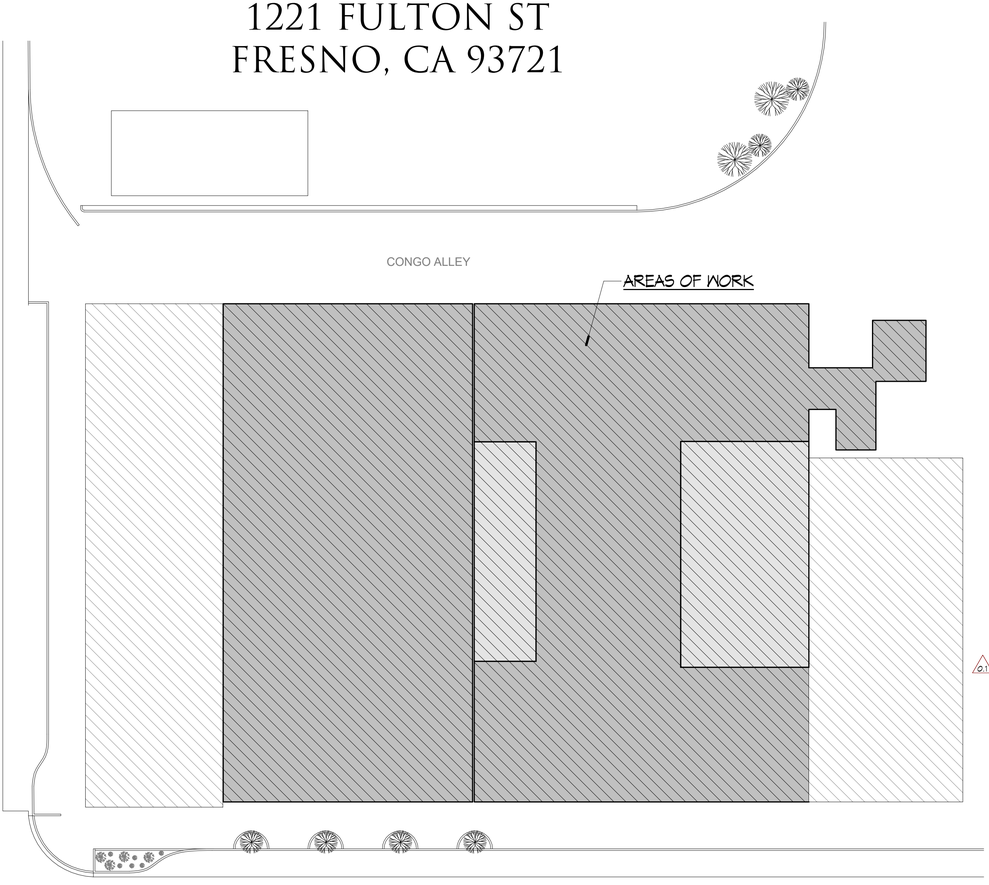
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

GENERAL NOTES

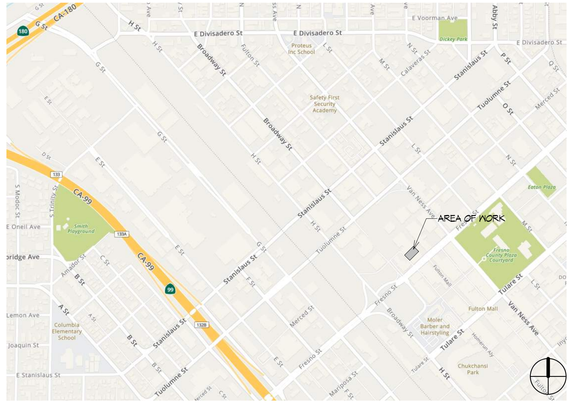
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES:
   A. 2019 CALIFORNIA ADMINISTRATIVE CODE (CAC); PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
   B. 2019 CALIFORNIA BUILDING CODE (CBC); PART 2, TITLE 24, CCR, BASED ON THE 2018 INTERNATIONAL BUILDING CODE (IBC)
   C. 2019 CALIFORNIA ELECTRICAL CODE (CEC); PART 3, TITLE 24, CCR, BASED ON THE 2017 NATIONAL ELECTRICAL CODE (NEC)
   D. 2019 CALIFORNIA MECHANICAL CODE (CMC); PART 4, TITLE 24, CCR, BASED ON THE 2018 UNIFORM MECHANICAL CODE (UMC)
   E. 2019 CALIFORNIA PLUMBING CODE (CPC); PART 5, TITLE 24, CCR, BASED ON THE 2018 UNIFORM PLUMBING CODE (UPC)
   F. 2019 CALIFORNIA FIRE CODE (CFC); PART 9, TITLE 24, CCR, BASED ON THE 2018 INTERNATIONAL FIRE CODE (IFC)
2. THE INTENT OF THE CONSTRUCTION DOCUMENTS IS TO RECONSTRUCT THE BUILDING IN ACCORDANCE WITH CBSC 2019. SHOULD ANY CONDITION DEVELOP NOT COVERED BY THE CONSTRUCTION DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH CBSC 2019, A CHANGE ORDER DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY OSHPD BEFORE PROCEEDING WITH THE WORK.
3. ADDENDA SHALL BE SIGNED BY THE ARCHITECT AND SUBMITTED TO AND APPROVED BY OSHPD BEFORE PROCEEDING WITH AFFECTED WORK.
4. SUBSTITUTIONS MUST BE APPROVED BY THE MEANS OF A CHANGE ORDER.
5. CHANGE ORDERS SHALL BE SIGNED BY THE APPLICANT, ARCHITECT AND SUBMITTED TO AND APPROVED BY OSHPD BEFORE PROCEEDING WITH AFFECTED WORK.
6. WHERE OSHPD OPM-NUMBER ANCHORAGE PRE-APPROVALS ARE INDICATED, THE CONTRACTOR SHALL OBTAIN FROM THE MANUF., THE MOST CURRENT PRE-APPROVAL DOCUMENTATION AND HAVE ON-SITE FOR OSHPD AND CONSTRUCTION AREA ADVISER'S REVIEW.
7. THE GOVERNING AUTHORITY OF THE HEALTH FACILITY SHALL SELECT A QUALIFIED TESTING LABORATORY, APPROVED BY THE ARCHITECT, TO CONDUCT THE REQUIRED TESTING.
8. UNLESS OTHERWISE INDICATED, ALL FEATURES OF THIS PROJECT ARE EXISTING.
9. DISPOSE OF ALL REFUSE OFF-SITE.
10. COORDINATE WORK SCHEDULING, SERVICE SHUT OFF, ETC. WITH OWNER.
11. INTERIOR WALL FINISHES SHALL BE SMOOTH, WATER-PROOF AND DURABLE. SPECIFICATIONS AND SAMPLES SHALL BE SUBMITTED TO THE OSHPD AREA CONSTRUCTION ADVISER FOR APPROVAL PRIOR TO INSTALLATION OR RE-USE IN THE CASE OF EXISTING FINISHES.
12. ALL INTERIOR WALL AND CEILING FINISHES SHALL HAVE THE FOLLOWING SMOKE DENSITY AND FLAME SPREAD CHARACTERISTICS:
    A. MAXIMUM SMOKE DENSITY.....450
    B. MAXIMUM FLAME SPREAD:
       a. AT ENCLOSED VERT. EXITWAYS.....25
       b. AT OTHER EXITWAYS.....25
       c. AT OTHER ROOMS OR AREAS.....200
13. INTERIOR WALL AND CEILING FINISH SHALL MEAN INTERIOR WAINSCOTING, PANELING, OR OTHER FINISH APPLIED STRUCTURALLY OR FOR DECORATION, ACOUSTICAL CORRECTION, INSULATION OR SIMILAR PURPOSES. EXCLUDED ARE TRIM, DOORS AND THEIR FRAMES, AND MATERIALS WHICH ARE LESS THAN 1/20" IN THICKNESS, CEMENTED TO THE SURFACE OF WALL OR CEILINGS. WALL & CEILING FINISHES SHALL BE TESTED IN ACCORDANCE WITH CBC 803.1, FLOOR FINISHES PER 804.4 AND DECORATIVE TRIM PER 806, AND RESULTS SUBMITTED TO THE OSHPD AREA CONSTRUCTION ADVISER UPON REQUEST PRIOR TO INSTALLATION
14. ANCHORAGE AND SUPPORTS OF ALL EQUIPMENT TO BE INSTALLED, AS A PART OF THIS PROJECT, SHALL BE DETAILED ON CONSTRUCTION DOCUMENTS, EXCEPT THOSE EXEMPT BY 2016 CBC SECTION 1617A.1.18. EQUIPMENT SUPPORTS AND ANCHORAGE SHALL BE APPROVED BY THE APPROPRIATE DESIGN PROFESSIONAL OF RECORD AND OSHPD AS A PART OF FIELD REVIEWS / OBSERVATIONS. THE INSPECTOR OF RECORD (IOR) SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.
15. WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN. SEE DETAIL FOR ALLOWABLE LOADS AND TESTING.
16. THE GENERAL EXTENT OF DEMOLITION WORK IS BASED ON LIMITED FIELD INVESTIGATION. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO BID AND WILL BE RESPONSIBLE FOR THE DISCONNECTING, RE-CONNECTING AND RE-ROUTING OF PLUMBING AND ELECTRICAL SYSTEM NECESSARY TO ACCOMPLISH THE WORK, WHETHER SPECIFICALLY INDICATED OR NOT.
17. ALL EXISTING MATERIALS NOT TO BE RE-USED OR NOT INDICATED TO BE RETAINED BY THE OWNER SHALL BE REMOVED FROM THE SITE AND BECOME THE PROPERTY OF THE CONTRACTOR FOR SALVAGE. CONTRACTOR SHALL VERIFY WITH THE OWNER WHICH ITEMS ARE TO BE SALVAGED.
18. THE CONTRACTOR SHALL KEEP THE EXISTING HOSPITAL UTILITIES IN OPERATION. THE CONTRACTOR SHALL NOTIFY THE OWNER A MINIMUM OF 48 HOURS IN ADVANCE FOR THE ALLOWANCE OF DISRUPTION IN SERVICES. DISRUPTION IN SERVICES SHALL ONLY BE AT THE OWNER'S DISCRETION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE ANY EXISTING ITEMS OR SURFACES WHICH ARE DAMAGED DURING THE CONSTRUCTION. THEY SHALL BE RESTORED TO THE ORIGINAL CONDITION OR FINISHED TO MATCH ADJACENT SURFACES.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BUILDING IN A SECURED CONDITION IN THE AREA WHICH IS INVOLVED IN THE WORK AT ALL TIMES DURING CONSTRUCTION.
20. FOR CONDITIONS WHERE DETAILS ARE NOT SHOWN, CONSTRUCTION IS TO BE AS DETAILED OR SHOWN FOR SIMILAR WORK.
21. APPROVED PORTABLE FIRE EXTINGUISHERS HAVING A MINIMUM RATING OF 2-A:10-B:C SHALL BE SO LOCATED THAT IT WILL BE UNNECESSARY TO TRAVEL MORE THAN 75 FEET TO OBTAIN ONE. NO LESS THAN ONE UNIT SHALL BE PROVIDED FOR EACH 6000 SQUARE FEET. SECTION 569, TITLE 19 & CBC 906. FIRE EXTINGUISHERS SHOULD BE LOCATED ADJACENT TO MANUAL FIRE ALARM SENDING STATIONS.
22. BUILDING INSULATION, EXPOSED OR CONCEALED, SHALL COMPLY WITH CBC 720 FOR INSULATING MATERIAL.
23. FIRE DEPARTMENT ACCESS ROADS SHALL BE ESTABLISHED AND MAINTAINED AT ALL TIMES (CFC-2019, SEC. 503)
24. FIRE DEPARTMENT WATER MAINS AND FIRE HYDRANTS SHALL BE OPERATIONAL AT ALL TIMES (CFC-2017, SEC. 507)
25. FIRE EXTINGUISHERS SHALL BE PROVIDED FOR BUILDING UNDER CONSTRUCTION. THE NUMBER AND TYPE OF EXTINGUISHERS SHALL BE AS REQUIRED BY THE OSHPD FIRE MARSHAL OR LOCAL FIRE DEPARTMENT. (CFC-2019, SEC 906 & 3315)
26. COMBUSTIBLE DEBRIS SHALL NOT ACCUMULATE WITHIN BUILDINGS. (CFC-2019, SEC. 3304.2)
27. CUTTING AND WELDING OPERATIONS SHALL BE IN ACCORDANCE WITH CFC-2019 CHAPTER 35.
28. SMOKING IS PROHIBITED. "NO SMOKING" SIGNS SHALL BE POSTED. (CFC-2019, SEC 310.3)
29. THE STORAGE, USE AND HANDLING OF FLAMMABLE LIQUIDS SHALL BE IN ACCORDANCE WITH CFC-2019, SEC 3305. STORAGE, USE AND HANDLING OF OTHER HAZARDOUS MATERIALS SHALL BE IN ACCORDANCE WITH CFC-2019 CH 50.
30. SMOKE DETECTORS SHALL BE COVERED OR REMOVED DURING ALTERATIONS. WHEN REQUIRED BY THE OSHPD FIRE MARSHAL, HEAT DETECTORS MAY BE SUBSTITUTED FOR SMOKE DETECTORS DURING ALTERATIONS
31. UPHOLSTERED FURNITURE AND MATTRESSES SHALL COMPLY WITH THE REQUIREMENTS OF CFC 805.2, AND SHALL BEAR THE LABEL OF AN APPROVED AGENCY STATING COMPLIANCE.
32. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE ALL NEW AND EXISTING FIELD CONDITION AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN WHAT IS SHOWN IN THE CONSTRUCTION DOCUMENTS AND ACTUAL FIELD CONDITIONS.
33. THE GENERAL CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT AND TRANSPORTATION SERVICES NECESSARY FOR COMPLETION OF THE WORK. ALL MATERIAL AND WORK PROVIDED SHALL COMPLY WITH APPLICABLE CODES AND REGULATIONS OF FEDERAL, STATE AND CITY AGENCIES HAVING JURISDICTION.
34. THE GENERAL CONTRACTOR SHALL OBTAIN AND/OR PROVIDE NECESSARY PERMITS AND INSPECTIONS FEES WHERE REQUIRED, OTHER THAN PLAN CHECKING AND BUILDING PERMIT FEES, WHICH ARE PROVIDED BY THE OWNER.
35. THE GENERAL CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING, AT ALL LOCATIONS WITHIN THE PROJECT AREA, AT LEVELS OF ADEQUACY AS REQUIRED TO COMPLETE THE WORK IN A SAFE AND PROPER MANNER.
36. THE GENERAL CONTRACTOR SHALL PROVIDE FIRST AID, FIRE PROTECTION AND OTHER TEMPORARY SERVICES AS REQUIRED IN ACCORDANCE WITH LEGAL REQUIREMENTS.
37. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION BETWEEN HIMSELF AND HIS SUB-CONTRACTORS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INSURE COORDINATION BETWEEN ALL TRADES, SO THAT THE JOB IS COMPLETES AND IN CONFORMITY WITH THE PLANS. THE GENERAL CONTRACTOR SHALL INSURE THAT ANY INCIDENTAL WORK NOT SHOWN, WHICH CAN BE REASONABLY INFERRED IS REQUIRED AND NECESSARY TO PROVIDE A COMPLETE JOB, SHALL BE FURNISHED AND INSTALLED.
38. ALL WORK SHALL BE PLANNED AND CARRIED OUT SO THERE WILL BE THE LEAST AMOUNT OF INCONVENIENCE TO THE TRAVELING PUBLIC. PLACING OF LIGHTS, BARRICADES, WARNING SIGNS, AND OTHER SAFETY DEVICES REQUIRED FOR PUBLIC SAFETY SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. ALL SAFETY MEASURES REQUIRED BY LAW SHALL BE TAKEN.
39. ALL DRAWING ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO ANY CONSTRUCTION, INCLUDING CIVIL, ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. THE GENERAL CONTRACTOR SHALL VERIFY, IN THE FIELD, ALL ELEVATIONS, DIMENSION, EXISTING CONDITIONS AND POINTS OF CONNECTIONS. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE GENERAL CONTRACTOR'S FIELD INVESTIGATIONS SHALL BE CALLED, IN WRITING, TO THE ATTENTION OF THE ARCHITECT, AND THE GENERAL CONTRACTOR SHALL RECEIVE THE ARCHITECT'S RESPONSE BEFORE PROCEEDING WITH THE WORK. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR PERFORMED PRIOR TO THE RESOLUTION OF ANY DISCREPANCY AS DESCRIBED ABOVE, SHALL BE CORRECTED BY THE GENERAL CONTRACTOR AT HIS OWN EXPENSE AND AT NO EXPENSE TO THE OWNER.
40. THE GENERAL CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL WORK WITH THE APPROVAL OF THE OWNER. THE GENERAL CONTRACT SHALL NOT DISRUPT ANY EXISTING BUILDING SERVICES AND UTILITIES WITHOUT THE APPROVAL OF THE OWNER. NO WORK SHALL PROCEED WITHOUT PRIOR APPROVAL OF THE OWNER.
41. ALL DUST, NOISE AND ODORS CAUSED BY THE WORK SHALL BE CONTROLLED PER LOCAL STANDARDS.
42. ALL DRAWINGS THROUGH NOTED TO SCALE, ARE FOR ILLUSTRATION ONLY. THE GENERAL CONTRACTOR, ALL SUB-CONTRACTORS, AND ALL VENDORS SHALL NOT SCALE DRAWINGS..
43. THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY DUSTPROOF PARTITIONS TO PROVIDE POSITIVE PROTECTION FOR ANY UNAFFECTED AREAS WHICH ARE ADJACENT TO AREA REQUIRING DEMOLITION WORK. THE OWNER SHALL ESTABLISH THE TIME AT WHICH THE PARTITIONS MAY BE INSTALLED AND THE CONTRACTOR SHALL NOT REMOVE ANY OF THE PARTITIONS WITHOUT APPROVAL FROM THE OWNER.
44. OSHPD FIELD STAFF AND THE LOCAL FIRE DEPARTMENT SHALL BE MADE AWARE OF ANY WORK, BEFORE IT IS INITIATED, THAT PRESENTS A HAZARD TO LIFE OR PROPERTY AS THE RESULT OF CONSTRUCTION, ALTERATION, OR DEMOLITION. ADDITIONALLY, WHEN ANY FIRE PROTECTION EQUIPMENT / SYSTEM HAVE BEEN RENDERED INOPERABLE, AS A RESULT OF SUCH WORK A FIRE WATCH SHALL BE IMPLEMENTED. THE SOLE RESPONSIBILITY OF THE FIRE WATCH PERSONNEL IS TO CONTINUOUSLY PATROL THE BUILDING OR PREMISES FOR THE PURPOSE OF DETECTING FIRES AND TRANSMITTING AN IMMEDIATE ALARM TO THE BUILDING OCCUPANTS AND FIRE DEPARTMENT. FIRE WATCH SHALL BE COORDINATED WITH OSHPD FIELD FIRE MARSHALL BEFORE WORK BEGINS. PER CAN 9-1404.5
45. FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITIONS OR ANY OTHER WALL REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING. LEAD LINED PARTITIONS SHALL LIKENISE BE IDENTIFIED. SUCH IDENTIFICATION SHALL:
    A. BE LOCATED IN ACCESSIBLE CONCEALED FLOOR, FLOOR-CEILING OR ATTIC SPACES.
    B. BE LOCATED WITHIN 15 FEET OF THE END OF EACH WALL AND AT INTERVALS NOT EXCEEDING 30 FEET MEASURED HORIZONTALLY ALONG THE WALL OR PARTITION; AND
    C. INCLUDE LETTERING NOT LESS THAN 3 INCHES IN HEIGHT WITH A MINIMUM 3/8 INCH STROKE IN A CONTRASTING COLOR.

