GENERAL NOTES

1. THE FOLLOWING GENERAL NOTES ARE APPLICABLE AS STATED BELOW, EXCEPT WHERE SPECIFICALLY INDICATED AND NOTED OTHERWISE ON THE DRAWINGS OR IN THE SPECIFICATIONS. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION REQUIREMENTS AND SCOPE OF WORK.
2. 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, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHERE IN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CONSTRUCTION CHANGE DOCUMENT (CCD) OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DISTRICT BEFORE PROCEEDING WITH THE WORK. SECTION 4-317, CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24, C.C.R).
3. BEFORE SUBMITTING THE BID PROPOSAL, VISIT THE JOB SITE AND FULLY ACQUAINT WITH THE EXISTING JOB CONDITIONS, VERIFY EXISTING AND NEW REQUIREMENT, INCLUDING NECESSARY PULL BOXES, SIZE AND NUMBER OF CONDUITS AND CONDUCTORS, PANELS, DISCONNECT SWITCHES CABLES, TIME CLOCKS ETC., WHETHER SHOWN ON DRAWINGS OR NOT, BUT REQUIRED FOR PROVIDING A COMPLETE AND OPERABLE, WITHOUT ADDITIONAL COST TO THE DISTRICT.
4. EQUIPMENT AND DEVICE LOCATIONS, ELEVATIONS, RISER DIAGRAMS, CONTROLS WIRING DIAGRAMS, SCHEMATICS, AND DETAILS SHOWN ON PLANS ARE CONCEPTUAL ONLY. THEY ILLUSTRATE THE FUNCTIONAL RELATIONSHIPS BETWEEN SYSTEM COMPONENTS AND THE PROJECT'S DESIGN INTENT. THE CONTRACTOR SHALL INSTALL DEVICES AS SITE CONDITIONS AND IOR APPROVAL PERMIT.
5. THE LOCATIONS OF EXISTING UTILITIES WHERE SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE DISTRICT, THE ARCHITECT/ENGINEER OR THEIR REPRESENTATIVES. DETERMINE THE EXACT LOCATION, DEPTH, INVERT ELEVATIONS, POINT OF CONNECTIONS AND PROPER SLOPES BEFORE CONNECTING WORK. FIELD VERIFY AND COORDINATE AS REQUIRED.
6. OCCUPANTS OF THE EXISTING BUILDING SHALL NOT BE INCONVENIENCED, DUE TO CONTRACTOR'S WORK DEBRIS, ETC. ENTRANCES AND CORRIDORS SHALL BE PROTECTED AND KEPT FREE OF OBSTRUCTIONS. THE DISTRICT SHALL BE NOTIFIED IN ADVANCE OF, TIME DELIVERY OF EQUIPMENT IN ORDER TO AVOID INTERFERENCE WITH THE NORMAL ACTIVITY OF THE BUILDING.
7. ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND ACTUAL FIELD CONDITIONS MUST BE REPORTED TO THE ARCHITECT/ENGINEER OF THE PROJECT. ANY DEVIATIONS FROM THESE PLANS NECESSITATED BY FIELD CONDITIONS MUST BE APPROVED BY THE ARCHITECT/ENGINEER OF THE PROJECT AND DOCUMENTED ON THE FINAL "AS-BUILT" DRAWINGS.
8. ALL WORK SHALL BE CONFORMANCE WITH TITLE 24, 2022 CALIFORNIA CODE REGULATIONS (CCR). TITLE 24 C.C.R., PARTS 1-5 MUST BE KEPT ON SITE DURING CONSTRUCTION.
9. WORKMANSHIP AND ALL EQUIPMENT/MATERIALS SHALL CONFORM TO 2022 CALIFORNIA CODE REGULATIONS (CCR), TITLE 24 C.C.R., SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AS FURNISHED BY THE CONTRACT DRAWINGS. WORKMANSHIP AND MATERIALS NOT IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE SUBJECT TO REMOVAL AND/OR REPLACEMENT AT CONTRACTOR'S EXPENSE.
10. AFTER THE NOTICE TO PROCEED (NTP) AND THE OFFICIAL START OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE PROTECTION OF ALL EXISTING STRUCTURES (BOTH EXTERIOR AND INTERIOR) WITHIN AND ADJOINING WORK AREA. ANY EXISTING STRUCTURES AND /OR IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED WITH MATERIALS, WORKMANSHIP, FIXTURES OR EQUIPMENT TEMPORARILY REMOVED SHALL BE RE-ERECTED OR INSTALLED IN AN APPROVED MANNER, THE CONTRACTOR SHALL SUBMIT ALL PROPOSED PROTECTION METHODS TO THE CONSTRUCTION MANAGER FOR REVIEW AND SHALL RECEIVE WRITTEN APPROVAL, PRIOR TO THEIR USE.
11. AFTER THE NOTICE TO PROCEED (NTP) AND THE OFFICIAL START OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT/ENGINEER FOR APPROVAL, ELECTRONIC DOCUMENTS (PDF) OF ALL REQUIRED SHOP DRAWINGS, BROCHURES AND OTHER SATISFACTORY DESCRIPTIONS INDICATING MANUFACTURER, CATALOG NUMBER, DIMENSIONS AND PERFORMANCE OF THE EQUIPMENT. ALL WORK SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING ALL APPROVALS OF SHOP DRAWING SUBMITTALS HAVE BEEN APPROVED BY ARCHITECT/ENGINEER OF THE PROJECT.
12. A STAMPED SET OF APPROVED DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
13. WHEN CONTRACTOR HAS BEEN AWARDED THE CONTRACT, IT IS HIS RESPONSIBILITY TO SECURE THE AREAS SO NO UNAUTHORIZED PERSONNEL OR STUDENTS GAIN ACCESS TO THE PROJECT AREA OR THE CONTRACTORS STAGING AREA.
14. ALL WORK IS TO BE COMPLETED ON REGULAR HOURS AS DIRECTED BY THE DISTRICT.
15. ALL WORK THAT INVOLVES "SHUT-DOWN" OF EXISTING UTILITIES OR PORTIONS THEREOF, SHALL BE DONE AT SUCH TIMES THAT WILL CAUSE THE LEAST INCONVENIENCE TO THE DISTRICT'S ACTIVITIES. THE EXACT TIME AND LENGTH OF "SHUT-DOWN" SHALL BE APPROVED BY DISTRICT WITH WRITTEN NOTICE AT LEAST 7 DAYS IN ADVANCE OF THE REQUIRED SHUT-DOWN.
16. THE CONTRACTOR SHALL COOPERATE WITH THE DISTRICT TO THE FULLEST EXTENT IN PROVIDING TRAFFIC CONTROL DURING COURSE OF CONSTRUCTION SO AS TO PROVIDE A MAXIMUM PROTECTION FOR STUDENTS AND DISTRICT PERSONNEL. ALL EMPLOYEES ON THE PROJECT WORK SHALL PARK THEIR PRIVATE VEHICLES IN THE AREA DESIGNATED BY THE DISTRICT.
17. THE CONTRACTOR SHALL EXERCISE MAXIMUM DUST AND NOISE CONTROL EFFORTS TO KEEP AT A MINIMUM THE NUISANCE OF DUST AND CONSTRUCTION NOISE FROM THE CONSTRUCTION.CONTRACTOR SHALL PROVIDE THE DISTRICT WITH A WRITTEN SCHEDULE OF WORK WHICH IS TO BE COORDINATED AND APPROVED BY THE DISTRICT PROJECT MANAGER, PRIOR TO THE START OF CONSTRUCTION.
18. CONTRACTOR TO COMPLY WITH ALL APPLICABLE SAFETY LAWS (OSHA, CAL OSHA ETC.). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL APPLICABLE SAFETY LAWS ARE STRICTLY ENFORCED AND TO MAINTAIN A SAFE CONSTRUCTION PROJECT.
19. ERECT AND MAINTAIN SUITABLE BARRIERS, PROTECTIVE DEVICES, LIGHTS AND WARNING SIGNS WHERE REQUIRED FOR THE PROTECTION OF THE PUBLIC AND EMPLOYEES. ENTRANCE TO ROOMS AND OTHER GUARDED LOCATIONS THAT CONTAIN LIVE PARTS SHALL BE MARKED WITH A CONSPICUOUS WARNING SIGN FORBIDDING UNQUALIFIED PERSONS TO ENTER.
20. THE CONTRACTOR SHALL FURNISH ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, WAREHOUSING AND ANY OTHER SERVICES REQUIRED TO COMPLETE THE WORK IN A TIMELY AND EFFICIENT MANNER.
21. THE DISTRICT SHALL BE NOTIFIED IN ADVANCE OF TIMES OF EQUIPMENT OR MATERIALS DELIVERY IN ORDER TO AVOID INTERFERENCE WITH THE NORMAL ACTIVITY ON THE DISTRICT PREMISES
22. THE WORK AREA SHALL BE CLEANED DAILY AND ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR AT LEGAL DUMP. AT CONCLUSION OF PROJECT CONTRACTOR SHALL LEAVE WORK AREA AND SITE, BROOM CLEAN AND GENERALLY IN SAME CONDITION AS PRIOR TO THIS CONSTRUCTION WORK.
23. PROTECT-IN PLACE AND CARE FOR LAWNS SHRUBS, ETC, IN THE CONSTRUCTION AREAS DURING CONSTRUCTION PERIOD. REPLACE ALL DAMAGED ITEMS AT NO COST TO DISTRICT.
24. AT NO TIME DURING THE WORK UNDER THE CONTRACT SHALL THE CONTRACTOR PLACE, OR CAUSE TO BE PLACED, ANY MATERIAL OR EQUIPMENT ETC, AT A LOCATION THAT WOULD IMPEDE OR IMPAIR ACCESS TO OR FROM THE PRESENT FACILITIES.
25. IF ASBESTOS/LEAD IS ENCOUNTERED IT SHALL BE IMMEDIATELY REPORTED TO THE DISTRICT. CONTRACTOR SHALL NOT CONTINUE THEIR WORK WHERE ANY HAZARDOUS MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION. REMOVAL AND ABATEMENT OF SUCH ENCOUNTERED SHALL BE PROVIDED BY DISTRICT. DISTRICT SHALL PROVIDE SPOT ABATEMENT WHERE IDENTIFIED BY CONTRACTOR.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING STRUCTURES AT THE WORK AREA FROM WEATHER AND OTHER INCLEMENT CONDITIONS. ANY DAMAGE INCURRED DUE TO FAILURE BY THE CONTRACTOR TO PROPERLY PROTECT SUCH WORK SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
27. THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED AND OR DEMOLISHED MATERIAL, WASTE AND DEBRIS CAUSED BY THE NEW WORK. THIS MATERIAL SHALL BE REMOVED FROM THE DISTRICT PROPERTY AND TAKEN TO A LEGALLY OPERATED DISPOSAL SITE. THE CONTRACTOR SHALL KEEP ALL PARTS OF THE BUILDING AND SITE FREE FROM ANY ACCUMULATIONS OF RUBBISH OR WASTE MATERIALS CAUSED BY HIS WORKMEN, AND SHALL REMOVE SUCH ACCUMULATIONS FROM THE BUILDING, SITE AND PROPERTY. JOB SITE SHALL BE CLEANED AT THE END OF EACH WORKING DAY.
28. THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO ASCE 7-05 SECTION 13.3.1 AND TABLE 13.6-1. ANCHORAGE DETAILS FOR WALL/FLOOR MOUNTED EQUIPMENT SHALL BE SHOWN ON PLANS.
29. SPECIFIED PRODUCTS AND MODEL NUMBERS REPRESENT THE DESIGN INTENT AND ARE RECOMMENDED FOR THIS PROJECT. IF A BIDDING CONTRACTOR PROPOSES A SUBSTITUTION FOR A DESIGN-INTENT PRODUCT, IN ACCORDANCE WITH DIVISION 00/01 OF THE PROJECT DOCUMENTS, THEY ARE SOLELY RESPONSIBLE FOR PROVIDING SUBSTANTIAL VALIDATION DEMONSTRATING THE SUBSTITUTED PRODUCT IS EQUAL TO OR BETTER THAN THE SPECIFIED PRODUCT IN ALL DESIGN ASPECTS. THIS VALIDATION MUST BE SUBMITTED TO THE DISTRICT AND ARCHITECT FOR REVIEW AND ACCEPTANCE NO LATER THAN 15 CALENDAR DAYS PRIOR TO THE BID OPENING DATE AND TIME. FAILURE TO OBTAIN PRIOR APPROVAL FOR A SUBSTITUTION WILL BE INTERPRETED AS THE CONTRACTOR'S INTENT TO FURNISH THE SPECIFIED ITEMS PER THE CONTRACT DOCUMENTS. ANY DEVIATIONS FROM THE APPROVED SUBSTITUTIONS RESULTING IN ADDITIONAL COSTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR/SUBCONTRACTOR.
30. CONTRACTOR TO PROVIDE ALL NECESSARY COMPONENTS WHETHER SHOWN OR NOT ON THE DRAWINGS OR SPECIFIED ON THE CONTRACT TO MAKE THE SYSTEM FUNCTIONALLY OPERATIVE AND ACCEPTABLE TO ALL CONCERNED AUTHORITIES.
31. THE CONTRACTOR SHALL ADJUST/AND INSTALL ALL EQUIPMENT, DEVICES AND CONTROLS TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FAILURE OF THE SYSTEM.
32. UPON COMPLETION OF THE INSTALLATION OF THE SYSTEM, INSTALLING CONTRACTOR SHALL SUBMIT STATEMENT OF COMPLIANCE AND REQUEST FINAL INSPECTION. A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DISTRICT PROJECT INSPECTOR.
33. DISTRICT SHALL BE NOTIFIED A MINIMUM OF 48 HR. PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
34. INDIVIDUAL ITEMS OF WORK ARE DETAILED IN THE VARIOUS SECTIONS OF THIS SCOPE OF WORK. THE ATTACHED DRAWINGS AND THE NOTES AND LEGENDS ON THE DRAWING, THE CONTRACTOR IS RESPONSIBLE TO COMPLETE THE REQUIREMENTS FOUND IN ANY OF THE ABOVE.
35. THE CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION ("AS-BUILT" DRAWINGS) UPON COMPLETION OF CONSTRUCTION, INCLUDING TESTING OF ALL EQUIPMENT, DEVICES, CONTROLS, AND ENSURING THE ENTIRE SYSTEM IS OPERATIONAL AND PROGRAMMED. A COPY OF THIS COMPLETED RECORD ("AS-BUILT" DRAWINGS) SHALL BE SUBMITTED TO THE IOR, ARCHITECT/ENGINEER, AND DISTRICT FOR FINAL ACCEPTANCE.
36. NOTIFY THE SUPPLIER OF ANY MISSING OR BROKEN PARTS OR ANY MISSING OR BROKEN FIXTURES AT LEAST FOURTEEN (14) DAYS PRIOR TO JOB COMPLETION. EQUIPMENT INSTALLED WITHOUT APPROVAL THEREOF SHALL BE DONE AT THE RISK OF THE CONTRACTOR AND THE COST OF REMOVAL OF SUCH EQUIPMENT OR RELATED WORK WHICH IS JUDGED UNSATISFACTORY FOR ANY REASON SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
37. CONTRACTOR SHALL WARRANTY MATERIALS AND INSTALLATION FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.

ELECTRICAL NOTES

NOTE: THIS DOCUMENT FORMS A PART OF THE SPECIFICATIONS AND SHALL BE CONSIDERED THE SAME AS IF ATTACHED THERETO.

1. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT A COMPLETE AND WORKABLE ELECTRICAL INSTALLATION BE PROVIDED FOR THE EQUIPMENT DESCRIBED OR SHOWN AS BEING IN THIS CONTRACT.FURNISH LABOR AND TOOLS NECESSARY AND INSTALL APPARATUS, MATERIALS, AND EQUIPMENT IN A FASHION COMPLYING WITH ALL APPLICABLE CODES, INCLUDING ITEMS REQUIRED BUT NOT NECESSARILY SHOWN, SUCH AS COUPLINGS, HANGERS, BRACKETS, CLAMPS, BOXES, CONNECTORS, AND HARDWARE.
2. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE LOCATION OF EQUIPMENT AND DEVICES AND THE ARRANGEMENT OF THE REQUIRED INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS PROPER COORDINATION WITH THE EXISTING FIELD CONDITIONS AND SPACE WILL PERMIT. SIMPLIFY INSTALLATION WHEREVER POSSIBLE BUT SUBJECT TO APPROVAL OF THE DISTRICT FOR VISUAL AND STRUCTURAL REASONS. THE DRAWINGS DO NOT SHOW NECESSARY OFFSETS, BENDS AND OBSTRUCTIONS. THE DRAWINGS ARE NOT INTENDED TO BE SCALED AND THE CONTRACTOR SHALL REFER TO THE GENERAL DIMENSIONED CONSTRUCTION DRAWINGS FOR DIMENSIONS AND EXACT LOCATIONS.
3. UNLESS OTHERWISE SHOWN OR SPECIFIED, ALL CONDUITS SHALL BE GRC/IMT TYPE THREADED FITTINGS. CONDUIT SHALL BE SURFACE MOUNTED ON WALLS, PIPE SUPPORTS, SURFACE MOUNTED ON ROOF FLOOR WITH DURA-BLOCK PIPE/CONDUIT SUPPORTS.
   - A. EXPOSED CONDUIT SHALL BE RUN PARALLEL TO, OR AT RIGHT ANGLES WITH THE LINES OF THE BUILDING.BEND SHALL BE FREE FROM DENTS OR FLATTENING.CONDUIT SHALL BE SUPPORTED AND SECURELY FASTENED.
   - B. CONDUIT SHALL BE INSTALLED AS A COMPLETE SYSTEM BEFORE WIRE OR CONDUCTORS ARE PULLED IN.
   - C. CONDUIT SHALL BE INSTALLED ENTIRELY FREE FROM OTHER PIPING, VALVES OR OTHER MECHANICAL EQUIPMENT, AND SHALL NOT BE INSTALLED WITHIN 6 INCHES OF HOT WATER OR HEATING FLUES.
   - D. POCKETS OR TRAPS IN ALL CONDUIT RUNS WHERE MOISTURE MAY COLLECT SHALL BE AVOIDED.WHERE DIPS ARE UNAVOIDABLE, A PULL BOX SHALL BE LOCATED AT EACH LOW POINT IN ORDER TO PROVIDE A MEANS OF DRAINAGE.
   - E. THE CONDUIT SYSTEM AND CONDUCTING WIRE ENCLOSURES SHALL BE SECURELY BONDED TOGETHER SO THAT FOR EVERY CONDUCTING COMPONENT IS PROVIDED WITH A LOW RESISTANCE PATH TO GROUND.
   - F. DOUBLE LOCKNUTS SHALL BE USED FOR SECURING CONDUIT AT A BOX OR CABINET UNLESS A THREADED HUB IS PROVIDED AS PART OF THE BOX OR CABINET.
   - G. RUNNING THREADS SHALL NOT BE USED ON CONDUIT FOR CONNECTION AT COUPLINGS.WHERE 2 LENGTHS OF CONDUIT MUST BE COUPLED TOGETHER, AND IT IS IMPOSSIBLE TO SCREW BOTH LENGTHS INTO AN ORDINARY COUPLING, THEN THE "ERICKSON" TYPE OF COUPLING MUST BE USED IN ORDER TO PROVIDE A RIGID JOINT THAT WILL BE BOTH MECHANICALLY AND ELECTRICALLY EFFECTIVE.
   - H. COUPLING AND CONNECTORS USED ON G.R.C./ I.M.T SHALL BE, THREADED TYPE.
   - I. CONDUIT SHALL BE TERMINATED WITH SUITABLE BUSHINGS OR EQUIVALENT DEVICES WHICH SHALL PROTECT THE ENCLOSED WIRES FROM ABRASION AT THE ENDS.
   - J. ALL BUILDING INTERIOR CONDUIT SIZES SHALL BE MINIMUM OF 3/4" IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE "CEC".
   - K. IN EACH CONDUIT WITHOUT CONDUCTORS, PROVIDE ROPE PULL STRING WITH A TAG IDENTIFYING LOCATION OF OPPOSITE END.
   - L. PROVIDE SLEEVES, NIPPLES, AND COUPLINGS REQUIRED FOR THE INSTALLATION OF CONDUIT. SLEEVES SHALL PROJECT 2" ABOVE FLOOR.
   - M. SEAL TIGHT FLEXIBLE CONDUIT SHALL BE PROVIDED TO CONNECT MOTORS ON SLIDING BASES, TO CONTROLS, AND TO VIBRATING EQUIPMENT.
   - N. PROTECT CONDUIT FROM DAMAGE AND THE ENTRANCE OF WATER AND FOREIGN MATTER DURING THE CONSTRUCTION PERIOD.WATERTIGHT STOPPERS OR CAPS SHALL BE INSTALLED IMMEDIATELY AFTER THE CONDUIT IS INSTALLED, REMOVED ONLY WHEN WIRE IS TO BE INSTALLED.
   - O. THOROUGHLY CLEAN THE INSIDE OF CONDUITS TO ASCERTAIN FOREIGN MATERIALS ARE REMOVED BEFORE PULLING WIRE OR CABLE.
5. PROVIDE AND INSTALL ALL CONDUIT/PIPE SUPPORTS AND FASTENERS WITH DURA-BLOK AS REQUIRED.
   - A. INSTALLATION OF HANGERS AND SUPPORTS SHALL BE MADE TO THE STRUCTURE.
   - B. INSTALLATION SHALL BE SUCH SO AS TO SUPPORT CONDUIT WITHOUT SAGGING AND WORK HAZARD AND SHALL BE CLEAR OF THE WORK OF OTHER TRADES. PROVISION FOR EXPANSION AND CONTRACTION SHALL BE MADE.
   - C. SPACING OF SUPPORTS FOR EXPOSED HORIZONTAL CONDUIT RUNS SHALL BE AS FOLLOWS.

SIZE OF CONDUIT (INCHES)	NUMBER OF CONDUITS IN RUN	LOCATION	MAXIMUM SUPPORT SPACING (FEET)
3/4	1 OR 2	ON A FLAT CEILING OR WALL	5
3/4	1 OR 2	WHERE IT IS DIFFICULT TO PROVIDE SUPPORTS EXCEPT AT INTERVALS FIXED BY BUILDING CONSTRUCTION	7
3/4	3 OR MORE	ANY LOCATION	7
1 & 2	1 OR 2	ON A FLAT CEILING OR WALL	6
1 & 2	1 OR 2	WHERE IT IS DIFFICULT TO PROVIDE SUPPORTS EXCEPT AT INTERVALS FIXED BY BUILDING CONSTRUCTION	10
1 & 2	3 OR MORE	ANY LOCATION	10

   - D. SPACING OF SUPPORTS FOR EXPOSED VERTICAL CONDUIT RUNS SHALL BE AS FOLLOWS.

SIZE OF CONDUIT (INCHES)	MAXIMUM SUPPORT SPACING (FEET)
3/4	7
1 AND 1¼	8
1½ AND 2	10

   - E. ELECTRICAL ENCLOSURES SHALL BE WEATHERPROOF WHEN EXPOSED TO OUTDOORS OR WET AREAS.

6. ALL BRACING OF CONDUIT AND CONDUIT SUPPORT SHALL BE INSTALLED IN ACCORDANCE WITH ASCE 7-10 SEISMIC BRACING GUIDELINES AS APPROVED BY DISTRICT. WHERE BRACING DETAILS ARE NOT SHOWN ON DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECTED TO THE APPROVAL OF ARCHITECT/ENGINEER AND DISTRICT FIELD ARCHITECT/ENGINEER.
7. EXACT LOCATION OF EQUIPMENT SHALL BE VERIFIED IN FIELD. COORDINATE INSTALLATION OF ELECTRICAL SYSTEM WITH EXISTING BUILDING STRUCTURES. PRIOR TO COMPLETION OF AFFECTED WORK, CONTRACTOR SHALL INSTRUCT THE DISTRICT ON THE USE AND MAINTENANCE OF THE INSTALLED SYSTEM.
8. SIZE OUTLET BOXES IN CONFORMITY WITH CODE FOR NUMBER AND GAUGE OF CONDUCTORS THEREIN. EXCEPT WHERE NOTED TO BE LARGER, MINIMUM BOX SIZE SHALL BE 4" SQUARE BY 2 1/8" DEEP. JUNCTION BOXES SHALL BE LABELED WITH RESPECTIVE CIRCUIT NUMBERS.
9. ALL OUTLET BOXES SHALL BE FLUSHED WITH THE FINISHED SURFACE OF WALLS AND CEILINGS OF COMBUSTIBLE MATERIALS.
10. ALL CONDUITS AND OUTLET BOXES SHALL BE SURFACE MOUNTED IN CMU, CONCRETE WALL/SLABS.
11. OPENINGS IN BOXES, CONDUIT BODIES AND FITTINGS SHALL BE ADEQUATELY CLOSED.
12. SURFACE MOUNTED BOXES AND CABINETS MOUNTED IN WET AND DAMP LOCATIONS SHALL BE WEATHERPROOF NEMA 3R OR NEMA 4X AND SHALL HAVE AT LEAST 1/4 INCH AIR SPACE BETWEEN THE BOX AND MOUNTING SURFACE.
13. PANEL BOARDS, TERMINAL CABINETS AND CONTROL DEVICES. DATA SHALL INCLUDE CABINET DIMENSIONS, SIZE AND CAPACITY OF BUSSES, CIRCUIT BREAKERS, SWITCHES, FUSES AND OTHER COMPONENTS.
16. USE "THNN" COPPER WIRES OR EQUAL FOR ALL BRANCH CIRCUIT WIRING WITH A SEPARATE GREEN GROUNDING CONDUCTOR. SIZE PER CEC 250-122.
17. EQUIPMENT SHALL BE LISTED BY A RECOGNIZED TESTING LABORATORY.
18. CONDUIT ROUTING, CONDUIT QUANTITIES, PULL BOX LOCATIONS, AND PULL BOX QUANTITIES SHOWN ARE SCHEMATIC. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND VERIFY CONDITIONS IN THE FIELD TO DETERMINE ACTUAL ROUTING, SIZES, AND QUANTITIES, COMPLYING WITH APPLICABLE ELECTRICAL CODES. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF CONDUITS, INCLUDING PULL BOXES, TO MEET PROJECT REQUIREMENTS.
19. ALL LOW-VOLTAGE WORK, INCLUDING DATA CABLE INSTALLATION, TERMINATION, AND EQUIPMENT, SHALL COMPLY WITH DISTRICT IT STANDARDS AND SPECIFICATIONS (DIVISIONS 27 & 28). COORDINATE ALL LOW-VOLTAGE WORK WITH THE DISTRICT IT AND OBTAIN THEIR APPROVAL.
20. LOW-VOLTAGE CABLE T-TAP SPLICES ARE PROHIBITED. CABLES MUST BE WIRED IN A SERIAL, DEVICE-TO-DEVICE CONFIGURATION.
21. ELECTRICAL EQUIPMENT GROUNDING:
    - 21.1. ALL NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT AND ENCLOSURES (CONDUITS, SUPPORTS, CABINETS, ETC.) INSTALLED UNDER THIS CONTRACT MUST BE PROPERLY GROUNDED TO THE GROUNDING SYSTEM, REGARDLESS OF WHETHER THEY'RE SHOWN ON THE DRAWINGS.
    - 21.2. THE GROUNDING INSTALLATION SHALL HAVE PROVISIONS FOR BOTH SYSTEM AND EQUIPMENT GROUNDS AS DEFINED BY THE "CEC" THESE GROUNDING SYSTEMS ARE TO BE EFFECTIVELY INSULATED FROM EACH OTHER EXCEPT AT THE SERVICE CONNECTION.
    - 21.3. ALL GROUNDING INSTALLATIONS MUST COMPLY WITH THE CEC AND THE NATIONAL ELECTRICAL SAFETY CODE (NESC). LOCAL INSPECTION AUTHORITY INTERPRETATIONS WILL GOVERN IN ANY CASE OF AMBIGUITY.
    - 21.4. IF THE WATER SERVICE IS USED AS A GROUNDING POINT, ENSURE THE WATER PIPING IS ELECTRICALLY CONTINUOUS AT JOINTS AND MADE OF CONDUCTIVE MATERIAL. WATER PIPING WITH SWEATED JOINTS IN THE ELECTRICAL PATH MUST HAVE THOSE JOINTS BONDED.
    - 21.5. WHERE GROUNDING CABLES ENTER OR LEAVE FERROUS CONDUITS, THEY MUST BE MECHANICALLY CONNECTED TO THE CONDUIT END. CONNECTIONS ARE ALSO REQUIRED WHERE THE GROUNDING CABLE PASSES THROUGH FERROUS FLOORING OR FRAMING.
22. THOROUGHLY CLEAN ALL PARTS OF THE EQUIPMENT AND MATERIAL INSTALLED UNDER THIS DIVISION. SURFACES OF EXPOSED CONDUIT SHALL BE CLEANED OF CEMENT, PLASTER, DIRT, RUST, GREASE, AND OTHER FOREIGN MATTER, AND BE LEFT IN CONDITION SUITABLE TO THE CONTRACTOR AND ACCEPTABLE FOR PAINTING.
    - A. EQUIPMENT FURNISHED WITHOUT SHOP APPLIED FINISH SHALL BE FIELD PAINTED.
    - B. CONCEALED SURFACES OF METAL RACKS, FRAMES, AND BOXES SHALL BE PAINTED BEFORE MOUNTING.
    - C. AFTER TESTS HAVE BEEN COMPLETED, CLEAN ALL EQUIPMENT WITH SOAP AND WATER, LEAVING EVERYTHING IN WORKING ORDER AT THE COMPLETION OF THE WORK.
    - D. ALL EXPOSED CONDUITS & BOXES SHALL BE PAINT TO MATCH EXTERIOR FINISH.
21. ELECTRICAL TESTING AND TERMINATIONS:
    - 21.1. ALL WIRING AND CONNECTIONS SHALL BE THOROUGHLY TESTED FOR CONTINUITY, GROUNDING, SHORT CIRCUITS, AND OTHER DEFECTS BEFORE CONNECTING ANY EQUIPMENT OR FIXTURES. CABLES SHALL BE ADDITIONALLY CHECKED FOR CONTINUITY, SHORTS, INSULATION RESISTANCE, AND PROPER PHASING.
    - 21.2. THE CONTRACTOR SHALL TERMINATE ALL CABLES AND WIRES USING UL-LISTED TERMINAL LUGS (SUPPLIED BY THE CONTRACTOR) TO ENSURE SECURE AND RELIABLE CONNECTIONS.
22. INSULATION SHALL BE TESTED BEFORE AND AFTER INSTALLATION, AND BEFORE ENERGIZING.
    - A. RUBBER INSULATION SHALL BE TESTED FOR ACCEPTANCE BY APPLYING DIRECT CURRENT POTENTIAL NOT OVER 3 TIMES THE RATIO OF DIRECT CURRENT TO 60% OF EQUIVALENT "RMS" ALTERNATING CURRENT FACTORY TEST VOLTAGE FOR 5 MINUTES.
    - B. VARNISHED CAMBRIC, PAPER, AND OTHER INSULATION SHALL BE TESTED IN THE MANNER DIRECTED BY AND UP TO THE LIMITS RECOMMENDED BY THE MANUFACTURER.
    - C. INSULATION RESISTANCE SHALL BE TESTED BY MEGGER OF NOT LESS THAN 600 VOLTS OUTPUT FOR CIRCUITS 480 VOLTS AND LESS. ANY CIRCUIT SHOWING AN INSULATION RESISTANCE OF LESS THAN 1 MEGOHM SHALL BE INVESTIGATED AND THE WEEK POINT CORRECTED. CORRECT OR REPLACE ANY CIRCUIT DEFECTIVE OR GROUNDED AND MAKE WIRE-BY-WIRE TEST.
24. THE ENTIRE SYSTEM SHALL BE PLACED IN PROPER OPERATING CONDITION.
    - A. OVERLOAD DEVICES SHALL BE ADJUSTED AND SET TO SUIT THE LOADS WHICH THEY CONTROL.
    - B. LOADS ON ALL PARTS OF SYSTEMS SHALL BE BALANCED, INSOFAR AS IS PRACTICAL.
    - C. ALL CHANGES SHALL BE MADE THAT ARE NECESSARY FOR ADJUSTING, SETTING AND BALANCING.
    - D. PHASE ROTATION AT ALL BUSES, PANELS, SWITCHBOARD ETC., SHALL BE CHECKED TO SEE IF IT CONFORMS WITH RECOGNIZED STANDARDS.
    - E. GROUND TESTS SHALL BE MADE WITH THE 3 ELECTRODE "AC" OR "DC" VOLTAGE DROP METHOD TO ESTABLISH INITIAL READINGS FOR RECORDS, AND TO ASCERTAIN THAT THEY MEET DESIGN AND CODE REQUIREMENTS.
    - F. CONTROL CIRCUITS SHALL BE CHECKED OUT FOR PROPER FUNCTIONING AND FAIL-SAFE QUALITIES.
25. DETERMINE EXACT ROUTING OF CONCEALED FEEDERS AND BRANCH HOME RUNS IN COOPERATION WITH OTHER TRADES TO SIMPLIFY INSTALLATION WHEREVER POSSIBLE BUT SUBJECT TO APPROVAL OF ARCHITECT FOR VISUAL AND STRUCTURAL REASONS.
26. ANY POWER OUTAGES SHALL BE APPROVED BY THE USER OF THE DISTRICT. A 7 DAY WRITTEN NOTICE SHALL BE GIVEN FOR ANY OUTAGE REQUEST. ANY REQUIRED SHUT DOWN OF UTILITIES SHALL BE COORDINATED WITH DISTRICT PRIOR TO SUCH ACTIVITIES. WORK MAY HAVE TO BE SCHEDULED OFF HOURS/WEEKENDS/HOLIDAYS AS DIRECTED BY DISTRICT.
27. CHECK PANEL SCHEDULES IDENTIFICATION FOR VALIDITY. RE-IDENTIFY ANY OR ALL CHANGES IN PANEL ON PANEL SCHEDULE CARD. WHILE PANEL COVER IS REMOVED TURN OFF ANY SPARE BREAKERS AND VERIFY SPARES ARE INDICATED ON PANEL SCHEDULE CARD.
28. USE "DYMO" LABEL ON FACE OF EACH CONTROL DEVICE AND JUNCTION BOXES INDICATING THE SOURCE PANEL AND CIRCUIT USED.
28. CUT FLOORS, CEILINGS AND WALLS AS REQUIRED FOR INSTALLATION OF WORK. ALL PENETRATION THROUGH MASONRY/CONCRETE WALL/CEILING SHALL BE X-RAYED PRIOR TO START OF WORK TO AVOID EXISTING STRUCTURAL RE-BAR AND PROVIDED BY MEANS OF SLEEVES OR CORE DRILLING. EXACT LOCATION OF CORING SHALL BE DETERMINED BASED ON STRUCTURAL CONDITION, EXISTING OBSTRUCTION AND FIELD CONDITION. CONTRACTOR SHALL COORDINATE WITH DISTRICT. CONDUITS SHALL NOT PENETRATE STRUCTURAL SLAB. ALL WORK SHALL BE PATCHED AND REPAIRED AS DIRECTED BY DISTRICT.
29. CUTTING, BORING, SAW CUTTING OR DRILLING THROUGH THE NEW OR EXISTING STRUCTURAL ELEMENT TO BE DONE ONLY WHEN SO DETAILED IN THE DRAWINGS OR ACCEPTED BY THE ARCHITECT AND STRUCTURAL ENGINEER WITH THE APPROVAL OF DISTRICT.
30. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM (CAULKING) AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA TO MAINTAIN INTEGRITY OF THE EXISTING RATING. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS.
31. ALL PENETRATION THRU EXISTING EXTERIOR WALL SHALL BE PROVIDED ALL UL LISTED SEAL AND WATERPROOF
32. EXISTING CONDUIT MAYBE RE-USED FOR NEW WORK, PROVIDED THEY MEET MINIMUM CONDUIT SIZE REQUIREMENTS AND WIRE FILL CAPACITY (40%), OTHERWISE PROVIDE NEW CONDUITS. CONTRACTOR AT HIS OPTION MAY REUSE EXISTING CONDUITS WITHIN THE BUILDINGS/SITE AND PROVIDE NEW CONDUITS TO EXTEND TO NEW DEVICE LOCATIONS AS NECESSARY.
33. MEP COMPONENT ANCHORAGE NOTE
    ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE APPROVED CONSTRUCTION DOCUMENTS.

    THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30:

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

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

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

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

ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

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

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., HCAI OPM FOR 2022 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.

ELECTRICAL DISTRIBUTION SYSTEMS (E):

X ☐ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE HCAI (OSHPD) PRE-APPROVAL (OPM #) # , AS INCLUDED IN THESE DRAWINGS WITH PROJECT-SPECIFIC NOTES AND DETAILS.

DO NOT MIX SEISMIC BRACING DETAILS FROM DIFFERENT OPM'S UNLESS SPECIFICALLY SHOWN ON DRAWINGS AND APPROVED BY ENGINEERING.

DEMOLITION NOTES

1. REFER TO MECHANICAL/PLUMBING DRAWINGS FOR DEMOLITION OF EQUIPMENT AND DEVICES. DISCONNECT AND REMOVE ALL ELECTRICAL ITEMS INCLUDING POWER CONNECTIONS, DISCONNECTS AND CONTROLS FOR TOTAL DEMOLITION, AS INDICATED ON MECHANICAL/PLUMBING DRAWINGS. BRANCH CIRCUIT/FEEDER, CONDUITS (EXPOSED) TO EQUIPMENT SHALL BE COMPLETELY REMOVED, ALONG WITH CONDUITS BACK TO SOURCE. LABEL BREAKERS AS SPARES AT SOURCE.
2. BEFORE COMMENCING DEMOLITION WORK, THE CONTRACTOR SHALL REVIEW THE COMPLETE SET OF CONSTRUCTION DOCUMENTS AND WORKING DRAWINGS AND FIELD VERIFY ALL EXISTING CONDITIONS AND ANY QUESTIONABLE WORK ASSOCIATED WITH DISCONNECTING AND/OR REMOVAL OF EXISTING FIRE ALARM DEVICES AND EQUIPMENT SHOWN FOR DEMOLITION; COORDINATE DEMOLITION WORK WITH CONSTRUCTION SCHEDULE.
3. CONTRACTOR SHALL NOTIFY THE DISTRICT, CONSTRUCTION MANAGER AND ENGINEER IMMEDIATELY WHEREVER REMOVAL OF EXISTING CONDUIT AND/OR EQUIPMENT WILL INTERFERE WITH EQUIPMENT THAT IS TO REMAIN OR INTERFERE WITH THE NEW EQUIPMENT INSTALLATION. IN SUCH SITUATIONS CONTRACTOR SHALL EXTEND PATHWAYS AND WIRING TO MATCH EXISTING BY TYPE & SIZE TO PROVIDE OPERABLE SYSTEM.
4. THESE DRAWINGS INDICATE EXISTING CONDITIONS WHICH WERE TAKEN FROM RECORD DRAWINGS/FIELD VISUAL VERIFICATIONS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THESE CONDITIONS. THE CONTRACTOR SHALL VERIFY AND INVESTIGATE ALL EXISTING FIELD CONDITIONS AND EXERCISE CAUTION IN THE DEMOLITION PROCESS, AND PROMPTLY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES ENCOUNTERED.
5. EXISTING DEVICES AND EQUIPMENT NOT INDICATED TO BE REMOVED OR ABANDONED ARE TO REMAIN IN USE, PER PROVISIONS OF CFC SECTION 104.7.1. EXCEPT FOR SHORT DESIGNATED INTERVALS DURING WHICH CONNECTIONS ARE MADE, SHUT-DOWN TIME OF THE EXISTING ELECTRICAL EQUIPMENT SHALL BE AT A TIME CONVENIENT AND AGREEABLE TO THE DISTRICT. EXISTING EQUIPMENT REMOVED FOR PROTECTION SHALL BE PLACED BACK TO ITS ORIGINAL LOCATION. EXISTING EQUIPMENT DAMAGED DURING THE PROCESS SHALL BE REPAIRED AND/OR REPLACED AS REQUIRED TO MAINTAIN A COMPLETE AND OPERABLE SYSTEM. NO ADDITIONAL CHARGES WILL BE ALLOWED FOR REPAIRING, REPLACING AND/OR RECONNECTING THE EXISTING SYSTEM DISTURBED DURING CONSTRUCTION.
6. UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL DEVICES ASSOCIATED WITH THE EXISTING EQUIPMENT BEING REMOVED.
7. THE CONTRACTOR, ACCOMPANIED BY THE DISTRICT, SHALL TAKE INVENTORY OF THE EXISTING MATERIAL AND EQUIPMENT. ALL MATERIAL AND EQUIPMENT WHICH ARE SELECTED BY THE DISTRICT FOR SALVAGE SHALL REMAIN THE PROPERTY OF THE DISTRICT. THE CONTRACTOR SHALL DELIVER SUCH SALVAGED EQUIPMENT AND MATERIAL TO THE LOCATION(S) CHOSEN BY THE DISTRICT. THE EQUIPMENT AND DEVICES SHALL BE NEATLY PILED, STORED AND PROTECTED FROM DAMAGE. ALL MATERIAL AND EQUIPMENT NOT SELECTED BY THE DISTRICT SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM PREMISES, AND DISPOSED OF.
8. COORDINATE ALL DEMOLITION WITH THE NEW REQUIREMENTS TO ASSURE THAT NEW INSTALLED SYSTEM IS COMPLETE AND OPERABLE.
9. CAREFULLY PROTECT ALL EXISTING WALLS, TRIM, FLOORS, EQUIPMENT, UTILITY LINES AND MATERIALS. WHEN WORKING ON FINISHED SURFACES LIMIT DAMAGE TO THE CONFINED SPACE AND RESTORE TO ORIGINAL CONDITION.
10. PROVIDE ALL PATCHING, PAINTING AND FINISHES, FOR ALL DEVICES LOCATED IN EXISTING AREAS TO RESTORE TO ORIGINAL CONDITIONS AND MUST BE APPROVED AND COORDINATED WITH THE DISTRICT. THE CONTRACTOR SHALL REPAIR AND/OR REPAINT ALL AREAS DAMAGED BY DEMOLITION OR CONSTRUCTION AND FINISH TO MATCH EXISTING ADJACENT SURFACES.
11. EXISTING CONDITIONS SHALL BE DOCUMENTED WITH DIGITAL PHOTOGRAPHY PRIOR TO START OF WORK AND DELIVERED TO DISTRICT.
12. PRIOR APPROVAL MUST BE OBTAINED FROM THE ENGINEER BEFORE NOTCHING, CORING AND/OR CUTTING OF EXISTING STRUCTURE IS DONE.
13. CONTRACTOR TO PROTECT ALL FIRE ALARM & ASSOCIATED CONDUIT & WIRING IN THE WAY OF SCOPE OF NEW WORK.
14. CONTRACTOR TO DISPOSE OF ALL REMOVED DEVICES AND EQUIPMENT.
15. PROVIDE BLANK COVER PLATES TO REMOVED DEVICES. COLOR WHITE OR AS SELECTED BY DISTRICT. TYPICAL U.O.N.
16. ALL REMOVED EQUIPMENT SHALL BE DISPOSED OF BY CONTRACTOR UNLESS OTHERWISE SALVAGED AS DIRECTED BY DISTRICT.
17. ALL EXISTING FIRE ALARM/PA/INTERCOM/PAGING/TELEPHONE/CLOCK/TV DEVICES AND CONTROL PANEL(S) AND RELATED EQUIPMENT SHALL BE PROTECTED, INCLUDING ALL CONDUIT (UNDERGROUND TO REMAIN - LABELED AT EACH LOCATION INCLUDING PULL BOXES & PROVIDE PULL STRINGS WITH ID TAGS) , WIRING, DEVICES.
18. EXISTING INTRUSION/EMS/AUTONOMOUS PA/LIGHTING CONTROLS SYSTEM SHALL REMAIN AS IS UNLESS OTHERWISE NOTED.
19. FIRE SAFETY DURING CONSTRUCTION SHALL BE IN COMPLIANCE WITH CFC 2022, CHAPTER 9, 11 AND 33 & CBC 2022, CHAPTER 33.
    - EXISTING FIRE ALARM SYSTEM SHALL BE MAINTAINED IN SERVICE, UNIMPAIRED, AT ALL TIMES UNTIL NEW FIRE ALARM HAS BEEN INSTALLED AND TESTED. UNLESS FIRE WATCH IS PROVIDED. ALL FIRE WATCH REQUIRED MUST BE PROVIDED BY CONTRACTOR AND TO BE COORDINATED WITH DISTRICT DURING CONSTRUCTION.
    - PROVIDE FIRE WATCH UNTIL THE NEW SYSTEM IS IN OPERATION AND APPROVED BY LOCAL FIRE AUTHORITY, AND DISTRICT.
    - PROVIDE FIRE WATCH PER CFC 901.7 SYSTEM OUT OF SERVICE. REFER TO SPECIFICATION SECTION 28 31 00B ATTACHMENT B FOR CSFM FIRE WATCH GUIDE LINE.

LIST OF CALIFORNIA CODE OF REGULATIONS (C.C.R.)

APPLICABLE CODES AS OF JANUARY 1, 2023

TITLE 24 C.C.R., PART1 2022 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE.
TITLE 24 C.C.R., PART2 2022 CALIFORNIA BUILDING CODE (CBC)
(2021 INTERNATIONAL BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, WITH CALIFORNIA AMENDMENTS)
TITLE 24 C.C.R., PART3 2022 CALIFORNIA ELECTRICAL CODE (CEC)
(2020 NATIONAL ELECTRICAL CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA)
TITLE 24 C.C.R., PART4 2022 CALIFORNIA MECHANICAL CODE (CMC)
(2021 UNIFORM MECHANICAL CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)
TITLE 24 C.C.R., PART5 2022 CALIFORNIA PLUMBING CODE (CPC)
(2021 UNIFORM PLUMBING CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)
TITLE 24 C.C.R., PART6 2022 CALIFORNIA ENERGY CODE

TITLE 24 C.C.R., PART9 2022 CALIFORNIA FIRE CODE (CFC)
(2021 INTERNATIONAL FIRE CODE OF THE INTERNATIONAL CODE COUNCIL)
TITLE 24 C.C.R., PART10 2022 CALIFORNIA EXISTING BUILDING CODE
(2021 INTERNATIONAL EXISTING BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, WITH AMENDMENTS)
TITLE 24 C.C.R., PART11 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN CODE)
TITLE 24 C.C.R., PART12 2022 CALIFORNIA REFERENCED STANDARDS CODE
TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 70	NATIONAL ELECTRICAL CODE	2021 EDITION
NFPA 72	NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED)	2022 EDITION
NFPA 90A	INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS	2021 EDITION
NFPA 101	LIFE SAFETY CODE - SAFETY TO LIFE FROM FIRE IN BUILDINGS AND STRUCTURES	2021 EDITION
UL 464	AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES	2016 EDITION
UL 521	STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS	1999 (R2021)
UL 1971	STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED	2002 (R2018)

FOR A COMPLETE LIST OF APPLICABLE NFPA STANDARDS REFER TO 2022 CBC (SFM) CHAPTER 35 AND CALIFORNIA FIRE CODE CHAPTER 80.

SEE CALIFORNIA BUILDING CODE CHAPTER 35 FOR STATE OF CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS.

ABBREVIATION

AFF	- ABOVE FINISH FLOOR
BLDG	- BUILDING
CFCI	- CONTRACTOR FURNISHED - CONTRACTOR INSTALLED
C.O.	- CONDUIT ONLY.
D.P.	- DISTRIBUTION PANEL.
EM	- EMERGENCY.
EF	- EXHAUST FAN
(E)	- EXISTING.
(ER)	- EXISTING DEVICE TO BE REPLACED
FA	- FIRE ALARM.
GND	- GROUND.
HP	- HORSEPOWER RATING.
J-BOX	- JUNCTION BOX.
KA	- KILO AMPERES.
KW	- KILOWATT.
KVA	- KILO-VOLT AMPS.
LCP	- LIGHTING CONTROL PANEL
LTG	- LIGHTING.
L.O.	- LUGS ONLY.
LV	- LOW VOLTAGE.
MH	- MOUNTING HEIGHT (TO BOTTOM OF FIXTURE)

MLO	- MAIN LUGS ONLY.
(N)	- NEW
NIC	- NOT IN CONTRACT
NTS	- NOT TO SCALE.
OFCI	- OWNER FURNISHED - CONTRACTOR INSTALLED
OFOI	- OWNER FURNISHED - OWNER INSTALLED
PNL	- PANEL BOARD
(R)	- RELOCATE AND REINSTALL THE SALVAGED (XR) ITEM AT THE NEW LOCATION (R) SHOWN ON THE DRAWINGS. PROVIDE NEW DEVICE BOX AND EXTEND THE CONDUIT AS REQUIRED.
TEL	- TELEPHONE
TTB	- TELEPHONE TERMINAL BOARD.
TYP	- TYPICAL.
UON	- UNLESS OTHERWISE NOTED.
V	- VOLTS.
W.P.	- WEATHERPROOF CONSTRUCTION.
XFMR	- TRANSFORMER
(X)	- DISCONNECT AND REMOVE EXISTING DEVICES/EQUIPMENT (X). PROVIDE STAINLESS STEEL BLANK COVERS.
(XR)	- REMOVE THE EXISTING, SALVAGE, PROTECT ITEM DURING RELOCATION, AND REINSTALL IT AT THE NEW LOCATION (R) SHOWN ON THE DRAWINGS. PROVIDE NEW DEVICE BOX AND EXTEND THE CONDUIT AS REQUIRED.
(+)X'-Y"	- MOUNTING HEIGHT (TO CENTER OF DEVICE)

ELECTRICAL SYMBOLS LIST

NOTE:
- SYMBOLS REPRESENT EQUIPMENT AND OUTLET BOXES TO WHICH CONDUIT AND WIRE IS RUN FOR CONNECTION TO FIXTURES AND DEVICES.
- NOT ALL SYMBOLS APPLY TO THIS PROJECT; DISREGARD THOSE NOT USED ON PLANS AND IN DETAILS.
- MOUNTING HEIGHTS IN SYMBOL LIST APPLY UNLESS OTHERWISE NOTED ON DRAWINGS.

▨	ELECTRICAL WALL MOUNTED PANEL (+60" AFF), SEE SCHEDULE.
▨	ELECTRICAL FLUSH MOUNTED PANEL (+60" AFF), SEE SCHEDULE.
☐	DISCONNECT SWITCH, MANUAL EXO, H.P. RATED (FUSED TO AMPERE RATING SHOWN) WEATHER PROOF, HEAVY DUTY PAD LOCKABLE IN ON POSITION.
Ⓙ	JUNCTION BOX, WITH COVER (4S" SQUARE, DEEP, WITH PLASTER RING)
⊖	DUPLEX RECEPTACLE, "DECORA" STYLE FLUSH IN WALL, GROUNDING TYPE +18"AFF (UON) (20A, 120V, STAINLESS STEEL ENGRAVED COVER PLATE)
⊖	DUPLEX CONTROLLED RECEPTACLE, MARKED WITH THE CONTROLLED CONTROLLED RECEPTACLE SYMBOL AND THE WORD "CONTROLLED", "DECORA" STYLE FLUSH IN WALL, GROUNDING TYPE +18"AFF (20A, 120V, STAINLESS STEEL ENGRAVED COVER PLATE)
⊕	DOUBLE DUPLEX RECEPTACLE, "DECORA" STYLE FLUSH IN WALL, GROUNDING TYPE +18"AFF (UON) (20A, 120V, STAINLESS STEEL ENGRAVED COVER PLATE)
⊟	DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, "DECORA" STYLE FLUSH IN WALL (20A, 120V, 3W, STAINLESS STEEL ENGRAVED COVER PLATE)
⌽	SPECIAL RECEPTACLE, WALL MOUNTED, +18"AFF (UON), SEE REFERENCE NOTE FOR DETAILS (STAINLESS STEEL ENGRAVED COVER PLATE)
S_a	SWITCH, WALL MOUNTED, "DECORA", SINGLE-POLE S.T., +42"AFF (SUBSCRIPT DENOTES UNIT CONTROLLED, STAINLESS STEEL ENGRAVED COVER PLATE)
S_m	SWITCH, MOTOR RATED, S.P.S.T. STAINLESS STEEL ENGRAVED COVER PLATE
S_a^D	LOW VOLTAGE DIMMER SWITCH, ACUITY nLIGHT # nPODM Dx, WALL MOUNTED, +42"AFF
S_{RGB}^{DMX}	COLOR CHANGING DMX CONTROL FOR TYPE F1 FIXTURES. SEE FIXTURE SCHEDULE
S_{ab}^D	2-ZONE LOW VOLTAGE DIMMER SWITCH, ACUITY nLIGHT # nPODM 2P Dx, WALL MOUNTED, +42"AFF
S^{LV}	2-ZONE LOW VOLTAGE SWITCH, ACUITY nLIGHT # nPODM 2P, WALL MOUNTED, +42"AFF
R	LOW VOLTAGE RELAY/POWER PACK, ACUITY nLIGHT #nPP16.
R_{PL}	LOW VOLTAGE RELAY FOR PLUG LOAD, ACUITY nLIGHT #nPP16 PL T24.
RD	LOW VOLTAGE RELAY/POWER PACK, WITH 0-10V DIMMING, ACUITY nLIGHT #nPP16 D.
OS	LOW VOLTAGE OCCUPANCY SENSOR, DUAL TECHNOLOGY, ACUITY nLIGHT #nCM PDT 9.
▭	WIREMOLD 5500 SERIES (3) COMPARTMENT NON METALLIC WALL MOUNTED +18" A.F.F. COMPLETE WITH ALL ACCESSORIES, RISERS TO 6" ABOVE ACCESSIBLE CEILING SPACE, INSERTS AND DEVICES, DEVICE COVER PLATES, WIRING. SECURE WIRE MOLD ON WALL WITH SCREWS. ADHESIVE SYSTEMS OF SECURING TO WALL IS NOT PERMITTED. FROM WALL MOUNTED WIREMOLD #5400 SERIES RISER PROVIDE THE FOLLOWING: A. CIRCUITING TO DESIGNATED PANEL FOR POWER OUTLETS SHOWN.
⊠	WIREMOLD RISER +6" ABOVE ACCESSIBLE CEILING SPACE, INSERTS AND DEVICES, DEVICE COVER PLATES, WIRING. SECURE WIRE MOLD ON WALL WITH SCREWS. ADHESIVE SYSTEMS OF SECURING TO WALL IS NOT PERMITTED.
IDF	IDF (DATA SWITCH WITH PATCH PANEL CABINET)
▽	DATA OUTLET, WALL MOUNTED WITH 1"C & SPECIFIED NUMBER OF CABLES (1D = 1 DATA), CAT6A UTP CABLE TERMINATED ON RJ-45 JACK AT THE FACEPLATE, AND ON RJ-45 PATCH PANELS IN THE IDF CABINET U.O.N. (1)DATA UNLESS OTHERWISE NOTED. , +18" AFF U.O.N.
▽	DATA OUTLET, CEILING MOUNTED WITH 1"C & SPECIFIED NUMBER OF CABLES (1D = 1 DATA), CAT6A UTP CABLE TERMINATED ON RJ-45 JACK AT THE FACEPLATE, AND ON RJ-45 PATCH PANELS IN THE IDF. U.O.N. (1) DATA U.O.N. .
◉	WIRELESS ACCESS POINT (WAP) WITH 1"C (2) CAT6A UTP CABLE TERMINATED ON RJ-45 JACK AT THE FACEPLATE, AND ON RJ-45 PATCH PANELS IN THE IDF. U.O.N.
TV	TELEVISION WITH 1"C SPECIFIED NUMBER OF CABLES (1D = 1 DATA), CAT6A UTP CABLE TERMINATED ON RJ-45 JACK AT THE FACEPLATE, AND ON RJ-45 PATCH PANELS IN THE IDF, +72" AFF U.O.N.
SEC	SECURITY CABINET FOR ACCESS CONTROL SYSTEM WITH POWER SUPPLY
◎	AV CAMERA. PROVIDE CAT6A FROM IDF TO SECURITY CAMERAS.
CR	PROXIMITY CARD READER, WALL MOUNTED
◎	DOOR/WINDOW POSITION CONTACT SENSOR SWITCH
E	ELECTRIFIED DOOR LOCK HARDWARE, INCLUDING BUILT-IN REX/RTE MICRO-SWITCH, WIRE-PASS-THRU HINGE OR OTHER
PwR	DEDICATED POWER SUPPLY UNIT
Ⓜ	MOTION DETECTOR, DOME STYLE, CEILING MOUNTED
V	EXISTING ACCESS CEILING PANEL

CONDUIT FOR CIRCUIT

- - - C	CONDUIT STUB-UP WITH FLOOR COUPLING (ACCESSIBLE FOR FUTURE REMOVAL)
- - - -	CONDUIT CONCEALED OR UNDERGROUND
──	BRANCH CIRCUIT WITH GREEN INSOLATED GROUND CONDUCTOR, SAME SIZE WIRE
─//─	3/4" CONDUIT WITH 2#12 WIRES AND 1#12 GND.
─///─	3/4" CONDUIT WITH 3#12 WIRES AND 1#12 GND.
─////─	3/4" CONDUIT WITH 4#12 WIRES AND 1#12 GND.
─/////─	3/4" CONDUIT WITH 5#12 WIRES AND 1#12 GND.
─//////─	3/4" CONDUIT WITH 6#12 WIRES AND 1#12 GND.
#10	NUMBER INDICATES GAUGE OF WIRE IN CODE SIZED CONDUIT.
C.O.	CONDUIT-ONLY WITH #12 TW COPPER PULL-WIRE (3/4" MINIMUM SIZE, UON)
A-1,3 →	HOMERUN TO CIRCUITS #1 & #3 IN PANEL "A" (CROSSMARKS INDICATE NUMBER OF WIRES)
─|‖	GROUND CONNECTION WITH ACCESSIBLE CLAMP (TO COLD WATER PIPE OR DRIVEN GROUND ROD)
──]	STUB CONDUIT
──	CONDUIT DROPPING DOWN FROM RUN (IF CONDUIT IS USED, KEEP COVER ACCESSIBLE)
──○	CONDUIT RISING UP FROM RUN (IF CONDUIT IS USED, KEEP COVER ACCESSIBLE)

ALL WIRING TO BE CU. THHN INSULATION & GROUND PER NEC 250-122 CONCEALED IN WALL OR CEILING

GENERAL SYMBOLS

(1A)	NUMBERED NOTE FOR SHEET WHERE SHOWN
A / E1.0	DETAIL DESIGNATION FOR ITEM & DRAWING NUMBER

SHEET INDEX

E001	ELECTRICAL NOTES AND SYMBOL LIST		
E011	ELECTRICAL SINGLE LINE DIAGRAM		
E031	ELECTRICAL PANEL SCHEDULES	E401	ELECTRICAL DETAILS
		E402	ELECTRICAL DETAILS
E101	ELECTRICAL SITE PLAN		
E110	ELECTRICAL BASEMENT FLOOR PLAN		
E111	ELECTRICAL DEMO FIRST FLOOR PLAN		
E121	ELECTRICAL FIRST FLOOR PLAN		
E211	ELECTRICAL DEMO FIRST FLOOR LIGHTING PLAN		
E221	ELECTRICAL FIRST FLOOR LIGHTING PLAN		
E222	ELECTRICAL SECOND FLOOR LIGHTING PLAN		
			TOTAL 12 SHEETS

ELECTRICAL NOTES AND SYMBOLS LIST

POMONA UNIFIED SCHOOL DISTRICT
WWW.PUSD.ORG

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15723 EL SONETO DRIVE
WHITTIER, CA 90603
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email info@hcapartners.com

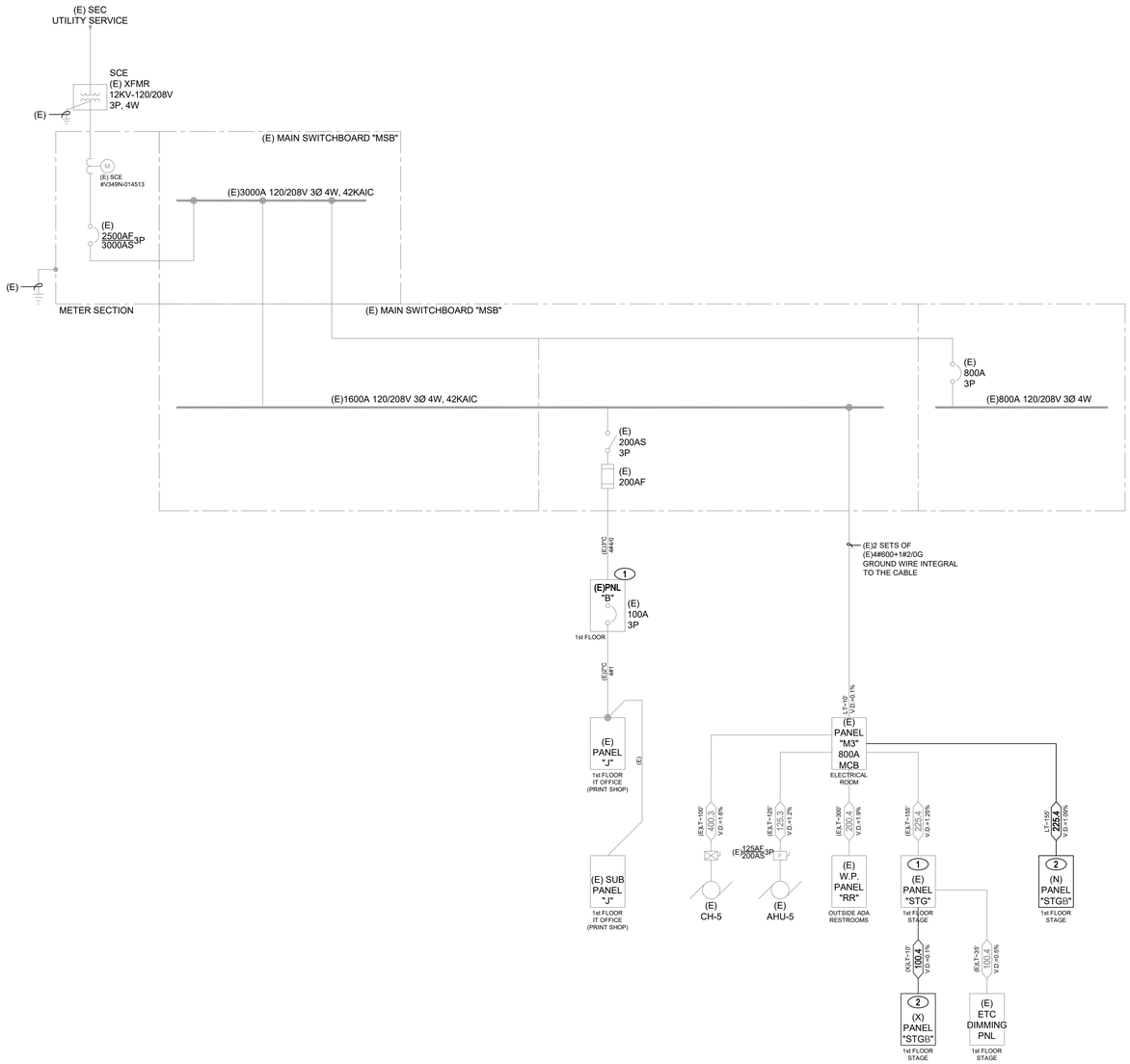
multi-discipline collaborative
MDC engineers,Inc
Consulting Engineers
5101 E La Palma Ave., Suite 205
Anaheim Hills, CA 92807-2056
T: 213.746.2844
F: 213.746.6463

REGISTERED PROFESSIONAL ENGINEER
RUNGSUB SUMETHASORN
No.E 19325
Exp. 12/31/2026
ELECTRICAL
STATE OF CALIFORNIA

POMONA OFFICE OF EDUCATION
EDUCATION CENTER
AUDITORIUM MODERNIZATION
POMONA UNIFIED SCHOOL DISTRICT
800 S GAREY AVENUE POMONA, CA 91766

April 25, 2025

E001



EXISTING SERVICE CAPACITY HAVE BEEN VERIFIED AND ADEQUATE TO SERVE NEW SCOPE

GENERAL NOTES

1. FEEDER LENGTHS SHOWN ARE FOR CALCULATION PURPOSES ONLY. ACTUAL FEEDERS LENGTHS SHALL SUIT EXISTING FIELD CONDITIONS. DO NOT USE THESE LENGTHS FOR BIDDING PURPOSES.
2. EXERCISER EXTREME CAUTION WHILE WORKING WITH ENERGIZED ELECTRICAL EQUIPMENT & CONNECTIONS. ALL WORK MUST COMPLY WITH ELECTRICAL SAFETY CODE, CAL/OSHA & DISTRICT SAFETY REQUIREMENTS. ONLY QUALIFIED & TRAINED CERTIFIED TECHNICIANS ARE PERMITTED TO WORK WITH PERSONAL PROTECTIVE EQUIPMENT (PPE) ELECTRICAL SYSTEM WITH PROPER SAFETY PROCEDURES & ARC FLASH PROTECTION AS REQUIRED CALIFORNIA ELECTRICAL SAFETY ORDERS CCA TITLE 8, APPLICABLE SECTIONS & NATIONALLY RECOGNIZED STANDARDS.

REFERENCE NOTES

(1) EXISTING ELECTRICAL PANEL WITH REVISED LOAD FOR NEW WORK, REFER TO PANEL SCHEDULES. IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE TYPE WRITTEN PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".

(2) REPLACE EXISTING ELECTRICAL PANEL "STGB" WITH NEW ELECTRICAL PANEL "STGB" (SURFACE MOUNTED). REMOVE EXISTING FEEDER FROM ELECTRICAL PANEL "STG" AND PROVIDE NEW FEEDER FROM EXISTING DISTRIBUTION PANEL "M3", PER SINGLE LINE DIAGRAM. RECONNECT EXISTING BRANCH CIRCUIT WIRING TO NEW PANEL "STGB". EXTEND WIRING AS REQUIRED TO RECONNECT ALL EXISTING CIRCUITS. IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL TYPE WRITTEN DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".

FEEDER SCHEDULE

FEEDER TAG	CONDUITS		CONDUCTORS PER SET		NOTES
	SET	SIZE	PHASE/NEUTRAL	GROUND	
40.4	1	1"	4#8	1#10	-
100.4	1	1.5"	4#2	1#6	-
125.3	1	1.5"	3#1	1#6	-
125.4	1	1.5"	4#1	1#6	-
150.3	1	2"	3#1/0	1#6	-
200.4	1	2"	4#3/0	1#6	-
225.4	1	2.5"	4#4/0	1#4	-
400.3	1	4"	3#500 KCMIL	1#2	-

NOTES:

1. THIS FEEDER SCHEDULE APPLIES TO COPPER CONDUCTORS RATED FOR 600 VOLTS AND INSULATED WITH THHN/THWN MATERIAL.
2. USE THIS SCHEDULE AS A GUIDE FOR CONDUCTOR AND CONDUIT SIZES. FEEDER SIZING MAY NEED TO BE INCREASED BASED ON VOLTAGE DROP CALCULATIONS.
3. ALL FEEDERS AND BRANCH CIRCUITS REQUIRE A GROUND WIRE OF THE SIZE SPECIFIED IN THE SCHEDULE. IF MULTIPLE CONDUITS ARE USED FOR A CIRCUIT, EACH CONDUIT NEEDS A GROUND WIRE.
4. NOT ALL FEEDERS LISTED MAY BE USED IN THIS PROJECT.
5. CONDUCTOR AMPACITIES EXCEEDING 100 AMPS ARE BASED ON THE USE OF TERMINALS RATED FOR 75°C.
6. CONDUIT TYPES:
   - 6.1. ELECTRICAL METALLIC TUBING (EMT): USED FOR INDOOR BRANCH CIRCUITS ONLY.
   - 6.2. GALVANIZED RIGID CONDUIT (GRC): SUITABLE FOR BOTH INDOOR AND OUTDOOR FEEDERS, ESPECIALLY FOR EXPOSED RUNS OR AREAS PRONE TO PHYSICAL DAMAGE.
   - 6.3. PVC SCHEDULE 40: USED FOR UNDERGROUND ELECTRICAL FEEDERS.
7. REFER TO THE SINGLE-LINE DIAGRAM OR PROJECT PLANS FOR CONDUIT SIZES. THESE SUPERSEDE THE SIZES LISTED HERE IF LARGER.
8. FEEDER LENGTHS ON THE SINGLE-LINE DIAGRAM ARE FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR MUST FIELD-MEASURE ACTUAL LENGTHS BASED ON SITE CONDITIONS AND THE CHOSEN ROUTING.
9. ALL FEEDERS REQUIRE APPROPRIATE SIZED LUGS FOR PROPER CONNECTION.

