

BARRANCA ELEMENTARY SCHOOL

727 S. BARRANCA AVENUE. COVINA, CA 91723

COVID-19 COVINA VALLEY DISTRICT WIDE HVAC REPLACEMENT

100% CONSTRUCTION DOCUMENTS

05/05/2022

DLR GROUP PROJECT NUMBER: 75-22605-00

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TOTAL: 27 SHEETS

VICINITY MAP



PROJECT DIRECTORY

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Statement of General Conformance

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS

(Application No. 03-122224 File No. 19-25)

- THE DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEETS
- THIS DRAWING, PAGE OF SPECIFICATION/CALCULATIONS

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

- DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS, AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND
- COORDINATION WITH MY PLANS AND SPECIFICATIONS, AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

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

- I FIND THAT:
- ALL DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET FOR EACH DISCIPLINE (SEE SHEET INDEX FOR LIST OF DISCIPLINES)
- THIS DRAWING OR PAGE

- ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN, AND
- HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS.

| SIGNATURE | DATE | SIGNATURE | DATE |
|----------------|-----------------|---|-----------------|
| | 05/05/2022 | | |
| JESSE MILLER | | ARCHITECT OR ENGINEER DELEGATED RESPONSIBILITY FOR THIS PORTION OF THE WORK | |
| PRINT NAME | | PRINT NAME | |
| C-32306 | 10/31/2023 | | |
| LICENSE NUMBER | EXPIRATION DATE | LICENSE NUMBER | EXPIRATION DATE |

DESIGN ANALYSIS DATA

- WIND DESIGN CRITERIA (CBC 1603A.1.4) - STRUCTURAL DESIGN PARAMETERS
 - RISK CATEGORY: III
 - WIND DESIGN SPEED: V=110 MPH
 - WIND EXPOSURE CATEGORY: B (PER ASCE 7-16)
- EARTHQUAKE DESIGN CRITERIA (CBC 1603A1.5)
 - SEISMIC DESIGN CATEGORY: E OR F
 - SITE CLASS: D
 - S₁ = 1.666
 - S₂ = 0.811
 - S_w = 2
 - S_w = 7/11
 - S_w = 1.33
 - S_w = 7/11
 - L₁ (IMPORTANCE FACTOR) = 1.25
 - F_a (CONTROLLING HOR. SEISMIC FORCE) = 2089.48 LB
- DESIGN LOAD BEARING VALUES OF SOILS (CBC 1603A1.6)
 - ALLOWABLE SOIL BEARING PRESSURE: 1,500 PSF
 - ALLOWABLE LATERAL BEARING PRESSURE: 100 PSF MIN.

SCOPE OF WORK

SCOPE OF WORK SHALL BE AS FOLLOWS:

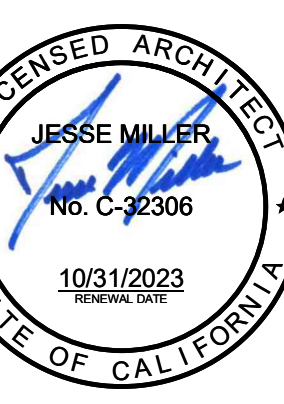
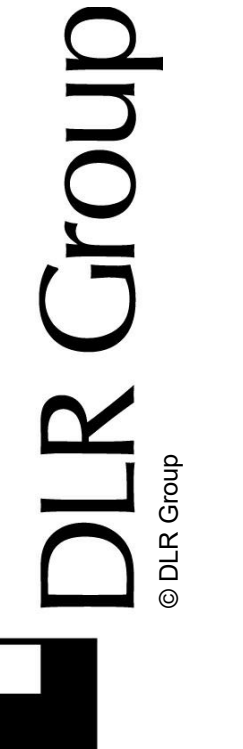
IN ADDITIONAL REMOVAL AND REPLACEMENT OF EXISTING MPR UNIT WITH NEW HVAC SYSTEMS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL SCOPE AS REQUIRED.

APPLICABLE CODES

- | | |
|---|---------------|
| 2019 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR | 2016 ADDITION |
| 2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR | 2013 ADDITION |
| 2018 INTERNATIONAL BUILDING CODE, VOL. 1 & 2, AND 2019 CALIFORNIA AMENDMENTS | 2016 ADDITION |
| 2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR | 2017 ADDITION |
| (2017 NATIONAL ELECTRICAL CODE AND 2019 CALIFORNIA AMENDMENTS) | 2017 ADDITION |
| 2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR | 2013 ADDITION |
| (2018 IPMIO UNIFORM MECHANICAL CODE AND 2019 CALIFORNIA AMENDMENTS) | 2016 ADDITION |
| 2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR | 2016 ADDITION |
| (2018 IPMIO UNIFORM PLUMBING CODE AND 2019 CALIFORNIA AMENDMENTS) | 2016 ADDITION |
| 2019 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR | 2016 ADDITION |
| 2019 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR | 2016 ADDITION |
| (2018 INTERNATIONAL FIRE CODE AND 2019 CALIFORNIA AMENDMENTS) | 2016 ADDITION |
| 2019 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR | 2016 ADDITION |
| (2018 INTERNATIONAL EXISTING BUILDING CODE AND 2019 CALIFORNIA AMENDMENTS) | 2016 ADDITION |
| 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL GREEN), PART 11, TITLE 24 CCR | 2016 ADDITION |
| 2019 CALIFORNIA REFERENCED STANDARDS CODE (CSCR), PART 12, TITLE 24 CCR | 2016 ADDITION |
| TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS | 2016 ADDITION |
| 2016 ASME A17.1/CSA B44-13 SAFETY CODE FOR ELEVATORS AND ESCALATORS | 2016 ADDITION |
| (PER 2019 CBC PART 4.3.5) | 2016 ADDITION |
| NOTE: CALIFORNIA ELEVATOR UNIT ENFORCES CCR TITLE 8 AND USES THE 2004 ASME A17.1 BY ADOPTION | 2016 ADDITION |
| 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN | 2017 ADDITION |
| NFPA 13 - STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS (CA AMENDED) | 2016 ADDITION |
| NFPA 14 - STANDARD FOR INSTALLATION OF SAND PIPE AND HOSE SYSTEMS (CA AMENDED) | 2016 ADDITION |
| NFPA 17 - STANDARD FOR DRY CHEMICAL EXTINGUISHING SYSTEMS | 2016 ADDITION |
| NFPA 17A - STANDARD FOR WET CHEMICAL EXTINGUISHING SYSTEMS | 2016 ADDITION |
| NFPA 20 - STANDARD FOR INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION | 2016 ADDITION |
| NFPA 22 - STANDARD FOR WATER TANKS FOR PRIVATE FIRE PROTECTION | 2016 ADDITION |
| NFPA 24 - STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES | 2016 ADDITION |
| NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED) | 2016 ADDITION |
| NFPA 80 - STANDARD FOR FIRE DOORS AND OTHER OPENINGS PROTECTIVE | 2016 ADDITION |
| NFPA 2001 - STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS (CA AMENDED) | 2016 ADDITION |
| UL 300 - STANDARD FOR FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF COMMERCIAL COOKING EQUIPMENT | 2005 (R2010) |
| UL 464 - AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES | 2003 ADDITION |
| UL 521 - STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS | 1999 ADDITION |
| UL 1971 - STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED | 2002 (R2010) |
| ICC 300 - STANDARD FOR BLEACHERS, FOLDING AND TELESCOPIC SEATING, AND GRANDSTANDS | 2017 ADDITION |

DSA GENERAL NOTES

- 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 4-338(b), PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR), NOT WITH STANDING OTHER PROVISIONS OF THE PROJECT SPECIFICATIONS, COMPLY WITH ALL PROVISIONS OF THE CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24, CCR), SECTION 4-338, FOR ALL ADDENDUM AND CONSTRUCTION CHANGE DOCUMENTS
- CONSTRUCTION CHANGE DOCUMENTS MUST BE SIGNED BY ALL THE FOLLOWING ARCHITECT OR ENGINEER HAVING GENERAL RESPONSIBLE CHARGE OF THE PROJECT, AND STRUCTURAL ENGINEER OF RECORD OR DELEGATED PROFESSIONAL ENGINEER (WHEN APPLICABLE).
- SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS (ACCESSIBILITY, STRUCTURAL ENGINEER, AND FIRE/SAFETY) SHALL BE CONSIDERED AS A CONSTRUCTION CHANGE DOCUMENT, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION IN ACCORDANCE WITH DSA R.4.4.6 AND SECTION 4-338(b), PART 1, TITLE 24, CCR. SUBSTITUTIONS SHALL BE FOR ANY MATERIALS, SYSTEMS OR PRODUCT THAT WOULD OTHERWISE BE REGULATED BY DSA.
- 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 SECTION 4-342, CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24, CCR).
- A DSA-ACCEPTED TESTING LAB, EMPLOYED BY THE DISTRICT (OWNER), SHALL CONDUCT ALL REQUIRED TESTS AND INSPECTIONS OF THE WORK.
- THE DSA-CERTIFIED PROJECT INSPECTOR AND DSA-ACCEPTED TESTING LAB SHALL BE EMPLOYED AND PAID BY THE OWNER (DISTRICT) AND APPROVED BY ALL OF THE FOLLOWING ARCHITECT OR ENGINEER HAVING GENERAL RESPONSIBLE CHARGE OF THE PROJECT: STRUCTURAL ENGINEER OF RECORD, AND DIVISION OF THE STATE ARCHITECT (DSA). THE INSPECTOR OF RECORD FOR THIS PROJECT SHALL BE CLASS 3 OR BETTER.
- ALL WORK SHALL CONFORM TO 2019 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
- A DSA-ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
- 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. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEN 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 AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK (SECTION 4-317(C), PART 1, TITLE 24, CCR).
- 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 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).
- GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
- 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 IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.
- LIGHTING CONTROL ACCEPTANCE TESTS MUST BE PERFORMED BY CERTIFIED LIGHTING CONTROL ACCEPTANCE TEST TECHNICIAN (ATT).
- MECHANICAL SYSTEM ACCEPTANCE TEST MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.
- ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR, ENGINEER/ARCHITECT OR RECORD OR THE OWNER'S AGENT.
- A LISTING OF CERTIFIED ATT CAN BE FOUND AT [HTTPS://WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/ACCEPTANCE-TESTING-TECHNICIAN-CERTIFICATION-PROVIDER-PROGRAM/ACCEPTANCE.COM](https://www.energy.ca.gov/programs-and-topics/programs/acceptance-testing-technician-certification-provider-program/acceptance.com)
- 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 CONFORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.
- PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.



BARRANCA ELEMENTARY SCHOOL
COVID-19 COVINA VALLEY DISTRICT WIDE HVAC REPLACEMENT
727 S. BARRANCA AVENUE, COVINA, CA 91723

100% CONSTRUCTION DOCUMENTS
05/05/2022 REVISIONS

75-22605-00
DSA #03-122224
DSA File #: 19-25

COVER SHEET

G0.1

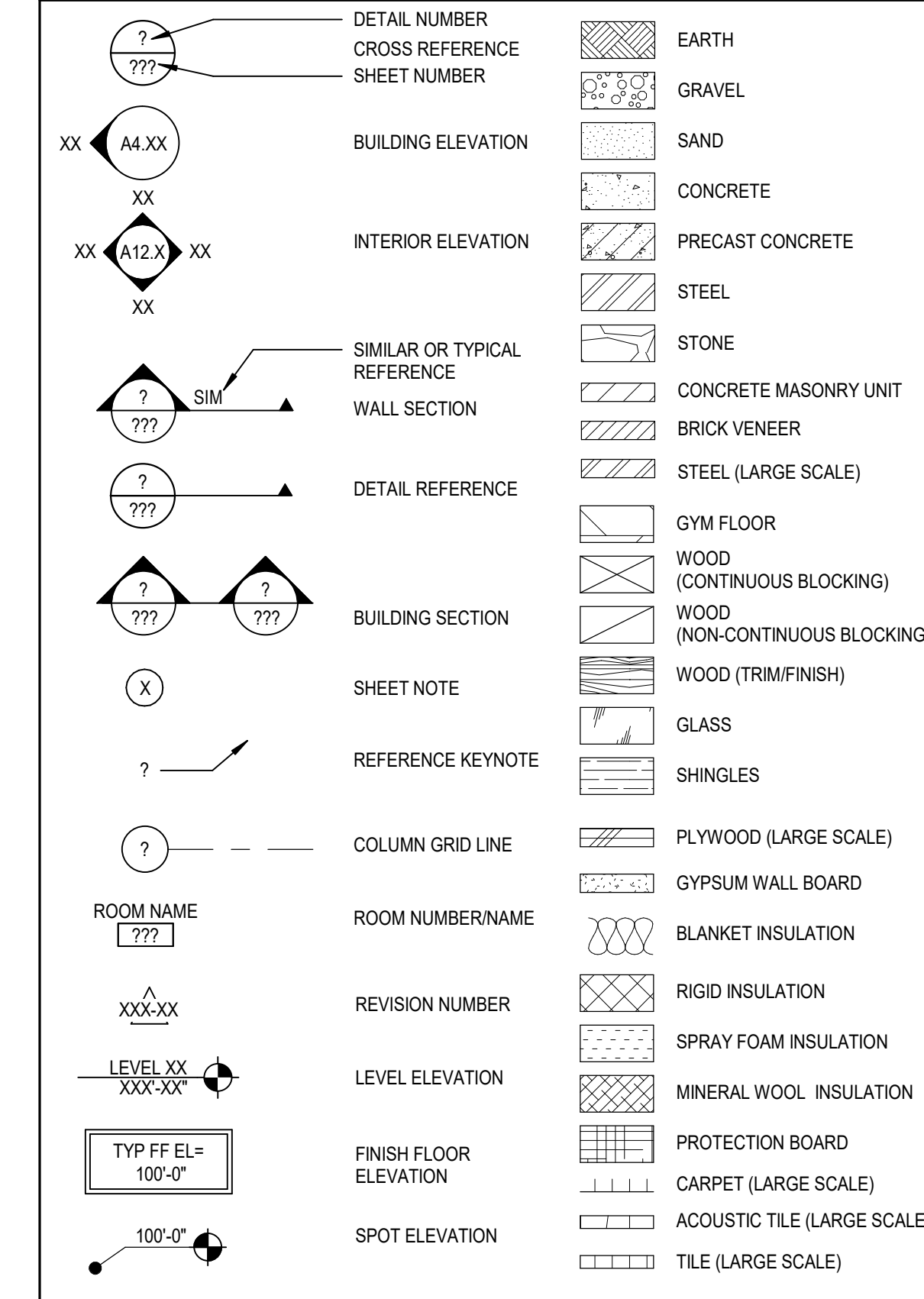
GENERAL ABBREVIATIONS

| | |
|--------|---------------------------------------|
| # | NUMBER |
| & | AND |
| @ | AT |
| ADA | AMERICANS WITH DISABILITY ACT |
| ADDN | ADDITION OR ADDITIONAL |
| AD | ADDITIONAL |
| 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 |
| CON(S) | CONNECTION(S) |
| CONST | CONSTRUCTION |
| CONT | CONTINUOUS |
| CONTR | CONTRACTOR(OR) |
| C | 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 |
| EG | ELEVATION |
| ELEC | ELECTRICAL |
| ENG | ENGINEER |
| EQ | 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 |
| IN | 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 |
| NC | 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 |
| SIM | SIMILAR |
| SPEC | SPECIFICATION(S) |
| STD | STANDARD |
| STL | STEEL |
| STOR | STORAGE |
| STRUCT | STRUCTURAL |
| SYM | SYMMETRICAL |
| TEMP | TEMPORARY |
| TYP | TYPICAL |
| UNEX | UNEXCAVATED |
| UNFN | UNFINISHED |
| UNO | UNLESS NOTED OTHERWISE |
| VERT | VERTICAL |
| VEST | VESTIBULE |
| VIF | VERIFY IN FIELD |
| W | WEST |
| W | WITH |
| W/O | WITHOUT |

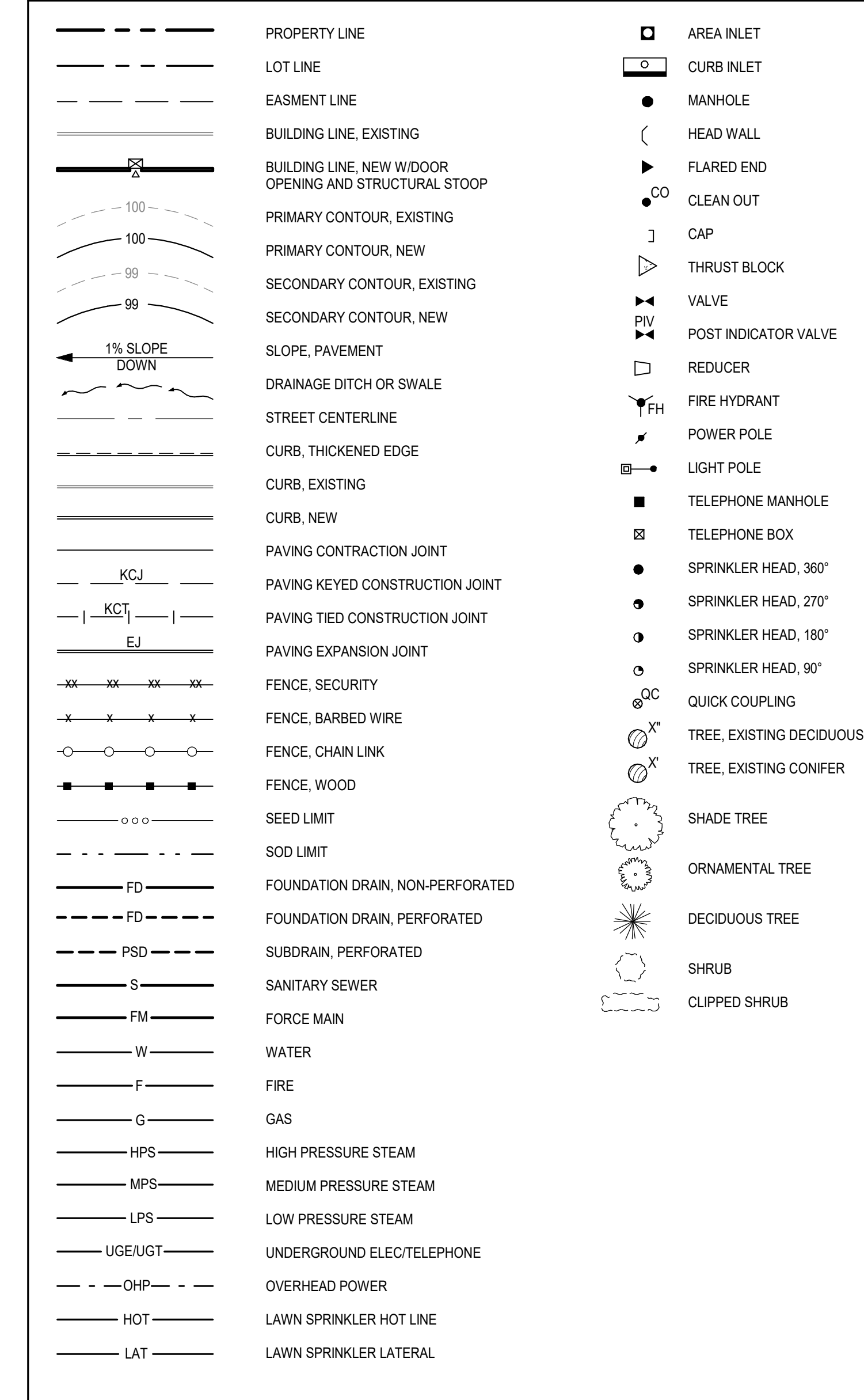
ARCHITECTURAL ABBREVIATIONS

| | |
|--------------|--|
| 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 |
| ADMIN | 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 |
| B/S | BOY CHANGING STATION |
| BD | BOARD |
| BLK | BLOCK |
| BLKG | BLOCKING |
| BLKHD | BULKHEAD |
| BMS(S) | BEAM(S) |
| BT | BOTTOM |
| BTW | BETWEEN |
| CAB | CABINET |
| CBD | CHALKBOARD |
| CER | CERAMIC |
| CF | CUBIC FEET |
| CFI | CONTRACTOR FURNISHED CONTRACTOR INSTALLED |
| CFMF | COLD-FORMED METAL FRAMING |
| CE | ELEVATION |
| 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 |
| COMP | 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 |
| CU | COPPER |
| CJ | COMBINATION UNIT |
| CJ | CONTROL JOINT |
| CY | CUBIC YARD |
| CYL | CYLINDER |
| DB | DECIBEL |
| DBL | DOUBLE |
| DC | DUST COLLECTOR |
| DEPR | DEPRESSION(ED) |
| DEPT | DEPARTMENT |
| DET | DETENTION |
| DF | DRAINING FOUNTAIN |
| DG | DOOR GRILLE |
| DIAG | DIAGONAL |
| DRFG | DAMP PROOFING |
| DR | DOOR |
| DSN | DOWNSPOUT NOZZLE |
| DW | DISHWASHER |
| DWL(S) | DOWEL(S) |
| DWR | DRAWER |
| EB | EXPANSION BOLT |
| EE | EACH END |
| EEW | EMERGENCY EYE WASH |
| EEWS | EMERGENCY EYE WASH SHOWER |
| 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 |
| EWG | ELECTRIC WATER COOLER |
| EXP | EXPANSION |
| EXP | EXPOSED |
| F | FABRIC |
| F.O. | FACE OF |
| FAB | FABRICATE(D) |
| FB | FACE BRICK |
| FD | FLOOR DRAIN |
| FDM | FOUNDATION |
| FE | FIRE EXTINGUISHER |
| FEC | FIRE EXTINGUISHER CABINET |
| FF | FINISH FLOOR |
| FH | FIRE HYDRANT |
| FHO | FIRE HOSE CABINET |
| FIG | FIGURE |
| FX | 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 |
| FIREPROOFING | 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 |
| G | GROUT |
| GA | GAUGE |
| GAL | GALLON |
| GALV | GALVANIZED |
| GB | GRAB BAR |
| GD | GARBAGE DISPOSAL |
| GEN | GENERAL |
| SCD | SEAT COVER DISPENSER |
| SCH | SHOWER CURTAIN HOOK |
| SCR | SHOWER CURTAIN ROD |
| SCT | STRUCTURAL CLAY TILE |
| GL | GLUE LAMINATED |
| GL | GLASS |
| GMP | GUARANTEED MAXIMUM PRICE |
| GR | GUARD RAIL |
| GR | GRADE |
| GRS | GALVANIZED RIGID STEEL |
| GWB | GYPSUM WALL BOARD |
| GYSUM | GYPSUM |
| HC | HOLLOW CORE |
| HD | HAND DRIVER |
| HDF | HIGH DENSITY FIBERBOARD |
| HDR | HEADER |
| HOWD | 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 |
| IFP | 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 | KITCHEN HOOD |
| KIT | KITCHEN |
| L | ANGLE |
| LAB | LABORATORY |
| LAM | LAMINATED |
| LAV | LAVATORY |
| LBR | LUMBER |
| LDG | LOADING |
| LF | LENGTH (LONG) |
| LG | LAMINATED GLASS |
| LN | LINEAR |
| LNO | LINEUM |
| LNR | 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 |
| MIR | 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 |
| OA | OVERALL |
| OFI | OWNER FURNISHED CONTRACTOR INSTALLED |
| OFF | OFFICE |
| OFI | OWNER FURNISHED OWNER INSTALLED |
| OH | OPPOSITE HAND |
| OP(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 |
| PG | PATTERN GLASS |
| PIC | PORTABLE INSTRUMENT CONNECTION |
| PIG | PATTERN INSULATING GLASS |
| PL | PLATE |
| PL | PROPERTY LINE |
| PL | PLASTIC LAMINATE |
| PLAM | PLASTIC LAMINATE |
| PLBG | PLUMBING |
| PR | PAIR |
| PREFAB | PREFABRICATED |
| PROJ | PROJECTOR (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 |
| RD | ROOF DRAIN |
| REF | REFERENCE |
| REFL | REFLECTED |
| REM | REMOVABLE |
| RESIL | RESILIENT |
| RF | RESILIENT FLOORING |
| RF | RUBBER FLOOR |
| RFM | RECESSED FLOOR MAT |
| RH | ROBE HOOK |
| RIC | 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 |
| SCT | STRUCTURAL CLAY TILE |
| SD | SOAP DISPENSER |
| SECY | SECRETARY |
| SF | SQUARE FEET |
| SG | SPANDREL GLASS |
| SGL | SINGLE |
| SH | SHOWER |
| SHM | 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 |
| STAGD | 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 |
| TAN | TANGENT |
| TB | TOWEL BAR |
| TBD | TACK BOARD |
| TCP | TOILET COMPARTMENT PARTITION |
| TERR | TERRAZZO |
| TFG | TINTED FLOAT GLASS |
| TG | TEMPERED GLASS |
| TH | THRESHOLD |
| THK | THICKNESS |
| TI | TENANT IMPROVEMENT |
| TIG | 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 |
| TTTG | TINTED TEMPERED INSULATING GLASS |
| TW | TACK WALL |
| UL | UNDERWRITERS LABORATORIES |
| UR | URINAL |
| US | UTILITY SHELF |
| UTIL | UTILITY |
| VB | VAPOR BARRIER |
| VB | VINYL BASE |
| VCB | VENTED COVE BASE |
| VF | 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 |
| WDW | 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 |

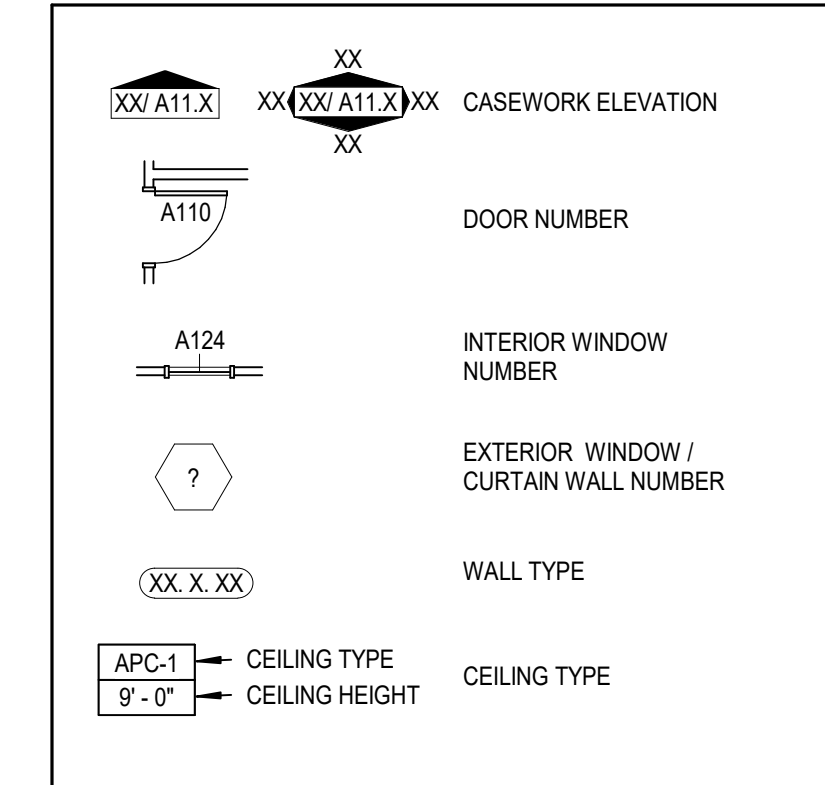
GENERAL SYMBOLS



SITE SYMBOLS

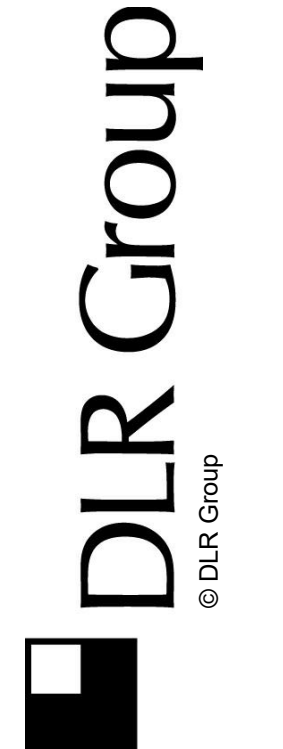


ARCHITECTURAL SYMBOLS



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 07410.
- 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 DRAWINGS 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. GO TO VERIFY ALL CLEARANCES. NOTIFY ARCHITECT IN CASE OF DISCREPANCY.