LETTERING SHALL INCLUDE A DESCRIPTION OF THE CONSTRUCTION "FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS" OR INDICATE THE LEAD EQUIVALENCE & HEIGHT OF PROTECTION



SITE PLAN
3/64" = 1'-0"

APPROVED: REVIEWED FOR CODE COMPLIANCE - COUNTY OF FRESNO PUBLIC WORKS AND PLANNING
Date: 12/20/22



VICINITY MAP

PROJECT TEAM

ARCHITECTURAL
MURATORE ASSOCIATES
1222 W SHAW AVE. / FRESNO, CA 93711
559-365-6534

STRUCTURAL
STRUCTCON
1700 FULTON ST / FRESNO, CA 93721
559-266-7887

FIRE PROTECTION
FIRE SYSTEMS SOLUTIONS
4277 W. RICHERT AVE STE 103 / FRESNO, CA 93722
559-275-4894

MECHANICAL
LAWRENCE ENGINEERING GROUP
4910 E CLINTON WAY / FRESNO, CA 93727
559-431-0101

ELECTRICAL
BORRELLI & ASSOCIATES
2032 N GATEWAY BLVD. / FRESNO, CA 93727
559-233-4138

SHEET INDEX

ARCHITECTURAL		
A0.01	GENERAL NOTES, SITE PLAN, PROJECT INFORMATION, SHEET INDEX	
A0.02	NOTES & ABBREVIATIONS	
A1.01	UL DETAILS	
A1.02	UL DETAILS	
A1.03	UL DETAILS	
A2.01	FLS/ACCESS	
A3.01	BASEMENT DEMO PLAN	
A4.01	BASEMENT FLOOR PLAN	
A4.02	ENLARGED PARTIAL FLOOR PLANS	
A4.11	GROUND LEVEL FLOOR PLAN	
A4.41	ROOF PLAN & DETAILS	
A5.01	REFLECTED CEILING PLAN	
A5.02	ENLARGED PARTIAL REFLECTED CEILING PLANS	
A6.01	INTERIOR ELEVATIONS	
A6.02	INTERIOR ELEVATIONS	
A6.03	INTERIOR ELEVATIONS	
A7.01	SCHEDULES	
A7.02	SCHEDULES - DOORS/WINDOWS	
A8.01	SECTIONS	
A9.01	DETAILS - TYPICAL NOTES, FLOORS	
A9.02	DETAILS - PARTITIONS	
A9.03	DETAILS - PARTITIONS	
A9.04	DETAILS - CEILING	
A9.04.1	TYPICAL SUSPENDED CEILING DETAILS FOR ACOUSTICAL TILE OR LAY-IN PANEL CEILINGS	
A9.04.2	TYPICAL SUSPENDED CEILING DETAILS FOR ACOUSTICAL TILE OR LAY-IN PANEL CEILINGS	
A9.04.3	TYPICAL SUSPENDED CEILING DETAILS FOR ACOUSTICAL TILE OR LAY-IN PANEL CEILINGS	
A9.04.4	TYPICAL SUSPENDED CEILING DETAILS FOR GYPSUM BOARD CEILINGS	
A9.05	DETAILS - CASEWORK	
STRUCTURAL		
S-0.1	TYPICAL NOTES	
S-0.2	TYPICAL DETAILS	
S-1.01	BASEMENT - PARTITION WALL	
S-1.02	DETAILS	
FIRE SPRINKLER		
FP0.1	FIRE SPRINKLER SITE PLAN / GENERAL NOTES	
FP0.2	FIRE SPRINKLER DEMO	
FP1.0	BRIX BUILDING FIRE SPRINKLER PIPING PLAN	
FP2.0	MERGER BUILDING FIRE SPRINKLER PIPING PLAN	
FP3.0	BRIX MERCER BUILDING FIRE SPRINKLER LAYOUT PLAN	
MECH-PLUMBING		
P1.01	BASEMENT DEMO PLUMBING PLAN	
P2.01	BASEMENT PLUMBING PLAN	
P2.02	ENLARGED BASEMENT PLUMBING PLAN	
P2.03	ENLARGED BASEMENT PLUMBING PLAN	
P3.01	PLUMBING SCHEDULES AND DETAILS	

SHEET INDEX

MECH-HVAC		
M-1.0	SCHEDULES	
M-1.1	SCHEDULES	
M-2.0	BASEMENT HVAC PLAN	
M-2.1	MECHANICAL ROOM DEMO & NEW PLAN	
M-3	MERGER ROOF PLAN	
M-4.0	DETAILS	
M-4.1	ENLARGED BASEMENT HVAC PLAN	
M-4.2	ENLARGED BASEMENT HVAC PLAN	
M-4.3	ENLARGED BASEMENT HVAC PLAN	
M-4.4	ENLARGED BASEMENT HVAC PLAN	
M-5	ENLARGED BASEMENT HVAC PLAN	
M-6	SECTIONS	
M-7	DETAILS	
M-8	DETAILS	
M-9	DETAILS	
M-10	CONTROL DIAGRAM	
M-11.1	VRF PIPING DIAGRAM	
M-11.2	VRF WIRING DIAGRAMS	
M-12.1	TITLE 24 DOCUMENTS	
M-12.2	TITLE 24 DOCUMENTS	
M-12.3	TITLE 24 DOCUMENTS	
M-12.4	TITLE 24 DOCUMENTS	
M-15	FIRE ALARM HVAC FANS & FSD SHUT-DOWN DIAGRAM	
ELECTRICAL		
E1.01	SHEET INDEX, SYMBOLS LIST, ABBREVIATIONS & NOTES	
E1.02	ARC FLASH LABLE REQUIREMENTS, MOUNTING HEIGHTS	
E1.03	PARTIAL SINGLE LINE DIAGRAM	
E1.04	PARTIAL SINGLE LINE DIAGRAM	
E1.05	PARTIAL SINGLE LINE DIAGRAM, DATA RISER DIAGRAM AND IDF RACK ELEVATION	
E1.06	LIGHTING FIXTURE & MECHANICAL SCHEDULES - ELECTRICAL EQUIPMENT WEIGHTS & DIMENSIONS	
E1.07	PANEL SCHEDULES	
E2.01	OVERALL ELECTRICAL SITE PLAN	
E3.01	BASEMENT LIGHTING PLAN	
E3.02	BASEMENT POWER & SIGNAL FLOOR PLAN	
E3.03	PARTIAL GROUND FLOOR PLAN & PARTIAL BASEMENT LIGHTING FLOOR PLAN	
E3.04	DEMOLITION ELECTRICAL ROOF PLAN - MERCER BUILDING	
E3.05	ELECTRICAL ROOF PLAN - MERCER BUILDING	
E4.01	BASEMENT FIRE ALARM NOTES	
E4.02	BASEMENT FIRE ALARM PLAN	
E5.01	TYPICAL ELECTRICAL DETAIL	
E5.02	TYPICAL ELECTRICAL DETAIL	
E5.03	TYPICAL ELECTRICAL DETAIL	
E5.04	TYPICAL ELECTRICAL DETAIL	
E6.01	BRIX BUILDING BASEMENT POWER TITLE-24 FORMS	
E6.02	MERGER BUILDING BASEMENT POWER TITLE-24 FORMS	
E6.03	BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS	
E6.04	BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS	
E6.05	BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS	
E6.06	MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS	
E6.07	MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS	
E6.08	MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS	

PROJECT INFORMATION

PROJECT NAME
BRIX - MERCER BASEMENT

PROJECT DESCRIPTION
REDESIGN THE BASEMENT OF THE BRIX AND MERCER BUILDING THAT WAS PREVIOUSLY DAMAGED BY FLOODING INTO A FUCTIONAL STORAGE AND MEETING AREA.

