MADERA UNIFIED SCHOOL DISTRICT

JOHN J. PERSHING ELEMENTARY SCHOOL
COLD BOX ADDITION
1505 ELLIS ST.
MADERA, CA 93638

GENERAL NOTES:

1. *THE INTENT OF THE DRAWING AND SPECIFICATIONS IS TO CONSTRUCT THE BUILDING IN ACCORDANCE WITH THE 2022 EDITION OF TITLE 24, CALIFORNIA CODE OF REGULATIONS. CHANGES TO THE STRUCTURAL, ACCESSIBILITY OR FIRE AND LIFE-SAFETY PORTIONS OF THE APPROVED PLANS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR CONSTRUCTION CHANGE DOCUMENT AS REQUIRED IN SECTION 4-338, PART 1, TITLE 24, CCR, AND SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK. DOCUMENTS SHALL BE PREPARED AND SUBMITTED TO DSA IN COMPLIANCE WITH DSA INTERPRETATION OF REGULATION IR A-6.*

2. *LAYOUT OF MATERIALS, EQUIPMENT AND SYSTEMS IS GENERALLY DIAGRAMMATIC UNLESS SPECIFICALLY DIMENSIONED. SOME WORK MAY BE SHOWN OFFSET FOR CLARITY. THE HVAC BUILDING PLANS HAVE BEEN PREPARED TO MATCH THE ARCHITECTURAL PLANS. IF DIFFERENCES OCCUR, THE ARCHITECTURAL PLANS ARE TO TAKE PRECEDENCE. THE ACTUAL LOCATIONS OF ALL MATERIALS, PIPING, DUCTWORK, FIXTURES, EQUIPMENT, SUPPORTS, ETC. SHALL BE CAREFULLY PLANNED, PRIOR TO INSTALLATION OF ANY WORK, TO AVOID ALL INTERFERENCE WITH EACH OTHER, OR WITH STRUCTURAL, ELECTRICAL, ARCHITECTURAL, OR OTHER ELEMENTS. ALL DUCT AND PIPE OFFSET ELBOWS FOR COORDINATION BETWEEN TRADES ARE NOT SHOWN. CONTRACTOR SHALL INCLUDE SUFFICIENT FUNDS FOR THE COORDINATION OFFSETS IN THE BID. VERIFY THE PROPER VOLTAGE AND PHASE OF ALL EQUIPMENT WITH THE ELECTRICAL PLANS. ALL CONFLICTS SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT AND THE ENGINEER PRIOR TO THE INSTALLATION OF ANY WORK OR THE ORDERING OF ANY EQUIPMENT.*

3. *WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER-DRIVEN PINS IN EXISTING NON-PRESTRESSED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.*

4. *MEP COMPONENT ANCHORAGE NOTE:*

   ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

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

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

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

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

5. *PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:*

   PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 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 (OSHPD) OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

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

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

   MP☐ MD☐ PP☐ E☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE HCAI (OSHPD) PRE-APPROVAL (OPM#) # 0043-13 . AS INCLUDED IN THESE DRAWINGS WITH PROJECT-SPECIFIC NOTES AND DETAILS.

6. *PENETRATIONS THROUGH FIRE RATED WALLS, FLOOR/CEILING, AND ROOF/CEILING ASSEMBLIES SHALL BE SEALED USING AN APPROVED SYSTEM CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC TO FIRE STOPS PER 2022 CBC SECTION 714. THIS INCLUDES EXISTING PIPE AND CONDUIT THROUGH NEW ASSEMBLIES. CUSTOM DESIGNED SYSTEMS WHICH COMBINE COMPONENTS FROM DIFFERENT APPROVED SYSTEMS BUT HAVE NOT BEEN TESTED AS A COMPLETE ASSEMBLY WILL NOT BE ACCEPTABLE. FOR FIRE STOPS FOR PIPE PENETRATIONS SEE SPECIFICATIONS.*

7. *A DSA CERTIFIED PROJECT INSPECTOR (MINIMUM CLASS 3) EMPLOYED BY THE DISTRICT & APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-338, PART 1, TITLE 24, CCR.*

8. *A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.*

9. *THIS PROJECT HAS NO DEFERRED SUBMITTALS.*

10. *GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.*

11. *SUBSTITUTIONS AFFECTING DSA-REGULATED ITEMS SHALL BE CONSIDERED AS CONSTRUCTION DOCUMENTS (CCD'S) AND SHALL BE APPROVED PRIOR TO FABRICATION AND INSTALLATION PER DSA IR A-6 AND SECTIONS 338 (C) PART 1, TITLE 24 CCR.*

12. *THE CALIFORNIA ENERGY CODE SECTION 1-0103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE. LIGHTING CONTROLS ACCEPTANCE TEST MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT). MECHANICAL SYSTEM ACCEPTANCE TEST MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021. ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TEST SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR. ENGINEERING / ARCHITECT OF RECORD OR THE OWNERS AGENT. A LISTING OF CERTIFIED ATT CAN BE FOUND AT :https://www.energy.ca. gov/ programs-and -topics/programs/acceptance-test-technician-certification-provider-program/acceptance. THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS REQUIRED ACCEPTANCE CRITERIA. PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.*

OWNER
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769 SOUTH PINE STREET
MADERA, CA 93637
(559) 675-4546
CONTACT: ROSALIND COX

MECHANICAL ENGINEER
LAWRENCE ENGINEERING GROUP
4910 E CLINTON WAY
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(559) 431-0101
CONTACT: RYAN CARLSON

ELECTRICAL ENGINEER
BORRELLI & ASSOCIATES, INC.
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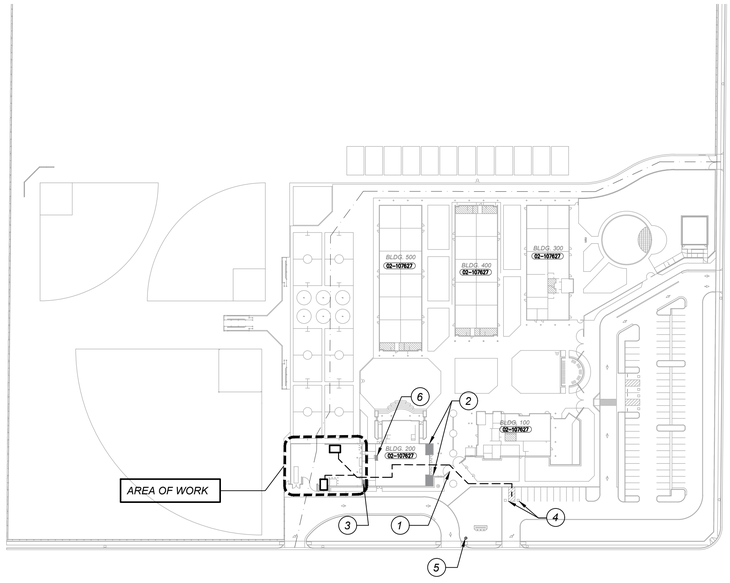
(559) 233-4438
CONTACT: JOHN BORRELLI

STRUCTURAL ENGINEER
PARRISH HANSEN
418 CLOVIS AVE.
CLOVIS, CA 93612
(559) 323-1023
CONTACT: BOB PARRISH



OVERALL SITE PLAN
SCALE: 1"=100'-0"

KEYNOTES: (THIS SHEET ONLY)

1. *(E) ACCESS GATE PER APP. NO. 02-107627 WITH ADJACENT SIGN TO BE LOCKED OPEN DURING NORMAL BUSINESS / SCHOOL HOURS OR DURING ANY PUBLIC FUNCTIONS.*
2. *(E) STUDENT ACCESSIBLE RESTROOM PER APP. 02-107627*
3. *(E) STAFF ACCESSIBLE RESTROOM PER APP. 02-107627*
4. *(E) ACCESSIBLE PARKING STALLS PER APP. 02-107627*
5. *(E) TOW- AWAY SIGN.*
6. *(E) ADA COMPLIANT DUAL HEIGHT DRINKING FOUNTAIN PER APP. 02-107627*

SHEET INDEX

SCHEDULING OF WORK

THIS PROJECT SHALL BE THE THIRD IN A SERIES OF FOUR PROJECTS AT MULTIPLE SCHOOL SITES. ALL WORK AT THIS SCHOOL SITE SHALL BE COMPLETED PRIOR TO ANY WORK COMMENCING AT NISHIMOTO ELEMENTARY.

CAFETERIA BUILDING ANALYSIS

OCCUPANCY	*A2.1, B*
EXISTING AREA	*6,409 / 1,146 FT²*
CONSTRUCTION TYPE	*V - N, FULLY SPRINKLERED*

SCOPE OF WORK

THE SCOPE OF WORK IS AS INDICATED BY THE CONTRACT DRAWINGS AND SPECIFICATION AND IS SUMMARIZED AS FOLLOWS:

- *PROVIDE NEW OUTDOOR GRADE-MOUNTED WALK-IN COOLER AND WALK-IN FREEZER AT CAFETERIA SERVICE YARD.*

LEGEND:

(---) DSA NUMBER (EXISTING BUILDING) *—— —— (E) FIRE LANE*

– – – – (E) ACCESSIBLE PATH OF TRAVEL.

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT: THE POT INDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERCATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NON-COMPLIANT WITH CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMLLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE PROTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OR UNREASONABLE HARDSHIP ARE INDICATED IN THESE CONSTRUCTION DOCUMENTS. DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH CBC AS PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

APPLICABLE CODES

- *2022 CALIFORNIA ADMINISTRATIVE CODE - CCR TITLE 24, PART 1*
- *2022 CALIFORNIA BUILDING CODE - CCR TITLE 24, PART 2*
- *2022 CALIFORNIA ELECTRICAL CODE - CCR TITLE 24, PART 3*
- *2022 CALIFORNIA MECHANICAL CODE - CCR TITLE 24, PART 4*
- *2022 CALIFORNIA PLUMBING CODE - CCR TITLE 24, PART 5*
- *2022 CALIFORNIA ENERGY CODE - CCR TITLE 24, PART 6*
- *2022 CALIFORNIA FIRE CODE - CCR TITLE 24, PART 9*
- *2022 EXISTING BUILDING CODE - CCR TITLE 24, PART 10*
- *2022 CALIFORNIA GREEN CODE - CCR TITLE 24 PART 11*
- *2022 CALIFORNIA REFERENCE CODE - CCR TITLE 24 PART 12*
- *TITLE 19 CCR PUBLIC SAFTEY, STATE FIRE MARSHALL REGULATIONS*
- *2022 NFPA 72 FOR FIRE ALARM SYSTEM. CFC CH 33 FIRE SAFTEY DURING CONSTRUCTION AND DEMOLITION*

Statement of General Conformance

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

(Application No. 02-122316 File No. 20-30)

The Architectural, Structural and Electrical Drawings Listed above have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. They have been examined by me for:

1) Design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and
2) Coordination with my plans and specifications and is acceptable for incorporation into the construction of this project.

This Statement of General Conformance shall not be construed as relieving me of my rights, duties, and responsibilities under Section 17302 and 81138 of the Education Code and Sections 4-336, 4-341 and 4-344 of Title 24, Part 1. *(Title 24, Part 1, Section 4-317 (b))*

RYAN W. CARLSON
LICENSE NUMBER: M34846
EXPIRATION DATE: 6-30-24

APPROVALS:
APPLICATION #
02-122315

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-122316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER
RYAN W. CARLSON
No. M34846
Exp. 6-30-26
MECHANICAL
STATE OF CALIFORNIA

DATE: 05-21-2024

JOHN J. PERSHING ELEMENTARY SCHOOL
COLD BOX ADDITION
1505 ELLIS ST.
MADERA, CA 93638

REVISIONS

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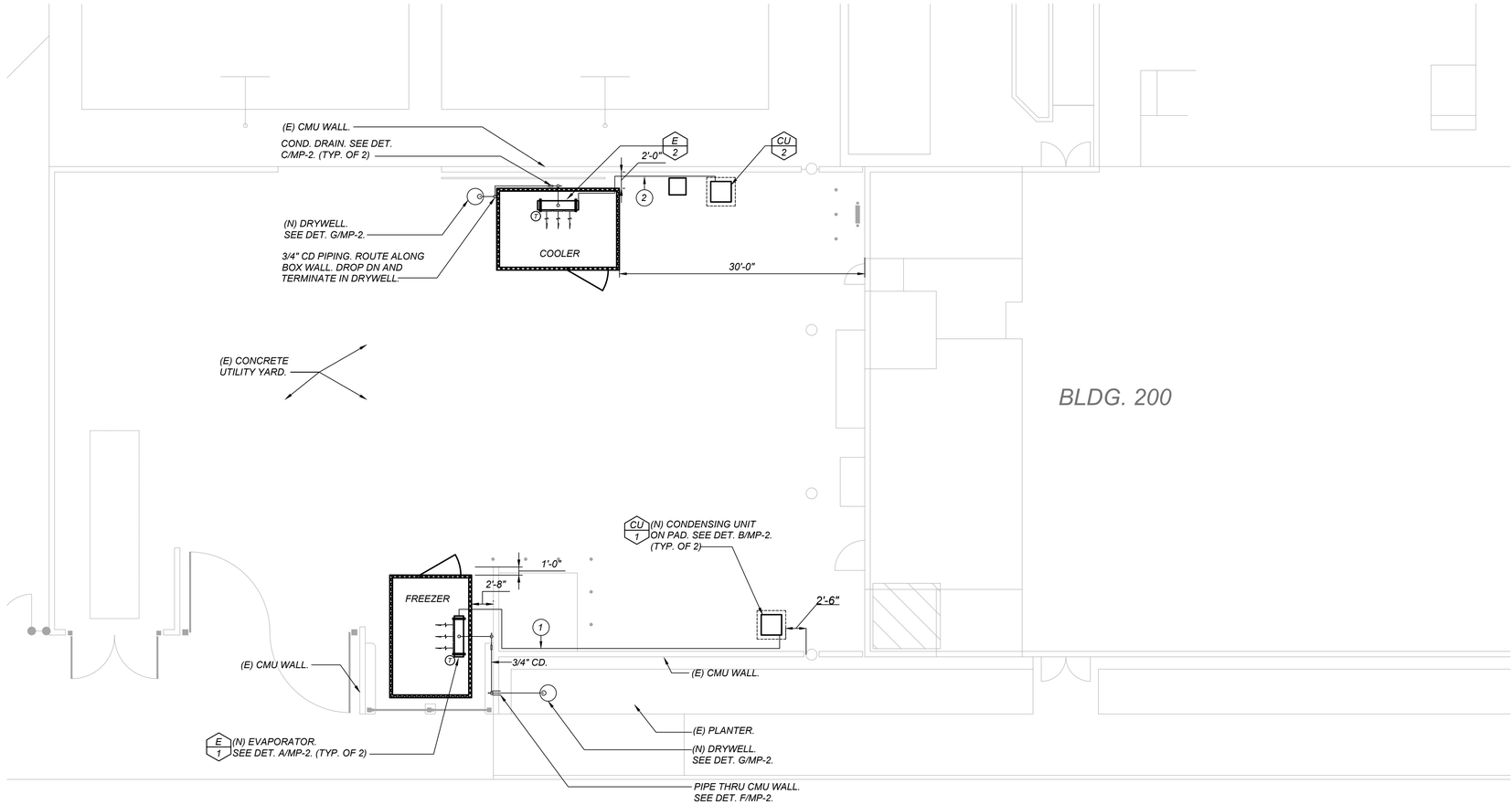
Fresno, CA 93727
FAX (559) 431-1302
4910 E. Clinton Way, Suite 101
(559) 431-0101

TITLE:
COVER SHEET

SHEET:
G1

PROJECT 24020



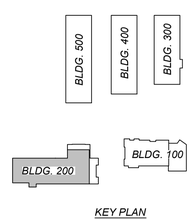
KEYNOTES: (THIS VIEW ONLY)

1. 3/8"RL & 1-1/8"RS PIPING ROUTE ALONG WALL THRU BOX WALL TO EVAP. E-1. SEE DETAIL E/MP-2 FOR PIPE ON WALL MOUNTING.
2. 3/8"RL & 7/8"RS PIPING ROUTE ALONG WALL THRU BOX WALL TO EVAP. E-2. SEE DETAIL E/MP-2 FOR PIPE ON WALL MOUNTING.

MECHANICAL YARD PLAN - PERSHING

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

NOTE:
THE WALK-IN COOLER AND FREEZER BOXES ARE SUBMITTED PER IR A-14 AS A BLACK-BOX, STANDARD PIECE OF EQUIPMENT. CONSTRUCTION OF THE BOXES ARE NOT PART OF DSA REVIEW.



KEY PLAN

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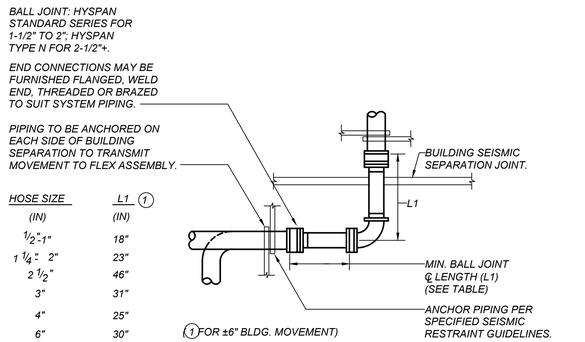
TITLE:
MECHANICAL
YARD PLAN
PERSHING

SHEET: MP-1

PROJECT 24020

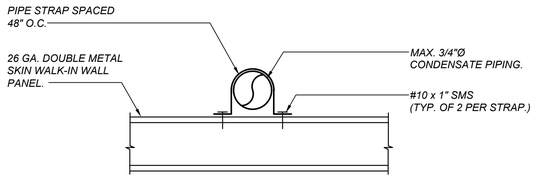


SEISMIC JOINT FOR PIPE DETAIL

H MP-2

SCALE: NONE

MP124

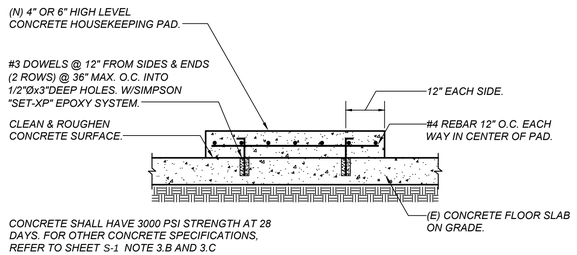


VERT. PIPE SUPPORT ON WALL DETAIL

J MP-2

SCALE: NONE

MP082



HOUSEKEEPING PAD DETAIL

K MP-2

SCALE: NONE

MM066

CONDENSING UNIT SCHEDULE

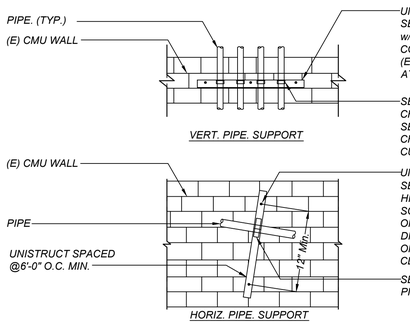
DESIGNATION	CU 1	CU 2
NAME PLATE AMPS	31.2	23.3
VOLTS/PHASE	230/1	230/1
MCA / MOP (AMPS)	34.2 / 40	17.3 / 25
LIQ. / SUCTION (IN.)	1/2 / 1-1/8	1/2 / 7/8
COOLING CAP (MBH)	17,820	19,300
AMBIENT (°F)	105	105
MANUFACTURER	RUSSELL	RUSSELL
MODEL NUMBER	RL400-HE	RS200-HE
LOCATION	EQUIPMENT YARD	EQUIPMENT YARD
OPER. WT (LBS)	352	215
ACCESSORIES	1,3	2,3

1. SINGLE 4.5 HP SCROLL COMPRESSOR.
2. SINGLE 2 HP COMPRESSOR.
3. REPLACEABLE CORE SUCTION FILTER, REPLACEABLE CORE LIQUID FILTER, FAN CYCLING CONTROL, SUCTION ACCUMULATOR, MANUAL RESET HIGH PRESSURE SWITCH.

EVAPORATOR SCHEDULE

DESIGNATION	E 1	E 2
AIRFLOW (CFM)	2325	2325
FLA	15.8	2.4
MCA / MOP	15 / 20	15 / 20
VOLTS/PHASE	230/1	115/1
TOTAL CAP. (MBH)	17,820	14,857
REFRIGERANT	R-448A	R-448A
REFRIG. SAFETY CLASS.	A1	A1
EVAP. TEMP. (°F)	-10	25
BOX TEMP. (°F)	0	35
MANUFACTURER	RUSSELL	RUSSELL
DEFROST TYPE	ELEC. DEFROST	AIR DEFROST
MODEL NUMBER	RL6E---ED	RL6A---AD
LOCATION	FREEZER	COOLER
OPER. WT (LBS)	78	72
ACCESSORIES	1	-

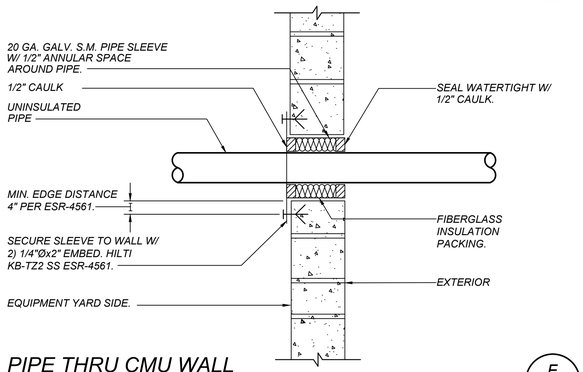
1. INCLUDES DEFROST HEATER.