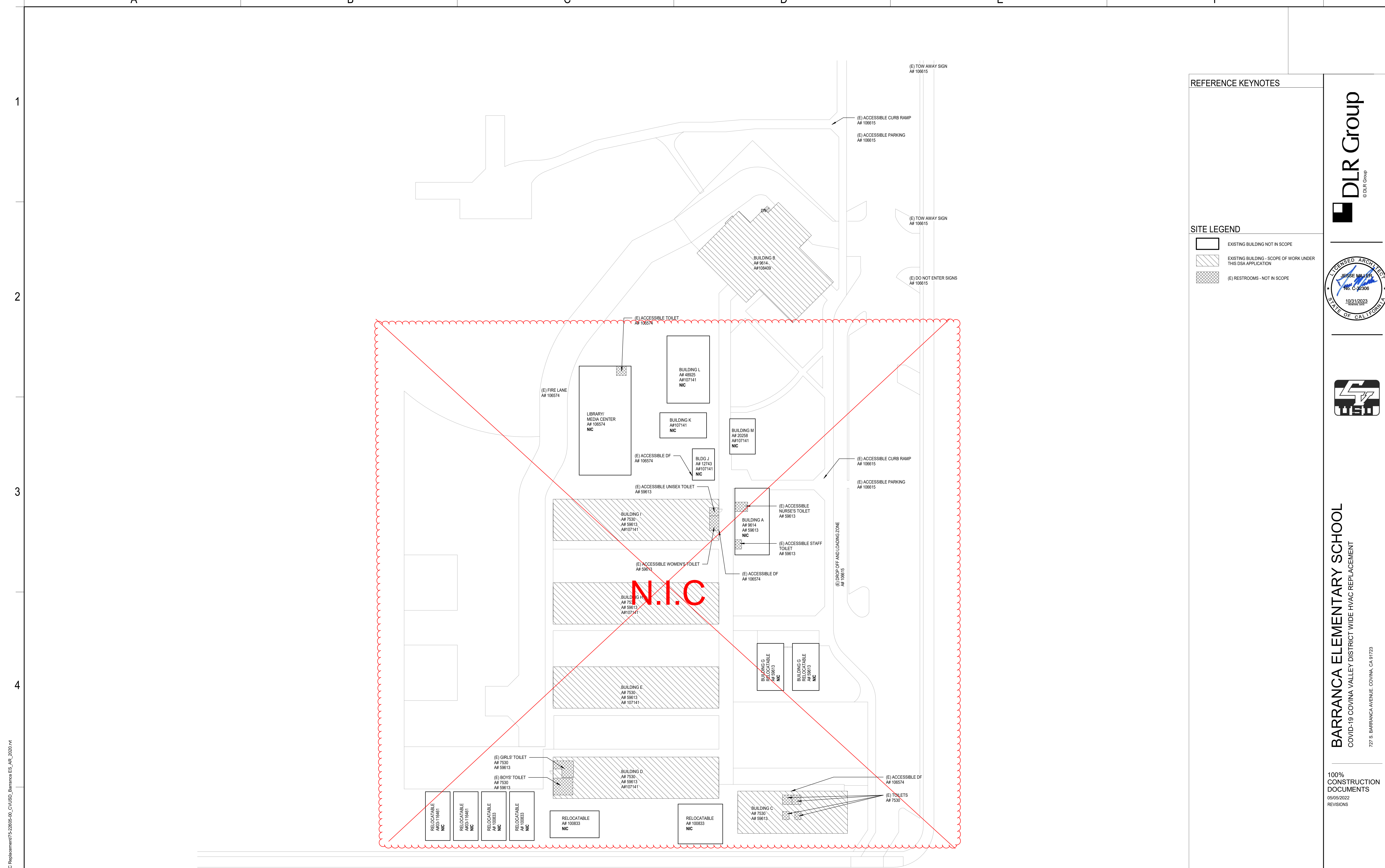
BARRANCA ELEMENTARY SCHOOL
 COVID-19 COVINA VALLEY DISTRICT WIDE HVAC REPLACEMENT
 727 S. BARRANCA AVENUE, COVINA, CA 91723

100% CONSTRUCTION DOCUMENTS
 05/05/2022 REVISIONS

75-22605-00
 DSA A#03-122224
 DSA File #: 19-25

GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

G1.1



REFERENCE KEYNOTES

- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- EXISTING BUILDING - NOT IN SCOPE
- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- EXISTING BUILDING - NOT IN SCOPE
- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- EXISTING BUILDING - NOT IN SCOPE
- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- EXISTING BUILDING - NOT IN SCOPE

SITE LEGEND

- EXISTING BUILDING - NOT IN SCOPE
- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- EXISTING BUILDING - NOT IN SCOPE
- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
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- EXISTING BUILDING - SCOPE OF WORK UNDER THIS DSA APPLICATION
- EXISTING BUILDING - NOT IN SCOPE



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ARCHITECTURAL
 SITE PLAN

A1.1

ARCHITECTURAL SITE PLAN
 SCALE: 1" = 30'-0"

DSA Certification Record

| APPLICATION # | FILE # | APPROVAL YEAR | NOTE |
|---------------|--------|---------------|---|
| 03-7530 | 19-25 | 2019 | ORIGINAL CAMPUS BUILDINGS |
| 03-59613 | 19-25 | 2019 | RELOCATABLE |
| 03-100833 | 19-25 | 2019 | RELOCATABLE |
| 03-106615 | 19-25 | 2019 | RELOCATABLE |
| 03-108409 | 19-25 | 2019 | RELOCATABLE |
| 03-106574 | 19-25 | 2006 | LIBRARY MEDIA CENTER, SITE IMPROVEMENTS |
| 03-107141 | 19-25 | 2008 | ALTERATION TO BLDGS. C, D, E, H, J, K, L, AND M |
| 03-114865 | 19-25 | 2012 | ALTERATIONS TO CLASSROOM BLDG. (A#7530); RELOCATION OF 2 CLASSROOMS FROM ANOTHER SITE (A#03-107020) |
| 03-116461 | 19-25 | 2016 | RELOCATION OF 2 CLASSROOMS BLDG. (A#03-1071310 & A# 03-11051) AND SITE WORK. |

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A

B

C

D

E

F

1

2

3

4

5

REFERENCE KEYNOTES

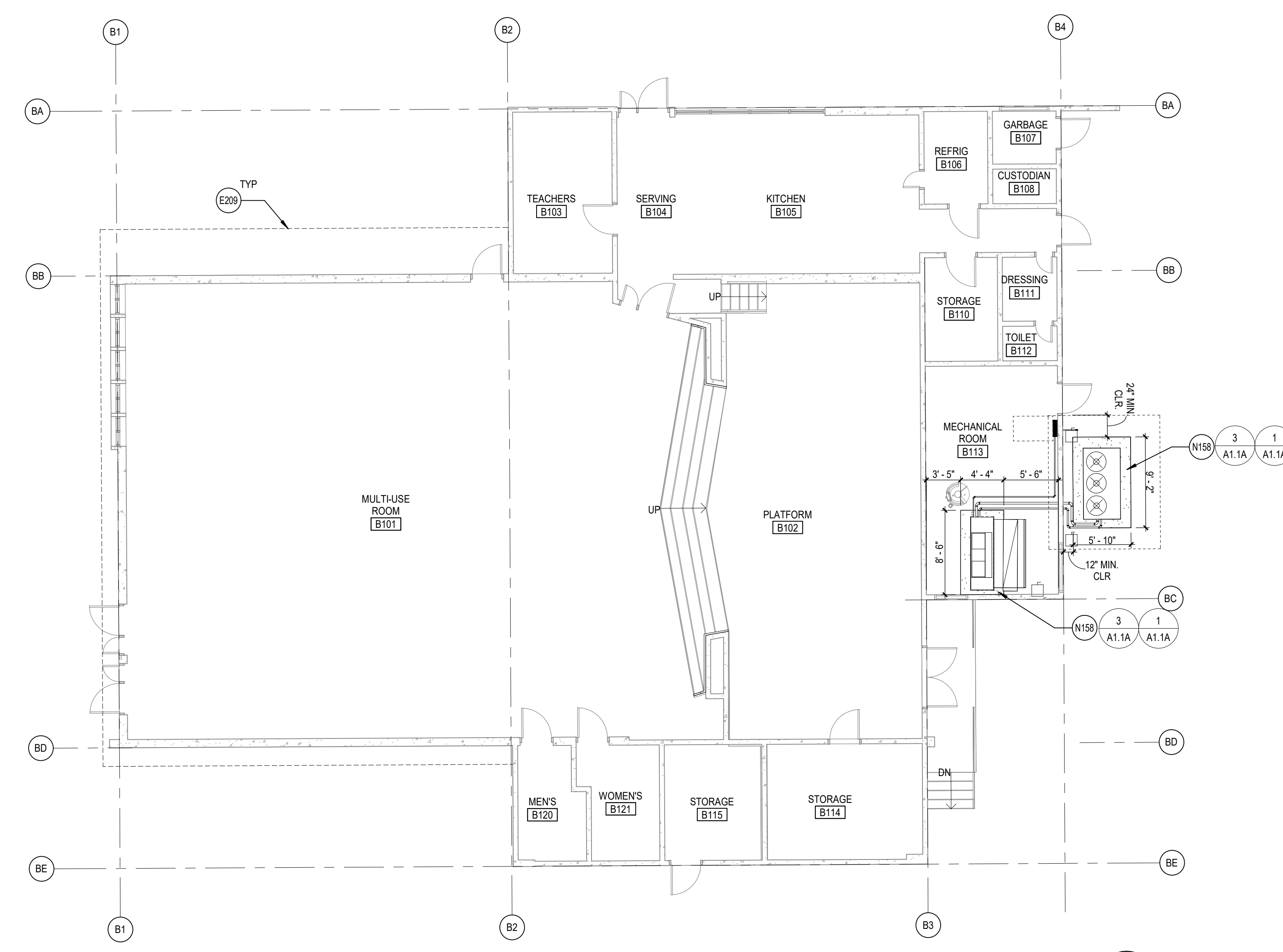
E209 LINE OF (E) ROOF ABOVE SHOWN DASHED
 N158 NEW MECHANICAL EQUIPMENT ON NEW 6" THK. TOP LEVELLED CONCRETE PAD & PLACED 6" FROM EDGE OF PAD. SEE MECH DWGS.

GENERAL ARCHITECTURAL NOTES

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

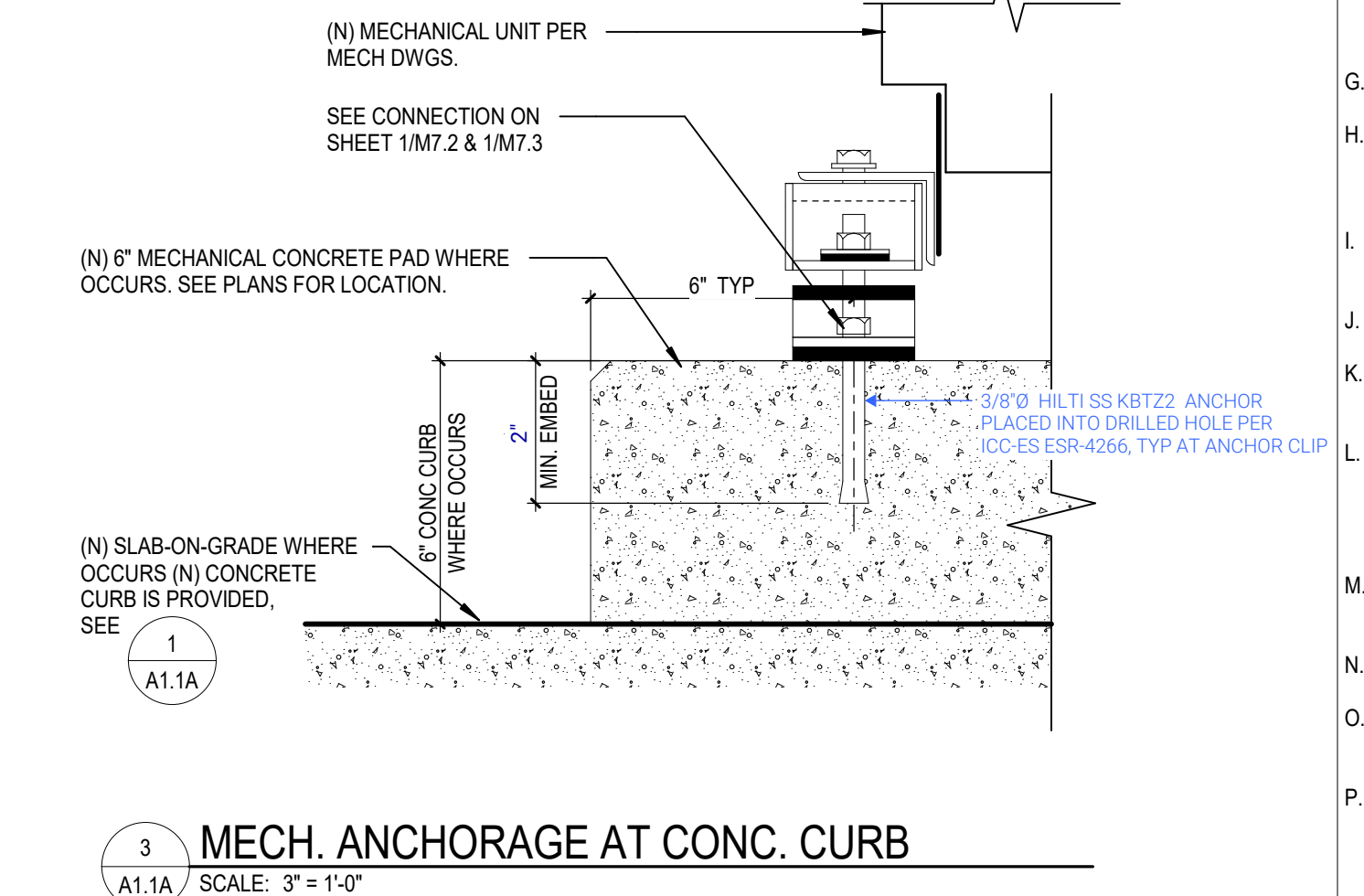
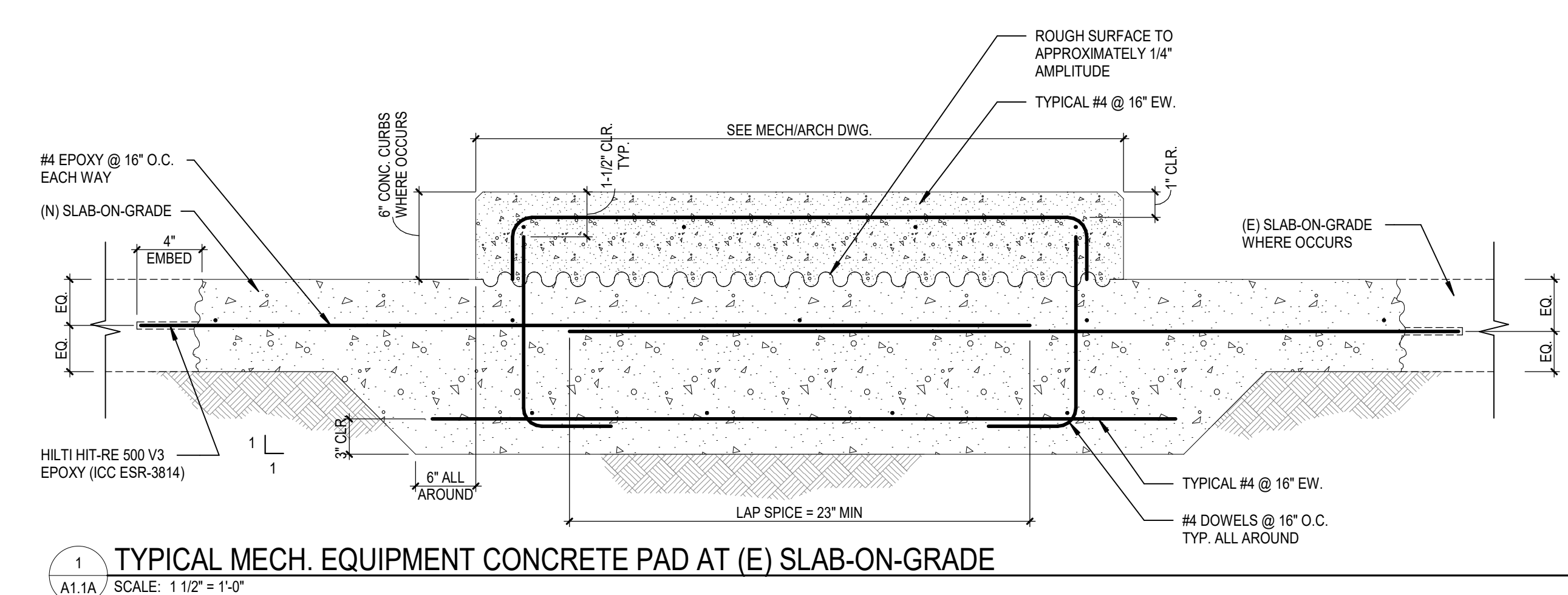
DEMOLITION GENERAL NOTES

- DEMOLITION NOTES APPLY TO ALL DEMOLITION SHEETS.
- THE CONTRACTOR SHALL:
- 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, CEILING, 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 INSPECTOR.
 - 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.



BUILDING B FLOOR PLAN

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



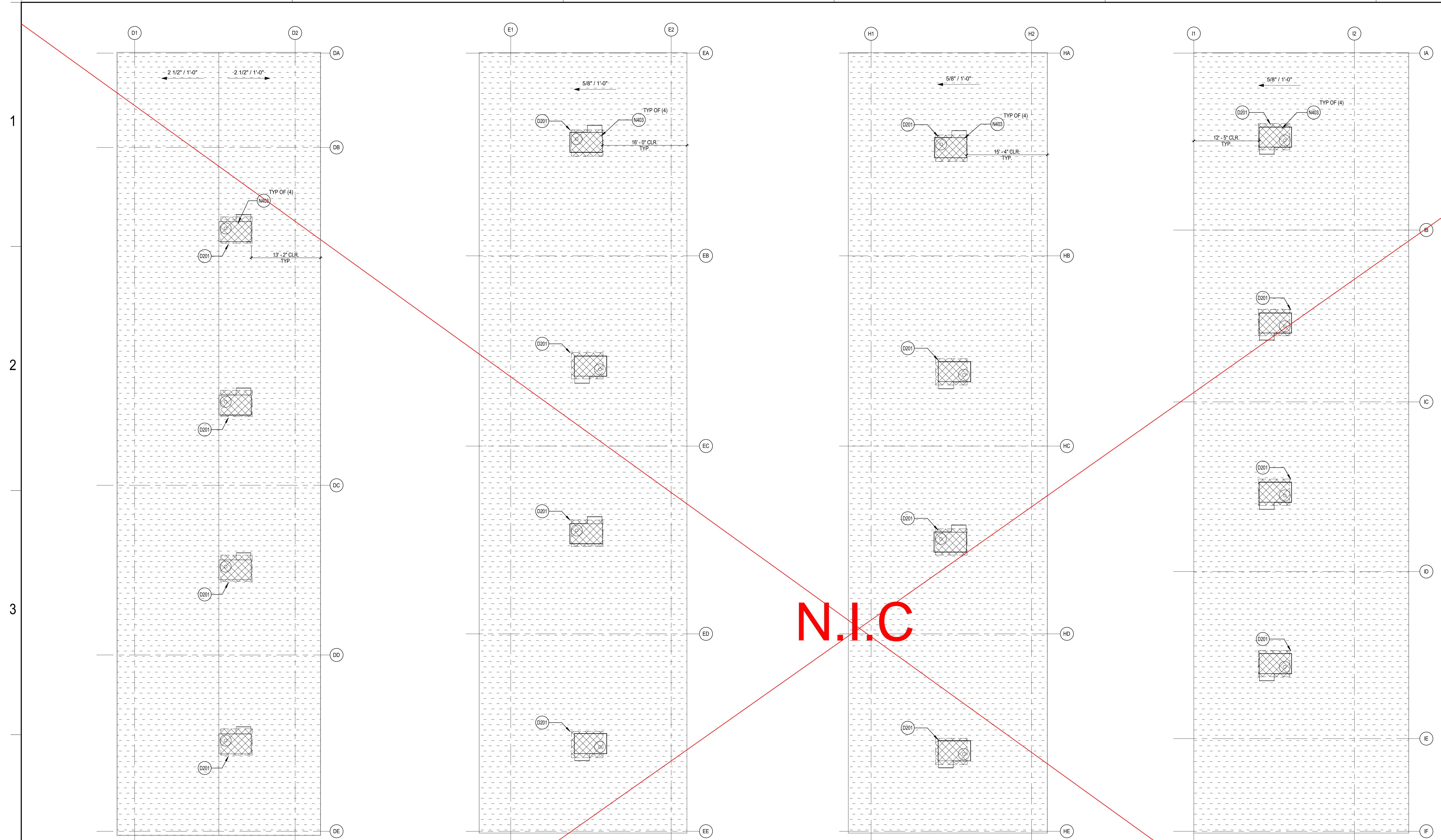
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 COVID-19 COVINA VALLEY DISTRICT WIDE HVAC REPLACEMENT
 727 S. BARRANCA AVENUE, COVINA, CA 91723

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REFERENCE KEYNOTES

D201 REMOVE (E) HVAC EQUIPMENT AND (E) DUCTWORK TO REMAIN PROTECT IN PLACE. 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. (E) ROOF CURBS TO REMAIN U.O. SEE MECHANICAL DRAWINGS SHEET M1.3B AND M1.3D FOR ADDITIONAL INFORMATION.
- B. COORDINATE THE SIZE AND LOCATION OF WALL PENETRATIONS FOR MECHANICAL AND ELECTRICAL EQUIPMENT. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR PENETRATIONS NOT SHOWN ON THIS DRAWING.
- C. (E) DRAINS, CURBS, VENTS AND STACKS TO REMAINS.

DEMOLITION GENERAL NOTES

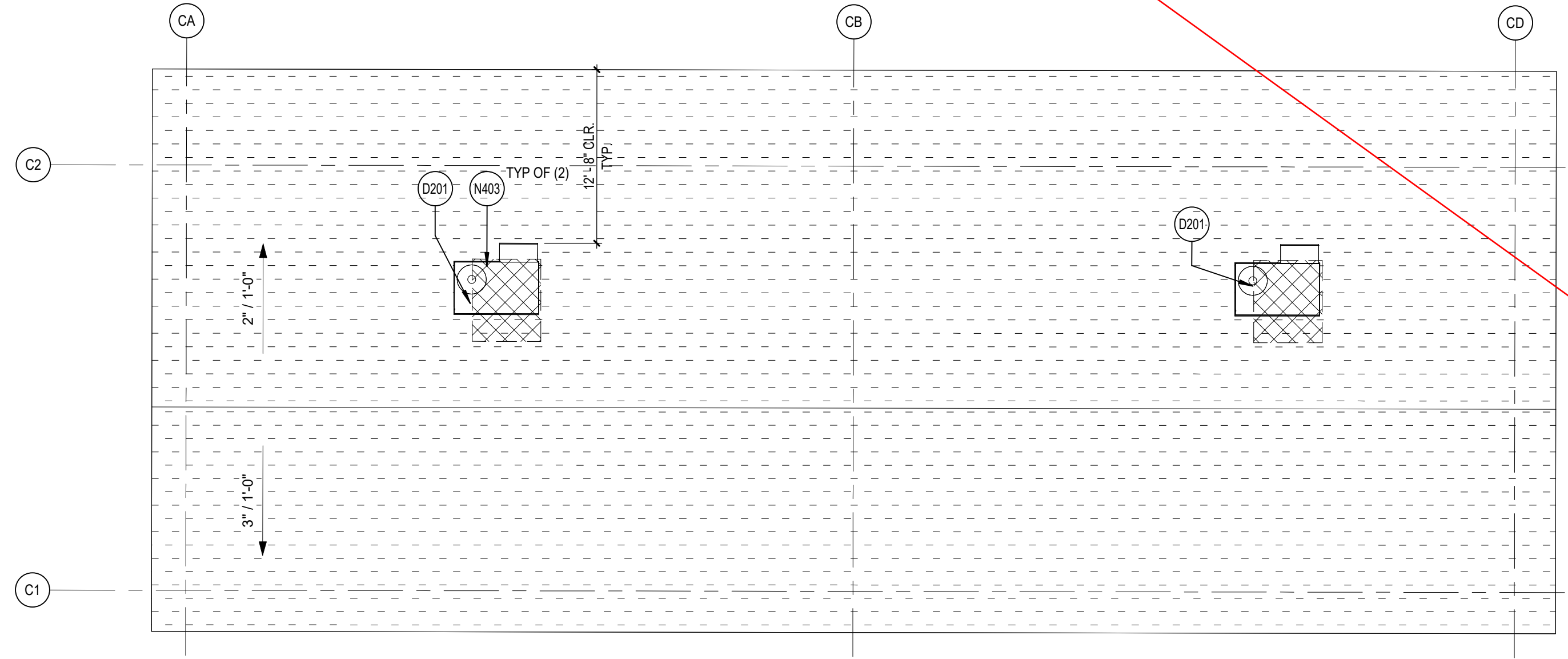
- DEMOLITION NOTES APPLY TO ALL DEMOLITION SHEETS.
- THE CONTRACTOR SHALL:
- A. COORDINATE ALL DEMOLITION AND PHASING EFFORTS WITH THE ARCHITECT AND OWNER'S REPRESENTATIVE. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION OF OWNER'S OPERATIONS. EXCESSIVE NOISE OR VIBRATION SHALL BE PRE-APPROVED AND 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, CEILING, 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 INSPECTOR.
 - P. 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.

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

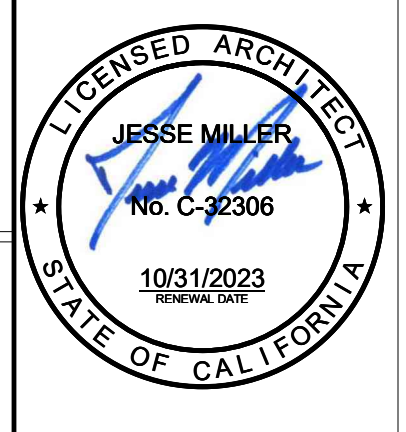
BUILDING E ROOF PLAN
SCALE: 1/8" = 1'-0"

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

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



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



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BUILDINGS D, E, H AND I ROOF PLAN

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STATE OF CALIFORNIA
Mechanical Systems
 NRCC-MCH-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
 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 Barranca Report Page: (Page 1 of 39)
 Project Address: 727 S Barranca Ave Date Prepared: 6/28/2022

A. GENERAL INFORMATION

| | | | |
|--|---|---|-------------|
| 01 Project Location (City) | Covina | 04 Total Conditioned Floor Area | 21505 |
| 02 Climate Zone | 10 | 05 Total Unconditioned Floor Area | 0 |
| 03 Occupancy Types Within Project: | | 06 # of Stories (Habitable Above Grade) | 1 |
| <input type="checkbox"/> Office (B) | <input type="checkbox"/> Retail (M) | <input type="checkbox"/> Non-refrigerated Warehouse (S) | |
| <input type="checkbox"/> Hotel/ Motel Guest Rooms (R-1) | <input type="checkbox"/> School (E) | <input type="checkbox"/> Healthcare Facility (I) | |
| <input type="checkbox"/> High-Rise Residential (R-2/R-3) | <input type="checkbox"/> Relocatable Class Bldg (E) | <input type="checkbox"/> 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 |
| <input checked="" type="checkbox"/> Heating Air System | <input type="checkbox"/> Water Economizer | <input checked="" type="checkbox"/> Air Economizer |
| <input checked="" type="checkbox"/> Cooling Air System | <input type="checkbox"/> Pumps | <input type="checkbox"/> Electric Resistance Heat |
| <input type="checkbox"/> Mechanical Controls | <input type="checkbox"/> System Piping | <input type="checkbox"/> Fan Systems |
| <input checked="" type="checkbox"/> Mechanical Controls (existing to remain, altered or new) | <input type="checkbox"/> Cooling Towers | <input checked="" type="checkbox"/> Ductwork (existing to remain, altered or new) |
| | <input type="checkbox"/> Chillers | <input checked="" type="checkbox"/> Ventilation |
| | <input type="checkbox"/> Boilers | <input type="checkbox"/> Zonal Systems/ Terminal Boxes |

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)
 Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters)

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
|--------|--------------------|---------------------------|-------------------|-------|-------|----|-------|-------|-------|-------|
| RTU-E3 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 19.86 | 33.62 | 0 | 36 | 33.4 | 43.71 | 36.74 |
| RTU-E4 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 21.02 | 35.58 | 0 | 37.49 | 34.94 | 46.26 | 38.42 |
| RTU-H1 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 21.16 | 35.83 | 0 | 38.22 | 35.83 | 46.57 | 39.4 |
| RTU-H2 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 20.14 | 34.1 | 0 | 36.98 | 34.41 | 44.32 | 37.85 |
| RTU-H3 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 19.86 | 33.62 | 0 | 36 | 33.4 | 43.71 | 36.74 |
| RTU-H4 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 21.02 | 35.58 | 0 | 37.49 | 34.94 | 46.26 | 38.42 |
| RTU-H1 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 21.07 | 35.67 | 0 | 38.7 | 36.32 | 46.36 | 39.95 |
| RTU-H2 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 20.04 | 33.92 | 0 | 36.48 | 33.89 | 44.09 | 37.27 |
| RTU-H3 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 19.97 | 33.81 | 0 | 36.33 | 33.74 | 43.95 | 37.11 |
| RTU-H4 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 19.93 | 33.74 | 0 | 36.15 | 33.55 | 43.85 | 36.9 |

¹FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(c). Healthcare facilities are exempt.
²It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
³If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
⁴Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b).

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H. FAN SYSTEMS & AIR ECONOMIZERS

| System Name: | RTU-C2 | Economizer: ¹ | NA: <=54 kbtu/h cooling | Economizer Controls: | Designed per §140.4(c) 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Device Design Airflow through Device (CFM) |
| SF | Supply | 1 | 2000 | BHP | 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: ¹ | NA: <=54 kbtu/h cooling | Economizer Controls: | Designed per §140.4(c) 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Device Design Airflow through Device (CFM) |
| SF | Supply | 1 | 1600 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 1600 | Total System Design (BHP): | | 0.91 | Maximum System Fan Power (BHP): |
| System Name: | RTU-D2 | Economizer: ¹ | NA: <=54 kbtu/h cooling | Economizer Controls: | Designed per §140.4(c) 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Device Design Airflow through Device (CFM) |
| SF | Supply | 1 | 1600 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 1600 | Total System Design (BHP): | | 0.91 | Maximum System Fan Power (BHP): |

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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 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|---|-----------------|---------------------------------------|---|--------------------|---------------------------------|--------------------------------|-----------------------------|--------------------|
| System Summary §110.1, §110.2, §140.4 | Pumps §140.4(k) | Fans/Economizers §140.4(c), §140.4(e) | System Controls §110.2, §120.2, §140.4(f) | Ventilation §120.1 | Terminal Box Controls §140.4(d) | Distribution §120.3, §140.4(i) | Cooling Towers §110.2(e)(2) | 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 |
| Mandatory Measures Compliance (See Table Q for Details) | | | | | | | | 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)
 Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP))

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|------------------|------------------------|-----------------------|-----------------|---|-------------------|-----------------|---|-------------------|
| Name or Item Tag | Size Category (Btu/h) | Rating Condition (°F) | Efficiency Unit | Minimum Efficiency Required per Tables 110.2 / Title 20 | Design Efficiency | Efficiency Unit | Minimum Efficiency Required per Tables 110.2 / Title 20 | Design Efficiency |
| FCU-B1 | >=135,000 and <240,000 | | COP | 3.2 | 3.4 | EER | 10.6 | 12.2 |
| RTU-C1 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-C2 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-D1 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-D2 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-D3 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-D4 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-E1 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-E2 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-E3 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-E4 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-H1 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-H2 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-H3 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-H4 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-I1 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-I2 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-I3 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |
| RTU-I4 | <65,000 | | HSPF | 7.7 | 13 | SEER | 13.0 | 14.3 |

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H. FAN SYSTEMS & AIR ECONOMIZERS

| System Name: | RTU-D3 | Economizer: ¹ | NA: <=54 kbtu/h cooling | Economizer Controls: | Designed per §140.4(c) 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Device Design Airflow through Device (CFM) |
| SF | Supply | 1 | 1600 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 1600 | Total System Design (BHP): | | 0.91 | Maximum System Fan Power (BHP): |
| System Name: | RTU-D4 | Economizer: ¹ | NA: <=54 kbtu/h cooling | Economizer Controls: | Designed per §140.4(c) 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Device Design Airflow through Device (CFM) |
| SF | Supply | 1 | 1600 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 1600 | Total System Design (BHP): | | 0.91 | Maximum System Fan Power (BHP): |
| System Name: | RTU-E1 | Economizer: ¹ | NA: <=54 kbtu/h cooling | Economizer Controls: | Designed per §140.4(c) 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Device Design Airflow through Device (CFM) |
| SF | Supply | 1 | 1600 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 1600 | Total System Design (BHP): | | 0.91 | Maximum System Fan Power (BHP): |

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CERTIFICATE OF COMPLIANCE NRCC-MCH-E
 This document 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(k) or §141.0(b)(2) for alterations.

