION, SEISMIC SEPARATION, ETC) INDICATE THE MINIMUM CLEAR DISTANCE REQUIRED. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS AND INFORMATION.
DESIGN CRITERIA	
1. ALL CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THESE DRAWINGS, SPECIFICATIONS, AND THE CODES, RULES AND REGULATIONS OF THE 2019 CALIFORNIA BUILDING CODE (CBC), AS ADOPTED AND AMENDED BY THE CITY OF COVINA, CA HEREINAFTER REFERRED TO AS THE BUILDING CODE.	
2. MATERIAL, SPECIFIC DESIGN STANDARDS LISTED IN THESE GENERAL NOTES ARE THE VERSION REFERENCED BY THE BUILDING CODE. IF NOT REFERENCED BY THE BUILDING CODE, USE THE LATEST EDITION APPROVED BY THE AUTHORITY HAVING JURISDICTION ON THE DATE OF THE PERMIT ISSUANCE.	
3. RISK CATEGORY	III
4. EXISTING DEAD LOADS ROOF - TOTAL	18 PSF (INCLUDES STRUCTURE SELF WEIGHT)
5. EXISTING LIVE LOADS ROOF LIVE LOAD	20 PSF
7. WIND LOADS BASIC WIND SPEED (3 SECOND GUST), V NOMINAL WIND SPEED, V <sub>50</sub> EXPOSURE CATEGORY, C TOPOGRAPHIC FACTOR, K <sub>zt</sub> AIR DENSITY FACTOR, K <sub>a</sub> INTERNAL PRESSURE COEFFICIENT, GC <sub>pi</sub>	102 MPH 79 MPH C 1.0 1.0 +- 0.18
8. SEISMIC LOADS SITE LATITUDE SITE LONGITUDE SITE CLASS IMPORTANCE FACTOR, I <sub>s</sub> MAPPED SPECTRAL RESPONSE ACCELERATIONS S <sub>s</sub> = 1.659 S <sub>1</sub> = 0.814 DESIGN SPECTRAL RESPONSE ACCELERATIONS S <sub>DS</sub> = 1.327 S <sub>1</sub> = 0.696 SEISMIC DESIGN CATEGORY, D	34.0897 -117.9385 D 1.25 S <sub>s</sub> = 1.659 S <sub>1</sub> = 0.814 S <sub>DS</sub> = 1.327 S <sub>1</sub> = 0.696 D
EXISTING SEISMIC FORCE RESISTING SYSTEM: ORDINARY PLAIN CONCRETE SHEAR WALLS (REMAIN UNALTERED)	

POST-INSTALLED ANCHORS	
1.	UNO, THE FOLLOWING APPLIES TO ALL POST-INSTALLED ANCHORAGE INTO HARDENED CONCRETE OR MASONRY WHICH INCLUDES TYPES SUCH AS EXPANSION, WEDGE, SLEEVE, ADHESIVE / EPOXY, SHOT-PIN, SCREW AND UNDERCUT.
2.	POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED.
3.	CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING, DAMAGED OR MISPLACED CAST-IN-PLACE ANCHORS.
4.	CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR WHEN DRILLING HOLES. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS.
5.	MAINTAIN A MINIMUM OF 2 INCHES FROM EXISTING REINFORCEMENT, CONDUIT, POST-TENSIONING (WHERE OCCURS), ETC. USE NON-DESTRUCTIVE TESTING TO LOCATE PRIOR TO DRILLING. CORING OR SHOOTING PINS INTO THE EXISTING CONCRETE OR MASONRY. FOR INSTALLATION DEEPER THAN 3 INCHES USE GROUND PENETRATING RADAR OR X-RAY METHODS.
6.	ALL ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS, MANUFACTURER'S RECOMMENDATIONS AND ALL APPLICABLE ICC-ES REPORTS, INCLUDING, BUT NOT LIMITED TO, ALL ANCHOR SPACINGS, EMBEDMENTS AND EDGE DISTANCES.
7.	SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE BUILDING CODE FOR SEISMIC USES. LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS, ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE AND INSTALLATION TEMPERATURES.
8.	EMBEDMENT REFERS TO THE FINAL INSTALLED EFFECTIVE DEPTH "H <sub>ef</sub> ". ALL ANCHORS SHALL HAVE EMBEDMENT NOTED OR EMBEDMENT AS RECOMMENDED BY MANUFACTURER WHERE NO EMBEDMENT IS SHOWN. REQUIRED ANCHOR HOLE DEPTH FOR INSTALLATION MAY BE DEEPER. CONDITIONS ELSEWHERE ON THE PROJECT, SUBJECT TO APPROVAL OF THE ENGINEER.
9.	IF THE FULL ANCHOR EMBEDMENT DEPTH, SPACING OR EDGE DISTANCE CANNOT BE ACHIEVED, NOTIFY THE ENGINEER.
10.	ALL PERSONNEL INSTALLING POST-INSTALLED ANCHORS SHALL BE TRAINED BY THE MANUFACTURER FOR PROPER INSTALLATION TECHNIQUE. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE UPON REQUEST.
11.	INSTALLATION OF ADHESIVE ANCHORS IN HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH AAI AND IN ACCORDANCE WITH AAI 316. PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF INSTALLATION.
12.	EXPANSION BOLTS IN CONCRETE SHALL BE ONE OF THE FOLLOWING: a. HILTI KWIK BOLT T22 CONCRETE ANCHORS (ICC ESR-4266) b. DEWALT POWER-STOP-SD1 (ICC ESR-2818), POWER STOP -SD2 (ICC ESR-2902) c. SIMPSON STRONG-TIE STRONG-BOLT 1" WEDGE ANCHORS (ICC ESR-3037)
13.	SCREW ANCHORS IN CONCRETE SHALL BE ONE OF THE FOLLOWING: a. HILTI HUS-EZ SCREW ANCHOR (ICC ESR-3027) b. HILTI HUS-EZ SCREW BOLT, SCREW ANCHOR (ICC ESR-3889) c. SIMPSON STRONG-TIE TITEN HD SCREW ANCHORS (ICC ESR-2713)
14.	ADHESIVE ANCHORS IN CONCRETE SHALL BE ONE OF THE FOLLOWING: a. HILTI HY-200 SAFE SET SYSTEM ADHESIVE ANCHORS (ESR-3187) (FAST CURE APPLICATIONS) b. HILTI RE-300 V9 ADHESIVE ANCHORS (ESR-3814) c. HILTI RE-100 ADHESIVE ANCHORS (ICC ESR-3829) (STANDARD CURE APPLICATIONS) d. DEWALT AT-200+ ADHESIVE ANCHORS (ICC ESR-4077) (FAST CURE APPLICATIONS) e. DEWALT PURE 110+ ADHESIVE ANCHORS (ICC ESR-3288) (STANDARD CURE APPLICATIONS) f. SIMPSON STRONG-TIE SET-3G ADHESIVE ANCHORING SYSTEM (ESR-4057) g. SIMPSON STRONG-TIE AT-XP ADHESIVE ANCHORING SYSTEM (APMO USES ESR-263) h. SIMPSON STRONG-TIE SET-AP ADHESIVE ANCHORING SYSTEM (ESR-2508) (STANDARD CURE APPLICATIONS)

15.	ANCHORS ARE NOT TO BE INSTALLED UNTIL CONCRETE OR GROUT HAS REACHED ITS DESIGN STRENGTH. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE WITH A MIN. AGE OF 21 DAYS.
16.	MASONRY CELLS SHALL BE FULLY GROUTED AND CURED FOR INSTALLATION OF POST-INSTALLED ANCHORS.
17.	USE INSTALLATION PROCEDURES FOR CRACKED CONCRETE CONDITIONS. DO NOT CORE DRILL FOR ANCHOR HOLES WITHOUT ENGINEER APPROVAL.
18.	PROVIDE GALVANIZED CARBON STEEL ANCHORS AT DRY INTERIOR LOCATIONS AND STAINLESS-STEEL TYPE 304 OR 316 AT EXTERIOR / DAMP INTERIOR LOCATIONS. ANCHORS SHALL BE CLEAN AND FREE OF DEBONDING SUBSTANCES.
19.	PATCH ABANDONED HOLES AND SPALLS USING NON-SHRINK GROUT AND REPAIR FINISHES AS REQUIRED. ANCHORS PENETRATING THROUGH WATERPROOFING OR VAPOR MEMBRANES SHALL BE SEALED OR FLASHED.
20.	ADHESIVE / EPOXY ANCHORS ON THIS PROJECT ARE NOT DESIGNED TO SUPPORT OR INTENDED TO RESIST SUSTAINED TENSION LOADS.

<u>STRUCTURAL STEEL</u>	
1.	FABRICATOR QUALIFICATIONS: FABRICATOR SHALL BE AISC CERTIFIED OR AN "APPROVED FABRICATOR" IN ACCORDANCE WITH THE BUILDING CODE AND APPROVED BY THE A/E. IN LIEU OF THE PREVIOUS, FABRICATOR SHALL INCLUDE IN THEIR BID THE SERVICES OF A SPECIAL INSPECTOR TO PROVIDE INSPECTION/TESTING SERVICES FOR WORK COMPLETED ON THE FABRICATOR'S PREMISES TO MEET BUILDING CODE REQUIREMENTS. AT THE COMPLETION OF WORK, FABRICATOR SHALL SUBMIT A "CERTIFICATE OF COMPLIANCE" TO THE ARCHITECT AND A/E STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENTS.
2.	STRUCTURAL STEEL SHAPES AND CONNECTING COMPONENTS SHALL CONFORM TO THE FOLLOWING MATERIAL SPECIFICATIONS UNO: FOLLOWING MATERIAL SPECIFICATIONS: WIDE FLANGE SHAPES HOLLOW STRUCTURAL SECTIONS (HSS) RECTANGULAR & SQUARE ROUND STEEL PIPE OTHER STEEL SHAPES AND PLATES HIGH STRENGTH STRUCTURAL BOLTS COLUMN ANCHOR ROOFS MACHINE BOLTS THREADED RODS WELDING ELECTRODES DEFORMED BAR ANCHORS (DBA) WELDED HEADED STUDS (WHS) WELDED THREADED STUDS (WTS)
	ASTM A992, Fy = 50 KSI ASTM A500, GRADE C, Fy = 50 KSI ASTM A500, GRADE C, Fy = 46 KSI ASTM A53, GRADE B, Fy = 35 KSI ASTM A36, Fy = 36 KSI ASTM F3125, GRADE A32N ASTM F1554, GRADE 55 WELDABLE (S1) ASTM A307 ASTM A36 E70XX ASTM A498, Fy = 70 KSI ASTM A108, Fy = 65 KSI ASTM A108, Fy = 65 KSI

3.	CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE BUILDING SYSTEM AT ALL TIMES DURING THE ERECTION PROCESS. ELEMENTS HAVE BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION AND HAVE NOT BEEN INVESTIGATED FOR TEMPORARY LOADING DURING CONSTRUCTION. INVESTIGATION OF THE STRUCTURAL ELEMENTS FOR ADEQUACY DURING THE STEEL ERECTION AND CONSTRUCTION PROCESS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR TO PROVIDE TEMPORARY SUPPORTS AS REQUIRED TO MAINTAIN STABILITY.
4.	COLUMNS AND BEAMS WITH BASE, CAP OR END PLATES SHALL HAVE SQUARE CUT OR MILLED ENDS.
5.	NON-METALLIC, NON-SHRINK, CHLORIDE FREE GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES SHALL CONSIST OF A PRE-MIXED PRODUCT COMPLYING WITH ALL REQUIREMENTS OF ASTM C1107. THE 28-DAY COMPRESSIVE STRENGTH OF THE GROUT SHALL BE TWICE THE FOUNDATION REQUIRED CONCRETE COMPRESSIVE STRENGTH, 5,000 PSI MINIMUM.
6.	UNO, ALL STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER, SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. ALL DAMAGED GALVANIZING SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780. STAINLESS AND WEATHERING STEELS, WHERE SPECIFIED, ARE EXEMPT FROM THIS REQUIREMENT.
7.	COAT STEEL BELOW GRADE WITH COLD-APPLIED ASPHALT EMULSION PER ASTM D1187.
8.	ALL ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL COMPLY WITH AISC CODE OF STANDARD PRACTICE, SECTION 10. REFER TO DRAWINGS FOR LOCATIONS OF AESS.
10.	ALL BOLTS (HIGH STRENGTH ANCHOR BOLTS, EXPANSION BOLTS, ADHESIVE ANCHORS, ETC.) SHALL BE INSTALLED WITH STEEL NUTS AND WASHERS. NUTS AND WASHERS FOR HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A563 AND TO ASTM F436, RESPECTIVELY.
11.	WELDING PROCEDURES, ELECTRODES, AND WELDER QUALIFICATIONS SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE D1.1, AISC STANDARDS, AND LOCAL CODE REQUIREMENTS.
12.	ALL WELDS SHOWN ON THE DRAWINGS SHALL BE SHOP WELDS, UNO, WHERE SHOWN, FIELD WELDING SHALL BE USED. CONTRACTOR MAY SUBSTITUTE FIELD WELDS FOR SHOP WELDS AT THEIR DISCRETION. SHOP DRAWINGS SHALL CLEARLY NOT ALL WELDING UNLESS AWS A2.4 SYMBOLS.
13.	WHERE CONTINUOUS ANGLES OR BENT PLATES ARE INDICATED, PROVIDE A CONTINUOUS BUTT WELD OR FULL PENETRATION WELD AT THE SPLICE POINTS. UNO, THE STEEL FABRICATOR MAY SUBMIT AN ALTERNATE BOLT CONNECTION DETAIL FOR APPROVAL.
14.	COORDINATE WITH ALL OTHER TRADES WITH STEEL INTERACTS. THIS INCLUDES BUT IS NOT LIMITED TO COORDINATING WITH MASONRY, PRECAST CONCRETE, CAST-IN-PLACE CONCRETE, JOIST, AND METAL DECK SUPPLIERS.

STRUCTURAL SUBMITTALS					
ITEM	PROD DATA	SHOP DWGS	TEST RESULTS	CALCS	DEFERRED SUBMITTAL
STRUCTURAL STEEL	-	YES	-	-	-
CONCRETE MATERIALS	YES	-	YES	-	-
GROUT	YES	-	-	-	-
STEEL DECK	YES	YES	-	-	-
COLD FORMED STEEL	YES	YES	-	-	-
EPOXY AND EXP ANCHORS	YES	-	-	-	-
WELD FILLER MATERIAL	YES	-	YES	-	-
ANCHORAGE FOR MECHELOC EQUIPMENT	-	YES	-	-	-

2.	"PROD DATA" - SUBMIT ADEQUATE DOCUMENTATION THAT THE PRODUCT PROPOSED TO BE USED MEETS THE REQUIREMENTS ON THESE PLANS AND THE PROJECT SPECIFICATIONS.
3.	"SHOP DWGS" - SUBMIT COMPLETE SHOP DRAWINGS SUFFICIENT TO SHOW QUANTITIES AND KINDS OF MATERIALS, METHODS OF ASSEMBLY, AND ALL DATA REQUIRED FOR FABRICATION, ERECTION, AND INSTALLATION. THE PURPOSE OF THESE DRAWINGS IS TO DEMONSTRATE THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT DOCUMENTED HEREIN. SUBMITTALS CONSISTING OF DRAWINGS TAKEN DIRECTLY FROM THESE PLANS WILL NOT BE APPROVED.
4.	"TEST RESULTS" - SUBMIT RESULTS FOR ANY TESTING REQUIRED BY BUILDING CODE OR THESE PLANS.
5.	"CALCS" - SUBMIT CALCULATIONS AND THE CORRESPONDING SHOP OR ERECTION DRAWINGS SIGNED AND SEALED BY A DESIGN PROFESSIONAL AUTHORIZED TO PERFORM WORK IN THE PROJECT JURISDICTION.
6.	"DEFERRED SUBMITTAL" - SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ONCE REVIEWED, CONTRACTOR SHALL FORWARD TO THE PLAN CHECK AUTHORITY (DIVISION OF STATE ARCHITECTS) FOR REVIEW AND APPROVAL. FABRICATION AND/OR INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT OCCUR UNTIL APPROVAL OF THE PLAN CHECK AUTHORITY IS RECEIVED.

STRUCTURAL RENOVATION SCOPE	
1.	PROJECT STRUCTURAL SCOPE IS LIMITED TO THE FOLLOWING: a. SECT TO ITEMIZE ELEMENTS WITHIN THE STRUCTURAL SCOPE HERE.
EXISTING CONDITIONS	
1.	CONTRACTOR IS TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. ALL WORK AND MATERIALS NECESSARY TO INSTALL NEW WORK IN EXISTING BUILDING(S) SHALL BE INCLUDED.
2.	CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AND SHALL CONTACT THE ENGINEER IF ANY DISCREPANCIES ARE FOUND BEFORE PROCEEDING. NOTIFY ENGINEER IMMEDIATELY IF EXISTING CONDITIONS DO NOT MATCH, OR SEEM IN CONFLICT WITH INFORMATION SHOWN ON DRAWINGS.
3.	DIMENSIONS INDICATED ON PLAN AS FIELD VERIFY, OR "FV", ARE DIMENSIONS THAT MAY BE REQUIRED FOR FABRICATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF DIMENSIONS IN THE FIELD NECESSARY FOR FABRICATION OF MEMBERS AND PRIOR TO SUBMISSION OF SHOP DRAWINGS.
4.	CONTRACTOR TO PROVIDE PROTECTION FOR ALL EXISTING BUILDING MATERIALS AND EQUIPMENT TO REMAIN FROM DAMAGE DUE TO DEMOLITION OR CONSTRUCTION OPERATIONS PERFORMED UNDER THIS CONTRACT.
5.	THE SEQUENCE OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TEMPORARY GUYS, BRACING, AND OTHER SUPPORTS AS NEEDED TO SAFELY RESIST ALL GRAVITY AND LATERAL LOADS TO WHICH THE EXISTING OR PROPOSED STRUCTURE MAY BE SUBJECTED, INCLUDING LOADS FROM ERECTION EQUIPMENT AND ERECTION OPERATIONS, AND WIND OR SEISMIC FORCES COMPARABLE IN INTENSITY FOR WHICH THE STRUCTURE IS DESIGNED. LOAD VERIFICATION OF EXISTING MEMBERS TO RECEIVE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR'S ENGINEER.
6.	ALL ERECTION AND CONSTRUCTION PROCEDURES SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE CODES AND ORDINANCES.
7.	ALL FRAMING CONNECTIONS TO EXISTING STRUCTURE SHALL BE FIELD VERIFIED PRIOR TO SHOP DRAWING PRODUCTION AND FABRICATION. FIELD VERIFIED DIMENSIONS SHALL BE INCLUDED ON FIRST SHOP DRAWING SUBMITTAL AND NOTED AS SUCH.
8.	EXISTING UTILITY LINES SHALL BE PROBED PRIOR TO CONSTRUCTION OF FOUNDATIONS. NOTIFY ENGINEER IF THE TOP OF ANY UTILITY PIPE COMES WITHIN 3'-0" OF THE BOTTOM OF ANY FOUNDATION. DETERMINE THE LOCATION OF ALL NEW AND EXISTING UNDERGROUND UTILITIES IN AND ADJACENT TO THE AREA OF WORK PRIOR TO EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH MAY RESULT FROM FAILURE TO EXACTLY LOCATE, PROTECT, AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES.
9.	EXCAVATION UNDER OR NEAR IN-PLACE FOOTINGS WHICH DISTURBS THE COMPACTED SOIL BENEATH THE FOOTINGS IS NOT PERMITTED.
10.	CONTRACTOR SHALL LOCATE REBAR IN EXIST. CONSTRUCTION PRIOR TO DRILLING OF HOLES AND SHALL TAKE CARE NOT TO DAMAGE EXIST. REBAR. IF DAMAGE TO EXIST. REBAR OCCURS DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE DAMAGE. REPAIR PROCEDURES NOT DETAILED IN THE CONTRACT DOCUMENTS WILL REQUIRE PREPARATION BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED AND MUST BE APPROVED BY THE ENGINEER.
EXISTING DOCUMENTATION	
1.	THE FOLLOWING DOCUMENTS WERE USED TO REPRESENT EXISTING STRUCTURE IN THE CONSTRUCTION DOCUMENTS. NOT ALL ELEMENTS AND INFORMATION HAS BEEN PROVIDED. COPIES OF THE EXISTING DRAWINGS MAY BE AVAILABLE AT THE CONTRACTOR'S REQUEST. <ul style="list-style-type: none"><li>ARCHITECTURAL DRAWINGS DATED OCTOBER 11, 1960 BY MAUL AND PULVER ARCHITECTS, INC.</li><li>STRUCTURAL DRAWINGS DATED OCTOBER 11, 1960 BY JAMES D. SCHWEICKERT AND ASSOCIATES CONSULTING ENGINEERS, INC.</li></ul>

DEMOLITION	
1.	DEMOLITION OF EXISTING STRUCTURE TO BE REMOVED SHALL BE PERFORMED BY THE CONTRACTOR USING MEANS NECESSARY TO PREVENT DAMAGE TO THE EXISTING STRUCTURE TO REMAIN. DAMAGE TO THE EXISTING STRUCTURE TO REMAIN SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE USING METHODS REVIEWED BY THE STRUCTURAL ENGINEER. IF EXISTING CONDITIONS DIFFER FROM THOSE SHOWN IN THE CONTRACT DOCUMENTS CONTACT THE ARCHITECT PRIOR TO PROCEEDING WITH WORK.
2.	SHORING OF THE EXISTING STRUCTURE SHALL BE PROVIDED BY THE CONTRACTOR AND DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

ABBREVIATIONS	
ABBREVIATIONS ARE AS SHOWN IN THE CONTRACT DOCUMENTS WITH THE FOLLOWING EXCEPTIONS:	
#	REINFORCING BAR SIZE, LB(S)
@	AT (SPACING)
Ø	DIAMETER
AB	ANCHOR BOLT
ABC	AGGREGATE BASE COURSE
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
ALT	ALTERNATE
ANCH	ANCHOR
APPROX	APPROXIMATE
ANCHOR	ANCHOR ROD
ARCH	ARCHITECTURAL
B	BOTTOM
BOD	BOTTOM OF DECK
BLDG	BUILDING
BKGS	BLOCKING
BMS	BEAMS
BOF	BOTTOM OF FOOTING
BOL	BOTTOM OF LINTEL
BOF	BOTTOM OF STEEL
BOF	BOTTOM
BRG	BUCKLING RESTRAINED BRACED
FRM	FRAME
BTWN	BETWEEN
C	CHANNEL
CANT	CANTILEVER
CFM	COLD-FORMED METAL FRAMING
CP	CAST-IN-PLACE
CJ	CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLM	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPOSITE
CONC	CONCRETE
CONNS	CONNECTION(S)
CONSTR	CONSTRUCTION
CONSTR	CONCRETE (OR)
CONSTR	CONSTRUCTION JOINT
CTR	CENTER
(D)	DEMOLISH
DBA	DEFORMED BAR ANCHOR
DCA	DEMAND CRITICAL WELD
DEG	DEGREE
DIAM	DIAMETER
DIA	DIAGONAL
DM	DIAMETER
DL	DEAD LOAD
DL	DITTO
DT	PRESTRESSED PRECAST DOUBLE TEE
DTL	DETAIL
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
(E)	EXISTING
EA	EACH
EBF	ECENTRICALLY BRACED FRAME
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDMENT, EMBEDDED
EN	EDGE NAILING
ENP	ENGINEERED WOOD PRODUCT
ENG	ENGINEER
EOD	EDGE OF DECK
EOR	ENGINEER OF RECORD
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EXP	EXPANSION
EXT	EXTERIOR
f <sub>c</sub>	SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE
f <sub>m</sub>	SPECIFIED COMPRESSIVE STRENGTH OF MASONRY
FD	FLOOR DRAIN
FDN	FOUNDATION
FRT	FIRE RESISTANCE TREATED
FS	FAR SIDE
FT	FEET (FOOT)
FTG	FOOTING
FV	FIELD VERIFY
Fy	YIELD STRENGTH
GA	GAGE, GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GLB	GLUE LAMINATED BEAM
GR	GRADE
H	HEIGHT
HC	PRESTRESSED PRECAST HOLLOW CORE T
HDR	HEADER
HORIZ	HORIZONTAL
HS	HEADED STUD
ID	INSIDE DIAMETER
IF	INSIDE FACE
IMF	INTERMEDIATE MOMENT FRAME
IN	INCH
INC	INCLUDE(ING)
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
JST	JOIST
JT	JOINT
K	KIP (1,000 LBS)
KSF	KIPS PER SQUARE FOOT
LB(S)	POUND(S)
Ld	REINFORCING BAR DEVELOPMENT LENGTH
Ldh	HOOKED REINFORCING BAR DEVELOPMENT LENGTH
LF	LINEAR
LFRS	LATERAL FORCE RESISTING SYSTEM
LI	LINEAR LOAD
LLB	LONG LEG BACK TO BACK
LLH	LONG LEG HORIZONTAL
LVL	LONG LEG VERTICAL
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LSH	LONG WAY
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL & PLUMBING
MF	MOMENT FRAME
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MISC	MISCELLANEOUS
MWFRS	MAIN WIND FORCE RESISTING SYSTEM
(N)	NEW
NT	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
ON CENTER	ON CENTER
OCBF	ORDINARY CONCENTRICALLY BRACED FRAME
OCES	ORDINARY CANTILEVER COLUMN SYSTEM
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OP	OPPOSITE
OPG(S)	OPENING(S)
OPPOSITE	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST CONCRETE
PCBE	PRECAST CONCRETE BEARING ELEVATION
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PRE-AB	PRE-FABRICATED
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSF	POUNDS PER SQUARE INCH
PTW	PRESERVATIVE-TREATED WOOD
RAD	RADIUS
RAD	REINFORCED CONCRETE
REF	REFERENCE
REF	REINFORCE, REINFORCED, REINFORCEMENT, REINFORCING (REQUIRED)
REQ(D)	REQUIRED
(REV)	REVISION(S)
RTU	ROOFTOP UNIT
SCBF	SPECIAL CONCENTRICALLY BRACED FRAME
SCCS	SPECIAL CANTILEVER COLUMN SYSTEM
SCHED	SCHEDULE
SDS	SELF-DRILLING SCREWS
SSH	SHORT SLOTTED HOLE
SECT	SECTION
SEOR	STRUCTURAL ENGINEER OF RECORD
SF	SQUARE FOOT
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SL	SIMILAR
SL	SNOW LOAD
SMF	SPECIAL MOMENT FRAME
SOG	SLAB ON GRADE
SPA	SPACE, SPACING
SPEC(S)	SPECIFICATION(S)
SST	STAINLESS STEEL
STAGD	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURE, STRUCTURAL
SYM	SYMMETRICAL
T	THICKNESS
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
TC	TENSION CONTROL
TCW	TOP OF CONCRETE WALL
TEMP	TEMPORARY
THRD	THREADED
TI	TOP OF
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOS	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPE	TOP OF PIER ELEVATION
TRANS	TRANSVERSE
TSE	TOP OF SLAB ELEVATION
TWE	TOP OF WALL ELEVATION
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VFY	VERIFY
W	WITH
W/O	WITHOUT
WD	WOOD
WFRS	WIND FORCE RESISTING SYSTEM
WGT	WEIGHT
WP	WORK POINT
WPS	WELDING PROCEDURE SPECIFICATION
WSTR	WELDED WIRE FABRIC/REINFORCEMENT
X-STR	EXTRA STRONG
XX-STR	DOUBLE EXTRA STRONG
ZRC	ZINC RICH COATING

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REQUIRED STRUCTURAL OBSERVATIONS

1. IN ACCORDANCE WITH IBC, SECTION 1704.6, THE OWNER'S REPRESENTATIVE SHALL EMPLOY A REGISTERED DESIGN PROFESSIONAL TO PERFORM STRUCTURAL OBSERVATIONS AS LISTED IN THE BELOW STATEMENT OF REQUIRED STRUCTURAL OBSERVATIONS.
2. STRUCTURAL OBSERVATION DOES NOT INCLUDE, OR WAIVE, THE RESPONSIBILITY FOR COMPLETING THE LISTED SPECIAL INSPECTIONS OR INSPECTIONS REQUIRED BY IBC SECTION 110.
3. AT THE CONCLUSION OF THE WORK, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE AHJ A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES WHICH, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
4. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR OR CONSTRUCTION MANAGER TO NOTIFY THE ENGINEER AS TO WHEN EACH MAJOR PHASE OF CONSTRUCTION IS READY FOR OBSERVATION A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT NAILING, REINFORCEMENT, WELDS, CONNECTIONS, ETC. ARE VISIBLE FOR DESIGNATED STRUCTURAL OBSERVER AT THE TIME OF SITE VISIT.
6. PRIOR TO THE FIRST STRUCTURAL OBSERVATION, THE OWNER'S REPRESENTATIVE SHALL COORDINATE A PRE-CONSTRUCTION MEETING BETWEEN THE OBSERVING ENGINEER, ARCHITECT, CONTRACTOR, SUBCONTRACTORS AND OTHER INSPECTORS. THE PURPOSE OF THE MEETING SHALL BE TO IDENTIFY THE STRUCTURAL ELEMENTS AND CONNECTIONS THAT ARE PART OF THE VERTICAL AND LATERAL LOAD RESISTING SYSTEMS AND REVIEW SCHEDULING OF SCHEDULED STRUCTURAL OBSERVATIONS.
7. THE STRUCTURAL OBSERVER SHALL PERFORM OBSERVATIONS AT THE FOLLOWING SIGNIFICANT CONSTRUCTION STAGES:  
a. AT SUBSTANTIAL COMPLETION OF THE PRIMARY STRUCTURE

STATEMENT OF SPECIAL INSPECTIONS

1. IN ACCORDANCE WITH IBC, SECTION 1704, THE OWNER'S REPRESENTATIVE SHALL EMPLOY ONE OR MORE QUALIFIED SPECIAL INSPECTORS AND/OR TESTING AGENCIES TO PERFORM STRUCTURAL TESTS AND SPECIAL INSPECTIONS ON THE TYPES OF WORK LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS.
2. THE DESIGNATED ENGINEER OF RECORD FOR SPECIAL INSPECTIONS SHALL BE RESPONSIBLE FOR DEFINING THE ACTIVITIES OF THE INSPECTORS, FOR CERTIFYING THE QUALIFICATIONS OF THE INSPECTORS WITH THE AHJ, AND TO ATTEND THE PRE-CONSTRUCTION MEETING TO DEFINE THEIR SCOPE OF SERVICES AND THE TESTING OR TEST PROCEDURES THAT ARE REQUIRED AS OUTLINED IN THE BUILDING CODE.
3. THE INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO VERIFY CONFORMANCE WITH THE APPROVED CONTRACT DOCUMENTS.
4. THE INSPECTOR SHALL FURNISH DAILY INSPECTION REPORTS ON THE WORK TO THE OWNER'S REPRESENTATIVE, AHJ AND ENGINEER. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND, IF UNCORRECTED, TO THE ENGINEER AND THE AHJ.
5. THE DESIGNATED ENGINEER OF RECORD FOR SPECIAL INSPECTIONS SHALL COMPLETE, SIGN AND SEAL A FINAL REPORT CERTIFYING THAT TO THE BEST OF THEIR KNOWLEDGE, THE WORK IS IN CONFORMANCE WITH THE APPROVED CONTRACT DOCUMENTS.
6. SPECIAL INSPECTION IS TO BE PROVIDED IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE AHJ AND SHALL NOT BE CONSTRUED TO RELIEVE THE OWNER OR AUTHORIZED AGENT FROM REQUESTING THE INSPECTIONS REQUIRED BY IBC SECTION 110.
7. CONTRACTOR RESPONSIBILITY: EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND- OR SEISMIC FORCE-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE AHJ AND THE OWNER'S REPRESENTATIVE ACKNOWLEDGING AWARENESS OF REQUIRED SPECIAL INSPECTIONS PRIOR TO COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT.
8. STEEL CONSTRUCTION: SPECIAL INSPECTIONS FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360-16. PROVIDE INSPECTION PER IBC SECTION 1704.2.5 FOR STRUCTURAL LOADING-BEARING MEMBERS AND ASSEMBLIES FABRICATED ON THE PREMISES OF A FABRICATOR'S SHOP. THESE INSPECTIONS SHALL BE AT CONTRACTOR'S EXPENSE IF THE FABRICATOR IS NOT AN APPROVED FABRICATOR PER SECTION 1704.2.5.1.
9. WELDING: WELDING INSPECTION SHALL BE IN COMPLIANCE WITH AWS D1.1. THE BASIS FOR WELDING INSPECTOR QUALIFICATIONS SHALL BE AWS D1.1. PROVIDE SPECIAL INSPECTION IN ACCORDANCE WITH AISC 360-16 TABLE N5.4-1 THROUGH TABLE N5.4-3.
10. STEEL DETAILING: AN INSPECTION OF THE STEEL FRAME SHALL BE PERFORMED TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE APPROVED CONSTRUCTION DOCUMENTS, SUCH AS BRACING, STIFFENING, MEMBER LOCATIONS AND PROPER APPLICATION OF JOINT DETAILS AT EACH CONNECTION.
11. HIGH STRENGTH BOLTING: INSTALLATION OF HIGH STRENGTH BOLTS SHALL BE PERIODICALLY INSPECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. HIGH STRENGTH BOLTING, PROVIDE SPECIAL INSPECTION IN ACCORDANCE WITH AISC 360-16 TABLE N5.6-1 THROUGH TABLE N5.6-3.
12. SPRAY-APPLIED FIREPROOFING: PER SECTION 1705.14.
13. MASTIC AND INTUMESCENT FIRE RESISTING COATINGS: PER SECTION 1705.15.
14. EXTERIOR INSULATION AND FINISH SYSTEM (EIFS): PER SECTION 1705.16.
15. FIRE-RESISTANT PENETRATIONS AND JOINTS: PER SECTION 1705.17.
16. SMOKE CONTROL: PER SECTION 1705.18.
17. EXPANSION BOLT, SCREW ANCHOR AND ADHESIVE ANCHORS: INSTALLATION TO VERIFY INSTALLATION IN ACCORDANCE WITH ICC-ES REPORTS NOTED PREVIOUSLY OR APPROVED EQUAL.
18. HEADED CONCRETE SHEAR CONNECTORS: INSPECTED AND TESTED PER AMERICAN WELDING SOCIETY CODE AWS D1.1.