PROJECT ADDRESS
BRIX & MERCER BUILDINGS
1221 FULTON ST.
FRESNO, CA 93721

APN
466-211-03T & 466-211-04T

OCCUPANCY
GROUP B, A3, S1

GROSS SQUARE FOOTAGE
AREA OF WORK: 25000 SF (APPROX.)

TYPE OF CONSTRUCTION
TYPE 2A

FIRE EXTINGUISHER SYSTEM
FULLY SPRINKLERED & PORTABLE FIRE EXTINGUISHER

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8-/23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 W SHAW AVE.
FRESNO, CA 93711
559-365-6534
infomuratoreassociates.com

CONSULTANT STAMP

ADOPTION / APPROVAL

CONTRACT NUMBER: 24-S-14
ADOPTED BY COUNTY OF FRESNO
BOARD OF SUPERVISORS
_____, 20_____

BRIAN PACHECO		DISTRICT 1
GARRY BREDEFELD	VICE CHAIRMAN	DISTRICT 2
LUIS CHAVEZ		DISTRICT 3
ERNEST "BUDDY" MENDES	CHAIRMAN	DISTRICT 4
NATHAN MAGSIG		DISTRICT 5

PAUL NERLAND
COUNTY ADMINISTRATIVE OFFICER

APPROVED Steve White Digitally signed by Steve White Date: 2025.03.04 09:26:19 -08'00'

STEVEN E. WHITE, DIRECTOR
DEPARTMENT OF PUBLIC WORKS AND PLANNING

REVISION TABLE:

REV.	DESCRIPTION	DATE
0.1	BACKCHECK	8/15/2022

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
GENERAL NOTES, SITE PLAN, PROJECT INFORMATION, SHEET INDEX

SHEET NUMBER
BC01
A0.01

INTERNAL NUMBER: 029

FILE PATH: P:\Projects\Work Updates\County of Fresno\4th Brix-Mercer Basement\Design\Documents\Cd-Arch\Archi\A0.01 Gen Notes, Abbrevs, Sheet Index.rvt

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CONSTRUCTION SAFETY NOTES

COMPLIANCE WITH NFPA 241 IS REQUIRED FOR ITEMS NOT SPECIFICALLY ADDRESSED HEREIN.

A. MEANS OF EGRESS –

1. REQUIRED MEANS OF EGRESS SHALL BE MAINTAINED DURING CONSTRUCTION AND DEMOLITION, REMODELING OR ALTERATIONS AND ADDITIONS TO ANY BUILDING.

B. PRECAUTIONS AGAINST FIRE

1. SMOKING SHALL BE PROHIBITED EXCEPT IN APPROVED AREAS. SIGNS SHALL BE POSTED IN ACCORDANCE WITH SECTION 310. IN APPROVED AREAS WHERE SMOKING IS PERMITTED, APPROVED ASHTRAYS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 310.

2. COMBUSTIBLE DEBRIS SHALL NOT BE ACCUMULATED WITHIN BUILDINGS. COMBUSTIBLE DEBRIS, RUBBISH AND WASTE MATERIAL SHALL BE REMOVED FROM BUILDINGS AT THE END OF EACH SHIFT OF WORK. COMBUSTIBLE DEBRIS, RUBBISH AND WASTE MATERIAL SHALL NOT BE DISPOSED OF BY BURNING ON THE SITE UNLESS APPROVED.

3. MATERIALS SUSCEPTIBLE TO SPONTANEOUS IGNITION, SUCH AS OILY RAGS, SHALL BE STORED IN A LISTED DISPOSAL CONTAINER.

4. WHEN REQUIRED BY THE FIRE CODE OFFICIAL FOR BUILDNG DEMOLITION, OR BUILDING CONSTRUCTION DURING WORKING HOURS THAT IS HAZARDOUS IN NATURE, QUALIFIED PERSONNEL SHALL BE PROVIDED TO SERVE AS AN ON-SITE FIRE WATCH. FIRE WATCH PERSONNEL SHALL BE PROVIDED WITH AT LEAST ONE APPROVED MEANS FOR NOTIFICATION OF THE FIRE DEPARTMENT AND THEIR SOLE DUTY SHALL BE TO PERFORM CONSTANT PATROLS AND WATCH FOR THE OCCURRENCE OF FIRE.

5. OPERATIONS INVOLVING THE USE OF CUTTING AND WELDING SHALL BE DONE IN ACCORDANCE WITH CHAPTER 35.

6. TEMPORARY WIRING FOR ELECTRICAL POWER AND LIGHTING INSTALLATIONS USED IN CONNECTION WITH THE CONSTRUCTION, ALTERATION OR DEMOLITION OF BUILDINGS, STRUCTURES, EQUIPMENT OR SIMILAR ACTIVITIES SHALL COMPLY WITH *CALIFORNIA ELECTRICAL CODE*.

C. OWNER'S RESPONSIBILITY FOR FIRE PROTECTION

1. THE FIRE PREVENTION PROGRAM SUPERINTENDENT SHALL BE RESPONSIBLE FOR SUPERVISING THE PERMIT SYSTEM FOR HOT WORK OPERATIONS IN ACCORDANCE WITH CHAPTER 35.

2. IMPAIRMENTS TO ANY FIRE PROTECTION SYSTEM SHALL BE IN ACCORDANCE WITH SECTION 901.

3. COVERINGS PLACED ON OR OVER FIRE PROTECTION DEVICES TO PROTECT THEM FROM DAMAGE DURING CONSTRUCTION PROCESSES SHALL BE IMMEDIATELY REMOVED UPON THE COMPLETION OF THE CONSTRUCTION PROCESSES IN THE ROOM OR AREA IN WHICH THE DEVICES ARE INSTALLED.

D. PORTABLE FIRE EXTINGUISHERS-

1. STRUCTURES UNDER CONSTRUCTION, ALTERATION OR DEMOLITION SHALL BE PROVIDED WITH NOT LESS THAN ONE APPROVED PORTABLE FIRE EXTINGUISHER IN ACCORDANCE WITH SECTION 906 AND SIZED FOR NOT LESS THAN ORDINARY HAZARD AS FOLLOWS:
   a. AT EACH STAIRWAY ON ALL FLOOR LEVELS WHERE COMBUSTIBLE MATERIALS HAVE ACCUMULATED.

   b. IN EVERY STORAGE AND CONSTRUCTION SHED.

   c. ADDITIONAL PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED WHERE SPECIAL HAZARDS EXIST INCLUDING, BUT NOT LIMITED TO, THE STORAGE AND USE OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.

E. TEMPORARY CONSTRUCTION BARRIERS

1. WHERE TEMPORARY CONSTRUCTION BARRIERS ARE REQUIRED TO BE INSTALLED DURING THE CONSTRUCTION OR RECONSTRUCTION OF FIRE-RESISTIVE ASSEMBLIES, TEMPORARY CONSTRUCTION SHALL MEET THE SAME FIRE RATING AS WOULD THE PERMANENT PARTITION. USE OF PLASTIC OR VINYL DUST BARRIERS IN LIEU OF FIRE RATED SEPARATIONS IS PROHIBITED. TEMPORARY CONSTRUCTION BARRIERS ARE NOT REQUIRED WHERE ADEQUATE FIRE-RESISTIVE SEPARATION CAN BE DEMONSTRATED TO EXIST BETWEEN OCCUPIED AREAS AND CONSTRUCTION AREAS. EXISTING MEANS OF EGRESS NEED NOT BE MAINTAINED WHERE APPROVED TEMPORARY MEANS OF EGRESS SYSTEMS AND FACILITIES ARE PROVIDED. REQUIRED MEANS OF EGRESS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION, DEMOLITION, REMODELING OR ALTERATIONS AND ADDITIONS TO ANY BUILDING.

2. WHERE CONSTRUCTION BARRIERS AFFECT ANY EXIT COMPONENT, PRE-APPROVAL SHALL BE OBTAINED FROM THE LOCAL FIRE JURISDICTION PRIOR TO ANY DEMOLITION OR RECONSTRUCTION.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

A		
	A/E	ARCHITECT / ENGINEER
	ABV	ABOVE
	ACOUST	ACOUSTICAL
	ADJ	ADJUSTABLE, ADJACENT
	AFF	ABOVE FINISHED FLOOR
	AL	ALUMINUM
	ALT	ALTERNATE
	ANOD	ANODIZED
B		
	BD	BOARD
	BEL	BELOW
	BLDG	BUILDING
	BM	BEAM
	BOT	BOTTOM
C		
	C/C	CENTER TO CENTER
	CAB	CABINET
	CJ	CONSTRUCTION JOINT
	CL	CENTER LINE
	CLG	CEILING
	COL	COLUMN
	CONC	CONCRETE
	CONST	CONSTRUCTION
	CONT	CONTRACTOR, CONTINUOUS
	COR	CORRIDOR
	CWR	CHILLED WATER RETURN
	CWS	CHILLED WATER SUPPLY
D		
	DBL	DOUBLE
	DEMO	DEMOLITION, DEMOLISH
	DEPT	DEPARTMENT
	DET	DETAIL
	DF	DRINKING FOUNTAIN
	DIA	DIAMETER
	DIM	DIMENSION
	DR	DOOR
E		
	E	EXISTING
	EA	EACH
	EF	EACH FACE
	EJ	EXPANSION JOINT
	EL	ELEVATION
	ELEC	ELECTRICAL
	EMER	EMERGENCY
	ENCL	ENCLOSURE
	ENGR	ENGINEER
	EQ	EQUAL
	EQUIP	EQUIPMENT
	ES	EACH SIDE
	EW	EACH WAY
	EWC	ELECTRIC WATER COOLER
F		
	FA	FIRE ALARM
	FF	FINISH FLOOR
G		
	GA	GAUGE
	GALV	GALVANIZED
	GB	GYPSUM BOARD
	GC	GENERAL CONTRACTOR
	GF(C)I	GROUND FAULT (CIRCUIT) INTERUPTER
	GND	GROUND
	GR	GRADE
	GYP	GYPSUM
H		
	H	HIGH, HEIGHT
	HCP	HANDICAPPED
	HDR	HEADER
	HM	HOLLOW METAL
	HORIZ	HORIZONTAL
	HR	HOUR
	HVAC	HEATING/VENTILATING AIR-CONDITIONING
I		
	ID	INSIDE DIAMETER / DIMENSION
	IN	INCHES
	INSUL	INSULATION
J		
	JC	JANITOR CLOSET
	JST	JOIST
	JT	JOINT
K		
	KIT	KITCHEN
	KS	KNEE SPACE
	KT	KEYBOARD TRAY
	KYBD	KEYBOARD
L		
	LAM	LAMINATE
	LAV	LAVATORY
	LB	POUND
	LF	LINEAL FEET
M		
	MATL	MATERIAL
	MAX	MAXIMUM
	MECH	MECHANICAL
	MFR	MANUFACTURER
	MGR	MANAGER
	MIN	MINIMUM
	MISC	MISCELLANEOUS
	MTD	MOUNTED
N		
	N	NORTH, NEW
	N/A	NOT APPLICABLE
	NIC	NOT IN CONTRACT
	NO	NUMBER
	NTS	NOT TO SCALE
O		
	OC	ON CENTER
	OD	OUTSIDE DIAMETER
	OPG	OPENING
	OPP	OPPOSITE
P		
	PL	PLATE
R		
	RA	RETURN AIR
	REFR	REFRIGERATOR
	REINF	REINFORCEMENT
	REQ'D	REQUIRED
	RM	ROOM
S		
	S	SOUTH
	SA	SUPPLY AIR
	SB	STATUS BOARD
	SCHED	SCHEDULE
	SECT	SECTION
	SF	SQUARE FOOT, FEET
	SIM	SIMILAR
	SMS	SHEET METAL SCREW
	SPKR	SPRINKLER
	SQ	SQUARE
	SS	STAINLESS STEEL
	STL	STEEL
	STOR	STORAGE
	SUSP	SUSPENDED
T		
	T & B	TOP AND BOTTOM
	TCCB	TRAUMA & CRITICAL CARE BUILDING
	TEL	TELEPHONE
	TEMP	TEMPORARY
	THK	THICKNESS
	THR	THRESHOLD
	TYP	TYPICAL
U		
	UC	UNDER COUNTER
	UNO	UNLESS NOTED OTHERWISE
V		
	VAR	VARY
	VEN	VENEER
	VENT	VENTILATION
	VERT	VERTICAL
	VEST	VESTIBULE
	VIF	VERIFY IN FIELD
W		
	W	WEST
	W/	WITH
	W/O	WITH OUT
	WC	WATER CLOSET
	WD	WOOD

RATING REQUIRMENTS (PER CBC TABLE 601)

BEARING WALLS - EXTERIOR	3 HOURS
BEARING WALLS - INTERIOR	3 HOURS
NON-BEARING WALLS - EXTERIOR	SEE CBC TABLE 602
NON-BEARING WALLS - INTERIOR	0 HOURS
PRIMARY STRUCTURAL FRAME	3 HOURS
FLOOR CONSTRUCTION & SECONDARY MEMBERS	2 HOURS
ROOF CONSTRUCTION & SECONDARY MEMBERS	1 1/2 HOURS
STAIRWAY CONSTRUCTION	WALLS: 2 HOURS STAIRS: HARD NON-COMBUSTIBLE
SHAFT ENCLOSURE	2 HOURS