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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(k) or §141.0(b)(2) for alterations.

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

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | |
|------------------|-------------------------------------|--|--|---|----------------|-------------------------------|----------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------------|
| Name or Item Tag | Equipment Category per Tables 110.2 | Equipment Type per Tables 110.2 / Title 20 | Smallest Size Available ¹ §140.4(a) | Equipment Sizing per Mechanical Schedule (kBTU/h) | | | Load Calculations ^{4,4} | | | | |
| | | | | Heating Output ^{2,3} | | Cooling Output ^{2,3} | | Total Heating Load (kBTU/h) | | | Total Sensible Cooling Load (kBTU/h) |
| | | | | Per Design (kBTU/h) | Rated (kBTU/h) | Supp. Heating Output (kBTU/h) | Sensible Per Design (kBTU/h) | Rated (kBTU/h) | Total Heating Load (kBTU/h) | Total Sensible Cooling Load (kBTU/h) | |
| FCU-B1 | Unitary Heat Pumps | Air-cooled, split (3 phase) | NA: Load Controls | 100.42 | 170 | 0 | 188.38 | 144 | 359.82 | 274.73 | |
| RTU-C1 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 33.55 | 56.8 | 0 | 41.9 | 39.6 | 49.75 | 43.56 | |
| RTU-C2 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 33.55 | 56.8 | 0 | 41.9 | 39.6 | 49.82 | 43.24 | |
| RTU-D1 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 19.94 | 33.76 | 0 | 36.21 | 33.61 | 43.89 | 36.97 | |
| RTU-D2 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 19.94 | 33.76 | 0 | 36.21 | 33.61 | 43.89 | 36.97 | |
| RTU-D3 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 19.93 | 33.74 | 0 | 36.15 | 33.55 | 43.85 | 36.9 | |
| RTU-D4 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 20.96 | 35.48 | 0 | 37.25 | 34.69 | 46.13 | 38.15 | |
| RTU-E1 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 21.16 | 35.83 | 0 | 38.22 | 35.83 | 46.57 | 39.4 | |
| RTU-E2 | Unitary Heat Pumps | Air-cooled, pkg (3 phase) | NA: Load Controls | 20.14 | 34.1 | 0 | 36.98 | 34.41 | 44.32 | 37.85 | |

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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-B1 | Economizer: ¹ | NA: Special OA Filtration | Economizer Controls: | Designed per §140.4(c) 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Device Design Airflow through Device (CFM) |
| SF | Supply | 1 | 6000 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 6000 | Total System Design (BHP): | | 0.91 | Maximum System Fan Power (BHP): |

| H. FAN SYSTEMS & AIR ECONOMIZERS | | | | | | | |
|---|--------------|--------------------------|-------------------------------------|----------------------------|--------------------------------|--|-------------------------------------|
| System Name: | RTU-H1 | Economizer: ¹ | 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Design Airflow through Device (CFM) |
| SF | Supply | 1 | 1600 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 1600 | 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)(2) for altered space conditioning systems. | | | | | | | | |
| System Name | System Zoning | Conditioned Floor Area Being Served (ft ²) | Thermostats §110.2(b) & (c), §120.2(a)(1) or §141.0(b)(2) | Shut-Off Controls §120.2(e) | Isolation Zone Controls §120.2(f) | Demand Response §110.12 and §120.2(b) | Supply Air Temp. Reset §140.4(f) | Window Interlocks per §140.4(n) |
| FCU-B1 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-C1 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-C2 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-D1 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-D2 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-D3 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-D4 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-E1 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-E2 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-E3 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-E4 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-H1 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |

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| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | | |
|---------------------------------------|----------------------------------|---|---|--------------------------|--------------------------------|---------------------------------------|--|--|-----------------------------|-----------------------------|
| System Name | | RTU-C2 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)(2) ² | | | 07 |
| 08 | | 09 | | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Space Name or Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/ toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)(3), §120.1(d)(5), and §120.1(e)(3) ⁶ | DCV | Provided per §120.1(d)(4) |
| Classroom | Lecture/ postsecondary classroom | 1270 | | 30 | 450 | 0 | 0 | NA: Not required space type | NA: Not required space type | NA: Not required space type |
| 17 | | Total System Required Min OA CFM | | 450 | 18 | Ventilation for this System Complies? | | Yes | | |

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| H. FAN SYSTEMS & AIR ECONOMIZERS | | | | | | | |
|---|--------------|--------------------------|-------------------------------------|----------------------------|--------------------------------|--|-------------------------------------|
| System Name: | RTU-H4 | Economizer: ¹ | 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Design Airflow through Device (CFM) |
| SF | Supply | 1 | 1600 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 1600 | Total System Design (BHP): | 0.91 | Maximum System Fan Power (BHP): | |

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| I. SYSTEM CONTROLS | | | | | | | | |
|--------------------|-------------|---------------------------|---------|-------------------|--------------|------|----------|----------|
| RTU-H2 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-H3 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-H4 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-I1 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-I2 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-I3 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |
| RTU-I4 | Single zone | <= 25,000 ft ² | Setback | Auto Timer Switch | 4 Hour Timer | EMCS | Included | Provided |

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Registration Date/Time: Report Version: 2019.1.003
Registration Provider: Energysoft Schema Version: rev 20200601
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| I. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | | |
|---------------------------------------|----------------------------------|---|---|--------------------------|--------------------------------|---------------------------------------|--|--|-----------------------------|-----------------------------|
| System Name | | RTU-D2 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)(2) ² | | | 07 |
| 08 | | 09 | | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Space Name or Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/ toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)(3), §120.1(d)(5), and §120.1(e)(3) ⁶ | DCV | Provided per §120.1(d)(4) |
| Classroom | Lecture/ postsecondary classroom | 930 | | 30 | 450 | 0 | 0 | NA: Not required space type | NA: Not required space type | NA: Not required space type |
| 17 | | Total System Required Min OA CFM | | 450 | 18 | Ventilation for this System Complies? | | Yes | | |

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
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Registration Provider: Energysoft Schema Version: rev 20200601
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| H. FAN SYSTEMS & AIR ECONOMIZERS | | | | | | | |
|---|--------------|--------------------------|-------------------------------------|----------------------------|--------------------------------|--|-------------------------------------|
| System Name: | RTU-I3 | Economizer: ¹ | 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 ² | Design HP | Fan Power Pressure Drop Adjustment - Table 140.4-B | Design Airflow through Device (CFM) |
| SF | Supply | 1 | 1600 | BHP | 0.91 | | |
| Total System Design Supply Airflow (CFM): | | | 1600 | Total System Design (BHP): | 0.91 | Maximum System Fan Power (BHP): | |

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Registration Provider: Energysoft Schema Version: rev 20200601
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| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | | |
|---------------------------------------|-----------------------------|---|---|--------------------------|--------------------------------|---------------------------------------|--|--|-----------------------------|-----------------------------|
| System Name | | FCU-B1 | System Design OA CFM Airflow ¹ | 4500 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)(2) ² | | | 07 |
| 08 | | 09 | | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Space Name or Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/ toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)(3), §120.1(d)(5), and §120.1(e)(3) ⁶ | DCV | Provided per §120.1(d)(4) |
| MPR Building | Assembly- multiuse | 3700 | | 300 | 4500 | 0 | 0 | NA: Not required space type | NA: Not required space type | NA: Not required space type |
| 17 | | Total System Required Min OA CFM | | 4500 | 18 | Ventilation for this System Complies? | | Yes | | |

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
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| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | | |
|---------------------------------------|----------------------------------|---|---|--------------------------|--------------------------------|---------------------------------------|--|--|-----------------------------|-----------------------------|
| System Name | | RTU-D4 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)(2) ² | | | 07 |
| 08 | | 09 | | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Space Name or Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/ toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)(3), §120.1(d)(5), and §120.1(e)(3) ⁶ | DCV | Provided per §120.1(d)(4) |
| Classroom | Lecture/ postsecondary classroom | 950 | | 30 | 450 | 0 | 0 | NA: Not required space type | NA: Not required space type | NA: Not required space type |
| 17 | | Total System Required Min OA CFM | | 450 | 18 | Ventilation for this System Complies? | | Yes | | |

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Registration Provider: Energysoft Schema Version: rev 20200601
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DLR Group
DLS
Barranca Elementary School
Covina Valley USD
727 S Barranca Ave, Covina, CA 91723
DSA SUBMITTED SET
5/5/2022
REVISIONS
75-22605-00
TITLE 24 COMPLIANCE
M0.3

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STATE OF CALIFORNIA
Mechanical Systems
NRC-MCH-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
Project Name: CVUSD Barranca Report Page: (Page 19 of 39)
Project Address: 727 S Barranca Ave Date Prepared: 6/28/2022

| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | |
|--|----------------------------------|---|---------------------------|--------------------------------|---------------------|--|---|--|-------------------------|
| 04 | | 05 | | | 06 | | | 07 | |
| System Name | RTU-E2 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)2 ² | 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 ³ | | | | | | | | | |
| Space Name of Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 ⁶ | |
| Classroom | Lecture/ postsecondary classroom | 995 | | 30 | 450 | 0 | 0 | DCV | Provided per §120.1(d)4 |
| 17 Total System Required Min OA CFM 450 18 Ventilation for this System Complies? Yes | | | | | | | | | |

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STATE OF CALIFORNIA
Mechanical Systems
NRC-MCH-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
Project Name: CVUSD Barranca Report Page: (Page 22 of 39)
Project Address: 727 S Barranca Ave Date Prepared: 6/28/2022

| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | |
|--|----------------------------------|---|---------------------------|--------------------------------|---------------------|--|---|--|-------------------------|
| 04 | | 05 | | | 06 | | | 07 | |
| System Name | RTU-H4 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)2 ² | 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 ³ | | | | | | | | | |
| Space Name of Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 ⁶ | |
| Classroom | Lecture/ postsecondary classroom | 970 | | 30 | 450 | 0 | 0 | DCV | Provided per §120.1(d)4 |
| 17 Total System Required Min OA CFM 450 18 Ventilation for this System Complies? Yes | | | | | | | | | |

Registration Number: Registration Date/Time: Registration Provider: Energysoft
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STATE OF CALIFORNIA
Mechanical Systems
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CERTIFICATE OF COMPLIANCE
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Project Address: 727 S Barranca Ave Date Prepared: 6/28/2022

| 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(f) for duct leakage testing. | | | | | | | | | |
| Duct Leakage Sealing | | | | | | | | | |
| The answers to the questions below apply to the following duct systems: FCU-B1 Duct leakage testing triggered for these systems? No | | | | | | | | | |
| 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 ² 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: | | | | | | | |
| Outdoors | | | | | | | | | |
| 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)11B or if the roof has fixed vents or openings to the outside/unconditioned spaces | | | | | | | | | |
| In an unconditioned crawl space | | | | | | | | | |
| 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? No | | | | | | | | | |
| 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 ² 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: | | | | | | | |
| Outdoors | | | | | | | | | |
| 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)11B or if the roof has fixed vents or openings to the outside/unconditioned spaces | | | | | | | | | |
| In an unconditioned crawl space | | | | | | | | | |

Registration Number: Registration Date/Time: Registration Provider: Energysoft
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STATE OF CALIFORNIA
Mechanical Systems
NRC-MCH-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
Project Name: CVUSD Barranca Report Page: (Page 20 of 39)
Project Address: 727 S Barranca Ave Date Prepared: 6/28/2022

| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | |
|--|----------------------------------|---|---------------------------|--------------------------------|---------------------|--|---|--|-------------------------|
| 04 | | 05 | | | 06 | | | 07 | |
| System Name | RTU-E4 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)2 ² | 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 ³ | | | | | | | | | |
| Space Name of Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 ⁶ | |
| Classroom | Lecture/ postsecondary classroom | 970 | | 30 | 450 | 0 | 0 | DCV | Provided per §120.1(d)4 |
| 17 Total System Required Min OA CFM 450 18 Ventilation for this System Complies? Yes | | | | | | | | | |

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STATE OF CALIFORNIA
Mechanical Systems
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CERTIFICATE OF COMPLIANCE
Project Name: CVUSD Barranca Report Page: (Page 23 of 39)
Project Address: 727 S Barranca Ave Date Prepared: 6/28/2022

| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | |
|--|----------------------------------|---|---------------------------|--------------------------------|---------------------|--|---|--|-------------------------|
| 04 | | 05 | | | 06 | | | 07 | |
| System Name | RTU-I2 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)2 ² | 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 ³ | | | | | | | | | |
| Space Name of Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 ⁶ | |
| Classroom | Lecture/ postsecondary classroom | 950 | | 30 | 450 | 0 | 0 | DCV | Provided per §120.1(d)4 |
| 17 Total System Required Min OA CFM 450 18 Ventilation for this System Complies? Yes | | | | | | | | | |

Registration Number: Registration Date/Time: Registration Provider: Energysoft
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STATE OF CALIFORNIA
Mechanical Systems
NRC-MCH-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
Project Name: CVUSD Barranca Report Page: (Page 26 of 39)
Project Address: 727 S Barranca Ave Date Prepared: 6/28/2022

| 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(f) for duct leakage testing. | | | | | | | | | |
| Duct Leakage Sealing | | | | | | | | | |
| The answers to the questions below apply to the following duct systems: RTU-C2 Duct leakage testing triggered for these systems? No | | | | | | | | | |
| 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 ² 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: | | | | | | | |
| Outdoors | | | | | | | | | |
| 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)11B or if the roof has fixed vents or openings to the outside/unconditioned spaces | | | | | | | | | |
| In an unconditioned crawl space | | | | | | | | | |
| 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-D1 Duct leakage testing triggered for these systems? No | | | | | | | | | |
| 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 ² 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: | | | | | | | |
| Outdoors | | | | | | | | | |
| 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)11B or if the roof has fixed vents or openings to the outside/unconditioned spaces | | | | | | | | | |
| In an unconditioned crawl space | | | | | | | | | |

Registration Number: Registration Date/Time: Registration Provider: Energysoft
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STATE OF CALIFORNIA
Mechanical Systems
NRC-MCH-E CALIFORNIA ENERGY COMMISSION

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| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | |
|--|----------------------------------|---|---------------------------|--------------------------------|---------------------|--|---|--|-------------------------|
| 04 | | 05 | | | 06 | | | 07 | |
| System Name | RTU-H2 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)2 ² | 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 ³ | | | | | | | | | |
| Space Name of Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 ⁶ | |
| Classroom | Lecture/ postsecondary classroom | 995 | | 30 | 450 | 0 | 0 | DCV | Provided per §120.1(d)4 |
| 17 Total System Required Min OA CFM 450 18 Ventilation for this System Complies? Yes | | | | | | | | | |

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NRC-MCH-E CALIFORNIA ENERGY COMMISSION

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| J. VENTILATION AND INDOOR AIR QUALITY | | | | | | | | | |
|--|----------------------------------|---|---------------------------|--------------------------------|---------------------|--|---|--|-------------------------|
| 04 | | 05 | | | 06 | | | 07 | |
| System Name | RTU-I4 | System Design OA CFM Airflow ¹ | 450 | System Design Transfer Air CFM | 0 | Air Filtration per §120.1(c) and §141.0(b)2 ² | 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 ³ | | | | | | | | | |
| Space Name of Item Tag | Occupancy Type ⁴ | Conditioned Floor Area (ft ²) | # of Shower heads/toilets | # of people ⁵ | Required Min OA CFM | Required Min CFM | Provided per Design CFM | DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 ⁶ | |
| Classroom | Lecture/ postsecondary classroom | 925 | | 30 | 450 | 0 | 0 | DCV | Provided per §120.1(d)4 |
| 17 Total System Required Min OA CFM 450 18 Ventilation for this System Complies? Yes | | | | | | | | | |

¹ FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system
² Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.
³ Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.
⁴ See Standards Tables 120.1-A and 120.1-B
⁵ For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.
⁶ §120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000ft², classrooms, conference rooms, restrooms, auditoriums, and open areas in warehouses, library book stock aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).

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STATE OF CALIFORNIA
Mechanical Systems
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Project Address: 727 S Barranca Ave Date Prepared: 6/28/2022

| 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(f) for duct leakage testing. | | | | | | | | | |
| Duct Leakage Sealing | | | | | | | | | |
| The answers to the questions below apply to the following duct systems: RTU-D2 Duct leakage testing triggered for these systems? No | | | | | | | | | |
| 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 ² 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: | | | | | | | |
| Outdoors | | | | | | | | | |
| 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)11B or if the roof has fixed vents or openings to the outside/unconditioned spaces | | | | | | | | | |
| In an unconditioned crawl space | | | | | | | | | |
| 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-D3 Duct leakage testing triggered for these systems? No | | | | | | | | | |
| 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 ² 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: | | | | | | | |
| Outdoors | | | | | | | | | |
| 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)11B or if the roof has fixed vents or openings to the outside/unconditioned spaces | | | | | | | | | |
| In an unconditioned crawl space | | | | | | | | | |

Registration Number: Registration Date/Time: Registration Provider: Energysoft
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Barranca Elementary School
Covina Valley USD
727 S Barranca Ave, Covina, CA 91723

DSA SUBMITTED SET
5/5/2022
REVISIONS

75-22605-00

TITLE 24 COMPLIANCE

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|---------------------------|--------------------|------------------------------|-----------------|
| NRC-MCH-E | | CALIFORNIA ENERGY COMMISSION | |
| CERTIFICATE OF COMPLIANCE | | NRCC-MCH-E | |
| Project Name: | CVUSD Barranca | Report Page: | (Page 37 of 39) |
| Project Address: | 727 S Barranca Ave | Date Prepared: | 6/28/2022 |

O. 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 https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

| Form/Title | Systems/Spaces To Be Field Verified | Field Inspector | |
|---|---|--------------------------|--------------------------|
| | | Pass | Fail |
| NRCA-MCH-11-A Automatic Demand Shed Controls | FCU-B1; RTU-C1; RTU-C2; RTU-D1; RTU-D2; RTU-D3; RTU-D4; RTU-E1; RTU-E2; RTU-E3; RTU-E4; RTU-H1; RTU-H2; RTU-H3; RTU-H4; RTU-I1; RTU-I2; RTU-I3; RTU-I4; | <input type="checkbox"/> | <input type="checkbox"/> |
| NRCA-MCH-16-A Supply Air Temperature Reset Controls | FCU-B1; RTU-C1; RTU-C2; RTU-D1; RTU-D2; RTU-D3; RTU-D4; RTU-E1; RTU-E2; RTU-E3; RTU-E4; RTU-H1; RTU-H2; RTU-H3; RTU-H4; RTU-I1; RTU-I2; RTU-I3; RTU-I4; | <input type="checkbox"/> | <input type="checkbox"/> |
| NRCA-MCH-18-A Energy Management Control Systems | FCU-B1; RTU-C1; RTU-C2; RTU-D1; RTU-D2; RTU-D3; RTU-D4; RTU-E1; RTU-E2; RTU-E3; RTU-E4; RTU-H1; RTU-H2; RTU-H3; RTU-H4; RTU-I1; RTU-I2; RTU-I3; RTU-I4; | <input type="checkbox"/> | <input type="checkbox"/> |

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
 Registration Date/Time: Report Version: 2019.1.003
 Registration Provider: Energysoft Schema Version: rev 20200601
 Report Generated: 2022-06-28 11:56:10

| | | | |
|---------------------------|--------------------|------------------------------|-----------------|
| NRC-MCH-E | | CALIFORNIA ENERGY COMMISSION | |
| CERTIFICATE OF COMPLIANCE | | NRCC-MCH-E | |
| Project Name: | CVUSD Barranca | Report Page: | (Page 38 of 39) |
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Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

| | O1 | O2 |
|---|-----|----------|
| Compliance with Mandatory Measures documented through MCH | Yes | M-Sheets |
| Mandatory Measures Note Block | | |

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
 Registration Date/Time: Report Version: 2019.1.003
 Registration Provider: Energysoft Schema Version: rev 20200601
 Report Generated: 2022-06-28 11:56:10

| | | | |
|---------------------------|--------------------|------------------------------|-----------------|
| NRC-MCH-E | | CALIFORNIA ENERGY COMMISSION | |
| CERTIFICATE OF COMPLIANCE | | NRCC-MCH-E | |
| Project Name: | CVUSD Barranca | Report Page: | (Page 39 of 39) |
| Project Address: | 727 S Barranca Ave | Date Prepared: | 6/28/2022 |

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

| | |
|--|--|
| Documentation Author Name: TONG FANG ZHAO | Documentation Author Signature: <i>Tong Fang Zhao</i> |
| Company: DLR Group | Signature Date: 2022-06-28 |
| Address: 700 FLOWER STREET | CEA/ HERS Certification Identification (if applicable): |
| City/State/Zip: LOS ANGELES CA 90017 | Phone: 213-444-0610 |

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Compliance is true and correct.
- 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).
- 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 4 of the California Code of Regulations.
- 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.
- 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: <i>Tong Fang Zhao</i> |
| Company: DLR GROUP | Date Signed: 2022-06-28 |
| Address: 700 FLOWER STREET | License: M-34291 |
| City/State/Zip: LOS ANGELES CA 90017 | Phone: 213-444-0610 |

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
 Registration Date/Time: Report Version: 2019.1.003
 Registration Provider: Energysoft Schema Version: rev 20200601
 Report Generated: 2022-06-28 11:56:10



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TITLE 24 COMPLIANCE

M0.6

A

B

C

D

E

F

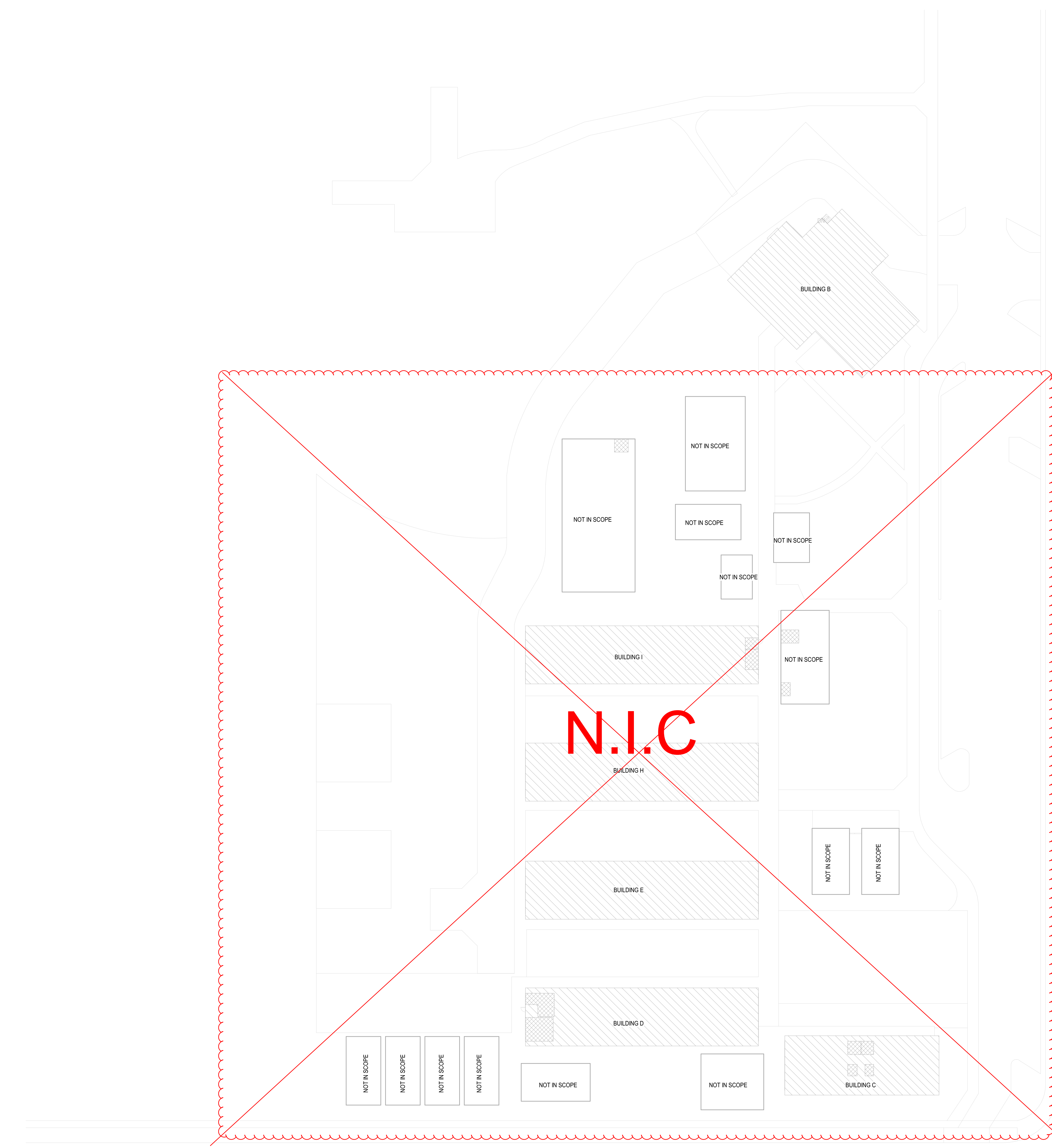
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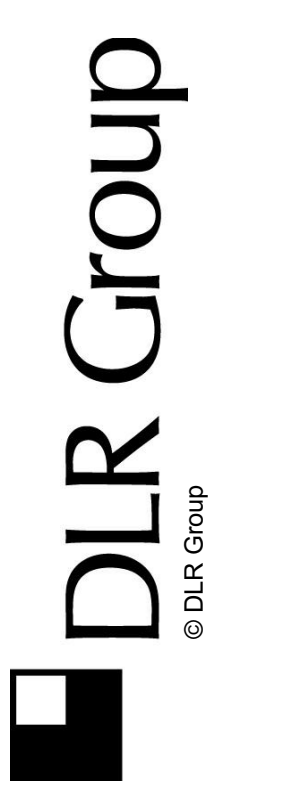


GENERAL NOTES

2
A FOR SYMBOLS AND ABBREVIATIONS SEE DRAWING M0.1

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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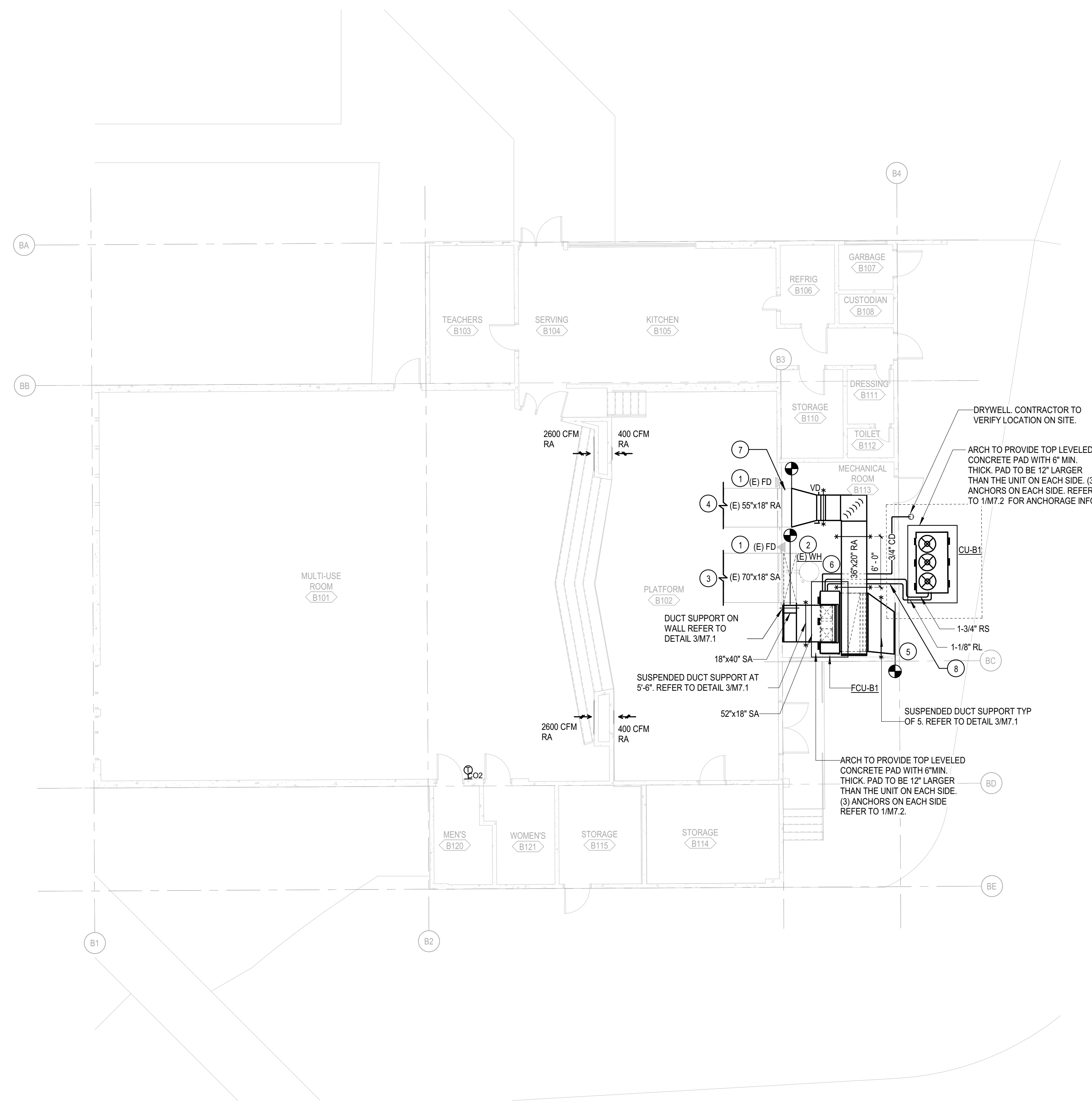
75-22605-00