ELECTRICAL PARTIAL SINGLE LINE DIAGRAM

POMONA UNIFIED SCHOOL DISTRICT
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REGISTERED PROFESSIONAL ENGINEER
RAMONA SUMETTIA SCHOOL
No.E 19325
Exp.12/31/2026
ELECTRICAL
STATE OF CALIFORNIA

POMONA OFFICE OF EDUCATION

EDUCATION CENTER AUDITORIUM MODERNIZATION

POMONA UNIFIED SCHOOL DISTRICT
800 S GAREY AVENUE POMONA, CA 91766

April 25, 2025

E011

DATE:	23-Apr-25	**PANEL VOLTAGE:**	208/120V
LOCATION	Basement Electrical Room - Surface Mounted	**PHASE & WIRE:**	3PH, 4W
PANEL:	(E) M3	**COPPER BUS:**	800
AIC RATING:	42KAIC	**MAINS CB:**	MCB

CIRCUIT CODE: 1=(CONTINUOUS) 2=(NON-CONTINUOUS) 3=(RECEPTACLES)

CKT NO.	CB CODE	CB TRIP	CB POLE	LOAD DESIGNATION	MISC	REC	LITE	LOAD VA	PHASES A	PHASES B	PHASES C	LOAD VA	LOAD DESIGNATION LITE	REC	MISC	LOAD DESIGNATION	CB POLE	CB TRIP	CKT CODE	CKT NO.
1	1	125	3	AHU-5	1			8400	42000			33600			1	CH-5	3	400	1	2
3	1	-	-	-	1			8400		42000		33600			1	-	-	-	1	4
5	1	-	-	-	1			8400			42000	33600			1	-	-	-	1	6
7		45	3	SPARE					6635			6635			2	PANEL "RR"	3	100	2	8
9		-	-	-						5775		5775			2	-	-		2	10
11		-	-	-							3992	3992			2	-	-		2	12
13	2	20	1	AHU RECPT AND LTS		1	3	249	249						2	SPARE	3	100		14
15	3	20	1	HEAT PUMP OUTLET & CNTRL		1		180		180					2	-	-			16
17	2	225	3	PANEL "STG"	2			18931			18931				2	-	-			18
19	2	-	-	-	2			19716	19716						2	SPARE	3	100		20
21	2	-	-	-	2			18501		18501					2	-	-			22
23		100	3	SPARE							0				2	-	-			24
25		-	-	-					0							SPARE	1	20		26
27		-	-	-						0						SPARE	1	20		28
29		20	1	SPARE							0					SPARE	1	20		30
31		20	1	SPARE				13365				13365			1	(N) PANEL "STGB"	3	*225	2	32
33		20	1	SPARE					16243			16243				-	-	-	2	34
35		20	1	SPARE							10315	10315				-	-	-	2	36
								TOTAL	81964	82698	75237									

SQ-D I-LINE TYPE "HCP"

NOTE: *PROVIDE NEW CIRCUIT BREAKER TO MATCH EXISTING BY MANUFACTURER, TYPE AND AIC RATINGS (225A/3P OG)

FEED FROM MAIN SWITCH BOARD "MSB"

CONNECTED KVA	239.9
CONN.KVA (CODE 1)	126.0
CONN.KVA (CODE 2)	113.7
CONN.KVA (CODE 3)	0.2
FEEDER DEMAND KVA	271.4
FEEDER DEMAND AMPS	753.3

DATE:	23-Apr-25	**PANEL VOLTAGE:**	208/120V
LOCATION	Auditorium Stage - Surface Mounted	**PHASE & WIRE:**	3PH, 4W
PANEL:	(E) STG	**COPPER BUS:**	225A
AIC RATING:	10KAIC	**MAINS CB:**	MLO

CIRCUIT CODE: 1=(CONTINUOUS) 2=(NON-CONTINUOUS) 3=(RECEPTACLES)

CKT NO.	CB CODE	CB TRIP	CB POLE	LOAD DESIGNATION	MISC	REC	LITE	LOAD VA	PHASES A	PHASES B	PHASES C	LOAD VA	LOAD DESIGNATION LITE	REC	MISC	LOAD DESIGNATION	CB POLE	CB TRIP	CKT CODE	CKT NO.
1	2	20	1	(E) RECEPT - STAGE			2	360	560			200			1	(E) EMERGENCY RELAY PANEL	1	20	2	2
3	2	20	1	(E) RECEPT - STAGE			2	360		1960		1600	550		1	(E) INVERTER	1	20	2	4
5	2	20	1	(E) RECEPT - STAGE			1	180			540	360		2		(E) FRONT OF STAGE RECEPT	1	20	3	6
7	2	20	1	(E) A/V RACK			2	1200	1740			540		3		(E) FRONT OF STAGE RECEPT	1	20	3	8
9	2	20	1	(E) CONV RECEPT			2	800		980		180		1		(E) FRONT OF STAGE RECEPT	1	20	3	10
11	3	20	1	(E) LIGHTING NETWORK RACK			1	800			1160	360		3		(E) FRONT OF STAGE RECEPT	1	20	3	12
13	3	20	1	(E) CONV RECEPT			1	180	540			360		2		(E) RECEPT - BACK OF STAGE	1	20	3	14
15	2	20	1	(E) MOTORIZED SCREEN			1	900		1260		360		2		(E) RECEPT - BACK OF STAGE	1	20	3	16
17	1	20	1	(E) LINEAR ARRAY SPEAKERS	1			1000			1360	360		2		(E) RECEPT - BACK OF STAGE	1	20	3	18
19	1	20	1	(E) LINEAR ARRAY SPEAKERS	1			1000	1000							SPARE	1	20		20
21		20	1	SPARE							0					SPARE	1	20		22
23		20	1	SPARE							0					SPARE	1	20		24
25		20	1	SPARE						0						SPARE	1	20		26
27		20	1	SPARE							0					SPARE	1	20		28
29		20	1	SPARE							0					SPARE	1	20		30
31		20	1	SPARE					6004.4			6004			1	Power Distribution Carts	3	*100	3	32
33		20	1	SPARE						6004.4		6004				-	-	-	3	34
35		20	1	SPARE							6004.4	6004				-	-	-	3	36
37	1	100	3	(E) DIMMING PANEL (ETC)				3082	9086.4			6004			1	Power Distribution Carts	3	100	3	38
39	1	-	-	-				3507		9511.4		6004				-	-	-	3	40
41	1	-	-	-				3432			9436.4	6004				-	-	-	3	42
								TOTAL	18931	19716	18501									

NOTE: *PROVIDE NEW CIRCUIT BREAKER TO MATCH EXISTING BY MANUFACTURER, TYPE AND AIC RATINGS

IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".

FEED FROM DISTRIBUTION PANEL "M3"

CONNECTED KVA	57.1
CONN.KVA (CODE 1)	12.0
CONN.KVA (CODE 2)	5.6
CONN.KVA (CODE 3)	39.5
FEEDER DEMAND KVA	45.4
FEEDER DEMAND AMPS	126.0

PANEL NAME: (E) DIM

Voltage: 120/208V 3P, 200A Max
BUS:

Ckt#	CODE	TRIP	POLE	Load Description	Fix Load	Fix Qty	Zone	LOAD VA	Load Ø A	Load Ø B	Load Ø C	LOAD VA	Zone	Fix Qty	Fix Load	Load Description	POLE	TRIP	CODE	Ckt#
1	1	20	1	Box Boom HR - Outlet 1	147	3			882					3	147	Box Boom HR - Outlet 1	1	20	2	2
3	1	20	1	Box Boom HL - Outlet 1	147	3				882				3	147	Box Boom HL - Outlet 2	1	20	1	4
5	1	20	1	FOH Stage Electric - Outlet 1	147	8					2352			8	147	FOH Stage Electric - Outlet	1	20	1	6
7	1	20	1	Stage Electric #1 - Outlet 1	90	6			1080					6	90	Stage Electric #1 - Outlet 2	1	20	1	8
9	1	20	1	Stage Electric #2 - Outlet 1	90	6				1080				6	90	Stage Electric #2 - Outlet 2	1	20	1	10
11	1	20	1	Stage Electric #3 - Outlet 1	90	6					1080			6	90	Stage Electric #3 - Outlet 2	1	20	1	12
13		20	1	SPARE					1120					112	10	(E) Cove Lighting (DMX)	1	20	1	14
15	1	20	1	(E) Cove Lighting (DMX)	10	112				1120						SPARE	1	20		16
17	1	20	1	CANTO ASTRO 600 at Booth	630	2					2520			2	630	CANTO ASTRO 600 at Booth	1	20	1	18
19		20	1	SPARE					0							SPARE	1	20		20
21		20	1	SPARE						0						SPARE	1	20		22
23		20	1	SPARE							0					SPARE	1	20		24
				Subtotals (both sides)					3082	3082	5952									
				Connected Load																

DATE:	23-Apr-25	**PANEL VOLTAGE:**	208/120V
LOCATION	Projection Booth - Surface Mounted	**PHASE & WIRE:**	3PH, 4W
PANEL:	(E) PRB	**COPPER BUS:**	100A
AIC RATING:	10KAIC	**MAINS CB:**	MLO

CIRCUIT CODE: 1=(CONTINUOUS) 2=(NON-CONTINUOUS) 3=(RECEPTACLES)

CKT NO.	CB CODE	CB TRIP	CB POLE	LOAD DESIGNATION	MISC	REC	LITE	LOAD VA	PHASES A	PHASES B	PHASES C	LOAD VA	LOAD DESIGNATION LITE	REC	MISC	LOAD DESIGNATION	CB POLE	CB TRIP	CKT CODE	CKT NO.
1	3	20	1	EXISTING*				500	1620			1120	112			(E) COVE LIGHTING	1	20	1	2
3	3	20	1	EXISTING*				500		1620		1120	112			(E) COVE LIGHTING	1	20	1	4
5	3	20	1	EXISTING*				500			707	207	3			(E) FRONT OF STAGE DOWNLTS	1	20	1	6
7	3	20	1	EXISTING*				500	570.8			70.8	2			(E) PROJ BOOTH LTG	1	20	1	8
9	3	20	1	EXISTING*				500		1040		540		3		(E) WIREMOLD RECEPTS	1	20	3	10
11	3	20	1	EXISTING*				500			680	180				(E) WIREMOLD RECEPTS	1	20	3	12
13	3	20	1	EXISTING*				500	1050			550		2		(E) LINEAR ARRAY SPEAKERS	1	20	2	14
15	3	40	1	EXISTING*				500		1050		550		2		(E) LINEAR ARRAY SPEAKERS	1	20	2	16
17	3	20	1	EXISTING*				500			500					SPARE	1	20		18
19	2	30	2	(E)HP-3 (HEAT PUMP) & FC-31	1			1580	1580							SPARE	1	20		20
21	2	-	1	-	1			1580		1580						SPARE	1	20		22
23	2	20	1	(E)FC-41 & 42 & WP RECEP	2			240			240					SPARE	1	20		24
25	2	20	1	(E)A/V RACK	1			1000	2200			1200		1		(E) PROJECTOR	1	20	2	26
27		20	1	SPARE						0						SPARE	1	20		28
29		20	1	SPARE							0					SPARE	1	20		30
								TOTAL	7020.8	5290	2127									

NOTE: *PROVIDE NEW CIRCUIT BREAKER TO MATCH EXISTING BY MANUFACTURER, TYPE AND AIC RATINGS

IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".

FEED FROM MAIN SWITCH BOARD "MSB"

CONNECTED KVA	14.4
CONN.KVA (CODE 1)	2.8
CONN.KVA (CODE 2)	6.7
CONN.KVA (CODE 3)	5.2
FEEDER DEMAND KVA	15.1
FEEDER DEMAND AMPS	41.8

DATE:	23-Apr-25	**PANEL VOLTAGE:**	208/120V
LOCATION	Auditorium Stage - Surface Mounted	**PHASE & WIRE:**	3PH, 4W
PANEL:	(N) STGB	**COPPER BUS:**	225A
AIC RATING:	10KAIC	**MAINS CB:**	MLO

CIRCUIT CODE: 1=(CONTINUOUS) 2=(NON-CONTINUOUS) 3=(RECEPTACLES)

CKT NO.	CB CODE	CB TRIP	CB POLE	LOAD DESIGNATION	MISC	REC	LITE	LOAD VA	PHASES A	PHASES B	PHASES C	LOAD VA	LOAD DESIGNATION LITE	REC	MISC	LOAD DESIGNATION	CB POLE	CB TRIP	CKT CODE	CKT NO.
1	1	20	1	(E) West Office Lights - 1st Floor				750	750							SPARE	1	20	3	2
3	3	20	1	(E) Room 221 2nd Floor				750		1500		750				(E) Auditorium Clg Attic Lights	1	20	1	4
5		20	1	SPARE							0					SPARE	1	20		6
7	3	20	1	(E) Recepts small kitch 2nd Flr				750	1500			750				(E) Orchestra Lights	1	20	3	8
9	3	20	1	(E) Recepts - Stage front Flr				750		1500		750				(E) Lights - Rm 221 and Green Rm	1	20	3	10
11		20	1	SPARE							0					SPARE	1	20		12
13	3	20	1	(E) Recepts - West office wall				750	750							SPARE	1	20		14
15	3	20	1	(E) Recepts - Wall of Aud.				750		750						SPARE	1	20		16
17	1	20	1	(E) Green room LTG				750			750					SPARE	1	20		18
19		20	1	SPARE					750			750				(E) Basement Lights and Recepts	1	20	3	20
21	2	20	3	Prodigy P2 - STAGE	1			600.4		2328.4		1728			2	Motor Trolley Rail/Bar (1/3Hp)	1	20	2	22
23	2	-	-	-				600.4			900.44	300			1	Motor Roll Down Screen	1	20	2	24
25	2	-	-	-				600.4	1850.4			1250			1	Roll Down LED Screen	2	20	1	26
27	2	20	3	Prodigy P2 - STAGE	1			600.4		1850.4		1250				(NEMA 6-20)	-	-	1	28
29	2	-	-	-				600.4			1850.4	1250			1	Roll Down LED Screen	2	20	1	30
31	2	-	-	-				600.4	1850.4			1250				(NEMA 6-20)	-	-	1	32
33	2	20	3	Prodigy P2 - STAGE	1			600.4		1850.4		1250			1	Roll Down LED Screen	2	20	1	34
35	2	-	-	-				600.4			1850.4	1250				(NEMA 6-20)	-	-	1	36
37	2	-	-	-				600.4	1850.4			1250			1	Roll Down LED Screen	2	20	1	38
39	2	20	3	Prodigy FlyPipe - Seating Area	1			288.2		1538.2		1250				(NEMA 6-20)	-	-	1	40
41	2	-	-	-				288.2			1538.2	1250			1	Roll Down LED Screen	2	20	1	42
43	2	-	-	-				288.2	1538.2			1250				(NEMA 6-20)	-	-	1	44
45	2	20	1	Motorized Curtain Track	5			425		1675		1250			1	Roll Down LED Screen	2	20	1	46
47	1	20	1	DMX Strip Lights Columns				400			1650	1250				(NEMA 6-20)	-	-	1	48
49		20	1	SPARE						1250		1250			1	Roll Down LED Screen	2	20	1	50
51		20	1	SPARE							1250	1250				(NEMA 6-20)	-	-	1	52
53		20	1	SPARE							275	275			1	DMX Scrim Roll Drum	2	20	1	54
55		20	1	SPARE						275		275				-	-	-	1	56
57		20	1	SPARE							1000	1000			1	Equipment Control Cabinet	1	20	1	58
59	3	20	1	Makeup Mirror Green Rm 131A		2		500			500					SPARE	1	20		60
61	3	20	1	Makeup Mirror Green Rm 131A		2		500	500							SPARE	1	20		62
63	3	20	1	Makeup Mirror Green Rm 102		2		500		500						SPARE	1	20		64
65	3	20	1	Makeup Mirror Green Rm 102		2		500			500					SPARE	1	20		66
67	3	20	1	Makeup Mirror Green Rm 102		2		500	500							SPARE	1	20		68
69	3	20	1	Makeup Mirror Green Rm 102		2		500		500						SPARE	1	20		70
71	3	20	1	Makeup Mirror Green Rm 102		2		500			500					SPARE	1	20		72
								TOTAL	13365	15243	10315									

NOTE: REPLACE EXISTING ELECTRICAL PANEL "STGB" WITH NEW ELECTRICAL PANEL "STGB" (SURFACE MOUNTED). REMOVE EXISTING FEEDER FROM ELECTRICAL PANEL "STG" AND PROVIDE NEW FEEDER FROM EXISTING PANEL "M3". PER SINGLE LINE DIAGRAM. RECONNECT EXISTING BRANCH CIRCUIT WIRING TO NEW PANEL "STGB". EXTEND WIRING AS REQUIRED TO RECONNECT ALL EXISTING CIRCUITS. IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".

FEED FROM DISTRIBUTION PANEL "M3"

CONNECTED KVA	39.9	
CONN.KVA (CODE 1)	21.0	
CONN.KVA (CODE 2)	8.7	
CONN.KVA (CODE 3)	10.3	
FEEDER DEMAND KVA	45.0	
FEEDER DEMAND AMPS	125.0	*Estimated Load*

(E) EMER RELAY PANEL "ELRP"

Relay #	Load Description	Fix Load	Fix Qty	CIRC	LOAD VA	Load	LOAD VA	CIRC	Fix Qty	Fix Load	Load Description	Relay #
1	AISLE LTG(SWITCHED)	0.33	251	INV-1		170.28		INV-2	265	0.33	AISLE LIGHTING(SWITCHED)	2
3	SPARE					140		INV-4	4	35	MAIN STAGE(0-10V)	4
5	AUDIENCE DN LTG(0-10V)	48	6	INV-5		288					SPARE	6
7	SPARE										SPARE	8
					Total	598.28						

(N) EMER RELAY PANEL "ELRP2"

Relay #	Load Description	Fix Load	Fix Qty	CIRC	LOAD VA	Load	LOAD VA	CIRC	Fix Qty	Fix Load	Load Description	Relay #
1	STG RT CORR LTG(0-10V)	35	2	INV-3a		140		INV-3c	2	35	STG LT LTG(0-10V)	2
3	STG RT LTG(0-10V)	35	2	INV-3b		140		INV-3d	2	35	STG LT CORR LTG(0-10V)	4
5	SPARE					0					SPARE	6
7	SPARE										SPARE	8
					Total	280						

M3	STG	DIM
PRB	STGB	ELPR
B		ELPR2

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Exp.12/31/25
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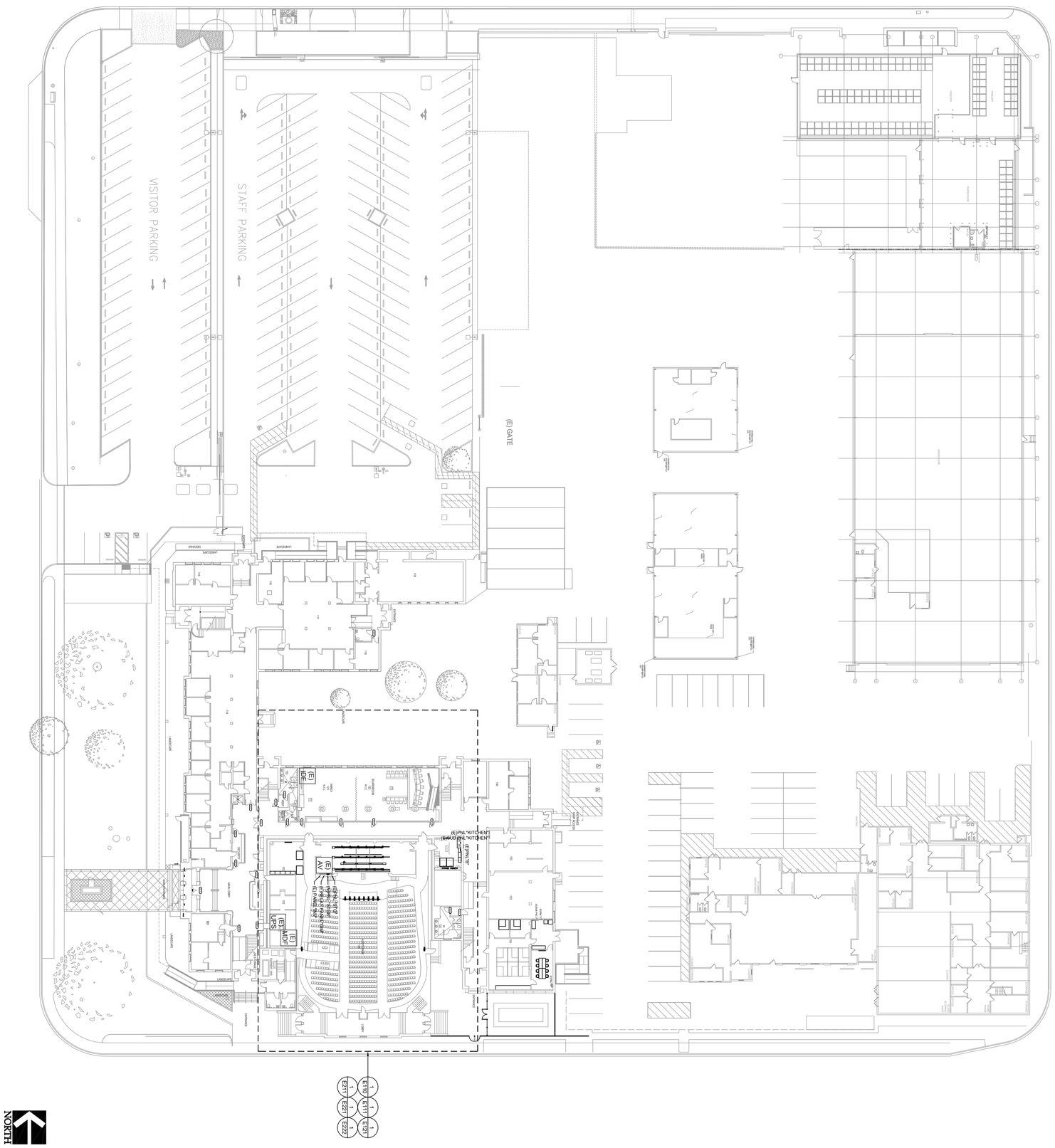
AUDITORIUM MODERNIZATION
POMONA UNIFIED SCHOOL DISTRICT
800 S GAREY AVENUE POMONA, CA 91766

ELECTRICAL PANEL SCHEDULES

April 25, 2025

E031



ELECTRICAL SITE PLAN

SCALE
1" = 30'-0"

1

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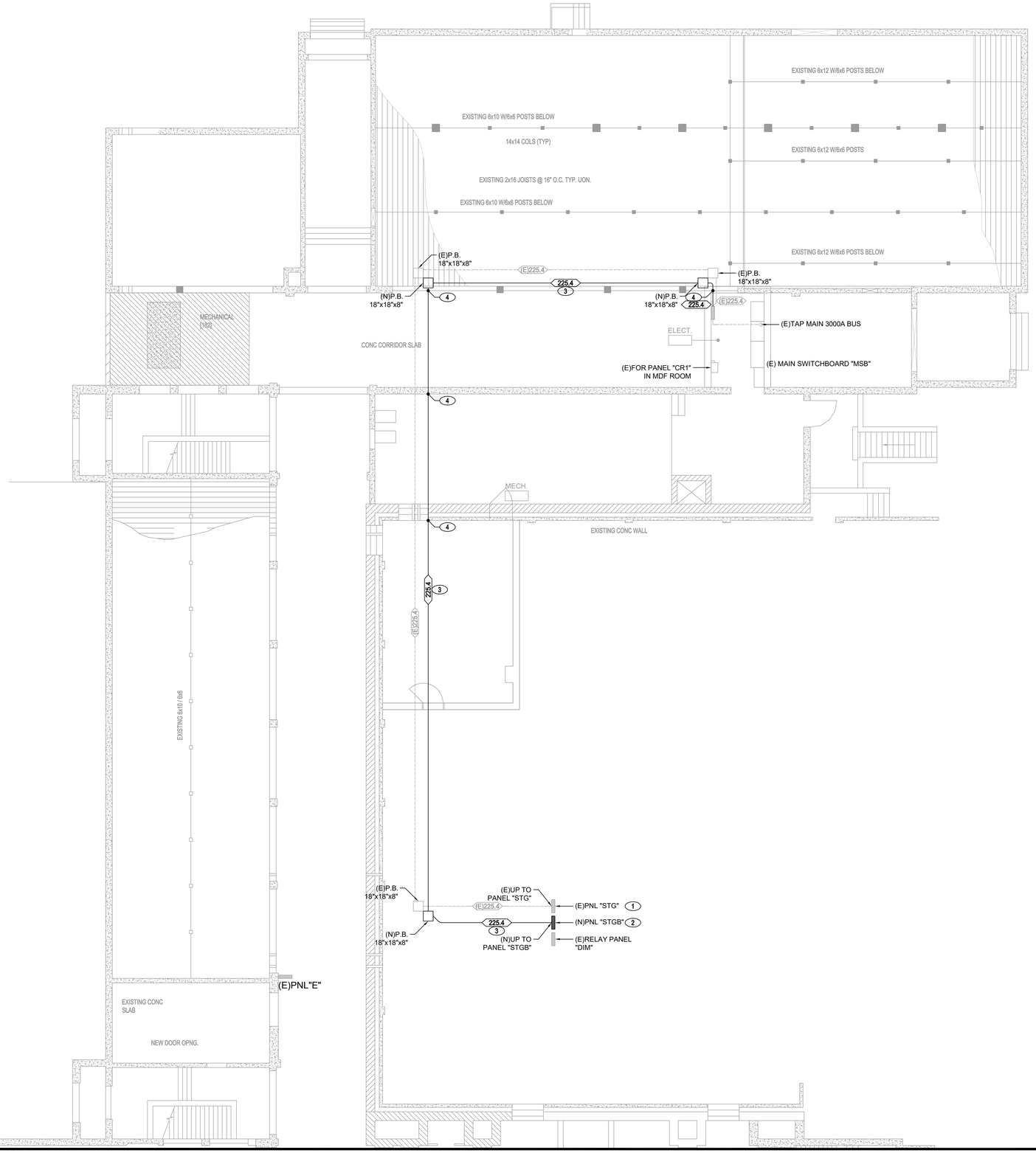
800 S GAREY AVENUE POMONA, CA 91766

ELECTRICAL SITE PLAN

April 25, 2025

E101



REFERENCE NOTES

1. EXISTING ELECTRICAL PANEL WITH REVISED LOAD PER NEW WORK. REFER TO PANEL SCHEDULES. IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".
2. REPLACE EXISTING ELECTRICAL PANEL "STGB" WITH NEW ELECTRICAL PANEL "STGB" (SURFACE MOUNTED). REMOVE EXISTING FEEDER FROM ELECTRICAL PANEL "STG" AND PROVIDE NEW FEEDER FROM EXISTING PANEL "MS", PER SINGLE LINE DIAGRAM. RECONNECT EXISTING BRANCH CIRCUIT WIRING TO NEW PANEL "STGB". EXTEND WIRING AS REQUIRED TO RECONNECT ALL EXISTING CIRCUITS. IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".
3. ROUTE FEEDER IN CRAWL SPACE, MOUNT TIGHT TO STRUCTURE.
4. CORE THROUGH EXISTING CONCRETE WALL. INSTALL WATER TIGHT SLEEVES AND UL LISTED CAULKING FOR NEW FEEDERS. NEW CORE SHALL BE CORED WITH 12" CLEAR DISTANCE BETWEEN HOLES.

ELECTRICAL BASEMENT FLOOR PLAN

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

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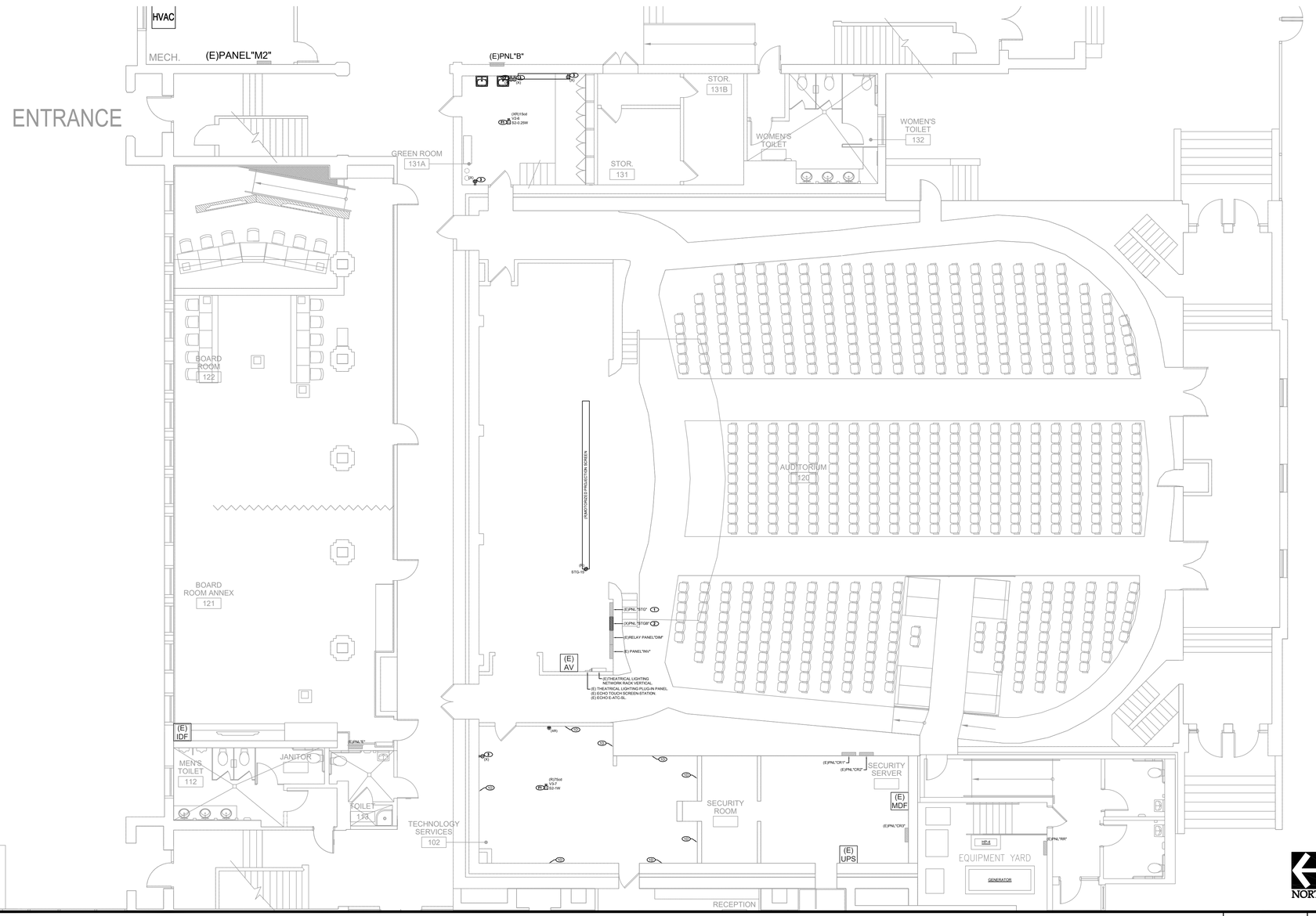
E110



REFERENCE NOTES

1D REMOVE ALL EXISTING DATA OUTLETS AND CABLING FROM THE WALLS IN THIS ROOM. DISCONNECT AND REMOVE ALL EXISTING DATA CABLING BACK TO THE IDF/MDF (TYPICAL).

1 EXISTING ELECTRICAL PANEL WITH REVISED LOAD PER NEW WORK, REFER TO PANEL SCHEDULES. IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".

2 REPLACE EXISTING ELECTRICAL PANEL "STGB" WITH NEW ELECTRICAL PANEL "STGB" (SURFACE MOUNTED). REMOVE EXISTING FEEDER FROM ELECTRICAL PANEL "STG" AND PROVIDE NEW FEEDER FROM EXISTING PANEL "M3", PER SINGLE LINE DIAGRAM.
RECONNECT EXISTING BRANCH CIRCUIT WIRING TO NEW PANEL "STGB". EXTEND WIRING AS REQUIRED TO RECONNECT ALL EXISTING CIRCUITS. IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".

3 DISCONNECT AND REMOVE EXISTING OUTLET, SALVAGE EXISTING BRANCH CIRCUIT WIRING , AND RECONNECT TO NEW OUTLET AS INDICATED. EXTEND CONDUIT & WIRING AS REQUIRED. PROVIDE NEW DECORA STYLE DUPLEX OUTLET WITH STAINLESS STEEL COVER PLATE.

F1 DISCONNECT AND SALVAGE EXISTING FIRE ALARM SYSTEM DEVICES/WIRING. RELOCATED TO NEW LOCATION AND RECONNECT AS INDICATED. EXTEND CONDUIT & WIRING AS REQUIRED.

ELECTRICAL DEMO FIRST FLOOR PLAN

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

ELECTRICAL DEMO FIRST FLOOR PLAN

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April 25, 2025

E111

SEQUENCE OF OPERATIONS FOR ALL OPERABLE SYSTEMS

Note: This sequence of operations is intended for screen mount safety requirements. Always consult the manufacturer's instructions and applicable safety standards for detailed procedures.

1. Power-Up Sequence:
   - 1.1. Verify Power: Ensure that all power sources are disconnected.
   - 1.2. Mount Safety Sensor: Securely mount the safety sensor to the screen, ensuring it is properly aligned and positioned to detect the intended object.
   - 1.3. Connect Wiring: Connect the safety sensor's wiring to the control system, following the manufacturer's instructions.
   - 1.4. Power Up: Apply power to the system.
2. System Initialization:
   - 2.1. Safety Sensor Calibration: Calibrate the safety sensor according to the manufacturer's instructions to ensure accurate detection.
   - 2.2. Control System Configuration: Configure and interface with existing Creston control system to recognize the safety sensor input and respond appropriately. Provide additional conduit pathway and wiring as required for control system operation.
   - 2.3. Safety Interlock Configuration: Provide and configure any safety interlocks or emergency stop devices to work in conjunction with the safety sensor.
3. Normal Operation:
   - 3.1. Object Detection: When the safety sensor detects the intended object (e.g., a person, machine part), shall send a signal to the control system.
   - 3.2. Control System Response: The control system processes the signal and takes appropriate action, such as:
     - 3.2.1. Stopping or pausing the system.
     - 3.2.2. Preventing hazardous motion.
     - 3.2.3. Enabling a safe mode of operation.
   - 3.3. Operator Interaction: The operator can interact with the system as needed, following established safety procedures.
4. Emergency Stop:
   - 4.1. Emergency Stop Activation: If an emergency situation arises, the operator can activate the emergency stop button or device.
   - 4.2. System Response: The control system immediately stops all hazardous motion and deactivates the safety sensor.
   - 4.3. Reset Procedure: Follow the manufacturer's instructions for resetting the emergency stop and restarting the system.
5. Important Safety Considerations:
   - 5.1. Maintenance: Follow the manufacturer's recommended maintenance schedule for the safety sensor and control system.
   - 5.2. Training: Provide adequate training to operators on the proper use and operation of the safety sensor and emergency stop procedures.
   - 5.3. Compliance: Ensure that the safety sensor installation and operation comply with all applicable safety standards and regulations.