TMS 402 / 602 — TABLE 3				
MINIMUM VERIFICATION REQUIREMENTS				
MINIMUM VERIFICATION	REQUIRED FOR QUALITY ASSURANCE (a)			REFERENCE FOR CRITERIA
	LEVEL 1	LEVEL 2	LEVEL 3	
Prior to construction, verification of compliance of submittals.	R	R	R	Art. 1.5
Prior to construction, verification of Fm and FAAC, except where specifically exempted by the Code.	NR	R	R	Art. 1.4B
During construction, verification of Slump flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to the project site.	NR	R	R	Art. 1.5 & 1.6.3
During construction, verification of Fm and FAAC for every 5,000 square feet (465 square meters).	NR	NR	R	Art. 1.4B
During construction, verification of proportions of materials as delivered to the project site for premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout.	NR	NR	R	Art. 1.4B

AISC 360 — TABLE N5.6-1			
INSPECTION TASKS PRIOR TO BOLTING			
INSPECTION TASKS PRIOR TO BOLTING	QC	QA	
Manufacturer's certifications available for fastener materials	O	P	
Fasteners marked in accordance with ASTM requirements	O	O	
Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O	
Proper bolting procedure selected for joint detail	O	O	
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O	
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O	
Proper storage provided for bolts, nuts, washers, and other fastener components	O	O	
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each bolted connection.			

AISC 360 — TABLE N5.6-2			
INSPECTION TASKS DURING BOLTING			
INSPECTION TASKS DURING BOLTING	QC	QA	
Fastener assemblies placed in all holes and washers and nuts are positioned as required	O	O	
Joint brought to the snug-tight condition prior to the pretensioning operation	O	O	
Fastener component not turned by the wrench prevented from rotating	O	O	
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	O	O	
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each bolted connection.			

AISC 360 — TABLE N5.6-3			
INSPECTION TASKS AFTER BOLTING			
INSPECTION TASKS AFTER BOLTING	QC	QA	
Document acceptance or rejection of bolted connections	P	P	
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each bolted connection.			

AISC 360 — TABLE N5.4-1			
INSPECTION TASKS PRIOR TO WELDING			
INSPECTION TASKS PRIOR TO WELDING	QC	QA	
Welder qualification records and continuity records	P	O	
Welding procedure specifications (WPS) available	P	P	
Manufacturer certifications for welding consumables available	P	P	
Material identification (type / grade)	O	O	
Welder identification system [a]	O	O	
Fit-up of groove welds (including joint geometry)			
Joint preparations <ul style="list-style-type: none"><li>• Dimensions (alignment, root opening, root face, bevel)</li><li>• Cleanliness (condition of steel surfaces)</li><li>• Tackling (back weld quality and location)</li><li>• Backing type and fit (if applicable)</li></ul>		O	O
Fit-up of CJP groove welds of HSS T-, Y- and K-joints without backing (including joint geometry)			
Joint preparations <ul style="list-style-type: none"><li>• Dimensions (alignment, root opening, root face, bevel)</li><li>• Cleanliness (condition of steel surfaces)</li><li>• Tackling (back weld quality and location)</li></ul>	P		O
Configuration and finish of access holes	O	O	
Fit-up of fillet welds <ul style="list-style-type: none"><li>• Dimensions (alignment, gaps at root)</li><li>• Cleanliness (condition of steel surfaces)</li><li>• Tackling (back weld quality and location)</li></ul>	O	O	
Check welding equipment	O	—	
[a] The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type. O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			

AISC 360 — TABLE N5.4-2			
INSPECTION TASKS DURING WELDING			
INSPECTION TASKS DURING WELDING	QC	QA	
Control and handling of welding consumables <ul style="list-style-type: none"><li>• Packaging</li><li>• Exposure Control</li></ul>	O	O	
No welding over cracked tack welds	O	O	
Environmental conditions <ul style="list-style-type: none"><li>• Wind speed within limits</li><li>• Precipitation and temperature</li></ul>	O	O	
WPS Followed <ul style="list-style-type: none"><li>• Settings on welding equipment</li><li>• Travel Speed</li><li>• Selected welding materials</li><li>• Shielding gas type / flow rate</li><li>• Preheat applied</li><li>• Interpass temperature maintained (min. / max.)</li><li>• Proper position (F, V, H, OH)</li></ul>	O	O	
Welding techniques <ul style="list-style-type: none"><li>• Interpass and final cleaning</li><li>• Each pass within profile limitations</li><li>• Each pass meets quality requirements</li></ul>	O	O	
Placement and installation of steel headed stud anchors	P	P	
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			

AISC 360 — TABLE N5.4-3			
INSPECTION TASKS AFTER WELDING			
INSPECTION TASKS AFTER WELDING	QC	QA	
Welds cleaned	O	O	
Size, length and location of welds	P	P	
Welds meet visual acceptance criteria <ul style="list-style-type: none"><li>• Crack prohibition</li><li>• Weld / base-metal fusion</li><li>• Crater cross section</li><li>• Weld profiles</li><li>• Weld size</li><li>• Undercut</li><li>• Porosity</li></ul>	P	P	
Arc strikes	P	P	
k-area [a]	P	P	
Weld access holes in rolled heavy shapes and built-up heavy shapes [b]	P	P	
Backing removed and weld tabs removed (if required)	P	P	
Repair activities	P	P	
Document acceptance or rejection of welded joint or member	P	P	
No prohibited welds have been added without the approval of the EOR	O	O	
[a] When welding of double plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 inches (75 mm) of the weld. [b] After rolled heavy shapes (see Section A3.1c) and built-up heavy shapes (see Section A3.1d) are welded, visually inspect the weld access hole for cracks. O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			

ANSI / SDI QA/QC — TABLE 1.3			
INSPECTION OR EXECUTION TASKS PRIOR TO WELDING			
TASK	QC	QA	
A. Welding procedure specifications (WPS) available	O	O	
B. Manufacturer certifications for welding consumables available	O	O	
C. Material identification (type / grade)	O	O	
D. Check welding equipment	O	O	
O - Observe these items on an intermittent basis. Operations need not be delayed pending these inspections. P - Perform these tasks prior to final acceptance for each item or element.			

ANSI / SDI QA/QC — TABLE 1.4			
INSPECTION OR EXECUTION TASKS DURING WELDING			
TASK	QC	QA	
A. Use of qualified welders	O	O	
B. Control and handling of welding consumables	O	O	
C. Environmental conditions (wind speed, moisture, temperature)	O	O	
D. WPS followed	O	O	
O - Observe these items on an intermittent basis. Operations need not be delayed pending these inspections. P - Perform these tasks prior to final acceptance for each item or element.			

ANSI / SDI QA/QC — TABLE 1.5			
INSPECTION OR EXECUTION TASKS AFTER WELDING			
TASK	QC	QA	
A. Verify size and location of welds, including support, sidelap, and perimeter welds	P	P	
B. Welds meet visual acceptance criteria	P	P	
C. Verify repair activities	P	P	
D. Document acceptance or rejection of welds	P	P	
O - Observe these items on an intermittent basis. Operations need not be delayed pending these inspections. P - Perform these tasks prior to final acceptance for each item or element.			

ANSI / SDI QA/QC — TABLE 1.6			
INSPECTION OR EXECUTION TASKS PRIOR TO MECHANICAL FASTENING			
TASK	QC	QA	
A. Manufacturer installation instructions available for mechanical fasteners	O	O	
B. Proper tools available for fastener installation	O	O	
C. Proper storage for mechanical fasteners	O	O	
O - Observe these items on an intermittent basis. Operations need not be delayed pending these inspections. P - Perform these tasks prior to final acceptance for each item or element.			

ANSI / SDI QA/QC — TABLE 1.7			
INSPECTION OR EXECUTION TASKS DURING MECHANICAL FASTENING			
TASK	QC	QA	
A. Fasteners are positioned as required	O	O	
B. Fasteners are installed in accordance with manufacturer's instructions	O	O	
O - Observe these items on an intermittent basis. Operations need not be delayed pending these inspections. P - Perform these tasks prior to final acceptance for each item or element.			

ANSI / SDI QA/QC — TABLE 1.8			
INSPECTION OR EXECUTION TASKS AFTER MECHANICAL FASTENING			
TASK	QC	QA	
A. Check spacing, type, and installation of support fasteners	P	P	
B. Check spacing, type, and installation of sidelap fasteners	P	P	
C. Check spacing, type, and installation of perimeter fasteners	P	P	
D. Verify repair activities	P	P	
E. Document acceptance or rejection on mechanical fasteners	P	P	
O - Observe these items on an intermittent basis. Operations need not be delayed pending these inspections. P - Perform these tasks prior to final acceptance for each item or element.			



MANZANITA ELEMENTARY SCHOOL  
COVID 19 - COVINA VALLEY DISTRICT HVAC REPLACEMENT

4131 N NORRA AVE COVINA, CA 91722

100% CONSTRUCTION DOCUMENTS  
11/02/2022 REVISIONS

75-22605-00  
DSA A#03-122231  
DSA File#: 19-25

GENERAL STRUCTURAL NOTES & SPECIAL INSPECTIONS

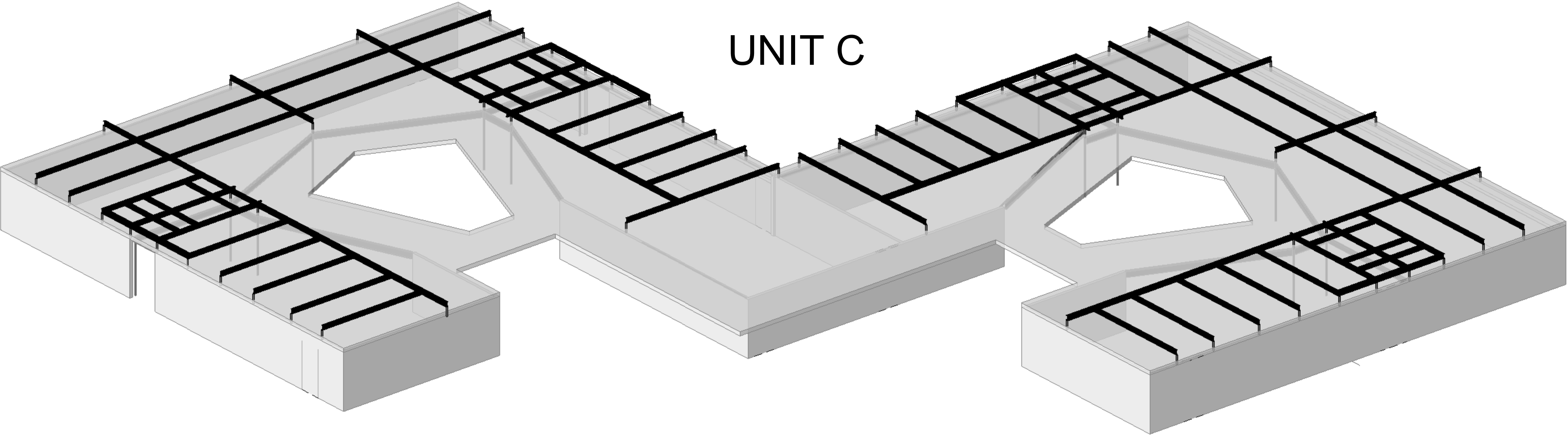
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A B C D E F

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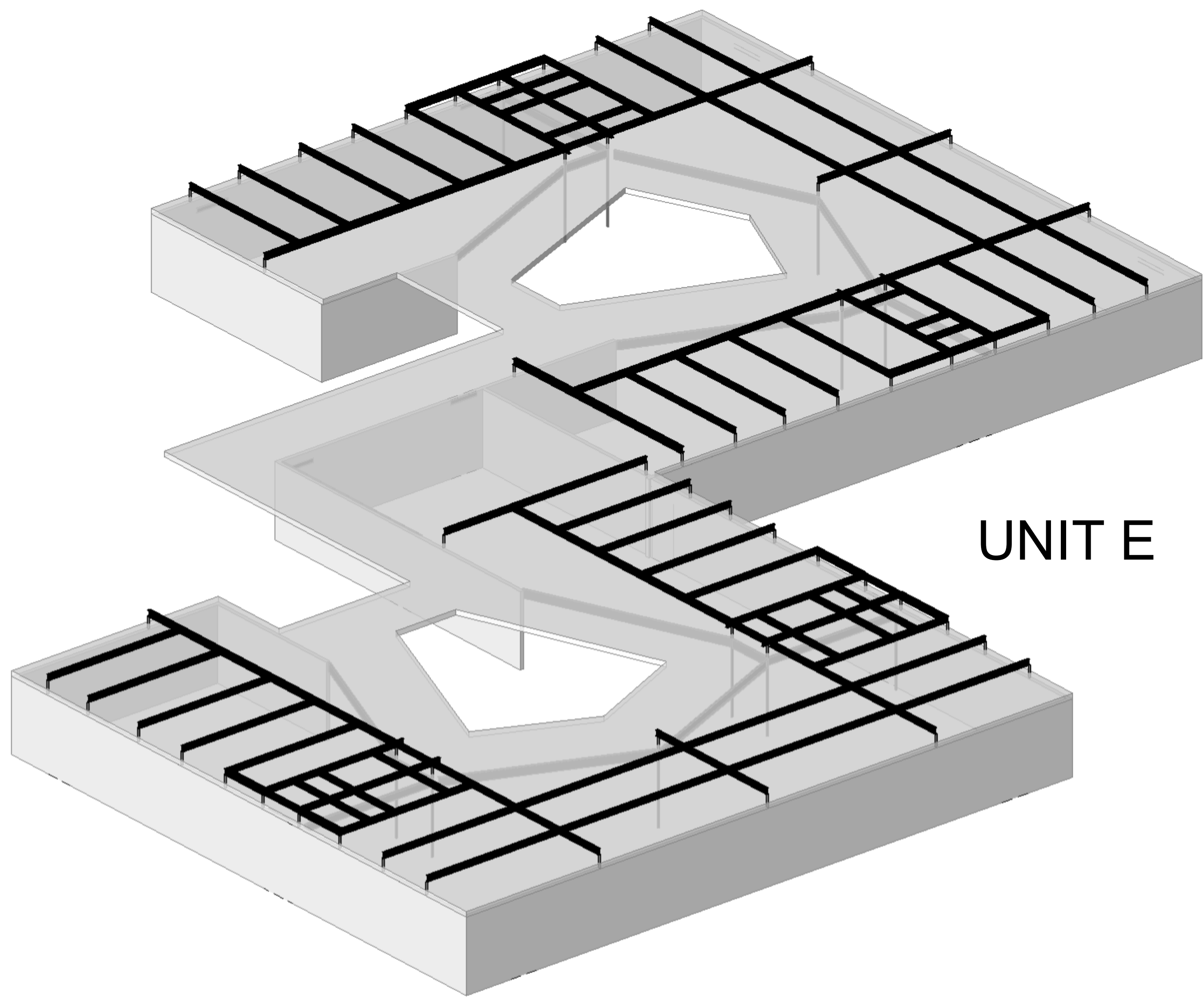


UNIT C

2

2A ISOMETRIC VIEW UNIT C  
SCALE:

3

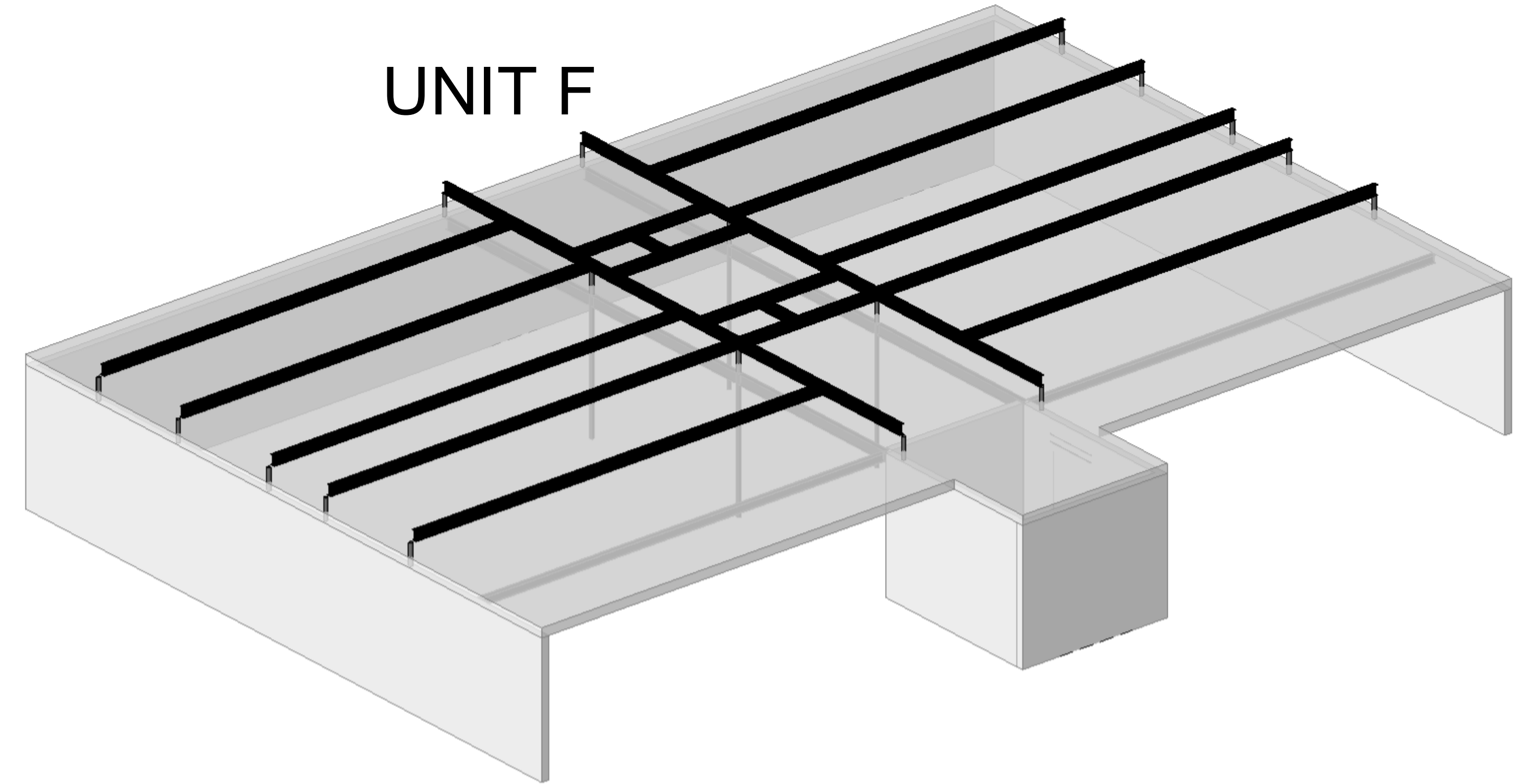


UNIT E

4

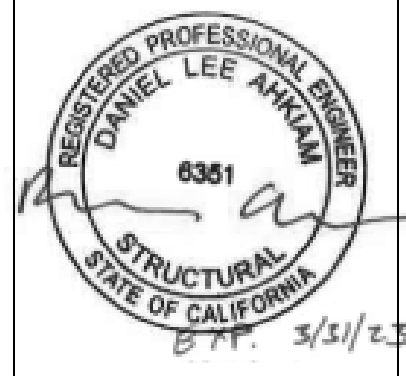
5A ISOMETRIC VIEW UNIT E  
SCALE:

UNIT F



5D ISOMETRIC VIEW UNIT F  
SCALE:

- NOTES:**
- 3D VIEW SHOWN (INCLUDING, BUT NOT LIMITED TO ISOMETRICS, PERSPECTIVES, ETC.) ARE PROVIDED FOR REFERENCE PURPOSES ONLY.
  - IN THE EVENT OF ANY DISCREPANCY BETWEEN INFORMATION REPRESENTED BY BOTH A 3D VIEW AND BY A NON-3D VIEW WITHIN THE CONSTRUCTION DOCUMENTS, THE NON-3D VIEW SHALL GOVERN IN ALL CASES.



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100%  
CONSTRUCTION  
DOCUMENTS  
11/02/2022  
REVISIONS

75-22605-00  
DSA A#03-122231  
DSA File#: 19-25  
ISOMETRIC  
VIEWS

S1.0

Autodesk Docu/75-22605-00 CVUSD - District Wide HVAC Replacement/75-22605-00 CVUSD\_Manzanita ES\_ST\_2022.rvt  
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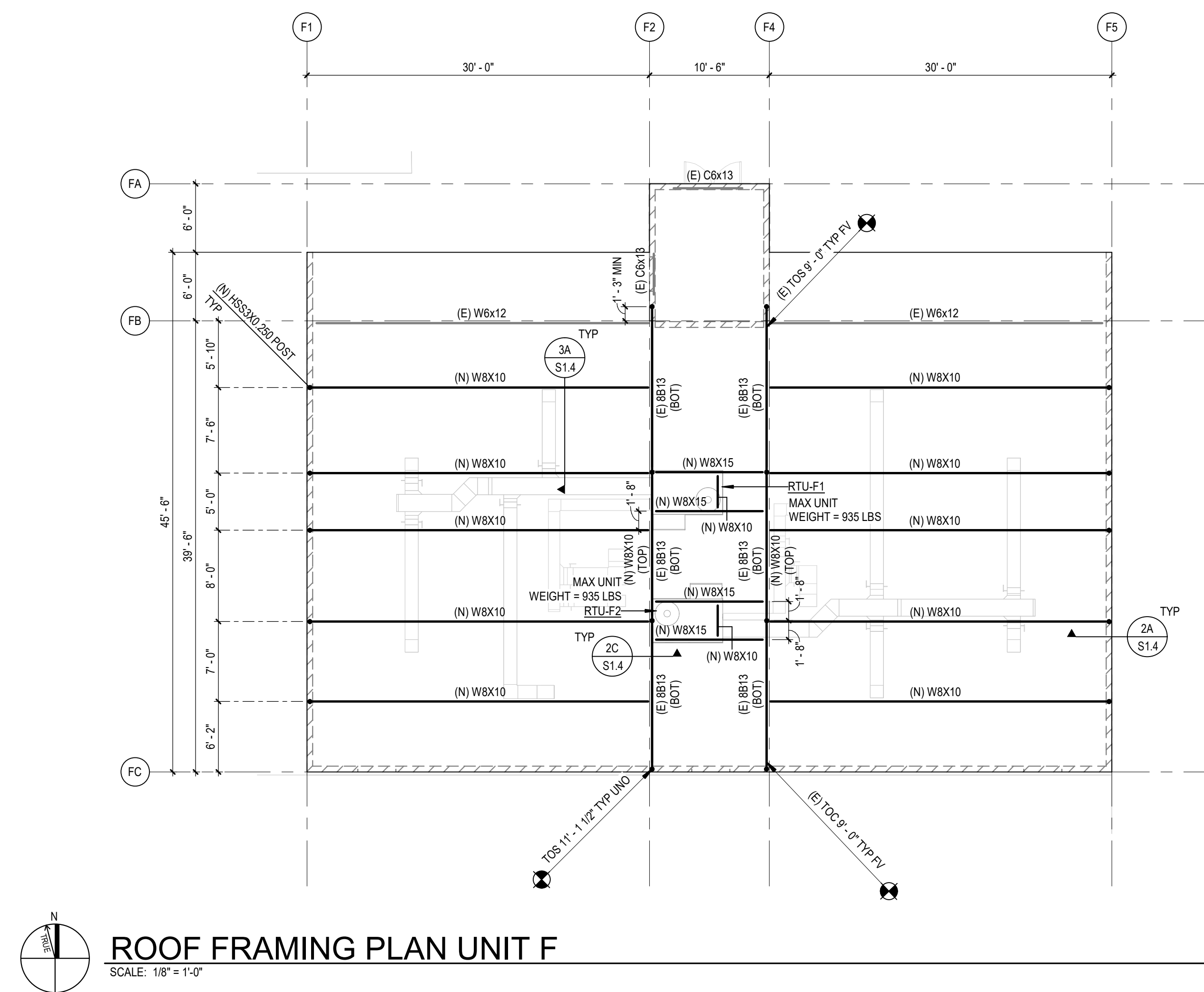
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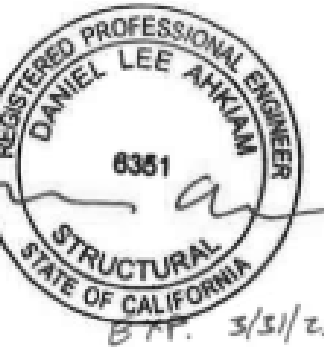
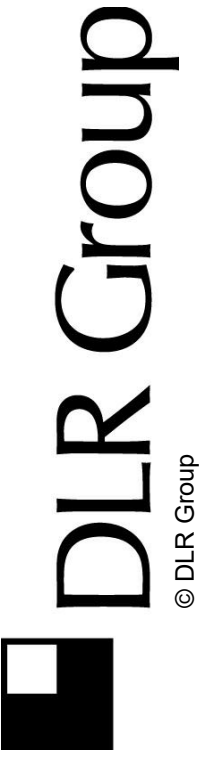


ROOF FRAMING PLAN NOTES:

1. ELEVATIONS ARE BASED ON A FLOOR DATUM OF 0'-0" UNO.
2. RTU SIZES AND LOCATIONS SHOWN ON PLAN ARE ONLY SCHEMATIC. CONTRACTOR SHALL VERIFY AND COORDINATE FINAL LOCATIONS/PLAN DIMENSIONS, WEIGHTS AND ROOF OPENING SIZES/LOCATIONS FOR ALL MECHANICAL UNITS/EQUIPMENT.
3. FOR ELEVATIONS, WALL SECTIONS AND DIMENSIONS NOT SHOWN SEE ARCHITECTURAL DRAWINGS.
4. (E) STEEL FRAMING LOCATION, SIZES AND ELEVATIONS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY ALL (E) BEAMS TO SUPPORTING NEW POST ABOVE.
5. ALL I/JN STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANIZED PER GENERAL NOTES.
6. (E) ROOF SYSTEM CONSISTS OF 7' 1/2" DECKING 18"x1" LONG FILLET WELDS @ 36" OC. PLEASE REFER TO EXISTING DRAWINGS FOR DETAILS.
7. FV (N) FRAMING ATTACHMENT IS TO (E) CONCRETE WALL. CONTRACTOR SEAL IF (N) FRAMING ATTACHMENT CANNOT BE MET.

### LEGEND

 EXISTING CONCRETE WALL



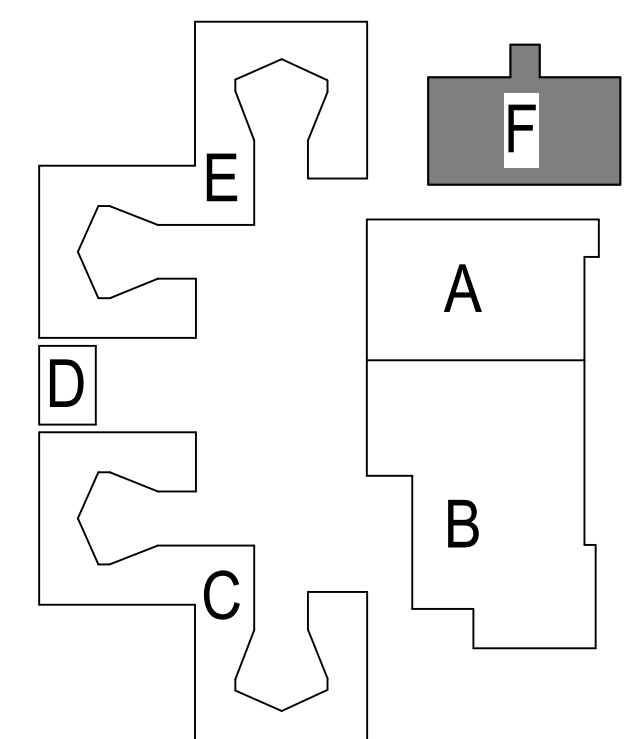
MANZANITA ELEMENTARY SCHOOL  
COVID 19 - COVINA VALLEY DISTRICT HVAC REPLACEMENT

COVID 19 - COVINA VALLY DISTRICT HVAC REPLACEMENT

4131 N NORA AVE COVINA, CA 91722

100%  
CONSTRUCTION  
DOCUMENTS  
11/02/2022  
REVISIONS

## KEY PLAN

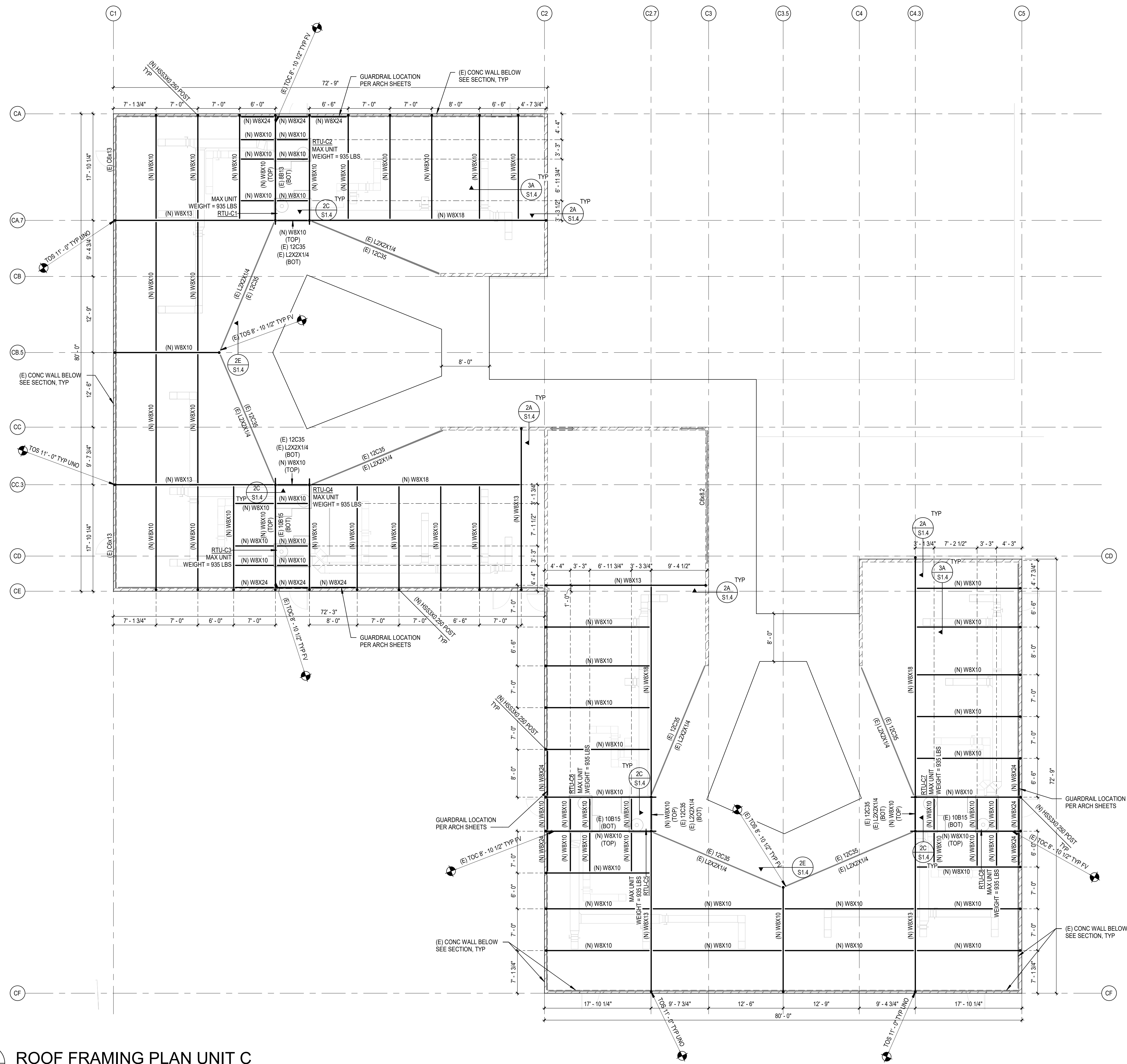


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DSA A#03-122231  
DSA File#: 19-25

ROOF FRAMING  
PLAN UNIT F

## S1.1

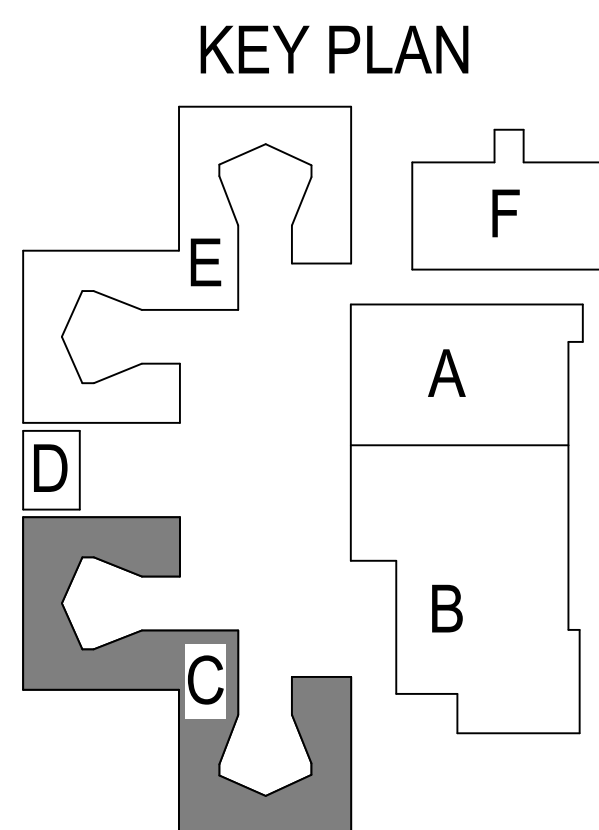




ROOF FRAMING PLAN NOTES:

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5. ALL (N) STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANIZED PER GENERAL NOTES.
6. (E) ROOF SYSTEM CONSISTS OF 7' 1/2" DECKING 18"x1" LONG STEEL WELDS @ 9" OC. PLEASE REFER TO EXISTING DRAWINGS FOR DETAILS.
7. FY (N) FRAMING ATTACHMENT IS TO (E) CONCRETE WALL. CONTACT SEER AT (N) FRAMING ATTACHMENT CANNOT BE MET.