MECHANICAL SITE PLAN

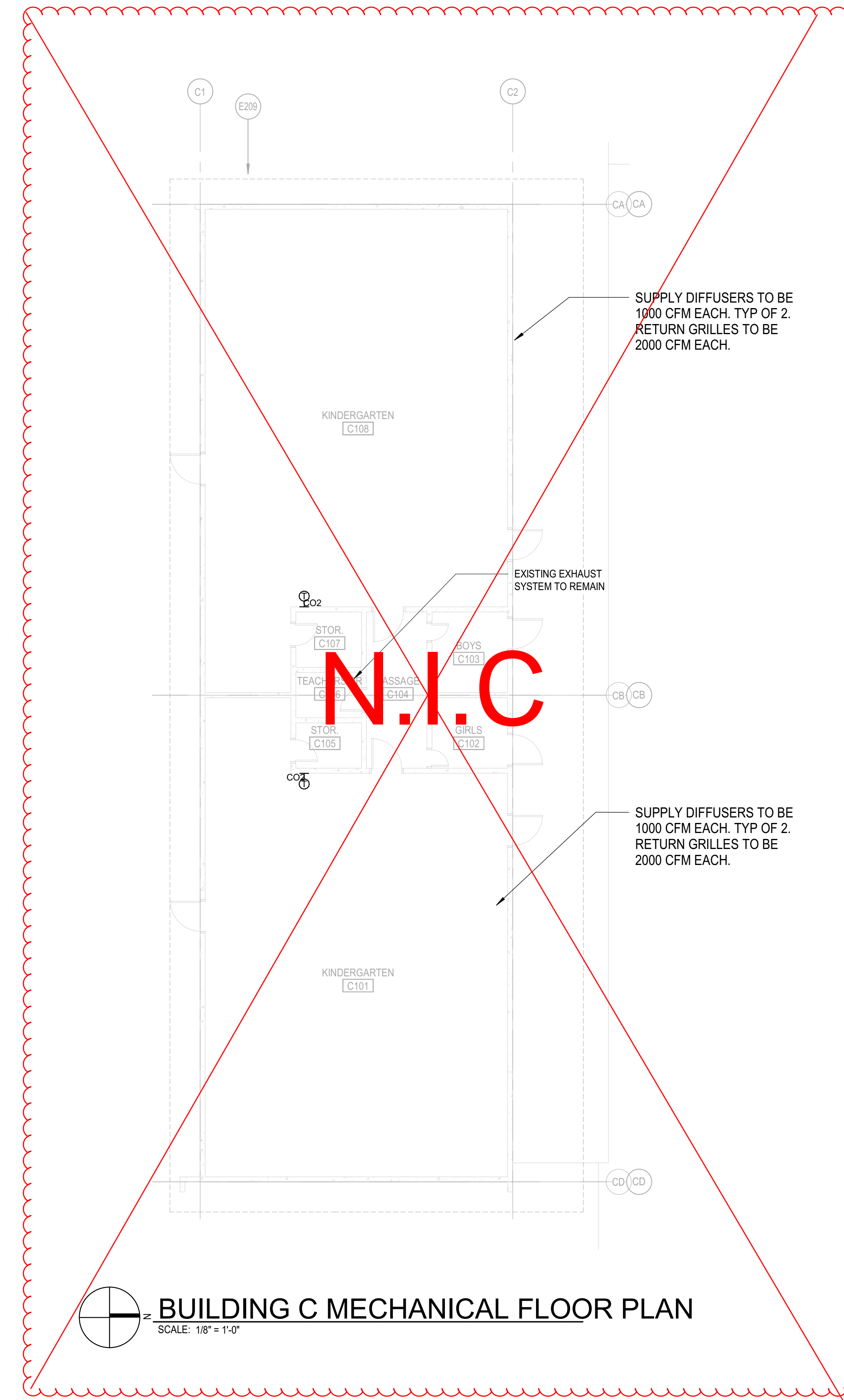
M1.1

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OVERALL MECHANICAL SITE PLAN
SCALE: 1" = 30'-0"



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



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

DEMO NOTES - MPR ONLY

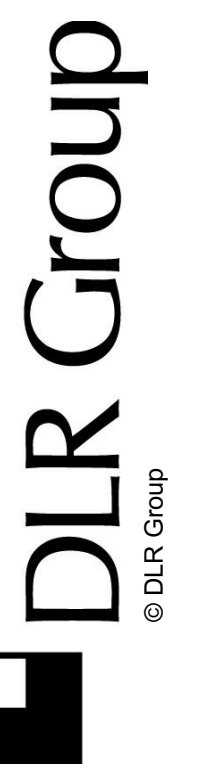
- A. REMOVE SUPPLY FAN, FURNACE AND RELATED DUCT, WIRING, MOTOR, SUPPORTS AND OTHER APPURTENANCES TO POC. REMOVE GAS PIPING UP TO MAIN AND CAP.
- B. (E) VEH AND RELATED EQUIPMENT, PIPING AND FLUE DUCT TO REMAIN.

GENERAL NOTES

1. SCOPE OF WORK IS CLASSROOMS & MPR ONLY.
2. EXISTING DUCTWORK IN CLASSROOMS & MPR TO REMAIN.
3. DIFFUSERS AND GRILLES AIR PATH CANNOT BE BLOCK BY ANY ITEMS.
4. PROVIDE 1" LINEAR TO NEW DUCT IN MPR.

KEY NOTES

1. (E) FIRE DAMPER AND RELATED ACCESS PANEL TO REMAIN.
2. PDD/POC TO BE BEFORE (E) FIRE DAMPER ACCESS PANEL.
3. (E) SA DUCTWORK TO REMAIN. 200 CFM FOR EACH SA DIFFUSER, TYP. OF 2.
4. (E) RA DUCTWORK & ROUTE TO REMAIN.
5. (E) OSA LOUVER & DAMPER TO REMAIN TO BE READY TO CONNECT TO DUCTWORK. CONTRACTOR TO VERIFY DAMPER CONDITION ON SITE PRIOR TO BID.
6. PROVIDE 1" CD PIPING TO DRAIN TO EXISTING FLOOR SINK. CONTRACTOR TO VERIFY PRIOR TO BID.
7. RE-BALANCE (E) EXHAUST DAMPER TO 2000 CFM. (E) EXHAUST HOOD TO REMAIN.
8. RULS PENETRATE WALL ABOVE GRADE. CONTRACTOR TO VERIFY LOCATION ON SITE. PROVIDE PHP PIPE SUPPORT.



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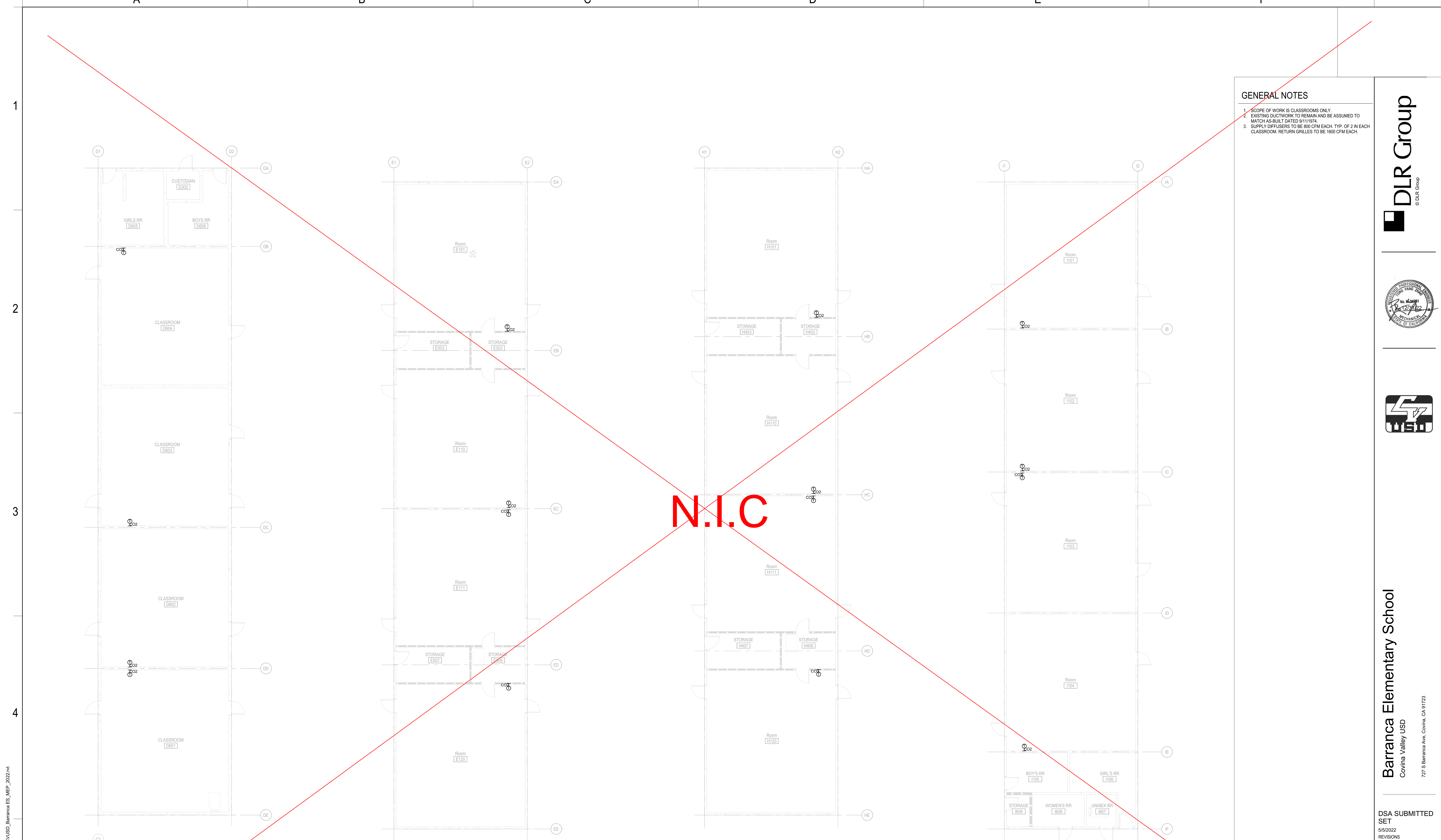
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BUILDING B & C MECHANICAL FLOOR PLAN

M1.1B

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GENERAL NOTES

1. SCOPE OF WORK IS CLASSROOMS ONLY.
2. EXISTING DUCTWORK TO REMAIN AND BE ASSUMED TO MATCH AS-BUILT DATED 9/11/1974.
3. SUPPLY DIFFUSERS TO BE 800 CFM EACH, TYP. OF 2" IN EACH CLASSROOM. RETURN GRILLES TO BE 1000 CFM EACH.

N.I.C

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

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

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

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

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BUILDINGS D,E,H & I MECHANICAL FLOOR PLAN

M1.1D

A

B

C

D

E

F

1

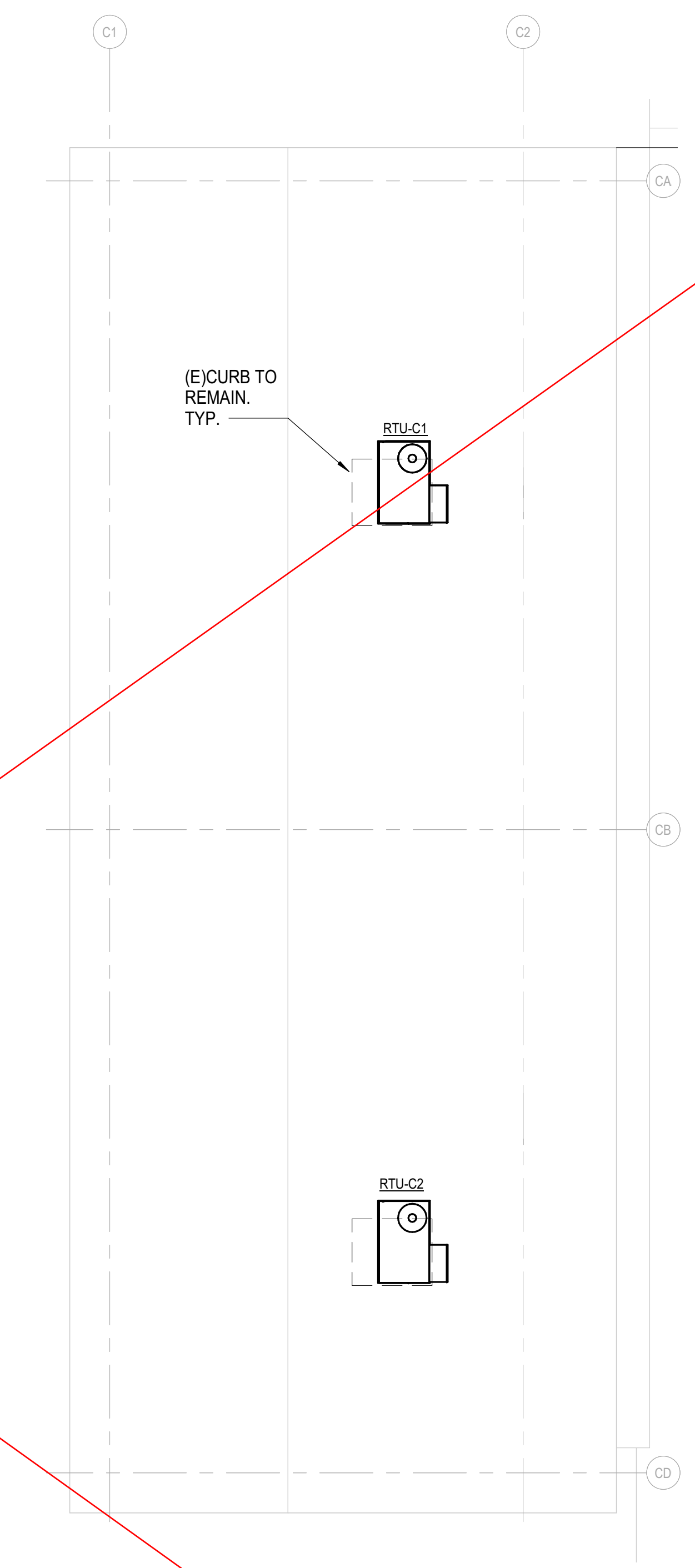
2

3

4

5

N.I.C



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

DEMO NOTES

- A. REMOVE ALL EXISTING RTUS AND DISCONNECT RELATED PIPING AND DUCTWORK. EXISTING DUCTWORK IN CLASSROOMS TO REMAIN.
- B. DISCONNECT EXISTING GAS PIPING FROM RTUS. EMPTY AND CAP PIPING AND ABANDON IN PLACE. TURN OFF SHUT-OFF VALVE AT BUILDING.

GENERAL NOTES

- 1. DESIGN IS BASED ON EXISTING INDOOR DUCTWORK & CONNECTIONS TO RTUS SHOWN ON AS-BUILT DATED 9/11/1974. CONTRACTOR TO VERIFY ON SITE PRIOR TO RTU INSTALLATION AND CURB ADAPTOR FABRICATION.
- 2. EXISTING RTU CURBS TO REMAIN. THE CURB ADAPTORS FOR CARRIER 499UL TO REMAIN. PROVIDE NEW ADAPTOR WHERE THE UNITS ARE NOT CARRIER.
- 3. RECONNECT 3/4" CONDENSATE WATER PIPING BACK TO EXISTING.



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**BUILDING C
MECHANICAL
ROOF PLAN**

M1.3B

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DEMO NOTES

- A. REMOVE ALL EXISTING RTUS AND DISCONNECT RELATED PIPING AND DUCTWORK. EXISTING DUCTWORK IN CLASSROOMS TO REMAIN.
- B. DISCONNECT EXISTING GAS PIPING FROM RTUS. EMPTY AND CAP PIPING AND ABANDON IN PLACE. TURN OFF SHUT-OFF VALVE AT EACH BUILDING.
- C. FOR EXISTING CARRIER 48HJL05 AND 48HJL06, USE THE EXISTING CURB ADAPTOR SINCE 48HJL HAS SAME FOOTPRINT AS 50FCO. SOME OF THE EXISTING ROOF TOP UNITS ARE MADE BY LENNOX. FOR EXISTING UNITS RATHER THAN CARRIER 48HJL, PROVIDE CURB ADAPTOR. CONTRACTOR TO MEASURE THE EXISTING CURB ON SITE AND SEND THE MEASUREMENT TO CARRIER/EOOR FOR NEW CURB.

GENERAL NOTES

- 1. DESIGN IS BASED ON EXISTING INDOOR DUCTWORK & CONNECTIONS TO RTUS SHOWN ON AS-BUILT DATED 9/11/1974. CONTRACTOR TO VERIFY ON SITE PRIOR TO RTU INSTALLATION AND CURB ADAPTOR FABRICATION.
- 2. EXISTING RTU CURBS TO REMAIN. THE CURB ADAPTORS FOR CARRIER 48HJL TO REMAIN. PROVIDE NEW ADAPTOR WHERE THE UNITS ARE NOT CARRIER.
- 3. RECONNECT 3/4" CONDENSATE WATER PIPING BACK TO EXISTING.

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

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

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

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



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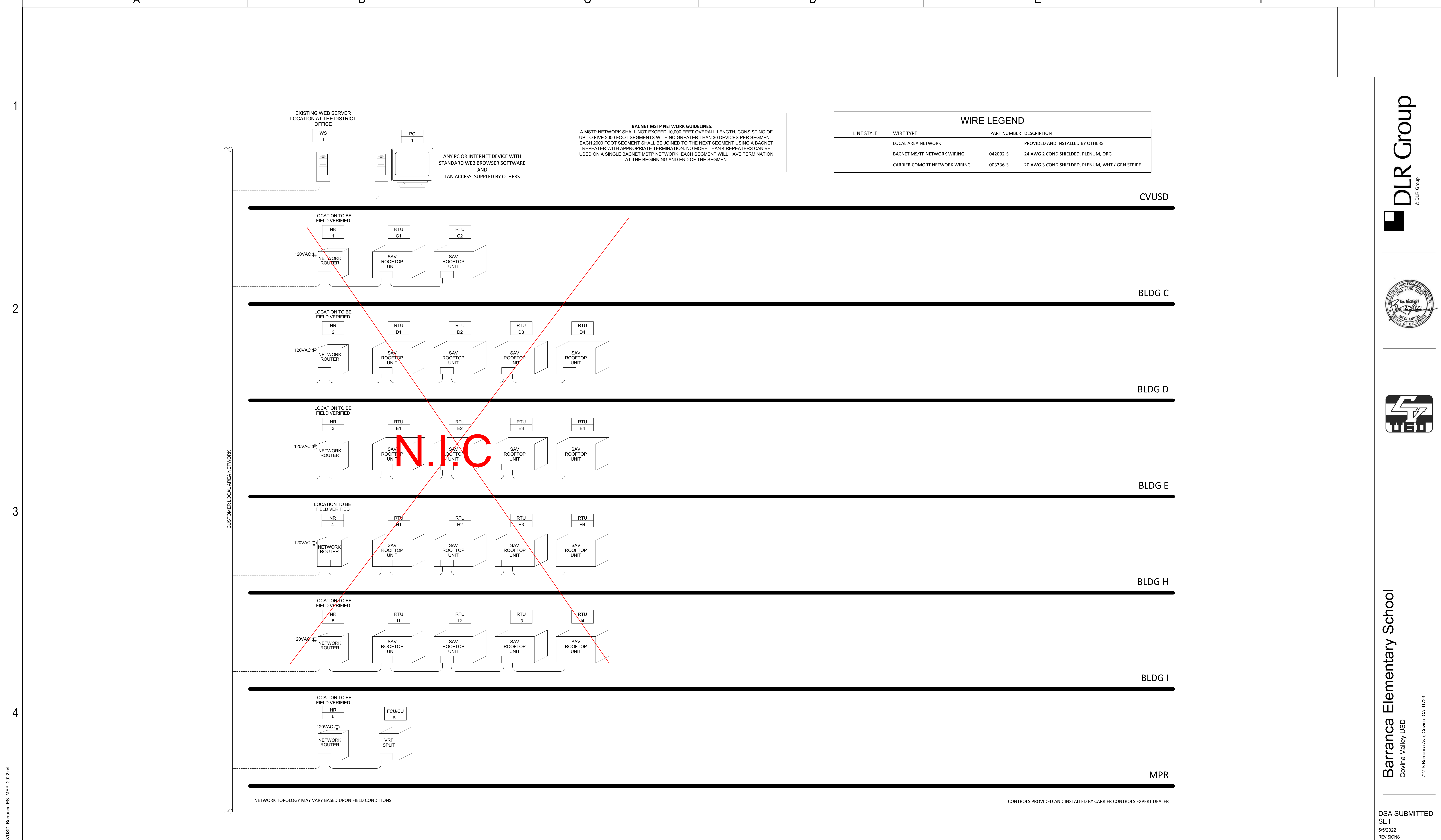
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BUILDINGS D,E,H & I MECHANICAL ROOF PLAN

M1.3D

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1 BACS RISER DIAGRAM
 M5.1 NO SCALE



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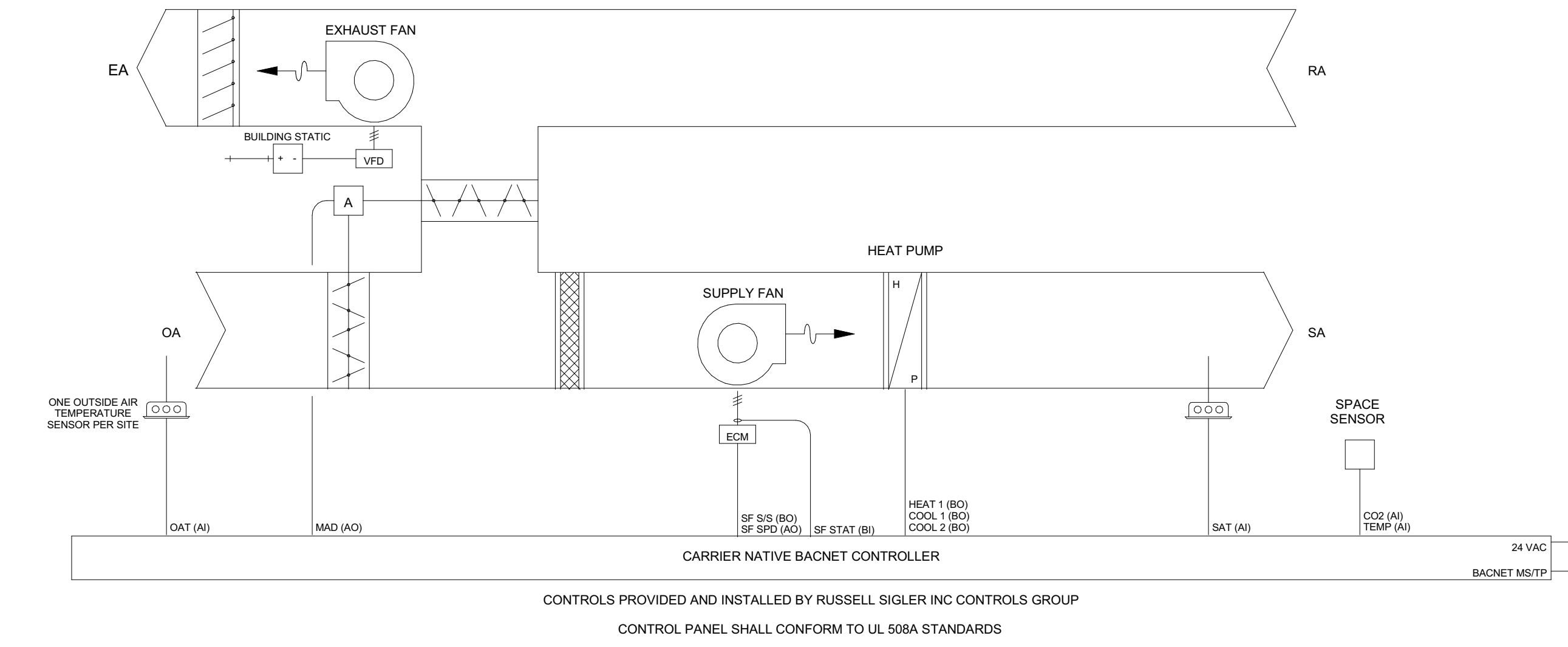
75-22605-00

CONTROLS DIAGRAMS

M5.1

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1

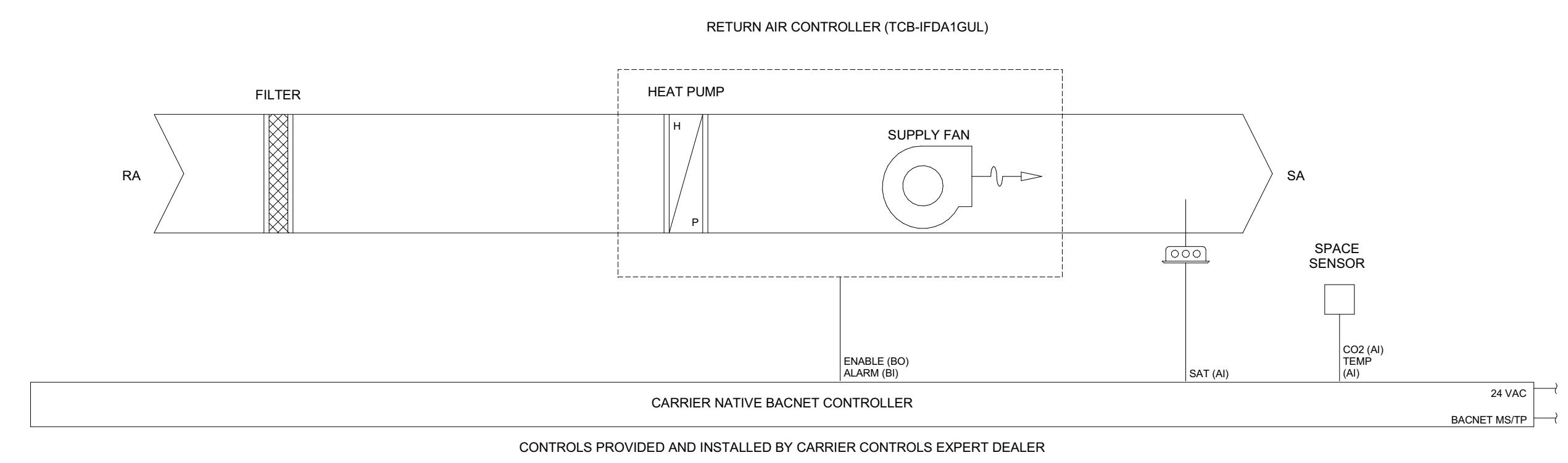


2

50FCQ HEAT PUMP DETAIL (RTU-C1, RTU-C2, RTU- D1 THRU RTU-D4, RTU-E1 THRU RTU-E4, RTU-H1 THRU RTU-H4, AND RTU-I1 THRU RTU-I4)

| | |
|-------|---|
| SCALE | 1 |
| NONE | |

3



SPLIT SYSTEM DETAIL (FCU/CU-B1)

| | |
|-------|---|
| SCALE | 2 |
| NONE | |

SEQUENCES OF OPERATION

SEQUENCE OF OPERATION FOR CVUSD BARRANCA ES
HEAT PUMP RTU CONTROLLER (RTU-C1 AND RTU-C2, RTU- D1 THRU RTU-D4, RTU-E1 THRU RTU-E4, RTU-H1 THRU RTU-H4, AND RTU-I1 THRU RTU-I4)

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.

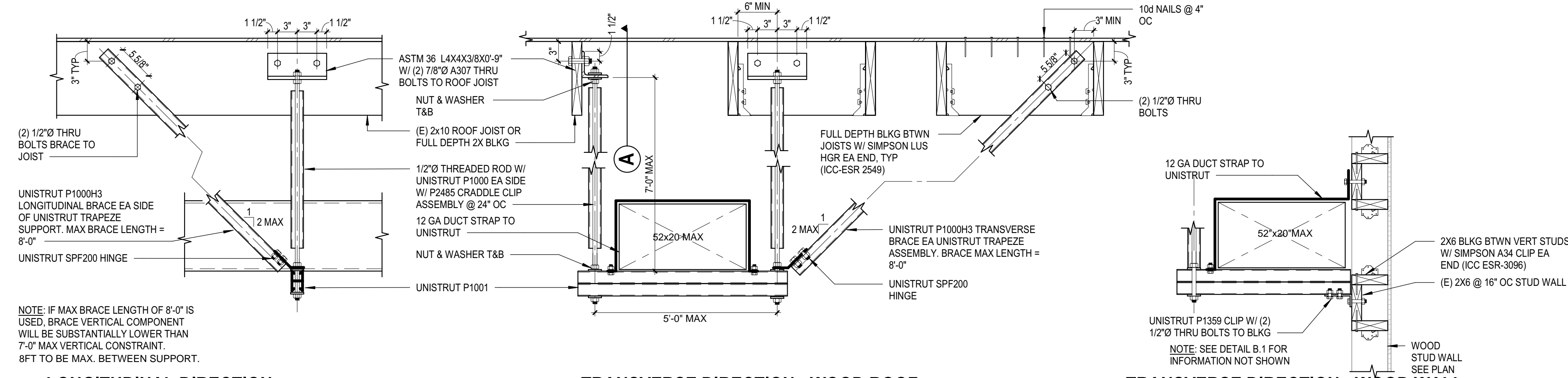
Economizer
Economizer shall close when fan is off or during a loss of power. During occupied hours when fan is energized, the economizer shall open to adjustable minimum position. When outside air temperature is below 75° and occupied space requires cooling, economizer shall open. If economizer air is 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.