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
NO. C38020
RENEWAL: 8-23
STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE.
FRESNO, CA 93711
559-565-6504
info@muratoreassociates.com

CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22

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

JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

NOTES & ABBREVIATIONS

SHEET NUMBER

A0.02

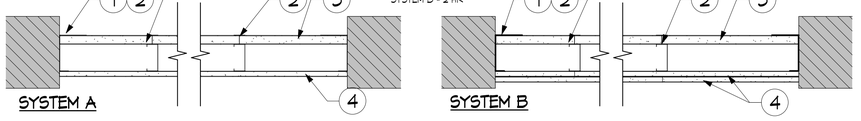
FILE PATH: P:\PROJECTS\2021\Customers (Clients) of Muratore\BRIX Mercer Basement\Design Documents\Drawings\Arch\BRIX Mercer Basement.rvt

INTERNAL NUMBER: 029

11/21/2022 2:07:28 PM

RATED SHAFT WALL

SYSTEM NO. U415
JAN 22, 2015
NONBEARING WALL RATING -
SYSTEM A - 1 HR
SYSTEM B - 2 HR



SYSTEM A

SYSTEM B

1. **FLOOR, SIDE AND CEILING RUNNERS —** "J" - SHAPED RUNNER, MIN 2-1/2 IN. DEEP (MIN 4 IN. DEEP WHEN SYSTEM C IS USED), WITH UNEQUAL LEGS OF 1 IN. AND 2 IN., FABRICATED FROM MIN 24 MILS (MIN 20 MILS WHEN ITEM 4A, 4B, 4C, 4D OR 1 ARE USED) GALV STEEL. RUNNERS POSITIONED WITH SHORT LEG TOWARD FINISHED SIDE OF WALL. RUNNERS ATTACHED TO STRUCTURAL SUPPORTS WITH STEEL FASTENERS LOCATED NOT GREATER THAN 2 IN. FROM ENDS AND NOT GREATER THAN 24 IN. OC. "E" - SHAPED STUDS (ITEM 2A) MAY BE USED AS SIDE RUNNERS IN PLACE OF "J" - SHAPED RUNNERS.

2. **STEEL STUDS —** "C-H" - SHAPED STUDS, MIN 2-1/2 IN. DEEP (MIN 4 IN. DEEP WHEN SYSTEM C IS USED), FABRICATED FROM MIN 25 MILS (MIN 20 MILS WHEN ITEMS 2D, 4A, 4B, 4C, 4D OR 1 IS USED) GALV STEEL. CUT TO LENGTHS 3/8 TO 1/2 IN. LESS THAN FLOOR-TO-CEILING HEIGHT AND SPACED 24 IN. OR 800 MM OC (MAX 16 IN. OC WHEN ITEMS 4A, 4B, 4C, OR 4D ARE USED).

   A. **STEEL STUDS —** (NOT SHOWN) — "E" - SHAPED STUDS INSTALLED BACK TO BACK IN PLACE OF "C-H" - SHAPED STUDS (ITEM 2) "E" - SHAPED STUDS SECURED TOGETHER WITH SCREWS AT MAXIMUM 12 IN. OC. FABRICATED FROM MIN 25 MILS (MIN 20 MILS WHEN ITEM 2D, 4A, 4B OR 1 IS USED) GALV STEEL. MIN 2-1/2 IN. DEEP (MIN 4 IN. DEEP WHEN SYSTEM C IS USED). WITH ONE LEG 1 IN. LONG AND TWO LEGS 3/4 IN. LONG, SHORTER LEGS 1 IN. APART TO ENGAGE GYPSUM LINER PANELS. CUT TO LENGTHS 3/8 TO 1/2 IN. LESS THAN FLOOR TO CEILING HEIGHTS.

   B. **FURRING CHANNELS —** (OPTIONAL, NOT SHOWN) — FOR USE WITH SINGLE OR DOUBLE LAYER SYSTEMS, RESILIENT FURRING CHANNELS FABRICATED FROM MIN 25MILS6 CORROSION PROTECTED STEEL, INSTALLED HORIZONTALLY, AND SPACED VERTICALLY A MAX 24 IN. OC. FLANGE PORTION OF CHANNEL ATTACHED TO EACH INTERSECTING "C-H" OR "E" STUD ON SIDE OF STUD OPPOSITE THE 1 IN. LINER PANELS WITH 1/2 IN. LONG TYPE S OR S-12 PAN-HEAD STEEL SCREWS. WHEN FURRING CHANNELS ARE USED, WALLBOARD TO BE INSTALLED VERTICALLY ONLY. NOT TO BE USED WITH TYPE FRK-S GYPSUM WALLBOARD, TYPE RB-LBS (ITEM 4A), TYPE NELGO (ITEM 4B) OR CEMENTITIOUS BACKER UNITS (ITEM 11).

   C. **FURRING CHANNELS —** FOR USE WITH SYSTEM I - "HAT" - SHAPED, 25 MSG GALV STEEL FURRING CHANNELS ATTACHED DIRECTLY OVER THE INNER LAYERS OF WALLBOARD TO EACH STUD WITH 2 IN. LONG TYPE S PAN HEAD STEEL SCREWS. SCREWS ALTERNATE FROM TOP FLANGE TO BOTTOM FLANGE AT EACH STUD INTERSECTION. FURRING CHANNELS SPACED VERTICALLY MAX 24 IN. OC.

   D. **STEEL FRAMING MEMBERS* —** (OPTIONAL, NOT SHOWN) — FOR USE WITH SINGLE OR DOUBLE LAYER SYSTEMS. FURRING CHANNELS AND STEEL FRAMING MEMBERS AS DESCRIBED BELOW, NOT TO BE USED WITH TYPE FRK-S GYPSUM WALLBOARD, TYPE RB-LBS (ITEM 4A), TYPE NELGO (ITEM 4B) OR CEMENTITIOUS BACKER UNITS (ITEM 11).

      a. **FURRING CHANNELS —** FORMED OF NO. 25 MSG GALV STEEL, 2-9/16 IN. OR 2-23/32 IN. WIDE BY 7/8 IN. DEEP, SPACED MAX. 24 IN. OC PERPENDICULAR TO STUDS. CHANNELS SECURED TO STUDS AS DESCRIBED IN ITEM B. GYPSUM BOARD INSTALLED VERTICALLY ONLY AND ATTACHED TO FURRING CHANNELS AS DESCRIBED IN ITEM 3.

      b. **STEEL FRAMING MEMBERS* —** USED TO ATTACH FURRING CHANNELS (ITEM 2DA) TO STUDS (ITEM 2 OR 2A.) CLIPS SPACED MAX. 24 IN. OC. GENECLIPS SECURED TO STUDS WITH NO. 8 X 1-1/2 IN. MINIMUM SELF-DRILLING, 5-12 STEEL SCREW THROUGH THE CENTER GROMMET. FURRING CHANNELS ARE FRICTION FITTED INTO CLIPS.

         PLITEQ INC — TYPE GENECLIP

3. **GYPSUM BOARD* —** GYPSUM LINER PANELS, NOM 1 IN. THICK, 24 IN. OR 600 MM (FOR METRIC SPACING) WIDE. PANELS CUT 1 IN. LESS IN LENGTH THAN FLOOR TO CEILING HEIGHT. VERTICAL EDGES INSERTED IN "H" PORTION OF "C-H" STUDS OR THE GAP BETWEEN THE TWO 3/4 IN. LEGS OF THE "E" STUDS. FREE EDGE OF END PANELS ATTACHED TO LONG LEG OF VERTICAL "J" - RUNNERS WITH 1-5/8 IN. LONG TYPE S STEEL SCREWS SPACED NOT GREATER THAN 12 IN. OC. WHEN WALL HEIGHT EXCEEDS LINER PANEL LENGTH, LINER PANEL MAY BE BUTTED TO EXTEND TO THE FULL HEIGHT OF THE WALL. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING. IN SYSTEM I, BUTT JOINTS IN LINER PANELS ARE STAGGERED MIN 36 IN. BUTT JOINTS BACKED WITH 6 IN. BY 22 IN. STRIPS OF 3/4 IN. THICK GYPSUM WALLBOARD (ITEM 4). WALLBOARD STRIPS CENTERED OVER BUTT JOINTS AND SECURED TO LINER PANELS WITH SIX 1-1/2 IN. LONG TYPE G STEEL SCREWS, THREE SCREWS ALONG THE 22 IN. DIMENSION AT THE TOP AND BOTTOM OF THE STRIPS.

   CGC INC — TYPE SLX

   UNITED STATES GYPSUM CO — TYPE SLX

   USG BORAL ZAMANI DRYWALL L L C SFZ — TYPE SLX

   USG MEXICO S A DE C V — TYPE SLX

4. **GYPSUM BOARD* —**

   SYSTEM A — 1 HR
   GYPSUM PANELS, WITH BEVELED, SQUARE OR TAPERED EDGES, NOM 5/8 IN. THICK, 48 IN. OR 1200 MM WIDE, APPLIED VERTICALLY OR HORIZONTALLY, ATTACHED TO STUDS WITH 1 IN. LONG TYPE S STEEL SCREWS SPACED 12 IN. WHEN INSTALLED VERTICALLY OR 8 IN OC WHEN INSTALLED HORIZONTALLY. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING.

   CGC INC — TYPES AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

   UNITED STATES GYPSUM CO — TYPES AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULX, ULIX, WRC, WRX, USGX. WHEN ULIX IS USED INSULATION, ITEM 6, **BATTS AND BLANKETS*** IS REQUIRED AND MINIMUM STUD DEPTH IS 4 IN.

   USG BORAL ZAMANI DRYWALL L L C SFZ — TYPES C, SCX

   USG MEXICO S A DE C V — TYPES AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

   SYSTEM B — 2 HR
   GYPSUM PANELS, WITH BEVELED, SQUARE OR TAPERED EDGES, NOM 1/2 IN. OR 5/8 IN. THICK, 48 IN. OR 1200 MM WIDE, APPLIED VERTICALLY OR HORIZONTALLY IN TWO LAYERS. INNER OR BASE LAYER ATTACHED TO STUDS WITH 1 IN. LONG TYPE S STEEL SCREWS SPACED 24 IN. OC WHEN INSTALLED VERTICALLY OR 16 IN. OC WHEN INSTALLED HORIZONTALLY. OUTER OR FACE LAYER ATTACHED TO STUDS WITH 1-5/8 IN. LONG TYPE S STEEL SCREWS SPACED 12 IN. OC WHEN INSTALLED VERTICALLY AND STAGGERED 12 IN. FROM BASE LAYER SCREWS OR 8 IN. OC WHEN INSTALLED HORIZONTALLY AND STAGGERED 8 IN. FROM BASE LAYER SCREWS. HORIZONTAL JOINTS BETWEEN INNER AND OUTER LAYERS STAGGERED A MIN OF 12 IN. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED 24 IN.
   CGC INC — 1/2 IN. TYPE C, IP-X2, IPC-AR OR WRC; 5/8 IN. TYPES AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, ULIX, USGX, WRC, WRX

   UNITED STATES GYPSUM CO — 1/2 IN. TYPES C, IP-X2, IPC-AR, OR WRC; 5/8 IN. TYPES AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULX, ULIX, USGX, WRC, WRX

   USG BORAL ZAMANI DRYWALL L L C SFZ — 1/2 IN. TYPE C; 5/8 IN. TYPES C, SCX

   USG MEXICO S A DE C V — 1/2 IN. TYPES C, IP-X2, IPC-AR OR WRC; 5/8 IN. TYPES AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

4. GYPSUM BOARD (CONT.)
   A. **GYPSUM BOARD* —** (AS AN ALTERNATE TO ITEM 4 SYSTEMS A, B, G, D, E, G, H, AND I WHEN USED AS THE BASE LAYER, FOR DIRECT ATTACHMENT ONLY) — NOM 5/8 IN. OR 3/4 IN. THICK LEAD BACKED GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY. VERTICAL JOINTS CENTERED OVER 20 MSG STEEL STUDS AND STAGGERED MIN 1 STUD CAVITY ON OPPOSITE SIDES OF STUDS. SEE ITEMS 1, 2, 2A, 2B AND 2D. PAILLBOARD SEGURED TO STUDS WITH 1-1/4 IN. LONG TYPE S-12 STEEL SCREWS SPACED 8 IN. OC AT PERIMETER AND 12 IN. OC IN THE FIELD. FOR JOINT COMPOUND SEE ITEM 5. TO BE USED WITH LEAD BATTEN STRIPS (SEE ITEM 4) OR LEAD DISCS OR TABS (SEE ITEM 10).

      RAY-BAR ENGINEERING CORP — TYPE RB-LBS

   B. **GYPSUM BOARD* —** (AS AN ALTERNATE TO ITEM 4 SYSTEMS A, B, G, D, E, G, H, AND I WHEN USED AS THE BASE LAYER, FOR DIRECT ATTACHMENT ONLY) — NOMINAL 5/8 IN. THICK LEAD BACKED GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY. VERTICAL JOINTS CENTERED OVER 20 MSG STEEL STUDS AND STAGGERED MIN 1 STUD CAVITY ON OPPOSITE SIDES OF STUDS. WALLBOARD SEGURED TO STUDS WITH 1-1/4 IN. LONG TYPE S-12 (OR 16 BY 1-1/4 IN. LONG BUGLE HEAD FINE DRILLER) STEEL SCREWS SPACED 8 IN. OC AT PERIMETER AND 12 IN. OC IN THE FIELD.