PIPE ON WALL SUPPORT

E MP-2

SCALE: NONE

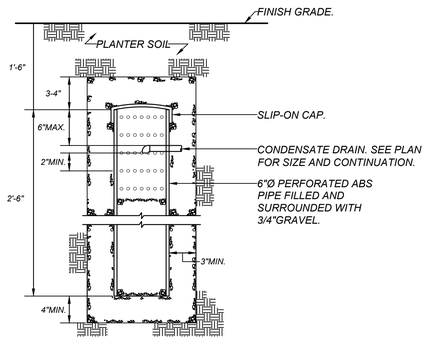


PIPE THRU CMU WALL

F MP-2

SCALE: NONE

MP097

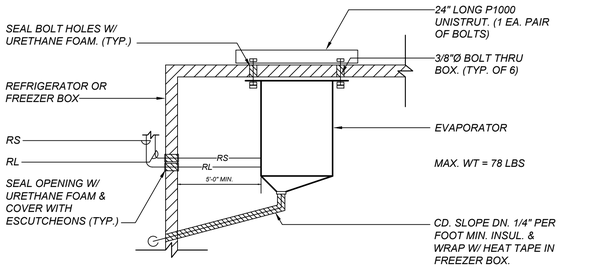


SINGLE CONDENSATE DRAIN DRYWELL

G MP-2

SCALE: NONE

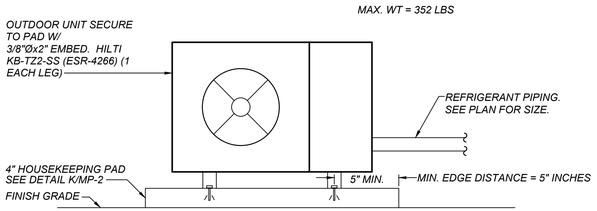
P029



EVAPORATOR MOUNTING DETAIL

A MP-2

SCALE: NONE

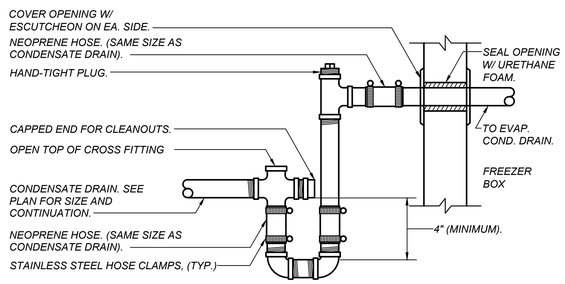


CONDENSING UNIT MOUNTING DETAIL

B MP-2

SCALE: NONE

MM063

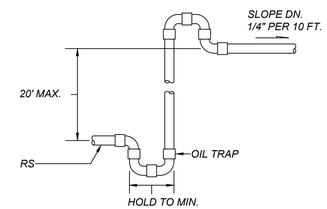


CONDENSATE DRAIN CONNECTION DETAIL

C MP-2

SCALE: NONE

P020



NOTE:
IF LIFT IS HIGHER THAN 20' USE MULTIPLE TRAPS.

RS RISER DETAIL

D MP-2

SCALE: NONE

APPROVALS:

APPLICATION # 02-122315

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APP. 02-122316 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER
STEPHAN W. CARLSON
No. M34846
Exp. 6-30-26
MECHANICAL
STATE OF CALIFORNIA

DATE: 05-21-2024

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TITLE:
MECHANICAL
DETAILS

SHEET:
MP-2

PROJECT 24020

RESINOUS FLOORING SPECIFICATIONS:

1. GENERAL: ALL GENERAL MECHANICAL SPECIFICATIONS APPLY TO THIS SECTION.

   A. REGULATORY REQUIREMENTS:
      a. CARB - MATERIALS AND EQUIPMENT USED FOR THIS PROJECT SHALL COMPLY WITH THE CURRENT APPLICABLE REGULATIONS OF THE CALIFORNIA AIR RESOURCES BOARD (CARB) AND THE ENVIRONMENTAL PROTECTION AGENCY (EPA), IN THE AREA WHERE THE PROJECT IS LOCATED.
      b. CBC - CALIFORNIA BUILDING CODE (CBC 804.1)

2. EXISTING CONDITIONS:

   A. EXAMINE SITE AND COMPARE IT WITH THE DRAWINGS AND SPECIFICATIONS. THOROUGHLY INVESTIGATE AND VERIFY CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. NO ALLOWANCE WILL BE MADE FOR EXTRA WORK RESULTING FROM NEGLIGENCE OR FAILURE TO BE ACQUAINTED WITH ALL AVAILABLE INFORMATION CONCERNING CONDITIONS NECESSARY TO ESTIMATE THE DIFFICULTY OR COST OF THE WORK.

   B. CONCRETE SUBSTRATE SHALL BE PROPERLY CURED FOR A MINIMUM OF 30 DAYS.

   C. RH (RELATIVE HUMIDITY) AND ALKALINITY TEST:
      a. SHALL CONTROL VAPOR TRANSMISSION UP TO AND INCLUDING 100 PERCENT READINGS PER RH TESTING OF ASTM F 2170 "DETERMINING RELATIVE HUMIDITY IN CONCRETE FLOOR SLABS USING IN SITU PROBES".
      b. SHALL CONTROL ALKALINITY FOR A LONG TERM MAXIMUM RESISTANCE OF PH 14 PER PH TESTING OF ASTM F 710 "PREPARING CONCRETE FLOORS TO RECEIVE RESILIENT FLOORING"

   D. JOB AREA TO BE FREE OF OTHER TRADES DURING FLOOR INSTALLATION.

3. MANUFACTURER:
      a. STONHARD, INC. - "STONSHIELD UTS"

4. MATERIALS: STONSHIELD UTS FOR EXTREME TEMPERATURE FLUCTUATIONS :
   A. A NOMINAL 1/4" THICK SYSTEM COMPRISED OF A HIGH PERFORMANCE, FOUR-COMPONENT MORTAR CONSISTING OF URETHANE RESIN, CURING AGENT, SELECTED, MEDIUM GRADED AGGREGATES AND INORGANIC PIGMENTS SEALED WITH A TWO-COMPONENT, 100 PERCENT SOLIDS, URETHANE COATING.

   B. PHYSICAL PROPERTIES: PROVIDE FLOORING SYSTEM IN WHICH PHYSICAL PROPERTIES OF TOPPING INCLUDING AGGREGATE, WHEN TESTED IN ACCORDANCE WITH STANDARDS OR PROCEDURES REFERENCED BELOW, ARE AS FOLLOWS:
      a. COMPRESSIVE STRENGTH (AFTER 7 DAYS): 7,700 PSI.
         1) PER ASTM C 579 "TEST METHODS FOR COMPRESSIVE STRENGTH OF CHEMICAL RESISTANT MORTARS, GROUTS, MONOLITHIC SURFACINGS, AND POLYMER CONCRETES".
      b. TENSILE STRENGTH: 1,000 PSI.
         1) PER ASTM C 307 "TEST METHOD FOR TENSILE STRENGTH OF CHEMICAL-RESISTANT MORTALS, GROUTS, AND MONOLITHIC SURFACINGS".
      c. FLEXURAL STRENGTH: 2,400 PSI.
         1) PER ASTM C 580 "TEST METHOD FOR FLEXURAL STRENGTH AND MODULUS OF ELASTICITY OF CHEMICAL-RESISTANT MORTARS, GROUTS, MONOLITHIC SURFACINGS, AND POLYMER CONCRETES".
      d. FLEXURAL MODULUS OF ELASTICITY: 2.6 X 106 PSI.
         1) PER ASTM C 580 "TEST METHOD FOR FLEXURAL STRENGTH AND MODULUS OF ELASTICITY OF CHEMICAL-RESISTANT MORTALS, GROUTS, MONOLITHIC SURFACINGS, AND POLYMER CONCRETES".
      e. HARDNESS (SHORE D DUROMETER): 80-84.
         1) PER ASTM D 2240 "STANDARD TEST METHOD FOR RUBBER PROPERIY -"DUROMETER HARDNESS".
      f. BOND STRENGTH (100 PERCENT CONCRETE FAILURE): 400 PSI.
         1) PER ASTM D 4541 "STANDARD TEST METHOD FOR PULL-OFF STRENGTH OF COATINGS USING PORTABLE ADHESION TESTERS".
      g. IMPACT RESISTANT: .160 IN.1BS.
         1) PER ASTM D 4226 "TEST METHODS FOR IMPACT RESISTANT OF RIGID POLY VINYL CHLORIDE (PVC) BUILDING PRODUCTS".
      h. ABRASION RESISTANCE (CS-17 WHEEL): 0.05 GM MAX WEIGHT LOSS.
         1) PER ASTM D 4060 "TEST METHOD FOR ABRASION RESISTANCE OF ORGANIC COATINGS BY THE TABER ABRASER".
      i. COEFFICIENT OF FRICTION:DEPENDENT ON TEXTURE SELECTION.
         1) PER ASTM D 2047 "TEST METHOD FOR STATIC COEFFICIENT OF FRICTION OF POLISH-COATED FLOORING SURFACES AS MEASURED BY THE JAMES MACHINE".
      j. FLAMMABILITY (EXTENT OF BURNING 0.25 INCHES MAX): SELF EXTINGUISHING.
         l) PER ASTM D 635 "TEST METHOD FOR RATE OF BURNING AND/OR EXTENT AND TIME OF BURNING OF PLASTICS IN A HORIZONTAL POSITION".
      k. THERMAL COEFFICIENT OF LINEAR EXPANSION: 1.1 X 10-5 IN/INOC.
         1) PER ASTM C 531 "TEST METHOD FOR LINEAR SHRINKAGE AND COEFFICIENT OF THERMAL EXPANSION OF CHEMICAL-RESISTANT MORTALS, GROUTS, MONOLITHIC SURFACINGS AND POLYMER CONCRETES".
      1. WATER ABSORPTION: 0.056 PERCENT.
         1) PER ASTM C 413 "TEST METHOD FOR ABSORPTION OF CHEMICAL-RESISTANT MORTARS, GROUTS, MONOLITHIC SURFACINGS, AND POLYMER CONCRETES".
      m. HEAT RESISTANT LIMITATION:
         1) FOR CONTINUOUS EXPOSURE: 200 DEG. F.
         2) FOR INTERMITTENT SPILLS: 250 DEG. F.
      n. CURE RATE ALLOWANCE (AT 77 DEG. F, 24 HOURS FOR NORMAL OPERATIONS): 6 HOURS FOR FOOT TRAFFIC.

5. APPLICATION:
   A. GENERAL: IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS UNLESS SPECIFICALLY NOTED OTHERWISE. IN ACCORDANCE WITH APPROVED SHOP DRAWINGS. IN ACCORDANCE WITH REGULATORY REQUIREMENTS. SET PLUMB, LEVEL, AND SQUARE.

   B. APPLICATION: FOLLOW THE DETAILED MANUFACTURER'S PRINTED INSTRUCTIONS MIXING AND APPLYING RESINOUS FLOORING TYPE 2. MATERIAL SHALL BE USED IMMEDIATELY AFTER MIXING. A "SCREED APPLICATOR" SHAH BE USED TO DISTRIBUTE THE MIXED RESINOUS FLOORING TYPE 2 ONTO THE FLOOR. NOTCHED FINISHING TROWELS AND SPIKED ROLLERS AS RECOMMENDED IN WRITING BY THE MANUFACTURER SHALL BE USED TO SMOOTH THE SURFACE OF THE MATERIAL TO THE REQUIRED THICKNESS. TEXTURE AGGREGATE SHAH THEN BE BROADCAST INTO THE WET MORTAR, IN TEXTURE FINISH AS SELECTED BY THE ARCHITECT. ALLOW TO CURE 6 - 8 HOURS AND APPLY SEALER COAT.

MECHANICAL SPECIFICATIONS:

1. GENERAL: ALL GENERAL MECHANICAL SPECIFICATIONS APPLY TO THIS SECTION.

2. PIPE LAYOUT: ROUTE PIPING TO AVOID CUTTING STRUCTURAL MEMBERS. WHERE CUTTING OR NOTCHING IS REQUIRED, THE STRUCTURAL MEMBER SHALL BE REINFORCED IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE. PIPING SHALL BE INSTALLED TO ENSURE UNRESTRICTED FLOW. ELIMINATE AIR POCKETS, PREVENT UNUSUAL NOISE AND PERMIT COMPLETE DRAINAGE OF THE SYSTEM. PROVIDE INDIVIDUAL SHUT OFF VALVES AT EACH EQUIPMENT ITEM.

3. PIPING MATERIALS:

A. REFRIGERANT	HARD DRAWN TYPE ACR COPPER. WROUGHT COPPER FITTINGS, SILVER ALLOY BRAZED, 1100°F, SILFOS.
B. CONDENSATE DRAIN	HARD TEMPER TYPE L COPPER, ASTM B88, 95-5 TIN-ANTIMONY SOLDER, WROUGHT COPPER FITTINGS OR SCHEDULE 40 GALV. STEEL, ASTM A53. GALV. MALLEABLE IRON SCREWED FITTING, ANSI B16.3.

4. VALVES AND FITTINGS:

   A. LINE VALVE: BRONZE BODY, BALL TYPE. TFE LOCKED IN SEALS. BACK SEATED VALVE STEM. CONTROLMATICS C-11.

   B. VIBRATION ISOLATING CONNECTION: SEAMLESS FLEXIBLE BRONZE TUBING, BRAID COVERED. SUITABLE FOR SYSTEM PRESSURE. AMERICAN.

   C. SOLENOID VALVE: FULL LINE SIZE. SPORLAN.

5. PIPE INSULATION: RUBBER BASED ELASTOMERIC PREFORMED PIPE INSULATION. THERMAL CONDUCTIVITY SHALL NOT EXCEED 0.27 BTU-IN/HR-FT -°F AT A MEAN TEMPERATURE OF 70°F. REFRIG. PIPE 1/2" THICK, COND. DRAIN PIPE IN FREEZER 1" THICK. PROVIDE ADHESIVE BY SAME MANUFACTURER. ARMACELL ARMAFLEX. COVER INSUL. PIPE EXPOSED TO WEATHER WITH 0.024" STUCCO EMBOSSED ALUMINUM JACKET AND 0.016" THICK ALUM. FITTING CURVES.

6. PIPE SUPPORT: TO 4" PIPE - STEEL "J" HANGER WITH SIDE BOLT; 5" AND LARGER PIPE - STEEL CLEVIS HANGER. LOAD AND JAM NUTS. SIZE AND MAX. LOAD PER MFGR'S. RECOMMENDATIONS. FELT LINER FOR COPPER PIPING. HANGER AND ROD SHALL HAVE GALV. FINISH. UNISTRUT.

7. SYSTEM IDENTIFICATION: FOR PIPE SYSTEMS OTHER THE DRAIN, MARK FLUID CONVEYED IN PIPE AND DIRECTION OF FLOW. COLORS PER ANSI 13.1. LOCATE AT ENDS OF LINES, MAJOR CONNECTIONS, PENETRATIONS OF WALLS, FLOORS OR CEILING, 50' O.C. MAX. SPACING.

8. CONTROLS:

   A. REFRIGERATOR REFRIGERATION SYSTEM: REFRIGERATOR SYSTEM SHALL RUN ON INTERNAL CONTROLS AT THE CONDENSING UNIT AND THE THERMOSTATS AT THE REFRIGERATOR EVAPORATORS.

   B. FREEZER REFRIGERATION SYSTEM: FREEZE SYSTEM SHALL OPERATE SIMILAR TO THE REFRIGERATOR SYSTEM.

   C. REFRIGERATOR SYSTEM ALARM MONITORING SYSTEM: THE REFRIGERATOR TEMPERATURE SET POINT SHALL BE 35°F (ADJ.).

   E. FREEZER SYSTEM ALARM MONITORING SYSTEM: THE FREEZER TEMPERATURE SET POINT SHALL BE 0°F(ADJ).

9. TESTS: PERFORM ALL TESTS AS REQUIRED BY APPLICABLE CODES IN THE PRESENCE OF INSPECTOR.

10. WALK-IN STORAGE FREEZER AND COOLER: SRC REFRIGERATION
    SRC CABINET FEATURES INCLUDE 4" THICK PPC® (PREMIUM PANEL CONSTRUCTION) HIGH-DENSITY EXTRUDED INSULATION FREEZER/COOLER PANELS ; EXCEEDS EISA ENERGY STANDARDS. PANELS INCLUDE NATIONAL APPROVALS - UL-NSF APPROVED / SMOKE & FLAME SPREAD PER ASTM E84 TESTING. PREMIUM WHITE METAL FINISH IN/OUT (NO EXTRA CHARGE); INTERNAL CAM LOCKING CEILING TO WALL SYSTEM FOR A MOISTURE PROOF TIGHT SEAL; FLOORLESS CONSTRUCTION IN FREEZER/COOLER; "H" FLAT BOTTOM; RADIUS FLOOR COVING.

    50"X78" UL APPROVED HEAVY DUTY ENTRY DOOR (FREEZER DOOR w/HEAT). 48" NET OPENING; UL APPROVED ENERGY SAVING VAPOR PROOF CFL LAMP PRE-WIRED TO EXTERIOR INDICATOR LIGHT SWITCH; EASY TO READ DIAL THERMOMETER; (3) HEAVY DUTY CHROME CAM LIFT SELF CLOSING HINGES, WITH ADDITIONAL SELF ACTUATING DOOR CLOSURE; DART MOUNT MAGNETIC DOOR SEAL GASKETS FOR A FIRM TIGHT DOOR SEAL; 36" TALL 0.063 ALUMINUM DIAMOND TREAD KICK PLATES ON LOWER PORTION OF DOOR (INTERIOR & EXTERIOR).

    HEAVY DUTY STAINLESS STEEL LOCKING BAR FACTORY MOUNTED ON WALK IN DOOR (PADLOCK BY OTHERS); HEATED PRESSURE RELIEF PORT; THIRD DOOR HINGE FOR SRC 9000 / 9001 DOOR. OUTDOOR MEMBRANE ROOF CAP (WHITE) - FLAT (SHIPPED LOOSE) WITH PERIMETER HOLD-DOWN TRIM. VINYL ROOF MEMBRANE IS A PROPRIETARY THERMOPLASTIC FORMULATION. WALK-IN DOOR INCLUDES WEATHERPROOF EXTERIOR SWITCH AND DOOR RAIN GUARD; NSF VINYL FLOOR SCREED SUPPLIED IN STANDARD LENGTHS.

    (1) 4' LONG 7500 LUMEN LED CEILING LIGHT FIXTURE IN SEALED WATERTIGHT POLY-CARBONATE HOUSING. UL APPROVED FOR WET LOCATIONS. BULB LIFE RATED 50,000 + HOURS.
    5 YEAR WARRANTY ON COMPLETE FIXTURE.

11. REFRIGERATION EQUIPMENT: LARKIN
    HIGH-EFFICIENCY SCROLL REFRIGERATION SYSTEM, MEDIUM TEMP 35°F OPERATION (COOLER), LOW TEMP 0°F OPERATION (FREEZER)
    PRE-ASSEMBLED AIR-COOLED CONDENSING UNIT WITH INSTALLED DRIER, PRESSURE CONTROLS AND SERVICE VALVES OUTDOOR CONDENSING UNITS INCLUDE LOW AMBIENT PROTECTION, WEATHERHOOD AND CRANKCASE HEATER;
    (1) LOW PROFILE AIR-DEFROST EVAPORATOR COIL WITH 115V HIGH-EFFICIENCY (EC STYLE) FAN MOTORS HIGH-EFFICIENCY CONTROL SYSTEM, DEFROST OCCURS ON DEMAND ONLY;
    (1) LOW PROFILE ELECTRIC-DEFROST EVAPORATOR COIL WITH 208-230V HIGH-EFFICIENCY (EC STYLE) FAN MOTORS & HEATERS.HIGH-EFFICIENCY CONTROL SYSTEM, DEFROST OCCURS ON DEMAND ONLY;
    EQUIPMENT IS UL APPROVED AND FULLY COMPLIANT WITH FEDERAL EISA & EPA STANDARDS.
    MULTI-REFRIGERANT COMPATIBLE;
    ALL CONTROL COMPONENTS, FILTER DRIERS AND /OR VALVES PROVIDED AS PART OF SYSTEM SELECT ELECTRICAL VOLTAGE AND PHASE OF CONDENSING UNIT: (208-230V, 1 OR 3 PHASE)
    WARRANTIES: 5 YEAR COMPRESSOR MOTOR, 1 YEAR PARTS

GENERAL MECHANICAL SPECIFICATIONS:

1. CODES AND REGULATIONS: ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE AUTHORITY HAVING JURISDICTION. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO CONSTRUCT THE FREEZER IN ACCORDANCE WITH THE 2022 EDITION OF TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH SAID TITLE 24, CALIFORNIA CODE OF REGULATIONS. NOTHING IN THESE DRAWINGS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

   A. CALIFORNIA BUILDING CODE - CBC - 2022
   B. CALIFORNIA MECHANICAL CODE - CMC - 2022
   C. CALIFORNIA PLUMBING CODE - CPC - 2022
   D. CALIFORNIA FIRE CODE - CFC - 2022
   E. CALIFORNIA ELECTRICAL CODE - CEC - 2022
   F. CALIFORNIA CODE OF REGULATIONS, TITLE 8, INDUSTRIAL RELATIONS
   G. CALIFORNIA CODE OF REGULATIONS, TITLE 24, BUILDING STANDARDS

2. PERMIT CHARGES: OBTAIN ALL PERMITS REQUIRED FOR PERFORMING WORK AND PAY ALL RELATED FEES.

3. WORK BY OTHERS: UNLESS OTHERWISE NOTED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL POWER WIRING, MOTOR STARTERS IN MOTOR CONTROL CENTERS, DISCONNECTS AND CONDUIT.

4. GUARANTEE: THE CONTRACTOR SHALL REPAIR ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND PAY FOR ANY DAMAGE TO OTHER WORK RESULTING THEREFROM WHICH APPEARS WITHIN A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF WORK.

5. EXAMINATION OF SITE: THE CONTRACTOR SHALL EXAMINE THE SITE PRIOR TO ORDERING OR FABRICATING ANY MATERIALS. EXISTING CONDITIONS THAT CONFLICT WITH THE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. NO ALLOWANCE SHALL BE MADE IN THE CONTRACTOR'S BEHALF FOR ANY EXTRA EXPENSE TO WHICH HE MAY BE PUT DUE TO FAILURE OR NEGLECT ON HIS PART TO MAKE SUCH AN EXAMINATION.