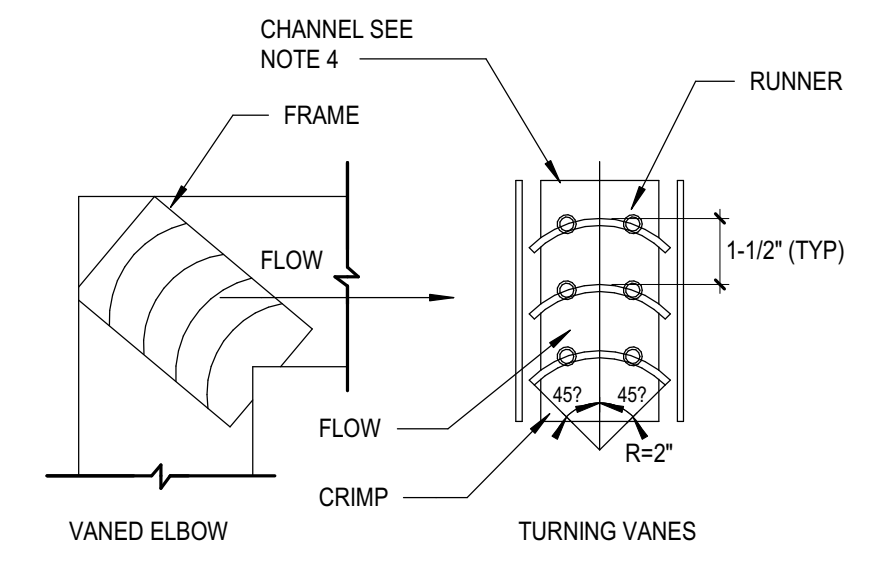
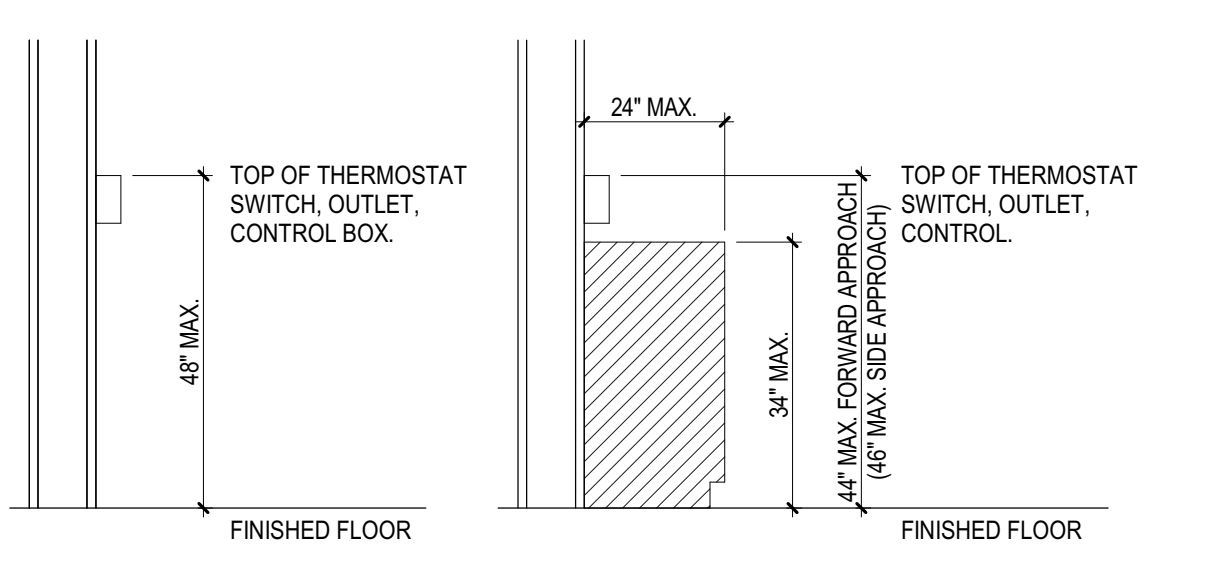
Power Exhaust
The exhaust fan shall modulate to maintain the room pressure setpoint (as determined by air balancer). Not controlled through EMS.

1 DETAILS
M5.2 NO SCALE

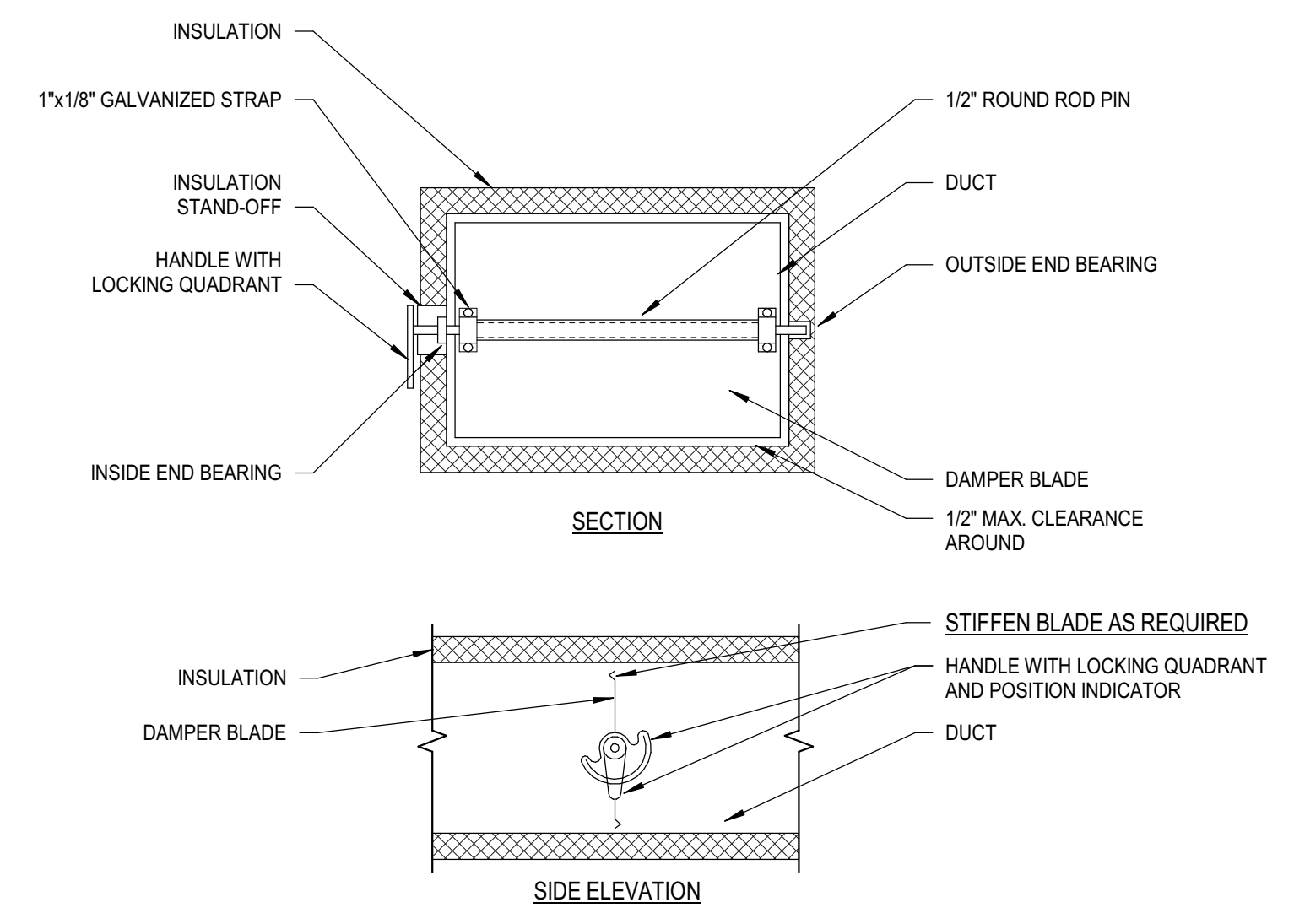
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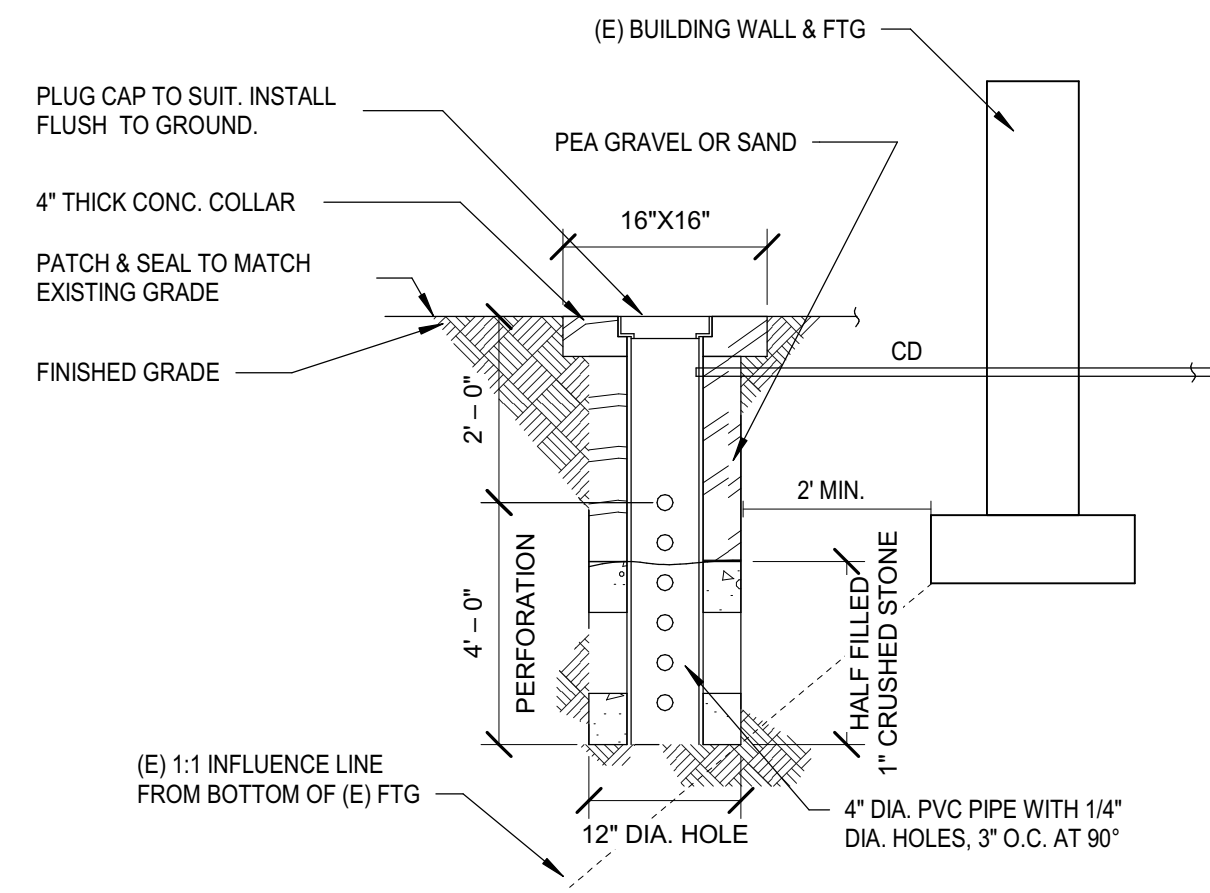
3 DUCT SUPPORTS
M7.1 NO SCALE



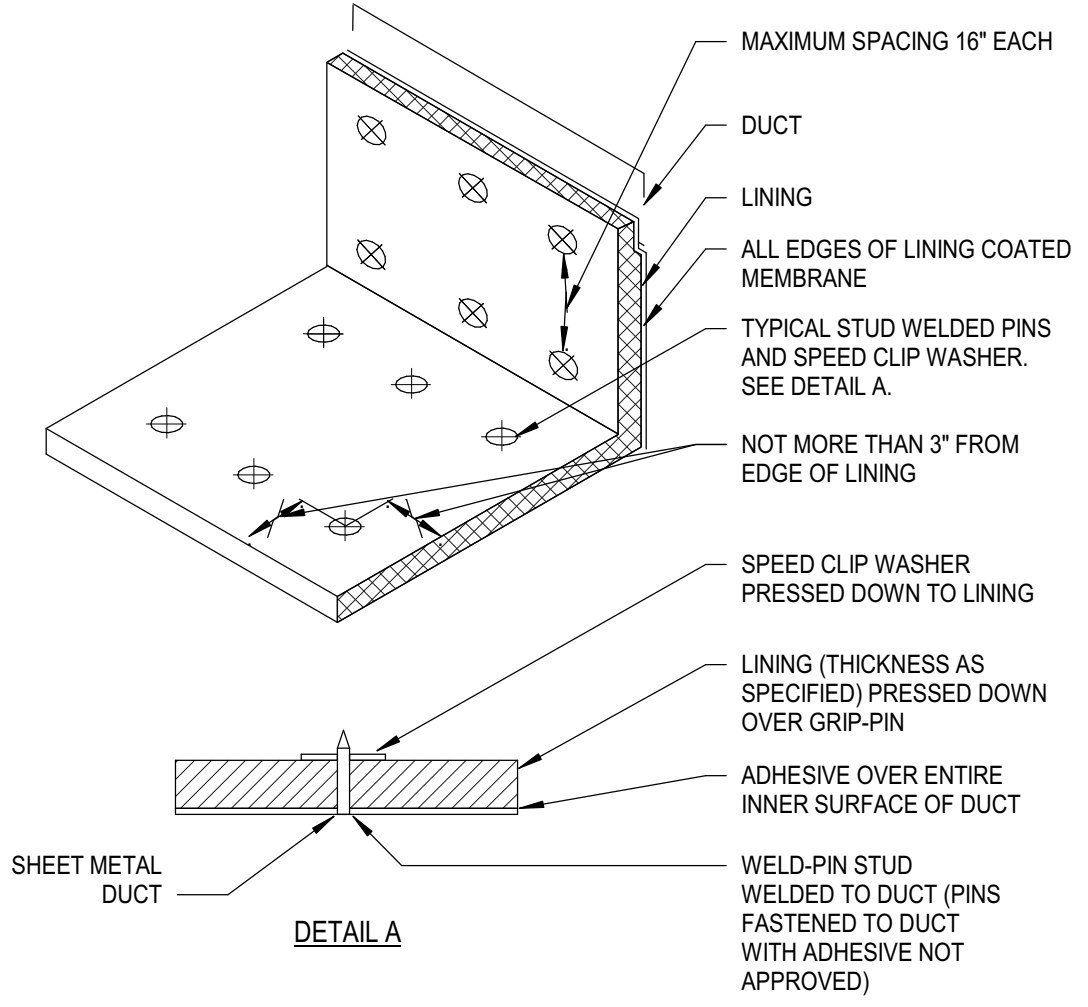
NOTES:
1. MAXIMUM UNSUPPORTED VANE LENGTH 36".
2. VANES AND FRAMES -24 GAUGE.
3. DUCT INLET AND OUTLET DIMENSIONS TO BE EQUAL.
4. FOR HIGH VELOCITY APPLICATIONS PROVIDE 18 GAUGE CHANNEL AND TACK WELD VANE EDGES TO CHANNEL, TYPICAL BOTH ENDS.
5. FRAMES AND CHANNELS - BOLTED OR TACK WELDED TO ELBOW.



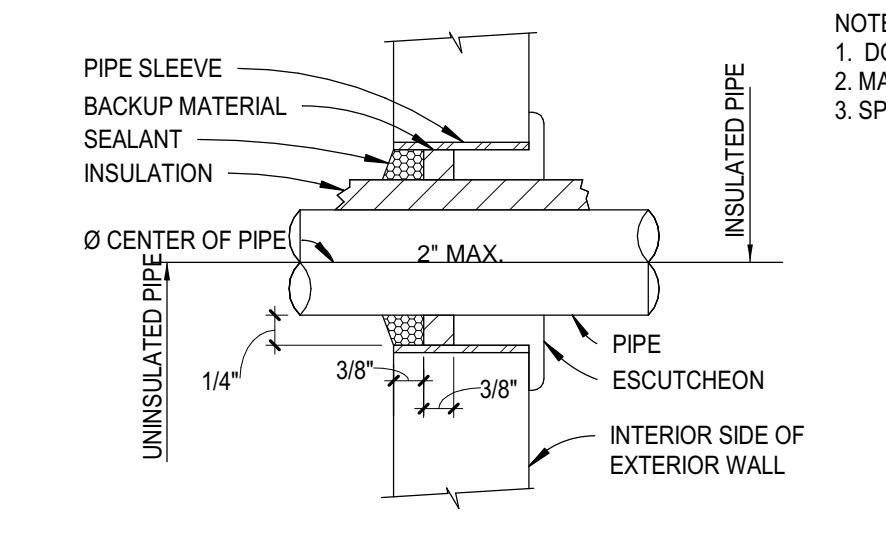
- DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
- DETAIL SHOWS SINGLE BLADE DAMPER. MULTI-BLADE DAMPERS INSTALLATIONS SHALL BE SIMILAR.
- LOCK DAMPER DURING AIR BALANCE AND MARK QUADRANT TO RECORD AIR BALANCED DAMPER POSITION.
- PROVIDE "HAT" SECTION AT QUADRANT FOR ALL EXTERNALLY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



2 DRY WELL DETAIL
M7.1 NO SCALE

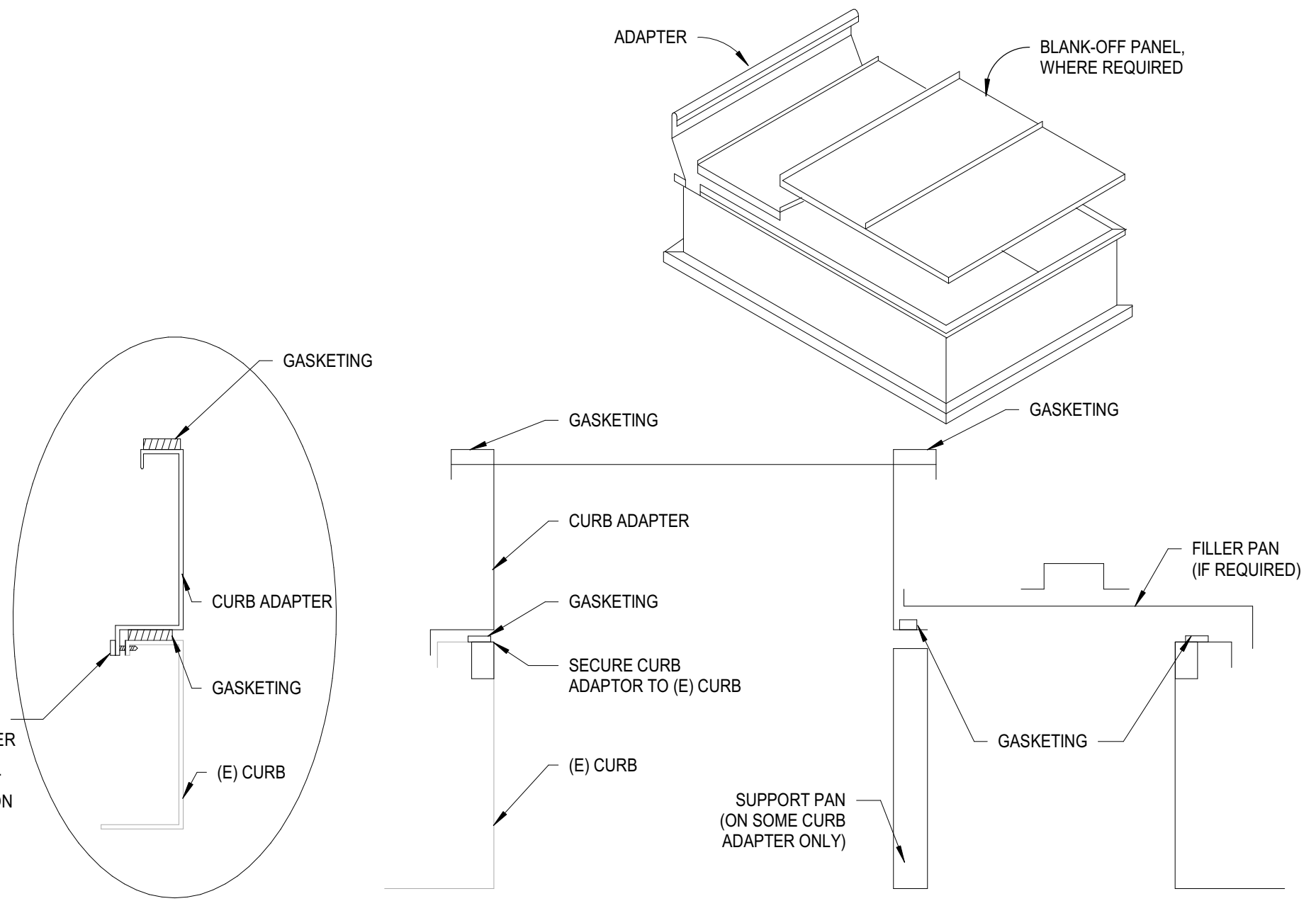


4 ACOUSTICAL DUCT LINING INSTALLATION DETAIL
M7.1 NO SCALE

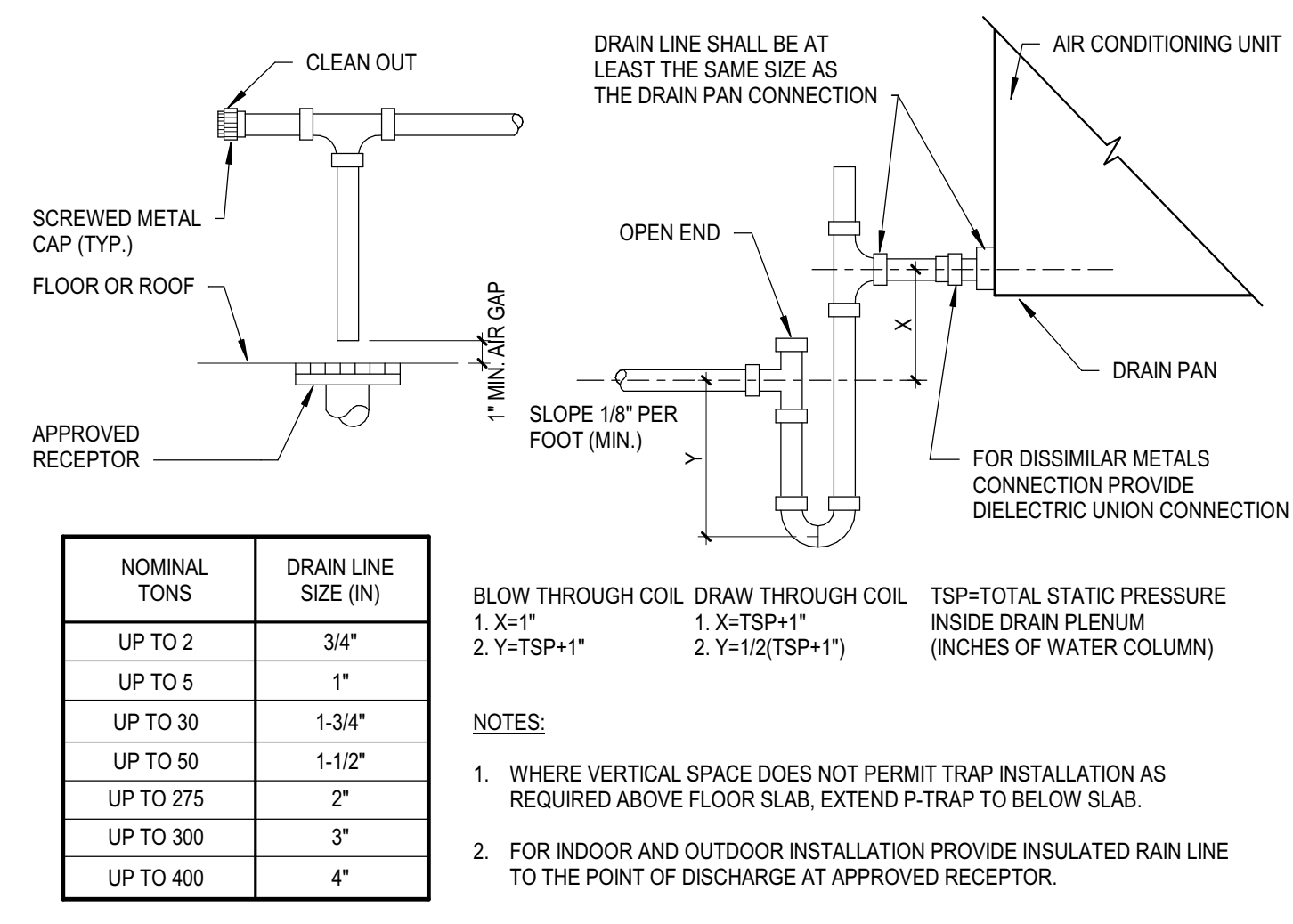


6 PIPE THRU WALL PENETRATION DETAIL
M7.1 NO SCALE

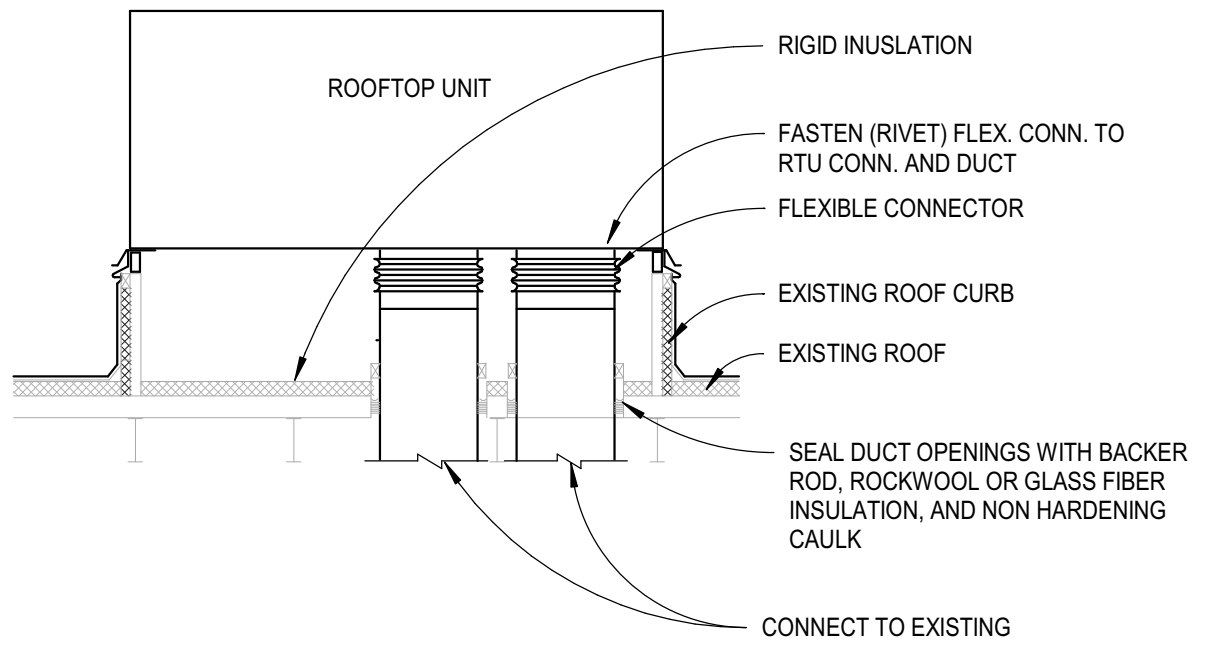
- NOTE:**
1. DO NOT CUT EXISTING STUDS.
2. MAX PENETRATION = 2" Ø
3. SPACE PENETRATIONS MINIMUM 48" APART.



- NOTES:**
1. CONTRACTOR TO CONFIRM CURB ADAPTER MODEL COMPATIBILITY WITH UNIT MANUFACTURER PRIOR TO ORDERING.
2. CONTRACTOR SHALL CONFIRM (E) ROOF CURB DIMENSIONS PRIOR TO ORDERING NEW CURBS.
3. BEFORE REMOVING (E) UNIT, CONTRACTOR TO VERIFY THAT SUPPLY AND RETURN DUCT DROPS IN (E) CURB ARE NOT FASTENED TO (E) UNIT. (E) DUCTS SHALL BE SUPPORTED WITHIN THE (E) CURB, NOT THE CURB ADAPTER.
4. SECURE CURB ADAPTER TO (E) CURB AND CAULK ALL AREAS WHERE LEAKS MIGHT OCCUR.
5. IF BLANK-OFF PANELS ARE PROVIDED BY CURB MANUFACTURER, PLACE OVER (E) CURB AND FASTEN IN PLACE. CAULK ALL LOCATIONS WHERE LEAKS COULD OCCUR.
6. APPLY GASKET AROUND PERIMETER OF CURB ADAPTER AND CROSS SUPPORTS BEFORE CAREFULLY SETTING NEW UNIT IN PLACE.