GENERAL NOTES

1. PROVIDE ACOUSTICAL SOUND MASKING PADS, LOWRY OR EQUAL, FOR ALL OUTLETS INSTALLED AT AUDITORIUM.
   - 1.1. ALL PENETRATIONS INTO SOUND-RATED PARTITIONS OR FLOOR-CEILING ASSEMBLIES SHALL BE SEALED, LINED, OR INSULATED WITH AN APPROVED PERMANENT RESILIENT SEALANT.
   - 1.2. ALL RIGID CONDUITS, DUCTS, PLUMBING PIPES, AND APPLIANCE VENTS LOCATED IN SOUND-RATED ASSEMBLIES SHALL BE ISOLATED FROM THE BUILDING CONSTRUCTION BY MEANS OF RESILIENT SLEEVES, MOUNTS, OR A MINIMUM 1/4" THICK APPROVED RESILIENT MATERIAL.
   - 1.3. AN APPROVED PERMANENT AND RESILIENT ACOUSTICAL SEALANT SHALL BE PROVIDED ALONG THE JOINT BETWEEN THE FLOOR AND THE SEPARATION WALLS.
   - 1.4. METAL VENTILATING AND CONDITIONED AIR DUCTS LOCATED IN SOUND RATED ASSEMBLIES SHALL BE LINED (EXCEPTION: DUCTS SERVING ONLY EXIT WAYS, KITCHEN COOKING FACILITIES, AND BATHROOMS NEED NOT BE LINED).
   - 1.5. MINERAL FIBER INSULATION SHALL BE INSTALLED IN JOIST SPACES WHENEVER A PLUMBING, PIPING, OR DUCT PENETRATES A FLOOR - CEILING ASSEMBLY OR WHERE SUCH UNIT PASSES THROUGH THE PLANE OF THE FLOOR - CEILING ASSEMBLY FROM WITHIN A WALL. THE INSULATION SHALL BE INSTALLED TO A POINT 12" BEYOND THE PIPE OR DUCT. THIS REQUIREMENT IS NOT APPLICABLE TO FIRE SPRINKLER PIPE, GAS LINE OR ELECTRICAL CONDUIT.
   - 1.6. ELECTRICAL OUTLET BOXES IN OPPOSITE FACES OF SEPARATION WALLS SHALL BE SEPARATED HORIZONTALLY BY 24" AND NOTE THAT BACK AND SIDES OF BOXES SHALL BE SEALED WITH 1/8" RESILIENT SEALANT AND BACKED BY A MINIMUM OF 2" THICK MINERAL FIBER INSULATION.
   - 1.7. NO WALL FURNACE SHALL BE INSTALLED IN SOUND RATED PARTITIONS.
   - 1.8. NO ELECTRICAL PANEL SHALL BE INSTALLED IN SOUND RATED PARTITIONS.

HOISTS AND WIRING CONNECTIVITY TO BE CONTRACTOR FURNISHED - CONTRACTOR INSTALLED (CFCI).

REFERENCE NOTES

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RECONNECT EXISTING BRANCH CIRCUIT WIRING TO NEW PANEL "STGB". EXTEND WIRING AS REQUIRED TO RECONNECT ALL EXISTING CIRCUITS. IDENTIFY ALL EXISTING ELECTRICAL LOADS AND UPDATE PANEL DIRECTORY CARDS ACCORDINGLY. LABEL ALL UNUSED BRANCH BREAKERS AS "SPARE".

(3) REPLACE EXISTING AV CRESTRON CABINET WITH NEW (2) AV ENCLOSURE CABINET (APC # AR3157B2, OR EQUAL) WITH CABLE MANAGEMENT.
COORDINATE WITH THE AV CONSULTANT (VIZUAL SYMPHONY) AND DISTRICT IT PRIOR TO INSTALLATION
SALVAGE AND RECONNECT ALL EXISTING AV/DATA EQUIPMENTS/CABLES TO NEW AV RACK. PROVIDE DEDICATED ELECTRICAL CIRCUITS WITH QUAD-DUPLEX IN SIDE CABINET.
PROVIDE NEW EQUIPMENT INCLUDE THE FOLLOWING COMPONENTS:
1. CONTROL FOR TROLLEY SYSTEM, THEATRICAL LIGHTING, CURTAIN/DRAPES.
2. (1) VIDEO WALL PROCESSOR
3. (1) CONTROL INTERFACE, CONNECT TO EXISTING CRESTRON CONTROL.
SEISMIC BRACING: BOTTOM SEISMIC BRACES COMPLIANT WITH CALIFORNIA SEISMIC STANDARDS.

(4) PROVIDE CONTROL SWITCHES FOR AV (VIDEO WALL), TROLLEY SYSTEM, THEATRICAL LIGHTING, AND CURTAIN/DRAPES. FIELD COORDINATE THE EXACT LOCATION OF CONTROL SWITCHES. PROVIDE CONDUIT AND WIRING IN ACCORDANCE WITH THE MANUFACTURER'S CONTROL WIRING DIAGRAMS AND REQUIREMENTS. COORDINATE WITH AV CONSULTANT (VIZUAL SYMPHONY).

(5A) 2-CHANNEL SWITCH, WITH INDICATOR LIGHT. (1)SWITCH CONTROLLING ALL OUTLETS AT DRESSING STATIONS (VIA PLUG LOAD RELAYS) ABOVE DRESSING ROOM COUNTER, AND (1)SWITCH CONTROLLING STATION LIGHTING (TYPE "W1"), PER NEC 520.73&74
PROVIDE CAT6 CABLE CONNECTIONS BETWEEN ALL nLIGHT LIGHTING CONTROL DEVICES OCCUPANCY SENSOR, SWITCHES, AND LIGHTING RELAYS.

(5B) SAME AS REF. NOTE (5A), WITH ONLY INDICATOR LAMPS (LOCKED OUT SWITCH CONTROLS), PER NEC 520.73&74

(6A) PROVIDE NEW MOTORIZE CURTAIN TRACK (H&H 401S HEAVYDUTY CURTAIN TRACK -H&H 462 CURTAIN MACHINE, OFCI), FIELD VERIFY OUTLET AND SWITCH LOCATION. PROVIDE CONDUIT AND WIRING IN ACCORDANCE WITH THE MANUFACTURER'S CONTROL WIRING DIAGRAMS AND REQUIREMENTS.

(6B) PROVIDE NEW TRACK MOTOR FOR MID-STAGE MAIN DRAPE TRACK (OFCI), FIELD VERIFY TRACK MOTOR POWER CONNECTION AND REMOTE PUSH BUTTON STATION LOCATION. PROVIDE CONDUIT AND WIRING IN ACCORDANCE WITH THE MANUFACTURER'S CONTROL WIRING DIAGRAMS AND REQUIREMENTS.

(7A) PROVIDE NEW PRODIGY 2 GENERAL PURPOSE HOIST (CFCI) - CEILING MOUNTED POWERHEAD - STAGE LIGHTING HUNG 1.5" DIA. SCHED. 40 PIPE
QUICKTOUCH PRESET RIGGING CONTROL, FIXED SPEED REMOTE AND REMOTE E-STOP STATION.
NEW STAGE LIGHTING (OFCI). PROVIDE 208V 3Ø, FIELD VERIFY OUTLET AND SWITCH LOCATION. PROVIDE CONDUIT AND WIRING WITH CABLE MANAGEMENT PER EACH SECTION IN ACCORDANCE WITH THE MANUFACTURER'S CONTROL WIRING DIAGRAMS AND REQUIREMENTS. COORDINATE WITH THE AV CONSULTANT (VIZUAL SYMPHONY) AND DISTRICT IT PRIOR TO INSTALLATION

(7B) PRODIGY FLYPIPE MOTORIZED SELF CLIMBING HOIST (CFCI), LIGHT BAR AND LIGHTS SUPPORTED FROM CEILING STRUCTURE IN ATTIC, PIPE LENGTH 20'-0" (ABOVE SEATING AREA)
QUICKTOUCH+ Mk2 CONTROL, FIXED SPEED REMOTE AND REMOTE E-STOP STATION.
NEW STAGE LIGHTING (OFCI), PROVIDE 208V 3Ø, FIELD VERIFY QUICKTOUCH CONTROLLER LOCATION.
PROVIDE CONDUIT AND WIRING WITH CABLE MANAGEMENT IN ACCORDANCE WITH THE MANUFACTURER'S CONTROL WIRING DIAGRAMS AND REQUIREMENTS.
COORDINATE WITH THE AV CONSULTANT (VIZUAL SYMPHONY) AND DISTRICT IT PRIOR TO INSTALLATION

(8) RIGGING TROLLEY SYSTEM (CFCI) WITH PRIME VIEW ROLL-DOWN DIGITAL WALL (OFOI):
1. RIGGING TROLLEY MOTORS, (RAILSTAR OR EQUAL TROLLEY MOTORS, (CFCI))
   - 1.1. PROVIDE RIGGING TROLLEY MOTORS, (RAILSTAR OR EQUAL TROLLEY MOTORS), (2) MOTORS 1/3 HP
   - 1.2. PROVIDE (2) NEW 6 x 12.5" I-BEAM RAILS FOR RAILSTAR MOTOR DRIVEN TROLLEY.
   - 1.3. PROVIDE 120V 1Ø, WITH SJOOW CORD, 120V 3C (HV-08), JACKET YELLOW. RUN CABLE THRU FESTOON SYSTEM FROM PULL BOX AT BACK WALL.
   - 1.4. FIELD VERIFY CONTROLLER LOCATION.
2. VAHLE FESTOON SYSTEM (CFCI), CABLE CARRIERS FOR ROUND CABLE ON I-BEAM TRACKS
   - 2.1. PROVIDE FESTOON SYSTEM CABLE CARRIERS FOR ROUND CABLE ON I-BEAM TRACKS
     - 2.1.1. (2) CABLE CARRIER (2 WHEELS), W25/R65K (CARRYING CAPACITY 10KG)
     - 2.1.2. LEAD CARRIER AND TRACK CLAMP, E 25-30 R
   - 2.2. RUN ALL POWER AND DATA CABLES LENGTH 25 FEET THRU FESTOON SYSTEM (3 LOOPS) FROM PULL BOX AT BACK WALL.
     - 2.2.1. MAX TRAVEL DISTANCE 16 FEET.
     - 2.2.2. MAX CABLE LOOP DEPTH 3 FEET
     - 2.2.3. OPEN SPACE 1 FEET (MIN ONE CARRIER LENGHT)
     - 2.2.4. STORAGE DISTANCE 4 FEET
3. PRIME VIEW ROLL-DOWN DIGITAL WALL (OFOI) - (157.5"H X 275.59W, 1279 LBS), SEE PRIMEVIEW DRAWINGS REVISED NOTE (COORDINATE WITH THE AV CONSULTANT (VIZUAL SYMPHONY) AND DISTRICT IT BEFORE INSTALLATION)
   - 3.1. PROVIDE POWER FOR LED ROLL SCREEN, (7) 208V 20A DEDICATED CIRCUIT SJOOW CORD, 208V 4C (HV-01), JACKET YELLOW (CONDUCTOR COLORS BLACK/WHITE/RED/GREEN, DO NOT USE NEUTRAL (WHITE) CABLE FOR 208V USE BLACK/RED+GND (GREEN) FOR 208V CONNECTION.) RUN CABLE THRU FESTOON SYSTEM FROM PULL BOX AT BACK WALL TO POWER SUPPLY ON TRUSS, WITH (7) 4"X4" 208V ELECTRICAL BOXES AND OUTLETS (NEMA 6-20).
   - 3.2. PROVIDE POWER FOR MOTOR LED ROLL SCREEN CONTROL BOX, (1) 120V 20A DEDICATED CIRCUIT SJOOW CORD, 120V 3C (HV-08), JACKET YELLOW. RUN CABLE THRU FESTOON SYSTEM FROM PULL BOX AT BACK WALL TO POWER SUPPLY ON TRUSS, WITH (1) 4"X4" 120V ELECTRICAL BOXES AND OUTLETS (NEMA 5-20).
   - 3.3. PROVIDE (18) CAT6 UTP SHIELDED, PLENUM-RATED GREEN CABLES WITH DURAWRAP (TECHFLEX OR EQUAL) ((25') EXTRA SLACK CAT6 LEFT AT VIDEO WALL LOCATION). RUN CABLE THRU FESTOON SYSTEM FROM PULL BOX AT BACK WALL TO EXISTING AV RACK. TERMINATE ON KEYSTONE JACKS AT THE BACK WALL. USE THE CUSTOM WHIP AS PATCH CORDS.
   - 3.4. ALL OUTPUT CABLES FROM POWER SUPPLY TO SCREEN BY SCREEN VENDOR/CONTRACTOR.
4. DMX SCRIM ROLL DRUM (WAHLBERG-249, CFCI)
   - 4.1. PROVIDE POWER FOR DMX SCRIM ROLL DRUM, 208V 20A DEDICATED CIRCUIT SJOOW CORD, 208V 4C (HV-01), JACKET YELLOW (CONDUCTOR COLORS BLACK/WHITE/RED/GREEN, DO NOT USE NEUTRAL (WHITE) CABLE FOR 208V USE BLACK/RED+GND (GREEN) FOR 208V CONNECTION.) RUN CABLE THRU FESTOON SYSTEM FROM PULL BOX AT BACK WALL TO POWER SUPPLY ON TRUSS, WITH A NEUTRIK POWERCON TRUE1 NAC3FX-W(-TOP) CABLE CONNECTOR FOR AC MAINS POWER INPUT.
   - 3.2. PROVIDE A DMX 512 DATA LINK TO CONTROL THE ROLL DOWN VIA DMX. (THE ROLL DOWN HAS 5-PIN XLR CONNECTORS FOR DMX DATA INPUT AND OUTPUT). USE SHIELDED TWISTED-PAIR CABLE DESIGNED FOR RS-485 DEVICES (DO NOT SPLIT A DMX LINE WITHOUT USING AN OPTO-ISOLATED RS-485 SPLITTER/AMPLIFIER). RUN CABLE THRU FESTOON SYSTEM FROM PULL BOX AT BACK WALL TO POWER SUPPLY ON TRUSS. CONNECT THE DMX DATA OUTPUT FROM THE DMX CONTROLLER TO THE MALE 5-PIN XLR DMX INPUT CONNECTOR (DMX 512 IN)

(9) PROVIDE POWER DISTRIBUTION:
(2) SOUTHWIRE #3GUKT POWER DISTRIBUTION CARTS (ONE ON EACH SIDE) - 120/208V AC, 100A, DIRECT WIRED, 4 POLES, 5 WIRES, 3-PHASE, NEMA 3R (CORD LENGTH 20 FEET)
(OUTLET (10) 20A @ 125V GFCI; (2) 30A @ 250V NON-GFCI)
PROVIDE PULL BOX 12"x12"x6" (FIELD VERIFY LOCATION) TO CONNECT POWER DISTRIBUTION CART'S CORD, EXTEND CONDUIT AND WIRING AS REQUIRED TO PULL BOX.
(4) SOUTHWIRE #4MZX6 POWER DISTRIBUTION BOXES ((2) ON EACH SIDE) - 120/240V AC, 30A, L14-30P, (4) 5-20R GFCI, 3 POLES, 4 WIRES

(10A) NEW 65" TV MONITORS (OFCI), +72"AFF.
PROVIDE NEW RJ-45 JACK WITH 1"C CAT6 (GREEN COLOR) TO AV RACK AT STAGE, COORDINATE WITH AV CONTRACTOR TO PROVIDED PATHWAY, TERMINATED ON RJ-45 JACK AT THE FACEPLATE, AND ON RJ-45 PATCH PANELS IN THE AV RACK AT STAGE.
PROVIDE ELECTRICAL POWER WITH EXTENSION RING AT EXISTING RECEPTACLE AS REQUIRED. EXTEND POWER WIRING 2#12+1#12GND (THHN/THWN CU) FROM EXISTING RECEPTACLE TO NEW RECEPTACLE, AS SHOWN.

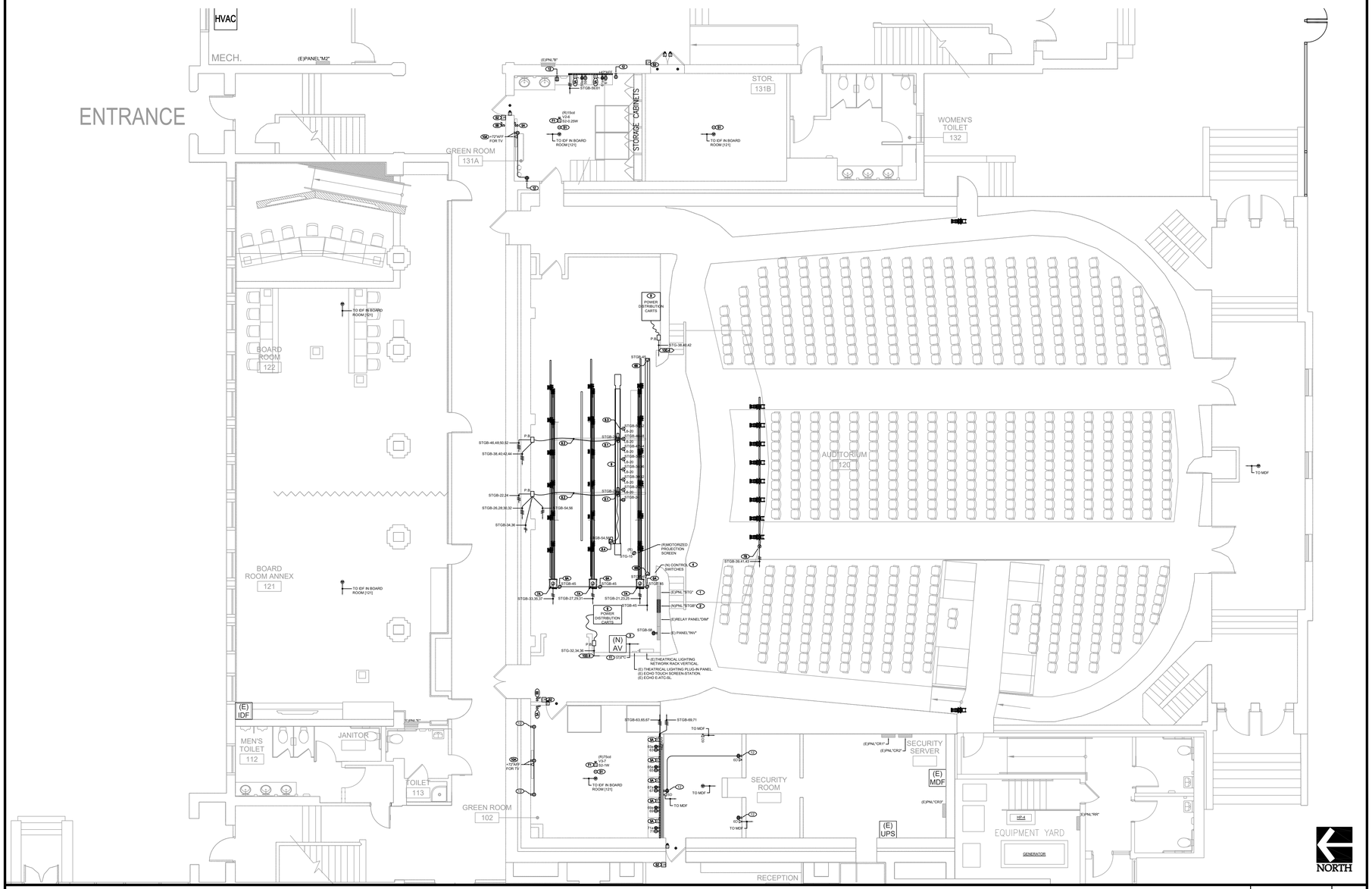
(11) PROVIDE THE FOLLOWING CABLING BETWEEN THE EXISTING AV CABINET ON THE STAGE AND THE CONTROL ROOM, TERMINATING EACH END AT THE EXISTING AV CABINETS WITH NEW (1) RU FIBER PATCH PANEL WITH LC FIBER CONNECTORS:
- (1) 12-STRAND SINGLE-MODE (OS2) INDOOR/OUTDOOR RISER FIBER OPTIC CABLE.
- (1) 12-STRAND MULTI-MODE (OM4) INDOOR/OUTDOOR RISER FIBER OPTIC CABLE.
FIELD COORDINATE ROUTING AND SUPPORT FOR CONDUIT.

(12) PROVIDE NEW QUAD RECEPTACLE AND RECONNECT EXISTING BRANCH CIRCUIT WIRING. EXTEND CONDUIT & WIRING AS REQUIRED. PROVIDE NEW DECORA STYLE OUTLET WITH STAINLESS STEEL COVER PLATE.

(F1) RELOCATED EXISTING FIRE ALARM SYSTEM DEVICES TO NEW LOCATION AND RECONNECT AS INDICATED. EXTEND CONDUIT & WIRING AS REQUIRED.

(S1) PROVIDE MOTION DETECTOR (BOSH DS9370, CEILING MOUNT (360 MOTION)) SECURITY CABLE TO EXISTING SECURITY PANEL AT SECURITY ROOM (COORDINATE EXACT LOCATION WITH ITS). REFER TO INTRUSION ALARM SYSTEM SPECIFICATION SECTION 28 30 00.

(S2) PROVIDE J-BOX AND 1"C.O. WITH PULL STRING FROM DOOR TO TERMINATE AT SERVER ROOM. (FOR FUTURE ACCESS CONTROL/CARD READER)



ELECTRICAL FIRST FLOOR PLAN

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

ELECTRICAL FIRST FLOOR PLAN

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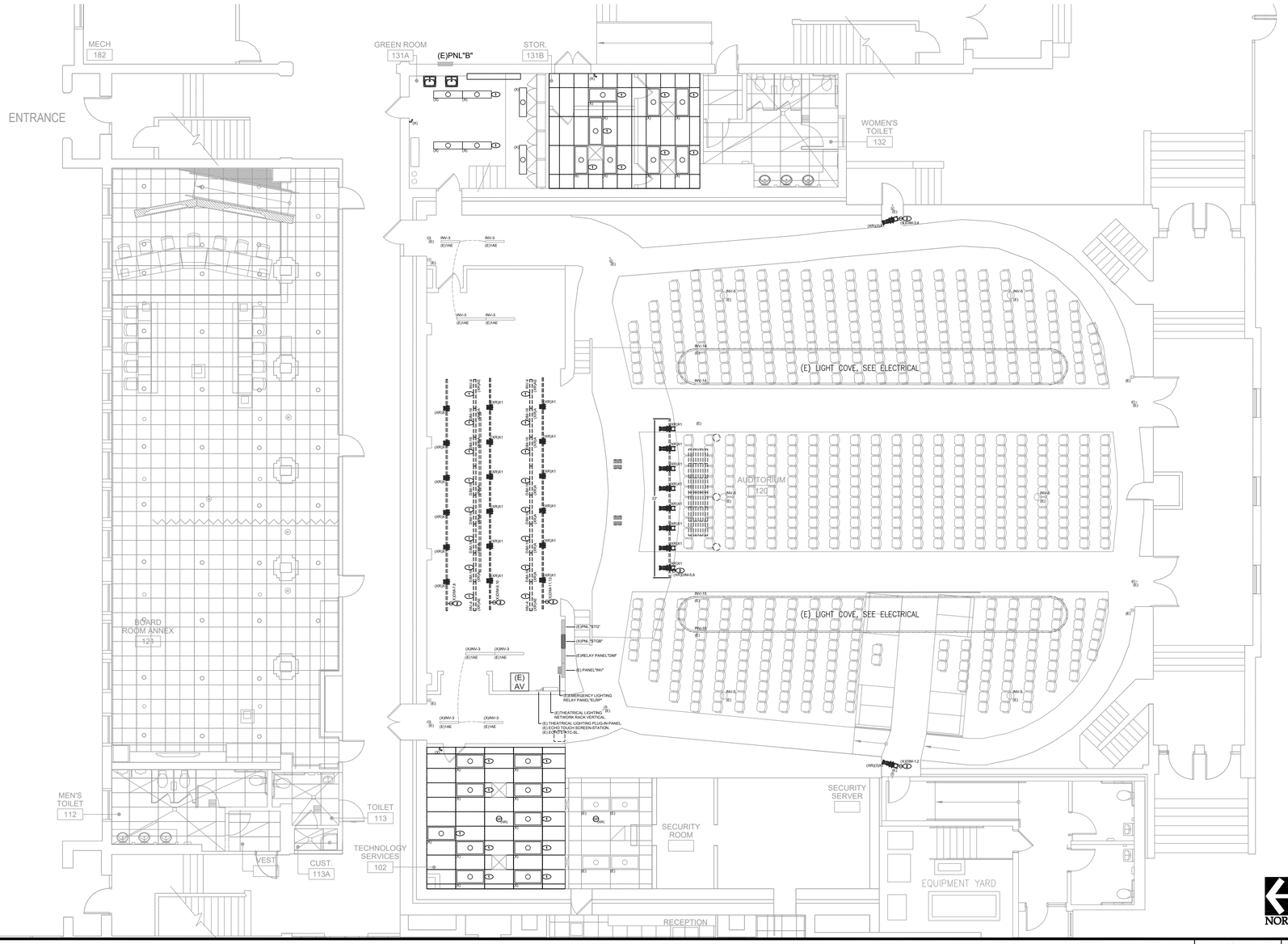
E121



REFERENCE NOTES

1. DISCONNECT AND REMOVE EXISTING LIGHT FIXTURE AND CEILING MOUNTED DEVICES. SALVAGE EXISTING LIGHTING CIRCUIT FOR CONNECTION TO NEW LIGHTS AND CONTROLS SHOWN ON SHEET E221.

2. DISCONNECT AND REMOVE EXISTING THEATRICAL LIGHTING FIXTURE. SALVAGE EXISTING THEATRICAL LIGHTING CIRCUIT (DEDICATED HOT AND NEUTRAL FROM DIMMING PANEL TO EACH L5-20 OUTLET (TOTAL (2) OUTLETS PER SECTION) AND SALVAGE EXISTING THEATRICAL LIGHTING COLORSOURCE RELAY WITH WIRELESS RECEIVER FOR CONNECTION TO NEW LIGHTS AND CONTROLS SHOWN ON SHEET E221.
   1. AFTER REMOVAL, CAREFULLY WRAP AND PROTECT ALL THEATRICAL LIGHTING FIXTURES TO PREVENT DAMAGE DURING THE CONSTRUCTION PROJECT. ENSURE THAT ALL FIXTURES ARE INDIVIDUALLY WRAPPED IN APPROPRIATE CUSHIONING MATERIALS, SUCH AS BUBBLE WRAP OR FOAM PADDING.
   2. ONCE WRAPPED, SECURELY PACKAGE THE FIXTURES IN STURDY BOXES OR CRATES TO PROTECT THEM DURING TRANSPORTATION AND STORAGE. LABEL EACH PACKAGE CLEARLY WITH THE FIXTURE TYPE, MODEL NUMBER, AND ANY SPECIAL HANDLING INSTRUCTIONS.
   3. STORE THE PACKAGED FIXTURES IN A CLEAN, DRY LOCATION AWAY FROM CONSTRUCTION ACTIVITY.
   4. UPON COMPLETION OF THE CONSTRUCTION PROJECT, REINSTALL THE FIXTURES IN THEIR ORIGINAL LOCATIONS, FOLLOWING THE MANUFACTURER'S INSTRUCTIONS AND ENSURING PROPER ELECTRICAL CONNECTIONS.

ELECTRICAL DEMO FIRST FLOOR LIGHTING PLAN

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

ELECTRICAL DEMO FIRST FLOOR LIGHTING PLAN

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E211

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	MANUFACTURER	FURNISHED /INSTALLED	MODEL	DESCRIPTION	MOUNTING	LAMP TYPE	WATT	VOLTAGE
A	LITHONIA	CFCI	CLX-L48-5000LM-SEF-FDL-120-GZ10-35K-80CRI -EPNKO-CS6G16STOWD5D-WH-SQ48	4' LED FIXTURE WITH LENS 0-10V DIMMING	PENDANT STEM KIT	LED 3500K	34.8	120V
AE	LITHONIA	CFCI	CLX-L48-5000LM-SEF-FDL-120-GZ10-35K-80CRI -EPNKO-CS6G16STOWDSD-WH-SQ48	4' LED FIXTURE WITH LENS 0-10V DIMMING CONNECTED TO EMERGENCY CIRCUIT FROM INVERTER	PENDANT STEM KIT	LED 3500K	35.4	120V
F1	ECOLOCITY	CFCI	RL-DX-RSC6-RGBTW-5M LC-SR-DM05-FF PS-MW-600-W-24 STICK-CW4 w/POWER4M EXAKLWP-1A-2M EX-KL1-CLIP-1 EXAKLWP-CLP-1 LA-EL-DMX-CBL LA-EL-DMX-CBL1	LED STRIP LIGHT WITH RGB + TUNABLE WHITE FLICKER FREE 5 CHANNEL ADJUSTABLE LED DMX DECODER (8A/CHANNEL) 600 WATT 24 VDC OUTDOOR POWER SUPPLY STICK CW4 DMX WALL CONTROL WITH POWER4M ADAPTER - BLACK 2M LED CHANNEL SYSTEM INCLUDING BASE AND FROSTED COVER-2M METAL MOUNTING BRACKET FOR CHANNEL SYSTEM END CAPS FOR CHANNEL SYSTEM 3-PIN MALE XLR TO RJ45 ADAPTER 3-PIN FEMALE XLR TO RJ45 ADAPTER	SURFACE	LED 4000K	6W/FT	MVOLT
F2	LITHONIA (OR EQUAL BY METALUX WILLIAMS)	CFCI	2VTL4-40L-ADP-MVOLT-EZ1-LP840	RECESSED 2X2 LED TROFFER eldoLED dims to 1%, 0-10V	RECESSED	LED 4000K	33.2	MVOLT
F2E	LITHONIA (OR EQUAL BY METALUX WILLIAMS)	CFCI	2VTL4-40L-ADP-MVOLT-EZ1-LP840-N100-E10WLCP	RECESSED 2X2 LED TROFFER eldoLED dims to 1%, 0-10V. EM Self-Diagnostic battery pack, 10W Constant Power, CEC compliant	RECESSED	LED 4000K	34.2	MVOLT
F3	LITHONIA	CFCI	BLTX4-40L-ADP-EZ1-LP840	SURFACE MOUNT 1X4 LED	SURFACE	LED 4000K	34	MVOLT
W1	KRUGG	CFCI	ICON 2436 Wall Mirror	Wall Mirror Dimmable LED task lighting Integrated touch sensor control with memory Energy efficient LED lighing 5000K 3720 Lumens, CRI 90+, Integrated Defogger	WALL	LED 5000K	50.6	120V

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	MANUFACTURER	FURNISHED /INSTALLED	MODEL	DESCRIPTION	MOUNTING	LAMP TYPE	WATT	VOLTAGE
X1	ETC ColorSource™ Spot	OFOI	CSSPOTS Power Input Cables : DPA-C Power Thru Jumpers : DPJ-5 Diffusers : S4LED-SFD Fixed Beam Lenses : 419EDLT	ColorSource Spot with shutter barrel, black 5ft PowerCon to grounded 20A twistlock connector 5ft PowerCon-to-PowerCon fixture-to-fixture jumper Source Four LED - Soft Focus Diffuser (included) 19° EDLT w/lens installed	LIGHT BAR	LED	147	120V
X2	ETC Lonestar	OFCI	LS-UB-MI-2550A1200-B RC-LS-2550K1001	Lonestar, Black, Ultra-Bright in Molded Insert, Boxed Road Case, Holds Up to Three (3) Lonestar Fixtures in Molded Insert	LIGHT BAR WALL	LED	290	120V
X3	CANTO	OFOI	CANTO ASTRO 600	Follow Spot Fixture	LIGHT BAR	LED	630	120V

LIGHTING FIXTURE NOTES:
PROVIDE ALL REQUIRED HARDWARE, CABLES. ETC., FOR A FULLY FUNCTIONAL INSTALLATION
REFER TO ARCHITECTURAL & LIGHTING PLANS AND SPECIFICATIONS FOR EXACT REQUIREMENTS, LOCATION & INSTALLATION

GENERAL NOTES

1. PROVIDE ACOUSTICAL SOUND MASKING PADS, LOWRY OR EQUAL, FOR ALL OUTLETS INSTALLED AT AUDITORIUM.
   1.1. ALL PENETRATIONS INTO SOUND-RATED PARTITIONS OR FLOOR-CEILING ASSEMBLIES SHALL BE SEALED, LINED, OR INSULATED WITH AN APPROVED PERMANENT RESILIENT SEALANT.
   1.2. ALL RIGID CONDUITS, DUCTS, PLUMBING PIPES, AND APPLIANCE VENTS LOCATED IN SOUND-RATED ASSEMBLIES SHALL BE ISOLATED FROM THE BUILDING CONSTRUCTION BY MEANS OF RESILIENT SLEEVES, MOUNTS, OR A MINIMUM 1/4" THICK APPROVED RESILIENT MATERIAL.
   1.3. AN APPROVED PERMANENT AND RESILIENT ACOUSTICAL SEALANT SHALL BE PROVIDED ALONG THE JOINT BETWEEN THE FLOOR AND THE SEPARATION WALLS.
   1.4. ELECTRICAL OUTLET BOXES IN OPPOSITE FACES OF SEPARATION WALLS SHALL BE SEPARATED HORIZONTALLY BY 24" AND NOTE THAT BACK AND SIDES OF BOXES SHALL BE SEALED WITH 1/8" RESILIENT SEALANT AND BACKED BY A MINIMUM OF 2" THICK MINERAL FIBER INSULATION.

REFERENCE NOTES

(1) PROVIDE UNSWITCHED (HOT) CIRCUIT CONNECTION TO INTEGRAL BATTERY OF EMERGENCY LIGHT FIXTURE.

(2) RECONNECT EXISTING LIGHT FIXTURE WITH SALVAGE EXISTING LIGHTING CIRCUIT AT THE LOCATIONS ON NEW CEILING AS SHOWN. EXTEND CONDUIT AND WIRING AS REQUIRED. FIELD VERIFY EXISTING CIRCUIT DESIGNATION.

(3) RECONNECT EXISTING DEVICES AND REINSTALL AT THE LOCATIONS ON NEW CEILING AS SHOWN. U.O.N. EXTEND CONDUIT AND WIRING AS REQUIRED. SALVAGE WIRING FOR REUSE.

(4) RECONNECT SALVAGE EXISTING LIGHTING CIRCUIT (DEDICATED HOT AND NEUTRAL FROM DIMMING PANEL TO EACH L5-20 OUTLET (TOTAL (2) OUTLETS PER SECTION) AND SALVAGE EXISTING THEATRICAL LIGHTING COLORSOURCE RELAY WITH WIRELESS RECEIVER FOR CONNECTION TO NEW LIGHTS AND CONTROLS. PROVIDE CONDUIT AND WIRING WITH CABLE MANAGEMENT PER EACH SECTION IN ACCORDANCE WITH THE MANUFACTURER'S CONTROL WIRING DIAGRAMS AND REQUIREMENTS.
COORDINATE WITH THE AV CONSULTANT (VIZUAL SYMPHONY) AND DISTRICT IT PRIOR TO INSTALLATION

(5) RECONNECT EXISTING CIRCUITS TO BE RUN VIA EXISTING EMERGENCY LIGHTING RELAY PANEL, UNISON FOUNDRY MINI PANEL #UFMP.

(6A) LIGHTING INSTALLATION - COLUMNS
- TYPE F1- INSTALL 16' LED STRIP (WITH ACCESSORIES AS CALLED FOR IN FIXTURE SCHEDULE), AT 4 LOCATIONS, AND CONNECT TO DMX CONTROLS

(6B) PROVIDE 18"x18"x4" NEMA-1 ENCLOSURE(HOFFMAN OR EQUAL), TO HOUSE POWER SUPPLY AND DMX DECODER (SPECIFIED IN FIXTURE SCHEDULE-TYPE F1). PROVIDE REQUIRED CONNECTIONS TO LIGHT FIXTURES, AND DMX CONTROL.