6. MATERIALS, EQUIPMENT AND INSTALLATION: EACH ITEM REFERRED TO ON THE DRAWINGS AND IN THE SPECIFICATIONS REPRESENTS THE STANDARD OF QUALITY DESIRED FOR MATERIALS, EQUIPMENT AND INSTALLATION. ALL SUBSTITUTIONS MUST BE REVIEWED IN WRITING BY THE ENGINEER. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND FREE FROM DEFECTS. ALL INSTALLATIONS SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND AS SHOWN ON DRAWINGS.

7. SUBMITTALS: WITHIN 30 DAYS OF CONTRACT AWARD, THE CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS FOR ALL MATERIALS, EQUIPMENT, ETC. PROPOSED FOR USE ON THIS PROJECT. SUBMITTALS SHALL BE A SINGLE FILE IN PDF FORMAT, WITH BOOKMARKS FOR TABLE OF CONTENTS AND EACH TAB, AND SUB-BOOKMARKS FOR EACH ITEM. MATERIAL OR EQUIPMENT SHALL NOT BE ORDERED OR INSTALLED UNTIL WRITTEN REVIEW IS PROCESSED BY THE ENGINEER. ANY ITEM OMITTED FROM THE SUBMITTAL SHALL BE PROVIDED AS SPECIFIED WITHOUT SUBSTITUTION.

8. CLOSEOUT DOCUMENTS:

   CONTRACTOR GUARANTEES: ALL CONTRACTORS INVOLVED IN THE PROJECT SHALL SUBMIT WRITTEN GUARANTEES FOR THEIR WORK FOR ONE YEAR FROM THE DATE OF ACCEPTANCE TO THE OWNER THROUGH THE ENGINEER.

   RECORD DRAWINGS: CONTRACTORS SHALL OBTAIN A SET OF PROJECT PRINTS TO KEEP AT THE JOB SITE. CONTRACTORS SHALL MARK ALL CHANGES FROM DESIGN PLANS ON THE PRINTS. WORK UNDERGROUND SHALL SHOW DEPTH AND DISTANCE FROM NEARBY STRUCTURES. SUBMIT THE RECORD DRAWINGS TO THE ENGINEER FOR REVIEW.

   OPERATING AND MAINTENANCE INSTRUCTIONS: TWO COPIES OF ALL EQUIPMENT OPERATION AND MAINTENANCE INSTRUCTIONS AND WIRING DIAGRAMS SHALL BE FURNISHED TO THE OWNER, THROUGH THE ENGINEER.
   O&M MANUAL SHALL INCLUDE COPIES OF ALL INSPECTION REPORTS & VERIFICATIONS REQUIRED BY THE ENFORCING AGENCY.

INSULATION SPECIFICATIONS:

1. RIGID FOAM BOARD: INSULATION TYPE SHALL BE EXTRUDED POLYSTYRENE (XPS). COMPRESSIVE STRENGTH OF 40 PSI, ASTM C578 COMPLIANT, UL U-197 CLASSIFICATION, R-VALUE OF 20 FOR 4" THICKNESS, FLAME SPREAD OF 10 PER ASTM 84. OWENS CORNING FOAMULAR NGX LT40.

WALK-IN BOX SPECIFICATIONS:

1. MANUFACTURER TO BE SRC REFRIGERATION WITHOUT SUBSTITUTION.
   FREEZER BOX DIMENSIONS SHALL BE: 15'-0" x 10'-0" x 9'-6" (LxWxH).
   COOLER BOX DIMENSIONS SHALL BE: 15'-0" x 10'-0" x 9'-6" (LxWxH).

   WALLS & CEILING SHALL BE 4" THICK PPC® (PREMIUM PANEL CONSTRUCTION) HIGH-DENSITY EXTRUDED INSULATION FREEZER PANELS; EXCEEDS EISA ENERGY STANDARDS. UL-NSF APPROVED / SMOKE & FLAME SPREAD PER ASTM E84 TESTING PREMIUM WHITE METAL FINISH IN/OUT. FOR FLOORLESS CONSTRUCTION WITH "H" FLAT BOTTOM. INTERNAL CAM LOCKING CEILING TO WALL SYSTEM FOR A MOISTURE PROOF TIGHT SEAL .

   DOORS:
   50"x78" UL APPROVED HEAVY DUTY ENTRY DOOR PACKAGE (FREEZER DOOR WITH HEAT, COOLER DOOR FOR NORMAL TEMP). 48" NET OPENING. UL APPROVED ENERGY SAVING VAPOR PROOF CFL LAMP PRE-WIRED TO EXTERIOR INDICATOR LIGHT SWITCH. EASY TO READ DIAL THERMOMETER. (3) HEAVY DUTY CHROME CAM LIFT SELF CLOSING HINGES, WITH ADDITIONAL SELF ACTUATING DOOR CLOSURE. DART MOUNT MAGNETIC DOOR SEAL GASKETS FOR A FIRM TIGHT DOOR SEAL.

   ALUMINUM DIAMOND TREAD KICK PLATES ON LOWER PORTION OF DOOR (INTERIOR & EXTERIOR) 36"H .063 ALUMINUM DIAMOND TREADBRITE KICKPLATES IN/OUT ON ENTRANCE DOOR.

   HEAVY DUTY STAINLESS STEEL LOCKING BAR FACTORY MOUNTED ON WALK IN DOOR (PADLOCK BY OTHERS) HEATED PRESSURE RELIEF PORT. THIRD DOOR HINGE FOR SRC 9000 / 9001 DOOR.

   WITH WEATHERPROOF EXTERIOR SWITCH AND DOOR RAIN GUARD FLOORLESS CONSTRUCTION IN COOLER; NSF VINYL FLOOR SCREED.

   ROOF:
   OUTDOOR MEMBRANE ROOF CAP - FLAT (SHIPPED LOOSE) WITH PERIMETER HOLD-DOWN TRIM. ROOF MEMBRANE IS THERMOPLASTIC FORMULATION. WHITE.

   LIGHTS:
   ONE 4' LONG 7500 LUMEN LED CEILING LIGHT FIXTURE IN SEALED WATERTIGHT POLY-CARBONATE HOUSING. UL APPROVED FOR WET LOCATIONS. LOW PROFILE DESIGN. BULB LIFE RATED 50,000 + HOURS. 5 YEAR WARRANTY ON COMPLETE FIXTURE.

   FLOOR:
   FLOOR SHALL BE RESINOUS FLOORING PER SPECIFICATIONS ON THIS SHEET. FLOOR SHALL HAVE MINIMUM 4" TALL ALUMINUM COVE BASE AROUND THE ENTIRE INTERIOR PERIMETER OF THE BOX.

APPROVALS:

APPLICATION # 02-122315

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-122316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER
STEPHAN W. CARLSON
No. M34846
Exp. 6-30-26
MECHANICAL
STATE OF CALIFORNIA

DATE: 05-21-2024

JOHN J. PERSHING ELEMENTARY SCHOOL
COLD BOX ADDITION
1505 ELLIS ST.
MADERA, CA 93638

REVISIONS

LAWRENCE ENGINEERING GROUP
4710 E. Clinton Way, Suite 101
Fresno, CA 93727
(559) 431-1001
FAX (559) 431-1302

TITLE: MECHANICAL SPECIFICATIONS

SHEET: MP-3

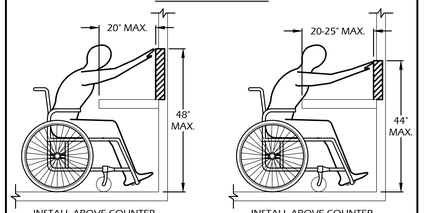
PROJECT 24020

APPROVALS:

APPLICATION #

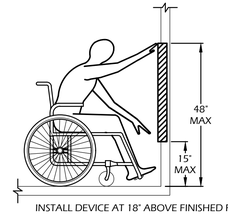
TYPICAL WALL DEVICE MOUNTING HEIGHTS

ADA GUIDELINES



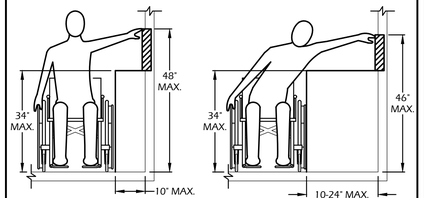
INSTALL ABOVE COUNTER DEVICE AT 44" ABOVE FINISHED FLOOR.

INSTALL ABOVE COUNTER DEVICE AT 40" ABOVE FINISHED FLOOR.



INSTALL DEVICE AT 18" ABOVE FINISHED FLOOR

FRONT ACCESS



INSTALL DEVICE AT 44" ABOVE FINISHED FLOOR.

INSTALL DEVICE AT 42" ABOVE FINISHED FLOOR.

SIDE ACCESS

DEVICE TYPE	MOUNTING HEIGHT
SWITCHES	NO MORE THAN 48" A.F.F. TO TOP OF DEVICE
DIMMERS	NO MORE THAN 48" A.F.F. TO TOP OF DEVICE
RECEPTACLES	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
TEL. OUTLETS (OFFICE)	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
TEL. OUTLETS (CLASSROOMS)	NO MORE THAN 48" A.F.F. TO TOP OF DEVICE
DATA OUTLETS	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
INTERCOM OUTLETS	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
TELEVISION OUTLETS	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
MICROPHONE OUTLETS	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
RECEPTACLES, OUTLETS, SWITCHES, ETC. MOUNTED ABOVE COUNTERS	WITHIN THE REACH RANGE SPECIFIED IN SECTION 11B-308 OF THE CALIFORNIA BUILDING CODE.
CLOCKS	AS SHOWN ON DRAWINGS
SPEAKERS	AS SHOWN ON DRAWINGS
HAND DRYERS	REFER TO ARCHITECTURAL PLANS
HAIR DRYERS	REFER TO ARCHITECTURAL PLANS
WALL SCONCES	ABOVE 80" FOR PROJECTIONS INTO CORRIDORS OF MORE THAN 4" OR AS SHOWN ON DRAWING
EXIT LIGHTS	SEE DETAILS
EXIT MARKERS	SEE DETAILS
EMERGENCY LIGHTING WALL PACK	AS SHOWN ON DRAWINGS
KEYPADS	NO MORE THAN 48" A.F.F. TO TOP OF DEVICE
WIREMOLD	MOUNTING HEIGHT SHALL BE SUCH THAT THE LOWEST DEVICE MOUNTED ON WIREMOLD IS AT 15" A.F.F. TO BOTTOM OF DEVICE, U.O.N.

NOTES:
1. ALL VERTICAL MEASUREMENTS ARE 'ABOVE FINISHED FLOOR' (A.F.F.).
2. SEE DRAWINGS FOR NON-TYPICAL MOUNTING HEIGHTS.
3. WHERE MOUNTING HEIGHTS ARE NOT SHOWN, REFER TO ARCHITECTURAL PLANS.
4. RECEPTACLES, LIGHT SWITCHES, TELEPHONE-DATA OUTLETS AND OTHER RECESSED ELECTRICAL DEVICES THAT ARE SHOWN BACK-TO-BACK ON WALLS SEPARATING CORRIDORS, ROOMS AND OPEN AREAS SHALL BE SEPARATED HORIZONTALLY BY AT LEAST 24 INCHES. THIS REQUIREMENT IS TO SATISFY BOTH THE CONDITIONS AT FIRE RATED CORRIDORS AND SOUND TRANSMISSION FACTOR BETWEEN ALL CORRIDORS, ROOMS AND OPEN AREAS INCLUDING EXTERIOR WALLS.

STANDARD SYMBOL LEGEND

FIXTURE DESIGNATOR - '#' INDICATES FIXTURE TYPE.

LIGHT FIXTURE - APPROXIMATELY TO SCALE

FIXTURE WITH 90 MINUTE EMERGENCY BATTERY BACK-UP UNIT - SEE TYPICAL WIRING DETAIL

LIGHT FIXTURE - WALL OR CEILING MOUNTED, '3' INDICATES CIRCUIT, 'a' INDICATES SWITCH CONTROL.

EXIT LIGHTS- CEILING OR WALL MOUNTED, ARROW(S) INDICATES DIRECTION.

EXISTING POLE LIGHTING

WATTSTOPPER LMRC-101 ON/OFF, 1 SWITCH LEG LIGHTING CONTROLLER

WATTSTOPPER LMRC-102 ON/OFF, 2 SWITCH LEG LIGHTING CONTROLLER

WATTSTOPPER LMRC-211 DIMMING, 1 SWITCH LEG LIGHTING CONTROLLER

WATTSTOPPER LMRC-212 DIMMING, 2 SWITCH LEG LIGHTING CONTROLLER

WATTSTOPPER LMRC-213 DIMMING, 3 SWITCH LEG LIGHTING CONTROLLER

WATTSTOPPER LMDC-100 DUAL TECHNOLOGY MOTION SENSOR

WATTSTOPPER LMDX-100 DUAL TECHNOLOGY OCCUPANCY SENSOR

WATTSTOPPER LMSW-101 SWITCH, 'a' INDICATES SWITCH LEG CONTROL. 2 LETTERS NEXT TO EACHOTHER WITHOUT A COMMA INDICATES 1 SWITCH LEG

WATTSTOPPER LMDM-101 DIMMER, 'a' INDICATES SWITCH LEG CONTROL. 2 LETTERS NEXT TO EACHOTHER WITHOUT A COMMA INDICATES 1 SWITCH LEG

WATTSTOPPER LMLS-400 PHOTOSENSOR

WATTSTOPPER LMPL-201 RECEPTACLE CONTROLLER

PANEL IDENTIFICATION
CIRCUIT IDENTIFICATION
SWITCH-LEG IDENTIFICATION
'PNL-#a

LIGHTING AND RECEPTACLE ROOM CONTROLLERS SHALL BE LOCATED ABOVE THE T-BAR CEILING FOR THE ROOMS THEY ARE CONTROLLING. IF THE ROOM WITH THE CONTROLLED DEVICES HAS A HARD CEILING THEN LOCATE THE ROOM CONTROLLERS AT THE NEAREST ADJACENT ROOM WITH A T-BAR CEILING. IF NO T-BAR CEILINGS EXISTS LOCATE THE ROOM CONTROLLERS IN THE ELECTRICAL ROOM. LABEL ALL ROOM LIGHTING AND RECEPTACLE CONTROLLERS WITH THE ROOM NAME, ROOM NUMBER, AND CIRCUIT(S) THEY CONTROL.

SKYLIT OR PRIMARY SIDE DAYLIT ZONE

SECONDARY SIDE DAYLIT ZONE

SPST TOGGLE WALL SWITCH - 20A, 120/277V, 'a' INDICATES CONTROL

OCCUPANCY SENSOR COMBO WALL SWITCH - 20A, 120/277V RATED

CEILING OR WALL MOUNTED JUNCTION BOX

PULLBOX(S) - SIZE AND NUMBER AS INDICATED

RECEPTACLE, DUPLEX - 20A, 120V & GROUND

RECEPTACLE, DUPLEX CEILING MOUNTED

RECEPTACLE, DUPLEX - WITH ONE-HALF SWITCHED/CONTROLLED

RECEPTACLE, DUPLEX- WITH GFCI PROTECTION

WP RECEPTACLE, DUPLEX - WITH GFCI PROTECTION IN WEATHERPROOF HOUSING

20A, 120V RECEPTACLE, DUPLEX- WITH TWO USB PORTS

RECEPTACLE, DOUBLE DUPLEX - (2) 20A, 120V & GROUND

RECEPTACLE, DOUBLE DUPLEX CEILING MOUNTED

RECEPTACLE, DOUBLE DUPLEX WITH GFCI PROTECTION

RECEPTACLE, DOUBLE DUPLEX - WITH ONE-HALF SWITCHED/CONTROLLED

RECEPTACLE, DOUBLE DUPLEX - WITH ONE-HALF SWITCHED/CONTROLLED, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.

RECEPTACLE, SPECIAL - REFER TO FLOOR PLAN FOR RECEPTACLE SIZE.

TELEPHONE OUTLET: PROVIDE & INSTALL 2-GANG BOX WITH 1" CONDUIT. STUB-UP INTO T-BAR CEILING. FOR HARD CEILINGS, RUN THE CONDUIT TO THE CABLE TERMINATION LOCATION INDICATED PER THE RISER DIAGRAM.

DATA OUTLET: PROVIDE & INSTALL 2-GANG BOX WITH 1" CONDUIT. STUB-UP INTO T-BAR CEILING. FOR HARD CEILINGS, RUN THE CONDUIT TO THE CABLE TERMINATION LOCATION INDICATED PER THE RISER DIAGRAM.

RECEPTACLE, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.

RECEPTACLE WITH ONE-HALF SWITCHED/CONTROLLED, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.

TELEPHONE OUTLET, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.

DATA OUTLET, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.

INTERCOM OUTLET, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.

FLUSH, FLOOR MOUNTED DUPLEX RECEPTACLE, DATA JACK, AND TELEPHONE JACK.

DATA OUTLET, CEILING MOUNTED

CEILING OR WALL MOUNTED WIRELESS ACCESS POINT PROVISIONS. PROVIDE AND INSTALL ONE DATA CABLE FROM EACH ACCESS POINT TO IDF. FOR HARD CEILINGS TERMINATE THE CABLES INTO A BOX WITH COVER PLATE. FOR T-BAR CEILINGS TERMINATE THE CABLES INTO A CUBE CAT-6 PORT AND CURL UP THE CABLE WITH 10-FEET OF SLACK. LEAVE ABOVE THE T-BAR CEILING. PROVIDE A LABEL BENEATH THE T-BAR CEILING TO INDICATE DATA PORTS ABOVE.

3/4" THICK x 96" TALL FIRE RETARDANT PLYWOOD BACKBOARD. PROVIDE QUANTITY OF PLYWOOD SHEETS TO ENCOMPASS ENTIRE LENGTH INDICATED ON PLANS.

TERMINAL CABINET - SURFACE OR FLUSH MOUNTED WITH FLAME RETARDANT PLYWOOD BACKBOARD

PANELBOARD - SURFACE OR FLUSH MOUNTED

DISTRIBUTION OR SWITCHBOARD

NEUTRAL LINK

TRANSFORMER

TRANSFORMER

#A/#B/#C FUSED DISCONNECT - MOTOR RATED. FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. DISCONNECTS TO BE FURNISHED WITH DUAL ELEMENT FUSES SIZED ACCORDING TO NAME PLATE DATA ON EQUIPMENT INSTALLED. SIZE AS : #A = AMPERE RATING OF DISCONNECT, #B = POLES, #C = FUSE SIZE REQUIRED. ALSO REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DISCONNECT REQUIREMENTS. IF NO AMPERE RATING IS INDICATED ON PLAN SIZE DISCONNECT PER NAMEPLATE RATING AND CEC.

#A/#B UNFUSED DISCONNECT - MOTOR RATED, FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR: #1 = AMPERE RATING OF DISCONNECT, #2 = POLES REQUIRED. ALSO REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DISCONNECT REQUIREMENTS. IF NO AMPERE RATING IS INDICATED ON PLAN SIZE DISCONNECT PER NAMEPLATE RATING AND CEC.

MAGNETIC MOTOR STARTER FURNISHED, INSTALLED AND CONNECTED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.

MOTOR - FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AND CONNECTED BY ELECTRICAL CONTRACTOR.

M METER

FIRE SPRINKLER HEAD. REFER TO OTHER DISCIPLINE PLANS.

INTRUSION ALARM DOOR CONTACT PROVISION, SEE TYPICAL DETAILS.

INTRUSION ALARM KEYPAD

INTRUSION ALARM MOTION DETECTOR, AIM AS INDICATED ON PLANS.

GROUND

CIRCUIT BREAKER

EXISTING ABOVE GROUND CONDUIT

EXISTING UNDERGROUND CONDUIT

WIREMOLD 5400 SERIES DUAL CHANNEL IVORY RACEWAY. PROVIDE ALL ACCESSORIES, FITTINGS, DIVIDERS, ETC FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

WIREMOLD RACEWAY VERTICAL RUNS. PROVIDE ALL ELBOWS, FITTINGS, AND CONNECTORS AS NECESSARY FOR A COMPLETE RACEWAY SYSTEM.

NEW ELECTRICAL EQUIPMENT

EXISTING ELECTRICAL EQUIPMENT TO REMAIN

EXISTING ELECTRICAL EQUIPMENT TO BE DEMOLISHED

GROUND WIRE WITH GREEN INSULATION SIZE PER N.E.C., U.O.N.

CONDUIT CONCEALED IN WALL OR CEILINGS. PROVIDE NUMBER OF WIRES NECESSARY FOR BRANCH CIRCUIT, SWITCH LEGS, ETC. PROVIDE SEPARATE NEUTRALS FOR EACH PHASE WIRE. SIZE SHALL BE DETERMINED BY OCPD CONNECTED TO THE PHASE CONDUCTORS AND VOLTAGE DROP CONSIDERATIONS. ALL CONDUITS SHALL HAVE GROUND CONDUCTOR(S). SIZE CONDUIT PER NEC.

CONDUIT CONCEALED UNDERGROUND OR BELOW FLOOR, MINIMUM SIZE IS 3/4". PROVIDE NUMBER OF WIRES NECESSARY FOR BRANCH CIRCUIT, SWITCH LEGS, ETC. PROVIDE SEPARATE NEUTRALS FOR EACH PHASE WIRE. SIZE SHALL BE DETERMINED BY OCPD CONNECTED TO THE PHASE CONDUCTORS AND VOLTAGE DROP CONSIDERATIONS. ALL CONDUITS SHALL HAVE GROUND CONDUCTOR(S). SIZE CONDUIT PER NEC.

CONDUIT- UP

CONDUIT-DOWN

SHEET NOTE NUMBER - #, SEE NOTE DESCRIPTION ON SAME SHEET.

GENERAL NOTE NUMBER - #, SEE NOTE DESCRIPTION ON SAME SHEET.

REFERENCE TO PLAN/DETAIL/DIAGRAM

XX | X DESIGNATES SIZE AND QUANTITY OF FEEDERS SEE FEEDER SCHEDULE

PROVIDE AND INSTALL TWO MALE F-TYPE CONNECTORS AND TV FACEPLATE. PROVIDE AND INSTALL RG-6 COAXIAL CABLE FROM EACH CONNECTOR TO THE CABLE TV HEADEND & TERMINATE WITH A MALE F-TYPE CONNECTOR.