8 CONDENSATE DRAIN CONNECTION DETAIL
M7.1 NO SCALE



9 RTU CONNECTION DETAIL
M7.1 NO SCALE

A

B

C

D

E

F

1

2

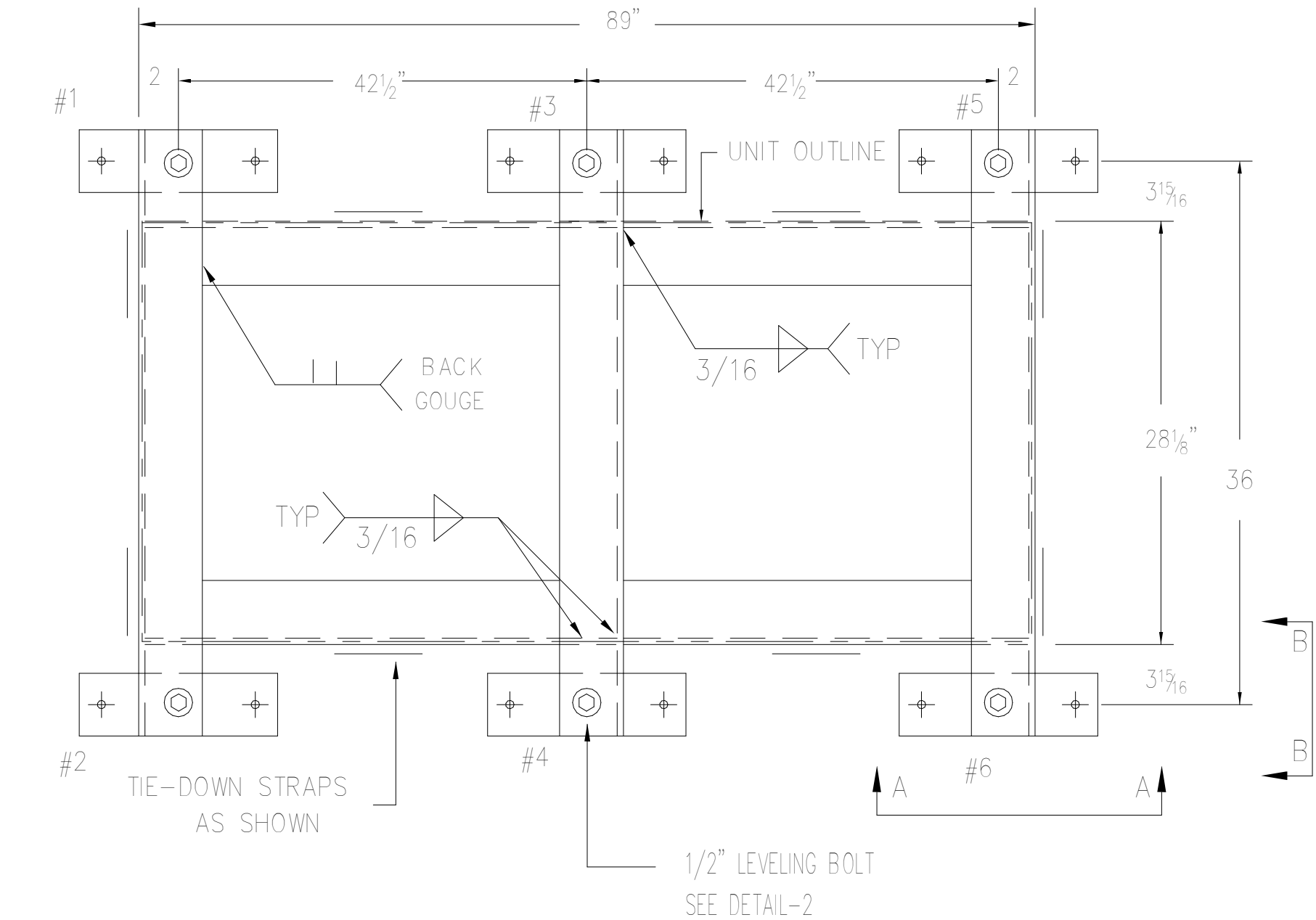
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4

5

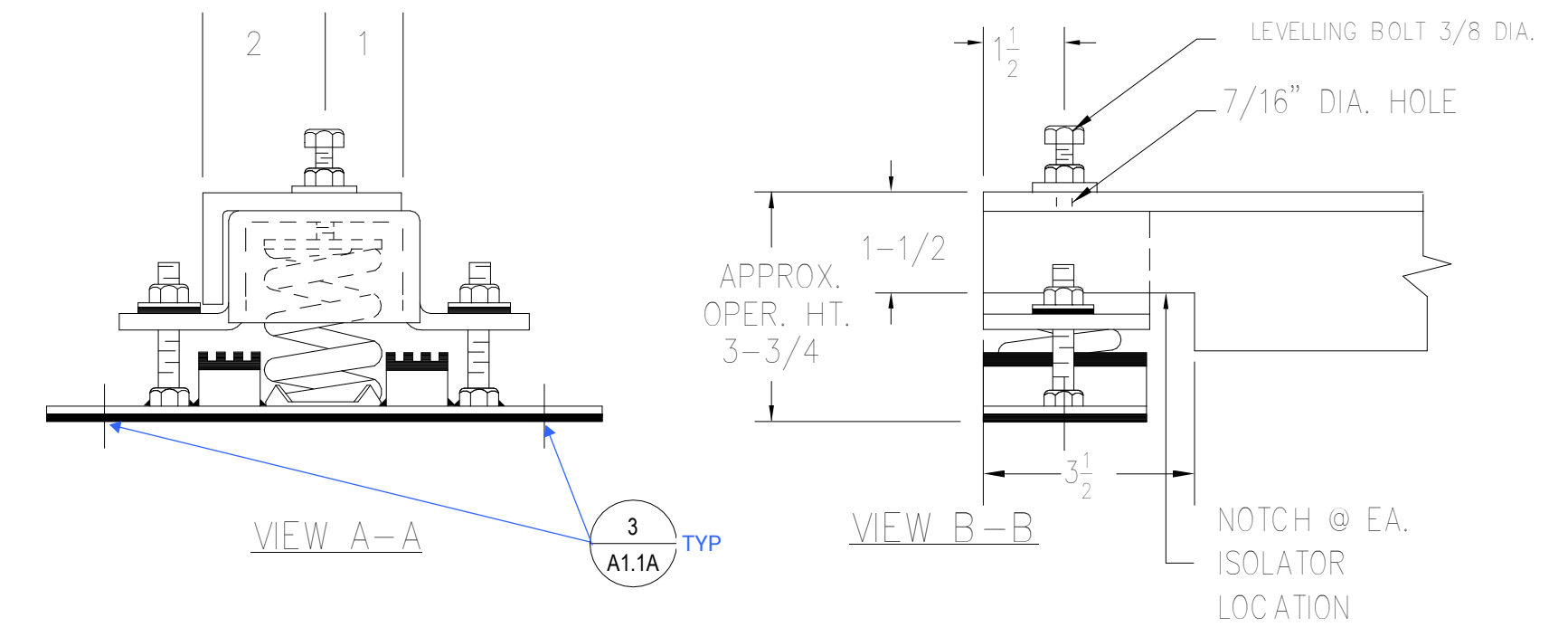
| MARK | MAKE | MODEL | STEEL FRAME |
|--------|---------|-----------|---------------|
| FCU-B1 | CARRIER | 40RUAG-16 | L 3 X 2 X 1/4 |

DETAIL-1



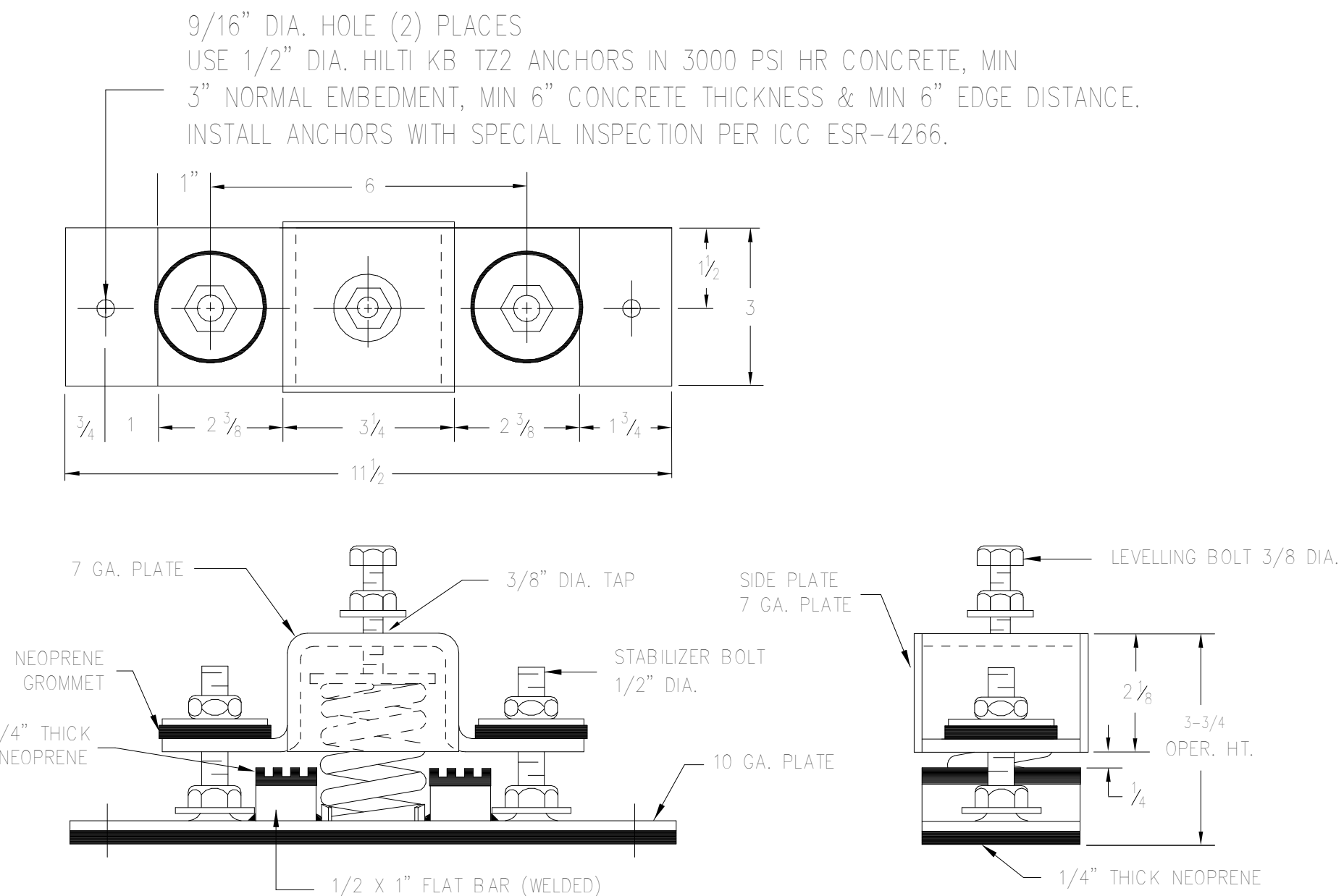
- NOTES:
- APPROX. STEEL WEIGHT INCLUDING ISOLATORS.: 170 LBS.
 - INDICATES TIE-DOWN STRAP. SEE DETAIL 3.
 - ALL DIMENSIONS REQUIRE FINAL REVIEW AT COMMENCEMENT OF PROJECT.

DETAIL-2



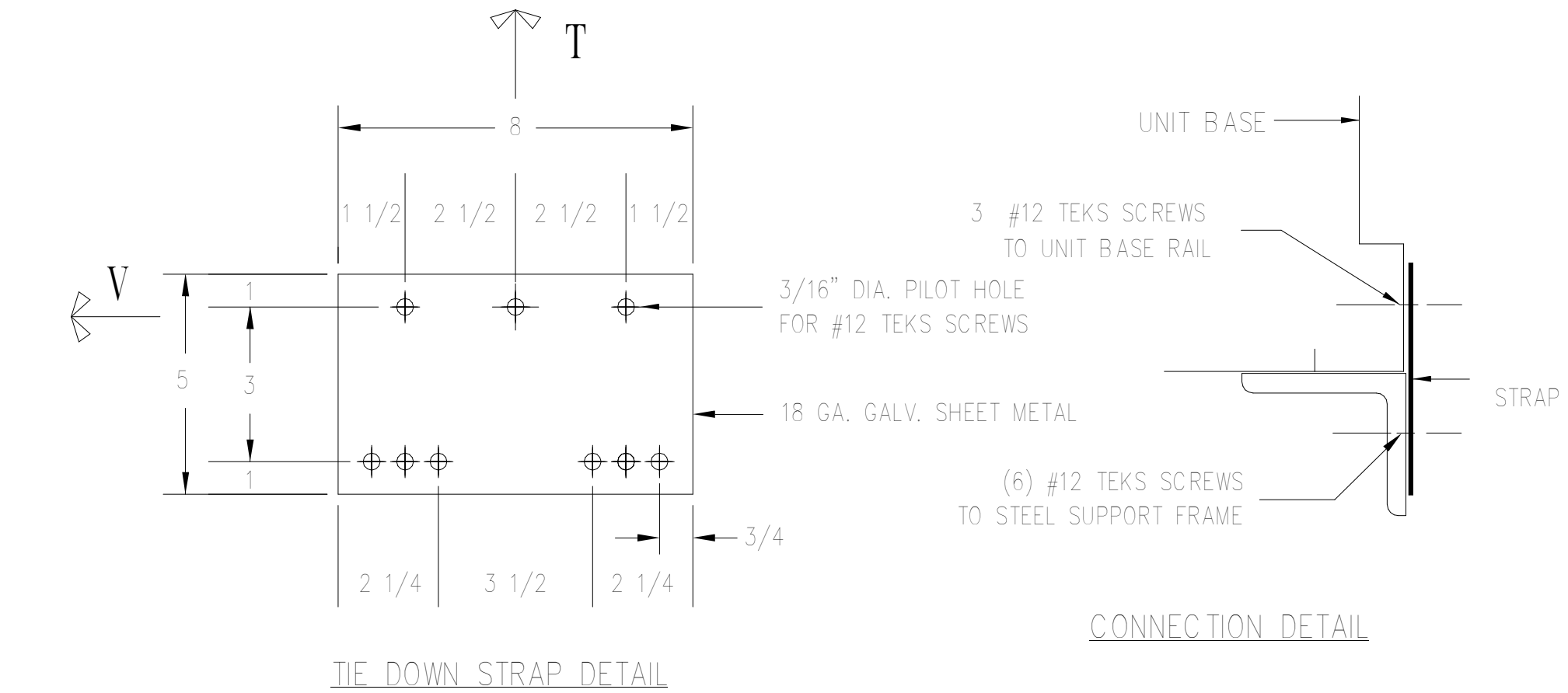
DETAIL-3

| MTG | SPRING OD | DEFL. |
|-----|-----------|-------|
| 1-6 | 3" | 1" |



MAX. ALLOW. LOADS: HORIZ. 1100 lbs. VERT. (UP) 1400 lbs.

RMU-EQ-SH-1



NOTE(S) 1. THE SEISMIC CAPACITY OF TIE-DOWN PLATES IS DEPENDENT ON PROPER FIELD INSTALLATION AS SHOWN ABOVE.

M. W. SAUSSE & CO., INC.
 28744 Whitherspoon Pkwy. Valencia, CA 91355
 Phone: (661) 257-3311 Fax: (661) 257-7673
Vibrex RMUAB
 vibration & seismic control systems

| | |
|--------------|--------------------------|
| JOB NAME: | COVINA USD - BARRANCA ES |
| CUST.: | |
| CUST. P.O.: | |
| MECH. ENGR.: | DLRG |
| MARK: | FCU-B1 |

| | |
|------------|-------------------------|
| REVISIONS: | |
| A: | ADDED WELDING (7-21-22) |
| B: | |
| C: | |
| D: | |

| | |
|--------------|---------|
| DRN: | JO |
| DATE: | 6/24/22 |
| DRAWING NO.: | -2A |

1 ISOLATOR DETAILS
M7.2 NO SCALE



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 Covina Valley USD
 777 S Barranca Ave. Covina, CA 91723

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 5/5/2022
 REVISIONS

75-22605-00

MECHANICAL DETAILS

M7.2

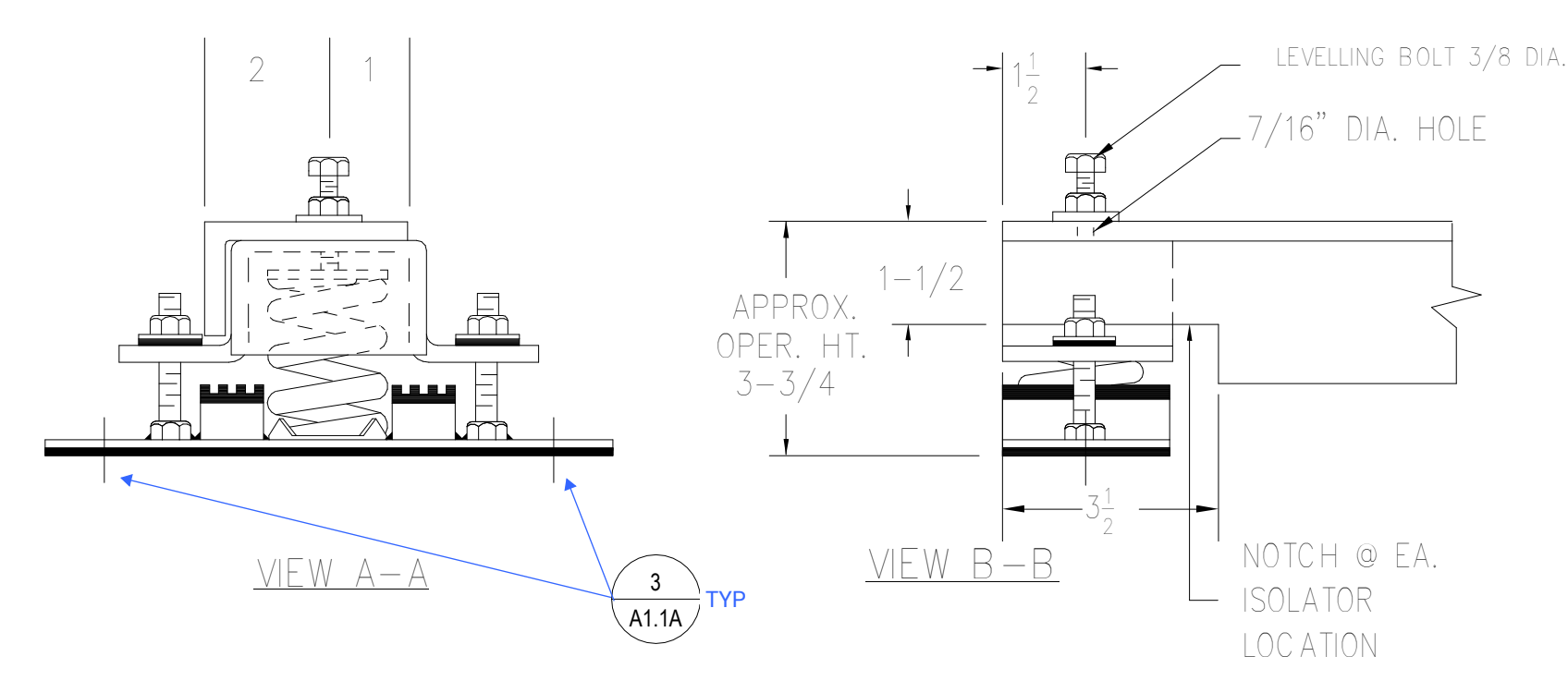
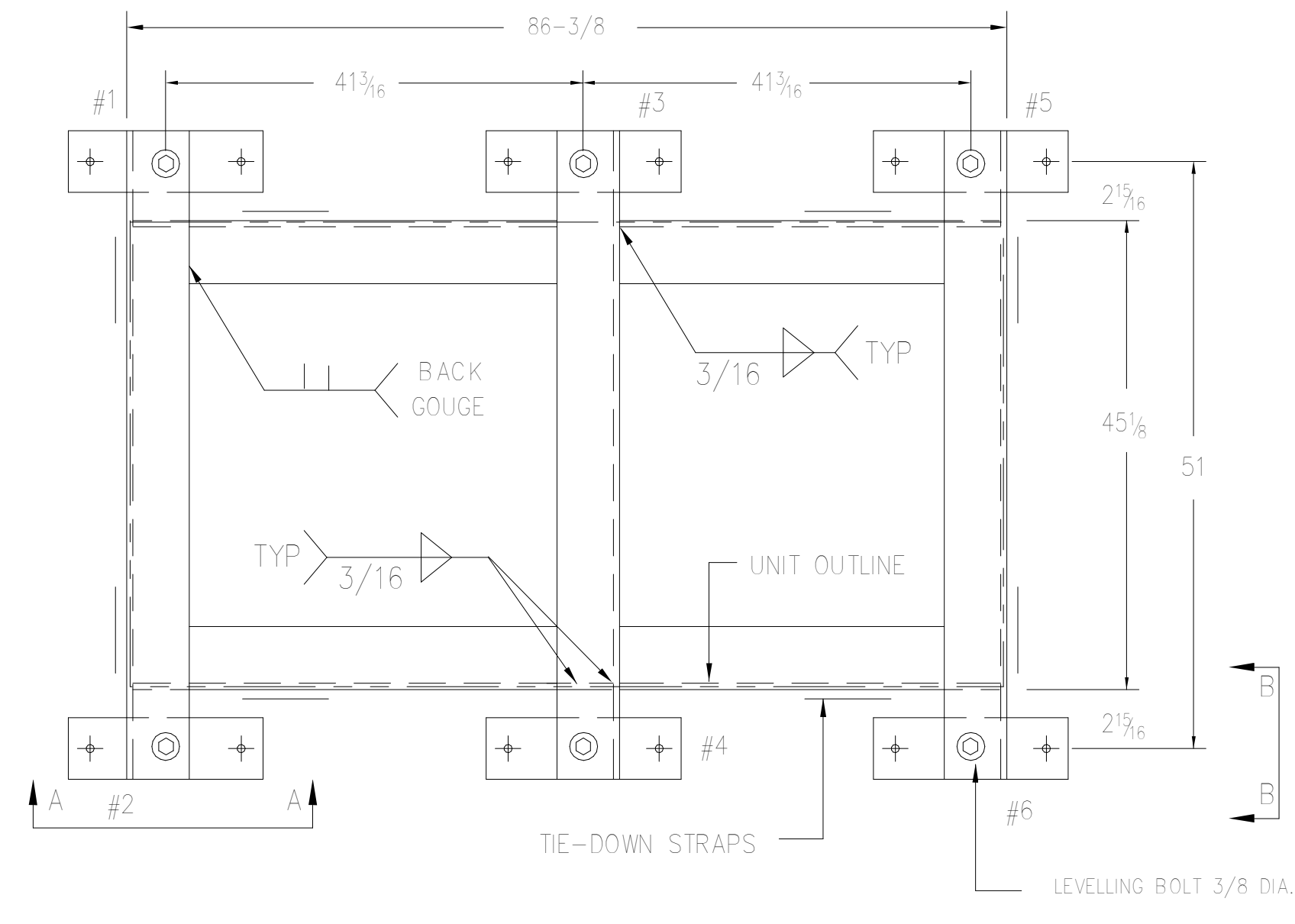
Autodesk Docs/75-22605-00_COVUSD - District Wide HVAC Replacement/75-22605-00_COVUSD_Barranca ES_MEP_2022.rvt 8/2/2022 5:13:37 PM

| MARK | MAKE | TYPE | SIZE | STEEL SIZE |
|-------|---------|-------|------|--------------|
| CU-B1 | CARRIER | 3BAUQ | 16 | L3 X 3 X 1/4 |

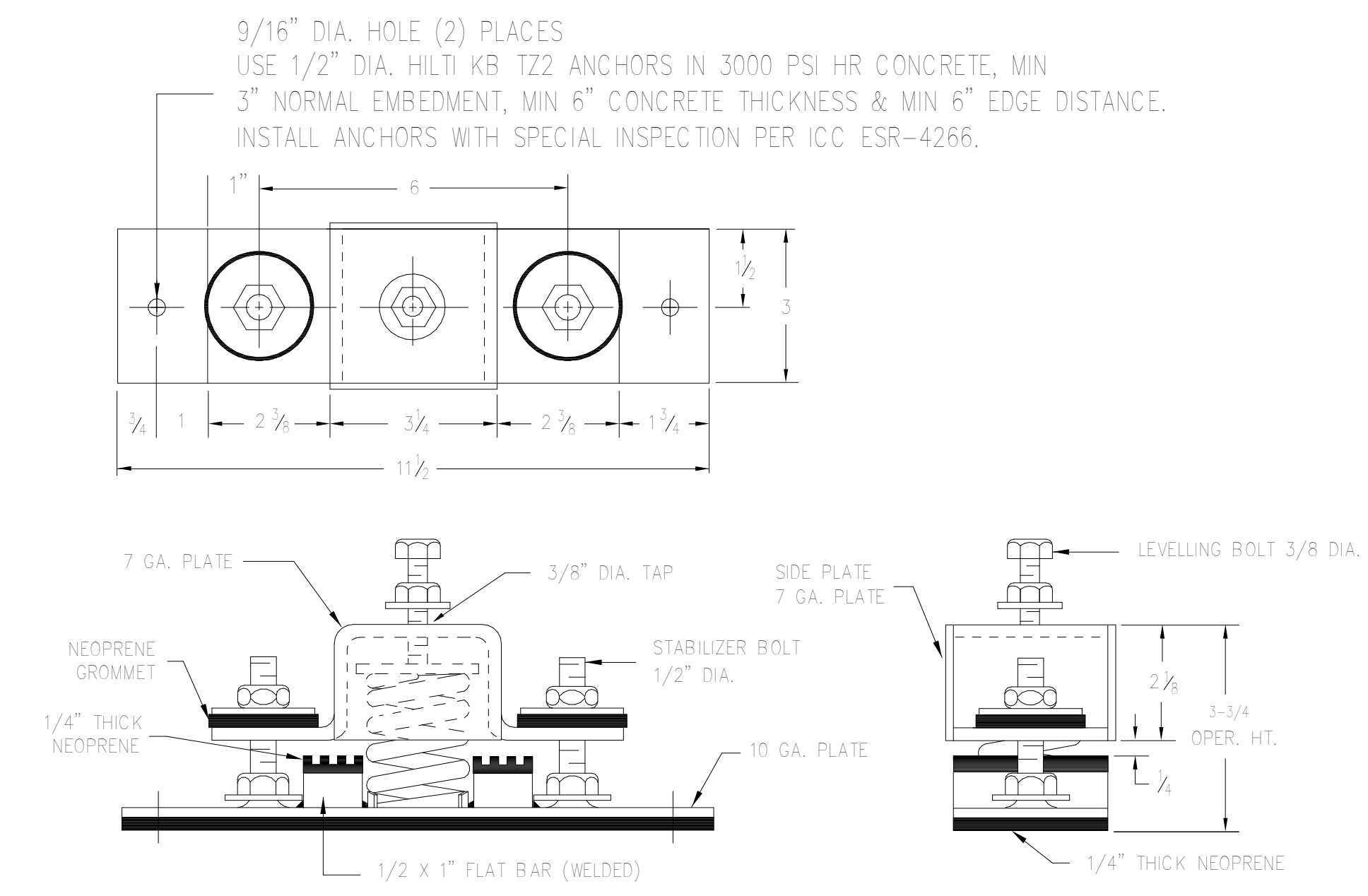
DETAIL-1

DETAIL-2

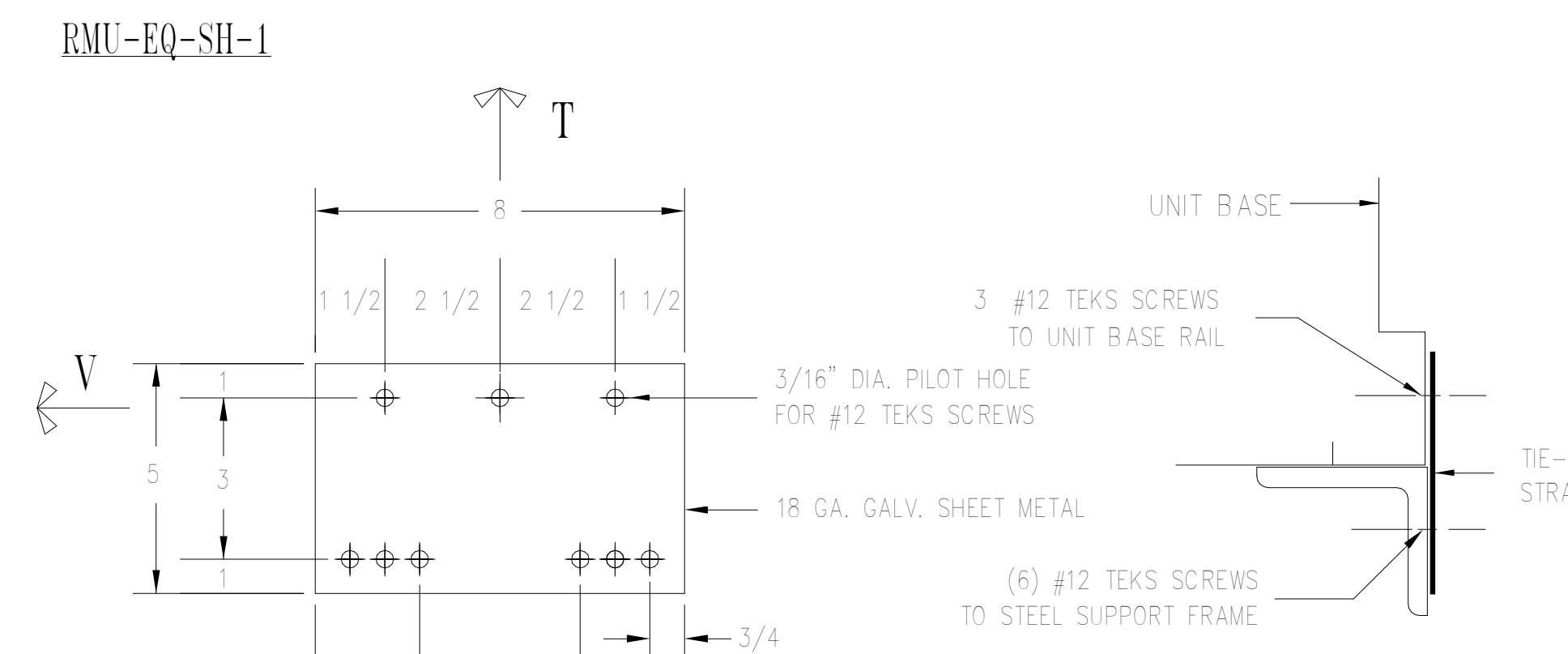
| MTS | SPRING O.D. | DEFL |
|-----|-------------|------|
| 1-6 | 2" | 1" |



- NOTES:
1. APPROX. STEEL WEIGHT INCLUDING ISOLATORS.: 185 LBS.
 2. — INDICATES TIE-DOWN STRAP. SEE DETAIL 3.
 3. ALL DIMENSIONS REQUIRE FINAL REVIEW AT COMMENCEMENT OF PROJECT.



MAX. ALLOW. LOADS: HORIZ. 1100 lbs. VERT. (UP) 1400 lbs.



NOTE(S) 1. THE SEISMIC CAPACITY OF TIE-DOWN PLATES IS DEPENDENT ON PROPER FIELD INSTALLATION AS SHOWN ABOVE.