## LEGEND

 EXISTING CONCRETE WALL

MANZANITA ELEMENTARY SCHOOL  
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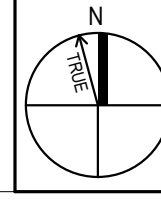
ROOF FRAMING  
PLAN UNIT C

## S1.2



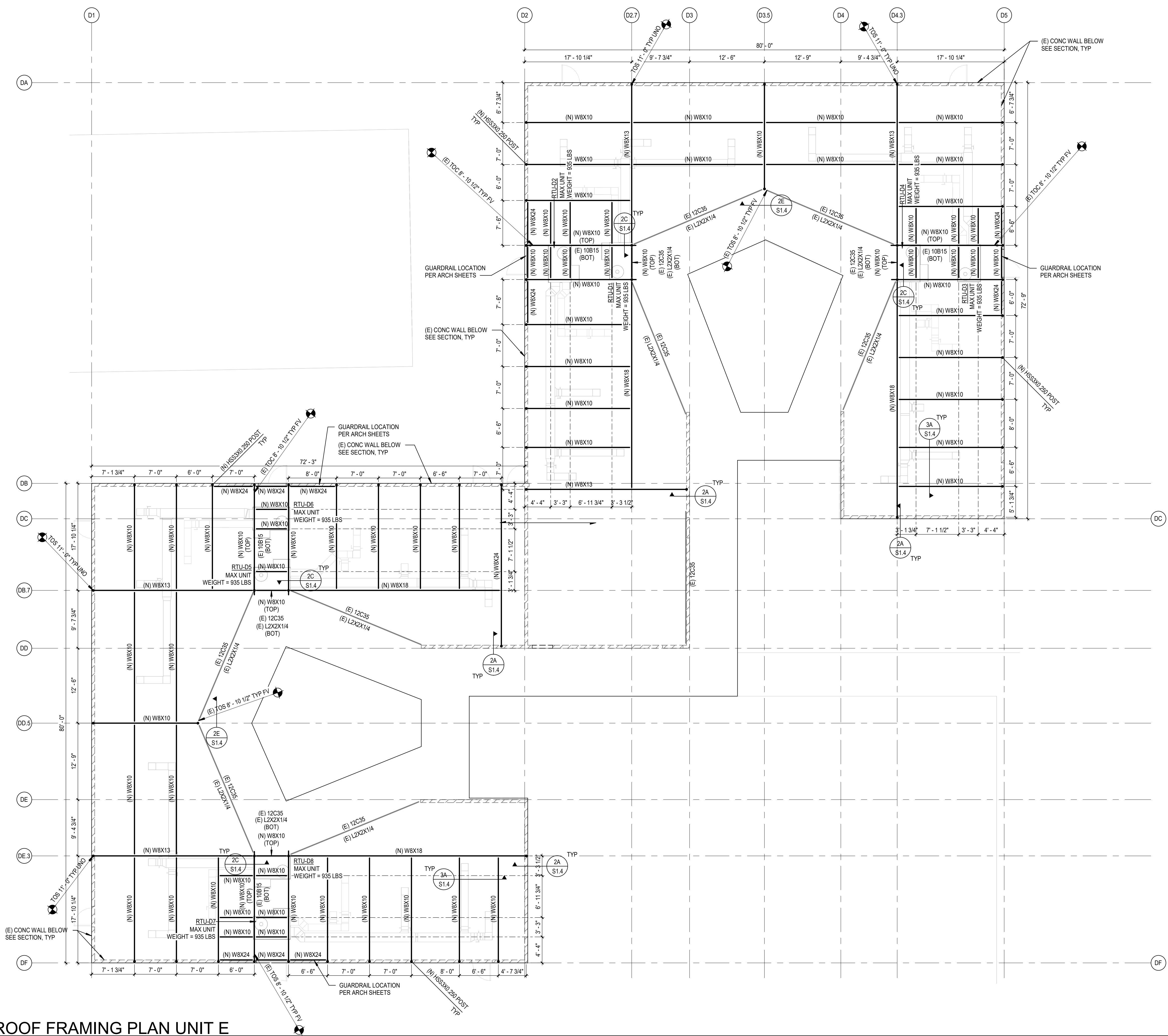


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# ROOF FRAMING PLAN UNIT E

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

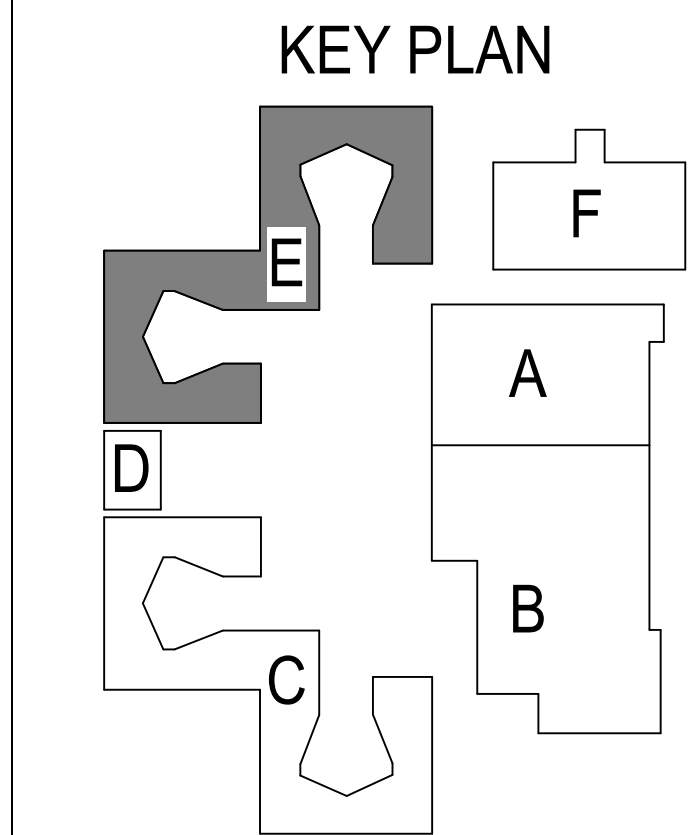


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- ALL (N) STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANIZED PER GENERAL NOTES.
- ROOF SYSTEM CONSISTS OF 7' 11/2" DECKING 1/8"x1" LONG FILLET WELDS @ 3/8" OC. PLEASE REFER TO EXISTING DRAWINGS FOR DETAILS.
- FV (N) FRAMING ATTACHMENT IS TO (E) CONCRETE WALL. CONTACT SEOR IF (N) FRAMING ATTACHMENT CANNOT BE MET.

## LEGEND

EXISTING CONCRETE WALL



## MANZANITA ELEMENTARY SCHOOL

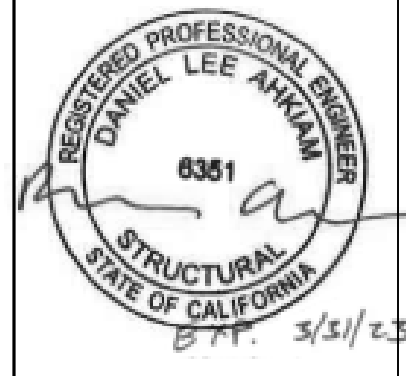
COVID 19 - COVINA VALLEY DISTRICT HVAC REPLACEMENT

4131 N NORRA AVE COVINA, CA 91722

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CONSTRUCTION  
DOCUMENTS  
11/02/2022  
REVISIONS

75-22605-00  
DSA A#03-122231  
DSA File#: 19-25  
ROOF FRAMING  
PLAN UNIT E

S1.3





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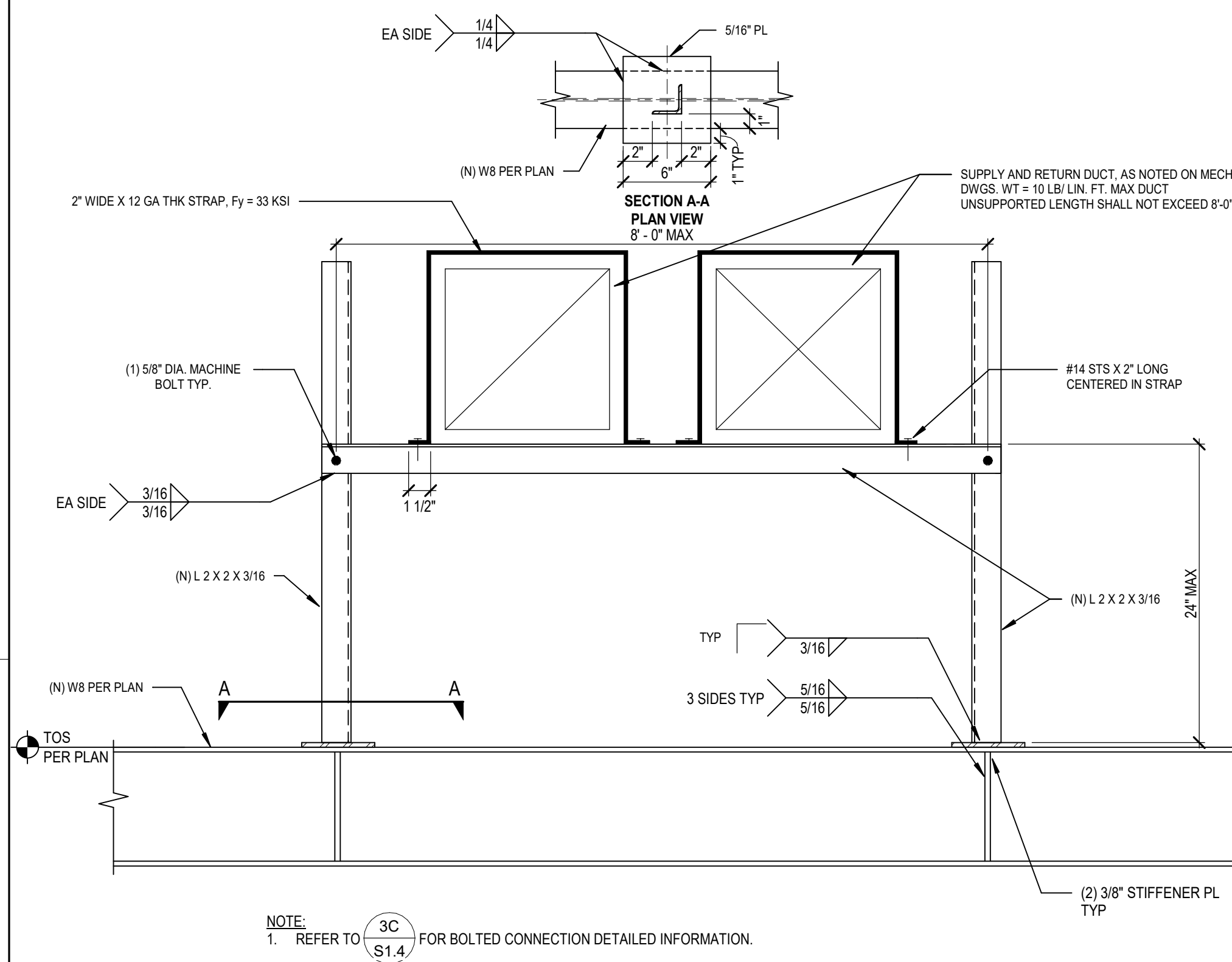
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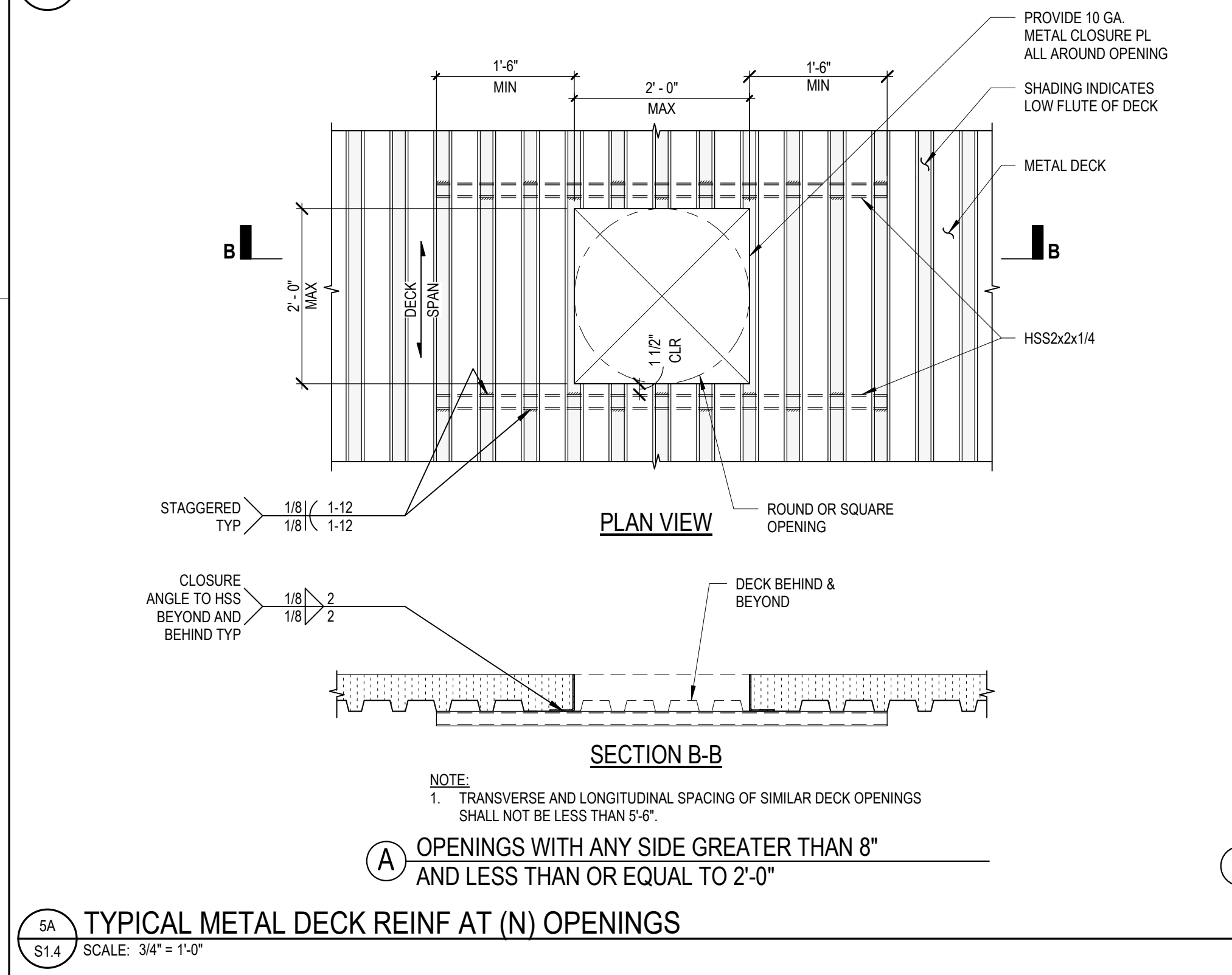
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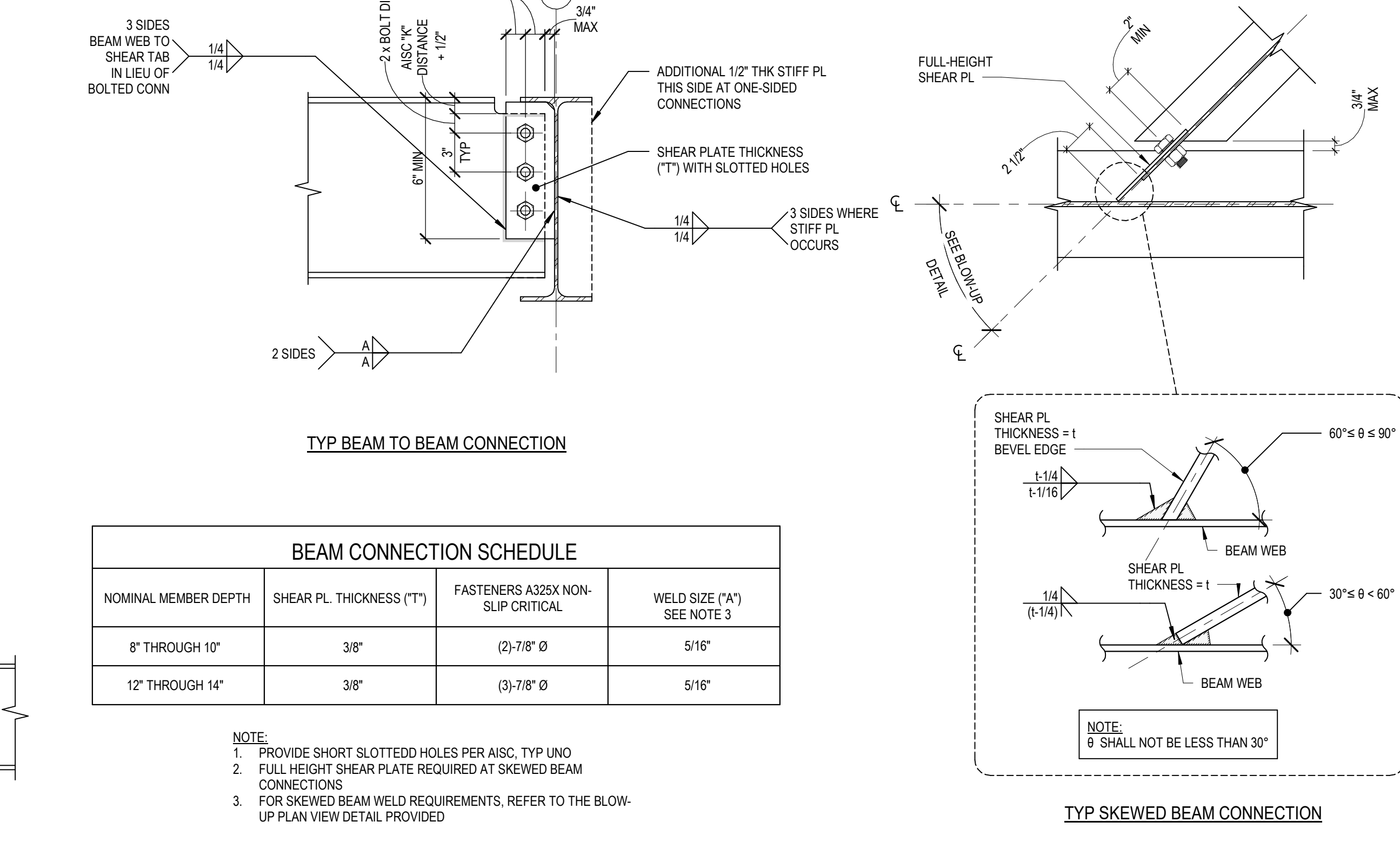
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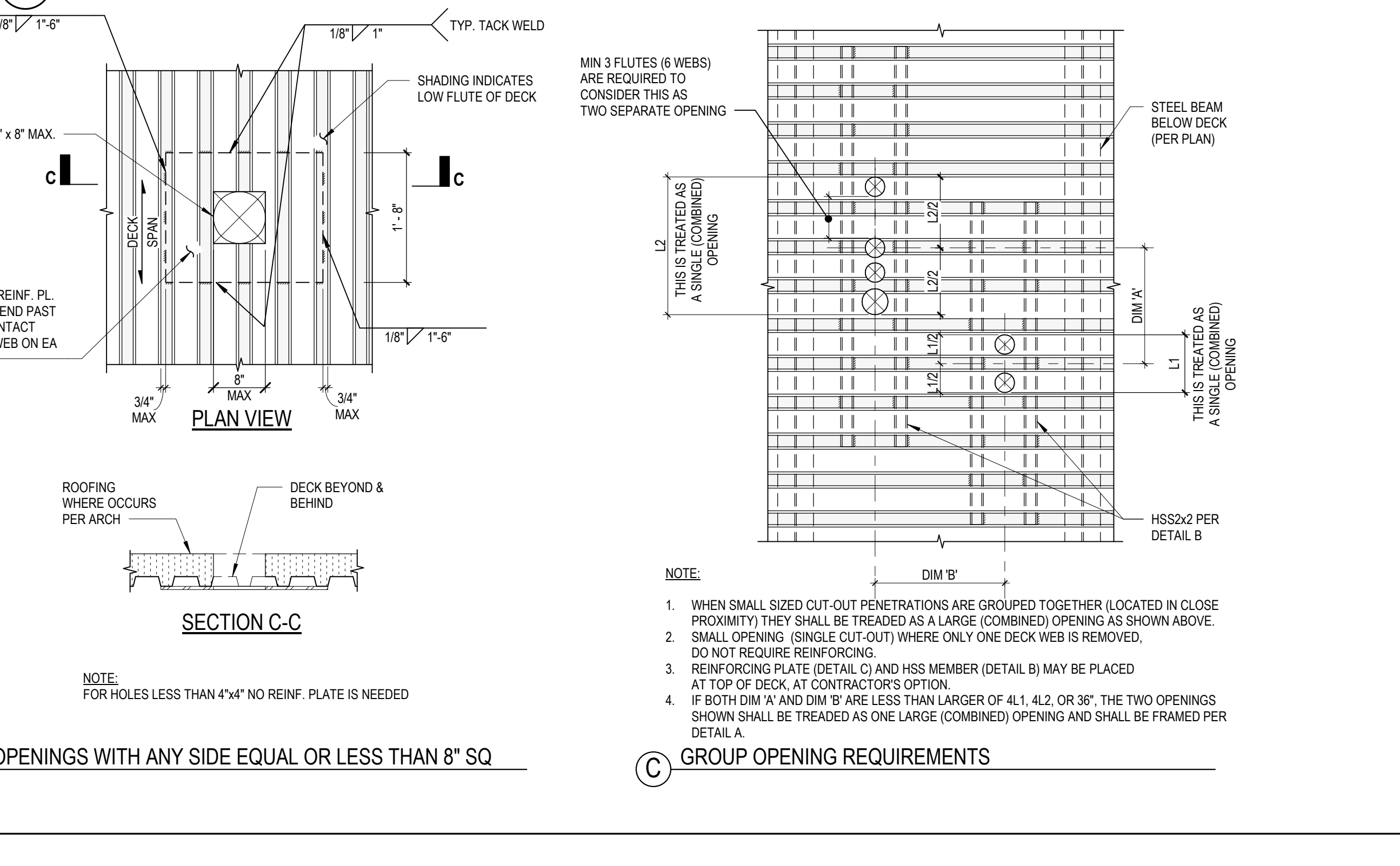
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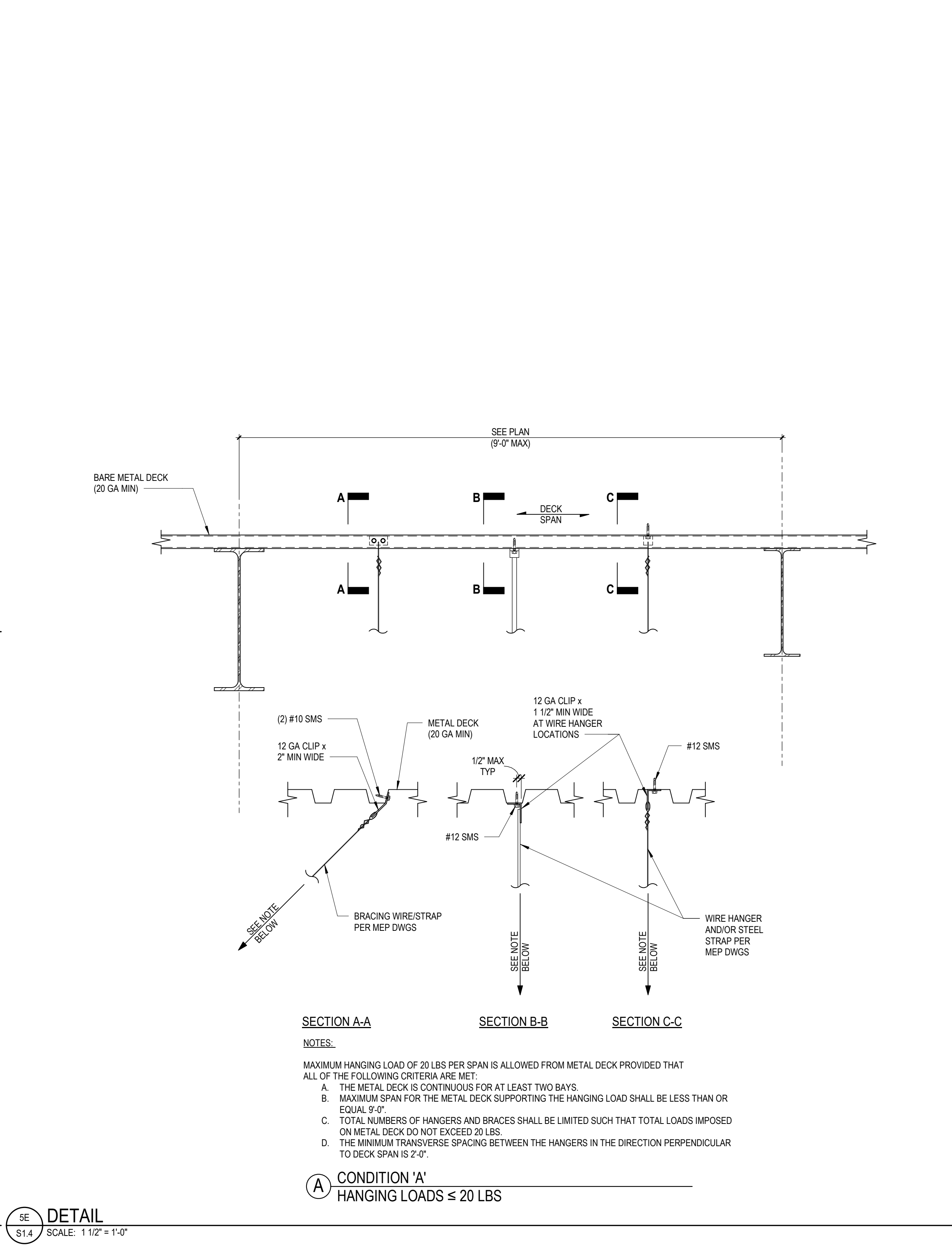
## SECTION

SCALE: 1 1/2" = 1'-0"



## SECTION

SCALE: 3" = 1'-0"



# MANZANITA ELEMENTARY SCHOOL

COVID 19 - COVINA VALLEY DISTRICT HVAC REPLACEMENT

4131 N INDIANA AVE COVINA, CA 91722

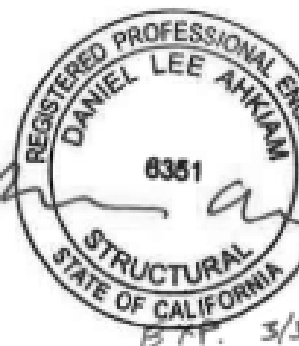
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CONSTRUCTION  
DOCUMENTS  
11/02/2022  
REVISIONS

75-22605-00  
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DSA File#: 19-25

ROOF FRAMING  
DETAILS

S1.4

DLR Group  
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## ABBREVIATIONS

(D)	DEMOLISHED	HTWS	HIGH TEMPERATURE HOT WATER SUPPLY
(E)	EXISTING	HUM	HUMIDIFIER
(R)	RELOCATED	HV	HEATING VENTILATING UNIT
°C	DEGREES CELSIUS	HVAC	HEATING VENTILATING AND AIR CONDITIONING
°F	DEGREES FAHRENHEIT	HWR	HEATING WATER RETURN
Ø	DIAMETER	HWS	HEATING WATER SUPPLY
		HX	HEAT EXCHANGER
		HZ	HERTZ (FREQUENCY)
A	AMPERE		
A/C	AIR CONDITIONING(ER)		
AABC	ASSOCIATED AIR BALANCE COUNCIL	IAQ	INDOOR AIR QUALITY
AAV	AUTOMATIC AIR VENT	IAW	IN ACCORDANCE WITH
ACC	ACCESSIBLE	IN	INSIDE DIAMETER
ACCU	AIR COOLED CONDENSING UNIT	INTAKE	INTAKE DOOR
AD	ACCESS DOOR	INSUL	INSULATION
ADJ	ADJUSTABLE		
AF	AIR FILTER	KH	KITCHEN HOOD
AHRI	AIR-CONDITIONING HEATING AND REFRIGERATION INSTITUTE	LAT	LEAVING AIR TEMPERATURE
AHU	AIR HANDLING UNIT	LF	LINEAR FOOT
AMB	AMBIENT	LG	LENGTH (LONG)
AMBA	AMERICAN BOILER MANUFACTURERS ASSOCIATION	LIN	LINEAR
AMP	AMPERE	LOX	LIQUID OXYGEN
AP	ACCESS PANEL	LPG	LIQUID PETROLEUM GAS
AS	AIR SEPARATOR	LPR	LOW PRESSURE STEAM RETURN
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	LPS	LOW PRESSURE STEAM SUPPLY
ASHRAE	AMERICAN SOCIETY OF HEATING REFRIGERATION AND AIR CONDITIONING ENGINEERS	LTD	LINED TRANSFER DUCT
		LV	LOUVER
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	LVG	LEAVING
AUTO	AUTOMATIC		
AV	ACID VENT	MA	MIXED AIR
		MAINT	MAINTENANCE
B	BOILER	MAN	MANUAL
BAS	BUILDING AUTOMATION SYSTEM	MATL	MATERIAL
BAT	BATTERY	MAU	MAKEUP AIR UNIT
BBO	BOILER BLOW OFF	MAV	MANUAL AIR VENT
BAL	BALANCING COCK	MBH	THOUSAND BTU PER HOUR
BC	BARE COPPER	MFG	MANUFACTURING
BDD	BACK DRAFT DAMPER	ML	MOTORIZED LOUVER
BF	BOILER FEED	MPG	MEDIUM PRESSURE GAS
BF1	BELOW FINISH FLOOR	MTD	MOUNTED
BFV	BUTTERFLY VALVE	MTG	MOUNTING
BHP	BREAK HORSEPOWER	MTWR	MEDIUM TEMP HOT WATER RETURN
BLKG	BLOCKING	NTWS	MEDIUM TEMP HOT WATER SUPPLY
BLKHD	BULKHEAD		
BMS	BUILDING MANAGEMENT SYSTEM	N.C.	NORMALLY CLOSED
BOD	BOTTOM OF DUCT	N.O.	NORMALLY OPEN
BOT	BOTTOM	NEC	NATIONAL ELECTRIC CODE
BP1P	BOILER PLANT INSTRUMENTATION PANEL	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSN.
BTU	BRITISH THERMAL UNIT	NO	NUMBER
BTUH	BRITISH THERMAL UNIT PER HOUR	NOM	NOMINAL
C	CONDUIT	OMM	OPERATION AND MAINTENANCE
CA	COMBUSTION AIR	OA	OUTSIDE AIR
CAP	CAPACITY	OD	OUTSIDE DIAMETER
CD	CONSTRUCTION DOCUMENTS		
CENT	CENTRIFUGAL	P	PUMP
CF	CUBIC FEET	PIT	PRESSURE/TEMPERATURE TEST PORT
CFH	CUBIC FEET PER HOUR	PB	PUSH BUTTON
CFM	CUBIC FEET PER MINUTE	PCF	POUNDS PER CUBIC FOOT
CH	CHILLER	PD	PRESSURE DROP
CIRC	CIRCULATING	PERF	PERFORATED
CLR	CLEAR	PERP	PERPENDICULAR
CO	CARBON MONOXIDE	PG	PRESSURE GAUGE
CO2	CARBON DIOXIDE	PI	POINT OF INTERSECTION
COMB	COMBINATION	PI1	PRESSURE INDICATOR
CONV	CONVECTOR	PL	PLATE
CP	CONDENSATE PUMP	PLBG	PLUMBING
CPS	CYCLES PER SECOND	PNEU	PNEUMATIC
CR	CONDENSER WATER RETURN	PNL	PANEL
CR	CORROSION RESISTANT	POC	POINT OF CONNECTION
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT	PAIR	POUNDS PER SQUARE INCH
CS	COUNTERSINK	PSI	POUNDS PER SQUARE INCH
CS	CONDENSER WATER SUPPLY	PVC	POLYVINYL CHLORIDE
CT	COOLING TOWER	PWR	POWER
CTL	CONTROL		
CU	CONDENSING UNIT	RA	RETURN AIR
CUH	CABINET UNIT HEATER	RAD	RADIUS
CWR	CHILLED WATER RETURN	RADIATOR	
CWS	CHILLED WATER SUPPLY	RAD	RADIATED
CYL	CYLINDER	RCP	REFLECTED CEILING PLAN
		RCU	REDIPROCATING CHILLER UNIT
D	DIFFUSER	RD	REFRIGERANT DISCHARGE
DB	DEW BULB	REFR	REFRIGERANT
DBL	DOUBLE	REG	REGISTER
DC	DUST COLLECTOR	REM	REMOVABLE
DEPT	DEPARTMENT	RESP	RESPONSIVE
DH	DUCT HEATER	RF	RETURN FAN
DI	DISTILLED WATER	RH	RELATIVE HUMIDITY
DIAG	DIAGONAL	RH	REFLECT HOOD
DIC	DISCHARGE	RHL	REHEAT COIL
DISCH	DISCHARGE	RHG	REFRIGERANT HOT GAS
DISTR	DISTRIBUTION	RL	REFRIGERANT LIQUID
DSTB	DISTRIBUTED	RL	REFRIGERANT LIQUID
		RM	REVOLUTIONS PER MINUTE
EA	EACH	RS	REFRIGERANT SUCTION
EA	EXHAUST AIR	RTU	ROOF TOP UNIT
EAT	ENTERING AIR TEMPERATURE	S	SMOKE DAMPER
EDH	ELECTRIC DUCT HEATER	SA	SUPPLY AIR
EER	ENERGY EFFICIENCY RATIO	SC	SECURITY
EF	EXHAUST FAN	SD	SMOKE DAMPER
EFF	EFFICIENCY	SD	SMOKE DETECTOR
EFF	EFFICIENCY	SD	SOAP DISPENSER
EH	ELECTRICAL HEATER	SE	STEAM EXHAUST VENT
ELEV	ELEVATOR	SGL	SINGLE
EMER	EMERGENCY	SPD	STATIC PRESSURE (H2O)
ENCL	ENCLOSURE	SQ	SQUARE
ENTL	ENTERING	SS	STAINLESS STEEL
ESP	EXTERNAL STATIC PRESSURE	STOR	STORAGE
EST	ESTIMATE	SUSP	SUSPENDED
ET	EXPANSION TANK	SV	SOLENOID VALVE
EWI	ENTERING WATER TEMPERATURE	SWP	STEAM WORKING PRESSURE
EXH	EXHAUST		
EXP	EXPOSED	T	THERMOSTAT
		TAB	TOP AND BOTTOM
F	FAHRENHEIT	TA	TRANSFER AIR
F	FURNACE	TB	TERMINAL BOX
F.V.	FIELD VERIFY	TC	TEMPERATURE CONTROL
FA	FACE	TD	TRANSFER DUCT
FAB	FABRICATE(D)	TEMP	TEMPERATURE
FCU	FAN COIL UNIT	THK	THICK(NESS)
FD	FIRE DAMPER	TOO	TOP OF DUCT
FF	FINISH FLOOR	TS	TEMPERATURE SENSOR
FLEX	FLEXIBLE	TSP	TOTAL STATIC PRESSURE
FME	FLOW MEASURING EQUIPMENT	TT	TEMPERATURE TRANSMITTER
FFM	FEET PER MINUTE		
FS	FLOW SWITCH	UC	UNIT COOLER
FSD	FIRE SMOKE DAMPER	UG	UNDERGROUND
FT	FIN TUBE	UH	UNIT HEATER
		UL	UNDERWRITERS LABORATORIES
		UV	UNIT VENTILATOR
G	GRILLE	V	VOLT
GA	GAUGE	VA	VOLT-AMPERE
GAL	GALLON	VA	VALVE
GALV	GALVANIZED	VAC	VACUUM
GR1 GFCI	GROUND FAULT CIRCUIT INTERRUPTER	VAV	VARIABLE AIR VOLUME
GHR	GLYCOL-WATER HEATING RETURN	VDO	VOLUME DAMPER
GHS	GLYCOL-WATER HEATING SUPPLY	VOL	VOLUME DAMPER
GPD	GALLONS PER DAY	VEL	VELOCITY
GPH	GALLONS PER HOUR	VENT	VENTILATION(ION)
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
GV	GATE VALVE	VOL	VOLUME
		VP	VACUUM PUMP
HCR	HOT/CHILLED WATER RETURN	VSMP	VARIABLE SPEED MOTOR CONTROLLER
HCS	HOT/CHILLED WATER SUPPLY		
HGR	HANGER	W	WIDE
HID	HIGH INTENSITY DISCHARGE	W	WATT
HP	HORSE POWER	WB	WET BULB
HP	HEAT PUMP	WC	WATER COLUMN
HP	HIGH PRESSURE	WCC	WATER COOLED CONDENSER
HPR	HIGH PRESSURE STEAM RETURN	WMFD	WATER FLOW MEASURING DEVICE
HPS	HIGH PRESSURE STEAM SUPPLY	WH	WATER HEATER
HR	HOUR	WLR	WATER LOOP RETURN
HTG	HEATING	WLS	WATER LOOP SUPPLY
HTR	HEATER	WP	WEATHERPROOF
HTWR	HIGH TEMPERATURE HOT WATER RETURN	WT	WEIGHT