TELEVISION OUTLET IN FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED, SEE TELEVISION SYMBOL.

(5) #/(2) NUMBER IN PARENTHESIS INDICATES QUANTITY OF DEVICES. TYPICAL FOR ALL TYPES OF DEVICES.

SPEAKER - WALL OR CEILING MOUNTED, REFER TO RISER DIAGRAM AND/OR NOTES ON PLANS.

CLOCK, REFER TO RISER DIAGRAM AND/OR NOTES ON PLANS.

COMBINATION CLOCK & SPEAKER, SEE CLOCK & SPEAKER SYMBOLS.

ABBREVIATIONS

A, AMP	AMPERES
A.C.	ABOVE COUNTER
A.F.F.	ABOVE FINISHED FLOOR
AL	ALUMINUM CONDUCTOR OR BUS
BD	BOARD
C	CONDUIT
CAB	CABINET
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CC	CENTER TO CENTER
CKT	CIRCUIT
CO	CONDUIT ONLY (EMPTY CONDUIT) WITH PULL WIRE
CPB	COMMUNICATIONS PULL BOX
CU	COPPER CONDUCTOR OR BUS
DB	DISTRIBUTION PANEL
(E)	EXISTING
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
E.O.L.	END-OF-LINE
EPO	EMERGENCY POWER-OFF
EWC	ELECTRIC WATER COOLER
F	FUSE
F.A./FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
F.B.O.	FURNISHED BY OTHER/FURNISHED BY OWNER
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METALLIC CONDUIT
FS	FLOW SWITCH
FUSD	FRESNO UNIFIED SCHOOL DISTRICT
G	GREEN GROUND WIRE
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HCAI	DEPARTMENT OF HEALTHCARE ACCESS AND INFORMATION
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
I.B.O.	INSTALLED BY OTHER
I.B.E.	INSTALLED AND CONNECTED BY ELECTRICAL CONTRACTOR
IC	INTERCOM
IDF	INTERMEDIATE DISTRIBUTION FRAME (DATA)
IG	ISOLATED GROUND
INT	INTRUSION ALARM
ISD	INFORMATION SERVICES DEPARTMENT
ITS	INTELLIGENT TRANSPORTATION SYSTEM
J/JB	JUNCTION BOX
KV	KILOVOLTS
KVA	KILOVOLTS-AMPERES
KW	KILOWATT
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LCP	LIGHTING CONTROL PANEL
LTGNC	LIGHTING NETWORK CONTROLLER
LTG	LIGHTING
LV	LOW VOLTAGE
MCC	MOTOR CONTROL CENTER
MDF	MAIN DISTRIBUTION FRAME
MTD	MOUNTED
MTG	MOUNTING
MLO	MAIN LUG ONLY
N	NEUTRAL
(N)	NEW
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C./OC	ON CENTER
OFOI	OWNER FURNISHED OWNER INSTALLED
Ø	PHASE
P	POLE
P.A./PA	PUBLIC ADDRESS SYSTEM
PB	PULL BOX
PNL	PANEL
PPB	POWER PULL BOX
REC/RECEPT.	RECEPTACLE
REF.	REFRIGERATOR
RELO	RELOCATABLE BUILDING/ PORTABLE BUILDING
RM	ROOM
RS	RAPID START
RU	RACK UNIT
SCE	SIGNAL CURRENT EXPANDER PANEL
S.L.	SECURITY LIGHT
SCTB	SIGNAL AND COMMUNICATION TERMINAL BACKBOARD
SPB	SIGNAL PULL BOX
SPD	SURGE SUPPRESSION DEVICE
STB	SIGNAL TERMINAL BOARD
STC	SIGNAL TERMINAL CABINET
SW	SWITCH
TPB	TELEPHONE PULL BOX
TS	TAMPER SWITCH
TEL	TELEPHONE
TERM	TERMINAL
TYP	TYPICAL
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
U.C.	UNDER COUNTER
UG	UNDERGROUND
UGPS	UNDERGROUND PULL SECTION
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTS/VOLTAGE
W	WATTS
WP	WEATHERPROOF
WM	WIREMOLD

ELECTRICAL SHEET INDEX

THESE PLANS ARE ACCOMPANIED WITH BOOK SPECIFICATIONS THAT FORM PART OF THE CONTRACT DOCUMENTS.

CALIFORNIA CODE OF REGULATIONS

PARTIAL LIST OF APPLICABLE CODES AS OF JANUARY 1, 2023

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR (2021 INTERNATIONAL BUILDING CODE, VOL. 1 & 2, AND 2022 CALIFORNIA AMENDMENTS)
2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR (2020 NATIONAL ELECTRICAL CODE AND 2022 CALIFORNIA AMENDMENTS)
2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR (2021 IAPMO UNIFORM MECHANICAL CODE AND 2022 CALIFORNIA AMENDMENTS)
2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR (2021 IAPMO UNIFORM PLUMBING CODE AND 2022 CALIFORNIA AMENDMENTS)
2022 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR (2021 INTERNATIONAL FIRE CODE AND 2022 CALIFORNIA AMENDMENTS)
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR (2021 INTERNATIONAL EXISTING BUILDING CODE AND 2022 CALIFORNIA AMENDMENTS)
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
2019 ASME A17.1/CSA B44-2019 SAFETY CODE FOR ELEVATORS AND ESCALATORS (PER 2022 CBC PART 2 CH 35) NOTE: CAL/OSHA ELEVATOR UNIT ENFORCES CCR TITLE 8 AND USES THE 2004 ASME A17.1 BY ADOPTION.

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 13 -	STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS (CA AMENDED) - 2022 EDITION
NFPA 14 -	STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS (CA AMENDED) 2019 EDITION
NFPA 17 -	STANDARD FOR DRY CHEMICAL EXTINGUISHING SYSTEMS - 2021 EDITION
NFPA 17A -	STANDARD FOR WET CHEMICAL EXTINGUISHING SYSTEMS - 2021 EDITION
NFPA 20 -	STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION - 2019 EDITION
NFPA 24 -	STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES (CA AMENDED) - 2019 EDITION
NFPA 72 -	NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED) - 2022 EDITION
NFPA 80 -	STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES - 2019 EDITION
NFPA 2001 -	STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS (CA AMENDED) 2018 EDITION
UL 300 -	STANDARD FOR FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF COMMERCIAL COOKING EQUIPMENT - 2005 (R2010)
UL 464 -	AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES - 2003 EDITION
UL 521 -	STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS - 1999 EDITION
ICC 300 -	STANDARD FOR BLEACHERS, FOLDING AND TELESCOPIC SEATING, AND GRANDSTANDS 2017 EDITION

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

ELECTRICAL EQUIPMENT NOTES

1. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF ELECTRICAL EQUIPMENT, DEVICES AND WIRING. SEE SECTION 260000 OF THE SPECIFICATIONS.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-122316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER
JOWAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE:

JOHN J. PERSHING ELEMENTARY SCHOOL
COLD BOX ADDITION
1505 ELLIS STREET
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REVISIONS

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BAI Project #24108

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. BORRELLI
No. E16390
Exp. 6/30/25
ELECTRICAL
STATE OF CALIFORNIA

SCAN ME

TITLE:
SYMBOL LEGEND, ABBREVIATIONS, AND REQUIREMENTS

SHEET:
E1.01

PROJECT

MEP ANCHORAGE BRACING NOTE

MEP COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

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

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

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

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

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 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. WHAT BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., HCAI OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOB SITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

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

MP [ ] MD [ ] PP [ ] E [X] OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS

MP [ ] MD [ ] PP [ ] E [ ] OPTION 2: SHALL COMPLY WITH THE APPLICABLE HCAI

TRENCHING AND EXCAVATION NOTES

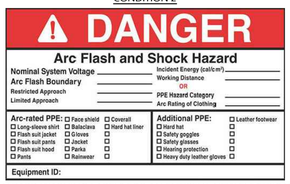
1. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CALL UNDERGROUND SERVICE ALERT "USA" BEFORE THE COMMENCEMENT OF ANY EXCAVATION. EACH CONTRACTOR SHALL HAVE THEIR OWN USA TICKET NUMBER FOR EACH PROJECT LOCATION AND SHALL NOT RIDE ON ANY OTHER CONTRACTORS TICKET. CONTRACTOR SHALL NOTIFY THE OWNER 72 HOURS PRIOR TO EXCAVATION.
2. THIS CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING NECESSARY FOR THE INSTALLATION OF EQUIPMENT AND MATERIALS. ALL PATCHING SHALL ACCURATELY MATCH THE ADJOINING WORK.
3. THIS CONTRACTOR SHALL DO EXCAVATING REQUIRED FOR THE INSTALLATION OF THE WORK. UNDERGROUND LINES OUTSIDE THE BUILDINGS SHALL BE INSTALLED WITH A MINIMUM OF 24" OF COVER, EXCEPT DEPTH OF UTILITY SERVICES SHALL COMPLY WITH RESPECTIVE UTILITY COMPANY REQUIREMENTS.
4. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE OPTIMUM MOISTURE CONTENT. COMPACT EACH LAYER TO REQUIRED PERCENTAGE OF MAXIMUM DRY DENSITY OR RELATIVE DRY DENSITY FOR EACH AREA CLASSIFICATION. DO NOT PLACE BACKFILL OR FILL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.
5. STRUCTURES, BUILDING SLABS, WALKWAYS, AND STEPS: COMPACT TOP 6" OF SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 95% MAXIMUM RELATIVE COMPACTION.
6. COMPACT TOP 6" OF SUBGRADE MATERIAL AT 85% RELATIVE COMPACTION.
7. COMPACT TOP 6" OF SUBGRADE IMMEDIATELY BENEATH THE BASE COURSE AT 95% MINIMUM RELATIVE COMPACTION.
8. ANY SURPLUS EXCAVATION RESULTING FROM THESE EXCAVATIONS SHALL BE HAULED OFF.
9. AFTER ALL TRENCHES HAVE BEEN TAMPED IN, RAKE OUT ALL HIGH AND LOW AREAS ALONG THE TRENCH LINE. ALL CLODS AND SOLID ROCKS EXPOSED ON THE SURFACE AS A RESULT OF THE EXCAVATION SHALL BE BROKEN DOWN AND OR CLEANED UP. ALL TRENCH LINES SHALL BE RAKED LEVEL WITH EXISTING GRADE.
10. ELECTRICAL, NETWORK, OR DATA CONDUIT SHALL NOT BE RUN IN EXCAVATIONS PROVIDED FOR PLUMBING OR HEATING PIPES, UNLESS SEPARATED BY A MINIMUM OF 12 INCHES.
11. PATCH ALL TRENCHED AREAS TO MATCH EXISTING.
12. HAND EXCAVATE IN AREAS WHERE TRENCHING IS DIFFICULT DUE TO STRUCTURAL OBSTRUCTIONS OR EXISTING UNDERGROUND CONDUIT.
13. THE CONTRACTOR SHALL WALK THE SITE WITH THE DISTRICT TO IDENTIFY ALL EXISTING CONDUITS AND PIPES.
14. CONTRACTOR SHALL RETAIN AND PAY FOR THE SERVICES OF A SOILS LAB TO TEST FOR THE COMPACTION OF THE BACKFILL. A SOILS PROFILE SHALL BE DONE OF THE EXCAVATED NATIVE TRENCHED DIRT SO THE COMPACTION TEST CAN BE COMPARED WITH THE NATIVE DIRT PROFILE. THE CONTRACTOR SHALL PROVIDE ALL COMPACTION OF THE TRENCH REQUIRED TO MEET A 95% COMPACTION REQUIREMENT. AN INSPECTED AND SIGNED OFF COMPACTION TESTING REPORT SHALL BE PROVIDED BY THE SOILS TESTING LAB AND COPY OF THE COMPACTION TEST SHALL BE PROVIDED TO THE ENGINEER OF RECORD/PROJECT COORDINATOR PRIOR INSTALLING THE HARDSCAPE. THE CONTRACTOR SHALL WILL BE REQUIRED TO PAY FOR ALL TESTS UNTIL THE COMPACTION RESULTS MEET OR EXCEED THE COMPACTION TEST.
15. CONTRACTOR TO CONDUCT GROUND PENETRATING RADAR STUDY AND IT SHALL BE PERFORMED ALONG THE ENTIRE TRENCHING PRIOR TO ANY TRENCHING WORK.

ARC FLASH WARNING LABEL REQUIREMENTS

CONDITION 1

ARC FLASH HAZARD HAZARD WARNING LABELS SHALL BE FIELD MARKED/PLACED ON ALL NEW AND EXISTING ELECTRICAL DISTRIBUTION BOARDS, MAIN SWITCHBOARDS, TRANSFORMERS, PANELS, PANELBOARDS, DISCONNECTS, MCC'S. PER CEC/NEC 110.16A THAT IS WITHIN THE SCOPE OF THIS PROJECT. LABELS SHALL BE APPLIED TO EXISTING EQUIPMENT WHERE NEW CONNECTIONS ARE MADE. THE LABELS SHALL MEET THE REQUIREMENTS OF 110.21(B) PER ANSI Z535.4-2011 GUIDELINES BY USING EFFECTIVE COLORS, SYMBOLS OR ANY COMBINATION THEREOF.

CONDITION 2



ARC FLASH HAZARD WARNING LABELS FOR AN ENTIRELY NEW ELECTRICAL SERVICE AND DISTRIBUTION SYSTEMS, THE EXCEPTION TO 110.16(B) SHALL BE UTILIZED AND ALL ELECTRICAL COMPONENTS OF THE DISTRIBUTION EQUIPMENT SHALL HAVE AN ARC FLASH WARNING LABEL WITH THE FOLLOWING INFORMATION:

a. NOMINAL SYSTEM VOLTAGE
b. ARC FLASH BOUNDARY
c. MINIMAL ARC RATING OF CLOTHING
d. AT LEAST ONE, BUT NOT BOTH OF THE FOLLOWING:
   - INCIDENT ENERGY & CORRESPONDING WORKING DISTANCE
   - THE ARC FLASH PPE CATEGORY

THE LABELS SHALL MEET THE REQUIREMENTS OF 110.21(B) PER ANSI Z535.4-2011 GUIDELINES BY USING EFFECTIVE COLORS, SYMBOLS OR ANY COMBINATION THEREOF. THE CONTRACTOR SHALL HAVE THE EQUIPMENT MANUFACTURER PROVIDE THE REQUIRED LABELING OR OBTAIN THE SERVICES OF A THIRD PARTY OR THE ELECTRICAL ENGINEER OF RECORD.

CONDITION 3

ARC FLASH HAZARD WARNING LABELS SHALL BE FIELD MARKED/PLACED ON ALL NEW SERVICE EQUIPMENT WITH THE FOLLOWING INFORMATION: NOMINAL SYSTEM VOLTAGE, AVAILABLE FAULT CURRENT AT THE SERVICE OVERCURRENT PROTECTIVE DEVICES, CLEARING TIME OF THE SERVICE OVERCURRENT PROTECTIVE DEVICES BASED ON THE AVAILABLE FAULT CURRENT AT THE SERVICE EQUIPMENT, THE DATE THE LABEL WAS APPLIED. THE LABELS SHALL MEET THE REQUIREMENTS OF 110.21(B) PER ANSI Z535.4-2011 GUIDELINES BY USING EFFECTIVE COLORS, SYMBOLS OR ANY COMBINATION THEREOF.

120V BRANCH CIRCUIT VOLT DROP CONDUCTOR LENGTH CHART

LOAD IN VOLT AMPERES	LENGTH OF CONDUCTOR				
	WIRE SIZE IN (GAUGE)				
	#12	#10	#8	#6	#4
1200VA	74	121	183	284	434
1560VA	57	93	141	218	334
1800VA	49	81	122	189	289
1920VA	46	76	115	178	271
2340VA	X	62	94	146	223
2880VA	X	51	76	118	181
3000VA	X	48	73	114	174
3900VA	X	X	56	87	134
4800VA	X	X	46	71	108

NOTES:
1. THIS CHART IS FOR COPPER CONDUCTORS ONLY.
2. THIS CHART ASSUME AN 80% POWER FACTOR AND STEEL RACEWAYS.
3. 2019 CALIFORNIA ENERGY CODE, 130.5(c) ALLOWS A MAXIMUM COMBINED VOLTAGE DROP OF 5%. THIS CHART ASSUMES A MAXIMUM LENGTH OF CONDUCTORS FOR LESS THAN 2% VOLTAGE DROP ON A BRANCH CIRCUIT AT GIVEN VA LOAD.
4. USE WIRE SIZE FROM THIS CHART UNLESS LARGER CONDUCTOR SIZES ARE NOTED ON THE DRAWINGS.
5. FOR VA VALUES NOT SHOWN USE NEXT HIGHEST VALUE FROM VALUE FROM THE CHART.