M. W. SAUSSE & CO., INC.
28744 Whitherspoon Pkwy. Valencia, CA 91355
Phone: (661) 257-3311 Fax: (661) 257-7673

Vibrex RMUAB
vibration & seismic control systems

| | |
|--------------|--------------------------|
| JOB NAME: | COVINA USD - BARRANCA ES |
| CUST.: | |
| CUST. P.O.: | |
| MECH. ENGR.: | DLRG |
| MARK: | CU-B1 |

| | |
|------------|-------------------------|
| REVISIONS: | |
| A: | ADDED WELDING (7-21-22) |
| B: | |
| C: | |
| D: | |

| | |
|--------------|---------|
| DRN: | JO |
| DATE: | 6/22/22 |
| DRAWING NO.: | -1A |

1 CU-B1 ISOLATOR DETAILS
M7.3 NO SCALE



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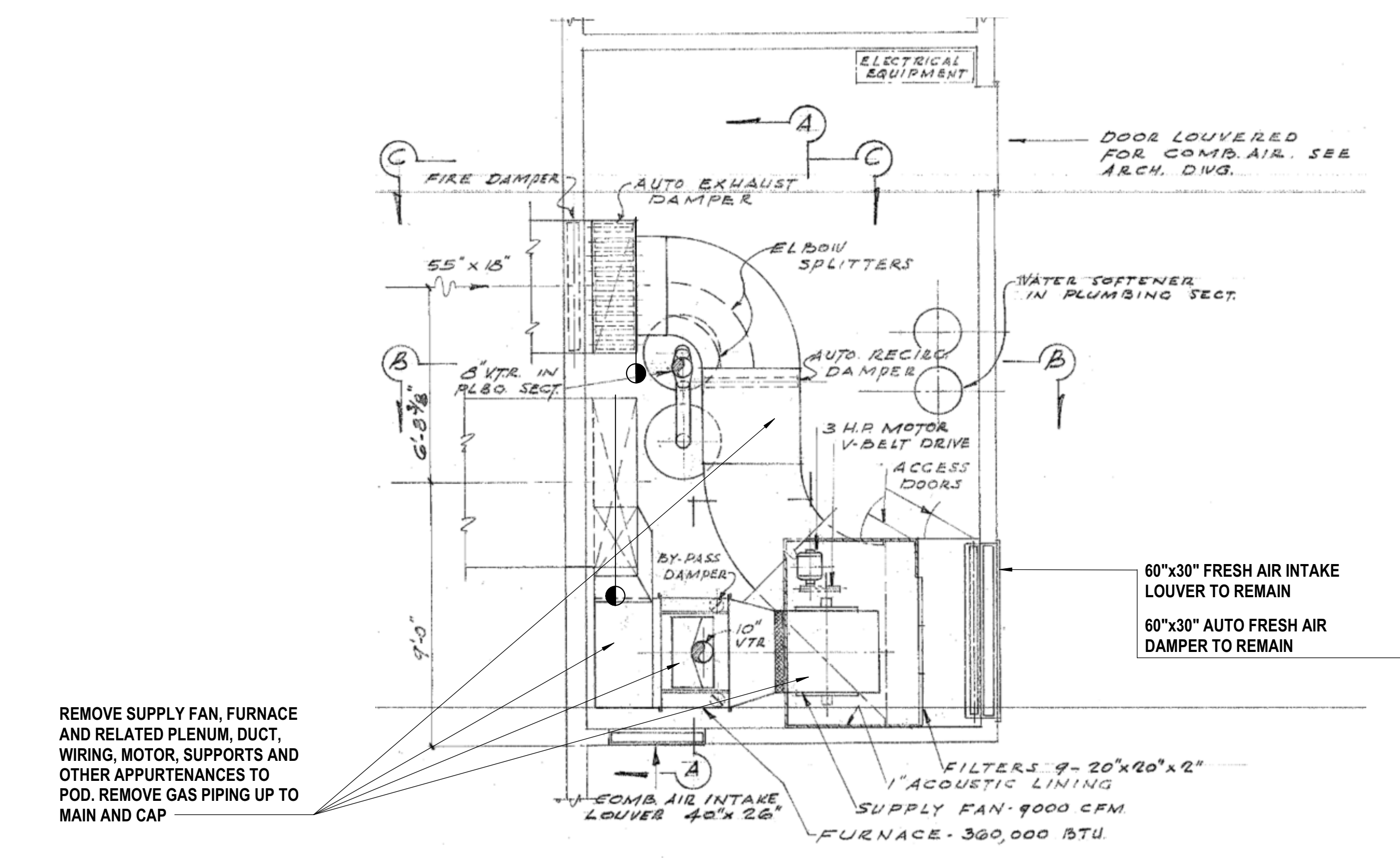
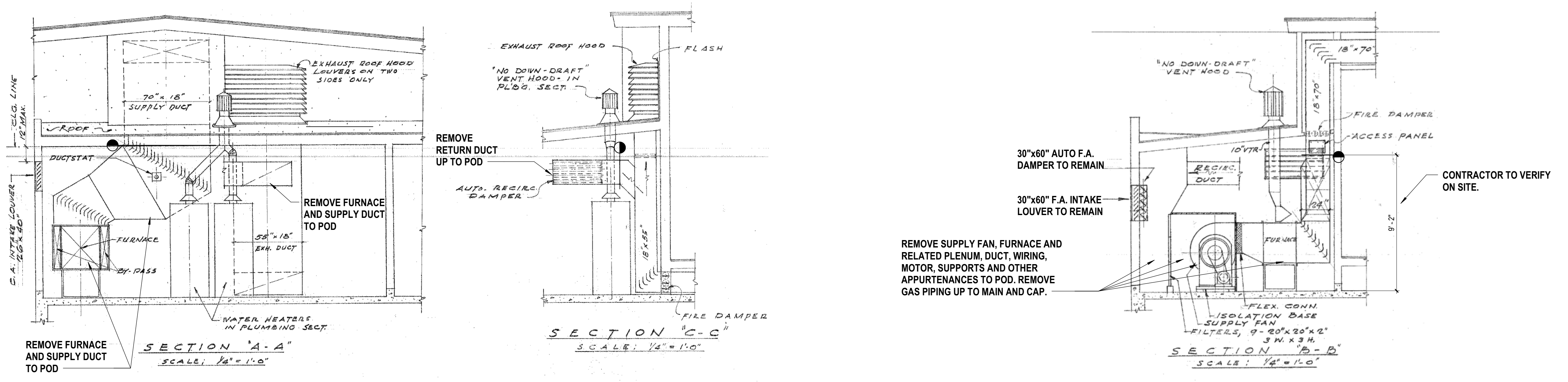
75-22605-00

MECHANICAL DETAILS

M7.3

Autodesk Docs/75-22605-00_COVUSD - District Wide HVAC Replacement/75-22605-00_COVUSD_Barranca ES_MEP_2022.rvt 8/22/22 5:13:37 PM

1
2
3
4
5



DEMO NOTES

A DEMO (E) EQUIPMENT AND SA & RA DUCTWORK IN THE SCOPE AREA UP TO POC, ALONG WITH ALL THE SUPPORTS, PIPING, OTHER COMPONENTS.



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MECHANICAL DEMOLITION PLAN

MD1.1

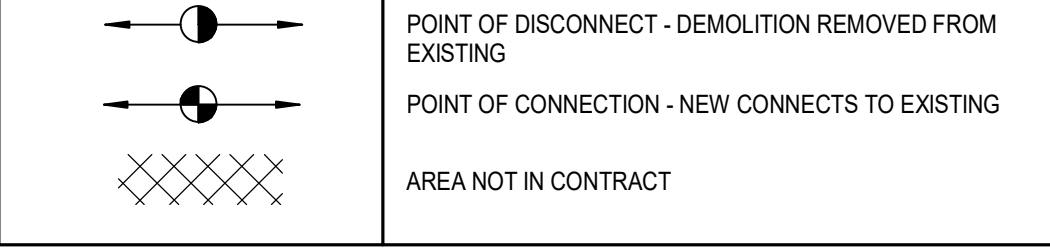
SHEET INDEX

| | |
|------|---|
| E0.1 | ELECTRICAL SYMBOLS, ABBREVIATIONS & NOTES |
| E2.1 | ROOF ELECTRICAL PLAN |
| E5.1 | ELECTRICAL DIAGRAMS |
| 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.

GENERAL SYMBOLS



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

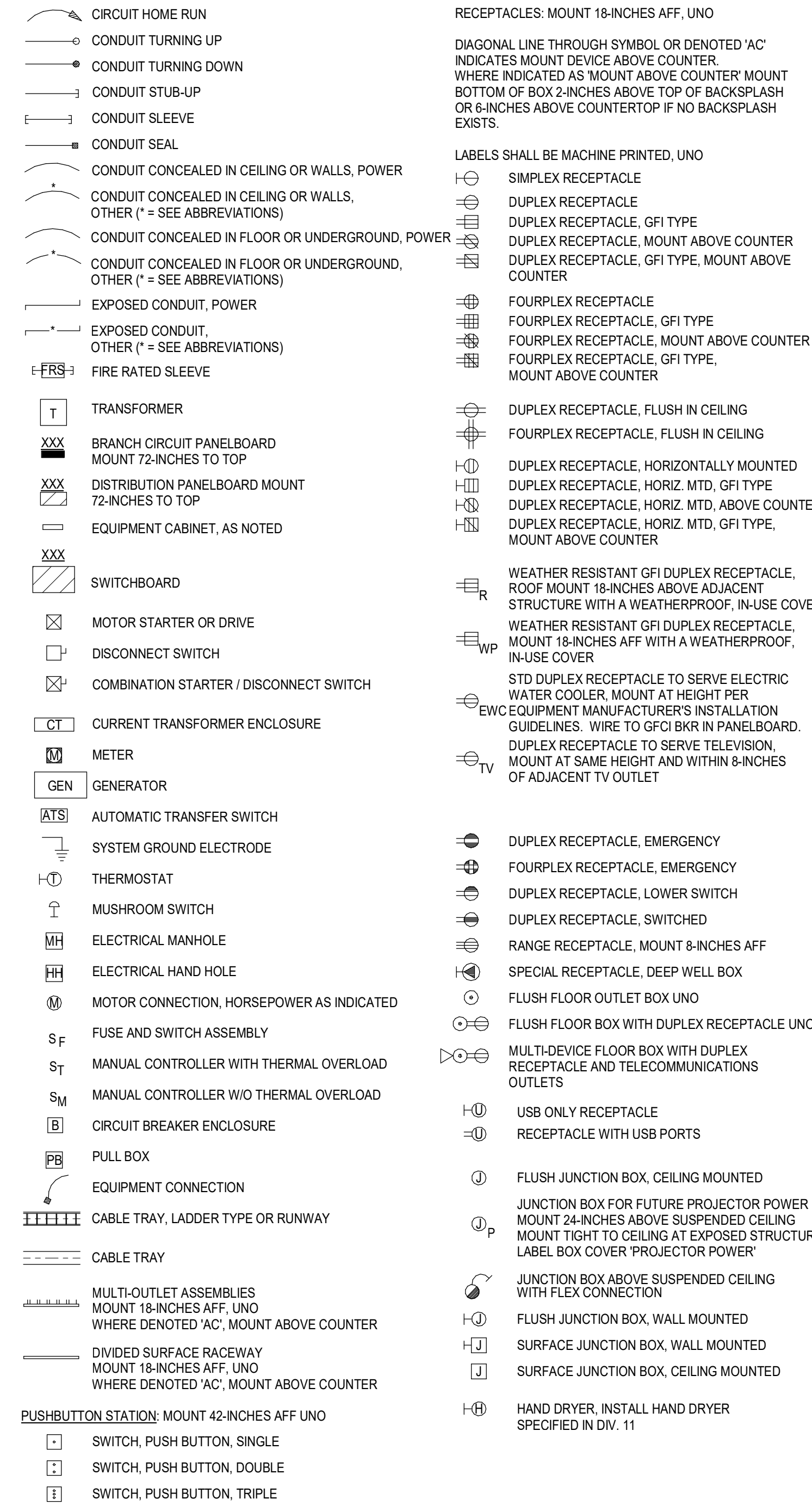
PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8, AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

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 |

POWER



ABBREVIATIONS

| | |
|-----------|---|
| (D) | DEMOLISHED |
| (E) | EXISTING |
| (R) | RELOCATED |
| Ø | PHASE |
| A | AMPERE |
| AC | ABOVE COUNTER |
| AF | AMP FRAME (CIRCUIT BREAKER) |
| AF | AMPERE INTERRUPTING CAPACITY |
| AL | ALUMINUM |
| AMP | AMPERE |
| AP | WIRELESS ACCESS POINT |
| AT | AMP TRIP (CIRCUIT BREAKER OR FUSE) |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AV | AUDIO-VISUAL |
| AWG | AMERICAN WIRE GAUGE |
| BAS | BUILDING AUTOMATION SYSTEM |
| BJ | BONDING JUMPER |
| BKR | BREAKER |
| BMS | BUILDING MANAGEMENT SYSTEM |
| C | CONDUIT |
| CATV | CABLE TELEVISION |
| CB | CIRCUIT BREAKER |
| CCTV | CLOSED CIRCUIT TELEVISION |
| CFCI | CONTRACTOR FURNISHED CONTRACTOR INSTALLED |
| CKT | CIRCUIT |
| CTL | CONTROL |
| CU | COPPER |
| DB | DECIBEL |
| DC | DIRECT CURRENT |
| DISC | DISCONNECT |
| DP | DISTRIBUTION PANELBOARD |
| DW | DISHWASHER |
| ECG | EMERGENCY COMMUNICATION SYSTEM |
| EGB | ELECTRICAL GROUNDING BUSBAR |
| EMD | ESTIMATED MAXIMUM DEMAND |
| EMGB | ELECTRICAL MAIN GROUNDING BUSBAR |
| EP | EXPLOSION PROOF |
| ER | EXISTING (TO BE RELOCATED) |
| ERMS | ENERGY REDUCTION MAINTENANCE SWITCH |
| EWIC | ELECTRIC WATER COOLER |
| FA | FIRE ALARM |
| FAA | FIRE ALARM ANNUNCIATOR |
| FACP | FIRE ALARM CONTROL PANEL |
| FC | FOOT CANDLE |
| FLA | FULL LOAD AMPS |
| FS | FLOW SWITCH |
| FSD | FIRE SMOKE DAMPER |
| G | EQUIPMENT GROUNDING CONDUCTOR |
| GEN | GENERATOR |
| GFI, GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| GFPE | GROUND FAULT PROTECTION OF EQUIPMENT |
| GND | EQUIPMENT GROUNDING CONDUCTOR |
| HH | HANDHOLE |
| HGA | HAND-OFF-AUTOMATIC |
| HP | HORSE POWER |
| IC | INTERCOM |
| IG | ISOLATED GROUND |
| JB | JUNCTION BOX |
| KAIC | THOUSAND AMPERE INTERRUPTING CIRCUIT |
| 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 |
| MOCP | MAXIMUM OVERCURRENT PROTECTION |
| MRTS | MOTOR RATED TOGGLE SWITCH |
| MSB | MAIN SWITCHBOARD |
| MTD | MOUNTED |
| MTG | 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 |
| PV | POST INDICATOR VALVE |
| PNL | PANEL |
| PWR | POWER |
| RCP | REFLECTED CEILING PLAN |
| RECPT | RECEPTACLE |
| REF | REFERENCE |
| RESP | RESPONSIVE |
| SCCR | SHORT CIRCUIT CURRENT RATING |
| SD | SMOKE DAMPER |
| SEC | SECONDARY |
| SPD | SURGE PROTECTION DEVICE |
| SWBD | SWITCHBOARD |
| TBB | TELECOMMUNICATIONS BONDING BACKBONE |
| TC | TIME CLOCK |
| TGB | TELECOMMUNICATIONS GROUNDING BUSBAR |
| TMGB | TELECOMMUNICATIONS MAIN GROUNDING 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) |
| XFRM | 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.



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ELECTRICAL SYMBOLS, ABBREVIATIONS & NOTES

E0.1

GENERAL NOTES

- A WORK TO INCLUDE REMOVAL OF EXISTING FEEDER TO EXISTING HVAC EQUIPMENT THAT ARE TO BE REMOVED AND REPLACED. FEEDER TO EXISTING INDOOR FAN COIL UNIT TO BE REMOVED IN ITS ENTIRETY.
- B DISCONNECTING MEANS TO BE NEMA 3R RATED, FURNISHED BY HVAC EQUIPMENT MANUFACTURER AND INSTALLED UNDER DIVISION 28.
- C CARBON MONOXIDE DETECTION SYSTEM NOT REQUIRED. ELECTRIC HEATING IS BEING PROVIDED.
- D SEE SCHEDULE ON SHEET E-1 FOR ADDITIONAL INFORMATION.
- E FUSES SHALL BE PROVIDED PER EQUIPMENT NAMEPLATE RATING.
- F ELECTRICAL PANELS LOCATED AT GRADE LEVEL DIRECTLY BELOW WHERE SHOWN.
- G ENERGY MNGEMENT SYSTEM (EMS) / BUILDING AUTOMATION SYSTEM (BAS) IS A DELAGATED DESIGN SCOPE BY CONTRACTOR. CONTRACTOR TO FIELD COORDINATE WITH SCHOOL DISTRICT FOR LOCATIONS OF EMS ROUTER AND EMS PANEL AS WELL AS CONDUIT ROUTING.
- H CARBON MONOXIDE DETECTION SYSTEM WILL NOT BE PROVIDED AT THIS TIME UNDER CEBC 503.15.1:
EXCEPTION 2: THE GROUP BUILDING WAS CONSTRUCTED BEFORE THE ADOPTION OF THE 2016 CALIFORNIA BUILDING STANDARDS CODE.
EXISTING HVAC UNITS ARE BEING REPLACED IN KIND THROUGHOUT.
- J CONTRACTOR TO PROVIDE CONNECTION FROM LOAD SIDE OF HVAC EQUIPMENT DISCONNECT SWITCH TO FEED POWER EXHAUST DISCONNECT SWITCH. PROVIDE SAME SIZE FEEDER. PROVIDE FUSES PER EQUIPMENT NAMEPLATE RATING.

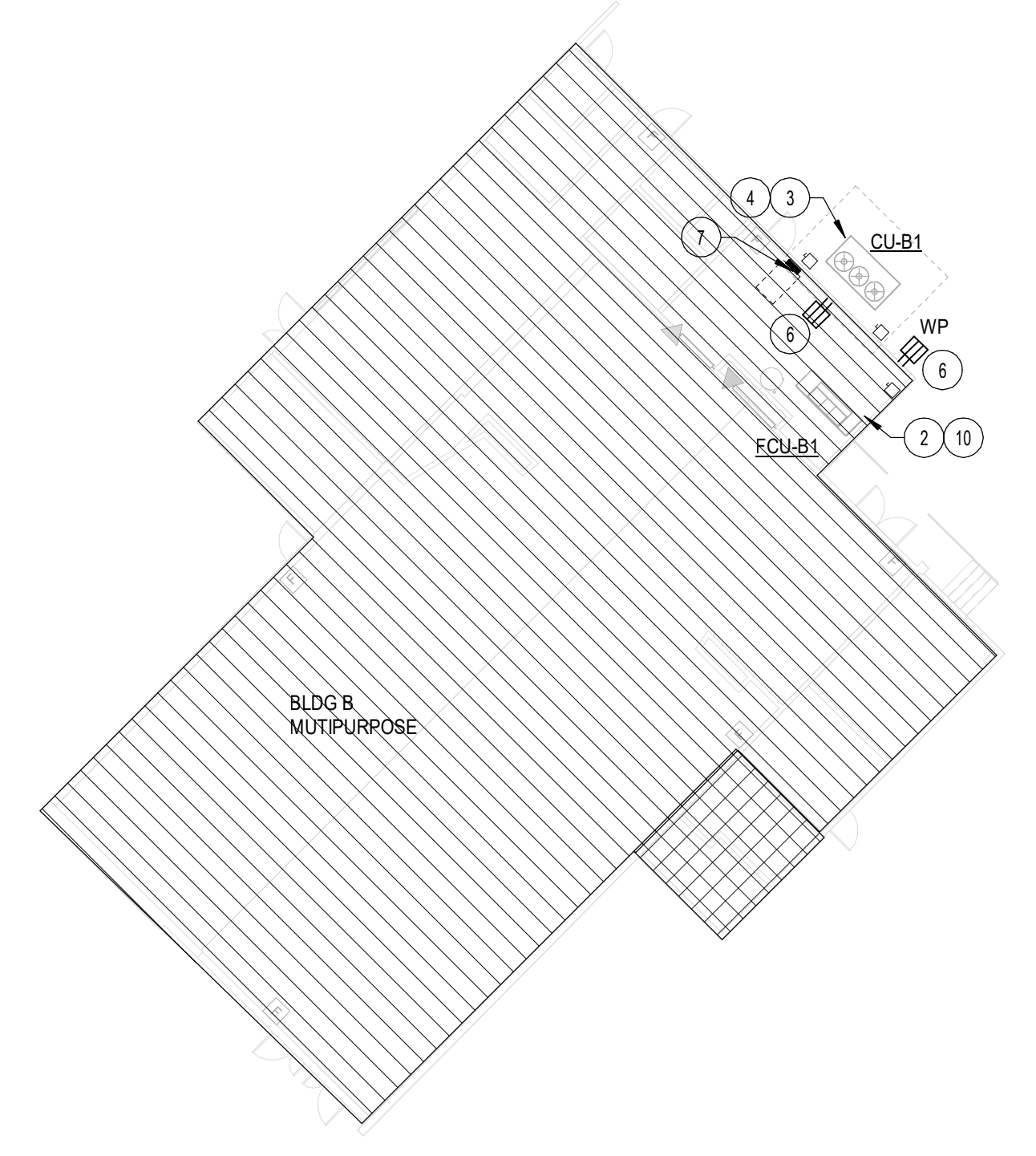
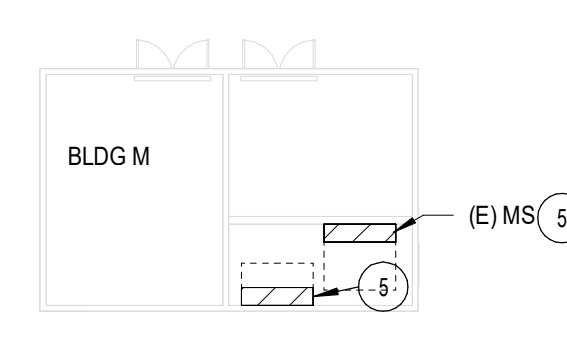
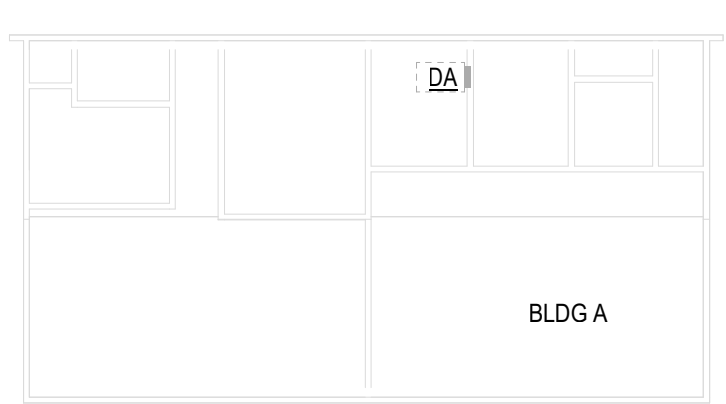
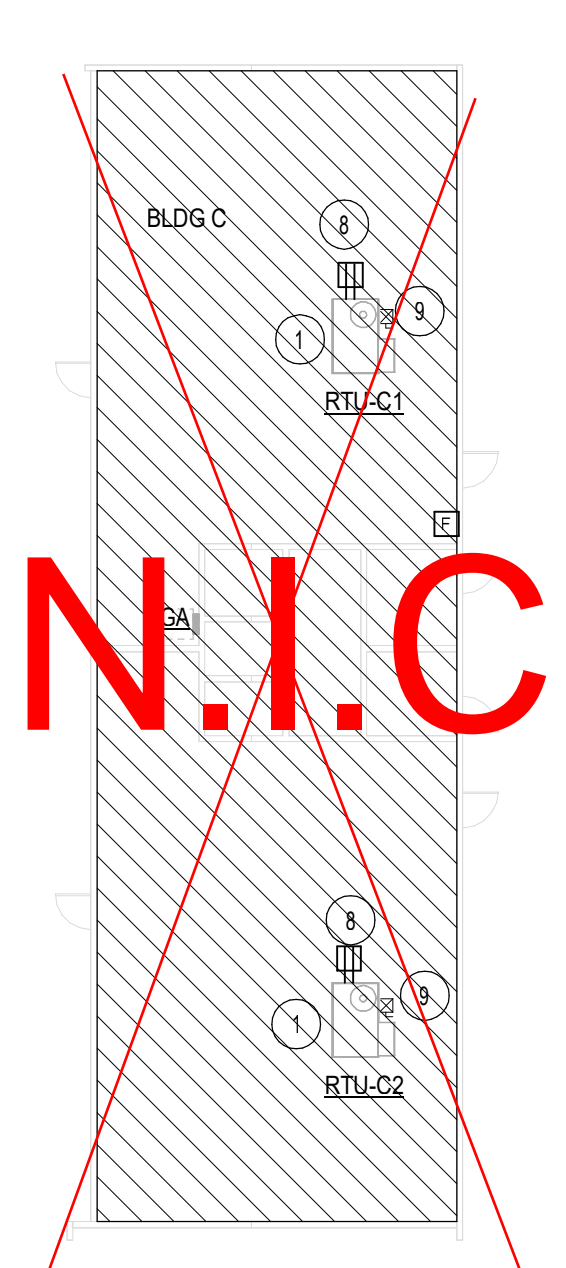
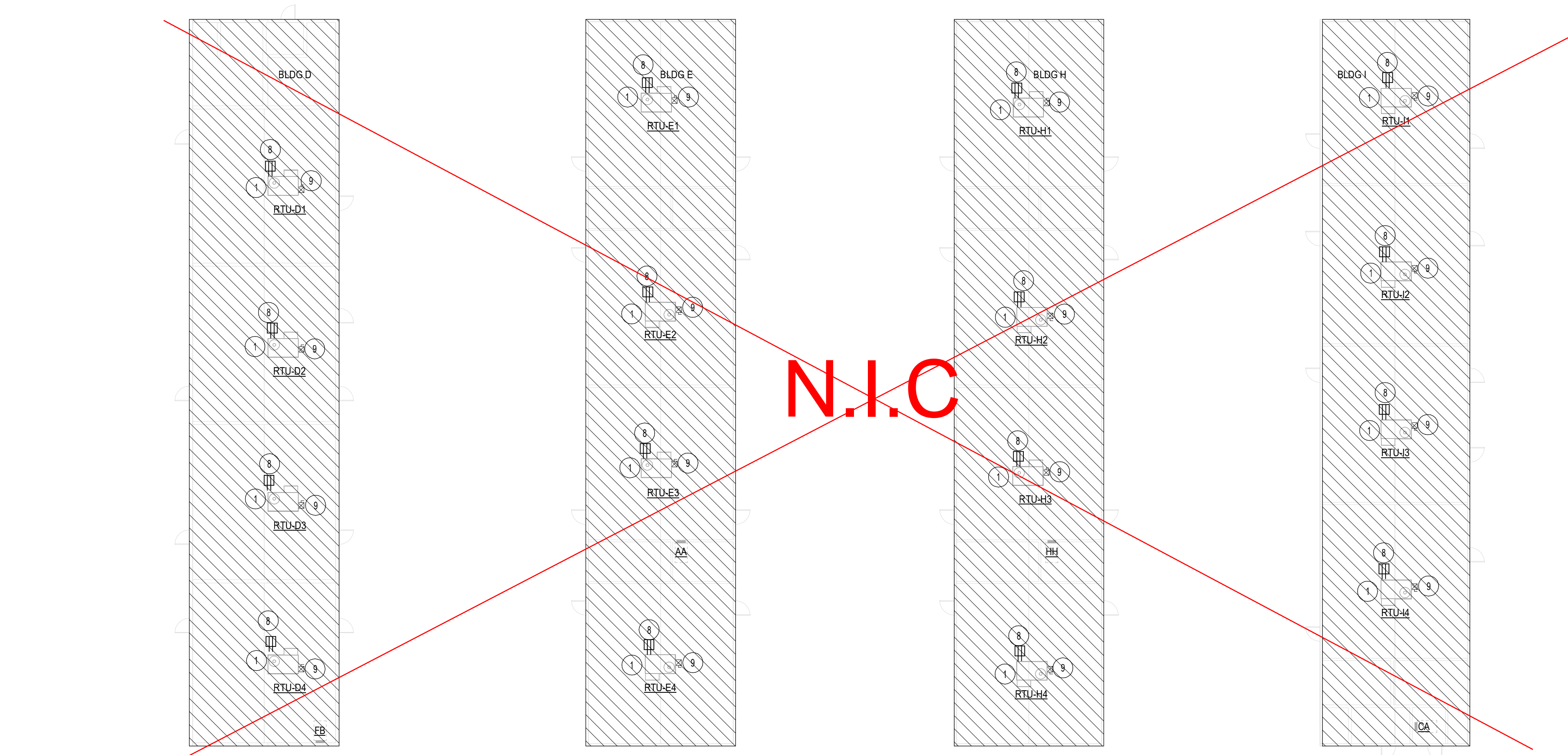
KEYNOTES

| No. | DESCRIPTION |
|-----|---|
| 1 | EXISTING HVAC EQUIPMENT ON THE ROOF TO BE DISCONNECTED AND REPLACED AS PART OF THIS SCOPE OF WORK. EXISTING FEEDER TO BE EXTENDED AS REQUIRED. PROVIDE ALL REQUIRED CONNECTION. FUSED DISCONNECT FOR POWER EXHAUST FAN SHALL BE PROVIDED WITH #8 CONDUCTOR AND #10 GND CONDUCTOR TO LOAD SIDE OF MAIN DISCONNECT FOR RTU. |
| 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 E-1. PROVIDE ALL REQUIRED CONNECTION. |
| 3 | NEW HVAC EQUIPMENT AT GRADE. PROVIDE NEW FEEDER PER TABLE ON SHEET E-1. PROVIDE ALL REQUIRED CONNECTION. |
| 4 | 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 TRAVEL DISTANCE DOES NOT EXCEED 100 FEET. |
| 5 | EXISTING ELECTRICAL EQUIPMENT TO REMAIN AND TO BE PROTECTED IN PLACE. |
| 6 | PROVIDE 120 VOLT CIRCUIT FROM SPARE BREAKER. PROVIDE TANDEN BREAKER AS REQUIRED. |
| 7 | (N) PANELBOARD B. 240 VOLTS, 3-PHASE, 3-WIRE, 100 AMP BUS. ROUTE CONDUIT ABOVE EXISTING WALKWAY CANOPIES AND FIELD COORDINATE WITH SCHOOL DISTRICT. PROVIDE PULLBOX EVERY 200 FEET ABOVE THE WALKWAY CANOPY. W/ 4X4X12 FT SUPPORTS AT 8FT MAX. REFER TO SHEET E-1 FOR PANELBOARD MOUNTING DETAIL. |
| 8 | GFCI TYPE RECEPTACLE PROVIDED BY HVAC EQUIPMENT MANUFACTURER PER KEYNOTE NUMBER 2 ON SHEET E-1. PROVIDE WEATHERPROOF COVER. |
| 9 | FUSED DISCONNECT SIZE PER TABLE SHOWN ON E-1. |
| 10 | PER 2019 CALIFORNIA MECHANICAL CODE SECTION 608 EXEMPTION NO. 2, AUTOMATIC SHUT OFF IS NOT REQUIRED WHERE OCCUPIED ROOMS SERVED BY THE IAR-HANDLING EQUIPMENT HAVE DIRECT EXIT TO EXTERIOR, AND TRAVEL DISTANCE DOES NOT EXCEED 100 FEET. |
| 11 | PROVIDE 120V CIRCUIT FOR EMS PANEL AND EMS ROUTER. FIELD COORDINATE EXACT LOCATION OF 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