      NEW ENGLAND LEAD BURNING CO INC, DBA NELGO — TYPE NELGO

   C. **GYPSUM BOARD* —** (AS AN ALTERNATE TO ITEM 4 SYSTEMS A, B, G, D, E, G, H, AND I WHEN USED AS THE BASE LAYER, FOR DIRECT ATTACHMENT ONLY) — NOM 5/8 OR 3/4 IN. THICK LEAD BACKED GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY. VERTICAL JOINTS CENTERED OVER 20 MSG STEEL STUDS AND STAGGERED MIN 1 STUD CAVITY ON OPPOSITE SIDES OF STUDS. SEE ITEMS 1, 2, 2A, 2B AND 2D. PAILLBOARD SEGURED TO STUDS WITH 1-1/4 IN. LONG TYPE S-12 STEEL SCREWS SPACED 8 IN. OC AT PERIMETER AND 12 IN. OC IN THE FIELD. FOR JOINT COMPOUND SEE ITEM 5. TO BE USED WITH LEAD BATTEN STRIPS (SEE ITEM 4) OR LEAD DISCS (SEE ITEM 10A). LEAD BATTEN STRIPS REQUIRED BEHIND VERTICAL JOINTS OF LEAD BACKED GYPSUM WALLBOARD AND OPTIONAL AT REMAINING STUD LOCATIONS. LEAD BATTEN STRIPS, MIN 2 IN. WIDE, MAX 10 FT LONG WITH A MAX THICKNESS OF 0.140 IN. PLACED ON THE FACE OF STUDS AND ATTACHED TO THE STUD WITH TWO 1 IN. LONG MIN. TYPE S-8 PAN HEAD STEEL SCREWS, ONE AT THE TOP OF THE STRIP AND ONE AT THE BOTTOM OF THE STRIP.

      MAYCO INDUSTRIES INC — TYPE X-RAY SHIELDED GYPSUM

   D. **GYPSUM BOARD* —** (AS AN ALTERNATE TO ITEM 4 SYSTEMS A, B, G, D, E, G, H, AND I WHEN USED AS THE BASE LAYER, FOR DIRECT ATTACHMENT ONLY) — NOM 5/8 IN. THICK LEAD BACKED GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED MIN 1 STUD CAVITY ON OPPOSITE SIDES OF STUDS. WALLBOARD SEGURED TO STUDS WITH 1-1/4 IN. LONG TYPE S-12 STEEL SCREWS GYPSUM PANEL STEEL SCREWS SPACED 8 IN. OC AT PERIMETER AND 12 IN. OC IN THE FIELD. LEAD BATTEN STRIPS REQUIRED BEHIND VERTICAL JOINTS OF LEAD BACKED GYPSUM WALLBOARD AND OPTIONAL AT REMAINING STUD LOCATIONS. LEAD BATTEN STRIPS, MIN 2 IN. WIDE, MAX 9 FT LONG WITH A MAX THICKNESS OF 0.14 IN. PLACED ON THE FACE OF STUDS AND ATTACHED TO THE STUD WITH TWO 1 IN. LONG MIN. TYPE S-8 PAN HEAD STEEL SCREWS, ONE AT THE TOP OF THE STRIP AND ONE AT THE BOTTOM OF THE STRIP. LEAD DISCS, NOMINAL 3/8 IN. DIAM BY MAX 0.095 IN. THICK. COMPRESSION FITTED OR ADHERED OVER THE SCREW HEADS. LEAD BATTEN STRIPS AND DISCS TO HAVE A PURITY OF 99.9% MEETING THE FEDERAL SPECIFICATION QQ-L-201F, GRADE 'C'.

      RADIATION PROTECTION PRODUCTS INC — TYPE RPP - LEAD LINED DRYWALL

5. **JOINT TAPE AND COMPOUND** — (NOT SHOWN)
   SYSTEMS A, B, C, E, F, G, H, I
   JOINTS ON OUTER LAYERS OF GYPSUM BOARDS (ITEM 4 AND 4A) COVERED WITH PAPER TAPE AND JOINT COMPOUND. PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM BOARDS ARE SUPPLIED WITH SQUARE EDGES. EXPOSED SCREW HEADS COVERED WITH JOINT COMPOUND.

6. **BATTS AND BLANKETS* —**
   SYSTEMS A, B, E, F, G, H, I
   (OPTIONAL) — MINERAL WOOL OR GLASS FIBER BATTS PARTIALLY OR COMPLETELY FILLING STUD CAVITY. ANY MINERAL WOOL OR GLASS FIBER BATT MINERAL BEARING THE UL CLASSIFICATION MARKING AS TO FIRE RESISTANCE.

   SYSTEM A WITH TYPE ULIX GYPSUM BOARDS
   PLACED IN STUD CAVITIES, ANY MIN. 3-1/2 IN. THICK GLASS FIBER INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE. SEE **BATTS AND BLANKETS (BKNV OR BZJZ) CATEGORIES** FOR NAMES OF CLASSIFIED COMPANIES.

   SYSTEMS C & D
   MIN 3 IN. (SYSTEM C) AND MIN 1-1/2 IN. (SYSTEM D) THICK MINERAL WOOL BATTS, FRICTION FITTED BETWEEN THE STUDS AND FLOOR AND CEILING RUNNERS.

   ROXUL INC — TYPE AFB

   THERMAFIBER INC — TYPE SAFB

7. **CEMENTITIOUS BACKER UNITS* —** (SYSTEM D) — NOM 1/2 OR 5/8 IN. THICK PANELS, SQUARE EDGE, ATTACHED TO STUDS OVER GYPSUM WALLBOARD WITH 1-5/8 IN. LONG, TYPE S-12, CORROSION RESISTANT STEEL SCREWS SPACED 8 IN. OC AND STAGGERED 8 IN. FROM GYPSUM WALL BOARD SCREWS. JOINTS COVERED WITH GLASS FIBER MESH TAPE. VERTICAL JOINTS STAGGERED ONE STUD CAVITY FROM GYPSUM WALLBOARD JOINTS. HORIZONTAL JOINTS STAGGERED A MIN OF 12 IN. FROM THE GYPSUM WALLBOARD JOINTS.

   UNITED STATES GYPSUM CO — TYPE DGB

8. **LAMINATING ADHESIVE* —** (OPTIONAL, NOT SHOWN) — USED TO BOND OUTER LAYER OF CEMENTITIOUS BACKER UNITS (ITEM 7) TO INNER LAYERS OF GYPSUM BOARD (ITEM 4) IN SYSTEM D. ANSI A136.1 TYPE I ORGANIC ADHESIVE APPLIED WITH 1/4 IN. SQUARE NOTCHED TROWEL. SEE ADHESIVES (BYWN) IN THE FIRE RESISTANCE DIRECTORY OR ADHESIVES (BJUL) IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF CLASSIFIED COMPANIES.

9. **LEAD BATTEN STRIPS —** (NOT SHOWN, FOR USE WITH ITEM 4A) — LEAD BATTEN STRIPS, MIN 1-1/2 IN. WIDE, MAX 10 FT LONG WITH A MAX THICKNESS OF 0.125 IN. STRIPS PLACED ON THE INTERIOR FACE OF STUDS AND ATTACHED FROM THE EXTERIOR FACE OF THE STUD WITH TWO 1 IN. LONG TYPE S-12 PAN HEAD STEEL SCREWS, ONE AT THE TOP OF THE STRIP AND ONE AT THE BOTTOM OF THE STRIP. LEAD BATTEN STRIPS TO HAVE A PURITY OF 99.9% MEETING THE FEDERAL SPECIFICATION QQ-L-201F, GRADE 'C'. LEAD BATTEN STRIPS REQUIRED BEHIND VERTICAL JOINTS OF LEAD BACKED GYPSUM WALLBOARD (ITEM 4B) AND OPTIONAL AT REMAINING STUD LOCATIONS.

   GYPSUM BOARD* — (AS AN ALTERNATE TO ITEM 4 SYSTEMS A, B, G, D, E, G, H, AND I WHEN USED AS THE BASE LAYER, FOR DIRECT ATTACHMENT ONLY) — NOM 5/8 IN. THICK LEAD BACKED GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED MIN 1 STUD CAVITY ON OPPOSITE SIDES OF STUDS. WALLBOARD SEGURED TO STUDS WITH 1-1/4 IN. LONG TYPE S-12 STEEL SCREWS GYPSUM PANEL STEEL SCREWS SPACED 8 IN. OC AT PERIMETER AND 12 IN. OC IN THE FIELD. LEAD BATTEN STRIPS REQUIRED BEHIND VERTICAL JOINTS OF LEAD BACKED GYPSUM WALLBOARD AND OPTIONAL AT REMAINING STUD LOCATIONS. LEAD BATTEN STRIPS, MIN 2 IN. WIDE, MAX 9 FT LONG WITH A MAX THICKNESS OF 0.14 IN. PLACED ON THE FACE OF STUDS AND ATTACHED TO THE STUD WITH CONSTRUCTION ADHESIVE AND TWO 1 IN. LONG TYPE S-12 PAN HEAD STEEL SCREWS, ONE AT THE TOP OF THE STRIP AND ONE AT THE BOTTOM OF THE STRIP. LEAD DISCS, NOMINAL 3/8 IN. DIAM BY MAX 0.095 IN. THICK. COMPRESSION FITTED OR ADHERED OVER THE SCREW HEADS. LEAD BATTEN STRIPS AND DISCS TO HAVE A PURITY OF 99.9% MEETING THE FEDERAL SPECIFICATION QQ-L-201F, GRADE 'C'.

10. **LEAD DISCS OR TABS —** (NOT SHOWN, FOR USE WITH ITEM 4A) — USED IN LIEU OF OR IN ADDITION TO THE LEAD BATTEN STRIPS (ITEM 9) OR OPTIONAL AT OTHER LOCATIONS - MAX 3/4 IN. DIAM BY MAX 0.125 IN. THICK LEAD DISCS COMPRESSION FITTED OR ADHERED OVER STEEL SCREW HEADS OR MAX 1/2 IN. BY 1-1/4 IN. BY MAX 0.125 IN. THICK LEAD TABS PLACED ON GYPSUM BOARDS (ITEM 4A) UNDERNEATH SCREW LOCATIONS PRIOR TO THE INSTALLATION OF THE SCREWS. LEAD DISCS OR TABS TO HAVE A PURITY OF 99.9% MEETING THE FEDERAL SPECIFICATION QQ-L-201F, GRADE 'C'.

   A. **LEAD DISCS —** (NOT SHOWN, FOR USE WITH ITEM 4C) — MAX 5/16 IN. DIAM BY MAX 0.140 IN. THICK LEAD DISCS COMPRESSION FITTED OR ADHERED OVER STEEL SCREEN HEADS. LEAD DISCS TO HAVE A PURITY OF 99.9% MEETING THE FEDERAL SPECIFICATION QQ-L-201F, GRADES 'B, C OR D'.

11. **LEAD BATTEN STRIPS —** (NOT SHOWN, FOR USE WITH ITEM 4B) — LEAD BATTEN STRIPS, 2 IN. WIDE, MAX 10 FT LONG WITH A MAX THICKNESS OF 0.142 IN. STRIPS PLACED ON THE FACE OF STUDS AND ATTACHED TO THE STUD WITH TWO MIN. 1 IN. LONG MIN. TYPE S-8 PAN HEAD STEEL SCREWS, ONE AT THE TOP OF THE STRIP AND ONE AT THE BOTTOM OF THE STRIP OR WITH ONE MIN. 1 IN. LONG MIN. TYPE S-8 PAN HEAD STEEL SCREW AT THE TOP OF THE STRIP. LEAD BATTEN STRIPS TO HAVE A PURITY OF 99.9% MEETING THE FEDERAL SPECIFICATION QQ-L-201F, GRADE 'C'. LEAD BATTEN STRIPS REQUIRED BEHIND VERTICAL JOINTS OF LEAD BACKED GYPSUM WALLBOARD (ITEM 4B) AND OPTIONAL AT REMAINING STUD LOCATIONS.

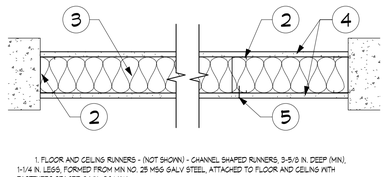
12. **LEAD TABS —** (NOT SHOWN, FOR USE WITH ITEM 4B) — 2 IN. WIDE, 5 IN. LONG WITH A MAX THICKNESS OF 0.142 IN. TABS FRICTION-FIT AROUND FRONT FACE OF STUD. THE STUD FOLDED BACK FLANGE AND THE BACK FACE OF THE STUD. TABS REQUIRED AT EACH LOCATION WHERE A SCREW ITHAT SECURES THE GYPSUM BOARDS, ITEM 4B) WILL PENETRATE THE STEEL STUD. LEAD TABS TO HAVE A PURITY OF 99.9% MEETING THE FEDERAL SPECIFICATION QQ-L-201F, GRADE 'C'. LEAD TABS MAY BE HELD IN PLACE WITH STANDARD ADHESIVE TAPE IF NECESSARY.

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

UL U415

SYSTEM NO. U465

JAN 22, 2015
NONBEARING WALL RATING - 1 HR.



1. FLOOR AND CEILING RUNNERS - (NOT SHOWN) - CHANNEL SHAPED RUNNERS, 3-5/8 IN. DEEP (MIN), 1-1/4 IN. LEGS, FORMED FROM MIN NO. 25 MSG GALV STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24 IN. OC MAX.