GENERAL NOTES

1. ALL WORK AND MATERIAL SHALL CONFORM TO LATEST CODES AND ORDINANCES. IT IS THE INTENTION OF THESE PLANS AND SPECIFICATIONS TO COVER ALL THINGS REQUIRED TO PROVIDE COMPLETE AND OPERATIVE SYSTEMS. THE CONTRACTOR SHALL FURNISH LABOR, MATERIAL, TRANSPORTATION, EQUIPMENT, MISCELLANEOUS SERVICES, ETC. REQUIRED TO ACCOMPLISH THIS RESULT. ANYTHING WHICH MAY BE REASONABLY CONSTRUED AS A NECESSARY PART OF THE INSTALLATION SHALL BE INCLUDED. NOTHING IN THESE PLANS OR SPECIFICATIONS MAY BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO ANY CONSTRUCTION CODES.
2. ALL EQUIPMENT SHALL HAVE TESTING LABORATORY LABEL ATTACHED (U.L. C.S.A. ETC.) AS PER N.E.C. 110. PROOF OF TESTING LABELS REQUIRED WITH ALL SUBMITTALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL THESE REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO PURCHASING, IF ANY OF THE SPECIFIED MATERIAL FAILED THESE REQUIREMENTS. WHERE A FIELD CERTIFIED PRODUCT MAY BE REQUIRED FOR FIELD ASSEMBLED COMPONENT, PROVIDE CERTIFIED REPORT BY AN APPROVED TESTING AGENCY ACCEPTABLE TO THE AUTHORITIES HAVING JURISDICTION. INCLUDE ALL TESTING FEES IN BID.
3. THE ENGINEERING SERVICE ARE LIMITED TO PREPARATION OF PLANS AND SPECIFICATIONS. THE PLANS AND SPECIFICATIONS ARE INTENDED TO BE USED AS CONSTRUCTION GUIDELINES ONLY AND NOT THE TOTAL INSTRUMENT OF CONTRACT DOCUMENTS. IT IS NOT THE INTENTION OF ANY CONSTRUCTION PLANS TO DIVIDE WORK AMONG DIFFERENT TRADES. VERIFY SCOPE OF WORK WITH GENERAL CONTRACTOR/OWNER SINCE THE ENGINEER IS NOT SUPERVISING THE JOB. THE ENGINEER WILL PROVIDE INTERPRETATION OF THE CONSTRUCTION DOCUMENTS, BUT SUPERVISION IS UNDER THE RESPONSIBILITY OF THE OWNER OR HIS APPOINTEE.
4. WORKING CLEARANCE SHALL BE MAINTAINED AS PER C.E.C/N.E.C. FOR ALL PANEL(S), SERVICE EQUIPMENT, DISCONNECT SWITCH, ETC. LOCAL UTILITY COMPANY WORKING CLEARANCE REQUIREMENT SHALL ALSO BE OBSERVED. POWER EQUIPMENT MANUFACTURER'S PRODUCT MAY VARY IN DIMENSION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF WORKING CLEARANCE REQUIREMENT WHEN LAYING OUT THE ELECTRICAL EQUIPMENT.
5. AVAILABLE FAULT CURRENT SHALL BE INDICATED ON ALL NEWLY INSTALLED SERVICE EQUIPMENT PER CEC 110.24. THE FIELD MARKING SHALL INCLUDE THE DATE OF THE FAULT CURRENT CALCULATION WAS PERFORMED. FOR MODIFICATION TO THE ELECTRICAL INSTALLATION, THE AVAILABLE FAULT CURRENT SHALL BE RECALCULATED INCLUDING NEW LOADS AND POSTED ON SITE PRIOR TO FINAL INSPECTION PER CEC ARTICLE110.24.
6. THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST SHOP DRAWINGS BEFORE STUBBING UP CONDUITS OR PENETRATING EXTERIOR WALL(S) OF BUILDING(S).
7. IN CASE OF INTERFERENCE BETWEEN ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND OTHER EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING BEFORE PROCEEDING.
8. ALL OUTDOOR DEVICES SHALL BE WEATHERPROOF.
9. ONLY MAJOR PULL BOXES ARE SHOWN. CONTRACTOR SHALL PROVIDE ADDITIONAL PULL BOXES WHERE THEY ARE REQUIRED TO MAKE A WORKABLE INSTALLATION. ALL PULL BOXES ABOVE GROUND SHALL BE PAD LOCKABLE. ALL PULL BOXES UNDERGROUND SHALL HAVE HOLD DOWN BOLTS AND BE TRAFFIC RATED.
10. MARK ALL PANELS WITH LAMANOID TAGS. PROVIDE TYPE WRITTEN PANEL SCHEDULE AT ALL NEW AND MODIFIED PANELS.
11. ALL FLOOR/GROUND MOUNTED EQUIPMENT SHALL SIT ON A CONCRETE PAD 3" HIGHER THAN SURROUNDING SURFACE FOR INTERIOR EQUIPMENT AND 6" FOR EXTERIOR EQUIPMENT.
12. CONTRACTOR SHALL FURNISH ALL MATERIALS, TOOLS, LABOR, EQUIPMENT AND SUPERVISION NECESSARY TO COMPLETE INSTALLATION, CHECKOUT AND INITIAL OPERATION.
13. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GENERAL ARRANGEMENT OF EQUIPMENT SHOWN AND SHALL SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT PRIOR TO PURCHASE.
14. CAUTION SHOULD BE USED WHEN EXCAVATING OR TRENCHING TO LOCATE EXISTING UNDERGROUND CONDUITS. COORDINATE WITH AGENCIES SUCH AS UNDERGROUND SERVICE ALERT PRIOR TO EXCAVATION.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING VISITED THE SITE AND SATISFIED HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL CHECK ALL OF THE CONDITIONS WHICH MAY AFFECT HIS WORK. THE SITE VISIT SHALL BE MADE PRIOR TO SUBMITTING THE BID.
16. THE CONTRACTOR SHALL OBTAIN A FULL SET OF PLANS WHEN BIDDING THE JOB.
17. ALL PHASE CONDUCTORS SHALL HAVE THEIR OWN NEUTRALS. NO SHARING OF NEUTRALS ALLOWED.
18. A CERTIFIED ELECTRICAL SHALL BE PRESENT ON THE PROJECT WHENEVER ELECTRICAL WORK IS IN PROGRESS. AN ELECTRICAL CONTRACTOR IS NOT EXEMPT FROM THIS REQUIREMENT AND SHALL ALSO BE CERTIFIED IF HE IS WORKING AS THE RESPONSIBLE PROJECT ELECTRICIAN . VIOLATION OF THIS REQUIREMENT BY EITHER ELECTRICIANS OR WORKING CONTRACTORS SHALL BE REPORTED TO THE STATE LICENSE CONTRACTOR BOARD AS REQUIRED UNDER THE EXISTING LABOR CODE SECTION 108.2. NO VOLUNTEERS ARE ALLOWED TO PERFORM WORK ON THIS PROJECT AND ALL CITY INSURANCE REQUIREMENTS MUST BE MET PRIOR TO PERFORMING ANY WORK.
19. ALL CONDUIT SHALL BE CONCEALED WITHIN ATTIC SPACE AND WALLS.
20. ONLY RIGID OR IMC CONDUIT SHALL BE USED WHEN TRANSITIONING FROM UNDERGROUND PVC CONDUIT TO ABOVE GROUND. PVC NOT ALLOWED.
21. ALL FASTENERS USED SHALL BE STAINLESS STEEL GRADE 316.
22. ALL EXTERIOR RECEPTACLES SHALL BE GFCI TYPE WITH A LOCKING, WEATHERPROOF IN-USE COVER.
23. ALL DISCONNECTS SHALL BE READILY ACCESSIBLE AND IN SIGHT OF THE EQUIPMENT, PER THE CALIFORNIA ELECTRICAL CODE. IF THE DISCONNECTING MEANS CANNOT BE LOCATED WITHIN SIGHT OF THE EQUIPMENT SERVED, IT SHALL HAVE THE CAPABILITY OF BEING LOCKED IN THE OPEN POSITION.
24. ALL CONDUCTORS IN STALLED IN UNDERGROUND OR WET LOCATIONS SHALL BE LISTED FOR WET LOCATIONS AND MARKED WITH "W" PER CEC.
25. SPLICES AND TERMINALS SHALL BE COMPRESSION TYPE OF SEAMLESS PURE COPPER, TIN PLATED LONG BARREL (TERMINALS WITH TWO-HOLE PAD AND INSPECTION WINDOW WITH NEMA DRILLING), AS MANUFACTURED BY BURNDY TYPE YS, YAZ-2N OR EQUAL. CLEAN ALL SURFACES AND INSTALL WITH OXIDE INHIBITING COMPOUND, BURNDY PENETROX-E OR EQUAL. INSTALL COMPRESSION CONNECTORS WITH 360° CIRCUMFERENTIAL COMPRESSION DYE, BURNDY HYPRESS OR EQUAL. THE INDENTER OR OTHER TYPE TOOLS WILL NOT BE ACCEPTABLE.
26. INSTALL 'MECHANICALLY FASTENED PHENOLIC NAMEPLATE WITH WHITE LETTERING ON BLACK BACKGROUND ON ALL EQUIPMENT, INCLUDING PULL BOXES, WITH DESCRIPTION INDICATED ON DRAWINGS. NAMEPLATES SHALL READ EXACTLY AS DESCRIBED ON THE DRAWINGS. IN GENERAL NAMEPLATE LETTERING SIZE SHALL BE 3/16-INCH HIGH FOR ALL NAMEPLATES SERVING FEEDER AND BRANCH CIRCUIT BREAKERS. ON MAIN SERVICE PANELS AND ALL OTHER NAMEPLATES LETTERING SHALL BE 1/4-INCH HIGH.
    26.1 ALL SWITCHBOARDS, SWITCHGEAR, PANELBOARDS, VFD'S, MOTORS, JUNCTION BOXES, PULL BOXES, DISCONNECT SWITCHES, ETC., SHALL BE MARKED TO INDICATE EACH DEVICE OR EQUIPMENT WHERE THE POWER ORIGINATES PER CEC 408.4, FIELD IDENTIFICATION REQUIRED, (B) SOURCE OF SUPPLY.
27. COORDINATE EQUIPMENT LOCATIONS, CONTROL AND POWER WIRING REQUIREMENTS AND CONNECT POINTS WITH ALL APPLICABLE DISCIPLINES.
28. PROVIDE AND INSTALL FUSES PER UNIT NAMEPLATE DATA ON THE EQUIPMENT PROVIDED.
29. REINSTALL EXISTING ELECTRICAL INSTALLATIONS DISTURBED. CERTAIN EXISTING ELECTRICAL INSTALLATIONS MAY BE LOCATED IN WALL, CEILINGS OR FLOORS THAT ARE TO BE REMOVED AND ARE ESSENTIAL FOR THE OPERATION OF OTHER REMAINING INSTALLATIONS. WHERE THIS CONDITIONS OCCURS, PROVIDE A NEW EXTENSION OF ORIGINAL CIRCUITS, RACEWAYS, EQUIPMENT AND OUTLETS TO RETAIN SERVICE CONTINUITY. INSTALLATIONS SHALL BE CONCEALED IN FINISHED AREAS.
30. ALL OUTDOOR ENCLOSURES SHALL BE WEATHERPROOF RATED AND HAVE LOCKING HASP, INCLUDING BUT NOT LIMITED TO SWITCHBOARDS, DISCONNECTS, ENCLOSURES, ETC. THE DISTRICT WILL PROVIDE THEIR OWN KEYED LOCKS. OUTDOOR PANELS SHALL HAVE KEYED LOCKING MECHANISM KEYED PER DISTRICT STANDARDS.
31. ALL BUSES, CONDUCTORS, AND WINDINGS SHALL BE COPPER.
32. ALL INTERRUPT AND SHORT CIRCUIT RATINGS SHALL BE FULLY RATED.
33. ALL TRANSFORMER SHALL BE K-13 RATED.

APPROVALS:

APPLICATION #

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DIV. OF THE STATE ARCHITECT
APP. 02-122316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER
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Exp. 6-30-24
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STATE OF CALIFORNIA

DATE:

JOHN J. PERSHING ELEMENTARY SCHOOL
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BAI Project #24108

REGISTERED PROFESSIONAL ENGINEER
ERIK BORRELLI
No. E16390
EXP. 6/30/25
ELECTRICAL
STATE OF CALIFORNIA

SCAN ME

TITLE:
ADDITIONAL ELECTRICAL NOTES AND REQUIREMENTS

SHEET:
E1.02

PROJECT

VOLTAGE: 208/120V, 3Ø, 4W					(N) PANEL 'WF'		BREAKER AIC: 35,000					
BUS: 150A							MOUNTING: SURFACE					
MAIN BREAKER: 150A/3P							ENCLOSURE: NEMA 3R					
CIR #	BKR	LOAD (VA) PHASE A	LOAD (VA) PHASE B	LOAD (VA) PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	LOAD (VA) PHASE B	LOAD (VA) PHASE A	BKR	CIR #
1	15A/1P	100			FRZR ALRM & LMS	COOLER ALRM & LMS			100	15A/1P	2
3	20A/1P		864		COOLER EVAP. E-2	FREEZER EVAP. E-1		1643		20A/2P	4
5	↓			0	SPARE		1643				6
7	35A/2P	2423			COOLER CONDENSING	SPARE			0	20A/1P	8
9			2423		UNIT, CU-2	RECEPTACLE		180		↓	10
11	60A/2P			3245	FREEZER CONDENSING	SPARE	0			↓	12
13		3245			UNIT, CU-1	↓			0	↓	14
15			0		SPACE	SPACE		0			16
17	↓			0	↓	↓	0			↓	18
19	↓	0			↓	↓			0	↓	20
21	↓		0		↓	↓		0		↓	22
23	↓			0	↓	↓	0			↓	24
25	↓	0			↓	↓				↓	26
27	↓		0		↓	↓				↓	28
29	↓			0	↓	↓				↓	30
TOTAL Ø LOADS (VA):					PHASE A = 5868	PHASE B = 5110	PHASE C = 4888				
TOTAL Ø LOADS (A):					PHASE A = 49	PHASE B = 43	PHASE C = 41				
TOTAL LOAD:					15866 VA	44 A					

MECHANICAL EQUIPMENT SCHEDULE

DESIG. (#/#)	DESCRIPTION	FLA/MCA/HP/W	STARTER/ FUSES	VOLT	PHASE	MAX. OCPD SIZE	CON-DUIT SIZE	CONDUCTOR #	CONDUCTOR SIZE	GND.
CU-1	CONDENSING UNIT	34.2 MCA	FUSE/DISC.	208	1	NOTE 2	1"	2	#6	NOTE 3
CU-2	↓	17.3 MCA	↓	↓	↓	↓	↓	↓	#8	↓
E-1	EVAPORATOR UNIT	15.8 FLA	↓	120	↓	↓	↓	↓	#10	↓
E-2	↓	2.4 FLA	↓	↓	↓	↓	↓	↓	#12	↓

NOTES:
1. * = THERMAL RATED SWITCH FOR FRACTIONAL HORSEPOWER MOTORS.
2. REFER TO THE PANEL SCHEDULE AND SINGLE LINE DIAGRAM FOR THE CIRCUIT BREAKER AND CONDUIT SIZES, IF NOT INDICATED WITHIN THE SCHEDULE.
3. GROUNDING CONDUCTOR SIZE TO MATCH CONDUCTOR SIZE.

GENERAL NOTES:
1. COORDINATE LOCATIONS AND POWER REQUIREMENT FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.
2. PROVIDE FUSED SWITCH DISCONNECT PER NAME PLATE RATING OF MECHANICAL UNITS FOR OVERLOAD PROTECTION.

(E) DRY TRANSFORMER SCHEDULE

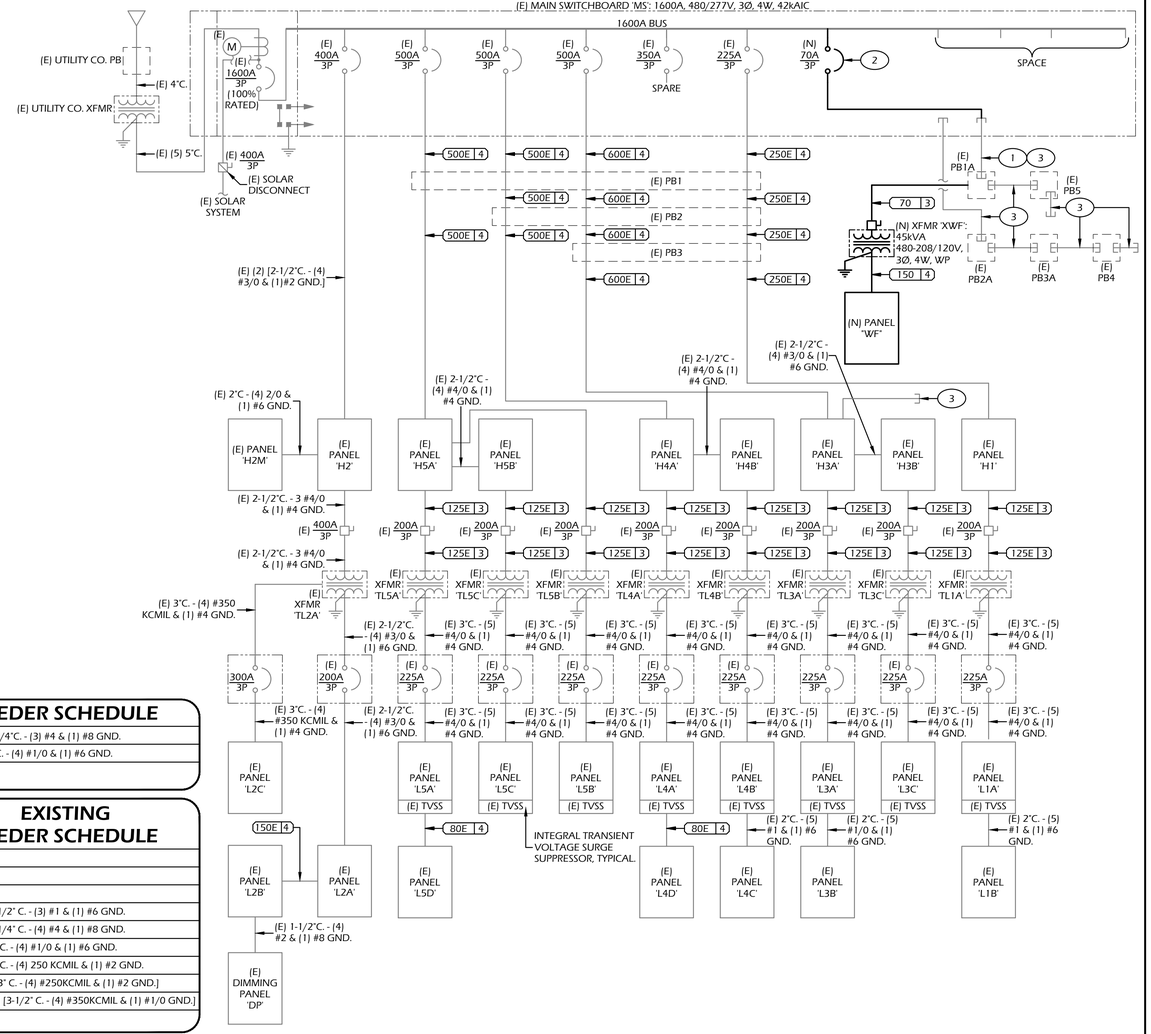
XFMR	PRIMARY	SECONDARY	kVA
(E) TL1A	480V	208/120V, 3Ø, 4W	75
(E) TL2A			150
(E) TL3A			75
(E) TL3C			
(E) TL4A			
(E) TL4B			
(E) TL5A			
(E) TL5B			
(E) TL5C	↓	↓	↓

FEEDER SCHEDULE

70 3	1-1/4"C. - (3) #4 & (1) #8 GND.
150 4	2"C. - (4) #1/0 & (1) #6 GND.

EXISTING FEEDER SCHEDULE

125E 3	1-1/2"C. - (3) #1 & (1) #6 GND.
80E 4	1-1/4" C. - (4) #4 & (1) #8 GND.
150E 4	2" C. - (4) #1/0 & (1) #6 GND.
250E 4	3" C. - (4) 250 KCMIL & (1) #2 GND.
500E 4	2[3" C. - (4) #250KCMIL & (1) #2 GND.]
600E 4	(2) [3-1/2" C. - (4) #350KCMIL & (1) #1/0 GND.]



SINGLE LINE DIAGRAM

NOT TO SCALE

TRANSFORMER WEIGHT & DIMENSIONS SCHEDULE

NAME	kVA	WEIGHT(Lb)	W	D	H	LOCATION	MANUFACTURER
XFMR 'XWF'	45 kVA	369	25.5"	25.93"	29.32"	ONSITE	SQUARE D OR EQUAL

ELECTRICAL DISTRIBUTION WEIGHT & DIMENSIONS SCHEDULE

NAME	CB	WEIGHT(Lb)	W	D	H	MOUNTING	MANUFACTURER
PANEL 'WF'	150A	254	20"	6.5"	62"	SURFACE	SQUARE D OR EQUAL

VOLTAGE DROP CALCULATIONS

Panel or Device	Distance	Material	Current	Voltage	Phase	Parallel Runs	Wire Size	For segment V_{DS}	For segment $\%V_{DS}$	Total to Device V_{DT}	Total to Device $\%V_{DT}$
(N) XFMR 'XWF'	59.0	Copper	56.000	480	3	1	#4	1.7665	0.37%	2.0979	0.44%
(N) PNL 'WF'	12.0	Copper	120.000	208	3	1	#1/0	0.3046	0.15%	0.3046	0.15%
WF-1	102.0	Copper	8.000	120	1	1	#10	2.0282	1.69%	2.3328	1.94%
WF-3	37.0	Copper	7.200	120	1	1	#12	1.0525	0.88%	1.3572	1.13%
WF-7,9	20.0	Copper	23.300	208	1	1	#8	0.7282	0.35%	1.0328	0.50%
WF-11,13	130.0	Copper	31.200	208	1	1	#6	3.9865	1.92%	4.2911	2.06%
WF-2	22.0	Copper	8.000	120	1	1	#12	0.6954	0.58%	1.0000	0.83%
WF-4,6	102.0	Copper	18.800	208	1	1	#10	4.7663	2.29%	5.0709	2.44%
WF-10	130.0	Copper	8.000	120	1	1	#10	2.5850	2.15%	2.8896	2.41%

SHEET NOTES (#)

1. UTILIZE ONE OF THE 2-1/2-INCH SPARE CONDUITS GOING FROM THE EXISTING PULLBOX TO THE (E) MSB 'MS1' TO ROUTE THE CONDUCTOR INDICATED PER THE FEEDER SCHEDULE FOR THE NEW TRANSFORMER 'XWF'.
2. PROVIDE AND INSTALL ALL MOUNTING HARDWARE FOR A FULLY FUNCTIONAL SYSTEM.
3. EXISTING SPARE CONDUITS, SEE ELECTRICAL SITE PLAN.

APPROVALS:

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MECHANICAL
STATE OF CALIFORNIA

DATE:

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SCAN ME

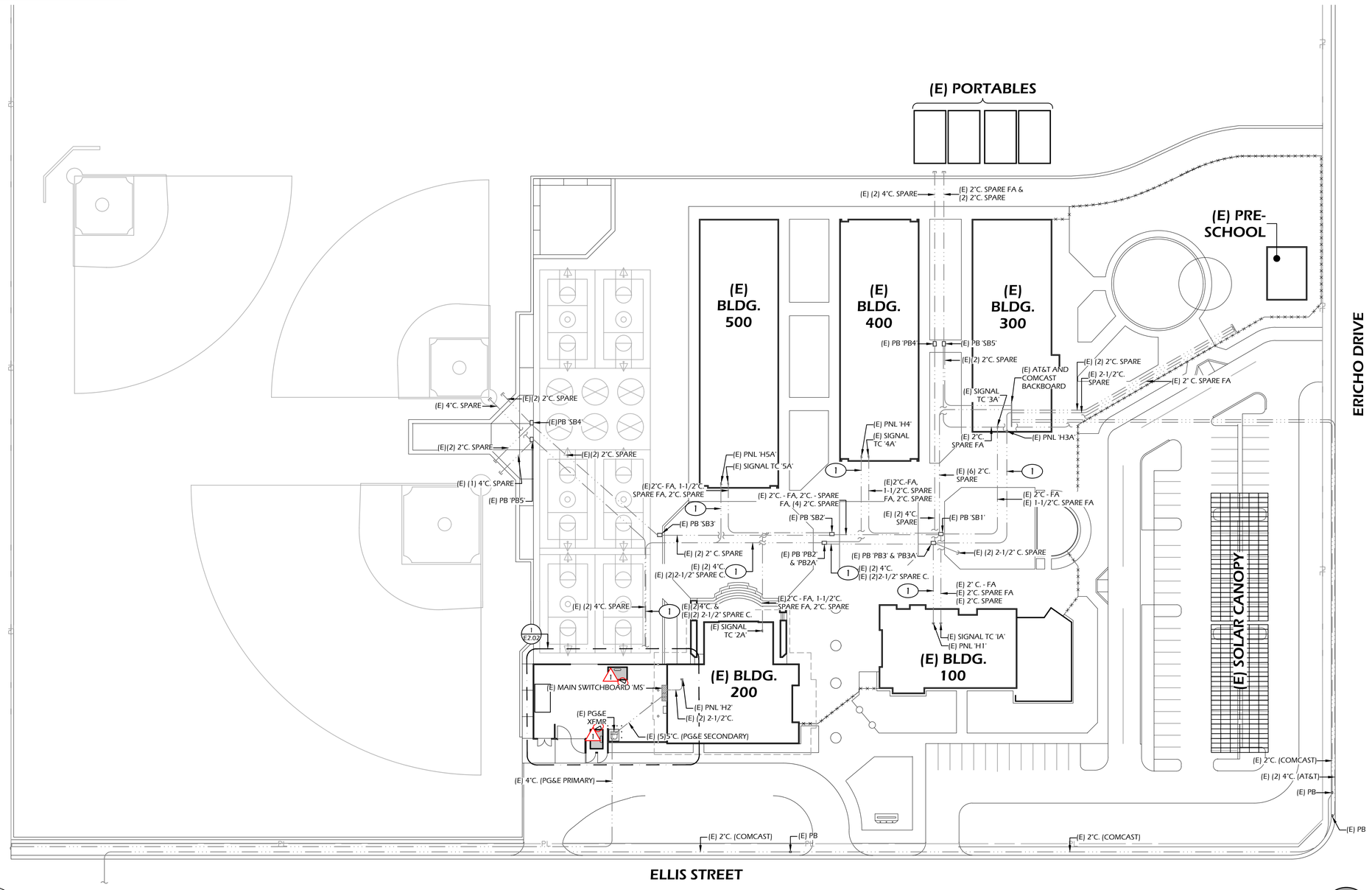
TITLE:
SINGLE LINE DIAGRAM, PANEL SCHEDULE, WEIGHT AND DIMENSION SCHEDULE

SHEET:
E1.03

PROJECT

SHEET NOTES (#)