1
2
3
4
5



OVERALL ELECTRICAL POWER PLAN
SCALE: 1/16" = 1'-0"



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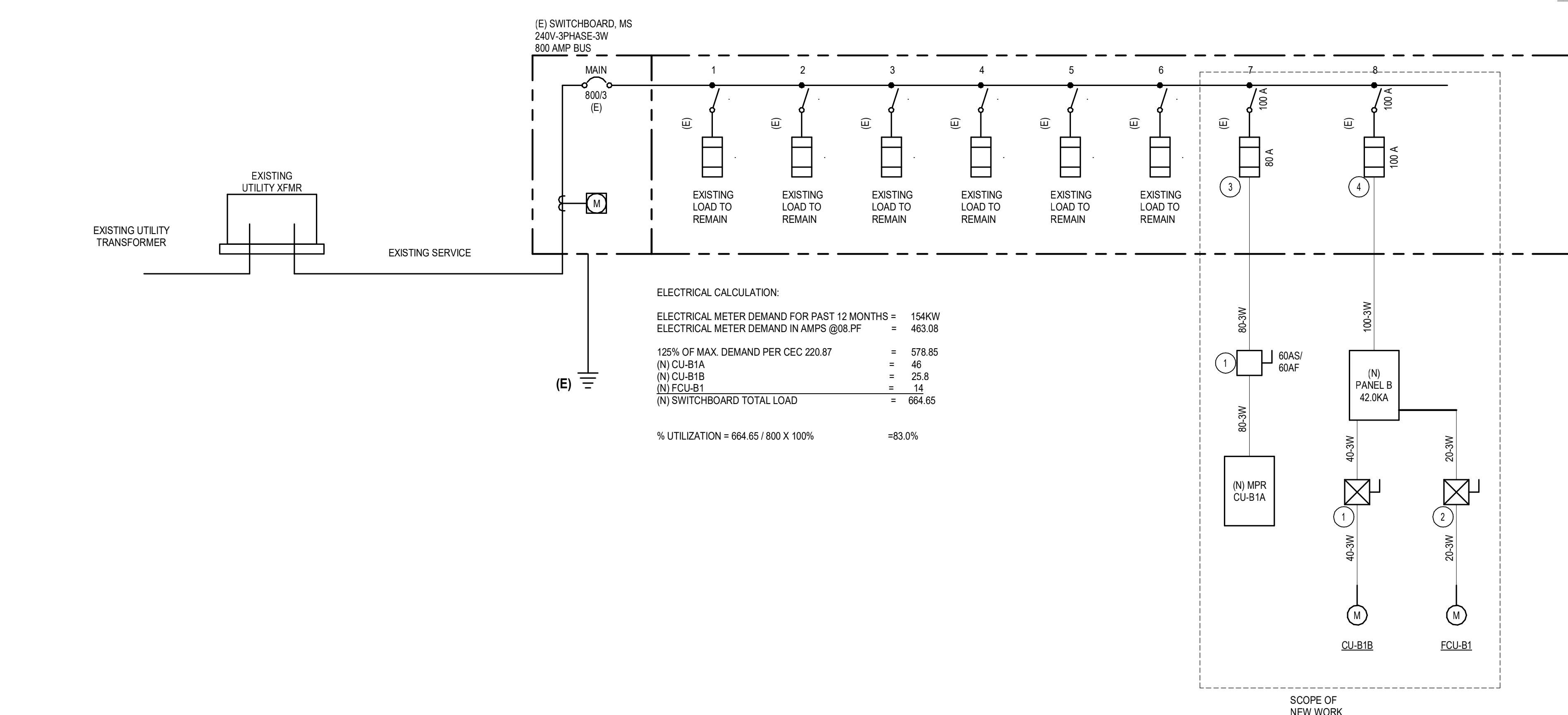
ROOF ELECTRICAL PLAN

E2.1

| FEEDER SCHEDULE - COPPER | | | | | | | | | |
|--------------------------|--------|-------|-----|--------------|--------|--------|-------------|--|--|
| MARK (AMPS) | # SETS | Ø & N | GND | CONDUIT SIZE | | | MARK SUFFIX | | |
| | | | | -4W | -3W | -2W | | | |
| 15 | 1 | 12 | 12 | 3/4" | 3/4" | 3/4" | | | |
| 20 | 1 | 12 | 12 | 3/4" | 3/4" | 3/4" | | | |
| 25 | 1 | 10 | 10 | 3/4" | 3/4" | 3/4" | | | |
| 30 | 1 | 10 | 10 | 3/4" | 3/4" | 3/4" | | | |
| 35 | 1 | 8 | 10 | 3/4" | 3/4" | 3/4" | | | |
| 40 | 1 | 8 | 10 | 3/4" | 3/4" | 3/4" | | | |
| 45 | 1 | 6 | 10 | 1" | 1" | 3/4" | | | |
| 50 | 1 | 6 | 10 | 1" | 1" | 3/4" | | | |
| 60 | 1 | 4 | 10 | 1-1/4" | 1" | 3/4" | | | |
| 70 | 1 | 4 | 8 | 1-1/4" | 1" | 3/4" | | | |
| 80 | 1 | 3 | 8 | 1-1/4" | 1-1/4" | 1" | | | |
| 90 | 1 | 2 | 8 | 1-1/4" | 1-1/4" | 1" | | | |
| 100 | 1 | 1 | 8 | 1-1/2" | 1-1/2" | 1-1/4" | | | |
| 110 | 1 | 1 | 6 | 1-1/2" | 1-1/2" | 1-1/4" | | | |
| 125 | 1 | 1 | 6 | 1-1/2" | 1-1/2" | 1-1/4" | | | |
| 150 | 1 | 10 | 6 | 2" | 2" | 1-1/2" | | | |
| 175 | 1 | 20 | 6 | 2" | 2" | 1-1/2" | | | |
| 200 | 1 | 30 | 6 | 2" | 2" | 1-1/2" | | | |
| 225 | 1 | 40 | 4 | 2-1/2" | 2" | 1-1/2" | | | |
| 250 | 1 | 250 | 4 | 2-1/2" | 2" | 1-1/2" | | | |
| 300 | 1 | 350 | 4 | 3" | 2-1/2" | 2" | | | |
| 350 | 1 | 500 | 3 | 3-1/2" | 3" | 2-1/2" | | | |
| 400 | 1 | 600 | 3 | 3-1/2" | 3" | 2-1/2" | | | |
| 400 | 2 | 300 | 3 | 2" | 2" | 1-1/2" | | | |
| 450 | 2 | 400 | 2 | 2-1/2" | 2" | 1-1/2" | | | |
| 500 | 2 | 250 | 2 | 2-1/2" | 2-1/2" | 2" | | | |
| 600 | 2 | 350 | 1 | 3" | 2-1/2" | 2" | | | |
| 700 | 2 | 500 | 10 | 3-1/2" | 3" | 2-1/2" | | | |
| 800 | 2 | 600 | 10 | 3-1/2" | 3" | 2-1/2" | | | |
| 1000 | 3 | 400 | 20 | 3" | 3" | 2-1/2" | | | |
| 1200 | 3 | 600 | 30 | 3-1/2" | 3-1/2" | 3" | | | |
| 1600 | 4 | 600 | 40 | 3-1/2" | 3-1/2" | 3" | | | |
| 2000 | 5 | 600 | 250 | 4" | 3-1/2" | 3" | | | |
| 2500 | 6 | 600 | 350 | 4" | 3-1/2" | 3" | | | |
| 3000 | 8 | 500 | 400 | 3-1/2" | 3" | 2-1/2" | | | |
| 4000 | 10 | 600 | 500 | 4" | 3-1/2" | 3" | | | |

ABBREVIATIONS:
Ø PHASE
N NEUTRAL
GND EQUIPMENT GROUNDING CONDUCTOR
-4W FOUR WIRE + GROUND (3Ø N, GND)
-3W THREE WIRE + GROUND (3Ø, GND or 2Ø N, GND)
-2W TWO WIRE + GROUND

NOTES:
1. CONDUCTOR AMPACITIES ARE BASED ON NEC TABLE 310.15(B)(16).
2. CONDUIT SIZES ARE BASED ON A MAXIMUM FILL RATIO OF 40%.
3. SCHEDULE SHALL BE USED FOR FEEDERS AND BRANCH CIRCUITS WHERE APPLICABLE.
4. ALL FEEDERS AND BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUNDING CONDUCTOR. SCHEDULE IS VALID FOR TYPE THHN, THWN-2, AND XHHW-2 CONDUCTORS. SEE SPECIFICATIONS FOR CONDUCTOR TYPES REQUIRED.
5. SCHEDULE IS VALID FOR TYPE EMT, IMC, FMC, LMC, RMC, AND RMC-40 RACEWAYS. SEE SPECIFICATIONS FOR RACEWAY APPLICATIONS.
6. OPTIONAL CONFIGURATIONS (1 OR 2 SETS) ARE GIVEN FOR SOME SIZES.
7. NOT ALL SIZES USED.



GENERAL SINGLE LINE NOTES

- OVERCURRENT DEVICES OF ENTIRE DISTRIBUTION SYSTEM SHALL MEET STATED FAULT CURRENT VALUES WITH FULLY RATED EQUIPMENT.
- CONDUCTOR LENGTHS INDICATED ON THE SINGLE LINE DIAGRAM ARE FOR FAULT CURRENT CALCULATIONS ONLY. ACTUAL LENGTH SHALL BE DETERMINED BY FIELD CONDITIONS AND ACTUAL ROUTES OF FEEDERS.
- REFER TO SWITCHBOARD SCHEDULES AND DISTRIBUTION PANEL SCHEDULES FOR ADDITIONAL REQUIREMENTS. WHERE A DISCREPANCY EXISTS BETWEEN EQUIPMENT ON THE SINGLE LINE DIAGRAM AND THE DETAILED SCHEDULES, THE ITEM OR ARRANGEMENT WITH BETTER QUALITY, GREATER QUANTITY, OR HIGHER COST SHALL BE USED.
- ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. REFER TO THE MOTOR AND SPECIAL CONNECTION SCHEDULE FOR ALL FEEDERS DESIGNATED 'M'.
- GROUNDING ELECTRODE CONDUCTOR SIZES ARE NOT INDICATED ON THE SINGLE LINE DIAGRAM. REFER TO THE GROUNDING RISER DIAGRAM FOR CONNECTIONS AND CONDUCTOR SIZES.

KEYNOTES

| No. | DESCRIPTION |
|-----|---|
| 1 | FUSED DISCONNECT TO BE PROVIDED BY CONTRACTOR. |
| 2 | VARIABLE FREQUENCY DRIVE WITH ON/OFF SWITCH TO BE PROVIDED UNDER DIVISION 23. |
| 3 | EXISTING 100 AMP SWITCH. PROVIDE 80 AMP FUSES |
| 4 | EXISTING 100 AMP SWITCH. PROVIDE 100 AMP FUSES |

1 One-Line Diagram
ES.1 NO SCALE

| PANEL: B | | | | | | | | | | | |
|--------------------------------|---------------------|----------|---|----------|---------------------------------|--------------|--------------|--------------|-----------|-----|--|
| LOCATION: MECHANICAL ROOM B113 | | | | | VOLTS: 240 Delta | | | | | | |
| BUS RATING: 200.0 A | | | | | PHASES: 3 | | | | | | |
| MAIN BREAKER: 100 | | | | | SCCR: | | | | | | |
| MOUNTING: SURFACE | | | | | FEED FROM: INTEGRAL SPD: Type 1 | | | | | | |
| LUG ACCESSORIES: SEE ONE-LINE | | | | | | | | | | | |
| CKT | CIRCUIT DESCRIPTION | BKR TRIP | P | BKR TYPE | LOAD TYPE | PHASE A (VA) | PHASE B (VA) | PHASE C (VA) | LOAD TYPE | CKT | |
| 1 | | | | | | | | | | | |
| 3 | CU-B1 | 60 | 3 | Motor | | 2,860 | 2,860 | 2,860 | | 4 | |
| 5 | | | | | | | | | | 6 | |
| 7 | | | | | | | | | | 8 | |
| 9 | FCU-B1 | 40 | 3 | Motor | | 1,552 | 1,552 | 1,552 | | 10 | |
| 11 | | | | | | | | | | 12 | |
| 13 | | | | | | | | | | 14 | |
| 15 | | | | | | | | | | 16 | |
| 17 | | | | | | | | | | 18 | |
| 19 | | | | | | | | | | 20 | |
| 21 | | | | | | | | | | 22 | |
| 23 | | | | | | | | | | 24 | |
| 25 | | | | | | | | | | 26 | |
| 27 | | | | | | | | | | 28 | |
| 29 | | | | | | | | | | 30 | |
| 31 | | | | | | | | | | 32 | |
| 33 | | | | | | | | | | 34 | |
| 35 | | | | | | | | | | 36 | |
| 37 | | | | | | | | | | 38 | |
| 39 | | | | | | | | | | 40 | |
| 41 | | | | | | | | | | 42 | |
| TOTAL LOAD: | | | | | | 4412 VA | 4412 VA | 4412 VA | | | |
| TOTAL AMPS: | | | | | | 31.8 A | 31.8 A | 31.8 A | | | |

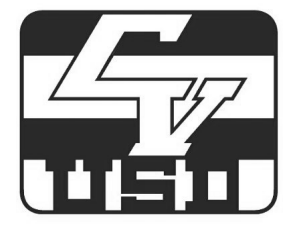
| LOAD TYPE | LOAD DESCRIPTION | CONNECTED LOAD (VA) | DEMAN D. | ESTIMATED DEMAND (VA) | DEMAND FACTOR NOTES | BKR TYPE | PANEL TOTALS |
|-----------|------------------|---------------------|----------|-----------------------|--|------------------|--|
| L | LIGHTING | 0 VA | 0.00% | 0 VA | CONTINUOUS LOAD @ 125% | G = GFCI (5mA) | CONNECTED LOAD: 13 WIA ESTIMATED DEMAND: 13 WIA CONNECTED CURRENT: 31.8 A EMD CURRENT: 31.8 A |
| R | RECEPTACLES | 0 VA | 0.00% | 0 VA | FIRST 10KVA @ 100%, REMAINDER @ 50% | GP = GFFP (30mA) | |
| K | KITCHEN | 0 VA | 0.00% | 0 VA | NON-DWELLING KITCHEN LOADS, NEC ART. 220 | ST = SHUNT TRIP | |
| M | MOTOR | 0 VA | 0.00% | 0 VA | LARGEST MOTOR, NEC ART. 430 | LO = LOCK OUT | |
| C | COOLING | 0 VA | 0.00% | 0 VA | | | |
| H | HEATING | 0 VA | 0.00% | 0 VA | | | |
| O | OTHER | 0 VA | 0.00% | 0 VA | | | |
| Spare | SPARE | 0 VA | 0.00% | 0 VA | | | |

NOTES:

| EXISTING UNIT | | | | | | | | | | NEW UNIT | | | | | | | | | | | |
|------------------|------------|------|------|------|-------------|-------------------|------------|------------------|-------------------------|----------|------------|------|------|-------------|----------------|---------------|-------------|-----|------|-------------------|----------------|
| TAGS | ELECTRICAL | | | | | | | TAGS | DIRECT REPLACEMENT? Y/N | CFM | ELECTRICAL | | | | | POWER EXHAUST | | | | NOTES | |
| | VIPH | MCA | FLA | MOCP | PANEL/ CKTW | FEEDER SIZE | DISCONNECT | | | | V-PH | MCA | MOCP | PANEL/ CKTW | DISCONNECT | REQUIRED? | Model# | MCA | MOCP | | FEEDER SIZE |
| NA | NA | NA | NA | NA | NA | NA | NA | CU-B1A | N | NA | 230/3 | 46 | 60 | MS-7 | 60A (60A FUSE) | | | | | | |
| NA | NA | NA | NA | NA | NA | NA | NA | CU-B1B | N | NA | 230/3 | 25.8 | 40 | B-1,3,5 | 60A (40A FUSE) | | | | | | |
| NA | NA | NA | NA | NA | NA | NA | NA | FCU-B1 | N | 6,000 | 230/3 | 14 | 20 | B-2,4,6 | 30A (20A FUSE) | | | | | | |
| RTU-C1 (BLDG. C) | 230/3 | 22.6 | 22.6 | 30 | GA-2,4,6 | 3#8, 2#14GND-1" C | 60 | RTU-C1 (BLDG. C) | Y | 1,600 | 230/3 | 26 | 30 | GA-2,4,6 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-C2 (BLDG. C) | 230/3 | 22.6 | 22.6 | 30 | GA-1,3,5 | 3#8, 2#14GND-1" C | 60 | RTU-C2 (BLDG. C) | Y | 1,600 | 230/3 | 26 | 30 | GA-1,3,5 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-D1 (BLDG. D) | 230/3 | 22.6 | 22.6 | 30 | FB-2,4,6 | 3#8, 2#14GND-1" C | 60 | RTU-D1 (BLDG. D) | Y | 1,600 | 230/3 | 26 | 30 | FB-2,4,6 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-D2 (BLDG. D) | 230/3 | 22.6 | 22.6 | 30 | FB-8,10,12 | 3#8, 2#14GND-1" C | 60 | RTU-D2 (BLDG. D) | Y | 1,600 | 230/3 | 26 | 30 | FB-8,10,12 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-D3 (BLDG. D) | 230/3 | 22.6 | 22.6 | 30 | FB-1,3,5 | 3#8, 2#14GND-1" C | 60 | RTU-D3 (BLDG. D) | Y | 1,600 | 230/3 | 26 | 30 | FB-1,3,5 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-D4 (BLDG. D) | 230/3 | 22.6 | 22.6 | 30 | FB-7,9,11 | 3#8, 2#14GND-1" C | 60 | RTU-D4 (BLDG. D) | Y | 1,600 | 230/3 | 26 | 30 | FB-7,9,11 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-E1 (BLDG. E) | 230/3 | 22.6 | 22.6 | 30 | AA-1,3,5 | 3#8, 2#14GND-1" C | 60 | RTU-E1 (BLDG. E) | Y | 1,600 | 230/3 | 26 | 30 | AA-1,3,5 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-E2 (BLDG. E) | 230/3 | 22.6 | 22.6 | 30 | AA-2,4,6 | 3#8, 2#14GND-1" C | 60 | RTU-E2 (BLDG. E) | Y | 1,600 | 230/3 | 26 | 30 | AA-2,4,6 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-E3 (BLDG. E) | 230/3 | 22.6 | 22.6 | 30 | AA-7,9,11 | 3#8, 2#14GND-1" C | 60 | RTU-E3 (BLDG. E) | Y | 1,600 | 230/3 | 26 | 30 | AA-7,9,11 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-E4 (BLDG. E) | 230/3 | 22.6 | 22.6 | 30 | AA-8,10,12 | 3#8, 2#14GND-1" C | 60 | RTU-E4 (BLDG. E) | Y | 1,600 | 230/3 | 26 | 30 | AA-8,10,12 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-H1 (BLDG. H) | 230/3 | 22.6 | 22.6 | 30 | BA-1,3,5 | 3#8, 2#14GND-1" C | 60 | RTU-H1 (BLDG. H) | Y | 1,600 | 230/3 | 26 | 30 | BA-1,3,5 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-H2 (BLDG. H) | 230/3 | 22.6 | 22.6 | 30 | BA-2,4,6 | 3#8, 2#14GND-1" C | 60 | RTU-H2 (BLDG. H) | Y | 1,600 | 230/3 | 26 | 30 | BA-2,4,6 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-H3 (BLDG. H) | 230/3 | 22.6 | 22.6 | 30 | BA-7,9,11 | 3#8, 2#14GND-1" C | 60 | RTU-H3 (BLDG. H) | Y | 1,600 | 230/3 | 26 | 30 | BA-7,9,11 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-H4 (BLDG. H) | 230/3 | 22.6 | 22.6 | 30 | BA-8,10,12 | 3#8, 2#14GND-1" C | 60 | RTU-H4 (BLDG. H) | Y | 1,600 | 230/3 | 26 | 30 | BA-8,10,12 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-I1 (BLDG. I) | 230/3 | 22.6 | 22.6 | 30 | CA-1,3,5 | 3#8, 2#14GND-1" C | 60 | RTU-I1 (BLDG. I) | Y | 1,600 | 230/3 | 26 | 30 | CA-1,3,5 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-I2 (BLDG. I) | 230/3 | 22.6 | 22.6 | 30 | CA-7,9,11 | 3#8, 2#14GND-1" C | 60 | RTU-I2 (BLDG. I) | Y | 1,600 | 230/3 | 26 | 30 | CA-7,9,11 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-I3 (BLDG. I) | 230/3 | 22.6 | 22.6 | 30 | CA-2,4,6 | 3#8, 2#14GND-1" C | 60 | RTU-I3 (BLDG. I) | Y | 1,600 | 230/3 | 26 | 30 | CA-2,4,6 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |
| RTU-I4 (BLDG. I) | 230/3 | 22.6 | 22.6 | 30 | CA-8,10,12 | 3#8, 2#14GND-1" C | 60 | RTU-I4 (BLDG. I) | Y | 1,600 | 230/3 | 26 | 30 | CA-8,10,12 | 60A (30A FUSE) | YES | PCD-SRT12CA | 4.9 | 8.8 | 3#8, 2#14GND-1" C | 20A (15A FUSE) |

GENERAL NOTES:

- CONTRACTOR TO FIELD VERIFY CIRCUITING AND FEEDER INFORMATION PRIOR TO EQUIPMENT REMOVAL. CONTRACTOR TO PROVIDE REQUIRED ADJUSTMENTS AS NEEDED.
- 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.
- 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.
- CONTRACTOR TO DEMOLISH POWER CONNECTION FROM ALL ROOF TOP UNITS. DEMOLITION TO CONSIST OF REMOVAL OF POWER CONNECTION, CABLING, AND CONDUIT BACK TO SOURCE UNLESS NOTED OTHERWISE.
- FIELD COORDINATE EQUIPMENT MANUFACTURER FOR FAULT CURRENT LIMITING FUSE TYPES



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 X-PATTERN 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

SEISMIC BRACKET PERPENDICULAR TO JOIST

SEISMIC BRACKET PARALLEL TO JOIST

ASTM A307 BOLTS OR ASTM A36 THREADED ROD WITH 2x2x1/2 PLATE WASHERS ON BACK SIDE OF 4x6

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

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.

| BRACE 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' | 3/8" | 1 1/2" | 1 1/2" |
| 38A TO 38B | 150 | 46'-60" | 3/8" | 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' | 3/4" | 1 1/2" | 2 1/2" |
| 63A TO 63C | 200 | 46'-60" | 3/4" | 1 1/2" | 2 1/2" |

SEE DETAIL NO.00 FOR SECTION NOTES

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PAGE **N4.10**

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

PERPENDICULAR TO JOIST

PARALLEL TO JOIST

2x2x1/2 PLATE WASHER

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

12-12d (35%) 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.

| BRACE ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp (LBS) | MAX BRACE RANGE (INCH) | MIN DIA. (INCH) |
|-----------------------|---------------------------------|------------------------|-----------------|
| 38A TO 38B | 150 | 30'-45' | 3/8" |
| 38A TO 38A | 80 | 46'-60" | 3/8" |
| 50A TO 50C | 180 | 30'-45' | 1/2" |
| 50A TO 50A | 100 | 46'-60" | 1/2" |
| 63A TO 63C | 210 | 30'-45' | 3/4" |
| 63A TO 63A | 120 | 46'-60" | 3/4" |

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SEISMIC BRACKET ATTACHMENT TO WOOD JOIST

AT JOIST

VIEW A-A

2x2x1/2 PLATE WASHER

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.

1 1/2x3 1/2x 5/8" LG.

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.

| BRACE ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp (LBS) | MAX BRACE RANGE (INCH) | MIN DIA. (INCH) |
|-----------------------|---------------------------------|------------------------|-----------------|
| 38A TO 38E | 420 | 30'-45' | 3/4" |
| 38A TO 38D | 300 | 46'-60" | 3/4" |
| 50A TO 50E | 420 | 30'-45' | 3/4" |
| 50A TO 50D | 300 | 46'-60" | 3/4" |
| 63A TO 63E | 420 | 30'-45' | 3/4" |
| 63A TO 63D | 300 | 46'-60" | 3/4" |

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 GRAVITY SUPPORT SPACING (FT) | MAX TRANSVERSE BRACE SPACING BASED ON TRADE SIZE AND g FORCE (FT) | | | | | | |
|------------|------------------------------|----------------------------------|---|-------|-----|------|----|----|----|
| | | | 0.25 | 0.375 | 0.5 | 0.75 | 1 | | |
| 3 | 8.26 | 10 | 45 | 41 | 38 | 36 | 35 | 33 | 31 |
| 3.5 | 10.98 | 10 | 48 | 44 | 41 | 39 | 37 | 35 | 33 |
| 4 | 13.64 | 10 | 50 | 45 | 42 | 40 | 38 | 36 | 34 |

NOTES:
1. MAXIMUM BRACE SPACING IS BASED ON ASCE 7-10 SECTION 13.6.3, NOTE 6, 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-83 WITH A MINIMUM YIELD STRENGTH OF 36,000 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, i.e., CONDUIT CAN BE PUSHED INTO COUPLING - 2" AND SET WITH MIN. (2) SCREWS. SHALL BE USED FOR 2", 2 1/2", AND 4" EMT.

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ELECTRICAL CONDUIT WEIGHT TABLES

| CONDUIT DIAMETER (IN) | PIPE TYPE | PIPE WEIGHT PER FOOT (LBS) | | |
|-----------------------|---|----------------------------|------------|-------|
| | | PIPE | CONDUCTORS | TOTAL |
| 3/8" | ELECTRICAL METALLIC TUBING (EMT) WEIGHT | 0.29 | 0.22 | 0.51 |
| 1/2" | | 0.44 | 0.40 | 0.84 |
| 3/4" | | 0.64 | 0.66 | 1.30 |
| 1" | | 0.95 | 1.17 | 2.12 |
| 1 1/2" | | 1.10 | 1.60 | 2.70 |
| 2" | | 1.48 | 2.62 | 4.10 |
| 2 1/2" | | 2.05 | 3.74 | 5.79 |
| 3" | | 2.50 | 5.76 | 8.26 |
| 3 1/2" | | 3.25 | 7.73 | 10.98 |
| 4" | | 3.79 | 9.94 | 13.64 |
| 6" | --- | --- | --- | |
| 8" | --- | --- | --- | |
| 3/8" | INTERMEDIATE METAL CONDUIT (IMC) WEIGHT | 0.80 | 0.22 | 0.82 |
| 1/2" | | 0.82 | 0.41 | 1.23 |
| 3/4" | | 1.16 | 0.66 | 1.82 |
| 1" | | 1.50 | 1.17 | 2.67 |
| 1 1/2" | | 1.82 | 1.60 | 3.42 |
| 2" | | 2.42 | 2.62 | 5.04 |
| 2 1/2" | | 4.28 | 3.47 | 7.75 |
| 3" | | 5.26 | 5.43 | 10.69 |
| 3 1/2" | | 6.12 | 7.34 | 13.46 |
| 4" | | 6.82 | 9.50 | 16.32 |
| 6" | --- | --- | --- | |
| 8" | --- | --- | --- | |
| 3/8" | RIGID METAL CONDUIT (RMC) WEIGHT | 0.79 | 0.22 | 0.81 |
| 1/2" | | 1.05 | 0.41 | 1.46 |
| 3/4" | | 1.53 | 0.66 | 2.19 |
| 1" | | 2.01 | 1.17 | 3.18 |
| 1 1/2" | | 2.46 | 1.61 | 4.09 |
| 2" | | 3.32 | 2.62 | 5.94 |
| 2 1/2" | | 5.27 | 3.74 | 9.01 |
| 3" | | 6.82 | 5.77 | 12.59 |
| 3 1/2" | | 8.31 | 7.73 | 16.04 |
| 4" | | 9.72 | 9.95 | 19.67 |
| 6" | 13.14 | 15.62 | 28.76 | |
| 8" | 17.45 | 22.58 | 40.03 | |

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92670
TEL (714) 630 - 0701, www.masonwest.com

DATE: 08/16/2019

Jiefu "Jeff" Zhang, SE
California SE No. 55270

PAGE **APP3.0**

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ROOF PENETRATION DETAIL 1

MIN. 1 1/2" X 20 GA CONDUIT TWO-HOLE CLAMP TO TOP AND BOTTOM OF JOIST W/ #10 PAN HEAD WOOD SCREW

(E) PLYWOOD SHEATHING

(E) WOOD JOIST

(N) FULL DEPTH BLOCKING IF REQUIRED.

DOUBLE TOP PL

SIMPSON A34 (T&B) EA END

1"-0" MAX TO CENTER OF MASS

WALL MOUNTED EQUIP (T&B) EA END

WALL MOUNTED EQUIP SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS PROVIDE W/D BACKING AND ANGLES PER SCHED

4x BLOCKING TYP

SIMPSON A34 (T&B) EA END

DOUBLE STUDS LAMINATE STUDS W/ 10d FACE NAILS AT 8" OC

SILL PL

HEIGHT ABOVE FLOOR TO CENTER OF MASS

1" (1/2" MAX)

ANCHOR SPACING

ANCHOR SPACING

WALL MOUNTED EQUIP SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS SIZE AND ANCHOR PATTERN VARIES

SEE ARCH (17" MAX)

NON-STRUCTURAL EQUIPMENT WEIGHT

WEIGHT < 250 LBS SINGLE 2x STUD

250 LBS < WEIGHT WEIGHT < 500 LBS DOUBLE 2x STUD

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

2 NO SCALE

1 NO SCALE

TYP WALL EQUIPMENT BACKING

DOUBLE TOP PL

SIMPSON A34 (T&B) EA END

1"-0" MAX TO CENTER OF MASS

WALL MOUNTED EQUIP (T&B) EA END

WALL MOUNTED EQUIP SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS PROVIDE W/D BACKING AND ANGLES PER SCHED

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1 NO SCALE

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Barranca Elementary School
Covina Valley USD
777 S Barranca Ave. Covina, CA 91723

DSA SUBMITTED SET
5/5/2022
REVISIONS

75-22605-00

ELECTRICAL DETAILS

E6.1

Autodesk Docs (7/5-22605-00) C:\US\SD - District Wide HVAC Replacement\75-22605-00_CV\USD - Barranca ES_MEP_2022.rvt 7/28/2022 4:07:11 PM