(7) PROVIDE SEPARATE CONTROL FOR HOUSE LIGHT FIXTURES STAGE LEFT AND RIGHT, 4-CHANNELS (INV-3a,3b,3c,3d). HOUSE LIGHTS SHOULD BE INDEPENDENTLY CONTROLLED. DISCONNECT EXISTING CIRCUIT (INV-3) FROM (E)ELRP REALY PANEL & HOUSE LIGHT FIXTURES AS INDICATED. ADD NEW 8-RELAY PANEL, ETC #ELRP FOUNDRY UFMP8, AND PROVIDE NEW (4)SWITCH LEGS TO NEW RELAYS IN NEW PANEL. PROVIDE (1)ADDITIONAL 4-BUTTON ECHO SWITCH ADJACENT TO (E)4-CHANNEL SWITCH ((4) LOCATIONS), AND CONNECT IN TO (E)ETCNet CONTROLS. REPROGRAM EXISTING LIGHTING CONTROL PANEL AND SWITCH. ADD ADDITIONAL CONTROLS AS NECESSARY.

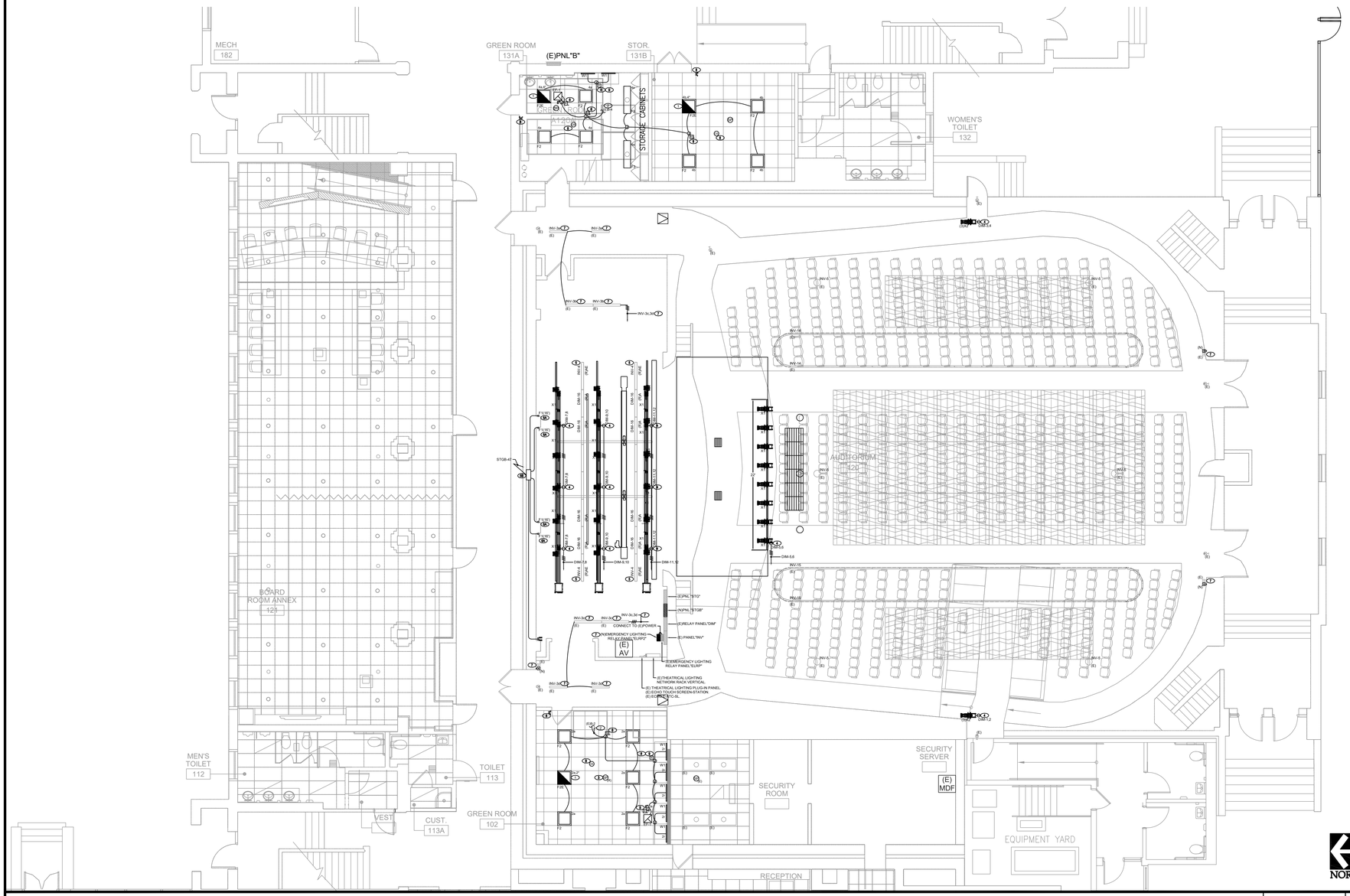
(8) PROVIDE CAT6 CABLE CONNECTIONS BETWEEN ALL NLIGHT LIGHTING CONTROL DEVICES OCCUPANCY SENSOR, DIMMER SWITCHES, AND LIGHTING RELAYS. PROVIDE 0-10V WIRING FROM DIMMING RELAYS TO CONTROLLED LIGHT FIXTURES. ALL CAT6 CABLES FOR LIGHTING SYSTEMS SHALL BE A YELLOW JACKET. REFER TO THE DISTRICT'S STANDARDS AND SPECIFICATIONS, DIVISION 27, FOR FURTHER DETAILS.

(9) RELAY FOR ILLUMINATED MIRRORS TO BE ACTIVATED BY OCCUPANCY SENSOR ONLY (NO WALL SWITCH). MIRRORS HAVE INTEGRATED CONTROLS FOR DIMMING.

HOISTS AND WIRING CONNECTIVITY TO BE CONTRACTOR FURNISHED - CONTRACTOR INSTALLED (CFCI).

LIGHTING FIXTURE SCHEDULE

SCALE N.T.S. | 2



ELECTRICAL FIRST FLOOR LIGHTING PLAN

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

ELECTRICAL FIRST FLOOR LIGHTING PLAN

POMONA UNIFIED SCHOOL DISTRICT
WWW.PUSD.ORG

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POMONA OFFICE OF EDUCATION
EDUCATION CENTER AUDITORIUM MODERNIZATION
POMONA UNIFIED SCHOOL DISTRICT
800 S GAREY AVENUE POMONA, CA 91766

April 25, 2025

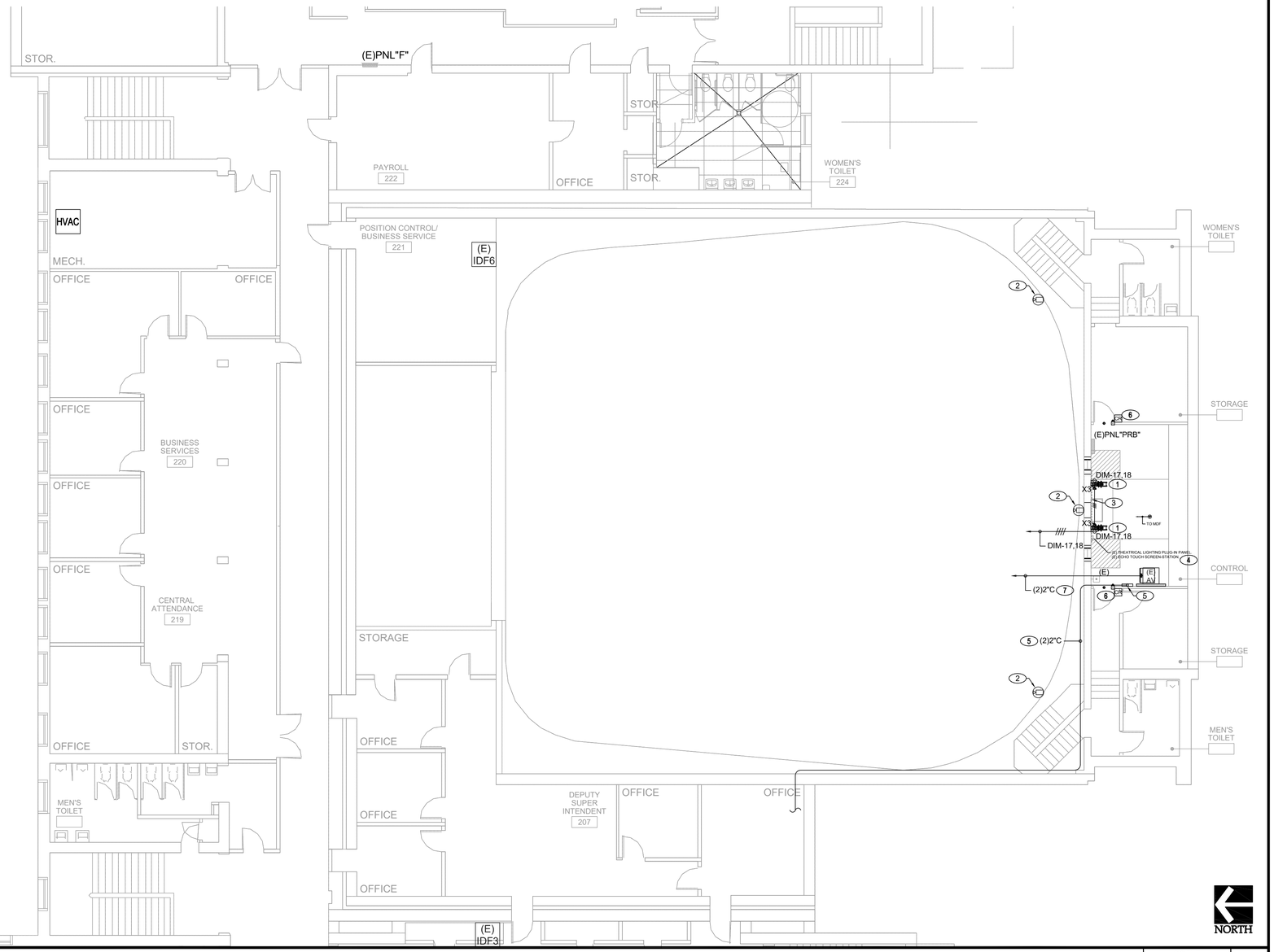
E221

GENERAL NOTES

1. PROVIDE ACOUSTICAL SOUND MASKING PADS, LOWRY OR EQUAL, FOR ALL OUTLETS INSTALLED AT AUDITORIUM.
   1.1. ALL PENETRATIONS INTO SOUND-RATED PARTITIONS OR FLOOR-CEILING ASSEMBLIES SHALL BE SEALED, LINED, OR INSULATED WITH AN APPROVED PERMANENT RESILIENT SEALANT.
   1.2. ALL RIGID CONDUITS, DUCTS, PLUMBING PIPES, AND APPLIANCE VENTS LOCATED IN SOUND-RATED ASSEMBLIES SHALL BE ISOLATED FROM THE BUILDING CONSTRUCTION BY MEANS OF RESILIENT SLEEVES, MOUNTS, OR A MINIMUM 1/4" THICK APPROVED RESILIENT MATERIAL.
   1.3. AN APPROVED PERMANENT AND RESILIENT ACOUSTICAL SEALANT SHALL BE PROVIDED ALONG THE JOINT BETWEEN THE FLOOR AND THE SEPARATION WALLS.
   1.4. ELECTRICAL OUTLET BOXES IN OPPOSITE FACES OF SEPARATION WALLS SHALL BE SEPARATED HORIZONTALLY BY 24" AND NOTE THAT BACK AND SIDES OF BOXES SHALL BE SEALED WITH 1/8" RESILIENT SEALANT AND BACKED BY A MINIMUM OF 2" THICK MINERAL FIBER INSULATION.

REFERENCE NOTES

1. PROVIDE (2) CANTO ASTRO 600 AT BOOTH (630W/EA, 6A 120V, OFCI). PROVIDE 2-LS-20 OUTLET BOXES, WITH HOME RUN TO DIMMING PANEL. PROVIDE DEDICATED HOT AND NEUTRAL TO EACH OUTLET. PROVIDE THEATRICAL LIGHTING COLORSOURCE RELAY WITH WIRELESS RECEIVER.
2. NEW AV CAMERA (OFOI), FIELD VERIFY THE EXACT LOCATION. PROVIDE NEW 1"C (2) CAT6A CABLE (GREEN COLOR) FROM EACH CAMERA TO THE EXISTING AV RACK AT THE STAGE.
3. REMOVE, REINSTALL, AND ADJUST RACEWAYS, CIRCUITS, CONTROLS, ETC., AS NECESSARY TO ACCOMMODATE NEW WORK. PROVIDE IN-COUNTER CONNECTIONS FOR DIMMER AND AUDIO CONTROL PANELS.
4. REPROGRAM (E)ETC CONTROLS, BASED ON ADDITIONAL ADDED EMERGENCY RELAY PANEL "ELRP2", FOR CONTROL OF NEW SWITCH LEGS AT (E)ECHO TOUCH SCREEN. SEE REFERENCE NOTE 7 ON SHEET E221.
5. PROVIDE (2) 2" CONDUIT WITH PULL STRING FOR FUTURE ACCESS CONTROL FROM THE MDF ROOM TO THE CONTROL BOOTH AT MEZZANINE. PROVIDE 18"x18"x4" WALL MOUNTED ACCESS CONTROL PULL BOX. CONTRACTOR SHALL COORDINATE ROUTING OF CONDUIT IN FIELD FROM MDF ROOM TO MATCH EXISTING FIELD CONDITIONS.
6. PROVIDE J-BOX AND 1"C.O. WITH PULL STRING FROM DOOR TO ACCESS CONTROL PULL BOX. (FOR FUTURE ACCESS CONTROL/CARD READER)
7. PROVIDE THE FOLLOWING CABLING BETWEEN THE EXISTING AV CABINET ON THE STAGE AND THE CONTROL ROOM. TERMINATING EACH END AT THE EXISTING AV CABINETS WITH NEW (1) RU FIBER PATCH PANEL WITH LC FIBER CONNECTORS:
   - (1) 12-STRAND SINGLE-MODE (OS2) INDOOR/OUTDOOR RISER FIBER OPTIC CABLE.
   - (1) 12-STRAND MULTI-MODE (OM4) INDOOR/OUTDOOR RISER FIBER OPTIC CABLE.
   FIELD COORDINATE ROUTING AND SUPPORT FOR CONDUIT.



ELECTRICAL SECOND FLOOR LIGHTING PLAN | SCALE 1/8" = 1'-0" | 1

HOISTS AND WIRING CONNECTIVITY TO BE CONTRACTOR FURNISHED - CONTRACTOR INSTALLED (CFCI).

ELECTRICAL SECOND FLOOR LIGHTING PLAN

POMONA UNIFIED SCHOOL DISTRICT
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Exp. 12/31/26
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POMONA OFFICE OF EDUCATION

EDUCATION CENTER AUDITORIUM MODERNIZATION

POMONA UNIFIED SCHOOL DISTRICT
800 S GAREY AVENUE POMONA, CA 91766

April 25, 2025

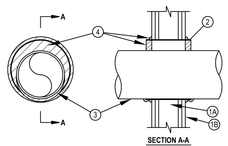
E222

System No. W-L-1465

CLASSIFIED C UL US

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)
F Rating — 1 or 2 Hr (See Item 1)
T Rating — 0 and 1/4 Hr (See Item 1)
L Rating At Ambient — Less Than 1 CFM/Sq Ft
L Rating At 400 F — Less Than 1 CFM/Sq Ft



SECTION A-A

1. WALL ASSEMBLY — THE 1 OR 2 HR FIRE RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS — WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4" LUMBER SPACED MAX 16" OC. STEEL STUDS TO BE MIN 3-1/2" WIDE AND SPACED MAX 24" OC.
   B. GYPSUM BOARD* — THICKNESS, TYPE, NUMBER OF LAYERS AND ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX Ø OF OPENING IS 10"

   THE HOURLY F, FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. THE T, FT, FTH RATINGS ARE 0 AND 1/4 HR FOR 1 AND 2 HR RATED WALL ASSEMBLIES, RESPECTIVELY.
2. STEEL SLEEVE — CYLINDRICAL SLEEVE FABRICATED FROM MIN 0.016" THICK GALV SHEET STEEL AND HAVING A MIN 1" LAP ALONG THE LONGITUDINAL SEAM. SLEEVE INSTALLED BY COILING THE SHEET STEEL TO A Ø SMALLER THAN THE THROUGH OPENING, INSERTING THE COIL THROUGH THE OPENINGS AND RELEASING THE COIL TO LET IT UNCOIL AGAINST THE CIRCULAR CUTOUTS IN THE GYPSUM BOARD LAYERS. THE ENDS OF THE STEEL SLEEVE SHALL BE FLUSH WITH OR EXTEND MAX 1" BEYOND EACH SURFACE OF THE WALL.
3. THROUGH PENETRANTS — ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF SLEEVE SHALL BE MIN 0" (POINT CONTACT) TO MAX 1-7/8". PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
   A. STEEL PIPE — NOM 8" Ø (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE — NOM 8" Ø (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. CONDUIT — NOM 4" Ø (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOM 6" STEEL CONDUIT.
   D. COPPER TUBING — NOM 4" Ø (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   E. COPPER PIPE — NOM 4" Ø (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
4. CONFIGURATION A
   FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 1" THICKNESS OF SEALANT APPLIED WITHIN ANNULUS, FLUSH WITH BOTH ENDS OF SLEEVE. A MIN 1/4" Ø BEAD OF SEALANT TO BE APPLIED AT THE TUBING/SLEEVE INTERFACE AT THE POINT CONTACT LOCATION AND AROUND THE ENTIRE PERIMETER OF THE SLEEVE AT THE SLEEVE/GYPSUM BOARD INTERFACE WHEN THE SLEEVE EXTENDS BEYOND THE WALL SURFACE.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 606 SEALANT, FS ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT
5. CONFIGURATION B
   FIRESTOP SYSTEM — THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING ITEMS:
   A. PACKING MATERIAL — MIN 5/8" THICKNESS OF MIN 4 PCF MINERAL WOOL BAT INSULATION COMPRESSED AND TIGHTLY AND PACKED IN TO EACH END OF THE SLEEVE. PACKING MATERIAL IS TO BE RECESSED FROM EACH END OF THE SLEEVE TO ACCOMMODATE FILL MATERIAL.
   A1. PACKING MATERIAL* - STRIPS — (AS AN ALTERNATE TO CONFIG .B ITEM 4A) - NOM 5/8" WIDE PRECUT MINERAL WOOL STRIPS. THE STRIPS ARE FIRMLY PACKED INTO THE GAP BETWEEN PENETRANT AND THE STEEL SLEEVE ITEM 2 ON BOTH SIDES OF THE WALL. PACKING MATERIAL IS TO BE RECESSED FROM EACH END OF THE SLEEVE TO ACCOMMODATE FILL MATERIAL.

   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 707 SPEED STRIPS
   B. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 1/2" THICKNESS OF SEALANT APPLIED WITHIN ANNULUS, FLUSH WITH BOTH ENDS OF SLEEVE. A MIN 1/4" Ø BEAD OF SEALANT TO BE APPLIED AT THE TUBING/SLEEVE INTERFACE AT THE POINT CONTACT LOCATION AND AROUND THE ENTIRE PERIMETER OF THE SLEEVE AT THE SLEEVE/GYPSUM BOARD INTERFACE WHEN THE SLEEVE EXTENDS BEYOND THE WALL SURFACE.

   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 606 SEALANT OR FS ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT
   * INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

ALL WALL AND FLOOR PENETRATIONS MADE UNDER THIS PROJECT SHALL BE SEALED PER THE APPLICABLE DETAIL. WHETHER THE WALL OR FLOOR IS KNOWN TO BE FIRE RATED OR NOT

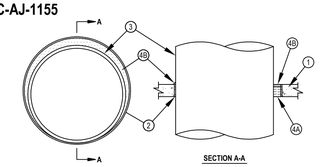
GYPSUM WALL PENETRATION DETAIL — SCALE N.T.S. — 1

System No. C-AJ-1155

CLASSIFIED C UL US

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)
F Rating — 2 and 3 Hr (See Item 3)
T Rating —0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft
L Rating At 400 F — 4 CFM/sq ft
W Rating — Class 1 (See Item 4)



SECTION A-A

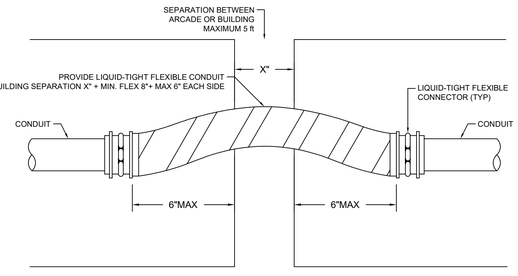
1. FLOOR OR WALL ASSEMBLY — MIN 4-1/2" THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX Ø OF OPENING IS 32".
2. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
3. METALLIC SLEEVE (OPTIONAL) — NOM 32" Ø (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL ASSEMBLY.
4. THROUGH PENETRANTS — ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE ANNULAR SPACE SHALL BE MIN 0" (POINT CONTACT) TO MAX 12". WHEN MAXIMUM ANNULAR SPACE EXCEEDS 2-1/4" THE F RATING IS 2 HR. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:
   A. STEEL PIPE — NOM 20" Ø (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE — NOM 20" Ø (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. CONDUIT — NOM 4" Ø (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOM 6" Ø (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOM 6" Ø (OR SMALLER) STEEL CONDUIT.
   D. COPPER TUBING — NOM 6" Ø (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   E. COPPER PIPE — NOM 6" Ø (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE
5. FIRESTOP SYSTEM — THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   A. PACKING MATERIAL — MIN 4" THICKNESS OF MIN 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP END OF SLEEVE FOR FLOORS OR FROM BOTH ENDS OF SLEEVE FOR WALLS TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
   B. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 1/2" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH THE TOP END OF THE SLEEVE FOR FLOORS, OR WITH BOTH ENDS OF THE SLEEVE FOR WALLS. MIN 1/2" THICK BEAD OF ALL MATERIAL TO BE INSTALLED AROUND PIPE AT INTERFACE OF SLEEVE FOR POINT CONTACT INSTALLATIONS. W RATING APPLIES ONLY WHEN FS-ONE MAX INTUMESCENT SEALANT IS USED. FOR THE W RATING, MAX ANNULAR SPACE IS 1-7/8" AND AN ADDITIONAL FILM OF SEALANT SHALL BE APPLIED OVER THE SLEEVE (WHEN USED) LAPPING AT LEAST 1/2" ONTO TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL.

   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

   *INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

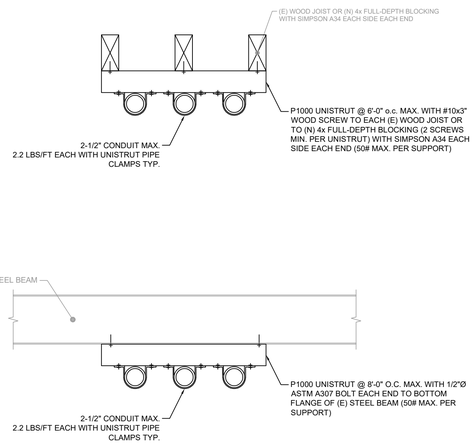
ALL WALL AND FLOOR PENETRATIONS MADE UNDER THIS PROJECT SHALL BE SEALED PER THE APPLICABLE DETAIL. WHETHER THE WALL OR FLOOR IS KNOWN TO BE FIRE RATED OR NOT	HOLES IN WALL AND FLOOR SHALL BE DONE BY CORE DRILLING ONLY. DO NOT DAMAGE REINFORCING STEEL BAR IN WALL. LOCATE BY NON-DESTRUCTIVE MEANS PRIOR TO CORING.

CONCRETE/MASONRY WALL/FLOOR PENETRATION DETAIL — SCALE N.T.S. — 2

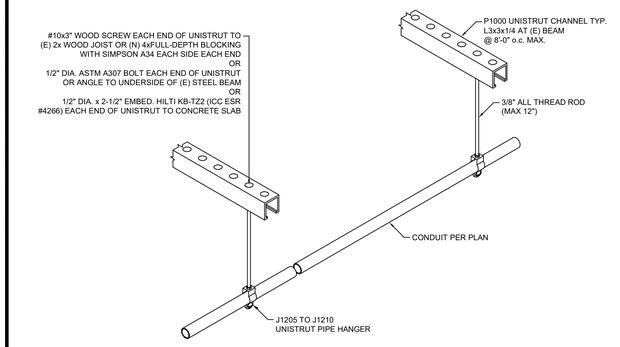


CONDUIT CONNECTION AT BUILDING OR ARCADE SEPARATION
PLAN VIEW. PROVIDE GROUND WIRE WITHIN FLEXIBLE CONDUIT.

CONDUIT CONNECTION AT SEPARATION — SCALE N.T.S. — 3

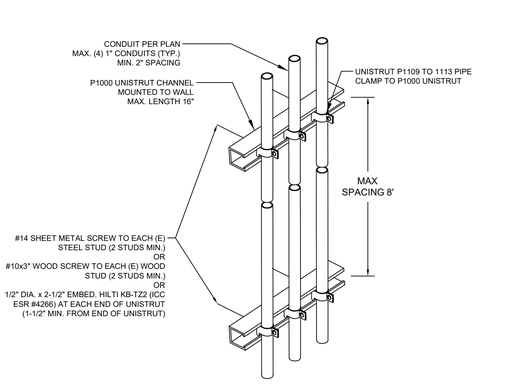


ELECTRICAL CONDUIT SUPPORT DETAILS — SCALE N.T.S. — 4



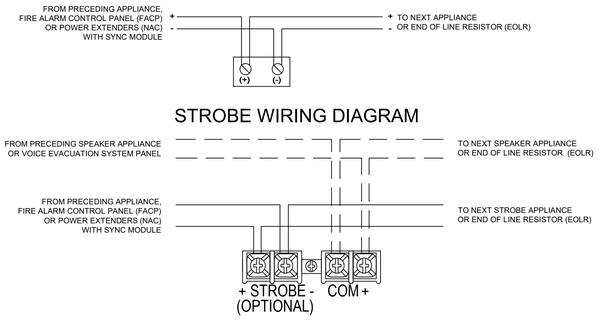
NOTE:
1. TYPICAL FOR CEILING CONDUIT HANGER AT STAGE AND GREENROOM ABOVE T-BAR
2. USE TABLE 358.30, 2022 NEC FOR EMT CONDUIT SECURING AND SUPPORTING
3. THIS SYSTEM IS DESIGNED FOR SINGLE CONDUITS 3/4"C AND 1"C
4. PROVIDE 12" SEPARATION FROM EXISTING ANCHOR(S), IF ANY.

CEILING SINGLE CONDUIT HANGER DETAIL — SCALE N.T.S. — 5

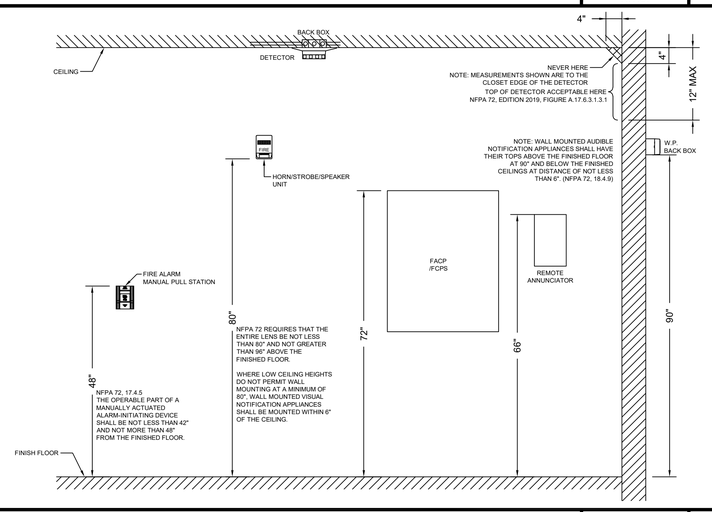


NOTES:
1. USE TABLE 358.30, 2022 NEC FOR EMT CONDUIT SECURING AND SUPPORTING
2. PROVIDE MINIMUM (2) UNISTRUT SUPPORT AT BETWEEN FLOOR TO CEILING.
3. CONDUIT SHALL BE SECURELY FASTENED IN PLACE AT LEAST EVERY 8 FEET, AND 3 FEET OF EACH TERMINATION POINTS (PULL BOX, J-BOX, ETC.).
4. PROVIDE 12" SEPARATION FROM EXISTING ANCHOR(S), IF ANY.
5. SHEET METAL SCREWS SHALL BE SUFFICIENT LENGTH TO PENETRATE STUDS BY 3 THREADS MIN.
6. PROVIDE GALVANIZED OR STAINLESS STEEL FASTENERS AT EXTERIOR LOCATIONS.

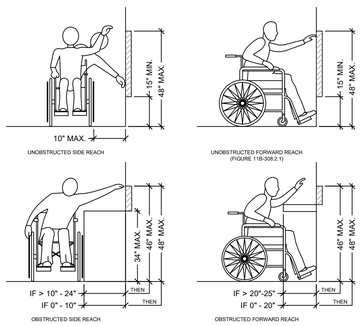
VERTICAL CONDUIT RISER SUPPORT DETAIL — SCALE N.T.S. — 6



SPEAKER/STROBE WIRING DIAGRAM — SCALE N.T.S. — 7



DEVICE ELEVATIONS — SCALE N.T.S. — 8



NOTE:
1. CBC2022, 11B-308.1.1 ELECTRICAL SWITCHES: CONTROLS AND SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF A ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES OR COOLING, HEATING AND VENTILATING EQUIPMENT, SHALL COMPLY WITH SECTION 11B-308 EXCEPT THE LOW REACH SHALL BE MEASURED TO THE BOTTOM OF THE OUTLET BOX AND THE HIGH REACH SHALL BE MEASURED TO THE TOP OF THE OUTLET BOX.
2. CBC2022, 11B-308.1.2 ELECTRICAL RECEPTACLE OUTLETS: ELECTRICAL RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30 AMPERES OR LESS AND COMMUNICATION SYSTEM RECEPTACLES SHALL COMPLY WITH SECTION 11B-308 EXCEPT THE LOW REACH SHALL BE MEASURED TO THE BOTTOM OF THE OUTLET BOX AND THE HIGH REACH SHALL BE MEASURED TO THE TOP OF THE OUTLET BOX.
3. CBC2022, 11B-309.4 OPERATION: OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 POUNDS MAXIMUM.
4. OPERABLE PARTS CANNOT BE LOCATED WHERE A PERSON USING A WHEELCHAIR WOULD BE FORCED TO REACH OVER AN OBSTRUCTION.
5. FIRE ALARM INITIATING DEVICE MUST BE LOCATED ON PATH OF TRAVEL.
6. PROVIDE FRONT AND PARALLEL APPROACH AT NEWLY INSTALLED FIRE ALARM INITIATING DEVICE.

MOUNTING HEIGHT OVER OBSTRUCTION — SCALE N.T.S. — 9

ELECTRICAL DETAILS

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REGISTERED PROFESSIONAL ENGINEER
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Exp.12/31/2025
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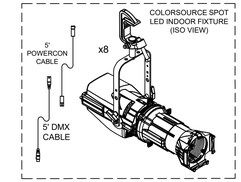
STATE OF CALIFORNIA

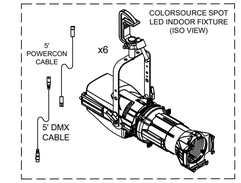
POMONA OFFICE OF EDUCATION
EDUCATION CENTER
AUDITORIUM MODERNIZATION
POMONA UNIFIED SCHOOL DISTRICT
800 S GAREY AVENUE POMONA, CA 91766

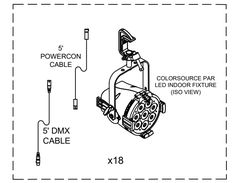
April 25, 2025

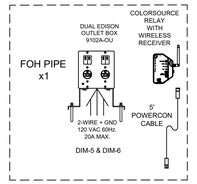
E401

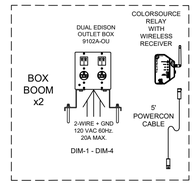
NOTE: SEE STRUCTURAL DRAWINGS FOR MOUNTING DETAILS

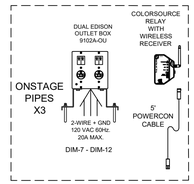


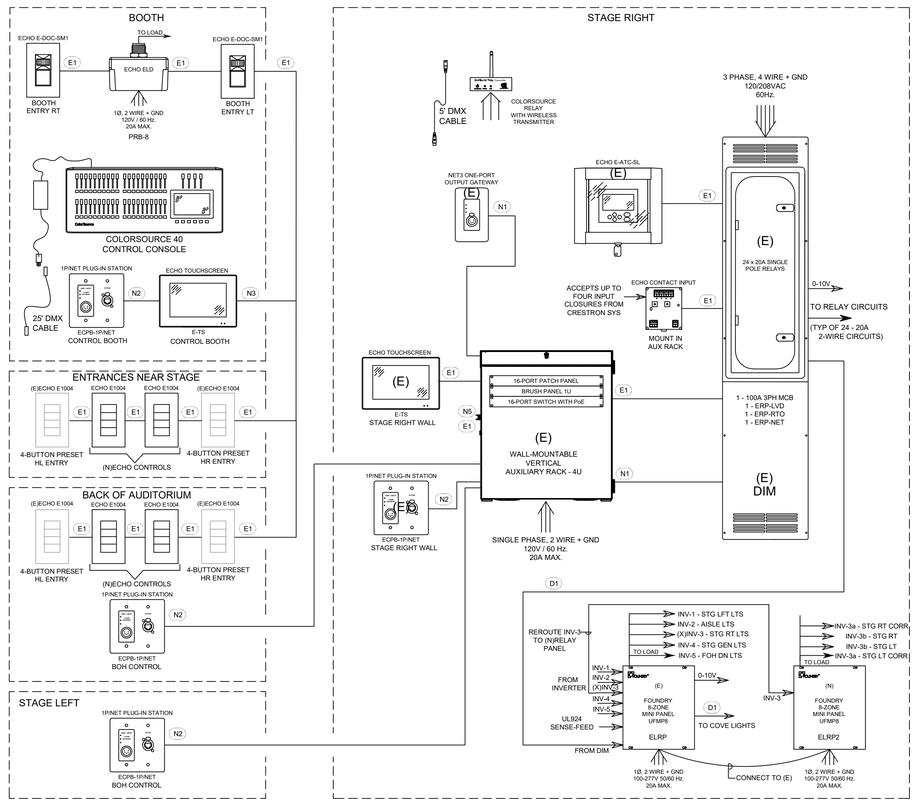












CONTROL WIRING LEGEND

SYMBOL	WIRE TYPE(S)	SIGNAL
D*	(1) BELDEN 9729	DMX INPUT
X*	(1) BELDEN 9729	DMX OUTPUT
N*	(1) BELDEN 1583A	ETC NET
E*	(1) BELDEN 8471 (1) #14 AWG. STRANDED WIRE	ECHOCONNECT
* = WIRE QUANTITY		

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL INFRASTRUCTURE INCLUDING ELECTRICAL, STRUCTURAL, AND ARCHITECTURAL ELEMENTS. COORDINATE WITH DISTRICT AND GENERAL CONTRACTOR.
2. PROVIDE ALL CONTROL WIRING AND DEVICES REQUIRED FOR A COMPLETE SYSTEM.
3. TOTAL LENGTH OF ECHO CONNECT WIRING RUNS SHALL NOT EXCEED 1640 FEET (500M). TOPOLOGY FREE TERMINATIONS.
4. TOTAL LENGTH OF NETWORK WIRING RUNS SHALL NOT EXCEED 320 FEET (100M). FOLLOW NETWORK (HOME-RUN) TOPOLOGY.
5. TOTAL LENGTH OF DMX WIRING RUNS SHALL NOT EXCEED 1640 FEET (500M). FOLLOW DAISY CHAIN TOPOLOGY.
6. CONTRACTOR SHALL PROVIDE TRAINING AND PROGRAMMING, INCLUDE A MINIMUM OF 8 SCENES PROGRAMMED PER DISTRICT'S DIRECTION. SCENES SHALL INTERFACE WITH A/V SYSTEM.
7. REPROGRAM EXISTING LIGHTING CONTROL PANEL AND SWITCH. ADD ADDITIONAL CONTROLS AS NECESSARY.