1. EXISTING FEEDERS AND CONDUITS PER SINGLE LINE DIAGRAM.



1 / - **PARTIAL ELECTRICAL SITE PLAN**
SCALE: 1"=40'-0"

APPROVALS:
APPLICATION #

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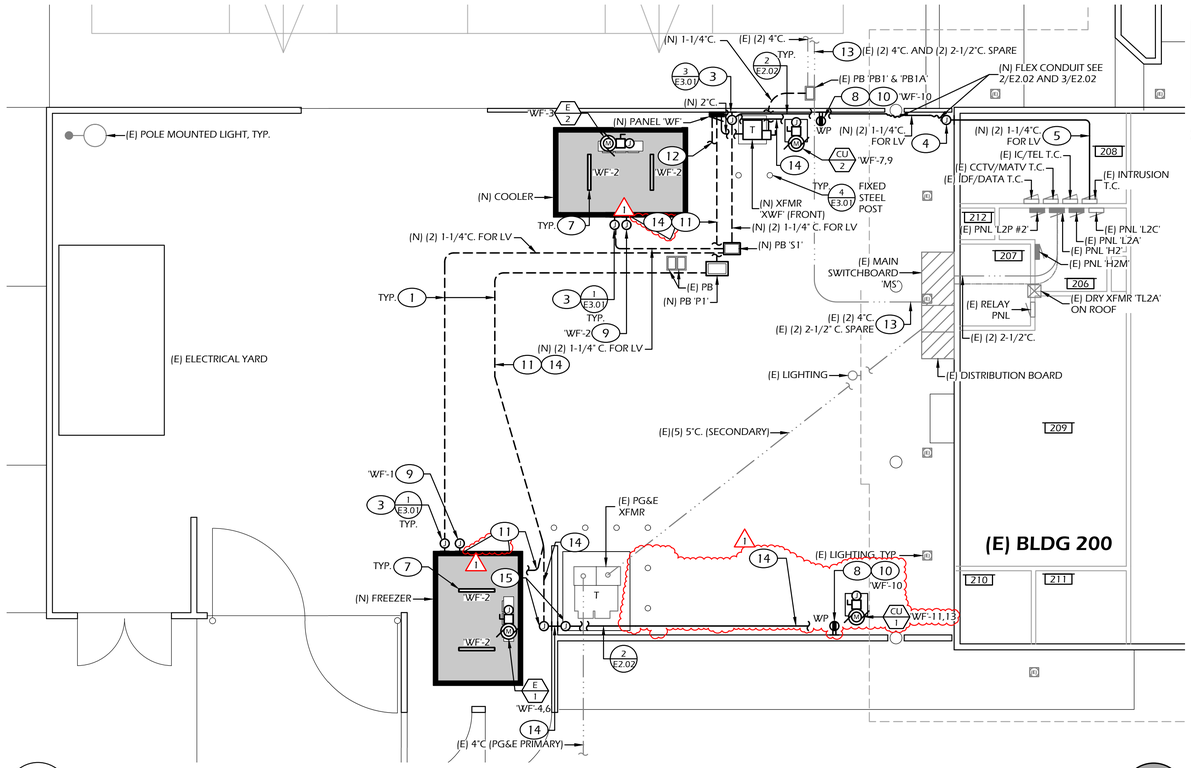
SCAN ME

TITLE:
PARTIAL ELECTRICAL SITE PLAN

SHEET:
E2.01

PROJECT



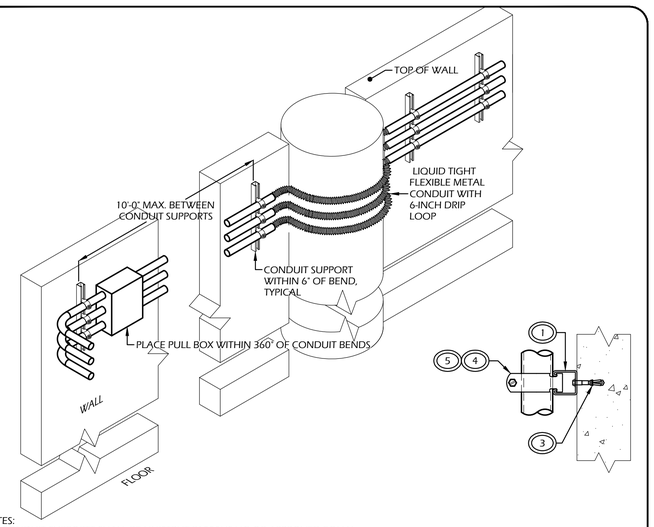
1 - **PARTIAL ELECTRICAL SITE PLAN**
SCALE: 1/8"=1'-0"

ROOM SCHEDULE

###	ROOM NAME	###	ROOM NAME
206	STORAGE	210	TOILET
207	PANTRY	211	OFFICE
208	CUSTODIAN	212	WATER HEATER
209	SERVING KITCHEN		

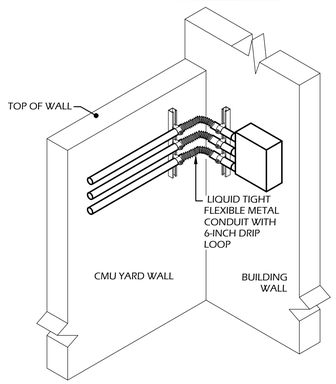
SHEET NOTES (#)

1. SAW-CUT CONCRETE AS APPLICABLE ALONG CONDUIT ROUTE AND HAUL AWAY DEBRIS. PATCH AND REPAIR TO MATCH THE EXISTING SURFACE AFTER INSTALLATION OF CONDUITS.
2. NOT USED.
3. PROVIDE AND INSTALL A 6X6X4-INCH NEMA 3R J-BOX, MOUNTED UP HIGH. TERMINATE THE SPARE COMMUNICATIONS CONDUITS AT J-BOX.
4. PROVIDE AND INSTALL A 6X6X4-INCH NEMA 3R J-BOX, MOUNTED UP HIGH ABOVE THE INTERIOR CEILING LEVEL. PROVIDE (2) 1-1/4-INCH CONDUIT, NIPPLE THROUGH WALL TO THE ATTIC FOR FUTURE COMMUNICATION CABLES.
5. ROUTE CONDUIT IN ACCESSIBLE CEILING SPACE.
6. NOT USED.
7. LIGHT FIXTURE SHALL BE MASTER-BILT 48-INCH FIXTURE P/N #157752. FIXTURE SHALL HAVE OPTIONAL CEILING MOUNT AND MOUNTED ON CEILING OF FREEZER/COOLER.
8. MOUNT RECEPTACLE ON WALL.
9. PROVIDE AND INSTALL A 1-1/4-INCH CONDUIT BACK TO PANEL CIRCUIT INDICATED. MAKE CONNECTIONS TO THE NL708 HIGH/LOW ALARM AND LIGHTING MANAGEMENT SYSTEM. MAKE ALL LIGHTING CONNECTIONS WITH 3/4-INCH LIQUID TIGHT CONDUITS TO THE LIGHT AND SWITCHES. COORDINATE WITH WALK-IN FREEZER CONTRACTOR FOR EXACT LOCATION.
10. PROVIDE AND INSTALL (3) #10 AWG CONDUCTORS WITHIN A 1-INCH CONDUIT BACK TO PANEL CIRCUIT INDICATED AND MAKE ALL CONNECTIONS.
11. FREEZER: REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR EVAPORATOR UNIT CONDUIT SIZE. REFER TO SHEET NOTE 9 FOR THE FREEZER ALARM & LIGHT MANAGEMENT SYSTEM CONDUIT SIZE. MAKE ALL CONNECTIONS.
12. COOLER: REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR EVAPORATOR UNIT CONDUIT SIZE. REFER TO SHEET NOTE 9 FOR THE FREEZER ALARM & LIGHT MANAGEMENT SYSTEM CONDUIT SIZE. MAKE ALL CONNECTIONS.
13. EXISTING FEEDERS AND CONDUITS PER EXISTING SINGLE LINE DIAGRAM.
14. REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR CONDENSING UNIT CONDUIT SIZE AND REFER TO SHEET NOTE 10 FOR RECEPTACLE CONDUIT SIZE. MAKE ALL CONNECTIONS.
15. PROVIDE AND INSTALL 10X10X6-INCH NEMA 3R JUNCTION BOX. CORE DRILL AND PENETRATE THROUGH CMU WALL AND ROUTE CONDUITS



NOTES:
1. CONDUIT SUPPORTS SHALL BE UNISTRUT P1000HS-HG OR APPROVED EQUAL.
2. CONDUIT SUPPORTS SHALL EXTEND 3" BEYOND CONDUITS.
3. MOUNT CONDUIT SUPPORTS TO WALL WITH HILTI 1/2"x3-3/4", STAINLESS STEEL KWIK-BOLT TZ2 EXPANSION ANCHORS. EACH SUPPORT SHALL BE FASTENED IN PLACE WITH A MINIMUM OF TWO BOLTS. TORQUE PER ICC-ES ESR-4266 FOR CONCRTET AND 4561 FOR CMU. BOLT SPACING SHALL NOT EXCEED 12". FOR CMU WALLS, INSTALL BOLTS AS CLOSE TO CENTER OF THE BLOCKS AS POSSIBLE.
4. MOUNT CONDUITS TO CONDUIT SUPPORTS WITH ELECTRO-GALVANIZED UNISTRUT, OR APPROVED EQUAL, PIPE CLAMPS. MODEL NUMBERS OF CLAMPS WILL VARY DEPENDING ON SIZE AND TYPE OF CONDUITS.
5. THE CONDUIT SUPPORTS AND PIPE CLAMPS SHALL BE MADE BY THE SAME MANUFACTURER.
6. MOUNT CONDUIT NEAR TOP OF WALL UNLESS OTHERWISE NOTED.
7. PROVIDE A PULL BOX ON EACH SIDE OF A COLUMN OR OTHER OBSTRUCTION REQUIRING BENDS IN THE CONDUITS.
8. COORDINATE WITH THE STRUCTURAL PLANS.

2 - **TYPICAL CONDUIT MOUNTING AT CONCRETE OR CMU WALL OR HORIZONTAL MOUNTING (SEISMIC JOINT)**
NOT TO SCALE



NOTES:
1. REFER TO DETAIL 2/E2.02 FOR CONDUIT MOUNTING AT CONCRETE OR CMU WALL.
2. REFER TO DETAIL 5/E3.01 FOR CONDUIT MOUNTING AT WOOD STUD WALL.

3 - **TRANSITION FROM CMU WALL TO BUILDING**
NOT TO SCALE

PULL BOX SCHEDULE

CATEGORY	DESIGNATION	MINIMUM SIZE	LxW (IN)	LID TYPE	SYSTEMS
POWER	P1	B1324	18.7x29.5	H/20	POWER
SIGNAL	S1	B1017	15.625x22.25	H/20	SIGNAL

NOTES:
1. PULL BOX SIZES LISTED ARE FOR CHRISTY CONCRETE PRODUCTS/OLDCASTE PRECAST.
2. ALL PULL BOXES SHALL BE EITHER BROOKS, CHRISTY CONCRETE PRODUCTS/OLDCASTE PRECAST, JENSEN PRECAST, OR EQUIVALENT.
3. ALL PULL BOXES SHALL BE PROVIDED WITH EXTENSION RINGS AND BOLT DOWN COVERS AS REQUIRED TO SUIT THE APPLICATION.
4. LABEL PULL BOXES 'ELECTRICAL' OR 'COMMUNICATIONS' AS REQUIRED.

GENERAL NOTES (#)

1. ALL CONDUIT PENETRATIONS SHALL BE SEALED WITH APPROVED SEALANT TO PREVENT MOISTURE PENETRATION WITHIN THE FREEZER AND COOLER.
2. ALL PANELS SHALL BE LOCKABLE.
3. COORDINATE WITH THE REFRIGERATION CONTRACTOR. PART NUMBERS WITHIN THIS PLAN ARE PER THE BUILT OF MATERIAL FOR THE WALK-IN BOXES. COORDINATE WITH THE REFRIGERATION CONTRACTOR FOR EQUIPMENT PURCHASE.
4. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF THE MECHANICAL UNITS.

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Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI Project #24108

REGISTERED PROFESSIONAL ENGINEER — BORRELLI — No. E16390 — EXP. 6/30/25 — ELECTRICAL — CALIFORNIA

SCAN ME

APPROVALS:
APPLICATION #

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-122316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER — BRYAN W. CARLSON — No. M34846 Exp. 6-30-24 — MECHANICAL — STATE OF CALIFORNIA

DATE:

JOHN J. PERSHING ELEMENTARY SCHOOL
COLD BOX ADDITION
1505 ELLIS STREET
MADERA, CA 93638

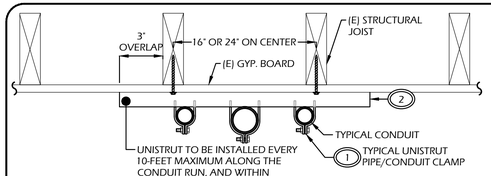
REVISIONS						
1	12-06-24	COORDINATION				

LAWRENCE ENGINEERING GROUP
4910 E. Clinton Way, Suite 101
Fresno, CA 93727
(559) 431-1000
FAX (559) 431-1582

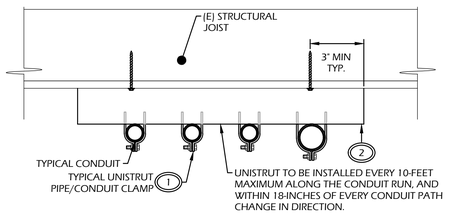
TITLE:
PARTIAL ELECTRICAL SITE PLAN

SHEET:
E2.02

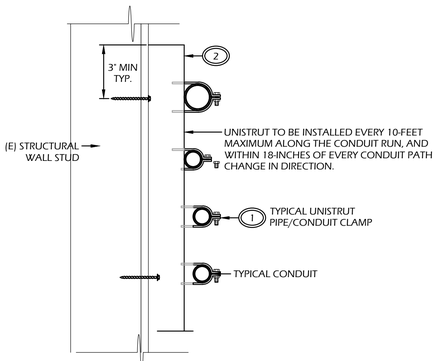
PROJECT



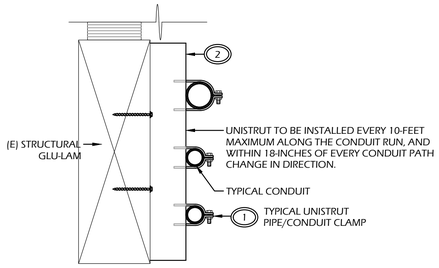
A CONDITION 1 - CEILING MOUNTED
CEILING JOIST PARALLEL TO CONDUIT RUN



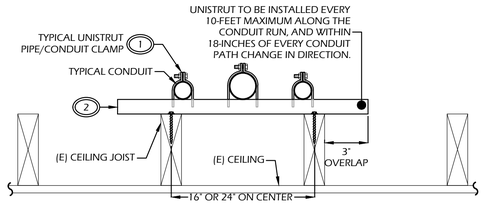
B CONDITION 2 - CEILING MOUNTED
CEILING JOIST PERPENDICULAR TO CONDUIT RUN



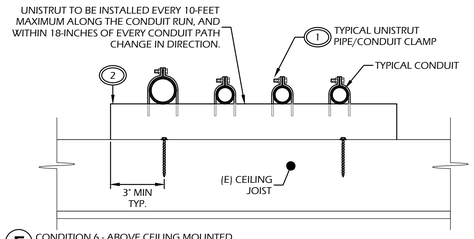
C CONDITION 3 - WALL MOUNTED



D CONDITION 4 - CONDUIT MOUNTING ON GLU-LAM



E CONDITION 5 - ABOVE CEILING MOUNTED
CEILING JOIST PARALLEL TO CONDUIT RUN



F CONDITION 6 - ABOVE CEILING MOUNTED
CEILING JOIST PERPENDICULAR TO CONDUIT RUN

DETAIL NOTES (#)

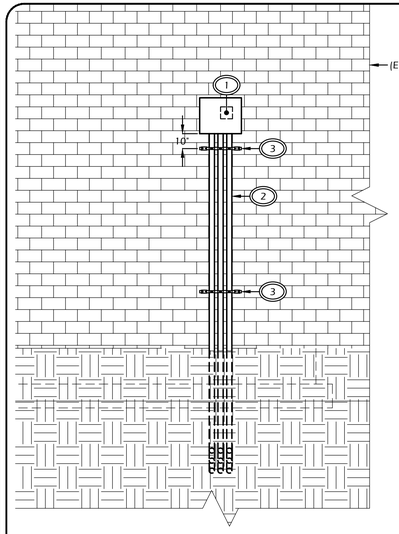
1. PROVIDE AND INSTALL UNISTRUT CONDUIT CLAMPS. COORDINATE UNISTRUT MEMBER SIZE. REFER TO SCHEDULE BELOW FOR CLAMP MODEL NUMBER AND MAXIMUM CONDUIT SIZE PER CLAMP.
2. PROVIDE AND INSTALL UNISTRUT WITH (2)#10X2-1/2" WEATHER COATED WOOD SCREW MIN. 2" EMBEDMENT AND WASHER, TYPICAL.

PART NO.	CONDUIT SIZE IN (mm)	THICKNESS GAUGE (mm)	WT/100 PCS LBS (kg)	DESIGN LOAD LBS (kN)
P1211	1/2 12.7	16 1.5	10 4.5	400 1.78
P1212	3/4 19.1	16 1.5	11 5.0	400 1.78
P1213	1 25.4	16 1.5	12 5.4	400 1.78
P1214	1-1/4 31.8	14 1.9	18 8.2	600 2.67
P1215	1-1/2 38.1	14 1.9	20 9.1	600 2.67
P1217	2 50.8	14 1.9	22 10.0	600 2.67
P1218	2-1/2 63.5	12 2.7	40 18.1	800 3.56
P1219	3 76.2	12 2.7	47 21.3	800 3.56
P1220	3-1/2 88.9	11 3.0	62 28.1	1000 4.45
P1221	4 101.6	11 3.0	67 30.4	1000 4.45

GENERAL NOTES

1. QUANTITY OF CONDUIT ON UNISTRUT MOUNTED MAY VARY. REFER TO CONDUIT ROUTING FLOOR PLAN FOR QUANTITY AND SIZE OF CONDUIT.
2. FOR CONDUITS ROUTING PARALLEL TO THE ROOF JOISTS WITH A WEIGHT GREATER THAN 15LBS./FT., THE SUPPORTS SHALL BE WITHIN 2 FEET OF AN EXISTING STRUCTURAL BEAM, ONE SUPPORT ON EACH SIDE OF THE BEAM.
3. CONDUITS ROUTING PERPENDICULAR TO THE ROOF JOISTS WITH A WEIGHT GREATER THAN 25LBS./FT. SHALL BE WITHIN 2 FEET OF AN EXISTING STRUCTURAL GLU-LAM.
4. UNISTRUT CHANNEL SHALL BE P1000-HG, UON. COORDINATE UNISTRUT MEMBER SIZE.

5 - **TYPICAL CONDUIT SUPPORT DETAIL**
NOT TO SCALE



A FRONT ELEVATION
SCALE: 1/4"=1'-0"

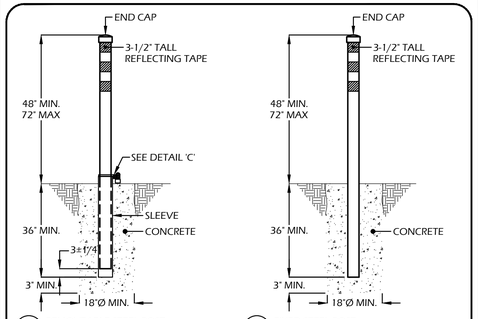
DETAIL NOTES (#)

1. SEE CONDUIT PENETRATION THROUGH CMU WALL DATAIL FOR WALL PENETRATION REQUIREMENTS.
2. PROVIDE AND INSTALL 316 STAINLESS STEEL, RIGID CONDUIT. QUANTITIES AND SIZES VARY, REFER TO SITE PLANS.
3. MOUNT CONDUITS TO STRUCTURE USING UNISTRUT P1000HS-ST AND UNISTRUT 316 STAINLESS STEEL PIPE CLAMPS AT 10'-0" O.C., MAX. MOUNT UNISTRUT TO STRUCTURE USING UNISTRUT P4376-ST AND 3/8"Ø SS TITEN HD SCREW ANCHOR WITH 2-3/4" EMBEDMENT AT EACH END (ESR-1056).

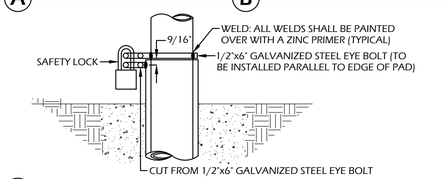
GENERAL NOTES:

1. SEAL ALL OPENINGS INTO CMU WITH CMU APPROVED SEALANT TO CREATE A WATERTIGHT SEAL.

3 - **CMU WALL MOUNTED J-BOX/WIREWAY DETAIL**
NOT TO SCALE



A REMOVEABLE STEEL POST
B FIXED STEEL POST

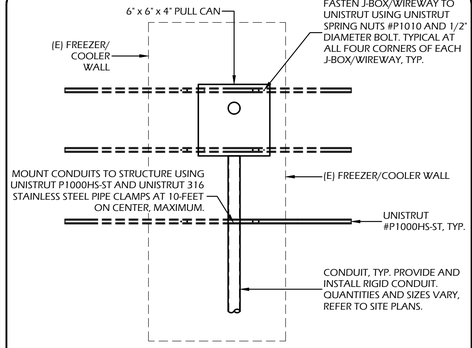


C REMOVEABLE POST LOCK ATTACHMENT

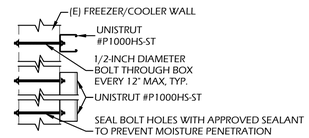
ITEM	MATERIAL
POST	4" GALVANIZED, STEEL PIPE, STANDARD, SCHEDULE NO. 40
SLEEVE	5" GALVANIZED, STEEL PIPE 36" LONG, STANDARD, SCHEDULE NO. 40
END CAP	4" GALVANIZED, MALLEABLE IRON, THREADED (SCREWED)

CONCRETE SHALL BE MIN 3000 PSI. IN 28 DAYS.