   1A. FRAMING MEMBERS* - FLOOR AND CEILING RUNNERS - (NOT SHOWN) - AS AN ALTERNATE TO ITEM 1 - CHANNEL SHAPED, MIN 3-5/8 IN. DEEP, ATTACHED TO FLOOR AND CEILING WITH FASTENERS 24 IN. OC. MAX.

   ALLSTEEL & GYPSUM PRODUCTS INC - TYPE SUPREME FRAMING SYSTEM
   CONSOLIDATED FABRICATORS CORP. BUILDING PRODUCTS DIV - TYPE SUPREME FRAMING SYSTEM
   QUAIL RUN BUILDING MATERIALS INC - TYPE SUPREME FRAMING SYSTEM
   SCAFCO STEEL STUD MANUFACTURING CO - TYPE SUPREME FRAMING SYSTEM
   STEEL CONSTRUCTION SYSTEMS INC - TYPE SUPREME FRAMING SYSTEM
   UNITED METAL PRODUCTS INC - TYPE SUPREME FRAMING SYSTEM

   1B. FRAMING MEMBERS* - FLOOR AND CEILING RUNNERS - NOT SHOWN - N LIEU OF ITEM 1 - FOR USE WITH ITEM 2B, PROPRIETARY CHANNEL SHAPED RUNNERS, 1-1/4 IN. WIDE BY MIN 3-5/8 IN. DEEP, FABRICATED FROM MIN 0.020 IN. THICK GALV STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24 IN. OC MAX.

   CALIFORNIA EXPANDED METAL PRODUCTS CO - VIPER20™ TRACK
   CRACO MFG INC - SMARTTRACK20™
   MARINO/WARE, DIV OF WARE INDUSTRIES NC - VIPER20™ TRACK
   PHILLIPS MFG CO L L C - VIPER20™ TRACK

   1C. FLOOR AND CEILING RUNNERS - (NOT SHOWN)-FOR USE WITH ITEM 2C- CHANNEL SHAPED, FABRICATED FROM MIN 20 MSG CORROSION-PROTECTED OR GALV STEEL, MIN DEPTH TO ACCOMMODATE STUD SIZE, WITH MIN 1 IN. LONG LEGS, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED MAX 24 IN. OC.

   1D. FRAMING MEMBERS* - FLOOR AND CEILING RUNNERS - NOT SHOWN - N LIEU OF ITEMS 1 THROUGH 1C - FOR USE WITH ITEM 2D AND 4G ONLY, PROPRIETARY CHANNEL SHAPED RUNNERS, 1-1/4 IN. DEEP BY MIN 3-5/8 IN. WIDE FABRICATED FROM MIN 0.018 IN. THICK GALV STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24 IN. OC MAX.

   CLARKDIETRICH BUILDING SYSTEMS - CD PROTRAK
   DMFOAMS L L C - PROTRAK
   MBA METAL FRAMING - PROTRAK
   RAM SALES L L C - RAM PROSTUD
   SOUTHEASTERN STUD 4 COMPONENTS INC - PROSTUD
   STEEL STRUCTURAL SYSTEMS L L C - TRI-S PROTRAK

   1E. FRAMING MEMBERS* - FLOOR AND CEILING RUNNERS - NOT SHOWN - N LIEU OF ITEMS 1 THROUGH 1D - FOR USE WITH ITEM 2E AND 4I ONLY, PROPRIETARY CHANNEL SHAPED RUNNERS, 1-1/4 IN. DEEP BY MIN 3-5/8 IN. WIDE FABRICATED FROM MIN 0.018 IN. THICK GALV STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24 IN. OC MAX.

   TELLINS INDUSTRIES L L C - TRUE-TRACK™

   1F. FRAMING MEMBERS* - FLOOR AND CEILING RUNNERS - NOT SHOWN - N LIEU OF ITEMS 1 THROUGH 1E - FOR USE WITH ITEM 2, CHANNEL SHAPED RUNNERS, 1-1/4 IN. DEEP BY MIN 3-5/8 IN. WIDE FABRICATED FROM MIN 25 MSG STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24 IN. OC MAX.

   KIRI (HONG KONG) LTD - TYPE KIRI

   1G. FRAMING MEMBERS* - FLOOR AND CEILING RUNNERS - NOT SHOWN - N LIEU OF ITEMS 1 THROUGH 1F - FOR USE WITH ITEM 2, CHANNEL SHAPED RUNNERS, 1-1/4 IN. DEEP BY MIN 3-5/8 IN. WIDE, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24 IN. OC MAX.

   STUDCO BUILDING SYSTEMS - CROSSTUD

   1H. FLOOR AND CEILING RUNNERS - (NOT SHOWN) - CHANNEL SHAPED, FABRICATED FROM MIN 0.02 IN. GALV STEEL, MIN WIDTH TO ACCOMMODATE STUD SIZE, WITH MIN 1 IN. LONG LEGS, FOR USE WITH STUDS SPECIFIED BELOW AND FABRICATED FROM MIN 0.02 IN. GALV STEEL OR THICKER, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED MAX 24 IN. OC.

   MARINO/WARE, DIV OF WARE INDUSTRIES NC - VIPER20™ TRACK VT1GO.

   1I. FRAMING MEMBERS* - FLOOR AND CEILING RUNNERS - NOT SHOWN - N LIEU OF ITEM 1 - FOR USE WITH ITEM 2H, PROPRIETARY CHANNEL SHAPED RUNNERS, 1-1/4 IN. WIDE BY MIN 3-5/8 IN. DEEP FABRICATED FROM MIN 0.020 IN. THICK GALV STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24 IN. OC MAX.

   TELLINS INDUSTRIES L L C - VIPER20™ TRACK

2. STEEL STUDS - CHANNEL SHAPED, 3-5/8 IN. DEEP (MIN), FORMED FROM MIN NO. 25 MSG GALV STEEL SPACED 24 IN. OC MAX. STUDS TO BE CUT 3/4 IN. LESS THAN ASSEMBLY HEIGHT.

   2A. FRAMING MEMBERS* - STEEL STUDS - AS AN ALTERNATE TO ITEM 2 - CHANNEL SHAPED STUDS, MIN 3-5/8 IN. DEEP, SPACED A MAX OF 24 IN. OC. STUDS TO BE CUT 3/4 IN. LESS THAN ASSEMBLY HEIGHT.

   ALLSTEEL & GYPSUM PRODUCTS INC - TYPE SUPREME FRAMING SYSTEM
   CONSOLIDATED FABRICATORS CORP. BUILDING PRODUCTS DIV - TYPE SUPREME FRAMING SYSTEM
   QUAIL RUN BUILDING MATERIALS INC - TYPE SUPREME FRAMING SYSTEM
   SCAFCO STEEL STUD MANUFACTURING CO - TYPE SUPREME FRAMING SYSTEM
   STEEL CONSTRUCTION SYSTEMS INC - TYPE SUPREME FRAMING SYSTEM
   UNITED METAL PRODUCTS INC - TYPE SUPREME FRAMING SYSTEM

   2B. FRAMING MEMBERS* - STEEL STUDS - NOT SHOWN - N LIEU OF ITEM 2 - FOR USE WITH ITEM 1B, PROPRIETARY CHANNEL SHAPED STEEL STUDS, 1-1/4 IN. WIDE BY MIN 3-5/8 IN. DEEP FABRICATED FROM MIN 0.020 IN. THICK GALV STEEL. STUDS CUT 3/4 IN. LESS N LENGTH THAN ASSEMBLY HEIGHT.

   CALIFORNIA EXPANDED METAL PRODUCTS CO - VIPER20™
   CRACO MFG INC - SMARTTRACK20™
   MARINO/WARE, DIV OF WARE INDUSTRIES NC - VIPER20™
   PHILLIPS MFG CO L L C - VIPER20™

   2C. STEEL STUDS - (AS AN ALTERNATE TO ITEM 2, FOR USE WITH ITEM 4E) CHANNEL SHAPED, FABRICATED FROM MIN 20 MSG CORROSION-PROTECTED OR GALV STEEL, 3-1/2 IN. MIN DEPTH, SPACED A MAX OF 16 IN. OC. STUDS FRICTION-FIT INTO FLOOR AND CEILING RUNNERS. STUDS TO BE CUT 5/8 TO 3/4 IN. LESS THAN ASSEMBLY HEIGHT.

   2D. FRAMING MEMBERS - STEEL STUDS - AS AN ALTERNATE TO ITEMS 2 THROUGH 2C- FOR USE WITH ITEM 1D AND 4G ONLY, CHANNEL SHAPED STUDS, MIN 3-5/8 IN. WIDE FABRICATED FROM MIN 0.018 IN. THICK GALV STEEL, SPACED A MAX OF 24 IN. OC. STUDS TO BE CUT 1/2 IN. LESS THAN ASSEMBLY HEIGHT.

   CLARKDIETRICH BUILDING SYSTEMS - CD PROSTUD
   DMFOAMS L L C - PROSTUD
   MBA METAL FRAMING - PROSTUD
   RAM SALES L L C - RAM PROSTUD
   SOUTHEASTERN STUD 4 COMPONENTS INC - PROSTUD
   STEEL STRUCTURAL SYSTEMS L L C - TRI-S PROSTUD

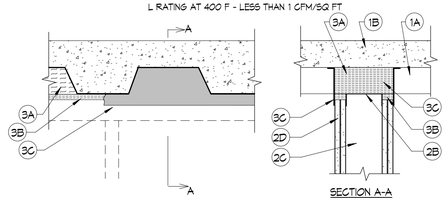
   2E. FRAMING MEMBERS* - STEEL STUDS - AS AN ALTERNATE TO ITEMS 2 THROUGH 2D- FOR USE WITH ITEM 1E AND 4I ONLY, CHANNEL SHAPED STUDS, MIN 3-5/8 IN. WIDE FABRICATED FROM MIN 0.018 IN. THICK GALV STEEL, SPACED A MAX OF 24 IN. OC. STUDS TO BE CUT 1/2 IN. LESS THAN ASSEMBLY HEIGHT.

   TELLINS INDUSTRIES L L

11/21/2022 2:21:28 PM

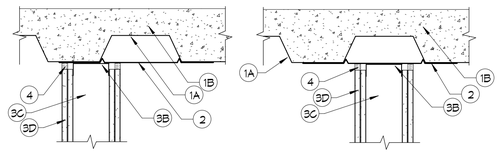
HEAD OF WALL

SYSTEM NO. HW-D-0633
MARCH 6, 2018
ASSEMBLY RATINGS - 1 AND 2 HR. (SEE ITEM 2)
NOMINAL JOINT WIDTH - 1
CLASS II OR III MOVEMENT CAPABILITIES - 25% COMPRESSION OR EXTENSION
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



SECTION A-A

CONFIGURATION A



CONFIGURATION B

CONFIGURATION C

FLOOR ASSEMBLY — THE FIRE-RATED FLUTED STEEL DECK/CONCRETE FLOOR ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL D900 FLOOR-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. THE HOURLY FIRE RATING OF THE FLOOR ASSEMBLY SHALL BE EQUAL TO OR GREATER THAN THE HOURLY FIRE RATING OF THE WALL ASSEMBLY. THE FLOOR ASSEMBLY SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL FLOOR AND FORM UNITS* —** MAX 3 IN. (76 MM) DEEP GALV FLUTED FLOOR UNITS.

B. **CONCRETE —** MIN 2-1/2 IN. (64 MM) THICK REINFORCED (100-150 PCF OR 1600-2400 KG/M³) CONCRETE, AS MEASURED FROM THE TOP PLANE OF THE FLOOR UNITS.

1A. **ROOF ASSEMBLY —** AS AN ALTERNATE TO ITEM 1, THE FIRE-RATED ROOF ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL P900 SERIES ROOF-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL CONTAIN MAX 3 IN. (76 MM) DEEP GALV STEEL FLUTED ROOF UNITS. THE HOURLY FIRE RATING OF THE ROOF ASSEMBLY SHALL BE EQUAL TO OR GREATER THAN THE HOURLY FIRE RATING OF THE WALL ASSEMBLY.

FIRESTOP CONFIGURATION A

2. **WALL ASSEMBLY —** THE 1 HR OR 2 HR RATED GYPSUM BOARD/STEEL STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U400, V400 OR W400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL FLOOR RUNNERS —** FLOOR RUNNERS OF WALL ASSEMBLY SHALL CONSIST OF GALV STEEL CHANNELS SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2G).

B. **LIGHT GAUGE FRAMING* - SLOTTED CEILING RUNNER —** SLOTTED CEILING RUNNER TO CONSIST OF GALV STEEL CHANNEL WITH SLOTTED FLANGES SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2G). SLOTTED CEILING RUNNER INSTALLED PERPENDICULAR TO DIRECTION OF FLUTED STEEL DECK SECURED TO VALLEYS (CONFIGURATION A) OR PARALLEL TO DIRECTION OF FLUTED DECK SECURED TO VALLEYS OR CORRUGATED STEEL STRAPS (CONFIGURATION B AND C) WITH TYPICAL STEEL FASTENERS OR WELDS SPACED MAX 24 IN. (610 MM).
SAFTI SEAL INC — ST, STN OR STX
MRI STEEL FRAMING LLC — SMART SLOTTED TRACK
SUPER STUD BUILDING PRODUCTS — SLOTTED TRACK

C. **STUDS —** STEEL STUDS TO BE MIN 3-1/2 IN. (64 MM) WIDE. STUDS CUT 1/2 TO 3/4 IN. (13 TO 19 MM) LESS IN LENGTH THAN ASSEMBLY HEIGHT WITH BOTTOM NESTING IN AND RESTING ON FLOOR RUNNER AND WITH TOP NESTING IN CEILING RUNNER (ITEM 2B) STEEL STUDS SECURED TO SLOTTED CEILING RUNNER WITH NO. 8 BY 1/2 IN. (13 MM) LONG WAFER HEAD STEEL SCREWS AT MID-HEIGHT OF SLOT ON MIN. ONE SIDE OF WALL. STUD SPACING NOT TO EXCEED 24 IN. (610 MM) OC.