## SHEET INDEX

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MP1.1	MECHANICAL PLUMBING SITE PLAN

N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSN.
NO	NUMBER
NOM	NOMINAL

OMM	OPERATION AND MAINTENANCE
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER

P	PUMP
PIT	PRESSURE/TEMPERATURE TEST PORT
PB	PUSH BUTTON
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
PERF	PERFORATED
PERP	PERPENDICULAR
PG	PRESSURE GAUGE
PI	POINT OF INTERSECTION
PI1	PRESSURE INDICATOR
PL	PLATE
PLBG	PLUMBING
PNEU	PNEUMATIC
PNL	PANEL
POC	POINT OF CONNECTION
PAIR	POUNDS PER SQUARE INCH
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PWR	POWER

RA	RETURN AIR
RAD	RADIUS
RADIATOR	
RAD	RADIATED
RCP	REFLECTED CEILING PLAN
RCU	REDIPROCATING CHILLER UNIT
RD	REFRIGERANT DISCHARGE
REFR	REFRIGERANT
REG	REGISTER
REM	REMOVABLE
RESP	RESPONSIVE
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RH	REFLECT HOOD
RHL	REHEAT COIL
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RL	REFRIGERANT LIQUID
RM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RTU	ROOF TOP UNIT

S	SMOKE DAMPER
SA	SUPPLY AIR
SC	SECURITY
SD	SMOKE DAMPER
SD	SMOKE DETECTOR
SD	SOAP DISPENSER
SE	STEAM EXHAUST VENT
SGL	SINGLE
SPD	STATIC PRESSURE (H2O)
SQ	SQUARE
SS	STAINLESS STEEL
STOR	STORAGE
SUSP	SUSPENDED
SV	SOLENOID VALVE
SWP	STEAM WORKING PRESSURE

T	THERMOSTAT
TAB	TOP AND BOTTOM
TA	TRANSFER AIR
TB	TERMINAL BOX
TC	TEMPERATURE CONTROL
TD	TRANSFER DUCT
TEMP	TEMPERATURE
THK	THICK(NESS)
TOO	TOP OF DUCT
TS	TEMPERATURE SENSOR
TSP	TOTAL STATIC PRESSURE
TT	TEMPERATURE TRANSMITTER

UC	UNIT COOLER
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UV	UNIT VENTILATOR

V	VOLT
VA	VOLT-AMPERE
VA	VALVE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VDO	VOLUME DAMPER
VOL	VOLUME
VEL	VELOCITY
VENT	VENTILATION(ION)
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VP	VACUUM PUMP
VSMP	VARIABLE SPEED MOTOR CONTROLLER

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEASURING DEVICE
WH	WATER HEATER
WLR	WATER LOOP RETURN
WLS	WATER LOOP SUPPLY
WP	WEATHERPROOF
WT	WEIGHT

W	WIDE
W	WATT
WB	WET BULB
WC	WATER COLUMN
WCC	WATER COOLED CONDENSER
WMFD	WATER FLOW MEAS



1

2

3

4

5

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STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

NRCC-MCH-4

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)(2), for alterations.

Project Name: CVUSD Manzanita

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Project Address: 4131 N Nora Ave

Date Prepared: 8/11/2022

A. GENERAL INFORMATION

01 Project Location (city)

Covina

04 Total Conditioned Floor Area

21120

02 Climate Zone

10

05 Total Unconditioned Floor Area

0

03 Occupancy Types Within Project:

☐ Office (B)

☐ Retail (M)

☐ Non-refrigerated Warehouse (S)

☐ Hotel/ Motel Guest Rooms (R-1)

☐ School (E)

☐ Healthcare Facility (I)

☐ High-Rise Residential (R-2/R-3)

☐ Relocatable Class Bldg (E)

☒ Other (write in)

See Table J

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)(2), for alterations.

01 Air System(s)

02 Wet System Components

03 Dry System Components

☒ Heating Air System

☐ Water Economizer

☒ Air Economizer

☒ Cooling Air System

☐ Pumps

☐ Electric Resistance Heat

☐ Mechanical Controls

☐ System Piping

☒ Fan Systems

☒ Mechanical Controls (existing to remain, altered or new)

☐ Cooling Towers

☒ Ductwork (existing to remain, altered or new)

☐ Chillers

☒ Ventilation

☐ Zonal Systems/ Terminal Boxes

☐ Boilers

☐ Zonal Systems/ Terminal Boxes

☐ Zonal Systems/ Terminal Boxes

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Mechanical Systems

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C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, or the table indicated as not compliant for guidance.

01 System Summary

02 Pumps

03 Fans/Economizers

04 System Controls

05 Ventilation

06 Terminal Box Controls

07 Distribution

08 Cooling Towers

09 Compliance Results

(See Table F)

(See Table G)

(See Table H)

(See Table I)

(See Table J)

(See Table K)

(See Table L)

(See Table M)

COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

This table is used to demonstrate compliance for mechanical equipment with mandatory requirements found in §110.1 and §110.2(a) and prescriptive requirements found in §140.4(a), §140.4(b), and §140.4(c) or §141.0(b)(2), for alterations.

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters)

01 Name or Item Tag

02 Equipment Category per Tables 110.2

03 Equipment Type per Tables 110.2 / Title 20

04 Smallest Size Available<sup>1</sup> §140.4(a)

05 Heating Output<sup>2,3</sup>

06 Supp. Heating Output (kBtu/h)

07 Sensible Per Design (kBtu/h)

08 Rated (kBtu/h)

09 Total Heating Load (kBtu/h)

10 Total Sensible Cooling Load (kBtu/h)

11 Load Calculations<sup>2,4</sup>

FCU/CU-B1

Unitary Heat Pumps

Air-cooled, split (3 phase)

NA: Load Controls

59.07

100

0

115.19

110

134.63

120.07

RTU-C1

Unitary Heat Pumps

Air-cooled, pkg (3 phase)

NA: Load Controls

14.18

24

0

24.32

24.5

31.86

29.12

RTU-C2

Unitary Heat Pumps

Air-cooled, pkg (3 phase)

NA: Load Controls

13.29

22.5

0

24.33

24.5

31.86

29.3

RTU-C3

Unitary Heat Pumps

Air-cooled, pkg (3 phase)

NA: Load Controls

12.7

21.5

0

23.73

24

30.74

28.84

RTU-C4

Unitary Heat Pumps

Air-cooled, pkg (3 phase)

NA: Load Controls

13.29

22.5

0

23.73

24

31.86

28.48

RTU-C5

Unitary Heat Pumps

Air-cooled, pkg (3 phase)

NA: Load Controls

12.4

21

0

23.14

23.5

29.92

28.39

RTU-C6

Unitary Heat Pumps

Air-cooled, pkg (3 phase)

NA: Load Controls

13.29

22.5

0

23.62

24

31.86

28.53

RTU-C7

Unitary Heat Pumps

Air-cooled, pkg (3 phase)

NA: Load Controls

12.7

21.5

0

23.13

23.5

30.74

28.04

RTU-C8

Unitary Heat Pumps

Air-cooled, pkg (3 phase)

NA: Load Controls

13.29

22.5

0

24.32

24.5

31.86

29.06

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Mechanical Systems

CALIFORNIA ENERGY COMMISSION

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This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)(2), for alterations.

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G. PUMPS

This section does not apply to this project.

H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e) and §140.4(m) for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name:

FCU/CU-B1

Economizer<sup>1</sup>

NA: Special OA Filtration

Economizer Controls:

Designed per §140.4(e) and (m)

System Fan Type:

Constant Volume

01 Fan Name or Item Tag

02 Fan Function

03 Qty

04 Maximum Design Supply Airflow (CFM)

05 HP Unit<sup>2</sup>

06 Design HP

07 Fan Power Pressure Drop Adjustment - Table 140.4-B

08 Device

Design Airflow through Device (CFM)

SF

Supply

1

4472

0.91

Total System Design Supply Airflow (CFM):

4472

Total System Design (BHP):

0.91

Maximum System Fan Power (BHP):

System Name:

RTU-C1

Economizer<sup>1</sup>

NA: <=54 kBtu/h cooling

Economizer Controls:

Designed per §140.4(e) and (m)

System Fan Type:

Constant Volume

01 Fan Name or Item Tag

02 Fan Function

03 Qty

04 Maximum Design Supply Airflow (CFM)

05 HP Unit<sup>2</sup>

06 Design HP

07 Fan Power Pressure Drop Adjustment - Table 140.4-B

08 Device

Design Airflow through Device (CFM)

SF

Supply

1

2000

0.91

Total System Design Supply Airflow (CFM):

2000

Total System Design (BHP):

0.91

Maximum System Fan Power (BHP):

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:

RTU-C5

Economizer<sup>1</sup>

NA: <=54 kBtu/h cooling

Economizer Controls:

Designed per §140.4(e) and (m)

System Fan Type:

Constant Volume

01 Fan Name or Item Tag

02 Fan Function

03 Qty

04 Maximum Design Supply Airflow (CFM)

05 HP Unit<sup>2</sup>

06 Design HP

07 Fan Power Pressure Drop Adjustment - Table 140.4-B

08 Device

Design Airflow through Device (CFM)

SF

Supply

1

2000

0.91

Total System Design Supply Airflow (CFM):

2000

Total System Design (BHP):

0.91

Maximum System Fan Power (BHP):

System Name:

RTU-C6

Economizer<sup>1</sup>

NA: <=54 kBtu/h cooling

Economizer Controls:

Designed per §140.4(e) and (m)

System Fan Type:

Constant Volume

01 Fan Name or Item Tag

02 Fan Function

03 Qty

04 Maximum Design Supply Airflow (CFM)

05 HP Unit<sup>2</sup>

06 Design HP

07 Fan Power Pressure Drop Adjustment - Table 140.4-B

08 Device

Design Airflow through Device (CFM)

SF

Supply

1

2000

0.91

Total System Design Supply Airflow (CFM):

2000

Total System Design (BHP):

0.91

Maximum System Fan Power (BHP):

System Name:

RTU-C7

Economizer<sup>1</sup>

NA: <=54 kBtu/h cooling

Economizer Controls:

Designed per §140.4(e) and (m)

System Fan Type:

Constant Volume

01 Fan Name or Item Tag

02 Fan Function

03 Qty

04 Maximum Design Supply Airflow (CFM)

05 HP Unit<sup>2</sup>

06 Design HP

07 Fan Power Pressure Drop Adjustment - Table 140.4-B

08 Device

Design Airflow through Device (CFM)

SF

Supply

1

2000

0.91

Total System Design Supply Airflow (CFM):

2000

Total System Design (BHP):

0.91

Maximum System Fan Power (BHP):

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Mechanical Systems

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Project Name: CVUSD Manzanita

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H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:

RTU-C8

Economizer<sup>1</sup>

NA: <=54 kBtu/h cooling

Economizer Controls:

Designed per §140.4(e) and (m)

System Fan Type:

Constant Volume

01 Fan Name or Item Tag

02 Fan Function

03 Qty

04 Maximum Design Supply Airflow (CFM)

05 HP Unit<sup>2</sup>

06 Design HP

07 Fan Power Pressure Drop Adjustment - Table 140.4-B

08 Device

Design Airflow through Device (CFM)

SF

Supply

1

2000

0.91

Total System Design Supply Airflow (CFM):

2000

Total System Design (BHP):

0.91

Maximum System Fan Power (BHP):

System Name:

RTU-D1

Economizer<sup>1</sup>

NA: <=54 kBtu/h cooling

Economizer Controls:

Designed per §140.4(e) and (m)

System Fan Type:

Constant Volume

01 Fan Name or Item Tag

02 Fan Function

03 Qty

04 Maximum Design Supply Airflow (CFM)

05 HP Unit<sup>2</sup>

06 Design HP

07 Fan Power Pressure Drop Adjustment - Table 140.4-B

08 Device

Design Airflow through Device (CFM)

SF

Supply

1

2000

0.91

Total System Design Supply Airflow (CFM):

2000

Total System Design (BHP):

0.91

Maximum System Fan Power (BHP):

System Name:

RTU-D2

Economizer<sup>1</sup>

NA: <=54 kBtu/h cooling

Economizer Controls:

Designed per §140.4(e) and (m)

System Fan Type:

Constant Volume

01 Fan Name or Item Tag

02 Fan Function

03 Qty

04 Maximum Design Supply Airflow (CFM)

05 HP Unit<sup>2</sup>

06 Design HP

07 Fan Power Pressure Drop Adjustment - Table 140.4-B

08 Device

Design Airflow through Device (CFM)

SF

Supply

1

2000

0.91

Total System Design Supply Airflow (CFM):

2000

Total System Design (BHP):

0.91

Maximum System Fan Power (BHP):

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

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Manzanita Elementary School

COVINA VALLEY USD

4131 North Nora Avenue Covina CA 91722

DSA Submitted Set  
11/02/2022  
REVISIONS

75-22605-00

TITLE 24  
COMPLIANCE

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STATE OF CALIFORNIA				CALIFORNIA ENERGY COMMISSION			
Mechanical Systems				Mechanical Systems			
NRC-MCH-E				NRC-MCH-E			
CERTIFICATE OF COMPLIANCE				CERTIFICATE OF COMPLIANCE			
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H. FAN SYSTEMS & AIR ECONOMIZERS							
System Name:	RTU-D3	Economizer <sup>1</sup>	NA: <=54 kBTU/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit <sup>2</sup>	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
SF	Supply	1	2000	BHP	0.91	Device	Design Airflow through Device (CFM)
Total System Design Supply Airflow (CFM):			2000	Total System Design (BHP):	0.91	Maximum System Fan Power (BHP):	
System Name:	RTU-D4	Economizer <sup>1</sup>	NA: <=54 kBTU/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit <sup>2</sup>	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
SF	Supply	1	2000	BHP	0.91	Device	Design Airflow through Device (CFM)
Total System Design Supply Airflow (CFM):			2000	Total System Design (BHP):	0.91	Maximum System Fan Power (BHP):	
System Name:	RTU-D5	Economizer <sup>1</sup>	NA: <=54 kBTU/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit <sup>2</sup>	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
SF	Supply	1	2000	BHP	0.91	Device	Design Airflow through Device (CFM)
Total System Design Supply Airflow (CFM):			2000	Total System Design (BHP):	0.91	Maximum System Fan Power (BHP):	

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I. SYSTEM CONTROLS								
This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.								
01	02	03	04	05	06	07	08	09
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)¹, §120.2(a)or §141.0(b)2E	Shut-Off Controls §120.2(e)	Isolation Zone Controls §120.2(g)	Demand Response §110.12 and §120.2(b)	Supply Air Temp. Reset §140.4(f)	Window Interlocks per §140.4(n)
FCU/CU-B1	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-C1	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-C2	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-C3	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-C4	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-C5	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-C6	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-C7	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-C8	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-D1	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-D2	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-D3	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided

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Mechanical Systems				Mechanical Systems			
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J. VENTILATION AND INDOOR AIR QUALITY										
04				05		06		07		
System Name	RTU-C2		System Design OA CFM Airflow <sup>2</sup>		225	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>	
						Provided per §120.1(c) (NR and Hotel/Motel)				
08	09		10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 <sup>1</sup>					Exh. Vent per §120.1(c)4				DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>6</sup>
	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM			
Classroom	Lecture/ postsecondary classroom		945		15	225	0	0	DCV	
									Provided per §120.1(d)4	
									Occ Sensor	
									NA: Not required space type	
17	Total System Required Min OA CFM					225	18	Ventilation for this System Complies?		Yes
04				05		06		07		
System Name	RTU-C3		System Design OA CFM Airflow <sup>2</sup>		225	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>	
						Provided per §120.1(c) (NR and Hotel/Motel)				
08	09		10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 <sup>1</sup>					Exh. Vent per §120.1(c)4				DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>6</sup>
	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM			
Classroom	Lecture/ postsecondary classroom		945		15	225	0	0	DCV	
									Provided per §120.1(d)4	
									Occ Sensor	
									NA: Not required space type	
17	Total System Required Min OA CFM					225	18	Ventilation for this System Complies?		Yes

Registration Number:	Registration Date/Time:	Registration Provider: Energysoft
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Mechanical Systems				Mechanical Systems			
NRC-MCH-E				NRC-MCH-E			
CERTIFICATE OF COMPLIANCE				CERTIFICATE OF COMPLIANCE			
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H. FAN SYSTEMS & AIR ECONOMIZERS							
System Name:	RTU-D6	Economizer <sup>1</sup>	NA: <=54 kBTU/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit <sup>2</sup>	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
SF	Supply	1	2000	BHP	0.91	Device	Design Airflow through Device (CFM)
Total System Design Supply Airflow (CFM):			2000	Total System Design (BHP):	0.91	Maximum System Fan Power (BHP):	
System Name:	RTU-D7	Economizer <sup>1</sup>	NA: <=54 kBTU/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit <sup>2</sup>	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
SF	Supply	1	2000	BHP	0.91	Device	Design Airflow through Device (CFM)
Total System Design Supply Airflow (CFM):			2000	Total System Design (BHP):	0.91	Maximum System Fan Power (BHP):	
System Name:	RTU-D8	Economizer <sup>1</sup>	NA: <=54 kBTU/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit <sup>2</sup>	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
SF	Supply	1	2000	BHP	0.91	Device	Design Airflow through Device (CFM)
Total System Design Supply Airflow (CFM):			2000	Total System Design (BHP):	0.91	Maximum System Fan Power (BHP):	

Registration Number:	Registration Date/Time:	Registration Provider: Energysoft
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Mechanical Systems				Mechanical Systems			
NRC-MCH-E				NRC-MCH-E			
CERTIFICATE OF COMPLIANCE				CERTIFICATE OF COMPLIANCE			
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RTU-D4	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-D5	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-D6	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-D7	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-D8	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-F1	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided
RTU-F2	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided

<sup>1</sup>FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.  
<sup>2</sup>Notes: Controls with a \* require a note in the space below explaining how compliance is achieved. EX: system 1; SA Temp Reset: Exempt because zones compliant with §140.4(d) ; EXCEPTION 1 to §140.4(f)

J. VENTILATION AND INDOOR AIR QUALITY	
This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 and §120.2(e)3B for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflow may be shown on the plans or the calculations can be presented in a spreadsheet.	
01	<input type="checkbox"/> Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	<input checked="" type="checkbox"/> Check this box if the project included Nonresidential or Hotel/Motel spaces
03	<input type="checkbox"/> Check this box if the project included new or altered high-rise residential dwelling units.
03	<input type="checkbox"/> Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.
Nonresidential and Hotel/ Motel Ventilation Systems	

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Mechanical Systems							
NRC-MCH-E							
CERTIFICATE OF COMPLIANCE				NRC-MCH-E			
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MECHANICAL SYSTEMS

CALIFORNIA ENERGY COMMISSION

NRCC-MCH-4

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J. VENTILATION AND INDOOR AIR QUALITY																	
04				05				06				07					
System Name		RTU-C8		System Design OA CFM Airflow <sup>2</sup>		225		System Design Transfer Air CFM		0		Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>					
												Provided per §120.1(c) (NR and Hotel/Motel)					
08		09		10		11		12		13		14		15		16	

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MECHANICAL SYSTEMS

CALIFORNIA ENERGY COMMISSION

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J. VENTILATION AND INDOOR AIR QUALITY														
04		05				06			07					
System Name	RTU-D6	System Design OA CFM Airflow <sup>2</sup>		225	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>						
								Provided per §120.1(c) (NR and Hotel/Motel)						
08	09	10	11	12	13	14	15	16						
		Mechanical Ventilation Required per §120.1(c)3 <sup>3</sup>				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>4</sup>					
Space Name or Item Tag	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM							
Classroom	Lecture/ postsecondary classroom	945		15	225	0	0	DCV	Provided per §120.1(d)4					
								Occ Sensor	NA: Not required space type					
17	Total System Required Min OA CFM				225	18	Ventilation for this System Complies?			Yes				
04		05				06			07					
System Name	RTU-D7	System Design OA CFM Airflow <sup>2</sup>		225	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>						
								Provided per §120.1(c) (NR and Hotel/Motel)						
08	09	10	11	12	13	14	15	16						
		Mechanical Ventilation Required per §120.1(c)3 <sup>3</sup>				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>4</sup>					
Space Name or Item Tag	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM							
Classroom	Lecture/ postsecondary classroom	945		15	225	0	0	DCV	Provided per §120.1(d)4					
								Occ Sensor	NA: Not required space type					
17	Total System Required Min OA CFM				225	18	Ventilation for this System Complies?			Yes				

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Registration Date/Time:

Registration Provider: Energysoft

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MECHANICAL SYSTEMS

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L. DISTRIBUTION (DUCTWORK AND PIPING)			
This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and prescriptive requirements found in §140.4(1) for duct leakage testing.			
Duct Leakage Sealing			
11	No	The scope of the project includes only duct systems serving healthcare facilities	
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.	
13	Yes	The space conditioning system serves less than 5,000 ft <sup>2</sup> of conditioned floor area.	
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:	
	<input type="checkbox"/>	Outdoors	
	<input type="checkbox"/>	In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)18 or if the roof has fixed vents or openings to the outside/ unconditioned spaces	
	<input type="checkbox"/>	In an unconditioned crawl space	
	<input type="checkbox"/>	In other unconditioned spaces	
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.	
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.	
17	Yes	Duct system shall be sealed in accordance with the California Mechanical Code	
The answers to the questions below apply to the following duct systems:		RTU-C1	Duct leakage testing triggered for these systems?
11	No	The scope of the project includes only duct systems serving healthcare facilities	
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.	
13	Yes	The space conditioning system serves less than 5,000 ft <sup>2</sup> of conditioned floor area.	
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:	
	<input type="checkbox"/>	Outdoors	
	<input type="checkbox"/>	In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)18 or if the roof has fixed vents or openings to the outside/ unconditioned spaces	
	<input type="checkbox"/>	In an unconditioned crawl space	

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J. VENTILATION AND INDOOR AIR QUALITY													
04		05			06			07					
System Name	RTU-D2	System Design OA CFM Airflow <sup>2</sup>	225	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>			Provided per §120.1(c) (NR and Hotel/Motel)				
08	09	10	11	12	13	14	15	16					
		Mechanical Ventilation Required per §120.1(c)3 <sup>3</sup>				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>4</sup>				
Space Name of Item Tag	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM						
Classroom	Lecture/ postsecondary classroom	945		15	225	0	0	DCV	Provided per §120.1(d)4				
								Occ Sensor	NA: Not required space type				
17	Total System Required Min OA CFM				225	18	Ventilation for this System Complies?			Yes			
04		05			06			07					
System Name	RTU-D3	System Design OA CFM Airflow <sup>2</sup>	225	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup>			Provided per §120.1(c) (NR and Hotel/Motel)				
08	09	10	11	12	13	14	15	16					
		Mechanical Ventilation Required per §120.1(c)3 <sup>3</sup>				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>4</sup>				
Space Name of Item Tag	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM						
Classroom	Lecture/ postsecondary classroom	945		15	225	0	0	DCV	Provided per §120.1(d)4				
								Occ Sensor	NA: Not required space type				
17	Total System Required Min OA CFM				225	18	Ventilation for this System Complies?			Yes			

Registration Number:

Registration Date/Time:

Registration Provider: Energysoft

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MECHANICAL SYSTEMS

CALIFORNIA ENERGY COMMISSION

NRCC-MCH-4

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VENTILATION AND INDOOR AIR QUALITY													
04		05				06			07				
System Name	RTU-D8	System Design OA CFM Airflow <sup>1</sup>		225	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup> Provided per §120.1(c) (NR and Hotel/Motel)					
08	09	10	11	12	13	14	15	16					
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 <sup>3</sup>				Exh. Vent per §120.1(c)4				DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>4</sup>				
	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM						
Classroom	Lecture/ postsecondary classroom	945		15	225	0	0	DCV		Provided per §120.1(d)4			
								Occ Sensor		NA: Not required space type			
17	Total System Required Min OA CFM				225	18	Ventilation for this System Complies?			Yes			
04		05				06			07				
System Name	RTU-F1	System Design OA CFM Airflow <sup>1</sup>		225	System Design Transfer Air CFM		0	Air Filtration per §120.1(c) and §141.0(b)2 <sup>2</sup> Provided per §120.1(c) (NR and Hotel/Motel)					
08	09	10	11	12	13	14	15	16					
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 <sup>3</sup>				Exh. Vent per §120.1(c)4				DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 <sup>4</sup>				
	Occupancy Type <sup>4</sup>	Conditioned Floor Area (ft <sup>2</sup> )	# of Shower heads/ toilets	# of people <sup>5</sup>	Required Min OA CFM	Required Min CFM	Provided per Design CFM						
Classroom	Lecture/ postsecondary classroom	1230		15	225	0	0	DCV		Provided per §120.1(d)4			
								Occ Sensor		NA: Not required space type			
17	Total System Required Min OA CFM				225	18	Ventilation for this System Complies?			Yes			







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Mechanical Systems

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D. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE			
Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at <a href="https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/">https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/</a>			
Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-MCH-05-A - Air Economizer Controls	RTU-C1 CARRIER 5-TON; RTU-C2 CARRIER 5-TON; RTU-C3 CARRIER 5-TON; RTU-C4 CARRIER 5-TON; RTU-C5 CARRIER 5-TON; RTU-C6 CARRIER 5-TON; RTU-C7 CARRIER 5-TON; RTU-C8 CARRIER 5-TON; RTU-D1 CARRIER 5-TON; RTU-D2 CARRIER 5-TON; RTU-D3 CARRIER 5-TON; RTU-D4 CARRIER 5-TON; RTU-D5 CARRIER 5-TON; RTU-D6 CARRIER 5-TON; RTU-D7 CARRIER 5-TON; RTU-D8 CARRIER 5-TON; RTU-F1 CARRIER 5-TON; RTU-F2 CARRIER 5-TON;	<input type="checkbox"/>	<input type="checkbox"/>

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Registration Provider: Energysoft

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D. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE			
Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at <a href="https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/">https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/</a>			
Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-MCH-16-A Supply Air Temperature Reset Controls	FCU/CU-B1A & B1B; RTU-C1 CARRIER 5-TON; RTU-C2 CARRIER 5-TON; RTU-C3 CARRIER 5-TON; RTU-C4 CARRIER 5-TON; RTU-C5 CARRIER 5-TON; RTU-C6 CARRIER 5-TON; RTU-C7 CARRIER 5-TON; RTU-C8 CARRIER 5-TON; RTU-D1 CARRIER 5-TON; RTU-D2 CARRIER 5-TON; RTU-D3 CARRIER 5-TON; RTU-D4 CARRIER 5-TON; RTU-D5 CARRIER 5-TON; RTU-D6 CARRIER 5-TON; RTU-D7 CARRIER 5-TON; RTU-D8 CARRIER 5-TON; RTU-F1 CARRIER 5-TON; RTU-F2 CARRIER 5-TON;	<input type="checkbox"/>	<input type="checkbox"/>

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Registration Number:

Registration Date/Time:

Registration Provider: Energysoft

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Abhijit Rege	Documentation Author Signature: 
Company: DLR Group	Signature Date: 2022-08-11
Address: 9F30-5A88-EGC4-7653-2F72-AB2E-9671-A2D4-7420-7AD7-DA3E-A59B-8F3B-18A3-B88E-17FE	CSA/HERC Certification Identification (if applicable): 9F30-5A88-EGC4-7653-2F72-AB2E-9671-A2D4-7420-7AD7-DA3E-A59B-8F3B-18A3-B88E-17FE
City/State/Zip:	Phone: (849)-701-8533
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: 1. The information provided on this Certificate of Compliance is true and correct. 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.	
Responsible Designer Name: TONG FANG ZHAO	Responsible Designer Signature: 
Company: DLR GROUP	Date Signed: 2022-08-11
Address: 700 FLOWER STREET	License: M-34291
City/State/Zip: LOS ANGELES CA 90017	Phone:

Registration Number:

Registration Date/Time:

Registration Provider: Energysoft

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D. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE			
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Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-MCH-06-A Demand Control Ventilation Systems must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)(3) ) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO2) concentration setpoints.	FCU/CU-B1A & B1B; RTU-C1 CARRIER 5-TON; RTU-C2 CARRIER 5-TON; RTU-C3 CARRIER 5-TON; RTU-C4 CARRIER 5-TON; RTU-C5 CARRIER 5-TON; RTU-C6 CARRIER 5-TON; RTU-C7 CARRIER 5-TON; RTU-C8 CARRIER 5-TON; RTU-D1 CARRIER 5-TON; RTU-D2 CARRIER 5-TON; RTU-D3 CARRIER 5-TON; RTU-D4 CARRIER 5-TON; RTU-D5 CARRIER 5-TON; RTU-D6 CARRIER 5-TON; RTU-D7 CARRIER 5-TON; RTU-D8 CARRIER 5-TON; RTU-F1 CARRIER 5-TON; RTU-F2 CARRIER 5-TON;	<input type="checkbox"/>	<input type="checkbox"/>

Registration Number:

Registration Date/Time:

Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Report Version: 2019.1.003  
Schema Version: rev 20200601

Report Generated: 2022-08-11 13:12:11

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

NRCC-MCH-E

CERTIFICATE OF COMPLIANCE

CVUSD Manzanita

Report Page: (Page 41 of 43)

Project Name:

Project Address: 4131 N Nora Ave

Date Prepared: 8/11/2022

D. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE			
Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at <a href="https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/">https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/</a>			
Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-MCH-18-A Energy Management Control Systems	FCU/CU-B1A & B1B; RTU-C1 CARRIER 5-TON; RTU-C2 CARRIER 5-TON; RTU-C3 CARRIER 5-TON; RTU-C4 CARRIER 5-TON; RTU-C5 CARRIER 5-TON; RTU-C6 CARRIER 5-TON; RTU-C7 CARRIER 5-TON; RTU-C8 CARRIER 5-TON; RTU-D1 CARRIER 5-TON; RTU-D2 CARRIER 5-TON; RTU-D3 CARRIER 5-TON; RTU-D4 CARRIER 5-TON; RTU-D5 CARRIER 5-TON; RTU-D6 CARRIER 5-TON; RTU-D7 CARRIER 5-TON; RTU-D8 CARRIER 5-TON; RTU-F1 CARRIER 5-TON; RTU-F2 CARRIER 5-TON;	<input type="checkbox"/>	<input type="checkbox"/>

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

Registration Number:

Registration Date/Time:

Registration Provider: Energysoft

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Mechanical Systems

CALIFORNIA ENERGY COMMISSION

NRCC-MCH-E

CERTIFICATE OF COMPLIANCE

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Report Page: (Page 39 of 43)

Project Name:

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D. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE			
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Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-MCH-11-A Automatic Demand Shed Controls	FCU/CU-B1A & B1B; RTU-C1 CARRIER 5-TON; RTU-C2 CARRIER 5-TON; RTU-C3 CARRIER 5-TON; RTU-C4 CARRIER 5-TON; RTU-C5 CARRIER 5-TON; RTU-C6 CARRIER 5-TON; RTU-C7 CARRIER 5-TON; RTU-C8 CARRIER 5-TON; RTU-D1 CARRIER 5-TON; RTU-D2 CARRIER 5-TON; RTU-D3 CARRIER 5-TON; RTU-D4 CARRIER 5-TON; RTU-D5 CARRIER 5-TON; RTU-D6 CARRIER 5-TON; RTU-D7 CARRIER 5-TON; RTU-D8 CARRIER 5-TON; RTU-F1 CARRIER 5-TON; RTU-F2 CARRIER 5-TON;	<input type="checkbox"/>	<input type="checkbox"/>

Registration Number:

Registration Date/Time:

Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Report Version: 2019.1.003  
Schema Version: rev 20200601

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Mechanical Systems

CALIFORNIA ENERGY COMMISSION

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CERTIFICATE OF COMPLIANCE

CVUSD Manzanita

Report Page: (Page 42 of 43)