LIGHTING CONTROL DIAGRAM

SCALE N.T.S.

1

ELECTRICAL DETAILS

POMONA UNIFIED SCHOOL DISTRICT
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EDUCATION CENTER
AUDITORIUM MODERNIZATION

POMONA UNIFIED SCHOOL DISTRICT
800 S GAREY AVENUE POMONA, CA 91766

April 25, 2025

E402

GENERAL NOTES

1. THE FOLLOWING GENERAL NOTES ARE APPLICABLE AS STATED BELOW, EXCEPT WHERE SPECIFICALLY INDICATED AND NOTED OTHERWISE ON THE DRAWINGS OR IN THE SPECIFICATIONS. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION REQUIREMENTS AND SCOPE OF WORK.
2. 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, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHERE IN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS.
3. EQUIPMENT AND DEVICE LOCATIONS, ELEVATIONS, RISER DIAGRAMS, CONTROLS WIRING DIAGRAMS, SCHEMATICS, AND DETAILS SHOWN ON PLANS ARE CONCEPTUAL ONLY. THEY ILLUSTRATE THE FUNCTIONAL RELATIONSHIPS BETWEEN SYSTEM COMPONENTS AND THE PROJECT'S DESIGN INTENT. THE CONTRACTOR SHALL INSTALL DEVICES AS SITE CONDITIONS AND I.O.R APPROVAL PERMIT.
4. THE LOCATIONS OF EXISTING UTILITIES WHERE SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE DISTRICT, THE ARCHITECT/ENGINEER OR THEIR REPRESENTATIVES. DETERMINE THE EXACT LOCATION, DEPTH, INVERT ELEVATIONS, POINT OF CONNECTIONS AND PROPER SLOPES BEFORE CONNECTING WORK. FIELD VERIFY AND COORDINATE AS REQUIRED.
5. OCCUPANTS OF THE EXISTING BUILDING SHALL NOT BE INCONVENIENCED, DUE TO CONTRACTOR'S WORK DEBRIS, ETC. ENTRANCES AND CORRIDORS SHALL BE PROTECTED AND KEPT FREE OF OBSTRUCTIONS. THE DISTRICT SHALL BE NOTIFIED IN ADVANCE OF, TIME DELIVERY OF EQUIPMENT IN ORDER TO AVOID INTERFERENCE WITH THE NORMAL ACTIVITY OF THE BUILDING.
6. ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND ACTUAL FIELD CONDITIONS MUST BE REPORTED TO THE ARCHITECT/ENGINEER OF THE PROJECT. ANY DEVIATIONS FROM THESE PLANS NECESSITATED BY FIELD CONDITIONS MUST BE APPROVED BY THE ARCHITECT/ENGINEER OF THE PROJECT AND DOCUMENTED ON THE FINAL "AS-BUILT" DRAWINGS.
7. WORKMANSHIP AND ALL EQUIPMENT/MATERIALS SHALL CONFORM TO 2022 CALIFORNIA CODE REGULATIONS (C.C.R), TITLE 24 C.C.R., SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AS FURNISHED BY THE CONTRACT DRAWINGS. WORKMANSHIP AND MATERIALS NOT IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE SUBJECT TO REMOVAL AND/OR REPLACEMENT AT CONTRACTOR'S EXPENSE.
8. AFTER THE NOTICE TO PROCEED (N.T.P) AND THE OFFICIAL START OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE PROTECTION OF ALL EXISTING STRUCTURES (BOTH EXTERIOR AND INTERIOR) WITHIN AND ADJOINING WORK AREA. ANY EXISTING STRUCTURES AND /OR IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED WITH MATERIALS, WORKMANSHIP, FIXTURES OR EQUIPMENT TEMPORARILY REMOVED SHALL BE RE-ERECTED OR INSTALLED IN AN APPROVED MANNER, THE CONTRACTOR SHALL SUBMIT ALL PROPOSED PROTECTION METHODS TO THE CONSTRUCTION MANAGER FOR REVIEW AND SHALL RECEIVE WRITTEN APPROVAL, PRIOR TO THEIR USE.
9. AFTER THE NOTICE TO PROCEED (N.T.P) AND THE OFFICIAL START OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL, ELECTRONIC DOCUMENTS (PDF) OF ALL REQUIRED SHOP DRAWINGS, BROCHURES AND OTHER SATISFACTORY DESCRIPTIONS INDICATING MANUFACTURER, CATALOG NUMBER, DIMENSIONS AND PERFORMANCE OF THE EQUIPMENT. ALL WORK SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING ALL APPROVALS OF SHOP DRAWING SUBMITTALS HAVE BEEN APPROVED BY ARCHITECT/ENGINEER OF THE PROJECT.
10. ALL WORK THAT INVOLVES "SHUT-DOWN" OF EXISTING UTILITIES OR PORTIONS THEREOF, SHALL BE DONE AT SUCH TIMES THAT WILL CAUSE THE LEAST INCONVENIENCE TO THE DISTRICT'S ACTIVITIES. THE EXACT TIME AND LENGTH OF "SHUT-DOWN" SHALL BE APPROVED BY DISTRICT WITH WRITTEN NOTICE AT LEAST 7 DAYS IN ADVANCE OF THE REQUIRED SHUT-DOWN.
11. THE CONTRACTOR SHALL EXERCISE MAXIMUM DUST AND NOISE CONTROL EFFORTS TO KEEP AT A MINIMUM THE NUISANCE OF DUST AND CONSTRUCTION NOISE FROM THE CONSTRUCTION.CONTRACTOR SHALL PROVIDE THE DISTRICT WITH A WRITTEN SCHEDULE OF WORK WHICH IS TO BE COORDINATED AND APPROVED BY THE DISTRICT PROJECT MANAGER, PRIOR TO THE START OF CONSTRUCTION.
12. THE CONTRACTOR SHALL FURNISH ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, WAREHOUSING AND ANY OTHER SERVICES REQUIRED TO COMPLETE THE WORK IN A TIMELY AND EFFICIENT MANNER.
13. IF ASBESTOS/LEAD IS ENCOUNTERED IT SHALL BE IMMEDIATELY REPORTED TO THE DISTRICT. CONTRACTOR SHALL NOT CONTINUE THEIR WORK WHERE ANY HAZARDOUS MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION. REMOVAL AND ABATEMENT OF SUCH ENCOUNTERED SHALL BE PROVIDED BY DISTRICT. DISTRICT SHALL PROVIDE SPOT ABATEMENT WHERE IDENTIFIED BY CONTRACTOR.
14. THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED AND OR DEMOLISHED MATERIAL, WASTE AND DEBRIS CAUSED BY THE NEW WORK. THIS MATERIAL SHALL BE REMOVED FROM THE DISTRICT PROPERTY AND TAKEN TO A LEGALLY OPERATED DISPOSAL SITE. THE CONTRACTOR SHALL KEEP ALL PARTS OF THE BUILDING AND SITE FREE FROM ANY ACCUMULATIONS OF RUBBISH OR WASTE MATERIALS CAUSED BY HIS WORKMEN, AND SHALL REMOVE SUCH ACCUMULATIONS FROM THE BUILDING, SITE AND PROPERTY. JOB SITE SHALL BE CLEANED AT THE END OF EACH WORKING DAY.
15. THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO ASCE 7-05 SECTION 13.3.1 AND TABLE 13.6-1. ANCHORAGE DETAILS FOR WALL/FLOOR MOUNTED EQUIPMENT SHALL BE SHOWN ON PLANS.
16. SPECIFIED PRODUCTS AND MODEL NUMBERS REPRESENT THE DESIGN INTENT AND ARE RECOMMENDED FOR THIS PROJECT. IF A BIDDING CONTRACTOR PROPOSES A SUBSTITUTION FOR A DESIGN-INTENT PRODUCT, IN ACCORDANCE WITH DIVISION 00/01 OF THE PROJECT DOCUMENTS, THEY ARE SOLELY RESPONSIBLE FOR PROVIDING SUBSTANTIAL VALIDATION DEMONSTRATING THE SUBSTITUTED PRODUCT IS EQUAL TO OR BETTER THAN THE SPECIFIED PRODUCT IN ALL DESIGN ASPECTS. THIS VALIDATION MUST BE SUBMITTED TO THE DISTRICT AND ARCHITECT FOR REVIEW AND ACCEPTANCE NO LATER THAN 15 CALENDAR DAYS PRIOR TO THE BID OPENING DATE AND TIME. FAILURE TO OBTAIN PRIOR APPROVAL FOR A SUBSTITUTION WILL BE INTERPRETED AS THE CONTRACTOR'S INTENT TO FURNISH THE SPECIFIED ITEMS PER THE CONTRACT DOCUMENTS. ANY DEVIATIONS FROM THE APPROVED SUBSTITUTIONS RESULTING IN ADDITIONAL COSTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR/SUBCONTRACTOR.
17. CONTRACTOR TO PROVIDE ALL NECESSARY COMPONENTS WHETHER SHOWN OR NOT ON THE DRAWINGS OR SPECIFIED ON THE CONTRACT TO MAKE THE SYSTEM FUNCTIONALLY OPERATIVE AND ACCEPTABLE TO ALL CONCERNED AUTHORITIES.
18. THE CONTRACTOR SHALL ADJUST/AND INSTALL ALL EQUIPMENT, DEVICES AND CONTROLS TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FAILURE OF THE SYSTEM.
19. UPON COMPLETION OF THE INSTALLATION OF THE SYSTEM, INSTALLING CONTRACTOR SHALL SUBMIT STATEMENT OF COMPLIANCE AND REQUEST FINAL INSPECTION. A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DISTRICT PROJECT INSPECTOR.
20. DISTRICT SHALL BE NOTIFIED A MINIMUM OF 48 HR. PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
21. INDIVIDUAL ITEMS OF WORK ARE DETAILED IN THE VARIOUS SECTIONS OF THIS SCOPE OF WORK. THE ATTACHED DRAWINGS AND THE NOTES AND LEGENDS ON THE DRAWING, THE CONTRACTOR IS RESPONSIBLE TO COMPLETE THE REQUIREMENTS FOUND IN ANY OF THE ABOVE.
22. THE CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION ("AS-BUILT" DRAWINGS) UPON COMPLETION OF CONSTRUCTION, INCLUDING TESTING OF ALL EQUIPMENT, DEVICES, CONTROLS, AND ENSURING THE ENTIRE SYSTEM IS OPERATIONAL AND PROGRAMMED. A COPY OF THIS COMPLETED RECORD ("AS-BUILT" DRAWINGS) SHALL BE SUBMITTED TO THE IOR, ENGINEER, AND DISTRICT FOR FINAL ACCEPTANCE.
23. NOTIFY THE SUPPLIER OF ANY MISSING OR BROKEN PARTS OR ANY MISSING OR BROKEN FIXTURES AT LEAST FOURTEEN (14) DAYS PRIOR TO JOB COMPLETION. EQUIPMENT INSTALLED WITHOUT APPROVAL THEREOF SHALL BE DONE AT THE RISK OF THE CONTRACTOR AND THE COST OF REMOVAL OF SUCH EQUIPMENT OR RELATED WORK WHICH IS JUDGED UNSATISFACTORY FOR ANY REASON SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
24. CONTRACTOR SHALL WARRANTY MATERIALS AND INSTALLATION FOR THREE (3) YEAR FROM THE DATE OF FINAL ACCEPTANCE.

ABBREVIATION

AC	- AIR CONDITIONING
ACU	- AIR CONDITIONING UNIT
AFF	- ABOVE FINISH FLOOR
BAS	- BUILDING AUTOMATION SYSTEM
BLDG	- BUILDING
BTU	- BRITISH THERMAL UNIT
BTUH	- BTU PER HOUR
CFCI	- CONTRACTOR FURNISHED - CONTRACTOR INSTALLED
CFM	- CUBIC FEET PER MINUTE
C.O.	- CLEAN-OUT
COMP	- COMPRESSOR
COND	- CONDENSATE
CONN	- CONNECTION
CONT	- CONTINUATION
COP	- COEFFICIENT OF PERFORMANCE
EF	- EXHAUST FAN
(E)	- EXISTING.
(ER)	- EXISTING DEVICE TO BE REPLACED
EA	- EXHAUST AIR
EAG	- EXHAUST AIR GRILLE
EAT	- ENTERING AIR TEMPERATURE
EER	- ENERGY EFFICIENCY RATING
EFF	- EFFICIENCY
EL	- ELEVATION
ESP	- EXTERNAL STATIC PRESSURE
EWT	- ENTERING WATER TEMPERATURE
EXH	- EXHAUST
FA	- FIRE ALARM.
GA	- GAUGE
GAL	- GALLONS
GPM	- GALLONS PER MINUTE
HP	- HORSEPOWER RATING
HVAC	- HEATING, VENTILATING & AIR CONDITIONING
HW	- HEATING WATER
HWR	- HEATING WATER RETURN
HWS	- HEATING WATER SUPPLY
LAT	- LEAVING AIR TEMPERATURE
LWT	- LEAVING WATER TEMPERATURE
MBH	- THOUSAND BTU PER HOUR
MERV	- MINIMUM EFFICIENCY RATING VALUE
MH	- MOUNTING HEIGHT (TO BOTTOM OF FIXTURE)
MV	- MANUAL AIR VENT
(N)	- NEW
NIC	- NOT IN CONTRACT
NOM	- NOMINAL
NTS	- NOT TO SCALE.
OFCI	- OWNER FURNISHED - CONTRACTOR INSTALLED
OSA	- OUTSIDE AIR
PD	- PRESSURE DROP
PSI	- POUNDS PER SQUARE INCH
PSIA	- PSI ABSOLUTE
PSIG	- PSI GAUGE
(R)	- RELOCATED
R	- RISERS, RELOCATE OR RISE
RA	- RETURN AIR
REQ'D	- REQUIRED
REV	- REVISE, REVISION OR REVOLUTIONS
RTU	- ROOFTOP UNIT
SA	- SUPPLY AIR SEN SENSIBLE
SF	- SUPPLY FAN
SP	- STATIC PRESSURE
SQ IN	- SQUARE INCH
ST	- STRAINER OR SOUND TRAP
STD	- STANDARD
TA	- TRANSFER AIR
TEMP	-TEMPERATURE
TI	- TENANT IMPROVEMENT
TS	- TEMPERATURE SENSOR
TYP	- TYPICAL.
V	- VENT
VAV	- VARIABLE AIR VOLUME
VFD	- VARIABLE FREQUENCY DRIVE
VOL	- VOLUME
W	- WASTE OR WIDTH OR WATTS
WC	- WATER COLUMN
WG	- WATER GAUGE
WP	- WORKING PRESSURE
WPD	- WATER PRESSURE DROP
WSHP	- WATER-SOURCE HEAT PUMP
WT	- WEIGHT
UON	- UNLESS OTHERWISE NOTED.
(X)	- EXISTING TO BE REMOVED .
(XR)	- REMOVE RELOCATE AS SHOWN
(+)X'-Y"	- MOUNTING HEIGHT (TO CENTER OF DEVICE)

DUCT NOTES

1. GENERAL:
   1.1. INSTALL ALL DUCTWORK ACCORDING TO SMACNA AND ASHRAE STANDARDS.
   1.2. COORDINATE WITH OTHER TRADES TO FIND THE BEST INSTALLATION ROUTE FOR DUCTWORK ON SITE. REFER TO DRAWINGS FOR GENERAL LAYOUT, BUT THEY ARE NOT FOR EXACT PLACEMENT.
   1.3. SEAL ALL DUCT JOINTS WITH WATER-BASED, HIGH-PRESSURE DUCT SEALANT TO MINIMIZE LEAKAGE (MAXIMUM 2% LEAKAGE ALLOWED).
   1.4. ALL MATERIALS INSIDE DUCTS OR PLENUMS MUST HAVE A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE-DEVELOPED INDEX OF 50 OR LESS AS TESTED BY ASTM E84 (NFPA 255).
2. DUCT MATERIAL AND CONSTRUCTION:
   2.1. USE GALVANIZED SHEET METAL FOR ALL DUCTWORK ACCORDING TO UMC STANDARDS.
   2.2. SELECT DUCT GAUGE AND CONSTRUCTION TO WITHSTAND TWICE THE FAN SUPPLY STATIC PRESSURE.
   2.3. NO DUCT PENETRATIONS ARE ALLOWED.
3. DUCT SIZING AND FITTINGS:
   3.1. DUCT SIZES SHOWN ON DRAWINGS ARE INTERNAL DIMENSIONS. AS LONG AS AIR HANDLING WORKS PROPERLY, DIMENSIONS AND SHAPES CAN BE ADJUSTED TO AVOID CONFLICTS AND MAINTAIN CLEARANCES.
   3.2. INSTALL SINGLE THICKNESS TURNING VANES AT EACH RECTANGULAR ELBOW OR USE 1.5 TIMES THE DUCT WIDTH RADIUS ELBOWS.
   3.3. CONSTRUCT RECTANGULAR ELBOWS FOLLOWING SMACNA HDCS FIGURE 2-2.
   3.4. CONSTRUCT ROUND TEES FOLLOWING SMACNA HDCS FIGURE 3-5.
   3.5. USE TRANSVERSE JOINTS FOLLOWING SMACNA FIGURE 1-4 FOR TYPES T-7 THROUGH T-25. T-1 THROUGH T-6 ARE NOT ALLOWED.
4. LEAKAGE AND INSULATION:
   4.1. INSULATE ALL SUPPLY AND RETURN AIR DUCTS AS PER CMC CHAPTER 6:
      4.1.1. MINIMUM 1.5 INCHES THICK FOR INTERIOR DUCTWORK
      4.1.2. MINIMUM 2.5 INCHES THICK FOR EXTERIOR DUCTWORK
   4.2. EXTERIOR DUCTWORK MUST BE SANDWICH INSULATION WITH DOUBLE WALL SHEET METAL CONSTRUCTION.
5. HANGING AND SUPPORTS:
   5.1. USE SUPERSTRUT/UNISTRUT CHANNEL TYPE SUPPORTS AND BRACES FOR EXTERIOR DUCTWORK.
   5.2. ALL DUCT HANGERS AND SUPPORTS MUST COMPLY WITH CMC AND SMACNA STANDARDS.
6. PROHIBITED MATERIALS:
   6.1. ALUMINUM FLEXIBLE DUCT AND "KD" DUCTWORK ARE NOT ALLOWED.
   6.2. UP TO 5 FEET OF FLEXIBLE DUCT CAN BE USED PER SECTION 603.4 OF THE CMC.
7. ADDITIONAL REQUIREMENTS:
   7.1. DUCTWORK CROSSING CORRIDORS MUST BE AT LEAST 26 GAUGE.
   7.2. FINAL CONNECTIONS TO CEILING DIFFUSERS MUST BE ACOUSTICAL TYPE FLEXIBLE DUCT (CASCO SILENT FLEX II) NOT EXCEEDING 72 INCHES IN LENGTH.
   7.3. PROVIDE SOUND BOOTS ON RETURN GRILLES AS INDICATED ON PLANS, ORIENTED TOWARDS THE BUILDING CORE.
   7.4. INSTALL MANUAL VOLUME DAMPERS IN ALL BRANCH DUCTS LEADING TO INDIVIDUAL DIFFUSERS, GRILLES, AND REGISTERS.

DIFFUSERS, REGISTERS, AND GRILLES NOTES

1. NEW EQUIPMENT: INSTALL NEW AIR DISTRIBUTION EQUIPMENT ACCORDING TO THE MODELS, SIZES, AND CAPACITIES INDICATED ON THE DRAWINGS.
2. EXISTING EQUIPMENT REMOVAL: REMOVE FROM THE SITE ALL EXISTING CEILING DIFFUSERS, RETURN GRILLES, AND OTHER AIR DISTRIBUTION DEVICES SCHEDULED FOR DEMOLITION WITHIN THE SCOPE OF THIS PROJECT.
3. VOLUME DAMPERS:
   3.1. INSTALL VOLUME DAMPERS IN ALL LOCATIONS INDICATED ON THE DRAWINGS AND ANYWHERE ELSE NECESSARY TO PROPERLY BALANCE THE AIRFLOW FROM EACH DIFFUSER/GRILLE.
   3.2. FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS, USE EXTENDED REGULATORS WITH CONCEALED COVER PLATES FOR OPERATION.
4. CEILING COORDINATION: COORDINATE THE INSTALLATION OF ALL SUPPLY DIFFUSERS AND RETURN GRILLES WITH THE CEILING GRID, LIGHTS, SEISMIC BRACING, FIRE ALARM DEVICES AND OTHER BUILDING ELEMENTS TO AVOID CONFLICTS.
5. DIFFUSER SIZES: CEILING DIFFUSER SIZES SHOWN ON THE DRAWINGS INDICATE NECK SIZES. PROVIDE FRAMES AS NECESSARY TO MATCH THE MOUNTING SURFACE.

MECHANICAL GREEN BUILDING CODES

1. HVAC SYSTEM AND CONTROLS (COMPLYING WITH ONE OF THE FOLLOWING STANDARDS):
   a. AABC'S NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE (6TH EDITION)
   b. ACCA MANUAL B
   c. ASHRAE'S STANDARD 111-2008.
   d. NEBB'S STANDARDS FOR TESTING, ADJUSTMENT, AND BALANCING OF ENVIRONMENTAL SYSTEM (7TH EDITION)
   e. SMACNA HVAC TESTING, ADJUSTING, AND BALANCING
2. A FINAL REPORT FOR THE TESTING AND ADJUSTING OF ALL NEW SYSTEMS SHALL BE COMPLETED AND PROVIDED TO THE FIELD INSPECTOR PRIOR TO FINAL APPROVAL. THIS REPORT SHALL BE SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES.
3. AN OPERATION AND SYSTEM MANUAL, SHALL BE PROVIDED TO THE FIELD INSPECTOR AT THE TIME OF FINAL INSPECTION.
4. IF THE NEW HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MERV OF 8. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY.
5. ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, OR SHEETMETAL UNTIL THE FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT.
6. AN AIR FILTER WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 13 OR HIGHER SHALL BE INSTALLED IN THE MECHANICAL SYSTEM FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY.
7. CONTRACTOR SHALL TEST THE HVAC SYSTEMS AND CONTROLS; INCLUDING, BUT NOT LIMITED TO OPERATION, TEMPERATURE, POWER CURRENT, FLOW, AND MAKE ADJUSTMENTS AS REQUIRED AND REQUIRED BY MANUFACTURER TO ENSURE PROPER OPERATION.

LIST OF CALIFORNIA CODE OF REGULATIONS (C.C.R.)

APPLICABLE CODES AS OF JANUARY 1, 2023

TITLE 24 C.C.R., PART1 2022 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE.
TITLE 24 C.C.R., PART2 2022 CALIFORNIA BUILDING CODE (CBC)
(2021 INTERNATIONAL BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, WITH CALIFORNIA AMENDMENTS)
TITLE 24 C.C.R., PART3 2022 CALIFORNIA ELECTRICAL CODE (CEC)
(2020 NATIONAL ELECTRICAL CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA)
TITLE 24 C.C.R., PART4 2022 CALIFORNIA MECHANICAL CODE (CMC)
(2021 UNIFORM MECHANICAL CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)
TITLE 24 C.C.R., PART5 2022 CALIFORNIA PLUMBING CODE (CPC)
(2021 UNIFORM PLUMBING CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)
TITLE 24 C.C.R., PART6 2022 CALIFORNIA ENERGY CODE

TITLE 24 C.C.R., PART9 2022 CALIFORNIA FIRE CODE (CFC)
(2021 INTERNATIONAL FIRE CODE OF THE INTERNATIONAL CODE COUNCIL)
TITLE 24 C.C.R., PART10 2022 CALIFORNIA EXISTING BUILDING CODE
(2021 INTERNATIONAL EXISTING BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, WITH AMENDMENTS)
TITLE 24 C.C.R., PART11 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN CODE)
TITLE 24 C.C.R., PART12 2022 CALIFORNIA REFERENCED STANDARDS CODE
TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 70	NATIONAL ELECTRICAL CODE	2021 EDITION
NFPA 72	NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED)	2022 EDITION
NFPA 90A	INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS	2021 EDITION
NFPA 101	LIFE SAFETY CODE - SAFETY TO LIFE FROM FIRE IN BUILDINGS AND STRUCTURES	2021 EDITION
UL 464	AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES	2016 EDITION
UL 521	STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS	1999 (R2021)
UL 1971	STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED	

FOR A COMPLETE LIST OF APPLICABLE NFPA STANDARDS REFER TO 2022 CBC (SFM) CHAPTER 35 AND CALIFORNIA FIRE CODE CHAPTER 80.

SEE CALIFORNIA BUILDING CODE CHAPTER 35 FOR STATE OF CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS.

MECHANICAL NOTES

NOTE: THIS DOCUMENT FORMS A PART OF THE SPECIFICATIONS AND SHALL BE CONSIDERED THE SAME AS IF ATTACHED THERETO.

1. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE LOCATION OF EQUIPMENT AND DEVICES AND THE ARRANGEMENT OF THE REQUIRED INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS PROPER COORDINATION WITH THE EXISTING FIELD CONDITIONS AND SPACE WILL PERMIT. SIMPLIFY INSTALLATION WHEREVER POSSIBLE BUT SUBJECT TO APPROVAL OF THE DISTRICT FOR VISUAL AND STRUCTURAL REASONS. THE DRAWINGS DO NOT SHOW NECESSARY OFFSETS, BENDS AND OBSTRUCTIONS. THE DRAWINGS ARE NOT INTENDED TO BE SCALED AND THE CONTRACTOR SHALL REFER TO THE GENERAL DIMENSIONED CONSTRUCTION DRAWINGS FOR DIMENSIONS AND EXACT LOCATIONS.
2. WHERE APPLICABLE, THERMOSTATS SHALL BE ABLE TO:
   A. MAINTAIN SPACE TEMPERATURE SET POINTS FROM 55 DEGREES TO 85 DEGREES.
   B. TERMINATE ALL HEATING AT 70 DEGREES OR LESS AND ALL COOLING AT 78 DEGREES OR MORE.
3. CONTRACTOR SHALL PROVIDE CONSTRUCTION FILTERS AT RETURN AIR OPENINGS DURING CONSTRUCTION.
4. ALL PIPING AND DUCTWORK SHALL FREELY PASS THROUGH ALL WALLS AND FLOORS WITHOUT RIGID CONNECTIONS. PENETRATION POINTS SHALL BE SLEEVED TO ALLOW PASSAGE OF PIPING OR DUCTWORK AND MAINTAIN 3/4" TO 1-1/4" CLEARANCE AROUND THE OUTSIDE SURFACES.THIS CLEARANCE SHALL BE TIGHTLY PACKED WITH ONE POUND DENSITY GLASS FIBER,AND CAULKED AIRTIGHT WITH NON-HARDENING SEALANT AFTER INSTALLATION OF PIPING OR DUCTWORK.
5. PIPING SHALL BE COMPLETE WITH PIPE FITTINGS, VALVES, COUPLING, STRAINERS, HANGER RODS, HANGERS, SUPPORTS, GUIDES, SLEEVES AND ACCESSORIES IN CONFORMANCE WITH THE LATEST PROVIDE FITTINGS FOR CHANGE IN PIPE SIZE CODES AND ASME, ANSI, ASTM AND MSS STANDARDS. AND FOR FINAL CONNECTION AT EQUIPMENT, AS REQUIRED.
6. IDENTIFY ALL NEW MECHANICAL EQUIPMENT WITH NAMEPLATES PERMANENTLY ENGRAVED WITH 1/2 INCH HIGH WHITE LETTERS ON A BLACK BACKGROUND. IDENTIFY EQUIPMENT WITH SYMBOLS SHOWN ON THE PLANS.
7. PROVIDE FLASHING AND COUNTER FLASHING FOR ALL PENETRATIONS THROUGH WALLS OR ROOF TO MAKE WATERPROOF INSTALLATION.
8. SUPPORT ALL PIPING SO THAT IT IS FIRMLY HELD IN PLACE BY APPROVED IRON HANGERS AND SUPPORTS, IN ACCORDANCE WITH RECOMMENDATIONS OF AMERICAN PIPE FITTERS ASSOCIATION AND PIPE HANGER INSTITUTE.
9. THERMOSTATS SHALL BE MOUNTED AT 4'-0" ABOVE FINISHED FLOOR. EACH THERMOSTAT SHALL BE LABELED TO INDICATE THE ASSOCIATED HVAC UNIT(S). LABELS SHALL BE DYMO STICKER LABELS WITH A LEGIBLE FONT SIZE; HAND-WRITTEN LABELS ARE NOT ACCEPTABLE. THERMOSTATS SHALL BE PROGRAMMABLE WITH SETUP, SETBACK, AND TIMECLOCK FUNCTIONS BY THE EQUIPMENT MANUFACTURER OR APPROVED EQUAL. THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY DURING OCCUPIED HOURS.
10. MEP COMPONENT ANCHORAGE NOTE:
    ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

    C. ALL PERMANENT EQUIPMENT AND COMPONENTS.
    D. 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.
    E. 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 DISTRICT.

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

    A. COMPONENT 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.
    B. COMPONENT 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 DISTRICT. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

    ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

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

    THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2022 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.

    ELECTRICAL DISTRIBUTION SYSTEM (E):

    X OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFICATION NOTES AND DETAILS.
    OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVALS (OPA #).

    DO NOT MIX SEISMIC BRACING DETAILS FROM DIFFERENT OPM'S UNLESS SPECIFICALLY SHOWN ON DRAWINGS AND APPROVED BY DISTRICT.

SEISMIC NOTES

1. CONTRACTOR SHALL PROVIDE COMPLETE SEISMIC ANCHORAGE AND BRACING FOR ALL PLUMBING AND REQUIRED PIPING.
2. CONTRACTOR SHALL COMPLY WITH THE SUPPORT AND ANCHORAGE OF HVAC EQUIPMENT AS SHOWN ON DRAWINGS. IF THERE IS NO ANCHORAGE DETAIL SHOWN ON THE DRAWINGS, SUBMIT SHOP DRAWINGS IF THE FOLLOWING APPLY:
   A. THE EQUIPMENT HAS AN OPERATING WEIGHT OVER 40D POUNDS AND IS MOUNTED DIRECTLY ON THE FLOOR OR ROOF.
   B. THE EQUIPMENT HAS AN OPERATING WEIGHT OVER 20 POUNDS AND IS SUSPENDED FROM THE ROOF, FLOOR, OR WALL OR IS SUPPORTED BY SPRING ISOLATION DEVICES.
   C. THE CONTRACTOR SHALL SUBMIT THE ANCHORAGE DETAILS AND CALCULATIONS FOR ITEMS NOT SHOWN ON THE DRAWINGS AND FOR ALL SUBSTITUTED EQUIPMENT THAT IS GREATER IN WEIGHT OR VARIES MORE THAN 10% IN LENGTH.
3. THE CALCULATIONS AND DETAIL SUBMITTALS SHALL BE SEALED AND SIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA. THE CALCULATIONS SHALL DEMONSTRATE THE FOLLOWING:
   A. THE ADEQUACY OF ANCHORAGE UNDER ALL APPLICABLE LOAD CONDITIONS PRESCRIBED BY THE UNIFORM BUILDING CODE.
   B. THE STRUCTURAL ELEMENTS, WHICH ARE RESISTING THE ANCHORAGE LOADS; SUCH AS CONCRETE FILL ON METAL DECK AND/OR STEEL BEAMS, ARE NOT STRESSED BEYOND ITS ACCEPTABLE VALUE.
4. FOR ALL VIBRATION ISOLATORS AND THEIR ANCHORAGES, THE CONTRACTOR SHILL PROVIDE CALCULATIONS, DETAILS AND TEST DATA TO SUBSTANTIATE THE ISOLATOR'S CAPACITY FOR VERTICAL AND LATERAL LOADS. CALCULATIONS MUST ALSO BE SUBMITTED TO SUBSTANTIATE THE SIZE, QUANTITY, LOCATION AND CONNECTION TO STRUCTURE. THE DRAWINGS MUST BE MADE CONSISTENT WITH THE CALCULATIONS. THE MANUFACTURER, EQUIPMENT AND STRUCTURAL ATTACHMENT PROCEDURE MUST BE CLEARLY SPECIFIED. ISOLATORS WHICH SUPPORT A COMPONENT INSIDE THE ACTUAL UNIT WILL NOT BE REVIEWED.
5. WHERE CONCRETE AND MASONRY EXPANSION OR ADHESIVE TYPE ANCHORS ARE USED, THE ANCHORAGE DETAILS AND CALCULATIONS SHALL INDICATE THE MANUFACTURER, ICBO REPORT NO., TYPE, DIAMETER, MINIMUM EMBEDMENT, CONCRETE TYPE AND STRENGTH.
6. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING DR DAMAGING THE EXISTING REINFORCING BARS. LOCATE REINFORCEMENT BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTILLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE R8NFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.
7. NO POWER DRIVEN FASTENERS AND/OR SHOT PINS ARE ALLOWED FOR HANGING EQUIPMENT, DUCTWORK AND PIPING SYSTEMS.
8. ALL EXPANSION ANCHORS SHALL HAVE 50% OF THE BOLTS TESTED. IF ANY ANCHOR FAILS TESTING, ALL ANCHORS OF THE SAME TYPE SHALL BE TESTED, WHICH ARE INSTALLED BY THE SAME TRADE, NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TEST FREQUENCY. (CBC 1910A.5.1) TESTING SHALL OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF THE SUBJECT ANCHORS, IN ACCORDANCE WITH IR19-1.
9. FOR ANCHORAGE USE RED HEAD THRU BOLTS ICC ESR-2427 OR HILTI KWIK BOLT 3 WEDGE ANCHORS ICC ESR-1385.
10. THE SEISMIC ANCHORAGE OF MECHANICAL EQUIPMENT SHALL CONFORM TO 2022 CBC SECTIONS 1615A.1.21 AND 1616A.1.22.