D. **GYPSUM BOARD* —** GYPSUM BOARD SHEETS INSTALLED TO A MIN TOTAL THICKNESS OF 5/8 IN. (16 MM) AND 1-1/4 IN. (32 MM) ON EACH SIDE OF WALL FOR 1 AND 2 HR RATED ASSEMBLIES, RESPECTIVELY. WALL TO BE CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY, EXCEPT THAT A NOM 1 IN. (25 MM) GAP SHALL BE MAINTAINED BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF THE STEEL FLOOR UNITS AND THE TOP RUN OF SCREWS SHALL BE INSTALLED INTO THE STUDS A MIN. 4 IN. (102 MM) BELOW THE LOWER SURFACE OF THE FLOOR. THE HOURLY FIRE RATING OF THE JOINT SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL.

3. **JOINT SYSTEM —** MAX SEPARATION BETWEEN BOTTOM FLANGE OF THE DEFLECTION TRACK AND TOP OF WALLBOARD (AT THE TIME OF INSTALLATION OF THE JOINT SYSTEM) IS 1 IN. (25 MM). THE JOINT SYSTEM IS DESIGNED TO ACCOMMODATE A MAX 25 PERCENT COMPRESSION OR EXTENSION FROM ITS INSTALLED WIDTH. THE JOINT SYSTEM CONSISTS OF:

A. **FORMING MATERIAL* —** MIN 4 PCF (64 KG/M³) DENSITY MINERAL WOOL BATT INSULATION CUT APPROX 33 PERCENT WIDER THAN THE FLUTES, APPROX 33 PERCENT THICKER THAN THE DEPTH OF THE STEEL DECK, AND WITH A LENGTH EQUAL TO THE OVERALL WIDTH OF THE WALL. MINERAL WOOL COMPRESSED AND INSERTED INTO FLUTES OF THE STEEL FLOOR UNITS BETWEEN TOP OF CEILING RUNNER AND THE STEEL DECK.
INDUSTRIAL INSULATION GROUP L L C — MINWOOL-1200 SAFING
JOHNS MANVILLE — SAFING
ROCK WOOL MANUFACTURING CO — DELTA BOARD OR DELTA-8
ROCKWOOL — TYPE SAFE
THERMAFIBER INC — TYPE SAF

A1. **FORMING MATERIAL* — PLUGS —** AS AN ALTERNATE TO ITEM 3A, PREFORMED MINERAL WOOL PLUGS, FORMED TO THE SHAPE OF THE FLUTED FLOOR UNITS, FRICTION FIT TO COMPLETELY FILL THE FLUTES ABOVE THE CEILING RUNNER. THE PLUGS SHALL PROJECT BEYOND THE FINISHED SIDE OF THE CEILING RUNNER. FLUSH WITH WALL SURFACE.
ROCK WOOL MANUFACTURING CO — DELTA DECK PLUGS

A2. **FORMING MATERIAL* — PLUGS —** AS AN ALTERNATE TO ITEM 3A AND FOR USE ONLY WITH HILTI FIRESTOP SPRAYS (CP 672, CP5-SP WB). PREFORMED MINERAL WOOL PLUGS, FORMED TO THE SHAPE OF THE FLUTED FLOOR UNITS, FRICTION FIT TO COMPLETELY FILL THE FLUTES ABOVE THE CEILING RUNNER. THE PLUGS SHALL PROJECT BEYOND THE FINISHED SIDE OF THE CEILING RUNNER. FLUSH WITH WALL SURFACE.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CPTTI SPEED PLUGS

B. **FORMING MATERIAL* —** MIN 4 PCF (64 KG/M³) DENSITY MINERAL WOOL BATT INSULATION CUT TO A THICKNESS TRICE LARGER THAN THE DISTANCE BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF THE STEEL FLOOR UNIT. MATERIAL COMPRESSED 50 PERCENT AND INSTALLED WITHIN CEILING RUNNER ABOVE TOP OF LINER PANEL FLUSH WITH THE INSIDE SURFACE OF THE PANEL. MATERIAL COMPRESSED AND INSTALLED ON FINISHED SIDE OF THE WALL BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF THE STEEL FLOOR UNITS, FLUSH WITH THE SURFACE OF THE WALL.
INDUSTRIAL INSULATION GROUP L L C — MINWOOL-1200 SAFING
JOHNS MANVILLE — SAFING
ROCK WOOL MANUFACTURING CO — DELTA BOARD
ROCKWOOL — SAFE
THERMAFIBER INC — TYPE SAF

B1. **FORMING MATERIAL* - STRIPS —** AS AN ALTERNATE TO ITEM 2B AND FOR USE ONLY WITH HILTI FIRESTOP SPRAYS (CP 672, CP5-SP WB). THE STRIPS ARE STACKED TO A HEIGHT TWICE LARGER THAN THE DISTANCE BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF THE STEEL FLOOR UNIT. STRIPS COMPRESSED 50 PERCENT AND INSTALLED WITHIN CEILING RUNNER ABOVE TOP OF LINER PANEL FLUSH WITH THE INSIDE SURFACE OF THE PANEL. STRIPS COMPRESSED AND INSTALLED ON FINISHED SIDE OF THE WALL BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF THE STEEL FLOOR UNITS, FLUSH WITH THE SURFACE OF THE WALL.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 761 SPEED STRIPS

C. **FILL, VOID OR CAVITY MATERIAL* —** MIN 1/18 IN. (0.18 MM) DRY, (1/8 IN. OR 3.2 MM WET) THICKNESS OF FILL MATERIAL SPRAYED OR BRUSHED ON EACH SIDE OF THE WALL IN THE FLUTES OF THE STEEL FLOOR UNITS AND BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF THE STEEL FLOOR UNITS TO COMPLETELY COVER MINERAL WOOL AND OVERLAP A MIN OF 1/2 IN. (13 MM) ONTO GYPSUM BOARD AND STEEL DECK ON BOTH SIDES OF WALL.
3M COMPANY — FIREDAM SPRAY 200
A/D FIRE PROTECTION SYSTEMS INC — A/D FIREBARRIER SPRAY ACRYLIC
ESS NELSON FIRESTOP — FSC 3
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP672, CP5-SP WB
FIRESTOP JOINT SPRAY
PABCO/RE FIRE PROTECTION PARTNERS — 3500 SI, 5100 SP
RECTORSEAL — METACAULK 1200 SPRAY, BIOSTOP 150 SPRAY
SPECIFIED TECHNOLOGIES INC — SPECSEAL AS200
TREMCO INC — TREMSTOP ACRYLIC SP
UNITED STATES GYPSUM CO — TYPE SA

C1. **FILL, VOID OR CAVITY MATERIAL* — TAPE —** AS AN ALTERNATE TO THE 3M FIREDAM SPRAY 200 (SEE ITEM C), TAPE CUT TO SIZE AND PRESS APPLIED WITHIN FLUTED AREAS OF JOINT TO COMPLETELY COVER MINERAL WOOL LAPPING MIN 1 IN. (25 MM) ONTO THE CONTOUR OF THE STEEL FLOOR UNITS AND EXTENDING TO LAP MIN 1 IN. (25 MM) ONTO THE GYPSUM WALL. ADDITIONAL PIECES OF TAPE ARE APPLIED ALONG THE JOINT TO COMPLETELY COVER THE REMAINING MINERAL WOOL BETWEEN BOTTOM OF STEEL DECK AND TOP EDGE OF WALL ALONG LENGTH OF JOINT, LAPPING MIN 1 IN. (25 MM) ONTO THE CONTOUR OF THE STEEL FLOOR UNITS AND MIN 1 IN. (25 MM) ONTO THE GYPSUM WALL. ADJOINING LENGTHS OF TAPE SHALL OVERLAP MIN 1/2 IN. (13 MM). TAPE SHALL BE APPLIED AT BOTH SIDES OF WALL.
3M COMPANY — 3M FIRE AND WATER BARRIER TAPE

FIRESTOP CONFIGURATION B

2. **CORRUGATED STEEL STRAPS* —** A CONTINUOUS LENGTH OF MIN NO. 20 GA GALV CORRUGATED STEEL STRAP TO SPAN THE FLUTE WITH RIBS EXTENDING INTO FLUTE CAVITY AT THE INTERSECTION OF THE VALLEY SURFACE AND FLUTE WALLS AND OVERLAPPING THE ADJACENT VALLEYS 1 1/2 IN. (38 MM). THE STEEL STRIP IS TO BE FASTENED TO THE FLOOR ASSEMBLY WITH TYPICAL STEEL FASTENERS OR WELDS 16 IN. (406 MM) O.C. ON BOTH VALLEYS. WHEN WALL LENGTH EXCEEDS LENGTH OF STRAP, STRAPS ARE TO BE TIGHTLY BUTTED OR OVERLAPPED AND FASTENED A MAX 2 IN. (51 MM) FROM ENDS.
SAFTI SEAL INC — SAFTI-FRAME FG (FLUTE COVER) SERIES

3. **WALL ASSEMBLY —** THE 1 HR OR 2 FIRE RATED GYPSUM BOARD/STEEL STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL FLOOR RUNNERS —** FLOOR RUNNERS OF WALL ASSEMBLY SHALL CONSIST OF GALV STEEL CHANNELS SIZED TO ACCOMMODATE STEEL STUDS (ITEM 3G).

B. **LIGHT GAUGE FRAMING* - SLOTTED CEILING RUNNER —** SLOTTED CEILING RUNNER TO CONSIST OF GALV STEEL CHANNEL WITH SLOTTED FLANGES SIZED TO ACCOMMODATE STEEL STUDS (ITEM 3G). SLOTTED CEILING RUNNER INSTALLED PERPENDICULAR TO DIRECTION OF FLUTED STEEL DECK SECURED TO VALLEYS (CONFIGURATION A) OR PARALLEL TO DIRECTION OF FLUTED DECK SECURED TO VALLEYS OR CORRUGATED STEEL STRAPS (CONFIGURATION B AND C) WITH TYPICAL STEEL FASTENERS OR WELDS SPACED MAX 24 IN. (610 MM)
SAFTI SEAL INC — ST, STN OR STX
MRI STEEL FRAMING LLC — SMART SLOTTED TRACK
SUPER STUD BUILDING PRODUCTS — SLOTTED TRACK

C. **STUDS —** STEEL STUDS TO BE MIN 3-1/2 IN. (64 MM) WIDE. STUDS CUT 1/2 TO 3/4 IN. (13 TO 19 MM) LESS IN LENGTH THAN ASSEMBLY HEIGHT WITH BOTTOM NESTING IN AND RESTING ON FLOOR RUNNER AND WITH TOP NESTING IN CEILING RUNNER (ITEM 3B) STEEL STUDS SECURED TO SLOTTED CEILING RUNNER WITH NO. 8 BY 1/2 IN. (13 MM) LONG WAFER HEAD STEEL SCREWS AT MID-HEIGHT OF SLOT ON MIN. ONE SIDE OF WALL. STUD SPACING NOT TO EXCEED 24 IN. (610 MM) OC.

D. **GYPSUM BOARD* —** GYPSUM BOARD SHEETS INSTALLED TO A MIN TOTAL THICKNESS OF 5/8 IN. (16 MM) AND 1-1/4 IN. (32 MM) ON EACH SIDE OF WALL FOR 1 AND 2 HR RATED ASSEMBLIES, RESPECTIVELY. WALL TO BE CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY, EXCEPT THAT A NOM 1 IN. (25 MM) GAP SHALL BE MAINTAINED BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF THE STEEL FLOOR UNITS AND THE TOP RUN OF SCREWS SHALL BE INSTALLED INTO THE STUDS A MIN OF 4 IN. (102 MM) BELOW THE LOWER SURFACE OF THE FLOOR. THE HOURLY FIRE RATING OF THE JOINT SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL.