Project Name:

Project Address: 4131 N Nora Ave

Date Prepared: 8/11/2022

Q. MANDATORY MEASURES DOCUMENTATION LOCATION		
This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.		
01		02
Compliance with Mandatory Measures documented through MCH	Yes	M-Sheets
Mandatory Measures Note Block		

Registration Number:

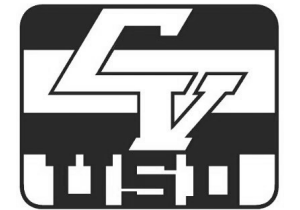
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Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Report Version: 2019.1.003  
Schema Version: rev 20200601

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Manzanita Elementary School  
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75-22605-00

TITLE 24  
COMPLIANCE

M0.6





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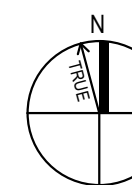
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C

D

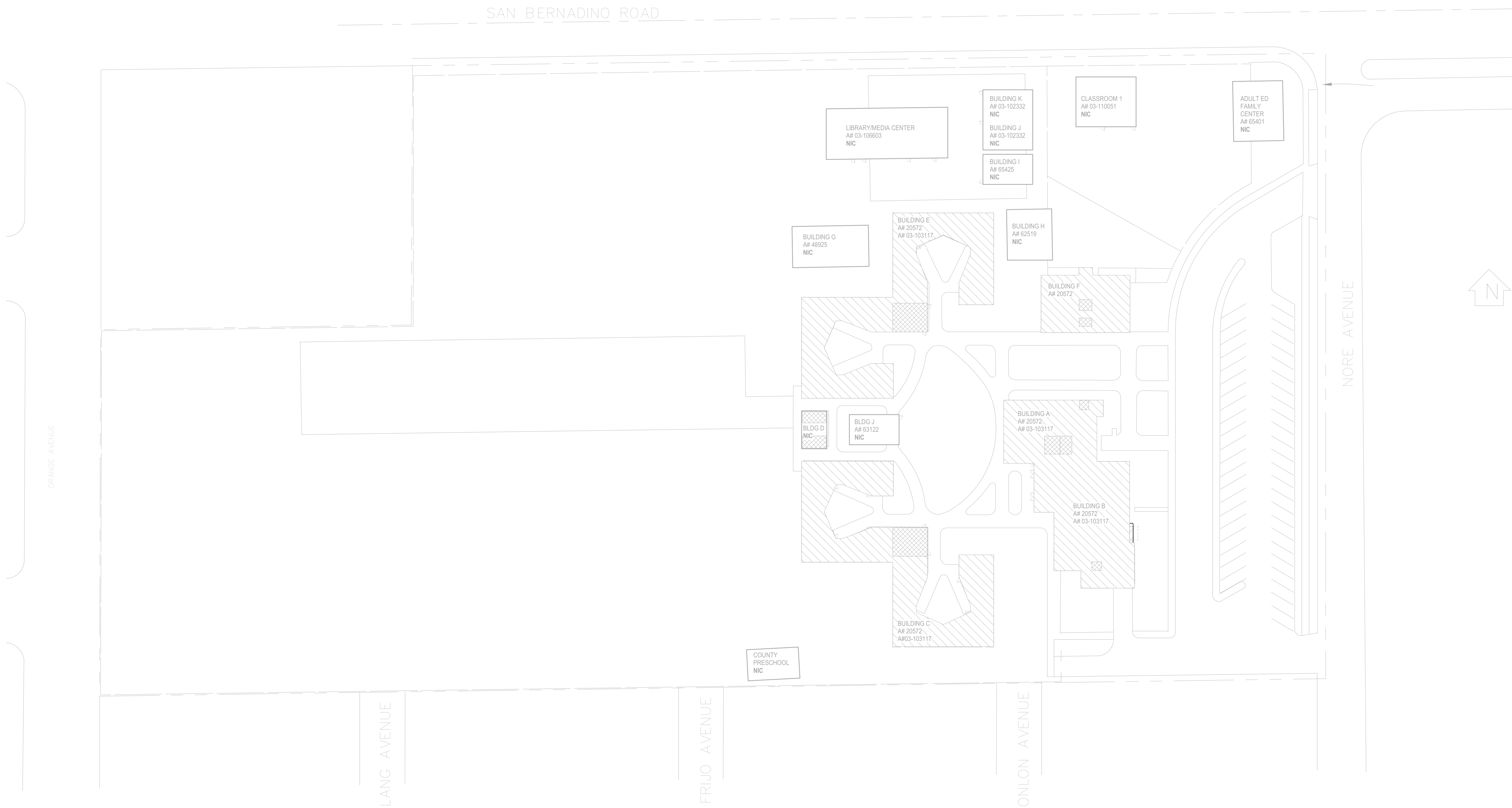
E

F



# OVERALL MECHANICAL SITE PLAN

SCALE: 1" = 40'-0"



## SITE LEGEND

- EXISTING BUILDING NOT IN SCOPE
- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- (E) RESTROOMS - NOT IN SCOPE



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OVERALL  
MECHANICAL  
SITE PLAN

M1.1



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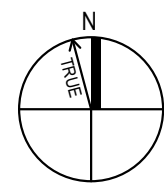
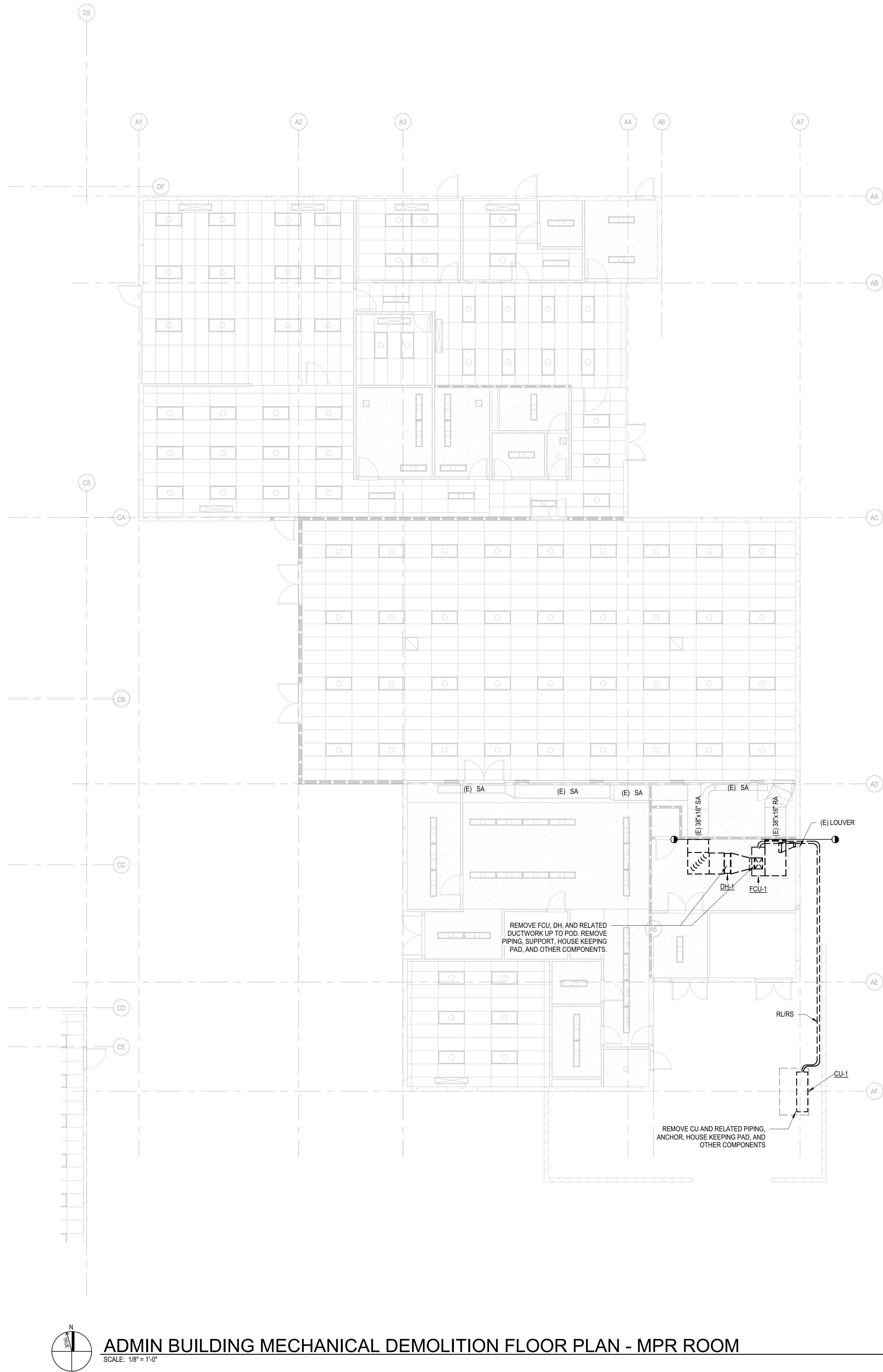
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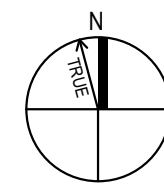
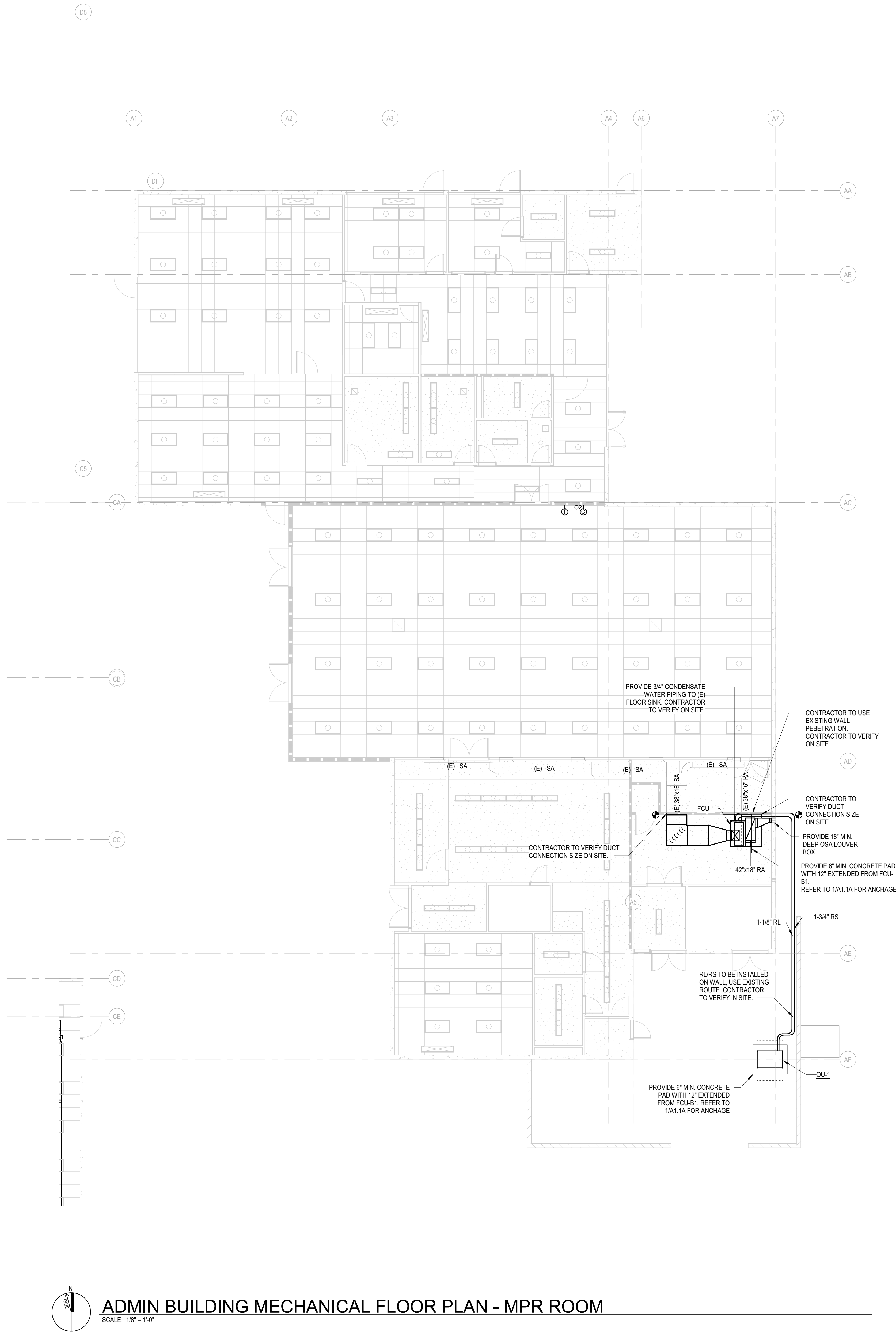
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**ADMIN BUILDING MECHANICAL DEMOLITION FLOOR PLAN - MPR ROOM**  
SCALE: 1/8" = 1'-0"



**ADMIN BUILDING MECHANICAL FLOOR PLAN - MPR ROOM**  
SCALE: 1/8" = 1'-0"



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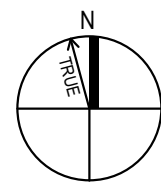
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REVISIONS

75-22605-00

BUILDING B  
MECHANICAL  
DEMO AND  
FLOOR PLANS

M1.1B





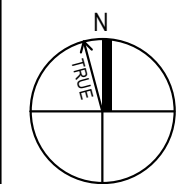
SCALE: 1/8" = 1'-0"

A SCOPE OF WORK IS CLASSROOMS & MPR ONLY.  
B DIFFUSERS AND GRILLES TO MATCH (E) CEILING TILES.  
REFER TO RCP.

M1.1C

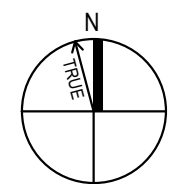
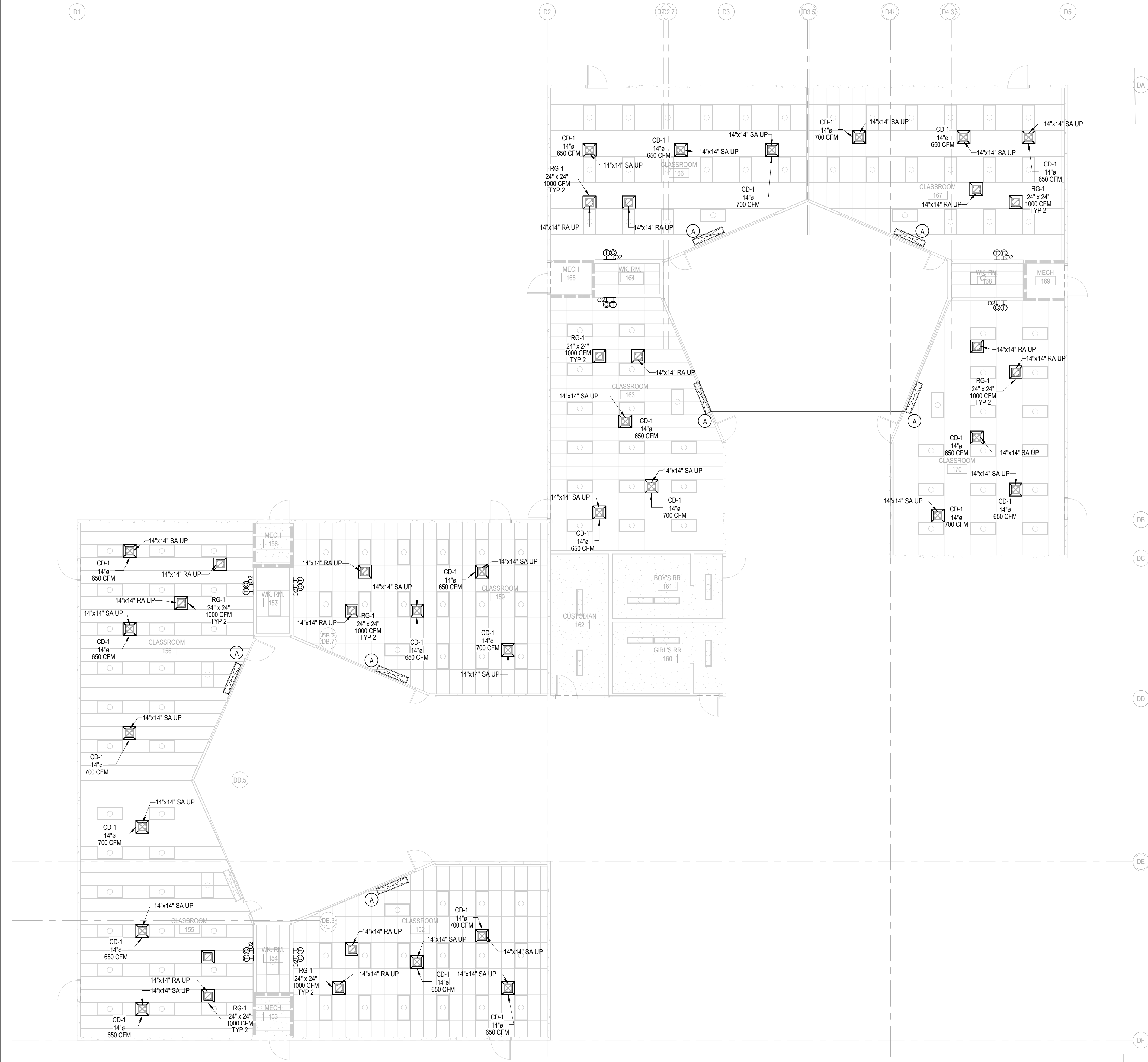


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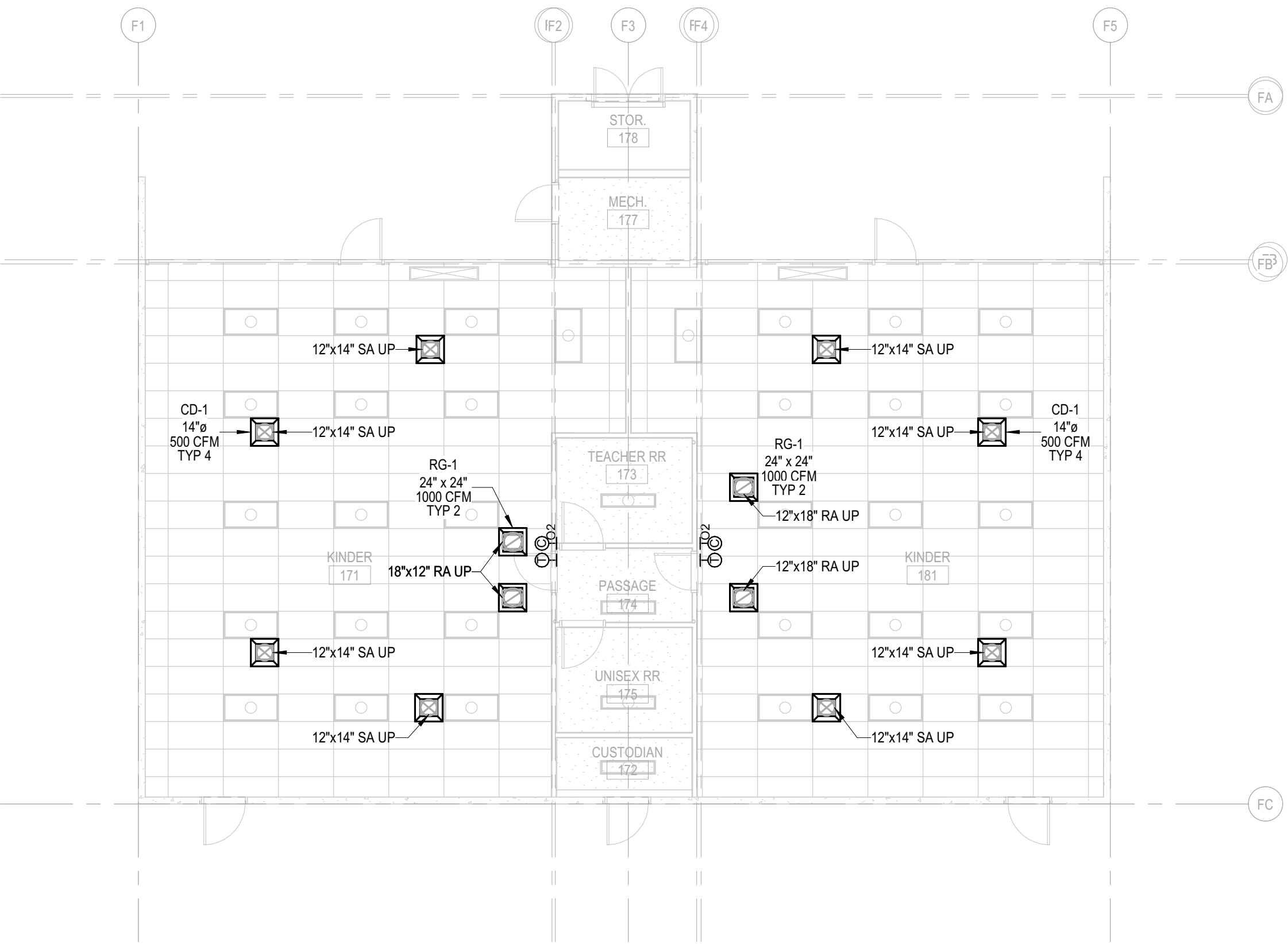
## BUILDING E MECHANICAL FLOOR PLAN

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



## BUILDING F MECHANICAL FLOOR PLAN

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

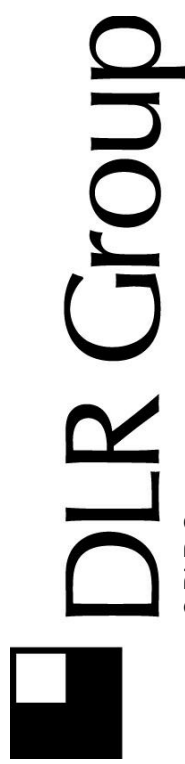


### DEMO NOTES

- A DEMOLISH EXISTING OUTDOOR CONDENSING UNIT ON ROOF AND INDOOR FANCOIL UNITS, ALONG WITH RELATED CONCRETE PADS, PIPING, CONDUIT, FENCE, SUPPORTS AND OTHER APPURTENANCES. REFER TO ARCH PLANS OR SPECS FOR FILLING HOLES AND MATCHING WALL. CONTRACTOR TO VERIFY LOCATIONS ON SITE. TYP.

### GENERAL NOTES

- A SCOPE OF WORK IS CLASSROOMS & MPR ONLY.  
B DIFFUSERS AND GRILLES TO MATCH (E) CEILING TILES. REFER TO RCP.



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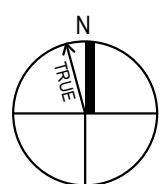
BUILDING E & F  
MECHANICAL  
FLOOR PLAN

M1.1E



## KEY NOTES

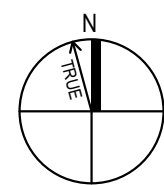
1. PROVIDE POWER EXHAUST ON RETURN DUCT WITH LEG LENGTH TO FIT THE ROOF SLOPE. CONTRACTOR TO VERIFY ON SITE. TYP.
2. RTU IS LESS THAN 10'-0" FROM ROOF EDGE. ARCH TO PROVIDE PROTECTION GUARDS. TYP.



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

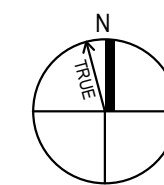


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## BUILDING E MECHANICAL ROOF PLAN

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



## BUILDING F MECHANICAL ROOF PLAN

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

### GENERAL HVAC NOTES

1. INSTALL NEW RTU ON BEAM WITH ISOLATORS.
2. NEW OPENINGS FOR SUPPLY AND RETURN DUCTS SHOULD BE MADE BETWEEN THE ROOF JOISTS. DO NOT CUT THE JOISTS.
3. PROVIDE FLEXIBLE DUCT AT UNIT CONNECTION FOR SA & RA DUCT.

### KEY NOTES

1. PROVIDE POWER EXHAUST ON RETURN DUCT WITH LEG LENGTH TO FIT THE ROOF SLOPE. CONTRACTOR TO VERIFY ON SITE. TYP.
2. RTU IS LESS THAN 10'-0" FROM ROOF EDGE. ARCH TO PROVIDE PROTECTION GUARDS. TYP.

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BUILDING E & F  
MECHANICAL  
ROOF PLAN

**M1.3E**



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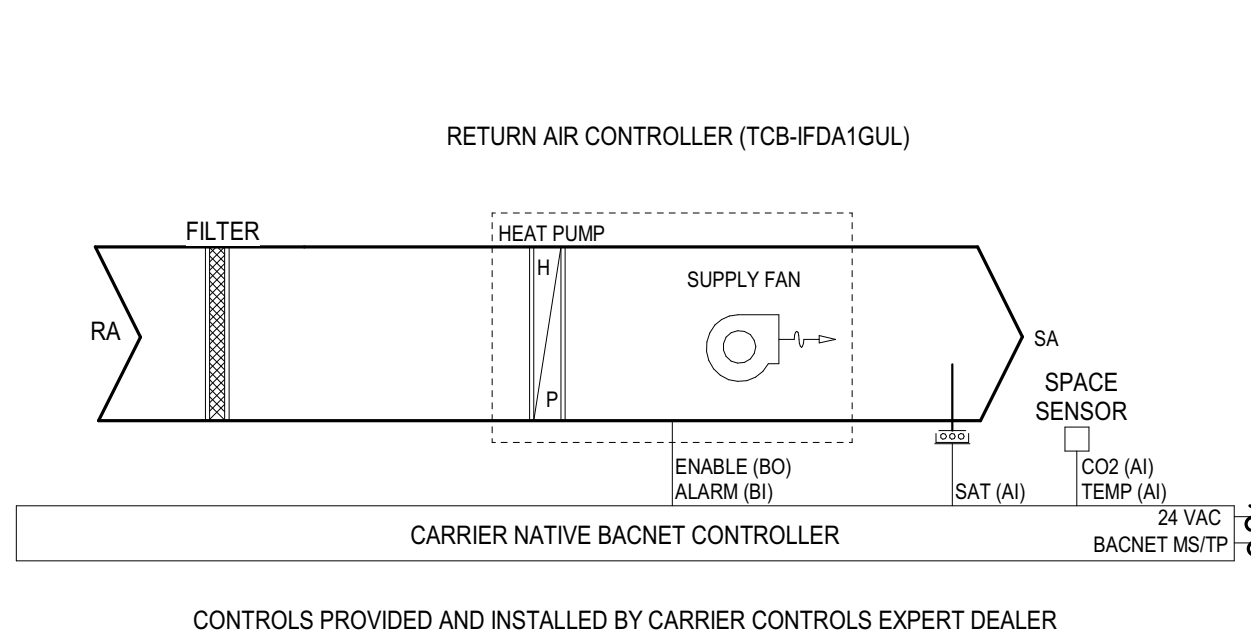
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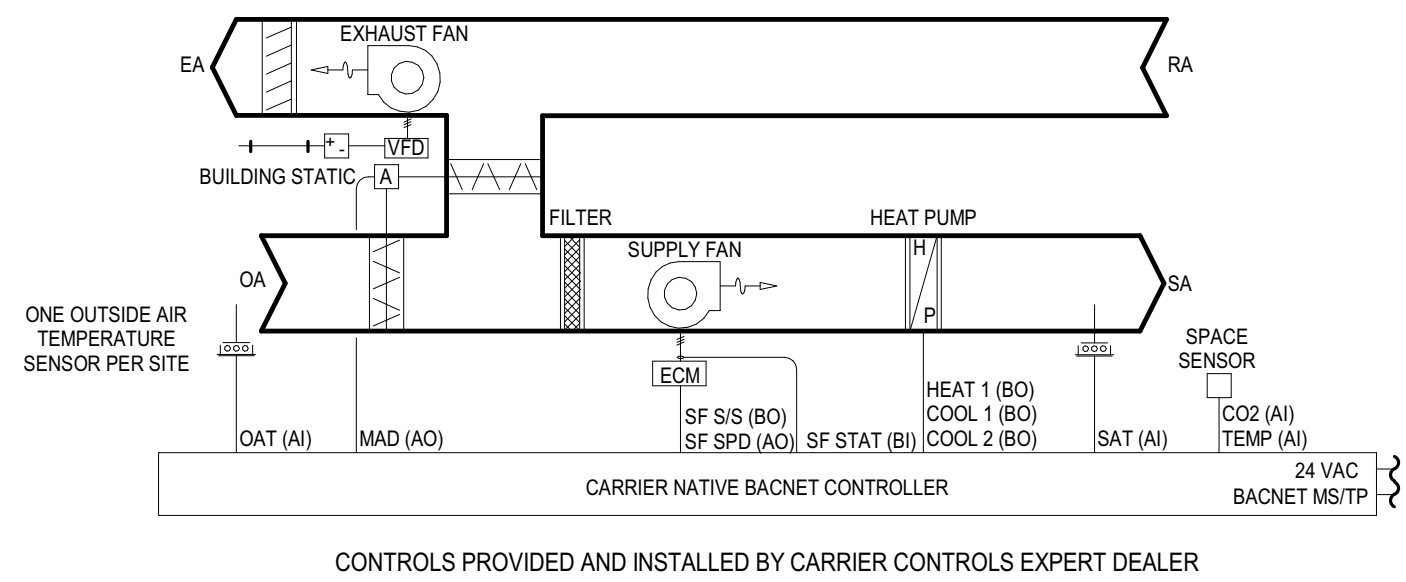
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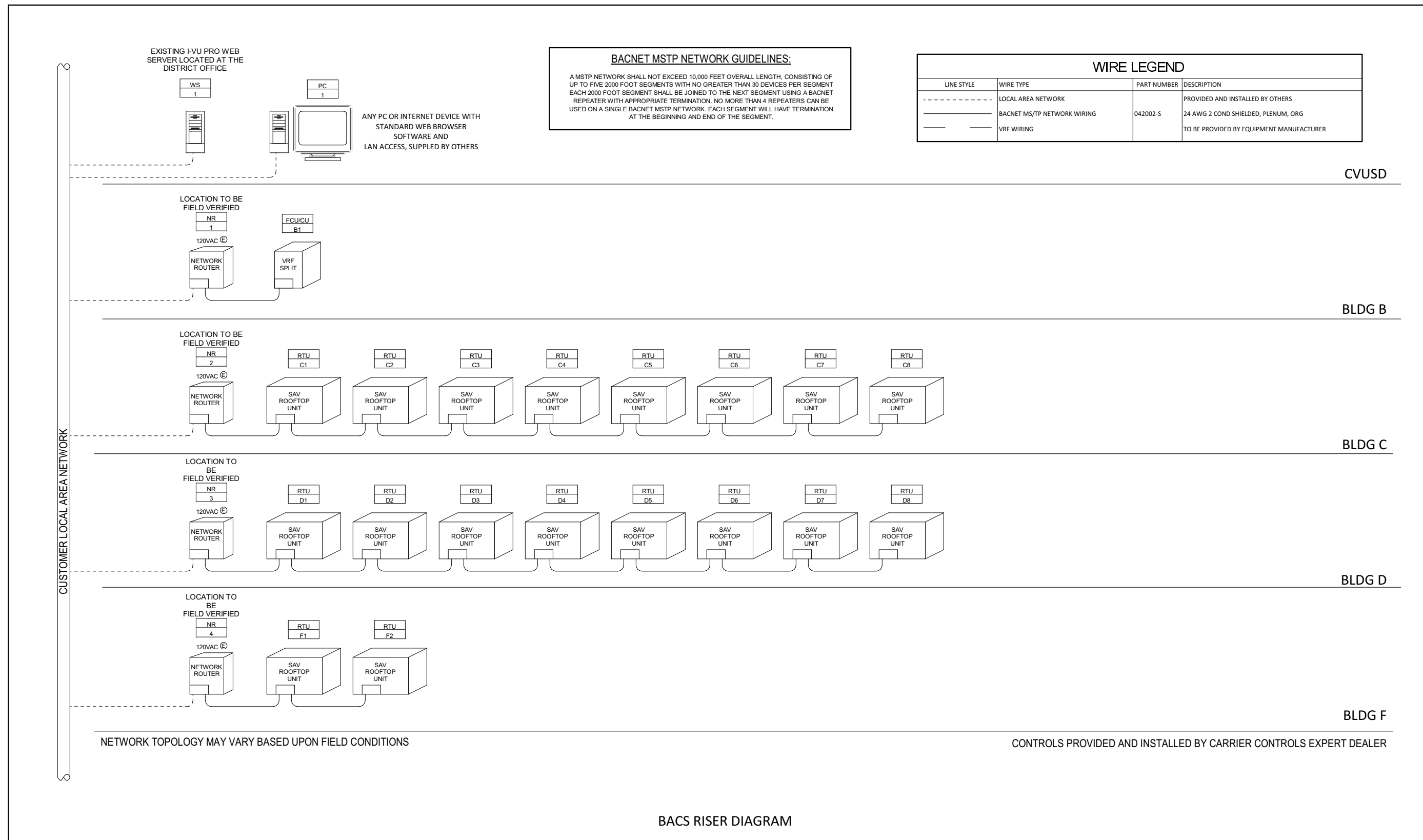
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1 FAN COIL UNIT (FCU-B1)  
MS.1 NO SCALE



2 50FCQ HEAT PUMP RTU (RTU-C1 THRU RTU-C8, RTU-D1 THRU RTU-D8, & RTU-F1 TO RTU-F2)  
MS.1 NO SCALE



3 RISER DIAGRAM  
MS.1 NO SCALE

## SEQUENCES OF OPERATION

### 1. FAN COIL CONTROLLER (FCU-1)

#### UNIT ENABLE

DURING OCCUPIED PERIODS, THE UNIT WILL BE ENABLED, AND THE FAN SHALL OPERATE CONTINUOUSLY. DURING UNOCCUPIED PERIODS, THE UNIT SHALL BE DISABLED. THE FAN OPERATES AT 1 OF 2 SPEEDS DEPENDING ON THE MODE OF OPERATION AND LOAD CONDITIONS. UNIT SHALL CONTROL HEATING AND COOLING STAGES WHEN ENABLED.

#### CO2 CONTROL

UNIT SHALL MONITOR SPACE CO2 WHEN THE SUPPLY FAN IS ENERGIZED. WHEN CO2 IS ABOVE SETPOINT OF 1000 PPM, AN ALARM SHALL BE ENABLED THROUGH THE EMS.