DEMOLITION NOTES

1. REVIEW AND VERIFICATION:
   1.1. BEFORE BIDDING AND COMMENCING DEMOLITION, THOROUGHLY REVIEW THE CONSTRUCTION DOCUMENTS, WORKING DRAWINGS, AND FIELD VERIFY ALL EXISTING CONDITIONS. THIS INCLUDES INVESTIGATING QUESTIONABLE WORK RELATED TO DISCONNECTING OR REMOVING EXISTING EQUIPMENT SHOWN FOR DEMOLITION. COORDINATE THIS INFORMATION WITH THE CONSTRUCTION SCHEDULE.
   1.2. DRAWINGS INDICATE EXISTING CONDITIONS BASED ON RECORD DRAWINGS AND LIMITED VISUAL VERIFICATION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ABSOLUTE ACCURACY. VERIFY ALL EXISTING FIELD CONDITIONS, EXERCISE CAUTION DURING DEMOLITION, AND PROMPTLY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES ENCOUNTERED.
2. EXISTING EQUIPMENT REMOVAL:
   2.1. UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL DEVICES ASSOCIATED WITH THE EXISTING EQUIPMENT BEING REMOVED. DISPOSE OF ALL REMOVED DEVICES AND EQUIPMENT UNLESS OTHERWISE DIRECTED BY THE DISTRICT FOR SALVAGE.
   2.2. THE CONTRACTOR, ACCOMPANIED BY THE DISTRICT REPRESENTATIVE, SHALL TAKE INVENTORY OF EXISTING MATERIAL AND EQUIPMENT. THE DISTRICT WILL SELECT MATERIAL AND EQUIPMENT FOR SALVAGE, WHICH WILL REMAIN THEIR PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR DELIVERING SALVAGED EQUIPMENT AND MATERIALS TO DESIGNATED LOCATIONS CHOSEN BY THE DISTRICT. EQUIPMENT AND DEVICES DESIGNATED FOR SALVAGE MUST BE NEATLY PILED, STORED, AND PROTECTED FROM DAMAGE. ANY MATERIALS AND EQUIPMENT NOT CHOSEN FOR SALVAGE BECOME THE PROPERTY OF THE CONTRACTOR AND MUST BE REMOVED FROM THE PREMISES AND DISPOSED OF RESPONSIBLY.
3. DEMOLITION COORDINATION:
   3.1. COORDINATE ALL DEMOLITION ACTIVITIES WITH NEW CONSTRUCTION REQUIREMENTS TO ENSURE THE NEWLY INSTALLED SYSTEM IS COMPLETE AND FUNCTIONAL.
4. EXISTING DUCTWORK:
   4.1. PERFORM CLEANING AND REPAIRS ON EXISTING DUCTS, INCLUDING SEALING LEAKS AND INSTALLING NEW LINERS AS SPECIFIED. UTILIZE EXISTING DUCTWORK AS SHOWN ON THE PLANS FOR ESTIMATING CLEANING COSTS AND AIR BALANCING.
   4.2. TEST, ADJUST, AND AIR BALANCE ALL SUPPLY AND EXHAUST REGISTERS WITHIN THE DESIGNATED AREA. SUBMIT A TAB REPORT TO THE DISTRICT REPRESENTATIVE FOR APPROVAL.
   4.3. IF ANY DIFFUSER FAILS TO ACHIEVE DESIGN CFM WITHIN 10% TOLERANCE AFTER AIR BALANCING, INSPECT EXISTING DUCTS FOR AIR LEAKAGE. PERFORM NECESSARY REPAIRS OR REPLACEMENTS TO REDUCE LEAKAGE AND ACHIEVE THE DESIRED CFM TOLERANCE.
5. EXISTING BUILDING PROTECTION
   5.1. CAREFULLY PROTECT ALL EXISTING WALLS, TRIM, FLOORS, EQUIPMENT, UTILITY LINES, AND MATERIALS DURING DEMOLITION. WHEN WORKING ON FINISHED SURFACES, LIMIT DAMAGE TO THE CONFINED SPACE AND RESTORE THEM TO THEIR ORIGINAL CONDITION.
   5.2. PATCHING AND PAINTING OF FLOORS, WALLS, CEILINGS, ETC., SHALL MATCH EXISTING FINISHES.
   5.3. PRIOR WRITTEN APPROVAL FROM THE ENGINEER IS MANDATORY BEFORE NOTCHING, CORING, OR CUTTING INTO EXISTING STRUCTURES.
6. IMPLEMENT DUST PROTECTION MEASURES THROUGHOUT CONSTRUCTION.
   6.1. COVER ALL DUCT AND AIR DISTRIBUTION COMPONENT OPENINGS WITH TAPE, PLASTIC, SHEET METAL, OR OTHER METHODS APPROVED BY THE ENFORCING AGENCY DURING ROUGH INSTALLATION, STORAGE ON-SITE, AND UNTIL THE FINAL STARTUP OF THE HVAC EQUIPMENT TO MINIMIZE DUST, WATER, AND DEBRIS ENTERING THE SYSTEM.
   6.2. DURING DEMOLITION AND CONSTRUCTION, PROVIDE MERV 8 FILTER MEDIA(S) AT THE MAIN RETURN AIR INTAKE(S) ON THE FLOOR BEING RENOVATED.
   6.3. PROTECT THE BUILDING'S HVAC SYSTEMS FROM DUST AND DEBRIS THROUGHOUT THE CONSTRUCTION PHASE. IMPLEMENT AND MAINTAIN CONSTRUCTION FILTERS (ADHERING TO SMACNA STANDARDS) DURING DUSTY WORK. REMOVE FILTERS BEFORE STARTING ANY TESTING AND BALANCING COMMISSIONING WORK.
   6.4. PROTECT SMOKE DETECTORS FROM CONSTRUCTION DUST. IF NECESSARY, INSTALL TEMPORARY HEAT DETECTORS TO MAINTAIN SMOKE DETECTION COVERAGE DURING CONSTRUCTION.
7. EXISTING SYSTEM CONSIDERATIONS:
   7.1. ENSURE THERE'S A SUFFICIENT RETURN AIR PATHWAY FOR THE RENOVATED AREA.
   7.2. SEAL ALL DUCT AND PIPE PENETRATIONS THROUGH FULL-HEIGHT WALLS WITH ACOUSTICAL SEALANT.
   7.3. ENSURE ALL CONCEALED SUPPLY AIR DUCTS IN THE CEILING ARE INSULATED.
   7.4. VERIFY THERE ARE NO COMBUSTIBLE MATERIALS PRESENT IF USING THE PLENUM SPACE AS A RETURN AIR PATHWAY.
   7.5. REPLACE DUCT INSULATION IF IT'S IN POOR CONDITION.
8. AIR HANDLING UNIT (AHU) INSPECTION:
   8.1. INSPECT THE CONDITION OF THE EXISTING AIR HANDLING UNIT (AHU) ON THE ROOF THAT SERVES THE TENANT SPACE. IF REPAIRS OR REPLACEMENT ARE NECESSARY, INFORM THE OWNER.
9. UTILITY SHUTDOWN:
   9.1. COORDINATE THE SCHEDULE FOR UTILITY SHUTDOWNS AND AREA CLOSURES WITH THE DISTRICT REPRESENTATIVE BEFORE BIDDING AND STARTING DEMOLITION OR CONSTRUCTION.

MECHANICAL SYMBOLS LIST

PIPING

SYMBOL	DESCRIPTION
	DIRECTION OF SLOPE
	DIRECTION OF FLOW
	PIPE UP
	PIPE DOWN
	PIPE DROP/PIPE RISE
	TOP CONNECTION - BRANCH LINE
	BOTTOM CONNECTION-BRANCH LINE
	TEE UP
	TEE DOWN
6	PIPE SIZE (DIAMETER IN INCHES)

GENERAL

SYMBOL	DESCRIPTION
(N)	NEW WORK
(E)	EXISTING WORK TO REMAIN
(X)	EXISTING WORK TO BE REMOVED
RTU X	EQUIPMENT IDENTIFICATION
	POINT OF CONNECTION (POC) / POINT OF DISCONNECTION (POD)
	UNION
	BALL VALVE
	CHECK VALVE
	SHUT-OFF VALVE
M	AUTOMATIC SHUT-OFF VALVE
	3-WAY VALVE
	FLEXIBLE CONNECTION
NECK SIZE-TAG-CFM	RECTANGULAR OR ROUND SUPPLY DIFFUSER OR REGISTER (SEE SCHEDULE). 4-WAY THROW UNLESS INDICATED OTHERWISE. EXAMPLES: 12X12-A-100 REFERS TO TAG A WITH 12"X12" NECK AND 100 CFM OR 10-B-200 REFER TO TAG B WITH 10" ROUND NECK AND 200 CFM.
NECK SIZE-TAG-CFM	RECTANGULAR OR ROUND EXHAUST GRILLE OR REGISTER (SEE SCHEDULE)
NECK SIZE-TAG-CFM	RECTANGULAR OR ROUND RETURN GRILLE OR REGISTER (SEE SCHEDULE)
NECK SIZE-LENGTH-TAG-CFM	LINEAR SLOT DIFFUSER (SEE SCHEDULE FOR NUMBER OF SLOTS). 2-WAY THROW UNLESS INDICATED OTHERWISE. EXAMPLE: 10-48-SN-250 REFERS TO 10" ROUND NECK, 48" SLOT LENGTH, TAG SN AND 250 CFM.
VD	VOLUME DAMPER
24X12	RECTANGULAR DUCT SIZE (WIDTH x DEPTH IN INCHES)
18Ø	ROUND DUCT SIZE (DIAMETER IN INCHES)
NECK SIZE-TAG -CFM	WALL SUPPLY GRILLE OR REGISTER (SEE SCHEDULE)
NECK SIZE-TAG -CFM	WALL RETURN GRILLE OR REGISTER (SEE SCHEDULE)
VD	VOLUME DAMPER
FD SD FSD	FIRE, SMOKE OR FIRE/SMOKE DAMPER

CONTROLS

SYMBOL	DESCRIPTION
T	THERMOSTAT OR THERMOMETER
TS	TIMER SWITCH
CO2	CARBON DIOXIDE SENSOR
DSD	DUCT SMOKE DETECTOR

GENERAL SYMBOLS

1A	NUMBERED NOTE FOR SHEET WHERE SHOWN
A / E1.0	DETAIL DESIGNATION FOR ITEM & DRAWING NUMBER

BASIS OF DESIGN

HVAC BASIS OF DESIGN
THIS PROJECT REMODELS THE HVAC SYSTEM FOR THE IT OFFICE SPACES. THE SCOPE OF WORK INCLUDES:

1. NEW DIFFUSERS: INSTALLING NEW SUPPLY AND RETURN DIFFUSERS THROUGHOUT THE IT OFFICES.
2. DIFFUSER RELOCATION: RELOCATING EXISTING SUPPLY AIR DIFFUSERS AND RETURN AIR GRILLES TO CORRESPOND WITH THE NEW CEILING TILE LAYOUT.
3. AIR BALANCING: REBALANCING THE AIRFLOW OF EACH DIFFUSER BASED ON THE REMODEL PLAN.

A. OUTDOOR DESIGN CONDITIONS
   1. SUMMER: 86°F DB / 67°F WB (ASHRAE 2% LOS ANGELES, CA)
   2. WINTER: 38°F (ASHRAE MEDIAN OF EXTREMES, LOS ANGELES, CA)
   3. ELEVATION: 270 FT.
   4. CALIFORNIA CLIMATE ZONE: 9

D. INDOOR DESIGN CONDITIONS
   1. BAR & SEATING AREAS:
      a. COOLING 72°F +/- 2°F
      b. HEATING 70°F +/- 2°F
   2. VENTILATION CRITERIA: 15 CFM / PERSON

E. BUILDING ENVELOPE (EXISTING)
   1. EXISTING EXTERIOR WALL: WOOD FRAMING WITH R-19 INSULATION.
   2. EXISTING GLAZING: NONE.

F. INTERNAL HEAT GAIN
   1. LIGHTING: 1.2W / SQ.FT.
   2. EQUIPMENT PROCESS LOAD: 1.0W / SQ.FT.
   3. OCCUPANTS (GENERAL): 250 BTUH SENSIBLE / 200 BTUH LATENT

G. OCCUPANCY CRITERIA
   1. OFFICE ROOM - 1 PERSON PER 200 SQ.FT.
   2. MEETING ROOM - 1 PERSON PER 20 SQ.FT.
   3. STUDIO ROOM - COUNT SEATING PER ROOM.

H. DUCTWORK DESIGN CRITERIA
   1. ALL DUCTWORK: 0.08" W.G. / 100 FT. MAX.

I. ACOUSTICAL DESIGN CRITERIA
   1. MAXIMUM NC LEVEL SHALL BE AT LEAST 5 NC POINTS BELOW THE CRITERION OF THE ROOM(S) SERVED.

SHEET INDEX

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MECHANICAL NOTES AND SYMBOLS LIST

POMONA UNIFIED SCHOOL DISTRICT
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MECHANICAL

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800 S GAREY AVENUE POMONA, CA 91766

April 25, 2025

M001

FAN SCHEDULE

UNIT TAG	SERVICE	MAKE	MODEL NUMBER	LOCATION	TYPE	CFM	ESP (IN. W.C.)	MAX. RPM	AMP	VOLT/PH/HZ	SPEED CONTROL	OPERATING WEIGHT (LBS.)	OPENING	SOUND LEVEL (SONES)
EF-1	GREEN ROOM	BROAN	L300E	GREEN ROOM	CEILING MOUNT	227	0.5	1207	0.7	120/1/60	YES	21.2	8"Ø 10"x6"	2.6

NOTES

1. PROVIDE EXTERIOR ALUMINUM LOUVER GRILLE 10"X6"; PROVIDE DUCT TRANSITIONS/ADAPTERS AS REQUIRED; VERIFY EXACT REQUIREMENTS IN THE FIELD.
2. PROVIDE ELECTRONIC SPEED CONTROL (INTERNAL), MODEL 80L
3. INTERLOCK EXHAUST FAN W/ LIGHT SWITCH.

DIFFUSER AND GRILLE SCHEDULE

TAG	MFR	MODEL	DESCRIPTION	FACE TYPE	FACE SIZE (IN.)	COLOR	MATERIAL	OBD	NOTES
A	TITUS	MCD	SQUARE CEILING SUPPLY	MODULAR CORE	24 x 24	WHITE	STEEL	NO	1,2,3,4,5,6,7
B	TITUS	PAR	SQUARE CEILING RETURN	PERFORATED	24 x 24	WHITE	STEEL	NO	1,2,3,4,5,6,7

NOTES

1. NECK SIZE AND CFM: REFER TO PLANS FOR NECK SIZE (E.G., 12X12) AND CUBIC FEET PER MINUTE (CFM) RATINGS (E.G., 400). TAG "A" ON THE PLANS INDICATES A DIFFUSER WITH A 12X12 NECK AND A CFM RATING OF 400.
2. PRESSURE DROP: THE MAXIMUM ALLOWABLE TOTAL PRESSURE DROP FOR THE DIFFUSER, INCLUDING ANY DUCT TRANSITIONS, IS 0.15 INCHES OF WATER GAUGE (WG).
3. NOISE LEVEL: THE MAXIMUM NOISE CRITERION (NC) LEVEL OF THE DIFFUSER MUST BE AT LEAST 5 NC POINTS LOWER THAN THE SPECIFIED NOISE CRITERIA FOR THE ROOM(S) IT SERVES.
4. FINISH: ALL VISIBLE SURFACES AND DUCTWORK BEHIND THE DIFFUSER FACE MUST BE PAINTED FLAT BLACK.
5. CEILING COORDINATION: COORDINATE WITH THE ARCHITECTURAL REFLECTED CEILING PLANS TO DETERMINE THE APPROPRIATE BORDER TYPES FOR THE DIFFUSERS.
6. EXPOSED DUCT COLOR MATCH: ANY GRILLE MOUNTED DIRECTLY ON EXPOSED DUCTWORK SHOULD MATCH THE PAINT COLOR OF THE DUCT (IF PAINTED) OR HAVE A CLEAR ANODIZED FINISH (IF THE DUCT IS UNPAINTED).
7. DUCT TRANSITION: PROVIDE A MINIMUM 3-INCH HIGH RECTANGULAR/SQUARE TO ROUND TRANSITION WHERE REQUIRED. THE TRANSITION SHOULD BE SIZED TO CREATE A MAXIMUM PRESSURE DROP OF 0.01 INCHES WG AND ENSURE THE ROUND NECK AREA IS EQUAL TO OR EXCEEDS THE RECTANGULAR NECK AREA.

FIXTURE SCHEDULE

TAG	PIPE ROUGH-IN				REMARKS
	WASTE	VENT	CW	HW	
LV-1	2"	1-1/2"	3/4"	3/4"	VITREOUS CHINA, UNDER-COUNTER, ROUND LAVATORY AMERICAN STANDARD OVALYN 9482.000; MANUAL, WRIST BLADE, RIGID SPOUT, DOUBLE FAUCET CHICAGO 895-317GN2AE3ABCP, 0.5-GPM, PRESSURE COMPENSATING AERATOR, LEAD-FREE NSF 61 CERTIFIED, CALGREEN COMPLIANT, ADA COMPLIANT; ANGLE STOP W/ LOOSE KEY HANDLE CHICAGO 1013-ABCP OR 1025-ABCP; GRID STRAINER, AND OFFSET LA PATTERN CAST BRASS P-TRAP AND TRAP ARM. PROVIDE TRUEBRO LAV GUARD PROTECTIVE SHIELD PIPE COVERS; ASSEMBLY SHALL BE ADA COMPLIANT.

PIPE MATERIAL SCHEDULE

SERVICE	MATERIALS
BELOW GROUND, OUTSIDE BUILDING, ON-SITE SEWER PIPING	LARGER THAN 4": PVC SDR 26 WITH BELL AND SPIGOT ENDS FOR GASKETED JOINTS WITH ELASTOMERIC SEALS, APPROVED FOR GRAVITY SEWER PIPING. PROVIDE APPROPRIATE ADAPTORS FOR CONNECTIONS TO PIPES OF DIFFERENT MATERIALS.
BELOW GROUND, INSIDE AND OUTSIDE THE BLDG, SEWER PIPING	HUBLESS CAST-IRON WITH NEOPRENE GASKET & STAINLESS STEEL BAND/SHIELD. PROVIDE POLYWRAP TUBULAR POLYETHYLENE PROTECTION FOR CAST-IRON PROVIDE APPROPRIATE ADAPTORS FOR CONNECTIONS TO PIPES OF DIFFERENT MATERIALS.
ABOVE GROUND, INSIDE BUILDING WASTE PIPING	HUBLESS CAST-IRON WITH NEOPRENE GASKET & STAINLESS STEEL BAND/SHIELD. PROVIDE APPROPRIATE ADAPTORS FOR CONNECTIONS TO PIPES OF DIFFERENT MATERIALS.
ABOVE GROUND VENT (V) PIPING	HUBLESS CAST-IRON WITH NEOPRENE GASKET & STAINLESS STEEL BAND/SHIELD OR GALVANIZED STEEL PIPE. PROVIDE APPROPRIATE ADAPTORS FOR CONNECTIONS TO PIPES OF DIFFERENT MATERIALS.
BELOW GROUND, OUTSIDE BUILDING, ON-SITE COLD WATER (CW)	PIPE SIZE, 4" AND LARGER: PVC PRESSURE PIPE C900 WITH MECHANICAL JOINTS AND FITTINGS APPROVED FOR UNDERGROUND PRESSURE WATER PIPING; PIPE SIZE, 3" AND SMALLER: SEAMLESS COPPER TYPE K PIPE, HARD DRAWN, WITH WROUGHT COPPER FITTINGS, LEAD-FREE SOLDER JOINTS, WRAPPED WITH 20-MIL PVC TAPE; PROVIDE THRUST BLOCKS ON EVERY CHANGE OF DIRECTION, CHANGE IN SIZE AND AT TEE FITTINGS. PROVIDE APPROPRIATE ADAPTORS FOR CONNECTIONS TO PIPES OF DIFFERENT MATERIALS.
BELOW GROUND, INSIDE BUILDING, COLD WATER (CW)	SEAMLESS COPPER TYPE K PIPE, HARD DRAWN, WITH WROUGHT COPPER FITTINGS, LEAD-FREE SOLDER JOINTS, WRAPPED WITH 20-MIL PVC TAPE
ABOVE GROUND, DOMESTIC COLD WATER	SEAMLESS COPPER TYPE L PIPE, HARD DRAWN, WITH WROUGHT COPPER FITTINGS, LEAD-FREE SOLDER JOINTS
ABOVE GROUND, DOMESTIC HOT WATER	SEAMLESS COPPER TYPE L PIPE, HARD DRAWN, W/ WROUGHT COPPER FITTINGS & INSULATION, LEAD-FREE SOLDER FOR JOINTS AND CONNECTIONS

PLUMBING SYMBOLS LIST

SYMBOL	ABBR.	DESCRIPTION
	W	SANITARY WASTE PIPING BEL. FLR.
	W	SANITARY WASTE PIPING ABV. FLR.
	V	VENT PIPING
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
	HWR	HOT WATER RETURN PIPING
	ICW	INDUSTRIAL COLD WATER PIPING
	IHW	INDUSTRIAL HOT WATER PIPING
	CHW	CHILLER WATER SUPPLY PIPING
	CHWR	CHILLER WATER RETURN PIPING
	DE	DEIONIZED WATER RETURN PIPING
	DER	DEIONIZED WATER RETURN PIPING
	LA	LABORATORY LABORATORY COMPRESSED AIR PIPE
	LG	LABORATORY GAS PIPE
	LV	LABORATORY VACUUM PIPING
	LW	LABORATORY WASTE PIPING
		PLUG
	POC	**POINT OF CONNECTION**
	UP	**PIPING UP**
	DN	**PIPING DOWN**
	FCO COYB	**FLOOR CLEANOUT CLEANOUT IN YARD BOX**
	WCO	**WALL CLEANOUT**
	G	**GAS PIPING**
	U.	**UNION**
	B.V.	**BALL VALVE**
	C.V.	**CHECK VALVE**
	SOV	**SHUT-OFF VALVE**
	3VV	**3-WAY VENT VALVE**
	FLEX.	**FLEXIBLE CONNECTION**
	GC	**GAS COCK**
	TP	**TRAP PRIMER LINE**
	SD	**STORM DRAIN PIPING**

MECHANICAL SCHEDULES

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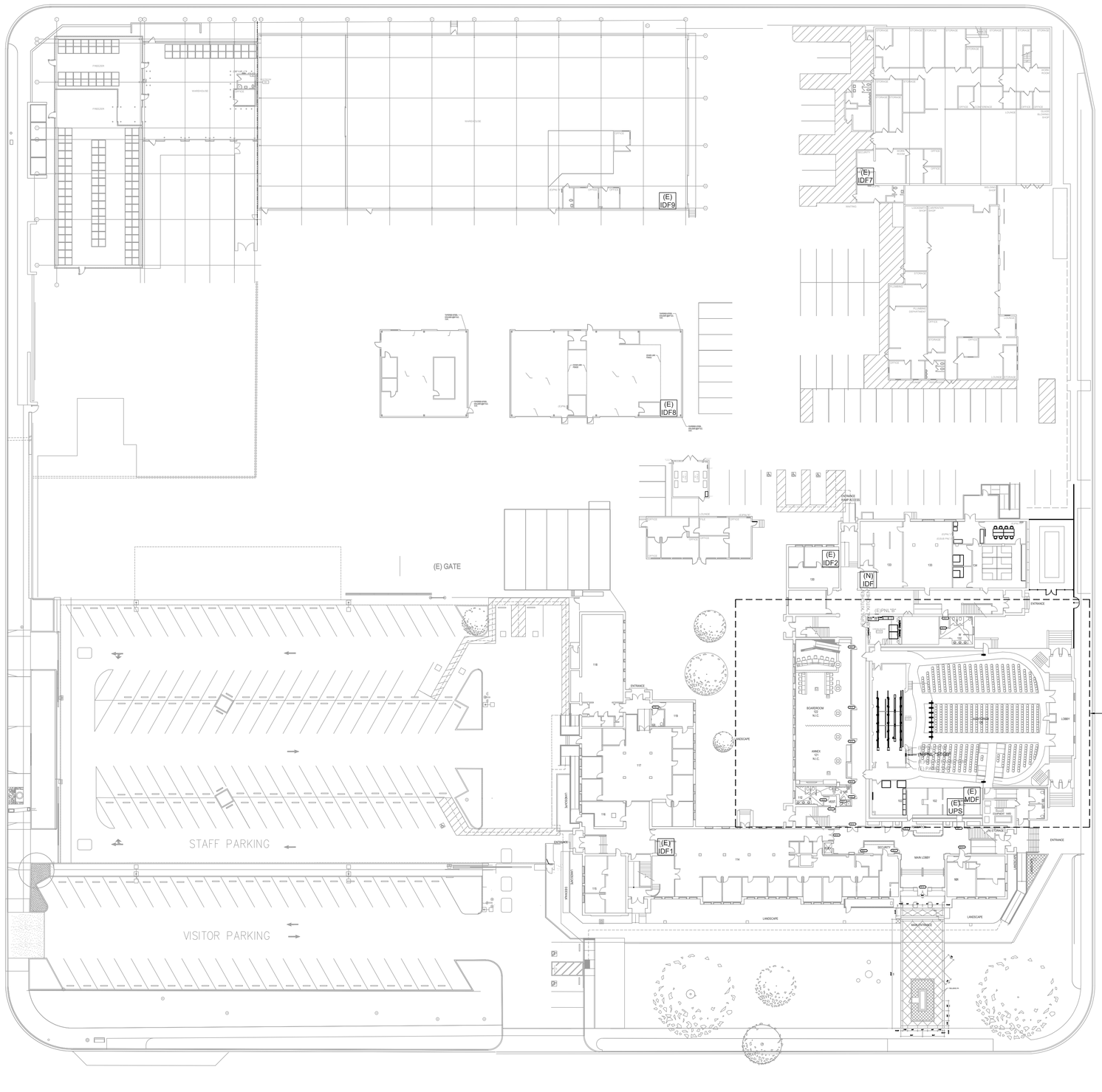
April 25, 2025

M002



GENERAL NOTES

1. FIELD VERIFICATION: VERIFY THE SIZES AND LOCATIONS OF EXISTING DUCTS AND PIPE CONNECTION POINTS BEFORE DEMOLITION AND CONSTRUCTION WORK BEGINS.
2. UTILITY SHUTDOWN: COORDINATE THE SCHEDULE FOR UTILITY SHUTDOWNS AND AREA CLOSURES WITH THE DISTRICT REPRESENTATIVE BEFORE STARTING DEMOLITION OR CONSTRUCTION.
3. IMPACT ASSESSMENT: VERIFY AND COORDINATE WITH THE DISTRICT REPRESENTATIVE ANY AREAS THAT MIGHT BE AFFECTED BEFORE CUTTING PIPES.
4. DUCT CLEANING AND REPAIR: PERFORM CLEANING AND REPAIRS ON EXISTING DUCTS, INCLUDING SEALING LEAKS AND INSTALLING NEW LINERS AS SPECIFIED.
5. TESTING AND BALANCING: TEST, ADJUST, AND AIR BALANCE ALL SUPPLY AND EXHAUST REGISTERS WITHIN THE DESIGNATED AREA. SUBMIT A TEST, ADJUST, AND BALANCE (TAB) REPORT TO THE DISTRICT REPRESENTATIVE FOR APPROVAL.
6. RETURN AIR PATH: ENSURE THERE'S A SUFFICIENT RETURN AIR PATHWAY FOR THE RENOVATED AREA.
7. ACOUSTICAL SEALING: SEAL ALL DUCT AND PIPE PENETRATIONS THROUGH FULL-HEIGHT WALLS WITH ACOUSTICAL SEALANT.
8. DUST PROTECTION: PROTECT THE BUILDING'S HVAC SYSTEMS FROM DUST AND DEBRIS IMPLEMENT AND MAINTAIN CONSTRUCTION FILTERS (ADHERING TO SMACNA STANDARDS) DURING DUSTY WORK.
9. REMOVE FILTERS BEFORE STARTING ANY TESTING AND BALANCING COMMISSIONING WORK.
10. SMOKE DETECTOR PROTECTION: PROTECT SMOKE DETECTORS FROM CONSTRUCTION DUST. IF NECESSARY, INSTALL TEMPORARY HEAT DETECTORS TO MAINTAIN SMOKE DETECTION COVERAGE DURING CONSTRUCTION.
11. CEILING DUCT INSULATION: ENSURE ALL CONCEALED SUPPLY AIR DUCTS IN THE CEILING ARE INSULATED.
12. BUILDING CODE COMPLIANCE: ENSURE THE REMODEL ADHERES TO ALL APPLICABLE BUILDING STANDARDS.
13. PLENUM RETURN AIR PATHWAY: VERIFY THERE ARE NO COMBUSTIBLE MATERIALS PRESENT IF USING THE PLENUM SPACE AS A RETURN AIR PATHWAY.
14. DUCT INSULATION REPLACEMENT: REPLACE DUCT INSULATION IF IT'S IN POOR CONDITION.

REFERENCE NOTES

(1) NOT USED

MECHANICAL SITE PLAN

SCALE	
1" = 30'-0"	1

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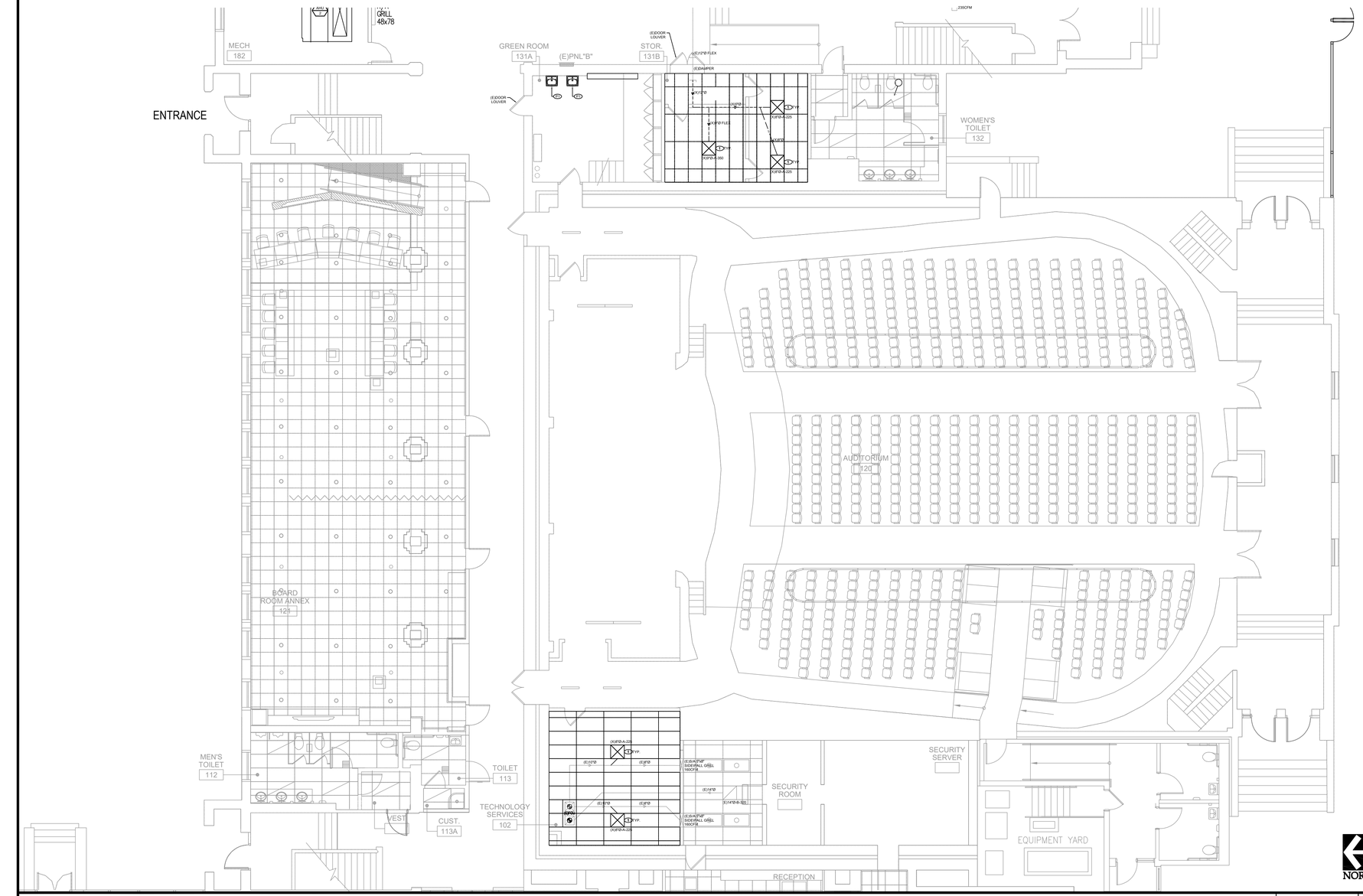
MP101



MECHANICAL DEMO FIRST FLOOR PLAN

SCALE 1/8" = 1'-0"

1

DEMOLITION NOTES

1. REVIEW AND VERIFICATION:
   - 1.1. BEFORE BIDDING AND COMMENCING DEMOLITION, THOROUGHLY REVIEW THE CONSTRUCTION DOCUMENTS, WORKING DRAWINGS, AND FIELD VERIFY ALL EXISTING CONDITIONS. THIS INCLUDES INVESTIGATING QUESTIONABLE WORK RELATED TO DISCONNECTING OR REMOVING EXISTING EQUIPMENT SHOWN FOR DEMOLITION. COORDINATE THIS INFORMATION WITH THE CONSTRUCTION SCHEDULE.
   - 1.2. DRAWINGS INDICATE EXISTING CONDITIONS BASED ON RECORD DRAWINGS AND LIMITED VISUAL VERIFICATION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ABSOLUTE ACCURACY. VERIFY ALL EXISTING FIELD CONDITIONS, EXERCISE CAUTION DURING DEMOLITION, AND PROMPTLY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES ENCOUNTERED.
2. EXISTING EQUIPMENT REMOVAL:
   - 2.1. UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL DEVICES ASSOCIATED WITH THE EXISTING EQUIPMENT BEING REMOVED. DISPOSE OF ALL REMOVED DEVICES AND EQUIPMENT UNLESS OTHERWISE DIRECTED BY THE DISTRICT FOR SALVAGE.
   - 2.2. THE CONTRACTOR, ACCOMPANIED BY THE DISTRICT REPRESENTATIVE, SHALL TAKE INVENTORY OF EXISTING MATERIAL AND EQUIPMENT. THE DISTRICT WILL SELECT MATERIAL AND EQUIPMENT FOR SALVAGE, WHICH WILL REMAIN THEIR PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR DELIVERING SALVAGED EQUIPMENT AND MATERIALS TO DESIGNATED LOCATIONS CHOSEN BY THE DISTRICT. EQUIPMENT AND DEVICES DESIGNATED FOR SALVAGE MUST BE NEATLY PILED, STORED, AND PROTECTED FROM DAMAGE. ANY MATERIALS AND EQUIPMENT NOT CHOSEN FOR SALVAGE BECOME THE PROPERTY OF THE CONTRACTOR AND MUST BE REMOVED FROM THE PREMISES AND DISPOSED OF RESPONSIBLY.
3. DEMOLITION COORDINATION:
   - 3.1. COORDINATE ALL DEMOLITION ACTIVITIES WITH NEW CONSTRUCTION REQUIREMENTS TO ENSURE THE NEWLY INSTALLED SYSTEM IS COMPLETE AND FUNCTIONAL.
4. EXISTING DUCTWORK:
   - 4.1. PERFORM CLEANING AND REPAIRS ON EXISTING DUCTS, INCLUDING SEALING LEAKS AND INSTALLING NEW LINERS AS SPECIFIED. UTILIZE EXISTING DUCTWORK AS SHOWN ON THE PLANS FOR ESTIMATING CLEANING COSTS AND AIR BALANCING.
   - 4.2. TEST, ADJUST, AND AIR BALANCE ALL SUPPLY AND EXHAUST REGISTERS WITHIN THE DESIGNATED AREA. SUBMIT A TAB REPORT TO THE DISTRICT REPRESENTATIVE FOR APPROVAL.
   - 4.3. IF ANY DIFFUSER FAILS TO ACHIEVE DESIGN CFM WITHIN 10% TOLERANCE AFTER AIR BALANCING, INSPECT EXISTING DUCTS FOR AIR LEAKAGE. PERFORM NECESSARY REPAIRS OR REPLACEMENTS TO REDUCE LEAKAGE AND ACHIEVE THE DESIRED CFM TOLERANCE.
5. EXISTING BUILDING PROTECTION
   - 5.1. CAREFULLY PROTECT ALL EXISTING WALLS, TRIM, FLOORS, EQUIPMENT, UTILITY LINES, AND MATERIALS DURING DEMOLITION. WHEN WORKING ON FINISHED SURFACES, LIMIT DAMAGE TO THE CONFINED SPACE AND RESTORE THEM TO THEIR ORIGINAL CONDITION.
   - 5.2. PATCHING AND PAINTING OF FLOORS, WALLS, CEILINGS, ETC., SHALL MATCH EXISTING FINISHES.
   - 5.3. PRIOR WRITTEN APPROVAL FROM THE ENGINEER IS MANDATORY BEFORE NOTCHING, CORING, OR CUTTING INTO EXISTING STRUCTURES.
6. IMPLEMENT DUST PROTECTION MEASURES THROUGHOUT CONSTRUCTION.
   - 6.1. COVER ALL DUCT AND AIR DISTRIBUTION COMPONENT OPENINGS WITH TAPE, PLASTIC, SHEET METAL, OR OTHER METHODS APPROVED BY THE ENFORCING AGENCY DURING ROUGH INSTALLATION, STORAGE ON-SITE, AND UNTIL THE FINAL STARTUP OF THE HVAC EQUIPMENT TO MINIMIZE DUST, WATER, AND DEBRIS ENTERING THE SYSTEM.
   - 6.2. DURING DEMOLITION AND CONSTRUCTION, PROVIDE MERV 8 FILTER MEDIA(S) AT THE MAIN RETURN AIR INTAKE(S) ON THE FLOOR BEING RENOVATED.
   - 6.3. PROTECT THE BUILDING'S HVAC SYSTEMS FROM DUST AND DEBRIS THROUGHOUT THE CONSTRUCTION PHASE. IMPLEMENT AND MAINTAIN CONSTRUCTION FILTERS (ADHERING TO SMACNA STANDARDS) DURING DUSTY WORK. REMOVE FILTERS BEFORE STARTING ANY TESTING AND BALANCING COMMISSIONING WORK.
   - 6.4. PROTECT SMOKE DETECTORS FROM CONSTRUCTION DUST. IF NECESSARY, INSTALL TEMPORARY HEAT DETECTORS TO MAINTAIN SMOKE DETECTION COVERAGE DURING CONSTRUCTION.
7. EXISTING SYSTEM CONSIDERATIONS:
   - 7.1. ENSURE THERE'S A SUFFICIENT RETURN AIR PATHWAY FOR THE RENOVATED AREA.
   - 7.2. SEAL ALL DUCT AND PIPE PENETRATIONS THROUGH FULL-HEIGHT WALLS WITH ACOUSTICAL SEALANT.
   - 7.3. ENSURE ALL CONCEALED SUPPLY AIR DUCTS IN THE CEILING ARE INSULATED.
   - 7.4. VERIFY THERE ARE NO COMBUSTIBLE MATERIALS PRESENT IF USING THE PLENUM SPACE AS A RETURN AIR PATHWAY.
   - 7.5. REPLACE DUCT INSULATION IF IT'S IN POOR CONDITION.
8. AIR HANDLING UNIT (AHU) INSPECTION:
   - 8.1. INSPECT THE CONDITION OF THE EXISTING AIR HANDLING UNIT (AHU) ON THE ROOF THAT SERVES THE TENANT SPACE. IF REPAIRS OR REPLACEMENT ARE NECESSARY, INFORM THE OWNER.
9. UTILITY SHUTDOWN:
   - 9.1. COORDINATE THE SCHEDULE FOR UTILITY SHUTDOWNS AND AREA CLOSURES WITH THE DISTRICT REPRESENTATIVE BEFORE BIDDING AND STARTING DEMOLITION OR CONSTRUCTION.