4 - **BARRIER POST DETAIL**
NOT TO SCALE

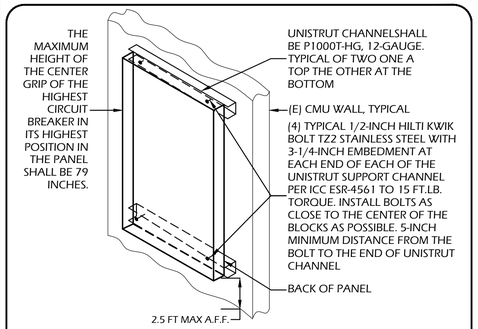


A J-BOX/WIREWAY MOUNTING



B UNISTRUT MOUNTED TO FREEZER/ COOLER WALL

1 - **FREEZER/ COOLER WALL MOUNTED J-BOX/WIREWAY DETAIL**
NOT TO SCALE



WIDTH	DEPTH	HEIGHT	WEIGHT	BOLT WITH CHANNEL NUT	
				QTY.	DIA.
20.00"	6.5"	68.00"	300 LBS.	4	3/8"

2 - **CMU WALL MOUNTED PANEL MOUNTING DETAIL**
NOT TO SCALE

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI Project #24108

APPROVALS:
APPLICATION #

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-122316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER
BRYAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE:

JOHN J. PERSHING ELEMENTARY SCHOOL
COLD BOX ADDITION
1505 ELLIS STREET
MADERA, CA 93638

REVISIONS

LAWRENCE ENGINEERING GROUP
Fresno, CA 93727
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4910 E. Clinton Way, Suite 101
(559) 431-0101

TITLE:
TYPICAL ELECTRICAL DETAILS

SHEET:
E3.01

PROJECT

APPROVALS:

APPLICATION #

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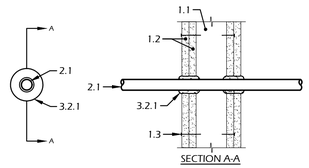
TITLE:
TYPICAL ELECTRICAL DETAILS

SHEET:
E3.02

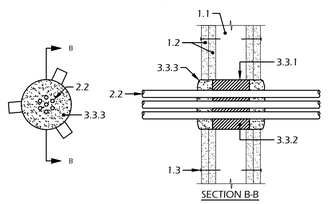
PROJECT

UL SYSTEM NO. W-L-3003
`F' RATINGS- 2 HOUR
`T' RATINGS- 2 HOUR



FIRESTOP CONFIGURATION `A'

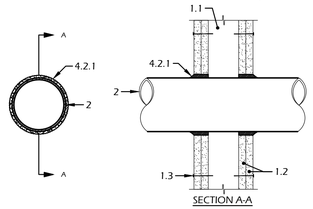
UL SYSTEM NO. W-L-3004
`F' RATINGS- 2 HOUR
`T' RATINGS- 2 HOUR



FIRESTOP CONFIGURATION `B'

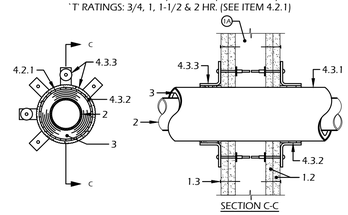
1. WALL ASSEMBLY
 1.1. STUDS- WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS.
 1.2. WALLBOARD, GYPSUM- 5/8" THICK.
 1.3. FASTENERS- 1-7/8" LONG 6D CEMENT COATED NAILS.
2. CABLES
 2.1. 50 PAIR (OR SMALLER) #24 AWG TELEPHONE CABLE WITH POLYVINYL CHLORIDE JACKET WITH POLYVINYL CHLORIDE INSULATION.
 2.2. TWO CONDUCTOR #24 AWG (OR SMALLER) WITH POLYVINYL CHLORIDE JACKET WITH POLYETHYLENE INSULATION.
3. FIRESTOP SYSTEM
 3.1. INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE FIRESTOP CONFIGURATION (`A' OR `B') IS DEPENDENT UPON THE TYPE AND SIZE OF THE CABLE AND THE SIZE OF THE ANNULAR SPACE BETWEEN THE CABLE AND THE PERIMETER OF THE CIRCULAR THROUGH OPENING AS TABULATED BELOW:
  3.1.1. ONE 50 PAIR, #24 AWG CABLE: 3/16" ANNULAR SPACE, FIRESTOP CONFIGURATION A.
  3.1.2. UP TO SEVEN 2 CONDUCTOR, #20 AWG CABLES: 3/8" ANNULAR SPACE, FIRESTOP CONFIGURATION B.
 3.2. FIRESTOP CONFIGURATION `A'
  3.2.1. FILL, VOID OR CAVITY MATERIAL (PUTTY)- MIN. 1-1/2" THICK LAYER OF PUTTY FIRMLY PACKED WITHIN THE OPENING. ADDITIONAL PUTTY INSTALLED SUCH THAT A MIN. 1/8" CROWN IS FORMED AROUND THE CIRCUMFERENCE TYPE `FSP').
 3.3. FIRESTOP CONFIGURATION `B'
  3.3.1. STEEL SLEEVE- NOMINAL 5" LONG CYLINDRICAL SLEEVE WITH NOMINAL 3/4" BY 3" LONG TABS TO RETAIN PUTTY IN POSITION. SLEEVE FORMED OF PRECUT 0.016" THICK (#30 GA.) GALVANIZED STEEL SHEET AVAILABLE FROM PUTTY MANUFACTURERS.
  3.3.2. FORMING MATERIAL- MINERAL WOOL INSULATION HAVING A MIN. DENSITY OF 6 PCF, FIRMLY PACKED WITHIN THE SLEEVE TO A MIN. THICKNESS OF 4".
  3.3.3. FILL, VOID OR CAVITY MATERIAL (PUTTY)- MIN. 1" THICK LAYER OF PUTTY MATERIAL FIRMLY PACKED TO FILL THE ANNULAR SPACE BETWEEN THE CABLES, MINERAL WOOL AND PERIPHERY OF THE OPENING. ADDITIONAL PUTTY SHOULD BE INSTALLED SUCH THAT A MIN. 1/8" CROWN IS FORMED AROUND THE CABLES. (NELSON ELECTRIC, UNIT OF GENERAL SIGNAL CORP.- TYPE FSP.)

UL SYSTEM NO. W-L-1001
`F' RATINGS: 1, 2, 3 & 4 HR. (SEE ITEM 4.1)
`T' RATINGS: 0, 1, 2, 3, & 4 HR. (SEE ITEM 4.1.1)



FIRESTOP CONFIGURATION `C'

UL SYSTEM NO. W-L-2002
`F' RATINGS: 1, 1-1/2 & 2 HR. (SEE ITEM 4.1)
`T' RATINGS: 3/4, 1, 1-1/2 & 2 HR. (SEE ITEM 4.2.1)



FIRESTOP CONFIGURATION `D'

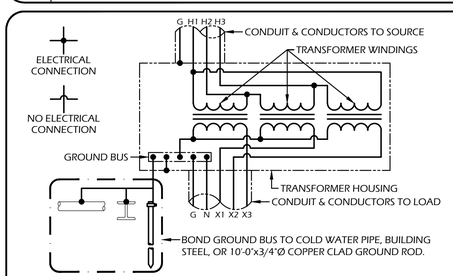
1. WALL ASSEMBLY
 1.1. STUDS- WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS.
 1.2. WALLBOARD, GYPSUM- 5/8" THICK.
 1.3. FASTENERS
2. CONDUIT
3. PIPE COVERING (OPTIONAL)- NOM. 1" OR 2" THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH FOIL-SCRIM-KRAFT.
4. FIRESTOP SYSTEM
 4.1. INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY `F' RATING OF THE FIRESTOP SYSTEM IS EITHER (1) OR (2) HOUR DEPENDING UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. THE HOURLY `T' RATINGS FOR THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE SIZE OF THE STEEL PIPE OR CONDUIT, THE ABSENCE OR PRESENCE OF PIPE COVERING (ITEM3), THE FIRESTOP CONFIGURATION AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED
  4.1.1. MAXIMUM 1"Ø CONDUIT: 3/16" ANNULAR SPACE, FIRESTOP CONFIGURATION C, 1 OR 2 HOUR `T' RATING
  4.1.2. MAXIMUM 4"Ø CONDUIT AND 1" COVERING: 3/8" ANNULAR SPACE, FIRESTOP CONFIGURATION D, 1 OR 2 HOUR `T' RATING
 4.2. FIRESTOP CONFIGURATION `C'
  4.2.1. FILL, VOID OR CAVITY MATERIAL - CAULK FILL MATERIAL FORCED INTO ANNULAR SPACE TO MAX. EXTENT POSSIBLE AND WITH A MIN. 1/4" DIAM. BEAD OF CAULK APPLIED TO PERIMETER OF PIPE OR CONDUIT AT ITS EGRESS FROM THE WALL.
 4.3. FIRESTOP CONFIGURATION `D'
  4.3.1. FILL, VOID OR CAVITY MATERIALS (WRAP STRIP)- NOMINAL 1/4" THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2" WIDE STRIPS. NOMINAL 2" WIDE STRIP, TIGHTLY WRAPPED AROUND PIPE COVERING (FOIL SIDE OUT) WITH SEAM BUTTED AND WITH EDGE OF WRAP STRIP ABUTTING WALL SURFACE. WRAP STRIP TEMPORARILY HELD IN POSITION WITH ALUMINUM FOIL TAPE, STEEL WIRE TIE OR EQUIVALENT.
  4.3.2. FILL, VOID OR CAVITY MATERIALS (CAULK)- GENEROUS BEAD OF CAULK TO OUTER PERIMETER OF WRAP STRIP AT INTERFACE WITH WALL SURFACE.
  4.3.3. STEEL COLLAR- NOMINAL 2" DEEP COLLAR WITH 1-1/4" WIDE BY 2" LONG ANCHOR TABS AND MINIMUM 1/4" LONG TABS TO RETAIN WRAP STRIP LAYER. COILS OF PRECUT 0.016" THICK (NO. 30 GAUGE) GALVANIZED SHEET STEEL AVAILABLE FROM WRAP STRIP MANUFACTURER.

CABLES	CONDUITS

NOTE: FOR OTHER RATED ASSEMBLIES, REFER TO THE LATEST ISSUE OF "UNDERWRITERS LABORATORIES, INC., FIRE RESISTANCE DIRECTORY."

5 - **CONDUIT/CABLE PENETRATIONS THRU RATED STUD/WALLBOARD ASSEMBLY DETAIL (TYPICAL)**

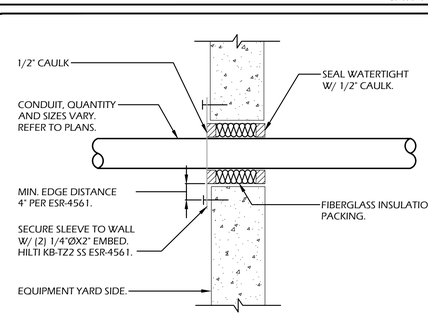
NOT TO SCALE GB160-01-01



NOTES:
1. SIZE CONDUITS AND CONDUCTORS PER THE SINGLE LINE DIAGRAM.

7 - **TRANSFORMER GROUNDING & CONNECTION DETAIL**

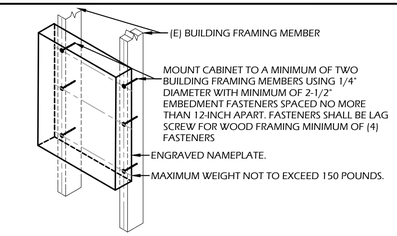
NOT TO SCALE



CONDUIT SIZE	CONDUIT SLEEVE SIZE	CONDUIT SLEEVE MATERIAL
1"	2"	GALVANIZED RIGID STEEL
1-1/4"	2-1/4"	GALVANIZED RIGID STEEL

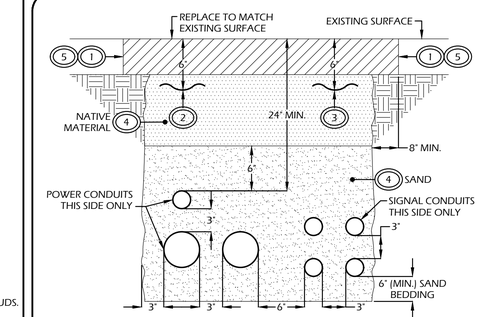
6 - **CONDUIT PENETRATION THRU CMU WALL DETAIL**

NOT TO SCALE



2 - **TYPICAL TERMINAL CABINET ATTACHMENT TO WALL**

NOT TO SCALE

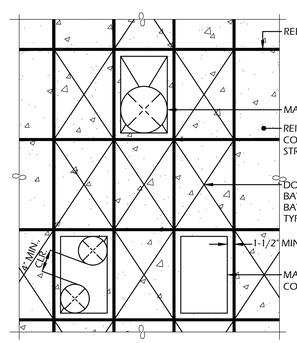


DETAIL NOTES (#)

1. SAWCUT ALL EDGES NEATLY.
2. PROVIDE AND INSTALL DETECTABLE WARNING TAPE MARKED "POWER" ABOVE POWER CONDUITS.
3. PROVIDE AND INSTALL DETECTABLE WARNING TYPE MARKED "COMMUNICATIONS" ABOVE COMMUNICATIONS CONDUIT.
4. THE CONTRACTOR SHALL RETAIN AND PAY FOR THE SERVICES OF A SOILS LAB TO TEST FOR THE COMPACTION OF THE BACKFILL. A SOILS PROFILE SHALL BE DONE OF THE EXCAVATED NATIVE TRENCHED DIRT SO THE COMPACTION TEST CAN BE COMPARED WITH THE NATIVE DIRT PROFILE. THE CONTRACTOR SHALL PROVIDE ALL COMPACTION OF THE TRENCH REQUIRED TO MEET A 95% COMPACTION REQUIREMENT. AN INSPECTED AND SIGNED COMPACTION TESTING REPORT SHALL BE PROVIDED BY THE SOILS TESTING LAB AND COPY OF THE COMPACTION TEST SHALL BE PROVIDED TO THE ENGINEER OF RECORD/PROJECT COORDINATOR PRIOR INSTALLING THE HARDSCAPE. THE CONTRACTOR SHALL BE REQUIRED TO PAY FOR ALL TESTS UNTIL THE COMPACTION RESULTS MEET OR EXCEED THE COMPACTION REQUIREMENTS.
5. PROVIDE 12"x1/2", STEEL REBAR DOWELS AT 12" CENTER TO CENTER ALONG ENTIRE PATH OF TRENCH BENEATH CONCRETE. DOWELS SHALL BE INSERTED 6" INTO EXISTING CONCRETE. PREPARE THE EXISTING CONCRETE BY DRILLING HOLES WITHIN IT AND PROVIDING EPOXY TO HOLD THE DOWEL IN PLACE.

3 - **TRENCH DETAIL WITHOUT SPACERS AND UNDER EXISTING SURFACE**

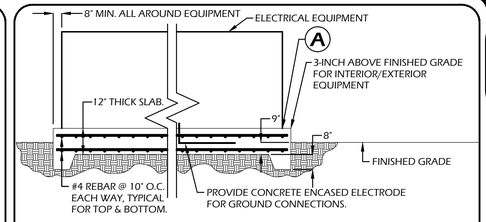
NOT TO SCALE

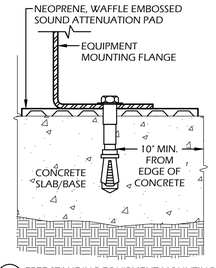


NOTES:
1. PRIOR TO CORING CONCRETE FOR CONDUITS, VERIFY EXACT LOCATION OF EXISTING REINFORCING BARS USING GROUND PENETRATING RADAR OR OTHER APPROVED METHODS
2. NO REINFORCING BARS SHALL BE SEVERED IN ANY FASHION WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
3. IF TWO, OR MORE, MATS OF REINFORCING ARE PRESENT, THE ALLOWABLE CORING AREA MAY BE REDUCED FROM THAT SHOWN.
4. NEW OPENINGS ARE ONLY ALLOWED WHERE SPECIFICALLY NOTED ON PLAN.
5. FOR RECTANGULAR HOLES SEE TYPICAL SAW CUTTING DETAIL FOR ADDITIONAL REQUIREMENTS.
6. ALL DRILLS SHALL BE SEALED WITH APPROVED WATER SEALANT.

4 - **CORE DRILLING THROUGH CONCRETE AND CMU REQUIREMENTS**

NOT TO SCALE



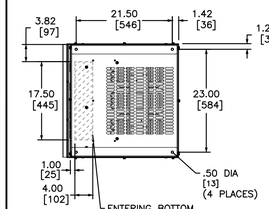


A FREE STANDING EQUIPMENT MOUNTING AT EXISTING OR NEW CONCRETE

NOTES:
1. EXPANSION ANCHORS SHALL BE A SINGLE-END, STAINLESS STEEL EXPANSION SHIELD ANCHOR WHICH MEETS THE DESCRIPTIVE PART OF FEDERAL SPECIFICATIONS FF-S-325 GROUP II, TYPE 2, CLASS 2, STYLE 1. ANCHORS SHALL BE DIMENSIONED AS PER HILTI FASTENING SYSTEMS, 5400 SOUTH 122nd EAST AVENUE, TULSA, OK 74146.
2. KWIK BOLT TZ2 EXPANSION ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH HILTI CARBIDE TIPPED DRILL BITS. ANCHORS SHALL BE INSTALLED AND TORQUED PER MANUFACTURER'S RECOMMENDATIONS.
3. INSTALL ANCHORS PER STRUCTURAL PLANS.
4. USE STAINLESS STEEL ANCHORS.
5. ANCHORS SHALL BE A MINIMUM OF 3/8" DIAMETER AND 2-1/2" EFFECTIVE EMBEDMENT.
6. REFER TO ICC ESR-4266 REPORT FOR FURTHER REQUIREMENTS.
7. ALL CONCRETE SHALL HAVE 3000 PSI STRENGTH AT 28 DAYS.
8. REINFORCING REBAR TO BE ASTM A615 OR A706 - GRADE 60 U.O.N.
9. REFER TO WEIGHT ND DIMENSIONS SCHEDULE ON SHEET E1.03 FOR TRANSFORMER'S WEIGHT AND DIMENSIONS.

TESTING AND INSPECTION REQUIREMENTS
POST-INSTALLED ANCHORS SHALL BE TESTED IN ACCORDANCE WITH CALIFORNIA BUILDING CODE. REFER TO PLANS FOR CITED YEAR OF THE BUILDING CODE.

IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE, NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TEST FREQUENCY. IF THE ANCHORS ARE USED FOR THE SUPPORT AND BRACING OF NON-STRUCTURAL COMPONENTS (PIPE, DUCT OR CONDUIT), THE TWENTY (20) SHALL BE ONLY THOSE ANCHORS INSTALLED BY THE SAME TRADE.



B TRANSFORMER BOLT PATTERN

1 - **FREESTANDING ELECTRICAL EQUIPMENT**

NOT TO SCALE GB20-01-27

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI Project #24108

REGISTERED PROFESSIONAL ENGINEER
JOHN BORRELLI
No. E16390
EXP. 6/30/25
ELECTRICAL
CALIFORNIA

SCAN ME

1. GENERAL NOTES

A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE CALIFORNIA BUILDING CODE (CBC), 2022 EDITION, AND ALL OTHER PUBLICATIONS AND STANDARDS LISTED HEREIN.

B. ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS.

C. DETAILS SHOWN ON STRUCTURAL DRAWINGS ARE TYPICAL. SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS. CONDITIONS NOT COMPATIBLE TO THE DETAILS PROVIDED SHALL BE REPORTED TO THE ARCHITECT.

D. DIMENSIONS SHOWN SHALL TAKE PRECEDENCE OVER SCALE ON PLANS, SECTIONS AND DETAILS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.

E. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

F. FRAMING AND DETAIL CONDITIONS SPECIFIED BY THESE DRAWINGS SHALL NOT BE MODIFIED WITHOUT APPROVED WRITTEN DOCUMENTATION FROM THE ENGINEER AND ARCHITECT AND DIVISION OF THE STATE ARCHITECT (DSA). CONTRACTOR SHALL NOT PROCEED WITH CONSTRUCTION OF CONDITIONS NOT APPROVED.

G. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FLOOR OR ROOF FRAMING MEMBERS. LOAD SHALL NOT EXCEED DESIGN LIVE LOAD.

H. DESIGN LOADING: PER CBC, 2022 EDITION.

I. CONSTRUCTION DOCUMENTS SHALL CONSIST OF THE "APPROVED" DRAWINGS, SPECIFICATIONS AND ADDENDUM BEARING THE STAMP AND SIGNATURE OF THE ARCHITECT AND THE APPROVAL STAMP OF DSA. STRUCTURAL CALCULATIONS ARE NOT PART OF THE CONSTRUCTION DOCUMENTS AND SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.

J. ALL WORK SHALL BE PERFORMED FROM THE "APPROVED" DOCUMENTS ONLY. A FULL SET OF APPROVED DOCUMENTS SHALL BE KEPT ON SITE DURING ALL CONSTRUCTION PHASES.