### 2. 50FCQ HEAT PUMP RTU CONTROLLER (RTU-C1 THRU RTU-C8, RTU-D1 THRU RTU-D8 & RTU-F1 TO RTU-F2)

#### INDOOR FAN

THE FAN OPERATES AT A VARIABLE SPEED TO MEET THE LOAD CONDITIONS AND SAT SAFETY REQUIREMENTS TO PROVIDE MAXIMUM ENERGY SAVINGS BY MINIMIZING FAN HORSEPOWER CONSUMPTION. FAN SPEED IS NOT CONTROLLED BY STATIC PRESSURE.

#### HEATING MODE

WHEN SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT, UNIT SHALL OPERATE IN THE HEATING MODE. UNIT SHALL STAGE AVAILABLE HEAT STAGES TO SATISFY DEMAND IN THE OCCUPIED SPACE.

#### COOLING MODE

WHEN SPACE TEMPERATURE IS ABOVE OCCUPIED COOLING SETPOINT, UNIT SHALL OPERATE IN THE COOLING MODE. UNIT SHALL ENABLE AVAILABLE COOLING STAGES TO SATISFY DEMAND IN THE OCCUPIED SPACE.

#### ECONOMIZER

ECONOMIZER SHALL CLOSE WHEN FAN IS OFF OR DURING A LOSS OF POWER. DURING OCCUPIED HOURS WHEN FAN IS ENERGIZED, THE ECONOMIZER SHALL OPEN TO ADJUSTABLE MINIMUM POSITION. WHEN OUTSIDE AIR TEMPERATURE IS BELOW 71° AND OCCUPIED SPACE REQUIRES COOLING, ECONOMIZER SHALL OPEN. IF ECONOMIZER AIR IS NOT SUFFICIENT TO MEET THE DEMAND IN THE OCCUPIED SPACE, UNIT SHALL ENABLE AVAILABLE MECHANICAL COOLING STAGES TO SATISFY DEMAND IN THE OCCUPIED SPACE.

#### CO2 CONTROL

UNIT SHALL MONITOR SPACE CO2 WHEN THE SUPPLY FAN IS ENERGIZED. WHEN CO2 IS ABOVE SETPOINT OF 1000 PPM, ECONOMIZER SHALL MODULATE OPEN TOWARD AN ADJUSTABLE MAXIMUM CO2 POSITION. AS THE CO2 LEVEL IN THE SPACE INCREASES ABOVE THE SETPOINT, THE MINIMUM POSITIONS OF THE DAMPERS WILL BE INCREASED PROPORTIONALLY, UNTIL THE MAXIMUM VENTILATION SETTING IS REACHED. AS THE SPACE CO2 LEVEL DECREASES BECAUSE OF THE INCREASE IN FRESH AIR, THE OUTDOOR DAMPER WILL FOLLOW THE HIGHER DEMAND CONDITION FROM THE DCV MODE OR FROM THE FREE-COOLING MODE.

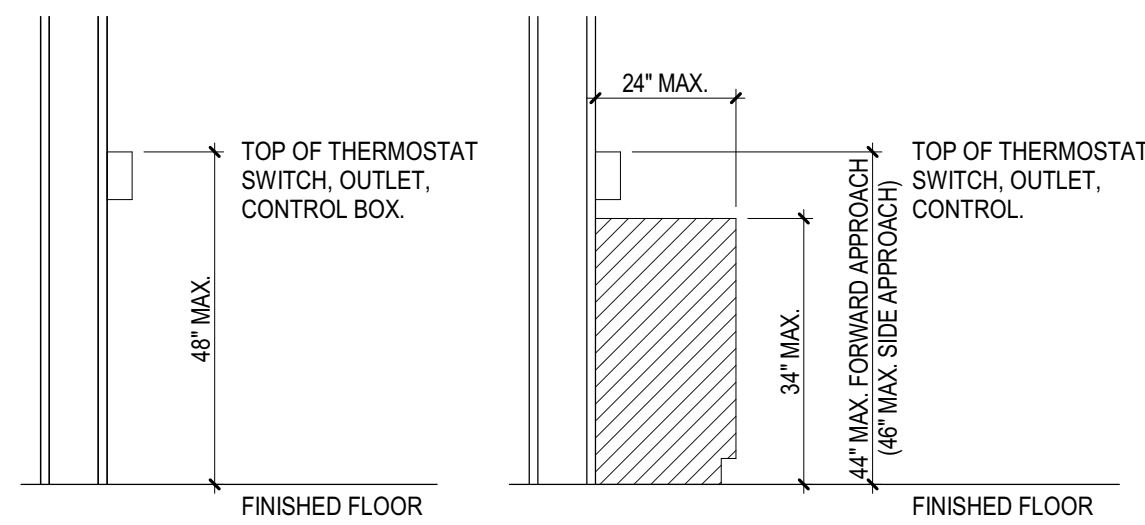
#### POWER EXHAUST

THE EXHAUST FAN SHALL MODULATE TO MAINTAIN THE ROOM PRESSURE SETPOINT (AS DETERMINED BY AIR BALANCER), NOT CONTROLLED THROUGH EMS.



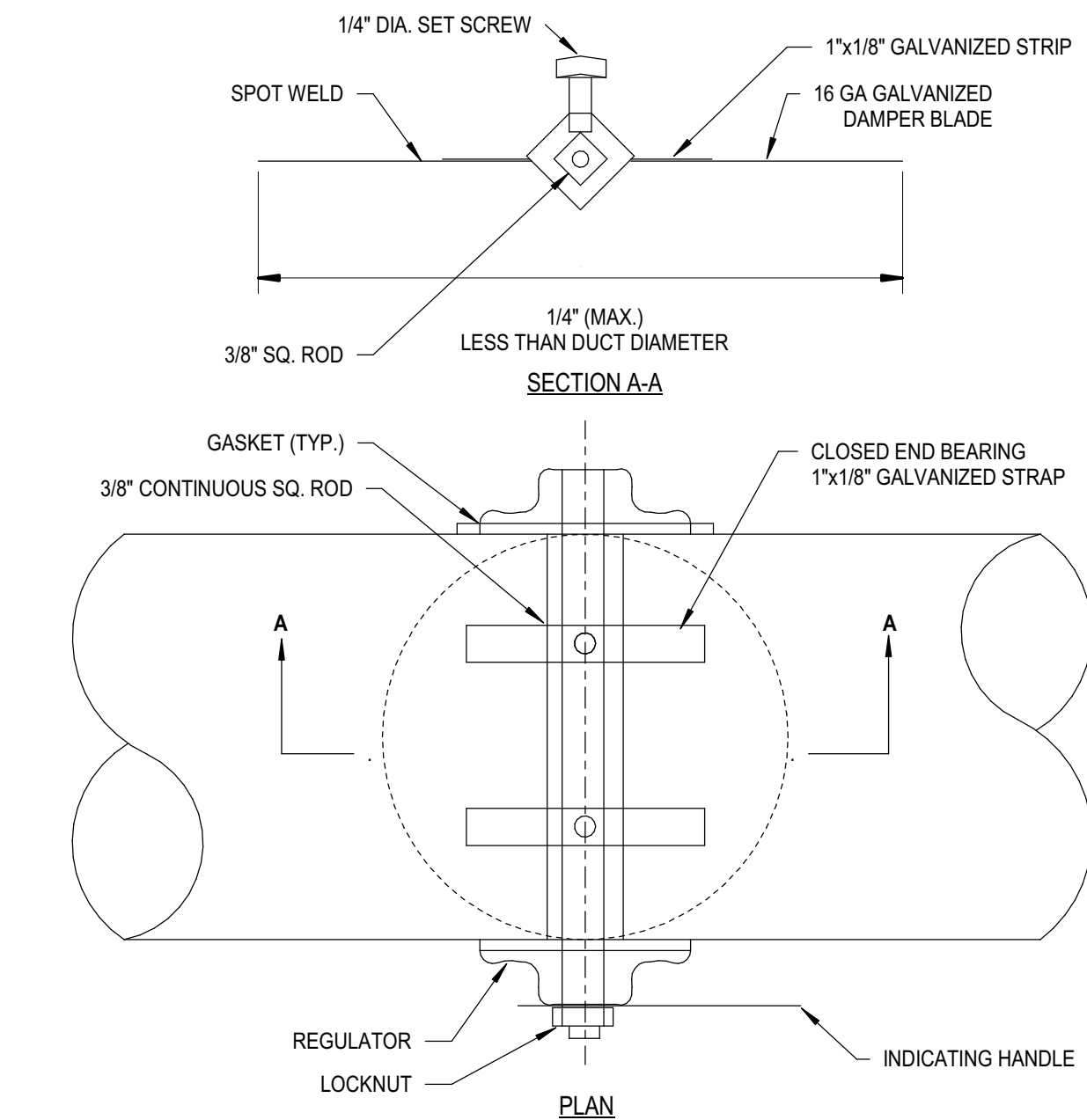
Autodesk Docs/775-22605-00\_CVUSD - District Wide HVAC Replacement/75-22605-00\_CVUSD\_Manzanita ES MEP\_2022.rvt  
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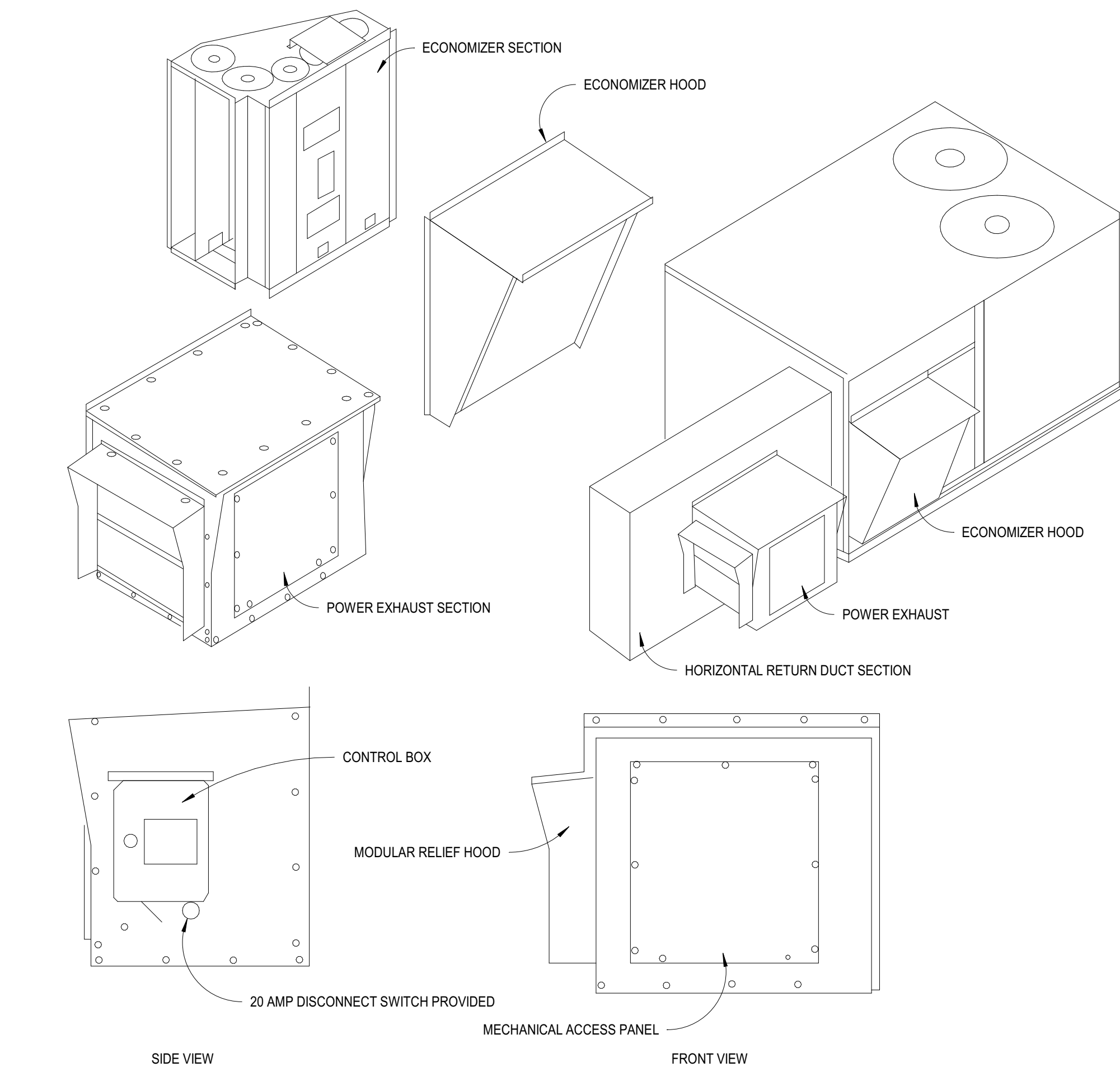
1 THERMOSTAT MOUNTING  
M7.1 NO SCALE

2



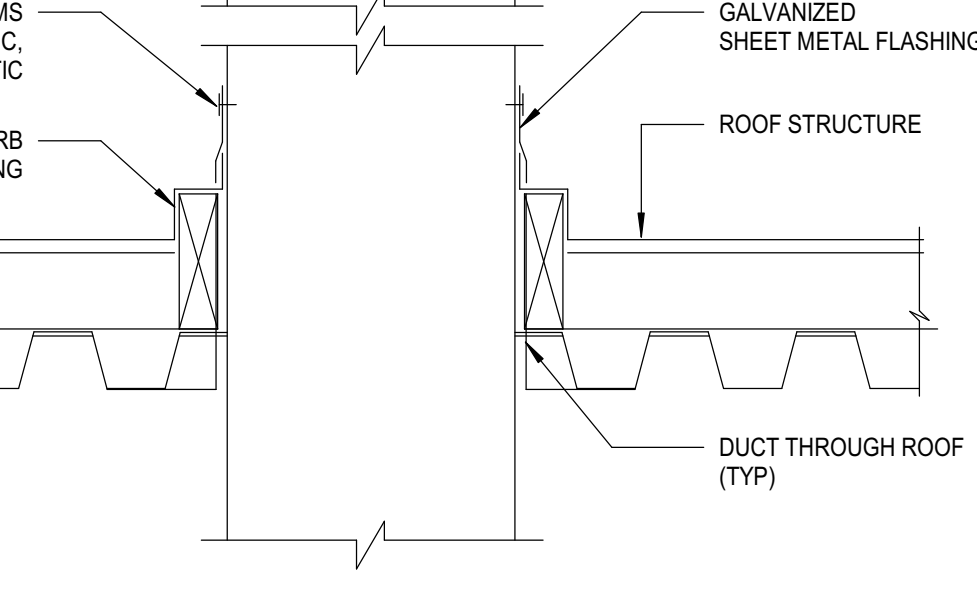
5 ROUND VOLUME DAMPER (UP TO 14")  
M7.1 NO SCALE

4



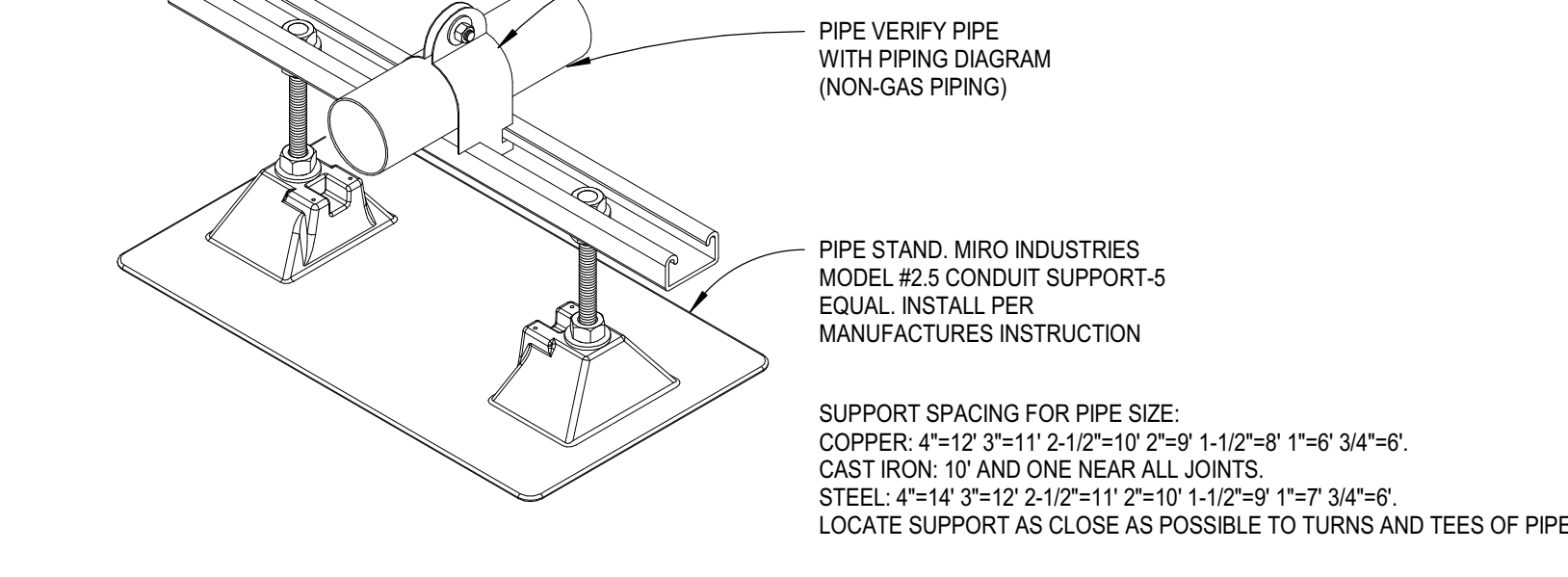
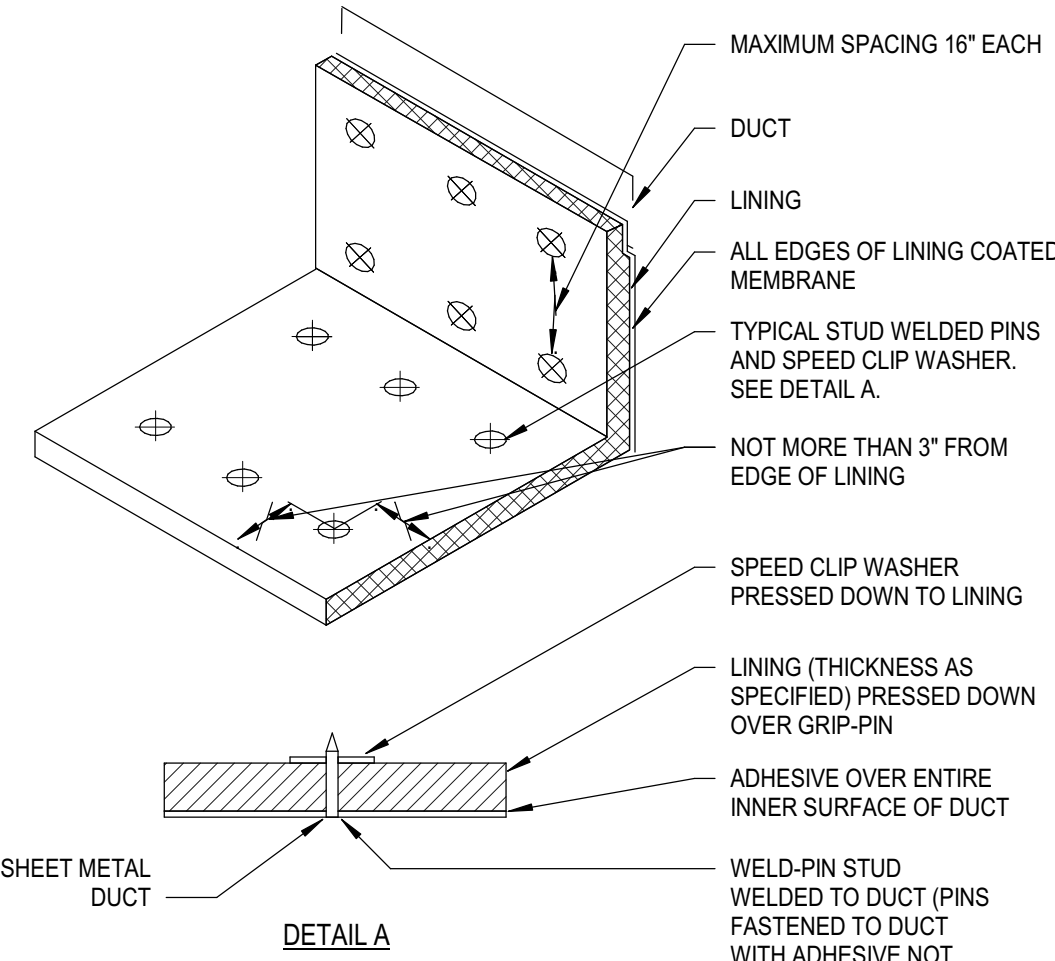
ECONIMIZER AND POWER EXHAUST DETAIL -  
HORIZONTAL DISCHARGE RTU (LESS THAN 15  
TONS)

10  
M7.1 NO SCALE



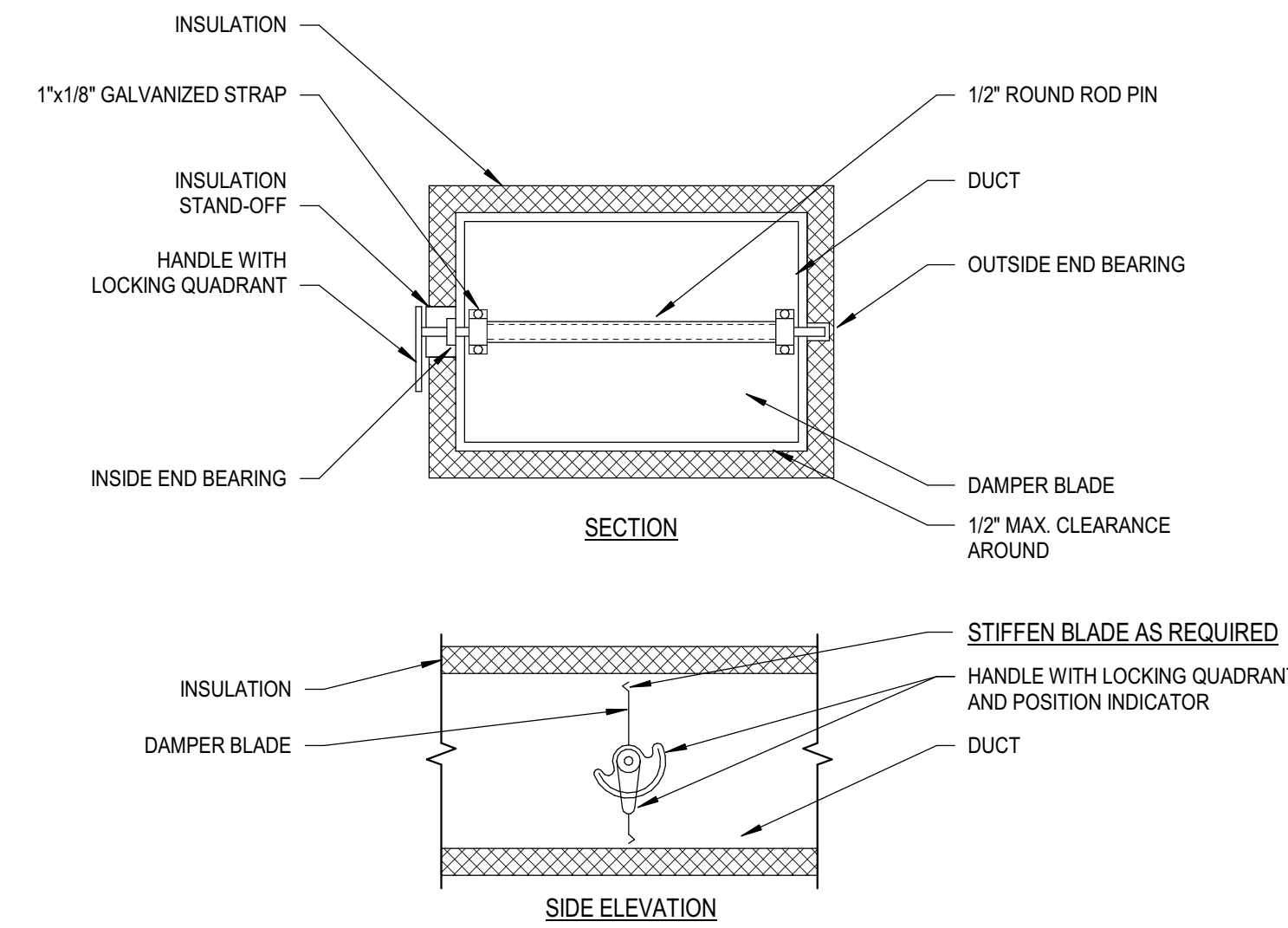
2 DUCT THRU ROOF PENETRATION  
M7.1 NO SCALE

6 ACOUSTICAL DUCT LINING INSTALLATION DETAIL  
M7.1 NO SCALE



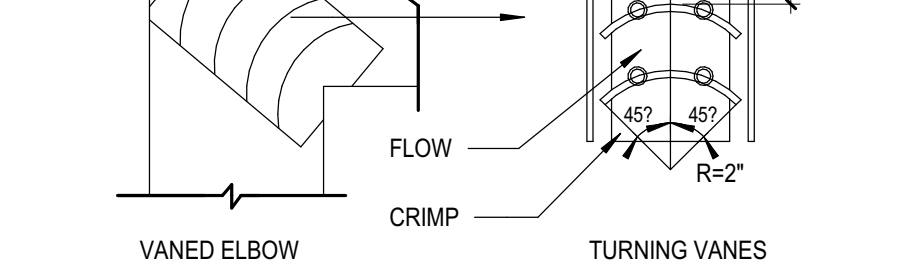
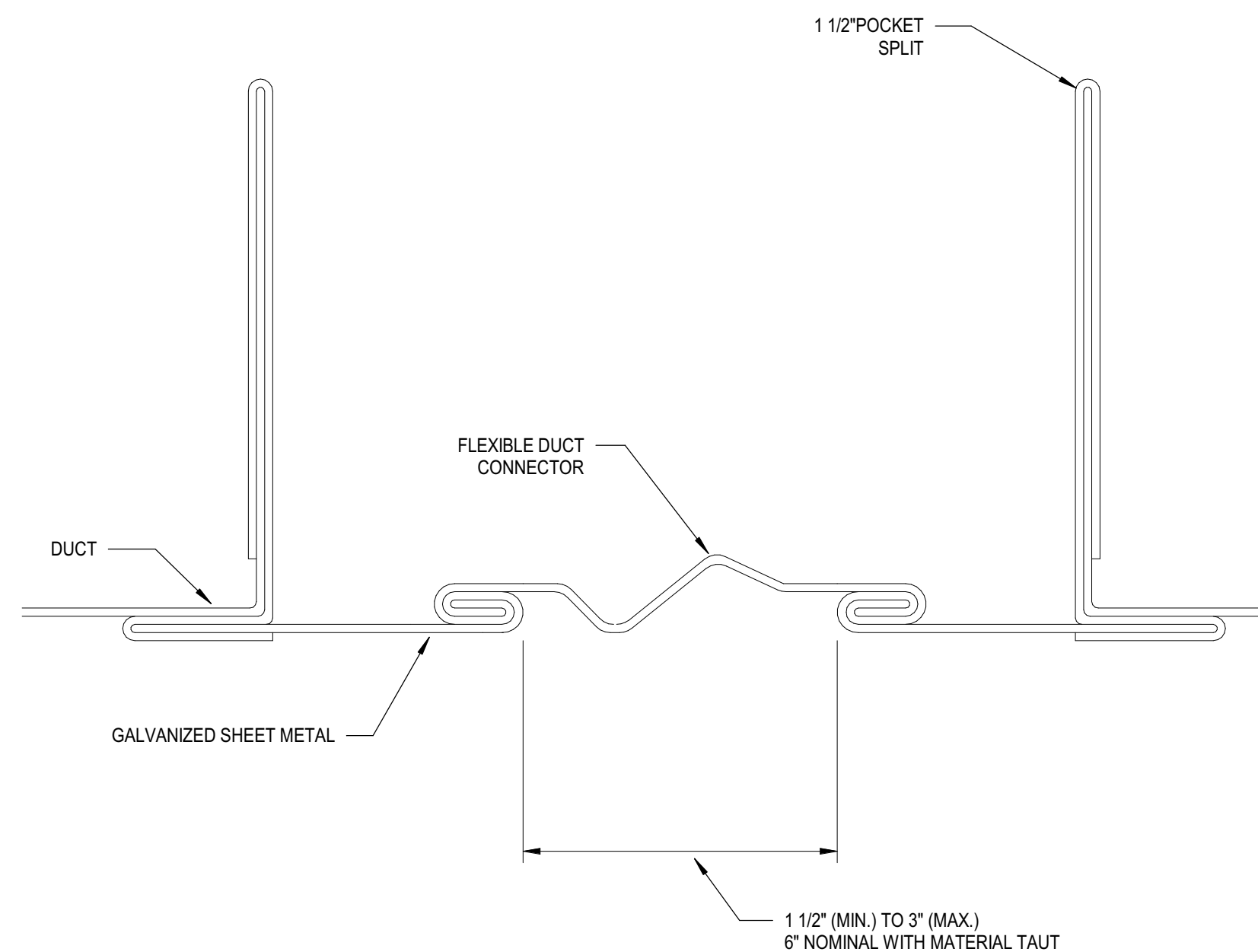
3 PIPE SUPPORT ON ROOF DETAIL  
M7.1 NO SCALE

7 RECTANGULAR VOLUME DAMPER DETAIL  
M7.1 NO SCALE



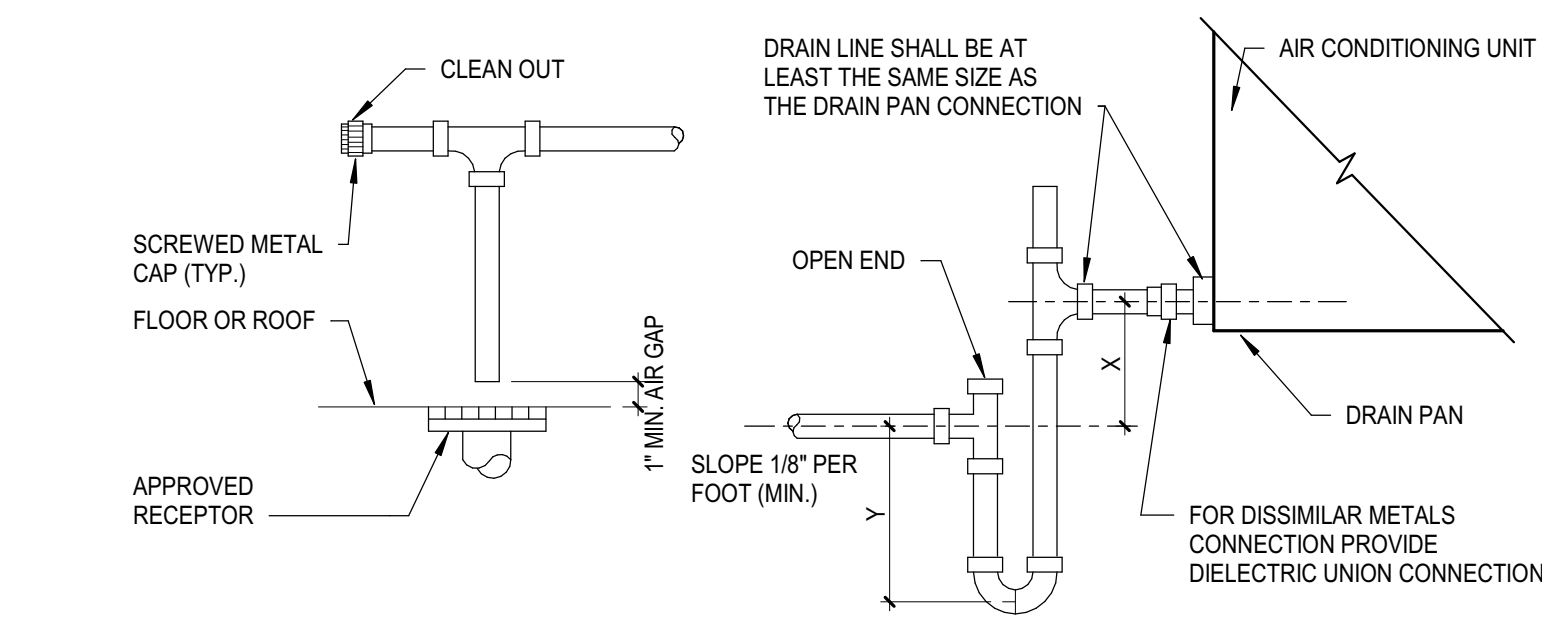
- DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
- DETAIL SHOWS SINGLE BLADE DAMPER. MULTI-BLADE DAMPERS INSTALLATIONS SHALL BE SIMILAR.
- LOCK DAMPER DURING AIR BALANCE AND MARK QUADRANT TO RECORD AIR BALANCED DAMPER POSITION.
- PROVIDE "HAT" SECTION AT QUADRANT FOR ALL EXTERNALLY INSULATED DUCTWORK.
- PROVIDE FLUORESCENT COLORED MARKERS ON CEILING AT ALL VOLUME DAMPER LOCATIONS.

11 FLEXIBLE DUCT CONNECTOR DETAIL  
M7.1 NO SCALE



- NOTES:
- MAXIMUM UNSUPPORTED VANE LENGTH 36".
  - VANES AND FRAMES -24 GAUGE.
  - DUCT INLET AND OUTLET DIMENSIONS TO BE EQUAL.
  - FOR HIGH VELOCITY APPLICATIONS PROVIDE 18 GAUGE CHANNEL AND TACK WELD VANE EDGES TO CHANNEL. TYPICAL BOTH ENDS.
  - FRAMES AND CHANNELS -BOLTED OR TACK WELDED TO ELBOW.

4 RECTANGULAR ELBOW W/ TURNING VANES DETAIL  
M7.1 NO SCALE



- BLOW THROUGH COIL DRAW THROUGH COIL
- X=TSP+1"
  - Y=TSP+1"
- TSP-TOTAL STATIC PRESSURE INSIDE DRAIN PLENUM (INCHES OF WATER COLUMN)
- X=TSP+1"
  - Y=1/2(TSP+1")

- NOTES:
- WHERE VERTICAL SPACE DOES NOT PERMIT TRAP INSTALLATION AS REQUIRED ABOVE FLOOR SLAB, EXTEND P-TRAP TO BELOW SLAB.
  - FOR INDOOR AND OUTDOOR INSTALLATION PROVIDE INSULATED RAIN LINE TO THE POINT OF DISCHARGE AT APPROVED RECEPTOR.