GENERAL PLUMBING NOTES

1. ALL UNDERGROUND UTILITY AND TRENCHING AND PATCHING SHALL BE VERIFIED WITH ALL TRADES & INCLUDED IN THE CONTRACTORS BID, REGARDLESS IF NOT SHOWN ON PLANS; PATCH TRENCHING TO MATCH (E) MATERIALS
2. DEMOLISH AND REMOVE EXISTING ITEMS, MATERIALS AND FINISHES AS REQUIRED AND NECESSARY FOR (N) WORK; REINSTALL & RESTORE ALL REMOVED MATERIALS & FINISHES AS REQUIRED.
3. SAWCUT AND PATCH EXISTING CONCRETE SLAB AS REQUIRED FOR NEW PIPING; INSTALL (N) FINISH FLOORING TO MATCH (E) AT SAWCUT PATCH.
4. REMOVE CURBS (SAWCUT) AND POUR NEW CONC. SLAB WHERE (E) CONC. CURBS OCCURS.
5. CONTRACTOR SHALL PATCH/FILL-IN ANY OPENINGS AS A RESULT OF DEMOLITION TO MATCH EXISTING CONSTRUCTION; PAINT/FINISH ENTIRE WALL TO MATCH EXISTING ADJACENT WALL FINISH; RESTORE ALL FINISHES AS REQUIRED.
6. EXTRA CARE MUST BE OBSERVED DURING DEMOLITION TO PREVENT DAMAGE TO EXISTING EQUIPMENT, PIPING, CONDUITS, CASEWORK, ETC. NOT RELATED TO THIS PROJECT.
7. CONTRACTOR TO VERIFY EXACT PIPING LOCATIONS, INVERT AND FIXTURE LOCATIONS IN THE FIELD; (E) FIXTURES, PIPING AND FOOTINGS ARE SHOWN FOR REFERENCE ONLY.
8. ALL WASTE PIPING BELOW & ABOVE GRADE/SLAB, AND VENT PIPING BELOW GRADE/SLAB & BELOW FIXTURE FLOOD LEVEL RIM, SHALL BE NEW.
9. TYPICALLY HAND EXCAVATE UTILITY TRENCHES UNDER (E) CONCRETE SLAB & WALL FOOTINGS; AS REQ'D FORM & SLURRY UNDER FOOTING TO PROVIDE COMPLETE SUPPORT BELOW FOOTING; SLEEVE (N) PIPE THROUGH ENCASEMENT.
10. MANUAL DIGGING: CONTRACTOR SHALL EXERCISE CAUTION WHILE EXCAVATING FOR (N) AND (E) PLUMBING PIPING TO AVOID ANY CONFLICT WITH (E) FOOTING AND OTHER UTILITIES; SUCH LOCATIONS SHALL BE HAND DUG AND PROTECT (E) CONDITIONS TO BE MAINTAINED.
11. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF (E) WASTE, VENT AND CW PIPES AND POC PRIOR TO DEMOLITION AND CONSTRUCTION.
12. ALL (E) CW, WASTE AND VENT PIPES FROM OTHER PLUMBING FIXTURES OUTSIDE OF RESTROOMS SHALL BE RECONNECTED BACK TO THE (N) PIPES INSIDE THE RESTROOMS.

REFERENCE NOTES

(1) DEMOLISH AND DISPOSE OF EXISTING SUPPLY/RETURN DUCTS, SUPPLY AIR DIFFUSER, AND RETURN DUCT OPENING WITH WIRE MESH SCREEN, AS SHOWN.

(P1) REMOVE AND DISPOSE OF EXISTING PLUMBING FIXTURES AND ASSOCIATED WASTE, VENT AND CW/HW PIPING TO POC, TO ACCOMMODATE NEW LAVATORY INSTALLATION. PROVIDE REQUIRED ACCESSORIES AS SHOWN ON M002 MECHANICAL SCHEDULE, FIXTURE/PIPE MATERIAL SCHEDULE. VERIFY EXACT LOCATIONS OF THE FIXTURES AND PIPING IN THE FIELD.

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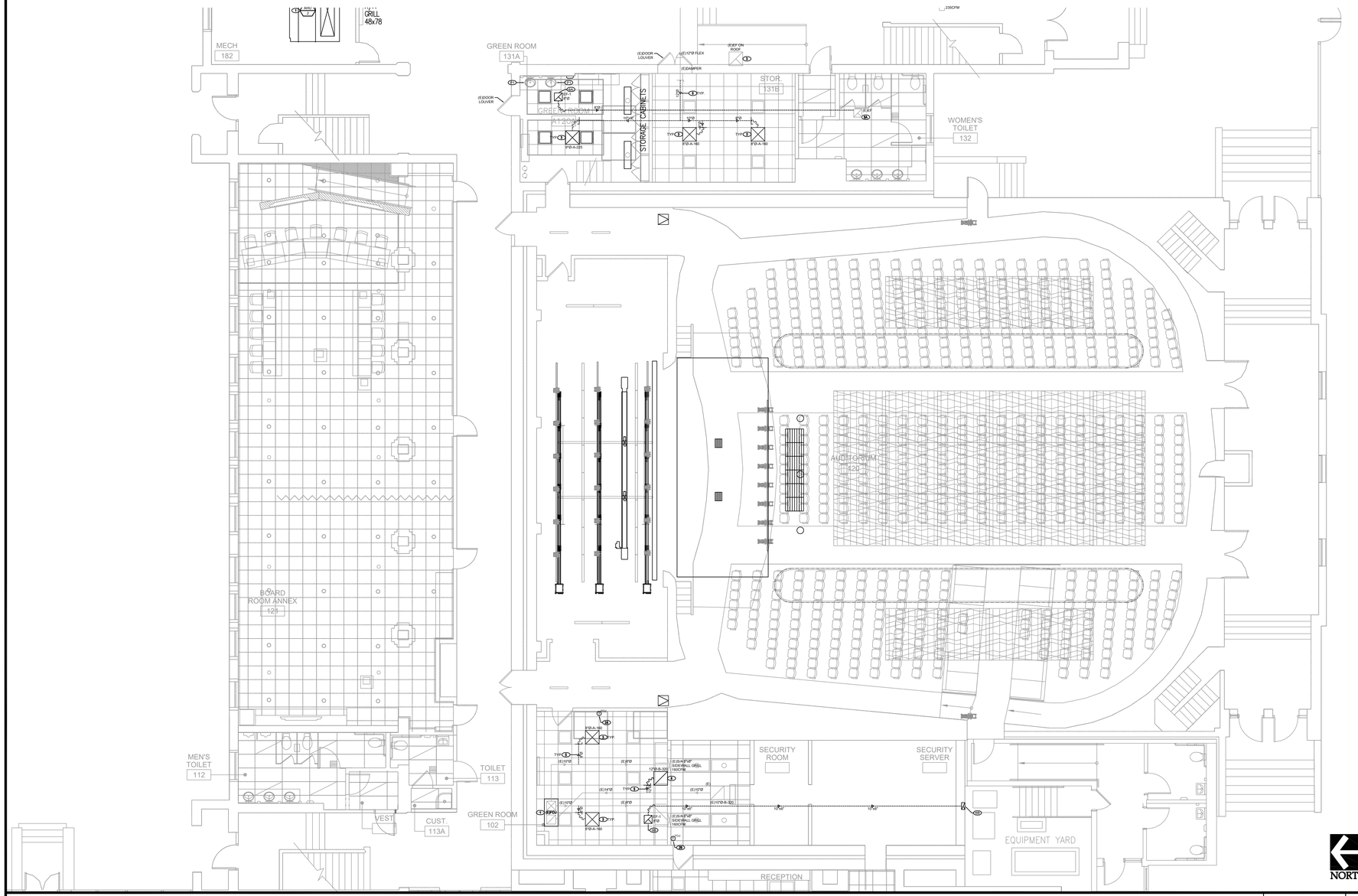
MP111



MECHANICAL FIRST FLOOR PLAN

SCALE 1/8" = 1'-0"

1

GENERAL NOTES

1. FIELD VERIFICATION: VERIFY THE SIZES, LOCATIONS OF EXISTING DUCTS, PIPE CONNECTION POINTS, AND ANY AREAS POTENTIALLY AFFECTED BEFORE DEMOLITION OR CONSTRUCTION BEGINS. COORDINATE THIS INFORMATION WITH THE DISTRICT REPRESENTATIVE.
2. DUCT CLEANING AND REPAIR: PERFORM CLEANING AND REPAIRS ON EXISTING DUCTS, INCLUDING SEALING LEAKS AND INSTALLING NEW LINERS AS SPECIFIED. UTILIZE EXISTING DUCTWORK AS SHOWN ON THE PLANS FOR ESTIMATING CLEANING COSTS AND AIR BALANCING.
3. TESTING AND BALANCING: TEST, ADJUST, AND AIR BALANCE ALL SUPPLY AND EXHAUST REGISTERS WITHIN THE DESIGNATED AREA. SUBMIT A TAB REPORT TO THE DISTRICT REPRESENTATIVE FOR APPROVAL.
4. RETURN AIR PATH: ENSURE THERE'S A SUFFICIENT RETURN AIR PATHWAY FOR THE RENOVATED AREA.
5. ACOUSTICAL SEALING: SEAL ALL DUCT AND PIPE PENETRATIONS THROUGH FULL-HEIGHT WALLS WITH ACOUSTICAL SEALANT.
6. DUST PROTECTION: PROTECT THE BUILDING'S HVAC SYSTEMS FROM DUST AND DEBRIS THROUGHOUT THE CONSTRUCTION PHASE. IMPLEMENT AND MAINTAIN CONSTRUCTION FILTERS (ADHERING TO SMACNA STANDARDS) DURING DUSTY WORK. REMOVE FILTERS BEFORE STARTING ANY TESTING AND BALANCING COMMISSIONING WORK.
7. CEILING DUCT INSULATION: ENSURE ALL CONCEALED SUPPLY AIR DUCTS IN THE CEILING ARE INSULATED.
8. PLENUM RETURN AIR PATHWAY: VERIFY THERE ARE NO COMBUSTIBLE MATERIALS PRESENT IF USING THE PLENUM SPACE AS A RETURN AIR PATHWAY.
9. EXISTING CONDITIONS VERIFICATION: INFORMATION ON DRAWINGS ABOUT EXISTING INSTALLATIONS IS BASED ON LIMITED INSPECTION AND MAY NOT BE ENTIRELY ACCURATE. FIELD VERIFICATION IS REQUIRED BEFORE PROCEEDING WITH ANY WORK THAT MIGHT BE AFFECTED.
10. SYSTEM PROTECTION DURING CONSTRUCTION: COVER ALL DUCT AND AIR DISTRIBUTION COMPONENT OPENINGS DURING ROUGH INSTALLATION, STORAGE ON SITE, AND UNTIL FINAL STARTUP TO MINIMIZE DUST, WATER, AND DEBRIS ENTERING THE SYSTEM.
11. AIR BALANCING DUCT LEAKAGE: IF ANY DIFFUSER FAILS TO ACHIEVE DESIGN CFM WITHIN 10% TOLERANCE AFTER AIR BALANCING, INSPECT EXISTING DUCTS FOR AIR LEAKAGE. PERFORM NECESSARY REPAIRS OR REPLACEMENTS TO REDUCE LEAKAGE AND ACHIEVE THE DESIRED CFM TOLERANCE.
12. PROVIDE ACOUSTICAL SOUND MASKING PADS, LOWRY OR EQUAL, AT AUDITORIUM.
    - 12.1. ALL PENETRATIONS INTO SOUND-RATED PARTITIONS OR FLOOR-CEILING ASSEMBLIES SHALL BE SEALED, LINED, OR INSULATED WITH AN APPROVED PERMANENT RESILIENT SEALANT.
    - 12.2. ALL RIGID CONDUITS, DUCTS, PLUMBING PIPES, AND APPLIANCE VENTS LOCATED IN SOUND-RATED ASSEMBLIES SHALL BE ISOLATED FROM THE BUILDING CONSTRUCTION BY MEANS OF RESILIENT SLEEVES, MOUNTS, OR A MINIMUM 1/4" THICK APPROVED RESILIENT MATERIAL.
    - 12.3. AN APPROVED PERMANENT AND RESILIENT ACOUSTICAL SEALANT SHALL BE PROVIDED ALONG THE JOINT BETWEEN THE FLOOR AND THE SEPARATION WALLS.
    - 12.4. METAL VENTILATING AND CONDITIONED AIR DUCTS LOCATED IN SOUND RATED ASSEMBLIES SHALL BE LINED (EXCEPTION: DUCTS SERVING ONLY EXIT WAYS, KITCHEN COOKING FACILITIES, AND BATHROOMS NEED NOT BE LINED).
    - 12.5. MINERAL FIBER INSULATION SHALL BE INSTALLED IN JOIST SPACES WHENEVER A PLUMBING, PIPING, OR DUCT PENETRATES A FLOOR - CEILING ASSEMBLY OR WHERE SUCH UNIT PASSES THROUGH THE PLANE OF THE FLOOR - CEILING ASSEMBLY FROM WITHIN A WALL. THE INSULATION SHALL BE INSTALLED TO A POINT 12" BEYOND THE PIPE OR DUCT. THIS REQUIREMENT IS NOT APPLICABLE TO FIRE SPRINKLER PIPE, GAS LINE OR ELECTRICAL CONDUIT.

GENERAL PLUMBING NOTES

1. ALL UNDERGROUND UTILITY AND TRENCHING AND PATCHING SHALL BE VERIFIED WITH ALL TRADES & INCLUDED IN THE CONTRACTORS BID, REGARDLESS IF NOT SHOWN ON PLANS; PATCH TRENCHING TO MATCH (E) MATERIALS.
2. DEMOLISH AND REMOVE EXISTING ITEMS, MATERIALS AND FINISHES AS REQUIRED AND NECESSARY FOR (N) WORK; REINSTALL & RESTORE ALL REMOVED MATERIALS & FINISHES AS REQUIRED.
3. SAWCUT AND PATCH EXISTING CONCRETE SLAB AS REQUIRED FOR NEW PIPING; INSTALL (N) FINISH FLOORING TO MATCH (E) AT SAWCUT PATCH.
4. REMOVE CURBS (SAWCUT) AND POUR NEW CONC. SLAB WHERE (E) CONC. CURBS OCCURS.
5. CONTRACTOR SHALL PATCH/FILL-IN ANY OPENINGS AS A RESULT OF DEMOLITION TO MATCH EXISTING CONSTRUCTION; PAINT/FINISH ENTIRE WALL TO MATCH EXISTING ADJACENT WALL FINISH; RESTORE ALL FINISHES AS REQUIRED.
6. EXTRA CARE MUST BE OBSERVED DURING DEMOLITION TO PREVENT DAMAGE TO EXISTING EQUIPMENT, PIPING, CONDUITS, CASEWORK, ETC. NOT RELATED TO THIS PROJECT.
7. CONTRACTOR TO VERIFY EXACT PIPING LOCATIONS, INVERT AND FIXTURE LOCATIONS IN THE FIELD; (E) FIXTURES, PIPING AND FOOTINGS ARE SHOWN FOR REFERENCE ONLY.
8. ALL WASTE PIPING BELOW & ABOVE GRADE/SLAB, AND VENT PIPING BELOW GRADE/SLAB & BELOW FIXTURE FLOOD LEVEL RIM, SHALL BE NEW.
9. TYPICALLY HAND EXCAVATE UTILITY TRENCHES UNDER (E) CONCRETE SLAB & WALL FOOTINGS; AS REQ'D FORM & SLURRY UNDER FOOTING TO PROVIDE COMPLETE SUPPORT BELOW FOOTING; SLEEVE (N) PIPE THROUGH ENCASEMENT.
10. MANUAL DIGGING: CONTRACTOR SHALL EXERCISE CAUTION WHILE EXCAVATING FOR (N) AND (E) PLUMBING PIPING TO AVOID ANY CONFLICT WITH (E) FOOTING AND OTHER UTILITIES; SUCH LOCATIONS SHALL BE HAND DUG AND PROTECT (E) CONDITIONS TO BE MAINTAINED.
11. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF (E) WASTE, VENT AND CW PIPES AND POC PRIOR TO DEMOLITION AND CONSTRUCTION.
12. ALL (E) CW, WASTE AND VENT PIPES FROM OTHER PLUMBING FIXTURES OUTSIDE OF RESTROOMS SHALL BE RECONNECTED BACK TO THE (N) PIPES INSIDE THE RESTROOMS.

REFERENCE NOTES

1. EXISTING HVAC SYSTEM. CONTRACTOR TO FIELD VERIFY AND COORDINATE THE EXACT LOCATION WITH THE DISTRICT REPRESENTATIVE.
   UTILIZE EXISTING SUPPLY AND RETURN DUCTS. MODIFY EXISTING DUCTS TO ACCOMMODATE INSTALLATION OF NEW DUCTS ABOVE THE CEILING.
   CONNECT NEW SUPPLY AND RETURN DUCTS TO EXISTING DUCTS (PROVIDE TRANSITIONS AS NEEDED).
   REBALANCE THE ENTIRE AIR DISTRIBUTION SYSTEM TO ACHIEVE THE MAXIMUM CFM (CUBIC FEET PER MINUTE) REQUIRED FOR THE REMODEL PLAN. TEST, ADJUST, AND BALANCE THE SYSTEM TO ENSURE IT DELIVERS THE SPECIFIED CFM.
2A. EXISTING THERMOSTAT TO BE RELOCATED TO NEW WALL (+48"AFF). EXTEND CONDUIT AND WIRING AS REQUIRED.
2B. PROVIDE NEW THERMOSTAT (+48"AFF). EXTEND CONDUIT AND WIRING AS REQUIRED.
3. CONTRACTOR TO REBALANCE THE AIR CAPACITY (CFM) OF EACH DIFFUSER TO MATCH THE REMODEL PLAN.
4. 24"X24" RETURN DUCT OPENING W/ WIRE MESH SCREEN AND AIR FILTER RACK FOR MERV 13 AIR FILTERS.
5. ALL DUCT SUPPORT SHALL BE ATTACHED TO EXISTING FURRED STRIP AT STRUCTURE, SIMILAR TO EXISTING CONDITION.
6A. PROVIDE NEW EXHAUST FAN, DUCT AND GRILLE; FIELD VERIFY EXACT LOCATIONS PRIOR TO INSTALLATION. CONNECT NEW DUCT TO EXISTING EXHAUST/VENT DUCT AT EXISTING EXHAUST FAN IN THE RESTROOM, PROVIDE TRANSITION FITTINGS AND DAMPER AS REQUIRED.
6B. PROVIDE NEW EXHAUST FAN, DUCT AND GRILLE; FIELD VERIFY EXACT LOCATIONS PRIOR TO INSTALLATION. EXTEND FLEXIBLE DUCT TO CONNECT TO THE NEW METAL DUCT, PROVIDE TRANSITION FITTINGS AS NEEDED. INSTALL A NEW ALUMINUM LOUVER AT THE EXISTING WINDOW OPENING IN THE SERVER ROOM TO THE EXTERIOR WALL. PATCH AND PAINT THE OPENING.
P1. PROVIDE NEW LAVATORY AND CONNECT TO EXISTING PIPES. EXTEND 1/2"CW, 2"W AND 1-1/2"V TO LAV. PROVIDE ANGLE STOPS, SUPPLIES, INSULATED TRAP, TRAP ARM AND REQUIRED ACCESSORIES AS SHOWN ON M002 MECHANICAL SCHEDULE, FIXTURE/PIPE MATERIAL SCHEDULE. REWORK EXISTING CW/HW/W/V PIPES INSIDE THE WALL, ABOVE CEILING AND BELOW FLOOR TO ACCOMMODATE NEW LAVATORY INSTALLATION. EXTEND/REPLACE DAMAGE PIPES AS REQUIRED. VERIFY EXACT LOCATIONS OF THE FIXTURES AND PIPING IN THE FIELD.

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POMONA OFFICE OF EDUCATION

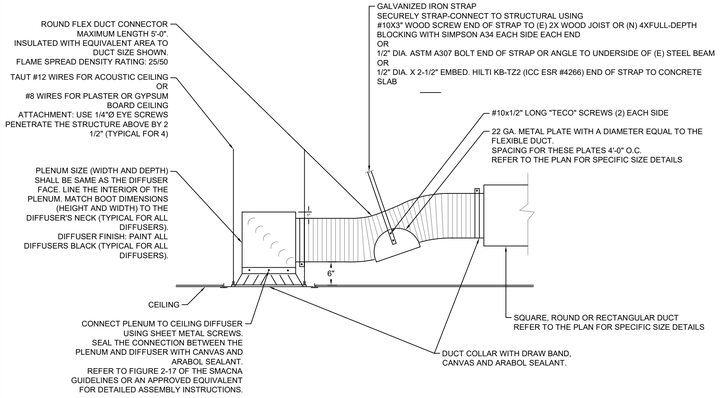
EDUCATION CENTER AUDITORIUM MODERNIZATION

POMONA UNIFIED SCHOOL DISTRICT
800 S GAREY AVENUE POMONA, CA 91766

April 25, 2025

MP121

MECHANICAL FIRST FLOOR PLAN



NOTE:
1. CONNECTIONS FOR RETURN, TRANSFER, AND EXHAUST CEILING GRILLES/REGISTERS ARE TYPICAL.
2. FLEXIBLE DUCT SHALL BE USED FOR ACCESSIBLE CEILINGS ONLY. FLEXIBLE DUCT ABOVE NON-ACCESSIBLE CEILINGS IS NOT ACCEPTABLE.

CEILING DIFFUSER INSTALLATION

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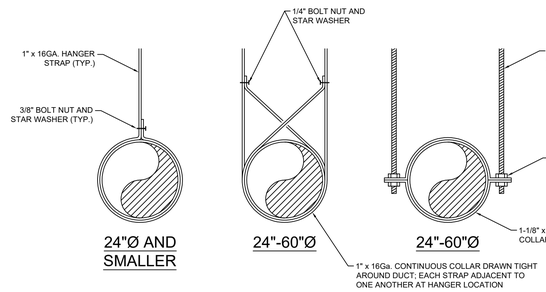
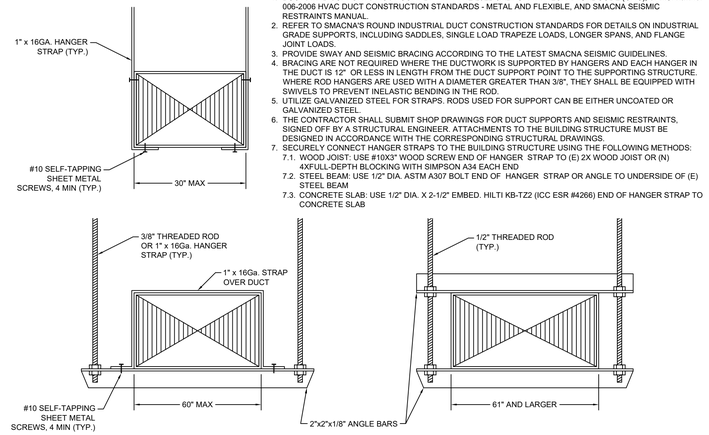


24"Ø AND SMALLER | 24"-60"Ø | 24"-60"Ø

NOTE:
1. DUCTS AND SUPPORTS MUST COMPLY WITH THE 2022 CALIFORNIA MECHANICAL CODE (CMC), SMACNA/ANSI 006-2006 HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND SMACNA SEISMIC RESTRAINTS MANUAL.
2. REFER TO SMACNA'S ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS FOR DETAILS ON INDUSTRIAL GRADE SUPPORTS, INCLUDING SADDLES, SINGLE LOAD TRAPEZE LOADS, LONGER SPANS, AND FLANGE JOINT LOADS.
3. PROVIDE SWAY AND SEISMIC BRACING ACCORDING TO THE LATEST SMACNA SEISMIC GUIDELINES.
4. BRACING ARE NOT REQUIRED WHERE THE DUCTWORK IS SUPPORTED BY HANGERS AND EACH HANGER IN THE DUCT IS 12" OR LESS IN LENGTH FROM THE DUCT SUPPORT POINT TO THE SUPPORTING STRUCTURE. WHERE ROD HANGERS ARE USED WITH A DIAMETER GREATER THAN 3/8", THEY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD.
5. UTILIZE GALVANIZED STEEL FOR STRAPS. RODS USED FOR SUPPORT CAN BE EITHER UNCOATED OR GALVANIZED STEEL.
6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR DUCT SUPPORTS AND SEISMIC RESTRAINTS, SIGNED OFF BY A STRUCTURAL ENGINEER. ATTACHMENTS TO THE BUILDING STRUCTURE MUST BE DESIGNED IN ACCORDANCE WITH THE CORRESPONDING STRUCTURAL DRAWINGS.
7. SECURELY CONNECT HANGER STRAPS TO THE BUILDING STRUCTURE USING THE FOLLOWING METHODS:
   7.1. WOOD JOIST: USE #10X3" WOOD SCREW END OF HANGER STRAP TO (E) 2X WOOD JOIST OR (N) 4XFULL-DEPTH BLOCKING WITH SIMPSON A34 EACH END
   7.2. STEEL BEAM: USE 1/2" DIA. ASTM A307 BOLT END OF HANGER STRAP OR ANGLE TO UNDERSIDE OF (E) STEEL BEAM
   7.3. CONCRETE SLAB: USE 1/2" DIA. X 2-1/2" EMBED. HILTI KB-TZ2 (ICC ESR #4266) END OF HANGER STRAP TO CONCRETE SLAB

ROUND DUCT SUPPORT

SCALE: NOT TO SCALE | 2



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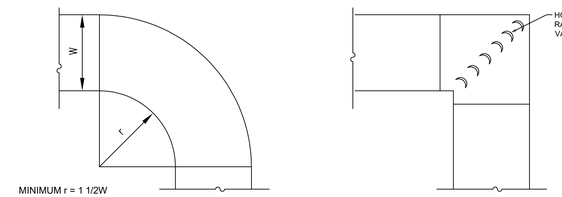
RECTANGULAR DUCT SUPPORT

SCALE: NOT TO SCALE | 3

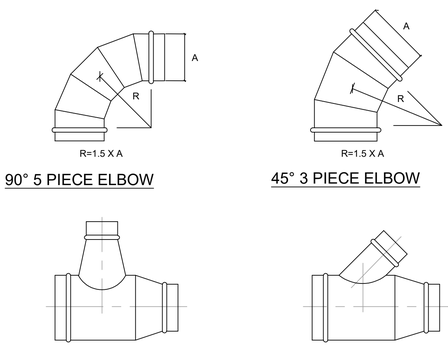


RADIUS ELBOW | SQUARE ELBOW

NOTE
1. VANE SELECTION:
   1.1. FOR DUCTS LESS THAN 18" WIDE, USE A MINIMUM 26 GA VANE WITH A CENTER-TO-CENTER SPACING OF 2-1/8".
   1.2. FOR DUCTS 18" WIDE AND WIDER, USE A MINIMUM 24 GA VANE WITH A CENTER-TO-CENTER SPACING OF 3-1/4".
2. VANE INNER RADIUS:
   2.1. FOR VANES WITH A CENTER-TO-CENTER SPACING OF 2-1/2", PROVIDE AN INNER RADIUS OF 2".
   2.2. FOR VANES WITH A CENTER-TO-CENTER SPACING OF 3-1/2", PROVIDE AN INNER RADIUS OF 4-1/2".

RECTANGULAR DUCT ELBOWS

SCALE: N.T.S. | 4

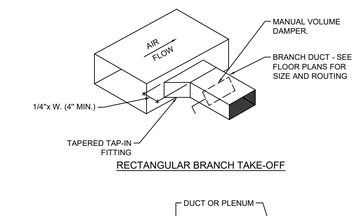


90° 5 PIECE ELBOW | 45° 3 PIECE ELBOW

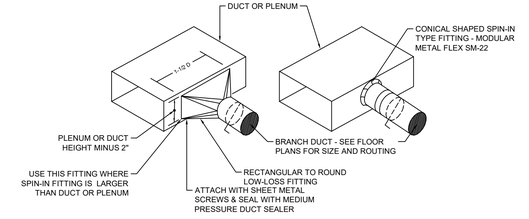
REDUCING CONICAL AND LATERAL TEE

ROUND DUCT FITTINGS

SCALE: N.T.S. | 5



RECTANGULAR BRANCH TAKE-OFF

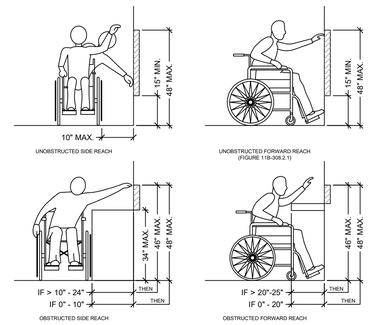


ROUND BRANCH TAKE-OFF

NOTE
1. MAKE ALL CONNECTIONS SECURE ACCORDING TO THE PRESSURE CLASS RATING SPECIFIED.
2. THIS DRAWING DEPICTS A ROUND DUCT TAKE-OFF.

BRANCH DUCT TAKE-OFF DETAIL

SCALE: N.T.S. | 6



NOTE:
1. CBC2022, 11B-308.1.1 ELECTRICAL SWITCHES: CONTROLS AND SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF A ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES OR COOLING, HEATING AND VENTILATING EQUIPMENT, SHALL COMPLY WITH SECTION 11B-308 EXCEPT THE LOW REACH SHALL BE MEASURED TO THE BOTTOM OF THE OUTLET BOX AND THE HIGH REACH SHALL BE MEASURED TO THE TOP OF THE OUTLET BOX.
2. CBC2022, 11B-308.1.2 ELECTRICAL RECEPTACLE OUTLETS: ELECTRICAL RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30 AMPERES OR LESS AND COMMUNICATION SYSTEM RECEPTACLES SHALL COMPLY WITH SECTION 11B-308 EXCEPT THE LOW REACH SHALL BE MEASURED TO THE BOTTOM OF THE OUTLET BOX AND THE HIGH REACH SHALL BE MEASURED TO THE TOP OF THE OUTLET BOX.
3. CBC2022, 11B-309.4 OPERATION: OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 POUNDS MAXIMUM.
4. OPERABLE PARTS CANNOT BE LOCATED WHERE A PERSON USING A WHEELCHAIR WOULD BE FORCED TO REACH OVER AN OBSTRUCTION.
5. FIRE ALARM INITIATING DEVICE MUST BE LOCATED ON PATH OF TRAVEL.
6. PROVIDE FRONT AND PARALLEL APPROACH AT NEWLY INSTALLED FIRE ALARM INITIATING DEVICE.

MOUNTING HEIGHT OVER OBSTRUCTION

SCALE: N.T.S. | 9

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M401