K. DESIGN DATA CONDITIONS AS LISTED BELOW.

LOADING DATA	
ROOF DEAD LOAD	5 psf
ROOF LIVE LOAD	20 psf

LATERAL LOAD DESIGN DATA			
PROJECT IS EXEMPT			
SITE COORDINATES: 36.986° N -120.052° W		RISK CATEGORY: II	
SEISMIC DESIGN DATA		WIND DESIGN DATA	
SEISMIC IMPORTANCE FACTOR (I)	1.0	ULTIMATE WIND SPEED (3 SECOND GUST)	94 mph
MAPPED SPECTRAL RESPONSE	S_s = 0.578 S_1 = 0.229	WIND EXPOSURE CATEGORY	C
SITE CLASS	D	INTERNAL PRESSURE COEFFICIENT	N/A
SPECTRAL RESPONSE COEFFICIENTS	S_{DS} = 0.516 S_{D1} = N/A	WIND PRESSURE FOR COMPONENTS & CLADDING	30 psf
SEISMIC DESIGN CATEGORY	D	ANALYSIS PROCEDURE	ASCE 7-16 CHAPTER 29.3
SEISMIC-RESISTING FORCE SYSTEM(S)	ASCE 7-17 TABLE 12.2-1 G.2.		
RESPONSE MODIFICATION FACTOR(S) R	1.25		
SEISMIC RESPONSE COEFFICIENT(S) C_s	0.424 W		
ANALYSIS PROCEDURE USED	ASCE 7 12.8 EQUIVALENT LATERAL FORCE		

2. SITE PREP. & FOUNDATION

A. FOUNDATION DESIGN: BASED ON ALLOWABLE SOIL BEARING PRESSURES AND OTHER REQUIREMENTS PER TABLE 1806A.2 - CLASS 5 SOIL:

1. ALLOWABLE BEARING PRESSURES:
   STATIC (DEAD + LIVE)(DEAD+WIND) 1500 psf
   COMBINED (DEAD + LIVE + SEISMIC) 2000 psf

B. ENGINEERING FILL: REFER TO A SOILS ENGINEER'S SPECIFICATIONS. ALL ENGINEERED FILL SHALL BE SUBJECT TO "SPECIAL INSPECTION" AS REQUIRED BY THE CBC AND THE DSA.

C. COMPACTION REQUIREMENTS: REFER TO A SOILS ENGINEER'S SPECIFICATION.

D. ALL FOOTINGS SHALL EXTEND TO FIRM BEARINGS.

E. ALL ANCHOR BOLTS, INSERTS, REINFORCING STEEL, DOWELS, AND OTHER EMBEDDED ITEMS SHALL BE SECURELY POSITIONED WITHIN THE FORMWORK PRIOR TO POURING CONCRETE.

3. CONCRETE

A. GENERAL: ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI MANUAL OF CONCRETE PRACTICE AND THE C.B.C.

B. REINFORCING MATERIALS:
1. DEFORMED ASTM A615 OR A706 - GRADE 60
2. WELDED WIRE FABRIC, ASTM A1064: NOT USED
3. WELDED REBAR: NOT USED

C. CONCRETE MIX DESIGNS: CONCRETE MIX SHALL BE LIMITED BY THE FOLLOWING.

LOCATION	COMP. STRENGTH (f'c)	MINIMUM SACKS/YD.	MAX. WATER/ CEMENT RATIO	AGGREGATE SIZE
TYPICAL INTERIOR SLAB ON GRADE	3,000 psi	5½	.45	ASTM C33 SIZE 57
FOOTINGS	3,000 psi	5½	.45	ASTM C33 SIZE 57

D. ADMIXTURES: ONLY AS APPROVED BY THE ENGINEER.

E. NO WELDING OF REINFORCING STEEL (BAR TO BAR).
SPLICE LAPS SHALL BE PROVIDED AS REQUIRED, UNLESS NOTED.

F. LAP SPLICES: SEE SCHEDULE BELOW.

G. COVER TO BARS: SEE SCHEDULE BELOW.

H. CONCRETE CURING: 5 DAY MOIST CURE.

I. FORM REMOVAL: SIDE FORMS OF FOOTINGS SLABS ON GRADE, MINIMUM 2 DAYS.

J. VIBRATION: VIBRATE ALL CONCRETE IN PLACE WITH A MECHANICAL VIBRATOR USED BY EXPERIENCED PERSONNEL.

K. TESTING: IN ACCORDANCE WITH ACI-318, SECTION 26.12.

L. DRILLED AND EPOXIED ANCHOR BOLTS: WHERE ANCHOR BOLTS OR HOLDOWN BOLTS ARE OMITTED, BOLTS SHALL BE SUBSTITUTED WITH DRILLED OR EPOXIED ANCHORS PER ENGINEERS WRITTEN DIRECTION ONLY.

CONCRETE REINFORCEMENT COVER

LOCATION	MINIMUM COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 THROUGH #18 BAR	2"
#5 BAR, W31 OR D31, AND SMALLER	1½"

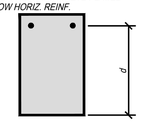
CONCRETE REINFORCEMENT LAP SPLICES

MIN. SPLICES UNLESS OTHERWISE DIMENSIONED ON DRAWINGS:

CONCRETE BAR TYPES	LAP TYPE
FOOTING BARS (OTHER THAN TOP BARS)	CL1
HORIZ. & VERT. WALL BARS	CL2
FOOTING 'TOP BARS'	CL2

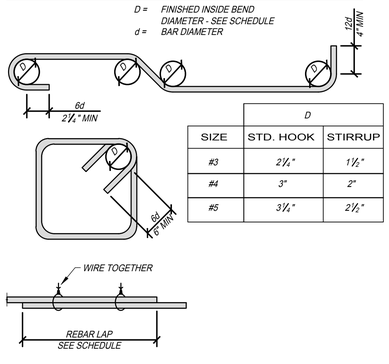
BAR SIZE	CL1	CL2	CL3
#4	24"	30"	48"
#5	30"	36"	60"

'TOP BAR' = HORIZ. BARS WHERE d > 12" FRESH CONCRETE PLACED BELOW HORIZ. REINF.



REINFORCEMENT BENDING REQUIREMENTS

D = FINISHED INSIDE BEND DIAMETER - SEE SCHEDULE
d = BAR DIAMETER



SIZE	D: STD. HOOK	D: STIRRUP
#3	2¼"	1½"
#4	3"	2"
#5	3¼"	2½"

4. STRUCTURAL STEEL AND MISCELLANEOUS METALS

A. GENERAL:
1. FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH ACCEPTED PRACTICES OF THE A.I.S.C.
2. STEEL TO BE TESTED WILL BE INDICATED IN THE SPECIFICATIONS. TESTING WILL BE WAIVED WITH MILL CERT. IDENTIFICATION.
3. WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE A.W.S. "STRUCTURAL WELDING CODE" (AWS D1.1:2020).
4. WELDING PROCEDURE SPECIFICATIONS "WPS" SHALL BE SUBMITTED TO THE SPECIAL INSPECTOR FOR ALL WELD TYPES USED ON THE PROJECT. SPECIAL INSPECTOR SHALL PROVIDE A LETTER TO THE SEOR INDICATING THEIR OFFICE HAS REVIEWED AND APPROVED ALL WELDING PROCEDURES.
5. WELDERS CERTIFICATES SHALL BE SUBMITTED TO THE PROJECT INSPECTOR PRIOR TO STARTING WORK. WELDERS SHALL BE QUALIFIED BY AWS CERTIFICATION FOR THE TYPE OF WORK TO BE DONE.
6. ALL WELDING SHALL BE SUBJECT TO SPECIAL INSPECTION. INSPECTION SHALL BE IN CONFORMANCE WITH THE CBC AND DSA.
7. FABRICATION SHALL NOT TAKE PLACE UNTIL SHOP DRAWINGS HAVE BEEN RECEIVED, RETURNED, AND ISSUES IN QUESTION HAVE BEEN RESOLVED.

B. MATERIALS:
1. STRUCTURAL STEEL
   a. CHANNELS, ANGLES & BASE PLATES - ASTM A36, Gr. A
   b. RECTANGULAR HSS - ASTM A992, Gr. 50
   c. STRUCTURAL HSS RECTANGULAR TUBING - ASTM A500, GRADE C (Fy = 50 KSI)
2. MISC. METALS - ASTM A36, Gr. A
3. STANDARD BOLTS - ASTM A307, Gr. A - TYPICAL UNLESS NOTED OTHERWISE.
4. WASHERS - AS REQUIRED BY THE AISC, RCSC, SECTION 6 - USE OF WASHERS.
5. WELDING ROD - HEAVILY COATED, CONFORMING WITH A.W.S. "SPECIFICATIONS FOR ARC WELDING". ELECTRODES OF CLASSIFICATION NUMBERS SUITABLE FOR THE WORK TO BE DONE.

C. SHOP DRAWING SUBMITTALS:
1. SHOP DRAWINGS MAY BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.
2. SHOP DRAWINGS SHALL NOT BE PREPARED UNTIL ALL CONDITIONS HAVE BEEN VERIFIED. ELEVATIONS AND DIMENSIONS ON STRUCTURAL DRAWINGS SHALL BE VERIFIED PRIOR TO FABRICATION. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PERFORMING WORK.
3. DETAILER SHALL SUBMIT RFI'S FOR ISSUES REQUIRING RESOLUTION FOR COMPLETION OF SHOP DRAWINGS. MINOR ISSUES MAY BE CLOUDED IN THE SHOP DRAWINGS.

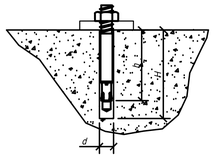
D. FRAMING AND DETAILS FOR THE SUPPORT OF ROOF AND/OR FLOOR MOUNTED EQUIPMENT AND OPENINGS IN ROOF ARE PROVIDED BY THE BLDG. MANUF. CONTRACTOR SHALL REFER TO THE MANUF. DRWGS. FOR EQUIPMENT AND OPENING LOCATIONS, SIZES AND MOUNTING REQUIREMENTS.

E. WEATHER PROTECTION OF WEATHER EXPOSED STEEL:
4. ALL STEEL COMPONENTS EXPOSED TO WEATHER SHALL BE GALVANIZED OR PAINTED.
5. ALL BOLTS AND ANCHOR BOLTS EXPOSED TO WEATHER SHALL BE STAINLESS STEEL OR GALVANIZED.
6. WEATHER PROTECTION FOR EXPOSED STRUCTURAL STEEL SHALL COMPLY WITH ONE OF THE FOLLOWING:
   d. PAINTED WITH SINC-RICH PRIMER (UNDERCOAT AND FINISH COAT) OR EQUIVALENT PAINT SYSTEM.
   e. HOT DIP GALVANIZED, MINIMUM ASTM A123 OR A153 CLASS D, AS APPLICABLE.
7. WEATHER PROTECTION FOR EXPOSED STEEL FASTENERS, EMBEDDED ANCHOR BOLTS AND RODS SHALL BE STAINLESS STEEL (TYPE 304 MINIMUM), HOT-DIP GALVANIZED (ASTM A153, CLASS D MINIMUM OR ASTM F2329), OR PROTECTED WITH CORROSION-PREVENTIVE COATING THAT DEMONSTATED NO MORE THAN 2-PERCENT OF RED-RUST IN MINIMUM 1,000 HOURS OF EXPOSURE IN SALT SPRAY TEST PER ASTM B117. ZINC-PLATED FASTENERS DO NOT COMPLY WITH THIS REQUIREMENT. (EXAMPLE PROPRIETY COATINGS THAT COMPLY WITH THE 1,000 HOUR REQUIREMENT INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO: QUIK GAURD BY SIMPSON, KWIK-COTE BY HILTI, STALGARD BY ELCO, VISTACORR BY SFS INTEC, ETC.)

5. POST-INSTALLED WEDGE-TYPE ANCHORS IN CONCRETE

HILTI KB-TZ2 ICC ESR-4266		
ANCHOR DIAMETER (in.)	INSTALLATION TORQUE (ft-lb.)	
	CONCRETE	
	CS	SS
⅜	30	30
½	50	40
⅝	40	60
¾	110	125

CS = CARBON STEEL SS = STAINLESS STEEL



h = EFFECTIVE DEPTH OF ANCHORS AS INDICATED ON DRAWINGS

H = DEPTH OF DRILLED HOLE PER ICC REPORT

d = HOLE DIAMETER = ANCHOR DIAMETER

NOTES

1. TORQUE TEST PROCEDURES ARE TO BE PERFORMED IN ACCORDANCE WITH THE TEST AND INSPECTION SPECIFICATIONS OF THE LISTED ICC ESR REPORT WITH A CALIBRATED TORQUE WRENCH.
2. ALL ANCHORS SHALL BE TORQUE TESTED. IOR OBSERVATION OF INSTALLATION TORQUE SHALL BE CONSIDERED ACCEPTABLE TESTING.
3. THE TORQUE TESTING OF WEDGE ANCHORS SHALL BE DONE IN THE PRESENCE OF THE PROJECT INSPECTOR (IOR) OR A "SPECIAL INSPECTOR" MAY PERFORM THIS TEST. A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY AND THE ARCHITECT. IF ANY ANCHOR FAILS THE TESTING REQUIREMENTS, THAT ANCHOR SHALL BE REPLACED BY ANOTHER ANCHOR PER ENGINEER'S DIRECTIVE.
4. ANCHOR DIAMETER REFERS TO THE THREAD SIZE.
5. TEST EQUIPMENT (INCLUDING TORQUE WRENCHES) IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.

6. SPECIAL INSPECTIONS

A. A STATEMENT FOR SPECIAL INSPECTION PREPARED BY THE SPECIAL INSPECTION AGENCY OF RECORD IN ACCORDANCE WITH 2022 CBC 1704A.3 MUST BE SUBMITTED PRIOR TO ISSUANCE OF PERMITS. THE SPECIAL INSPECTION AGENCY MUST BE CERTIFIED BY THE ICC (INTERNATIONAL CODE COUNCIL) AND APPROVED BY THE DSA. THE PROPOSAL MUST INDICATE THAT SPECIAL INSPECTION WAS RETAINED BY THE OWNER, OR THE OWNER'S AGENT, BUT NOT THE CONTRACTOR OR THE PERSON RESPONSIBLE FOR THE WORK. THE PROPOSAL MUST IDENTIFY THE SCOPE OF REQUIRED INSPECTIONS, LIST THE INDIVIDUALS PERFORMING THE INSPECTIONS (INCLUDE CURRENT INDIVIDUAL CERTIFICATIONS AS WELL AS THE LABORATORY'S CERTIFICATION), AND MUST BE ATTACHED TO EACH SET OF PLANS.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING ALL SPECIFIED INSPECTIONS AND TESTING WITH THE INSPECTION/TESTING AGENCY. SEE SPECIFICATIONS FOR REQUIRED INSPECTIONS AND TESTING REQUIRED.

C. THE FOLLOWING ITEMS ARE SUBJECT TO "SPECIAL INSPECTION" IN CONFORMANCE WITH CBC SEC. 1701A. (EXCEPTIONS MAY BE TAKEN WHERE APPLICABLE):
1. ALL STRUCTURAL WELDING.
2. SPECIAL GRADING, EXCAVATION, AND FILLING.
3. INSTALLATION OF I.C.C. AND IAPMO APPROVED WEDGE AND SCREW TYPE BOLTS INTO CONCRETE AND CMU.
4. CONCRETE.

D. THE CONTRACTOR SHALL KEEP THE ARCHITECT & ENGINEER INFORMED OF CONSTRUCTION PROGRESS TO ALLOW FOR OBSERVATION OF THE WORK PRIOR TO COVER UP.

ITEMS EXEMPT FROM TESTING & INSPECTION

1. EPOXY SHEAR DOWELS IN SITE FLATWORK.
2. REINFORCING STEEL TESTING WITH MILL CERT. IDENTIFICATION.
3. FLAT WORK CONCRETE BATCH PLANT INSPECTION.
4. SOIL INSPECTION AT SHALLOW CONCRETE FOUNDATIONS.

APPROVALS:

APPLICATION # 02-122315

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-122316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER
SHAWN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 03-06-2024

JOHN J. PERSHING ELEMENTARY SCHOOL
COLD BOX ADDITION
1505 ELLIS ST.
MADERA, CA 93638

REVISIONS

LAWRENCE ENGINEERING GROUP
4910 E. Clinton Way, Suite 101
Fresno, CA 93727
(559) 431-1900
FAX (559) 431-1902

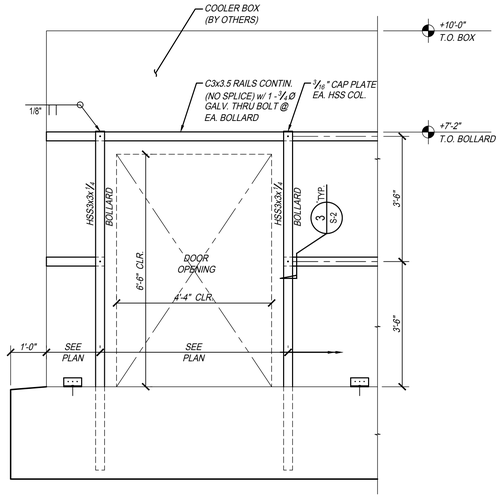
TITLE: GENERAL NOTES

SHEET: S-1

PROJECT 24020

REGISTERED PROFESSIONAL ENGINEER
ROBERT S. PARRISH
No. S2331
Exp. 3/25
6/14/24
STRUCTURAL
STATE OF CALIFORNIA

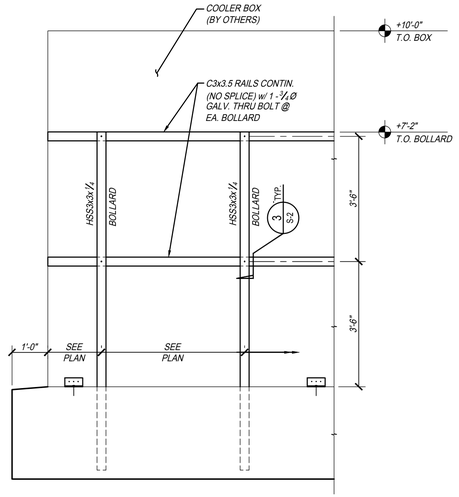
PROVOST& PRITCHARD
PARRISH HANSEN
STRUCTURAL DIVISION
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611
559/449-2700
https://provostandpritchard.com/



PARTIAL WALL ELEVATION

SCALE: 1/2" = 1'-0" (BOLLARD & RAIL FRAMING @ DOOR OPENINGS)

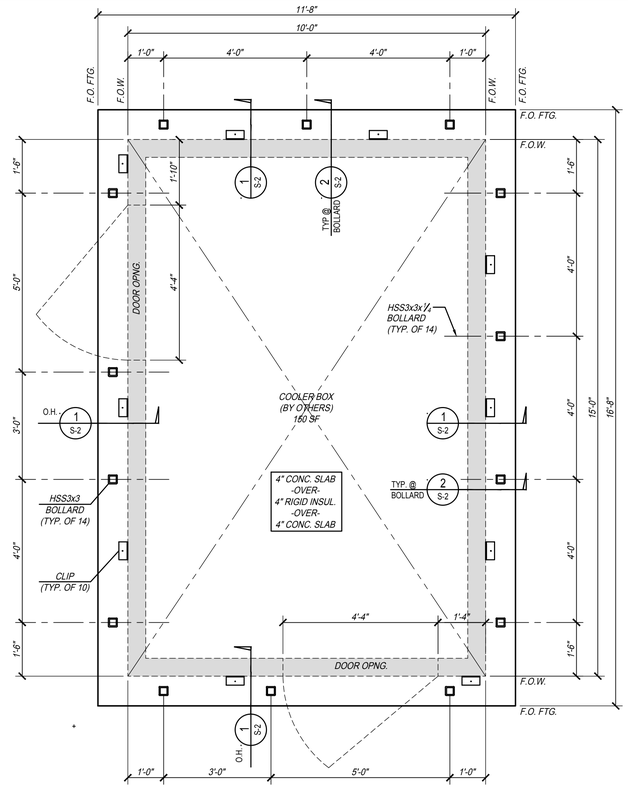
ELEV02 C S-2



PARTIAL WALL ELEVATION

SCALE: 1/2" = 1'-0" (TYPICAL BOLLARD & RAIL FRAMING)

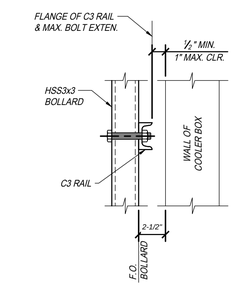
ELEV01 B S-2



FLOOR SLAB & FOUNDATION PLAN

SCALE: 1/2" = 1'-0" NOTE: HSS BOLLARD SHOWN AS REQUIRED SOLID WALL & DOOR OPNG. CONDITIONS. VERIFY WITH COOLER BOX SPECIFICATION FOR DOOR OPNG. LOCATIONS.

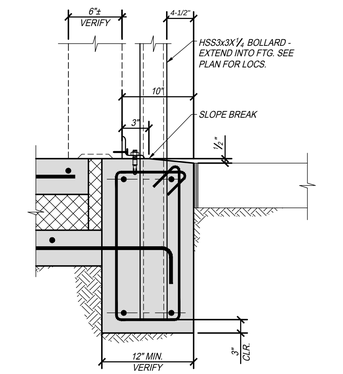
PLAN A S-2



DETAIL

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

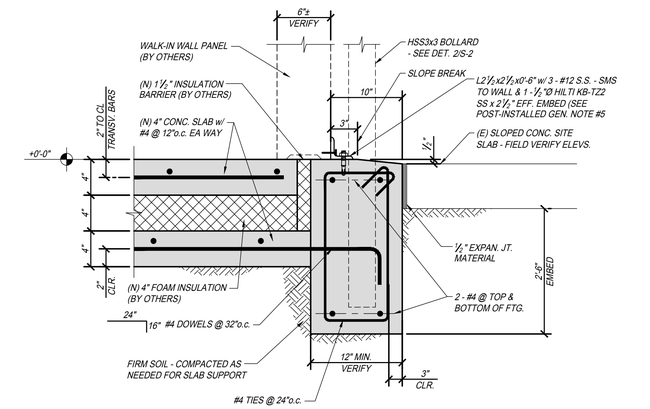
DET03 3 S-2



DETAIL

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

DET02 2 S-2



DETAIL

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

DET01 1 S-2

APPROVALS:

APPLICATION # 02-122315

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-122316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 07/09/2024

REGISTERED PROFESSIONAL ENGINEER
JOWAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 03-06-2024

JOHN J. PERSHING ELEMENTARY SCHOOL
COLD BOX ADDITION
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TITLE: PLANS & DETAILS

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3/14/24
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SHEET: S-2

PROJECT 24020