8 CONDENSATE DRAIN CONNECTION DETAIL  
M7.1 NO SCALE







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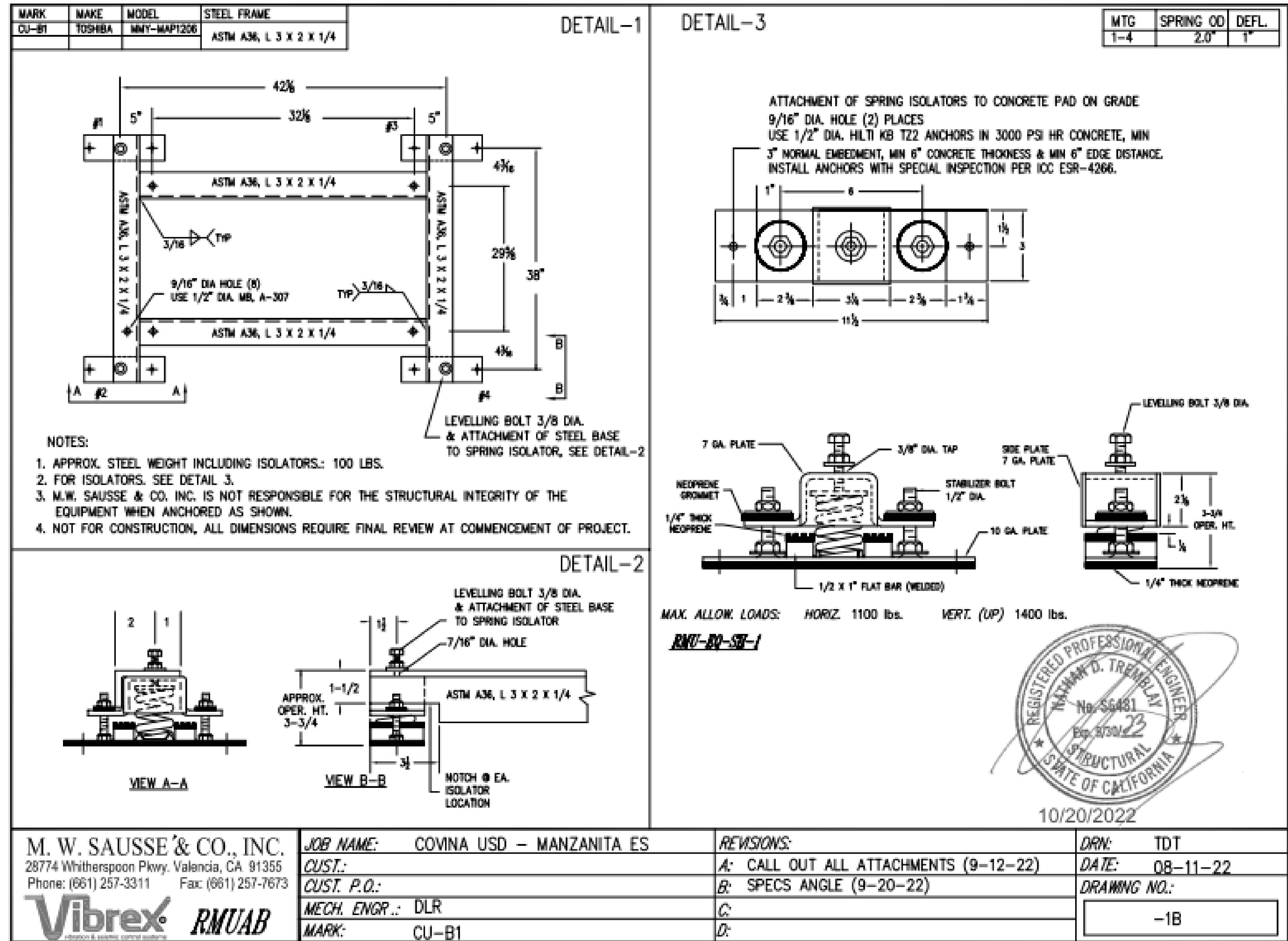
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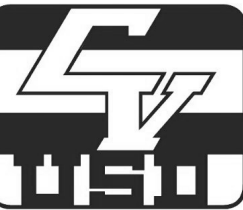
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MECHANICAL  
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M7.3



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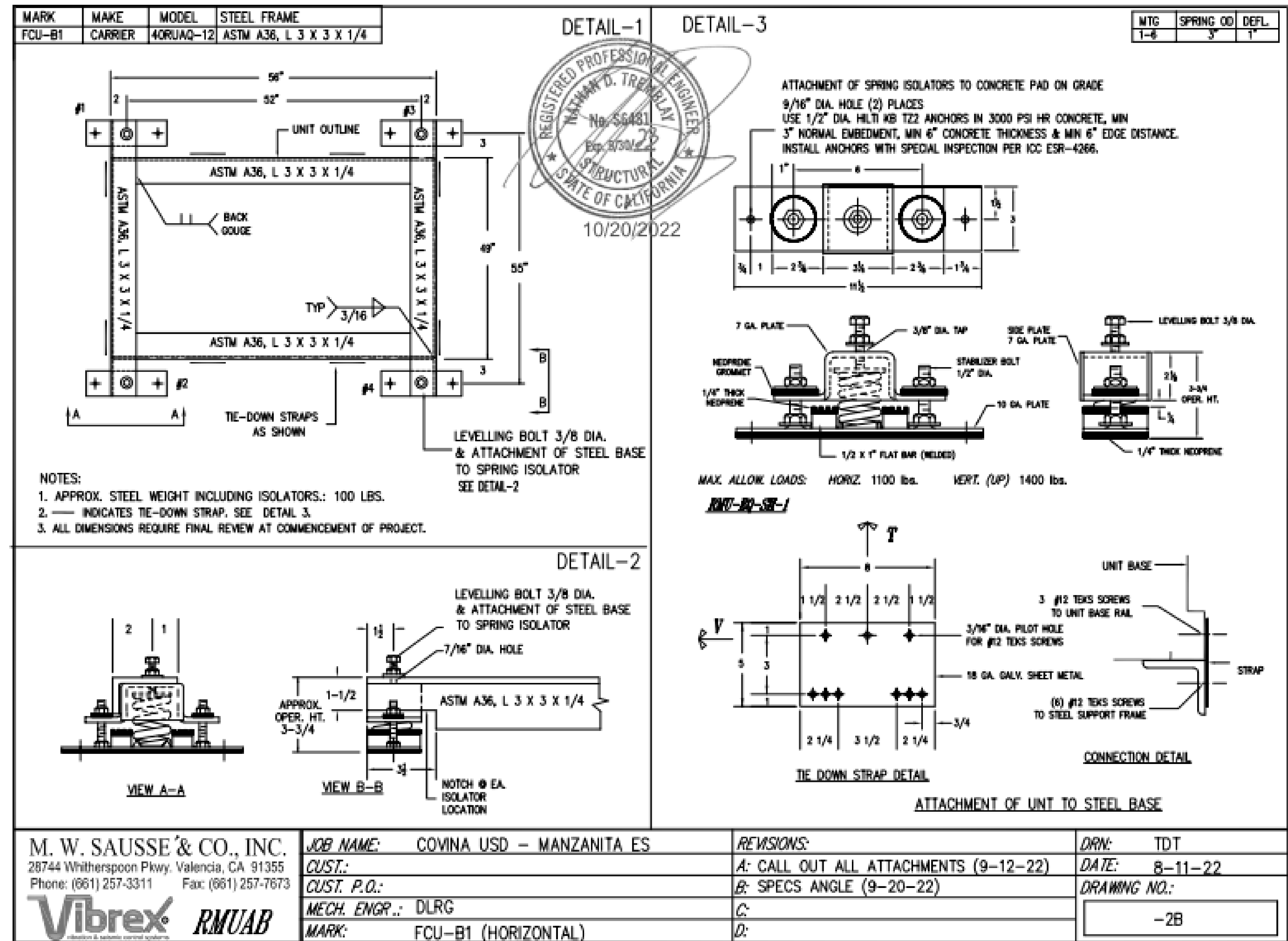
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1 FCU-B1  
M7.4 NO SCALE

Autodesk Docs/75-22605-00\_CVUSD - District Wide HVAC Replacement/75-22605-00\_CVUSD\_Manzanita ES\_ME2\_2022.rvt  
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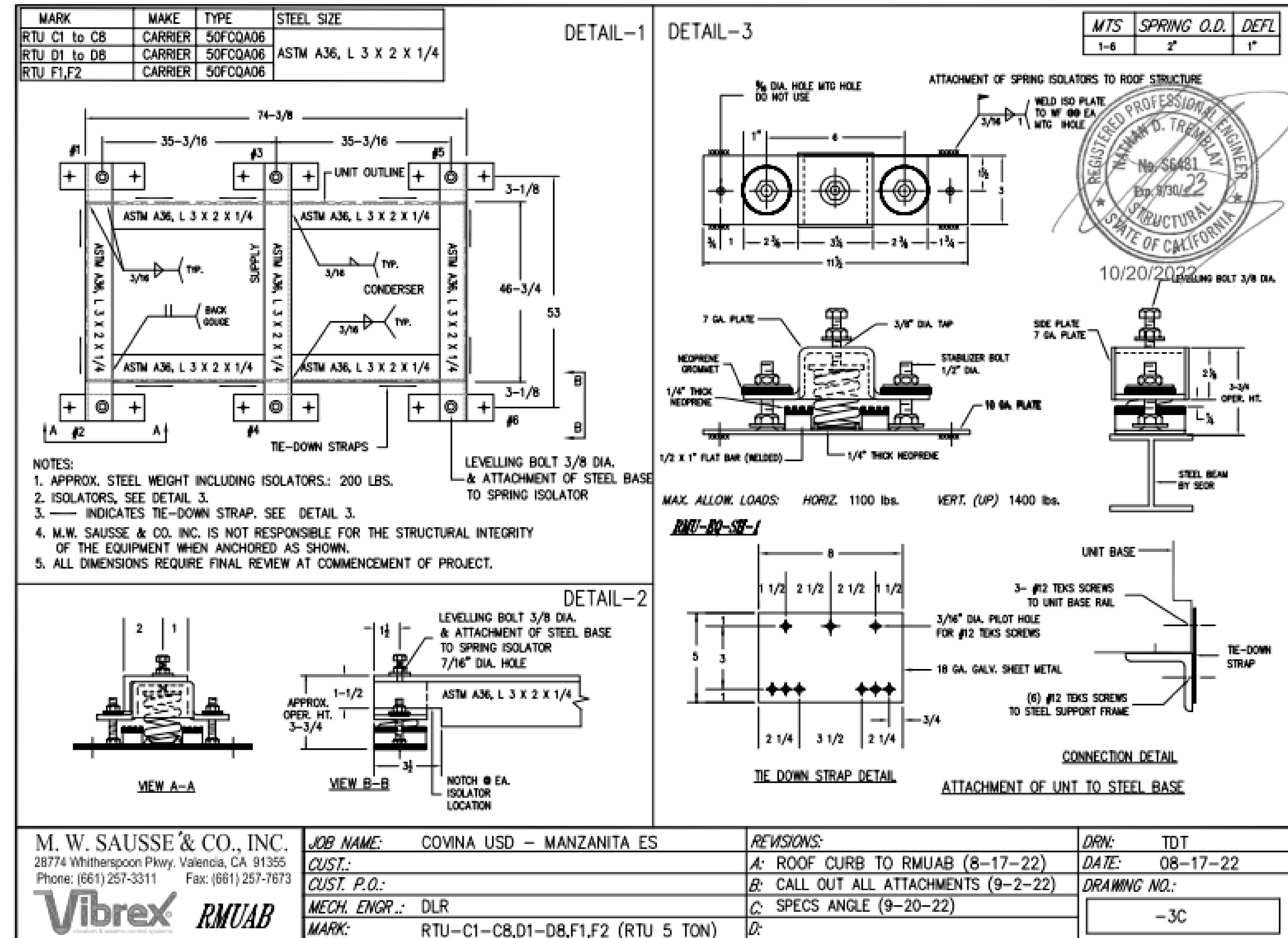
1

2

3

4

5



1 RTU CURB  
M7.5 NO SCALE



1

MANZANITA E.S. AC UNIT REPLACEMENT																																									
MANZANITA E.S. EXISTING UNIT													NEW UNIT																												
TAGS	MAKE	SPLIT SYSTEM MODEL	CAPACITY (TONS)	ELECTRICAL (SINGLE CIRCUIT)				WEIGHT (LBS)	POWER EXHAUST		OPERATING WEIGHT (LBS)	DIRECT REPLACEMENT? Y/N	CARRIER MODEL #	NET COOLING CAPACITY			AIRFLOW (CFM)		ESP (IN WG)	SEER	EER	HEATING CAPACITY (MBH)	NEW MERV RATING	FILTER QUANTITY & SIZE (W" X H" X D")	ELECTRICAL			WEIGHT	OUTSIDE AIR HOOD WEIGHT (LBS)	ECONOMIZER			POWER EXHAUST				ROOF CURB WEIGHT (LBS)	TOTAL WEIGHT (LBS)	UNIT DIMENSIONS (L" X W" X H")	ANCHORAGE DETAIL REFERENCE	
				VIPH	MCA	FLA	MOCF		EXISTING	WEIGHT				NOMINAL TON	TOTAL (BTUH)	SENSIBLE (BTUH)	SUPPLY	MIN OSA							VIPH	MCA	MOCF			LBS	REQUIRED?	WEIGHT	REQUIRED?	MODEL #	MCA	MOCF					WEIGHT
RTU-C1 THRU RTU-C8 (BLDG. C)	CARRIER	38QRC060 40QAE060	5.0	208/1	42	33.2		272	NO	-	272	N	50FCQA06A2A3	5	58890	45950	2000	600	1	14.3	10.96	56.8	13	4 (16X16X2)	208/1	41	60	586	NA	YES	REFER TO PE WEIGHT	YES	PECD-SRT12CB	7.1	12.8	191	NA	777	75 X 47 X 42	1/M7.5	
RTU-D1 THRU RTU-D8 (BLDG. D)	CARRIER	38QRC060 40QAE060	5.0	208/1	42	33.2		272	NO	-	272	N	50FCQA06A2A3	5	58890	45950	2000	600	1	14.3	10.96	56.8	13	4 (16X16X2)	208/1	41	60	586	NA	YES	REFER TO PE WEIGHT	YES	PECD-SRT12CB	7.1	12.8	191	NA	777	75 X 47 X 42	1/M7.5	
RTU-F1 & RTU-F2 (BLDG. F)	CARRIER	38QRC060 40QAE060	5.0	208/1	42	33.2		272	NO	-	272	N	50FCQA06A2A3	5	58890	45950	2000	600	1	14.3	10.96	56.8	13	4 (16X16X2)	208/1	41	60	586	NA	YES	REFER TO PE WEIGHT	YES	PECD-SRT12CB	7.1	12.8	191	NA	777	75 X 47 X 42	1/M7.5	
CU-B1 (BLDG. B)	CARRIER	38AKS014	10.0	208/3	69.6		100	800	NO	-	800	Y	MMY-MAP1206H19P-LJL	10						23.85	12.5				208/3	45.4	50	684	NA	NO	NA	NO	NA	NA	NA	NA	NA	684	48 X 31 X 73	1/M7.3	
FCU-B1 (BLDG. B)	CARRIER	40RM-012	10.0	208/3	12.8	10.2		650	NO	-	650	N	40RUQA12T3A5-0A0A0		120900	86,400	3960	1188	1.4				120.9	13		208/3	14	20	427	NA	NO	NA	NO	NA	NA	NA	NA	NA	427	49 X 28 X 56	1/M7.4

- NOTES:
1. PROVIDE MECHANICAL UNIT WITH INTEGRAL CONVENIENCE RECEPTACLE.
  2. ALL ROOFTOP UNITS SHALL BE PROVIDED WITH UNPOWERED CONVENIENCE OUTLET.
  3. ALL ROOFTOP UNITS ARE HORIZONTALLY DISCHARGED CONFIGURATION. UNO. FIELD VERIFY PRIOR TO ORDERING.
  4. PROVIDE HINGED ACCESS PANEL FOR ALL ROOFTOP UNITS.
  5. FINAL WEIGHT (LBS) IS SUMMATION OF RTU WEIGHT, AND ECONOMIZER SECTION, AS APPLICABLE.
  6. SCOR RATING OF RTUs AND FCU-B1 SHALL BE MINIMUM OF 10KA AND CU-B1 SHALL BE 65KA.

2

DIFFUSER AND GRILLE SCHEDULE								
MARK NO.	MANUFACTURER & MODEL NO.	TYPE	OVERALL DIMENSIONS	NECK SIZE	CFM RANGE	MAX NC	MAX SP	NOTES
CD-1	TITUS PAS	CEILING SUPPLY	24"x24"	6"Ø	0 - 110	25	0.1	1,2,3
				8"Ø	111 - 190	25	0.1	
				10"Ø	191 - 280	25	0.1	
				12"Ø	281 - 350	25	0.1	
				14"Ø	351 - 450	25	0.1	
				16"Ø	451 - 550	25	0.1	
RG-1	TITUS PAR	CEILING RETURN	24"x24"	6"Ø	0 - 100	20	0.1	1,2,3
				8"Ø	101 - 175	20	0.1	
				10"Ø	176 - 275	20	0.1	
				12"Ø	276 - 380	20	0.1	
				14"Ø	381 - 500	20	0.1	
				16"Ø	501 - 570	20	0.1	

- NOTES:
1. OBTAIN ARCHITECT'S APPROVAL FOR COLOR AND FINISH.
  2. MATCH THE BORDER TYPE TO THE CEILING.
  3. PROVIDE FLAT BLACK INTERNAL FINISH.

3

DUCT SIZING SCHEDULE \*\*\* FOR LOW VELOCITY SUPPLY, RETURN AND EXHAUST

CFM RANGE	ROUND DUCT DIAMETER OR EQUIVALENT RECTANGULAR DUCT	CFM RANGE	ROUND DUCT DIAMETER OR EQUIVALENT RECTANGULAR DUCT
0-110	6" OR 8" X 4"	1400-1900	18" OR 24" X 12"
101-180	8" OR 10" X 6"	1900-2500	20" OR 24" X 14"
181-270	10" OR 10" X 8"	2500-3300	22" OR 32" X 14"
271-400	10" OR 12" X 8"	3300-4100	24" OR 36" X 14"
401-600	12" OR 12" X 10"	4100-5000	26" OR 40" X 16"
601-900	14" OR 16" X 10"	5000-6200	28" OR 48" X 16"
901-1400	16" OR 18" X 12"	6200-7500	30" OR 48" X 18"

REMARKS:

DUCT SIZES INDICATED ARE INSIDE DIMENSIONS WHICH MAY BE ALTERED BY CONTRACTOR TO OTHER DIMENSIONS TO AVOID INTERFERENCES AND CLEARANCE REQUIREMENTS. USE EQUAL FRICTION METHOD, 0.1"WG PER 100FT. OF DUCT TO DETERMINE DUCT SIZES.

VERIFY ALL DIMENSIONS AT THE SITE. MAKE ALL FIELD MEASUREMENTS AND SHOP DRAWINGS NECESSARY FOR FABRICATION AND ERECTION OF SHEET METAL WORK. MAKE ALLOWANCES FOR BEAMS, PIPE OR OTHER OBSTRUCTION AND FOR WORK BY OTHER TRADES AND NOTIFY THE ARCHITECT IN THE EVENT OF ANY POTENTIAL INTERFERENCE. MAKE AN INITIAL VERIFICATION OF BEAM PENETRATIONS SHOWN ON STRUCTURAL DRAWINGS AND ADVISE OF ANY POTENTIAL INTERFERENCES.

LOCATION	AIR VELOCITY GUIDELINES (FPM)				
	NOISE CRITERIA (NC)				
	40	35	30	25	15
MAIN SUPPLY DUCT	1700	1500	1000	800	600
MAIN RETURN DUCT	1200	1000	750	600	500
DUCT TO GRILLE SUPPLY	600	500	400	300	250
DUCT TO GRILLE RETURN	600	500	400	300	250

DUCT SIZING \*\*\* MEDIUM PRESSURE DUCTWORK

CFM	ROUND DUCT (IN)	RECTANGULAR DUCT (IN) (W IS DUCT WIDTH)				
		WX4	WX6	WX8	WX10	WX12
UP TO 150	6	8	6	X	X	X
151-280	8	10	10	8	X	X
281-500	10	X	16	12	10	X
501-800	12	X	X	16	12	X
801-1200	14	X	X	22	16	14

REMARKS:

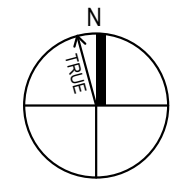
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4

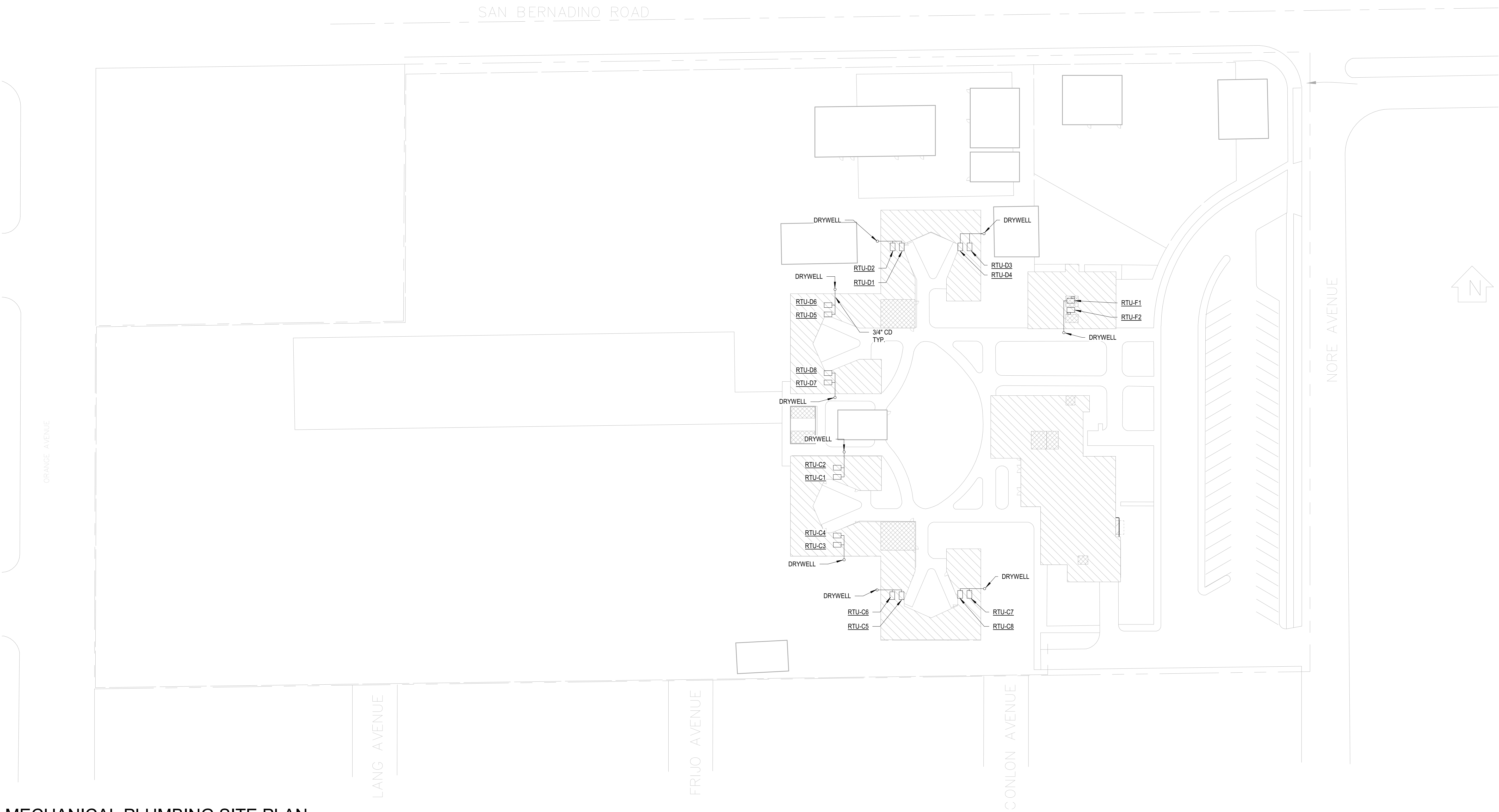
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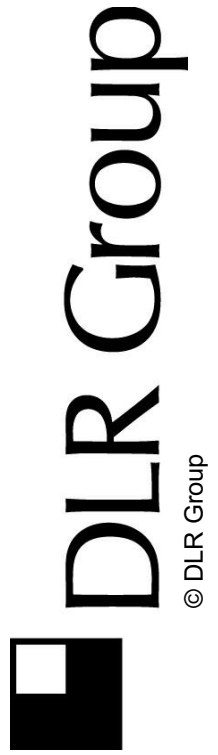
MECHANICAL PLUMBING SITE PLAN

SCALE: 1" = 40'-0"



SITE LEGEND

- EXISTING BUILDING NOT IN SCOPE
- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- (E) RESTROOMS - NOT IN SCOPE



Manzanita Elementary School

COVINA VALLEY USD

4131 North Nore Avenue Covina CA 91722

DSA Submitted Set  
11/02/2022  
REVISIONS

75-22605-00

MECHANICAL  
PLUMBING SITE  
PLAN

MP1.1



APPLICABLE CODE: 2019 CBC  
02/02/2020  
REVISED: 02/14/2020

MEP COMPONENT ANCHORAGE NOTE

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 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

- ALL PERMANENT EQUIPMENT AND COMPONENTS
- 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.
- 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:

- COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- 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 THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

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 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

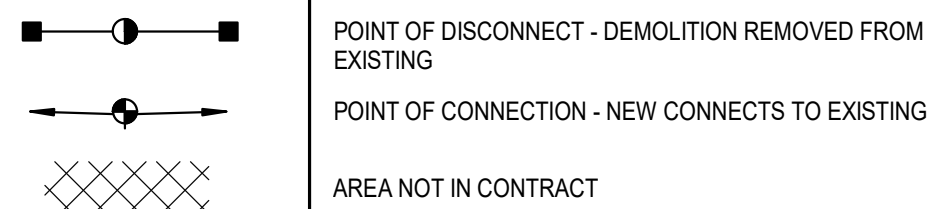
THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL 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#) #\_00043-13

GENERAL SYMBOLS



SHEET INDEX

E0.1 ELECTRICAL SYMBOLS, ABBREVIATIONS, NOTES & SCHEDULE

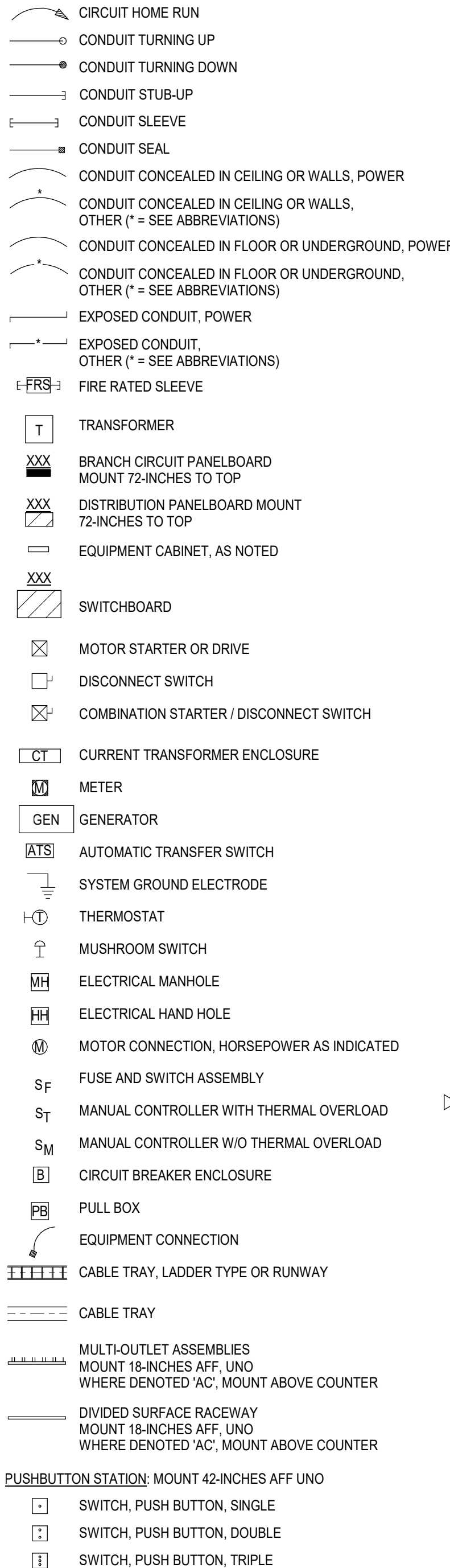
E2.1 ROOF ELECTRICAL PLAN

E6.1 ELECTRICAL DETAILS

GENERAL NOTES

- PENETRATIONS IN WALLS REQUIRING PROTECTED OPENINGS MUST BE FIRESTOPPED WITH AN APPROVED MATERIAL.
- UNLESS SPECIFICALLY SHOWN ON THESE DRAWINGS, NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED, OR NOTCHED WITHOUT PRIOR AUTHORIZATION IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD AND DSA.

POWER



RECEPTACLES: MOUNT 18-INCHES AFF, UNO  
DIAGONAL LINE THROUGH SYMBOL OR DENOTED 'AC' INDICATES MOUNT DEVICE ABOVE COUNTER WHERE INDICATED AS MOUNT ABOVE COUNTER MOUNT BOTTOM OF BOX 2-INCHES ABOVE TOP OF BACKSPLASH OR 6-INCHES ABOVE COUNTER TOP IF NO BACKSPLASH EXISTS  
LABELS SHALL BE MACHINE PRINTED, UNO  
SIMPLEX RECEPTACLE  
DUPLEX RECEPTACLE  
DUPLEX RECEPTACLE, GFI TYPE  
DUPLEX RECEPTACLE, MOUNT ABOVE COUNTER  
DUPLEX RECEPTACLE, GFI TYPE, MOUNT ABOVE COUNTER  
FOURPLEX RECEPTACLE  
FOURPLEX RECEPTACLE, GFI TYPE  
FOURPLEX RECEPTACLE, MOUNT ABOVE COUNTER  
FOURPLEX RECEPTACLE, GFI TYPE, MOUNT ABOVE COUNTER  
DUPLEX RECEPTACLE, FLUSH IN CEILING  
FOURPLEX RECEPTACLE, FLUSH IN CEILING  
DUPLEX RECEPTACLE, HORIZONTALLY MOUNTED  
DUPLEX RECEPTACLE, HORIZ. MTD, GFI TYPE  
DUPLEX RECEPTACLE, HORIZ. MTD, ABOVE COUNTER  
DUPLEX RECEPTACLE, HORIZ. MTD, GFI TYPE, MOUNT ABOVE COUNTER  
WEATHER RESISTANT GFI DUPLEX RECEPTACLE, ROOF MOUNT 18-INCHES ABOVE ADJACENT STRUCTURE WITH A WEATHERPROOF, IN-USE COVER  
WEATHER RESISTANT GFI DUPLEX RECEPTACLE, MOUNT 18-INCHES AFF WITH A WEATHERPROOF, IN-USE COVER  
STD DUPLEX RECEPTACLE TO SERVE ELECTRIC WATER COOLER, MOUNT AT HEIGHT PER  
EWC EQUIPMENT MANUFACTURER'S INSTALLATION GUIDELINES. WIRE TO GFCI BKR IN PANELBOARD.  
DUPLEX RECEPTACLE TO SERVE TELEVISION, MOUNT AT SAME HEIGHT AND WITHIN 8-INCHES OF ADJACENT TV OUTLET  
DUPLEX RECEPTACLE, EMERGENCY  
FOURPLEX RECEPTACLE, EMERGENCY  
DUPLEX RECEPTACLE, LOWER SWITCH  
DUPLEX RECEPTACLE, SWITCHED  
RANGE RECEPTACLE, MOUNT 8-INCHES AFF  
SPECIAL RECEPTACLE, DEEP WELL BOX  
FLUSH FLOOR OUTLET BOX UNO  
FLUSH FLOOR BOX WITH DUPLEX RECEPTACLE UNO  
MULTI-DEVICE FLOOR BOX WITH DUPLEX RECEPTACLE AND TELECOMMUNICATIONS OUTLETS  
USB ONLY RECEPTACLE  
RECEPTACLE WITH USB PORTS  
FLUSH JUNCTION BOX, CEILING MOUNTED  
JUNCTION BOX FOR FUTURE PROJECTOR POWER MOUNT 24-INCHES ABOVE SUSPENDED CEILING MOUNT TIGHT TO CEILING AT EXPOSED STRUCTURE LABEL BOX COVER 'PROJECTOR POWER'  
JUNCTION BOX ABOVE SUSPENDED CEILING WITH FLEX CONNECTION  
FLUSH JUNCTION BOX, WALL MOUNTED  
SURFACE JUNCTION BOX, WALL MOUNTED  
SURFACE JUNCTION BOX, CEILING MOUNTED  
HAND DRYER, INSTALL HAND DRYER SPECIFIED IN DIV. 11

ABBREVIATIONS

(D)	DEMOLISHED	KV	KILOVOLT
(E)	EXISTING	KVA	KILOVOLT AMPERES
(R)	RELOCATED	KW	KILOWATT
Ø	PHASE	LT	LIGHT
		LTG	LIGHTING
A	AMPERE	MCA	MINIMUM CIRCUIT AMPACITY
AC	ABOVE COUNTER	MCB	MAIN CIRCUIT BREAKER
AF	AMP FRAME (CIRCUIT BREAKER)	MCC	MOTOR CONTROL CENTER
AL	ALUMINUM	MH	MANHOLE
AMP	AMPERE	MLO	MAIN LUGS ONLY
AP	WIRELESS ACCESS POINT	MOCB	MAXIMUM OVERCURRENT PROTECTION
AT	AMP TRIP (CIRCUIT BREAKER OR FUSE)	MRTS	MOTOR RATED TOGGLE SWITCH
ATS	AUTOMATIC TRANSFER SWITCH	MSB	MOUNTED
AV	AUDIO-VISUAL	MTG	MOUNTING
AWG	AMERICAN WIRE GAUGE	MTS	MAIN TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM	N	NEUTRAL
BJ	BONDING JUMPER	N.C.	NORMALLY CLOSED
BKR	BREAKER	N.O.	NORMALLY OPEN
BMS	BUILDING MANAGEMENT SYSTEM	NF	NON-FUSED
C	CONDUIT	NL	NIGHT LIGHT
CATV	CABLE TELEVISION	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CB	CIRCUIT BREAKER	OS&Y	OUTSIDE SCREW AND YOKE
CCTV	CLOSED CIRCUIT TELEVISION	P	POLE(S)
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	PA	PUBLIC ADDRESS
CKT	CIRCUIT	PB	PULL BOX
CTL	CONTROL	PH	PHASE
CU	COPPER	PIV	PISTON INDICATOR VALVE
DB	DECIBEL	PNL	PANEL
DC	DIRECT CURRENT	PWR	POWER
DISC	DISCONNECT	RCP	REFLECTED CEILING PLAN
DP	DISTRIBUTION PANELBOARD	RECP	RECEPTACLE
DW	DISHWASHER	REF	REFERENCE
ECB	EMERGENCY COMMUNICATION SYSTEM	RESP	RESPONSIVE
EGS	ELECTRICAL GROUNDING BUSBAR	SCCR	SHORT CIRCUIT CURRENT RATING
EMD	ESTIMATED MAXIMUM DEMAND	SD	SHOCK DAMPER
EMGB	ELECTRICAL MAIN GROUNDING BUSBAR	SEC	SECONDARY
EP	EXPLOSION PROOF	SPD	SURGE PROTECTION DEVICE
ER	EXISTING (TO BE) / RELOCATED	SWBD	SWITCHBOARD
ERMS	ENERGY REDUCTION MAINTENANCE SWITCH	TBB	TELECOMMUNICATIONS BONDING BACKBONE
EWC	ELECTRIC WATER COOLER	TC	TIME CLOCK
FA	FIRE ALARM	TGB	TELECOMMUNICATIONS GRONDING BUSBAR
FAA	FIRE ALARM ANNUNCIATOR	TMGB	TELECOMMUNICATIONS MAIN GRONDING BUSBAR
FACP	FIRE ALARM CONTROL PANEL	TO	TELECOMMUNICATIONS OUTLET
FC	FOOT CANDLE	TR	TELECOMMUNICATIONS ROOM
FLA	FULL LOAD AMPS	TS	TAMPER SWITCH
FS	FLOW SWITCH	TV	TELEVISION
FSD	FIRE SMOKE DAMPER	UG	UNDERGROUND
G	EQUIPMENT GROUNDING CONDUCTOR	UPS	UNINTERRUPTABLE POWER SUPPLY
GEN	GENERATOR	V	VOLT
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER	VA	VOLT-AMPERE
GPFE	GROUND FAULT PROTECTION OF EQUIPMENT	VFD	VARIABLE FREQUENCY DRIVE
GND	EQUIPMENT GROUNDING CONDUCTOR	W	WIRE
HH	HANDHOLE	WA	TELECOMMUNICATIONS WORK AREA
HOA	HAND-OFF-AUTOMATIC	WG	WIRE GUARD
HP	HORSE POWER	WP	WEATHER-PROOF (NEMA 3R)
IC	INTERCOM	XFMR	TRANSFORMER
IG	ISOLATED GROUND		
JB	JUNCTION BOX		
KAIC	THOUSAND AMPERE INTERRUPTING CIRCUIT		

ABBREVIATIONS

KV	KILOVOLT
KVA	KILOVOLT AMPERES
KW	KILOWATT
LT	LIGHT
LTG	LIGHTING
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MOCB	MAXIMUM OVERCURRENT PROTECTION
MRTS	MOTOR RATED TOGGLE SWITCH
MSB	MOUNTED
MTD	MOUNTING
MTS	MAIN TRANSFER SWITCH
N	NEUTRAL
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NF	NON-FUSED
NL	NIGHT LIGHT
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OS&Y	OUTSIDE SCREW AND YOKE
P	POLE(S)
PA	PUBLIC ADDRESS
PB	PULL BOX
PH	PHASE
PIV	PISTON INDICATOR VALVE
PNL	PANEL
PWR	POWER
RCP	REFLECTED CEILING PLAN
RECP	RECEPTACLE
REF	REFERENCE
RESP	RESPONSIVE
SCCR	SHORT CIRCUIT CURRENT RATING
SD	SHOCK DAMPER
SEC	SECONDARY
SPD	SURGE PROTECTION DEVICE
SWBD	SWITCHBOARD
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TC	TIME CLOCK
TGB	TELECOMMUNICATIONS GRONDING BUSBAR
TMGB	TELECOMMUNICATIONS MAIN GRONDING BUSBAR
TO	TELECOMMUNICATIONS OUTLET
TR	TELECOMMUNICATIONS ROOM
TS	TAMPER SWITCH
TV	TELEVISION
UG	UNDERGROUND
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
WA	TELECOMMUNICATIONS WORK AREA
WG	WIRE GUARD
WP	WEATHER-PROOF (NEMA 3R)
XFMR	TRANSFORMER

\*NOTE\*  
ALL NOTES ON THIS SHEET ARE APPLICABLE TO ALL OTHER SHEETS IN THIS SET.  
THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE APPLICABLE IN THIS SET OF DRAWINGS.

EXISTING UNIT							NEW UNIT														NOTES
TAGS	ELECTRICAL						TAGS	DIRECT REPLACEMENT?	CFM	ELECTRICAL				POWER EXHAUST				DISCONNECT	FEEDER SIZE		
	V/PH	MCA	FLA	MOCBP	PANEL/ CKT#	FEEDER SIZE				V-PH	MCA	MOCBP	DISCONNECT	REQUIRED?	Model#	MCA	MOCBP	DISCONNECT	FEEDER SIZE		
CU-B1(BLDG B)	208/3	69.6	55.68	100	MSB-2	3#1, 1#8GND -1.5"C	CU-B1	Y	7,480	208/3	45.4	50	60A (50A FUSE)	NA	NA	NA	NA	NA	NA		
FCU-B1(BLDG B)	208/3	12.8	10.2	20	MSB-3	3#12, 1#12GND-0.5"C.	FCU-B1	Y	4,500	208/3	14	20	30A (20A FUSE)	NA	NA	NA	NA	NA	NA		
CU-C1 (BLDG C)	208/1	42	33.2	60A	LC-1,3	4#8, 1#10GND - 1"C	RTU-C1	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-C2 (BLDG C)	208/1	42	33.2	60A	LC-2,4		RTU-C2	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-C3 (BLDG C)	208/1	42	33.2	60A	LC-5,7	4#8, 1#10GND - 1"C	RTU-C3	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-C4 (BLDG C)	208/1	42	33.2	60A	LC-6,8		RTU-C4	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-C5 (BLDG C)	208/1	42	33.2	60A	LC-9,11	4#8, 1#10GND - 1"C	RTU-C5	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-C6 (BLDG C)	208/1	42	33.2	60A	LC-10,12		RTU-C6	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-C7 (BLDG C)	208/1	42	33.2	60A	LC-13,15	4#8, 1#10GND - 1"C	RTU-C7	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-C8 (BLDG C)	208/1	42	33.2	60A	LC-14,16		RTU-C8	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-D1 (BLDG D)	208/1	42	33.2	60A	LE-1,3	4#8, 1#10GND - 1"C	RTU-E1	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-D2 (BLDG D)	208/1	42	33.2	60A	LE-2,4		RTU-E2	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-D3 (BLDG D)	208/1	42	33.2	60A	LE-5,7	4#8, 1#10GND - 1"C	RTU-E3	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-D4 (BLDG D)	208/1	42	33.2	60A	LE-6,8		RTU-E4	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-D5 (BLDG D)	208/1	42	33.2	60A	LE-9,11	4#8, 1#10GND - 1"C	RTU-E5	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-D6 (BLDG D)	208/1	42	33.2	60A	LE-10,12		RTU-E6	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-D7 (BLDG D)	208/1	42	33.2	60A	LE-13,15	4#8, 1#10GND - 1"C	RTU-E7	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-D8 (BLDG D)	208/1	42	33.2	60A	LE-14,16		RTU-E7	Y	2,000	208/1	41	60	60A (60A FUSE)	YES	PCED-SRT12CB	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-F1 (BLDF F)	208/1	15.3	12.4	60A	LF-25,27	4#6, 1#12GND - 1"C	RTU-F1	Y	1,600	208/1	34	50	60A (60A FUSE)	YES	PCD-SRT12CA	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
CU-F2 (BLDF F)	208/1	15.3	12.4	60A	LF-29,31		RTU-F2	Y	1,600	208/1	34	50	60A (60A FUSE)	YES	PCD-SRT12CA	7.1	12.8	30A (20A FUSE)	2#8 1#10GND-1"C		
GENERAL NOTES:																					
1	CONTRACTOR TO FIELD VERIFY CIRCUITING AND FEEDER INFORMATION PRIOR TO EQUIPMENT REMOVAL. CONTRACTOR TO PROVIDE REQUIRED ADJUSTMENTS AS NEEDED.																				
2	PROVIDE MECHANICAL UNIT WITH INTEGRAL CONVENIENCE RECEPTACLE. FEED FROM SPARE 20A/1P BREAKER IN NEAREST PANEL. ROUTE 2#12+1#12GND IN 1/2" EMT CONDUIT FROM PANEL TO RECEPTACLE.																				
3	POWER NO MORE THAN 10 RECEPTACLES ON ONE CIRCUIT. FIELD VERIFY EXACT LOCATION OF NEAREST PANEL AND ROUTE OF NEW CIRCUIT FROM PANEL TO UNIT RECEPTACLE.																				
4	CONTRACTOR TO DEMOLISH POWER CONNECTION FROM ALL ROOF TOP UNITS AND FAN COIL UNITS. DEMOLITION TO CONSIST OF REMOVAL OF POWER CONNECTION, CABLING, AND CONDUIT BACK TO SOURCE UNLESS NOTED OTHERWISE.																				
5	FIELD COORDINATE EQUIPMENT MANUFACTURER FOR FAULT CURRENT LIMITING FUSE TYPES																				



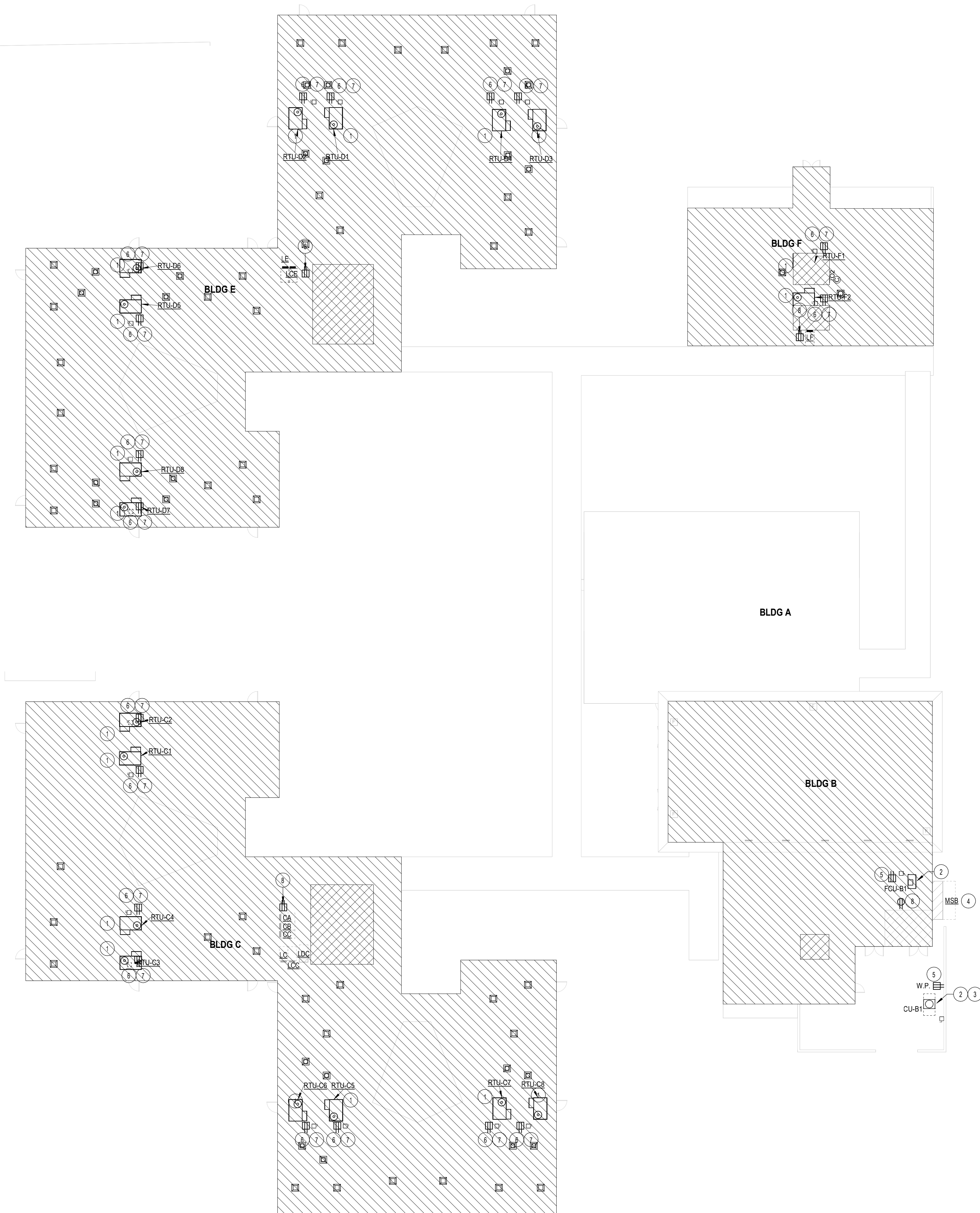
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## GENERAL NOTES

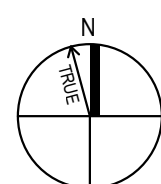
- WORK TO INCLUDE REMOVAL OF EXISTING FLOOR TO EXISTING HVAC EQUIPMENT THAT ARE TO BE REMOVED AND REPLACED. FLOOR TO EXISTING INDOOR FAN COIL UNIT TO REMAIN AS IS.
- D DISCONNECTING MAINS TO BE NEMA 3R PANEL, FURNISHED AND INSTALLED BY DIVISION 26
- E CONDUIT AND CABLE TRAYS TO BE PROVIDED NOT REQUIRED. ELECTRIC HANGING IS BEING PROVIDED
- D SEE SCHEDULE ON SHEET E01. FOR ADDITIONAL INFORMATION.
- F FUSE RACK SHALL BE PROVIDED PER EQUIPMENT NAMEPLATE RATING.
- F ELECTRICAL PANELS LOCATED AT GRADE LEVEL DIRECTLY BELOW WHERE SHOWN.
- G OVERHEAD POWER MENT (EMS) / BUILDING AUTOMATION SYSTEM (BAS) IS A DELEGATED DESIGNING SPEC BY CONTRACTOR. CONTRACTOR TO FIELD COORDINATE WITH ELECTRICAL DISTRICT FOR LOCATIONS OF EMS ROUTER AND EMS PANEL AS WELL AS CONDUIT ROUTING.
- H CARBON MONOXIDE DETECTION SYSTEM WILL NOT BE PROVIDED (THIS ITEM UNDER CBCS 503.15.1).
- EXCEPTION 2: THE GROUP BUILDING WAS CONSTRUCTED BEFORE THE ADDITION OF THE 2016 CALIFORNIA BUILDING STANDARDS CODE.
- EXISTING HVAC UNITS ARE BEING REPLACED IN KIND THROUGHOUT
- J CONTRACTOR TO PROVIDE DISCONNECT SWITCH TO FIELD POWER EXHAUST DISCONNECT SWITCH (NAMEPLATE SAME SIZE FEEDER. PROVIDE FUSES PER EQUIPMENT NAMEPLATE RATING)

## KEYNOTES

No.	DESCRIPTION
1	EXISTING HVAC EQUIPMENT ON THE ROOF TO BE DISCONNECTED AND REPLACED AS PART OF THIS SCOPE OF WORK. PROVIDE NEW FEEDER PER TABLE ON SHEET 10. PROVIDE ALL REQUIRED ELECTRICAL CONNECTIONS. SEE ELECTRICAL MANUAL ON SHEET 01 FOR ADDITIONAL INFORMATION.
2	EXISTING HVAC EQUIPMENT AT GRADE TO BE DISCONNECTED AND REPLACED AS PART OF THIS SCOPE OF WORK. PROVIDE NEW FEEDER PER TABLE ON SHEET 10. PROVIDE ALL REQUIRED ELECTRICAL CONNECTIONS.
3	DUCT SMOKE DETECTOR FOR COMPLIANCE TO CALIFORNIA MECHANICAL CODE SECTION 608 IS NOT REQUIRED PER CODE EXCEPTION NO.2. ROOM HAVE DIRECT EXIT TO EXTERIOR AND NO.2 DISTANCE DOES NOT EXCEED 100 FEET.
4	EXISTING ELECTRICAL EQUIPMENT TO REMAIN AND TO BE RE-TERMINAL TO THE NEW SERVICE.
5	PROVIDE 120 VOLT CIRCUIT FROM SPARE BREAKER. PROVIDE TANDEN BREAKER AS REQUIRED.
6	GPO TYPE RECEPTACLE PROVIDED BY HVAC EQUIPMENT MANUFACTURER PER GPO TYPE RECEPTACLE PROVIDED BY HVAC EQUIPMENT MANUFACTURER. SEE TABLE 2 ON SHEET 10. PROVIDE WEATHERPROOF COVER.
7	FUSED DISCONNECT PER TABLE SHOWN ON SHEET 10.
8	PROVIDE 120V EXACT LOCATIONS FOR EMS ROUTER AND EMS PANEL.
9	PROVIDE 120V EXACT LOCATIONS FOR EMS ROUTER AND EMS PANEL.

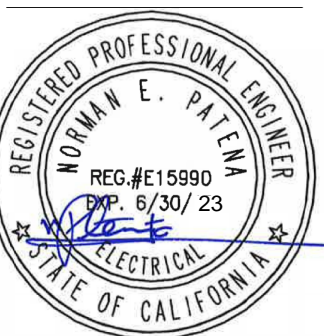
## SITE LEGEND

-  EXISTING BUILDING NOT IN SCOPE  
 EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION  
 (E) RESTROOMS - NOT IN SCOPE



## OVERALL ELECTRICAL POWER PLAN

SCALE: 1/16" = 1'-0"





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**ALTERNATE ARRANGEMENT OF SEISMIC BRACES FOR CONDUITS ON TRAPEZE**

ELEVATION VIEW  
SOLID BRACE INSTALLED IN-BETWEEN HANGERS (TRANSVERSE OR ALL-DIRECTIONAL BRACE)

ELEVATION VIEW  
CABLE BRACE INSTALLED IN-BETWEEN HANGERS

ELEVATION VIEW  
CABLE BRACE INSTALLED AT SINGLE HANGER (TRANSVERSE BRACES ONLY)

PLAN VIEW  
LONGITUDINAL SOLID BRACES INSTALLED IN ALTERNATING DIRECTIONS

PLAN VIEW  
ALL-DIRECTIONAL SOLID BRACES INSTALLED IN ALTERNATING DIRECTIONS

PLAN VIEW  
CABLE X-PATTERN BRACE INSTALLED IN-BETWEEN HANGERS

NOTES:  
(1) REFER TO APPROPRIATE DETAIL F PAGES FOR DIMENSIONS AND NOTATIONS NOT SHOWN.

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**SEISMIC BRACKET ATTACHMENT TO STRUCTURAL TIMBER WITH (1) THRU BOLT OR THREADED ROD**

MIN. 2x MEMBER, TYP.  
(MIN. SPECIES SPECIFIC GRAVITY G = 0.42 AND GRADE NO. 2)

ASTM A307 BOLT OR ASTM A36 THREADED ROD, WITH 2x2x1/2 PLATE WASHER ON BACK SIDE OF JOIST

MAX. 4x JOIST, TYP. (MIN. SPECIES SPECIFIC GRAVITY G = 0.42 AND GRADE NO. 2)

4x6 (MIN. SPECIES SPECIFIC GRAVITY G = 0.42 AND GRADE NO. 2)

ADDITIONAL BLOCKING OF WOOD JOIST TO BE DESIGNED BY THE STRUCTURAL ENGINEER OF RECORD.

**SEISMIC BRACE BRACKET PERPENDICULAR TO JOIST**

BRACE BRACKET ATTACHMENT TYPE	ALLOWABLE LATERAL LOAD Fp LBS	MAX. BRACE RANGE INCH	MIN. DIA. INCH	MIN. Cmin1 INCH	MIN. Cmin2 INCH
38A TO 38D	250	30"-45"	1/2	1 1/2	1 1/2
38A TO 38B	150	46"-60"	1/2	1 1/2	1 1/2
50A TO 50D	300	30"-45"	1/2	1 1/2	2
50A TO 50B	170	46"-60"	1/2	1 1/2	2
63A TO 63D	340	30"-45"	1/2	1 1/2	2 1/2
63A TO 63C	200	46"-60"	1/2	1 1/2	2 1/2

SEE DETAIL NO.00 FOR SECTION NOTES

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**SEISMIC BRACKET ATTACHMENT TO WOOD I-JOISTS WITH (1) THRU BOLT OR THREADED ROD**

2x6x1'-0" (MIN. SPECIES SPECIFIC GRAVITY G=0.42 AND GRADE NO. 2)

ASTM A307 BOLT OR ASTM A36 THREADED ROD, WITH 2x2x1/2 PLATE WASHER ON BACK SIDE OF JOIST

12-12d (3/4") COMMON NAIL, CLINCH NAILS AT I-JOIST WEB TYP.

MASON IND. N.Y. SEISMIC BRACKET FOR CABLE OR SOLID BRACING.

ADDITIONAL BLOCKING OF WOOD JOIST TO BE DESIGNED BY THE STRUCTURAL ENGINEER OF RECORD.

**PERPENDICULAR TO JOIST**

BRACE BRACKET ATTACHMENT TYPE	ALLOWABLE LATERAL LOAD Fp LBS	MAX. BRACE RANGE INCH	MIN. DIA. INCH
38A TO 38D	150	30"-45"	1/2
38A TO 38A	80	46"-60"	1/2
50A TO 50C	180	30"-45"	1/2
50A TO 50A	100	46"-60"	1/2
63A TO 63C	210	30"-45"	1/2
63A TO 63A	120	46"-60"	1/2

SEE DETAIL NO.00 FOR SECTION NOTES

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**SEISMIC BRACKET ATTACHMENT TO WOOD JOIST**

MIN. 2x (MIN. SPECIES SPECIFIC GRAVITY G=0.42 AND GRADE NO. 2), TYP.

2 1/2" DIA. ASTM A307 BOLT OR ASTM A36 THREADED ROD THROUGH 1/2" DIA. HOLE, WITH STANDARD WASHER ON BACK SIDE OF JOIST, SNUG TIGHT TYP.

L3x3x1/4, 5" L.G.

MASON IND. N.Y. SEISMIC BRACKET FOR SOLID OR CABLE BRACING. BRACE BRACKET MAY BE ROTATED TO ANY ANGLE AROUND BOLT.

ADDITIONAL BLOCKING OF WOOD JOIST TO BE DESIGNED BY THE STRUCTURAL ENGINEER OF RECORD.

**AT JOIST**

**VIEW A-A**

BRACE BRACKET ATTACHMENT TYPE	ALLOWABLE LATERAL LOAD Fp LBS	MAX. BRACE RANGE INCH	MIN. DIA. INCH
38A TO 38E	420	30"-45"	1/2
38A TO 38D	300	46"-60"	1/2
50A TO 50E	420	30"-45"	1/2
50A TO 50D	300	46"-60"	1/2
63A TO 63E	420	30"-45"	1/2
63A TO 63D	300	46"-60"	1/2

SEE DETAIL NO.00 FOR SECTION NOTES

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**CONDUIT**

**ELECTRICAL METALLIC TUBING (EMT) MAXIMUM SEISMIC BRACE SPACINGS**

**VERTICAL FORCE Fpv = 0.375g (ASD)**

TRADE SIZE	MAX WEIGHT PER FOOT (LBS/FT)	MAX SUPPORT SPACING (FT)	MAX TRANSVERSE BRACE SPACING BASED ON TRADE SIZE AND g FORCE (FT)					
			0.25	0.375	0.5	0.625	0.75	0.875
1	8.25	10	45	41	38	36	35	33
3.5	10.98	10	48	44	41	39	37	35
4	13.64	10	50	45	42	40	38	36

NOTES:  
1. MAXIMUM BRACE SPACING IS BASED ON ASCE 7-10 SECTION 13.6.3, NOTE 9, 70 PERCENT OF THE MATERIAL MINIMUM SPECIFIED TENSILE STRENGTH FOR STEEL TUBING.  
2. EMT CONSIDERED FULL OF CONDUCTORS WHEN DETERMINING WEIGHT (REFER TO APPENDIX).  
3. FOR LONGITUDINAL AND ALL-DIRECTIONAL BRACE SPACING, MULTIPLY THE TABULATED VALUES BY 3. BRACE AND OR CONNECTION CAPACITY MAY GOVERN MAXIMUM SPACING IN SOME CASES.  
4. BRACE SPACINGS ARE BASED ON EMT STEEL TUBING CONSTRUCTED TO UL-797 OR ANSI C-88.3 WITH A MINIMUM YIELD STRENGTH OF 30,000 PSI.  
5. COUPLINGS FOR UP TO 2 1/2" EMT TO MEET PROJECT SPECIFICATIONS, HOWEVER, COMPRESSION COUPLINGS OR COUPLINGS WITH MIN. (2) SCREWS AT EACH END + g. CONDUIT CAN BE PUSHED INTO COUPLING + 2" AND SET WITH MIN. (2) SCREWS. SHALL BE USED FOR 3", 3 1/2", AND 4" EMT.

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**ELECTRICAL CONDUIT WEIGHT TABLES**

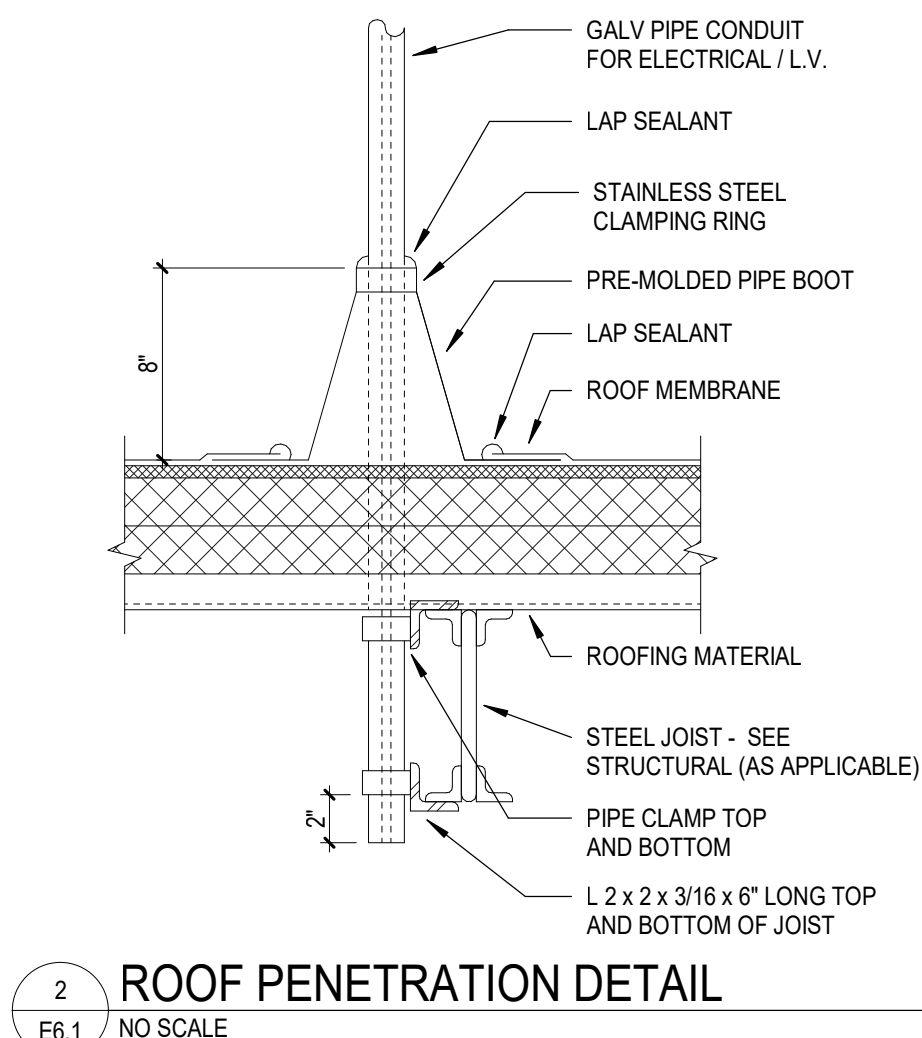
CONDUIT DIAMETER (IN)	PIPE TYPE	CONDUIT WEIGHTS	
		PIPE WEIGHT PER FOOT (LBS)	TOTAL
ELECTRICAL METALLIC TUBING (EMT) WEIGHT	1/2	0.29	0.32
	3/4	0.44	0.40
	1	0.64	0.66
	1 1/2	1.17	0.96
	2	1.40	2.62
	2 1/2	2.05	3.74
INTERMEDIATE METAL CONDUIT (IMC) WEIGHT	1/2	2.50	5.78
	3/4	3.25	7.73
	1	3.70	9.94
	1 1/2	6.80	0.22
	2	8.82	0.41
	2 1/2	1.16	0.86
RIGID METAL CONDUIT (RMC) WEIGHT	1/2	1.50	1.17
	3/4	1.82	1.60
	1	2.42	2.62
	1 1/2	4.28	3.47
	2	5.26	5.43
	2 1/2	6.12	7.34

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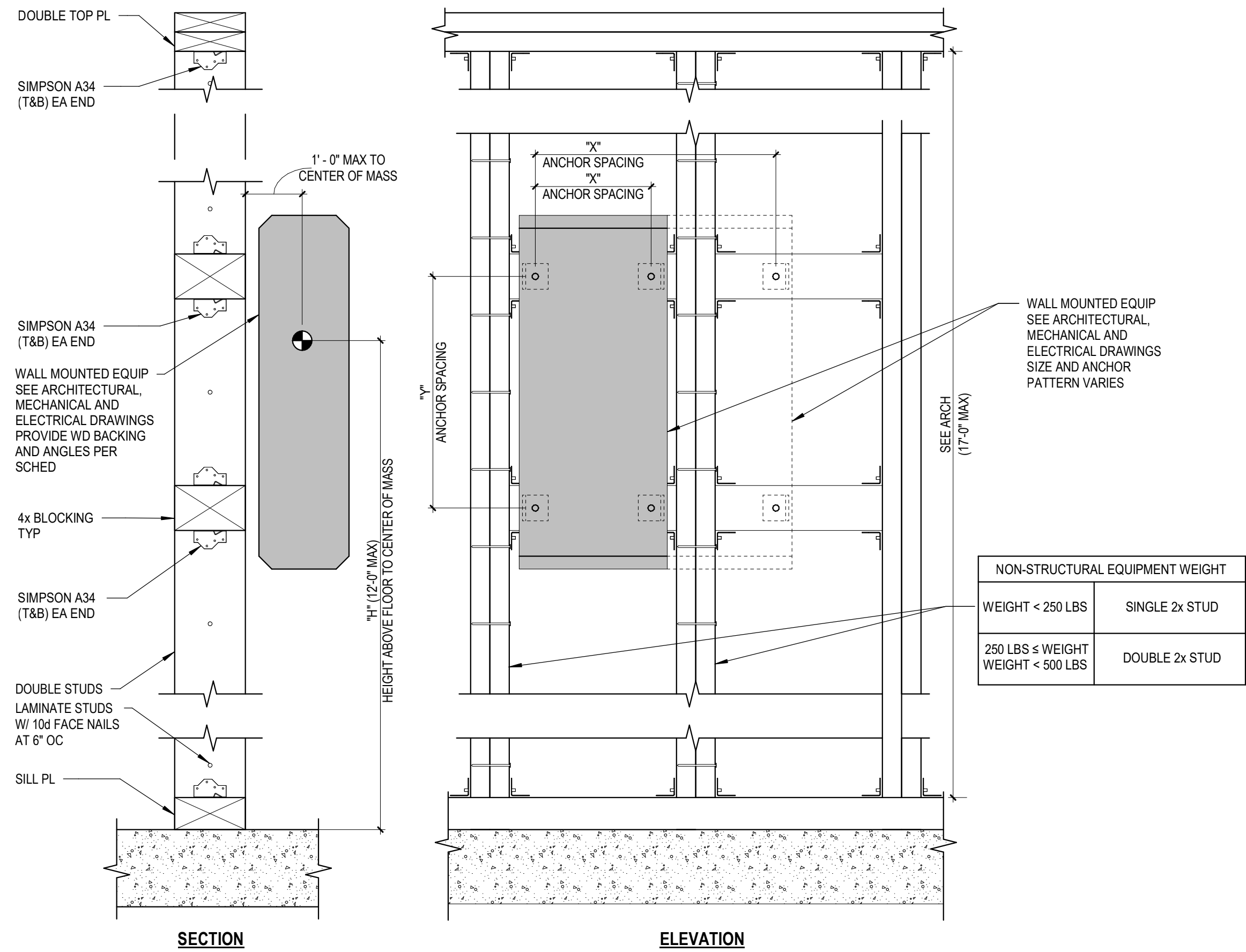
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**APP3.0**

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**ROOF PENETRATION DETAIL**  
NO SCALE



- NOTES:**
- MAXIMUM WEIGHT OF EQUIPMENT UNIT NOT TO EXCEED 500 LBS.
  - COORDINATE EXACT LOCATIONS WITH MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS.

**TYP WALL EQUIPMENT BACKING**  
NO SCALE

**Manzanita Elementary School**  
COVINA VALLEY USD  
4131 North Norco Avenue Covina, CA 91722

DSA Submitted Set  
11/02/2022  
REVISIONS

75-22605-00

**ELECTRICAL DETAILS**

**E6.1**

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