4. **FILL, VOID OR CAVITY MATERIAL* — CAULK OR SEALANT —** MAX SEPARATION BETWEEN CORRUGATED STEEL STRAP AND TOP OF WALL IS 1 IN. (25 MM). THE JOINT SYSTEM IS DESIGNED TO ACCOMMODATE A MAX 25 PERCENT COMPRESSION OR EXTENSION FROM ITS INSTALLED WIDTH. MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL INSTALLED ON EACH SIDE OF THE WALL BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF FLOOR, FLUSH WITH EACH SURFACE OF WALL.
A/D FIRE PROTECTION SYSTEMS INC — A/D FIREBARRIER ACRYLIC SEALANT
ESS NELSON FIRESTOP — ES 1398 SEALANT
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S OR CP5-S SIL GG SEALANT
SPECIFIED TECHNOLOGIES INC — SPECSEAL ES SEALANT, PENSIL 300 SEALANT, SIL300 SEALANT
TREMCO INC — TREMSTOP ACRYLIC OR PYRE-SIL
DAP PRODUCTS INC — DAP FIRE STOP FIRE-RATED SILICONE SEALANT
UNITED STATES GYPSUM CO — TYPE A

5. **FILL, VOID OR CAVITY MATERIAL* - SEALANT OR CAULK —** (OPTIONAL, NOT SHOWN) - MIN 1/8 IN. (3.2 MM) BEAD OF SEALANT APPLIED AT BASE OF OUTSIDE LEG OF CORRUGATED RIBS PRIOR TO FASTENING OF CORRUGATED STEEL STRAP TO ADJACENT VALLEYS. ANY **FILL, VOID OR CAVITY MATERIALS*** SEALANT OR CAULK MAY BE USED.
FIRESTOP CONFIGURATION C

2. **CORRUGATED STEEL STRAPS* —** A CONTINUOUS LENGTH OF NO. 20 GA GALV CORRUGATED STEEL STRAP TO SPAN THE FLUTE WITH RIBS EXTENDING INTO FLUTE CAVITY AT THE INTERSECTION OF THE VALLEY SURFACE AND FLUTE WALLS AND OVERLAPPING THE ADJACENT VALLEYS 1 1/2 IN. (38 MM). THE STEEL STRIP IS TO BE FASTENED TO THE FLOOR ASSEMBLY WITH TYPICAL STEEL FASTENERS OR WELDS 16 IN. (406 MM) O.C. ON BOTH VALLEYS. WHEN WALL LENGTH EXCEEDS LENGTH OF STRAP, STRAPS ARE TO BE TIGHTLY BUTTED OR OVERLAPPED AND FASTENED A MAX 2 IN. (51 MM) FROM ENDS.
SAFTI SEAL INC — SAFTI-FRAME FG (FLUTE COVER) SERIES

3. **WALL ASSEMBLY —** THE 1 HR OR 2 FIRE RATED GYPSUM BOARD/STEEL STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL FLOOR RUNNERS —** FLOOR RUNNERS OF WALL ASSEMBLY SHALL CONSIST OF GALV STEEL CHANNELS SIZED TO ACCOMMODATE STEEL STUDS (ITEM 3G).

B. **LIGHT GAUGE FRAMING* - SLOTTED CEILING RUNNER —** SLOTTED CEILING RUNNER TO CONSIST OF GALV STEEL CHANNEL WITH SLOTTED FLANGES SIZED TO ACCOMMODATE STEEL STUDS (ITEM 3G). SLOTTED CEILING RUNNER INSTALLED PERPENDICULAR TO DIRECTION OF FLUTED STEEL DECK SECURED TO VALLEYS (CONFIGURATION A) OR PARALLEL TO DIRECTION OF FLUTED DECK SECURED TO VALLEYS OR CORRUGATED STEEL STRAPS (CONFIGURATION B AND C) WITH TYPICAL STEEL FASTENERS OR WELDS SPACED MAX 24 IN. (610 MM)
SAFTI SEAL INC — ST, STN OR STX
MRI STEEL FRAMING LLC — SMART SLOTTED TRACK
SUPER STUD BUILDING PRODUCTS — SLOTTED TRACK

C. **STUDS —** STEEL STUDS TO BE MIN 3-1/2 IN. (64 MM) WIDE. STUDS CUT 1/2 TO 3/4 IN. (13 TO 19 MM) LESS IN LENGTH THAN ASSEMBLY HEIGHT WITH BOTTOM NESTING IN AND RESTING ON FLOOR RUNNER AND WITH TOP NESTING IN CEILING RUNNER (ITEM 3B) STEEL STUDS SECURED TO SLOTTED CEILING RUNNER WITH NO. 8 BY 1/2 IN. (13 MM) LONG WAFER HEAD STEEL SCREWS AT MID-HEIGHT OF SLOT ON MIN. ONE SIDE OF WALL. STUD SPACING NOT TO EXCEED 24 IN. (610 MM) OC.

D. **GYPSUM BOARD* —** GYPSUM BOARD SHEETS INSTALLED TO A MIN TOTAL THICKNESS OF 5/8 IN. (16 MM) AND 1-1/4 IN. (32 MM) ON EACH SIDE OF WALL FOR 1 AND 2 HR RATED ASSEMBLIES, RESPECTIVELY. WALL TO BE CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY, EXCEPT THAT A NOM 1 IN. (25 MM) GAP SHALL BE MAINTAINED BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF THE STEEL FLOOR UNITS AND THE TOP RUN OF SCREWS SHALL BE INSTALLED INTO THE STUDS A MIN OF 4 IN. (102 MM) BELOW THE LOWER SURFACE OF THE FLOOR. THE HOURLY FIRE RATING OF THE JOINT SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL.

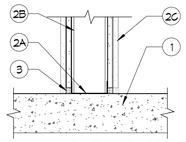
4. **FILL, VOID OR CAVITY MATERIAL* — SEALANT —** MAX SEPARATION BETWEEN BOTTOM OF FLUTED DECK OR CORRUGATED STEEL STRAP AND TOP OF WALL IS 1 IN. (25 MM). THE JOINT SYSTEM IS DESIGNED TO ACCOMMODATE A MAX 25 PERCENT COMPRESSION OR EXTENSION FROM ITS INSTALLED WIDTH. MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL INSTALLED ON EACH SIDE OF THE WALL BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM OF FLOOR, FLUSH WITH EACH SURFACE OF WALL.
A/D FIRE PROTECTION SYSTEMS INC — A/D FIREBARRIER ACRYLIC SEALANT
ESS NELSON FIRESTOP — ES 1398 SEALANT
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S OR CP5-S SIL GG SEALANT
SPECIFIED TECHNOLOGIES INC — SPECSEAL ES SEALANT, PENSIL 300 SEALANT, SIL300 SEALANT
TREMCO INC — TREMSTOP ACRYLIC OR PYRE-SIL
DAP PRODUCTS INC — DAP FIRE STOP FIRE-RATED SILICONE SEALANT
UNITED STATES GYPSUM CO — TYPE A

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

UL HW-D-0633

BOTTOM OF WALL

SYSTEM NO. BW-S-0002
JUNE 29, 2015
ASSEMBLY RATINGS - 1 AND 2 HR (SEE ITEM 1)
NOMINAL JOINT WIDTH - 3/4 IN.
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



1. FLOOR ASSEMBLY — MIN 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) STRUCTURAL CONCRETE. FLOOR MAY ALSO BE CONSTRUCTED OF ANY 6 IN. (152 MM) THICK UL CLASSIFIED HOLLOW-CORE PRECAST CONCRETE UNITS*.

SEE PRECAST CONCRETE UNITS CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURES.

2. WALL ASSEMBLY — THE 1 OR 2 H FIRE-RATED GYPSUM BOARD/STEEL STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U400, V400 OR W400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. IN ADDITION, THE WALL MAY INCORPORATE A HEAD-OF-WALL JOINT SYSTEM AS SPECIFIED IN THE HW SERIES JOINT SYSTEMS IN THE UL FIRE RESISTANCE DIRECTORY. THE WALL SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STEEL FLOOR RUNNERS — FLOOR RUNNERS OF WALL ASSEMBLY SHALL CONSIST OF MIN NO. 25 GAUGE GALV STEEL CHANNELS SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2B). FLOOR RUNNERS TO BE PROVIDED WITH 1-1/4 IN. (32 MM) FLANGES. RUNNERS SECURED WITH STEEL FASTENERS SPACED 12 IN. (305 MM) OC.

B. STUDS — STEEL STUDS TO BE MIN 3-1/2 IN. (64 MM) WIDE. STUDS CUT 1/2 TO 3/4 IN. (13 TO 19 MM) LESS IN LENGTH THAN ASSEMBLY HEIGHT WITH BOTTOM NESTING IN, RESTING ON AND FASTENED TO FLOOR RUNNER WITH SHEET METAL SCREWS. STUD SPACING NOT TO EXCEED 24 IN. (610 MM) OC.

C. GYPSUM BOARD* — GYPSUM BOARD INSTALLED TO A MIN TOTAL THICKNESS OF 5/8 OR 1-1/4 IN. (16 OR 32 MM) ON EACH SIDE OF WALL FOR A 1 OR 2 HR RATED WALL, RESPECTIVELY. WALL TO BE CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U400, V400 OR W400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY, EXCEPT THAT A MAX 3/4 IN. (19 MM) GAP SHALL BE MAINTAINED BETWEEN THE BOTTOM OF GYPSUM BOARD AND TOP OF CONCRETE FLOOR. THE HOURLY FIRE RATING OF THE JOINT SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL.

3. FILL, VOID OR CAVITY MATERIAL* SEALANT — MAX SEPARATION BETWEEN TOP OF FLOOR AND BOTTOM OF GYPSUM BOARD WALL SHEATHING IS 3/4 IN. (19 MM). MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL INSTALLED ON EACH SIDE OF THE WALL BETWEEN THE BOTTOM OF THE GYPSUM BOARD AND THE TOP OF THE CONCRETE FLOOR, FLUSH WITH EACH SURFACE OF THE WALL.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 606 OR CP5-S SIL GG SEALANT
SPECIFIED TECHNOLOGIES INC — SPECSEAL ES SEALANT, PENSIL 300 SEALANT, SIL300 SEALANT
TREMCO INC — TREMSTOP ACRYLIC OR PYRE-SIL
DAP PRODUCTS INC — DAP FIRE STOP FIRE-RATED SILICONE SEALANT
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S OR CP5-S SIL GG SEALANT
UNITED STATES GYPSUM CO — TYPE A

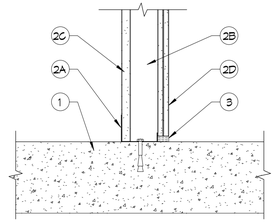
5. FILL, VOID OR CAVITY MATERIAL* - SEALANT OR CAULK — (OPTIONAL, NOT SHOWN) - MIN 1/8 IN. (3.2 MM) BEAD OF SEALANT APPLIED AT BASE OF OUTSIDE LEG OF CORRUGATED RIBS PRIOR TO FASTENING OF CORRUGATED STEEL STRAP TO ADJACENT VALLEYS. ANY **FILL, VOID OR CAVITY MATERIALS*** SEALANT OR CAULK MAY BE USED.

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

UL BW-S-0002

BOTTOM OF WALL

DESIGN NO. BW-S-0023
JULY 22, 2015
ASSEMBLY RATING - 1 AND 2 HR (SEE ITEM 2)
JOINT WIDTH - 3/4 AND 1 IN. MAX (SEE ITEM 3)



1. FLOOR ASSEMBLY — MIN 2-1/2 IN. (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) STRUCTURAL CONCRETE.

2. WALL ASSEMBLY — THE 1 OR 2 HR FIRE RATED GYPSUM BOARD/STEEL STUD SHAFT WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U400, V400 OR W400 SERIES WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. IN ADDITION, THE WALL MAY INCORPORATE A HEAD-OF-WALL JOINT SYSTEM CONSTRUCTED AS SPECIFIED IN THE HW SERIES JOINT SYSTEMS IN THE UL FIRE RESISTANCE DIRECTORY. THE WALL SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. FLOOR AND CEILING RUNNERS — J-SHAPED RUNNER, 2-1/2 IN. (64 MM) WIDE WITH UNEQUAL LEGS OF MIN 1-1/4 IN. (32 MM) AND 2 IN. (51 MM), FABRICATED FROM MIN 24 MSG GALV STEEL. RUNNERS POSITIONED WITH SHORT LEG TOWARD FINISHED SIDE OF WALL. RUNNERS ATTACHED TO STRUCTURAL SUPPORTS WITH STEEL FASTENERS LOCATED NOT GREATER THAN 2 IN. (51 MM) FROM ENDS AND NOT GREATER THAN 12 IN. (610 MM) OC.

B. STEEL STUDS — C-H-SHAPED STUDS, 2-1/2 IN. (64 MM) WIDE BY 1-1/2 IN. (38 MM) DEEP, FABRICATED FROM MIN 25 MSG GALV STEEL, CUT TO LENGTHS 3/8 TO 1/2 IN. (10 TO 13 MM) LESS THAN FLOOR TO CEILING HEIGHT AND SPACED 24 IN. (610 MM) OC. STUDS NEST IN FLOOR RUNNER AT BOTTOM AND J RUNNER OR SLOTTED CEILING TRACK AT TOP. AFTER INSTALLATION OF GYPSUM BOARD LINER PANELS (ITEM 2C), STUDS SECURED TO FLANGE OF FLOOR RUNNER ON FINISHED SIDE OF WALL ONLY WITH NO. 6 BY 1/2 IN. (13 MM) LONG SELF-DRILLING, SELF-TAPPING STEEL SCREWS. STUDS SECURED TO FLANGE OF SLOTTED CEILING TRACK ON FINISHED SIDE OF WALL ONLY WITH NO. 8 BY 1/2 IN. (13 MM) LONG SELF-DRILLING, SELF-TAPPING WAFER HEAD STEEL SCREWS AT SLOT MIDHEIGHT.

C. GYPSUM BOARD* — 1 IN. (25 MM) THICK BY 24 IN. (610 MM) WIDE GYPSUM BOARD LINER PANELS AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION SERIES DESIGN. PANELS CUT 1 IN. (25 MM) LESS IN LENGTH THAN FLOOR TO CEILING HEIGHT. VERTICAL EDGES INSERTED IN "H"-SHAPED SECTION OF "C-H" STUDS. AT THE ENDS OF THE ASSEMBLY, THE FREE EDGE OF THE END PANELS ARE ATTACHED TO THE LONG LEG OF VERTICAL J-RUNNERS (ITEM 2A) WITH 1-5/8 IN. (41 MM) LONG TYPE S STEEL SCREWS SPACED MAX 12 IN. (305 MM) OC.

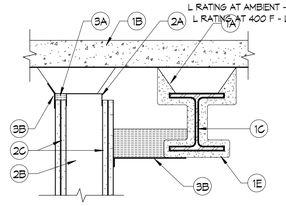
D. GYPSUM BOARD* — GYPSUM BOARD SHEETS, 1/2 OR 5/8 IN. (13 OR 16 MM) THICK, APPLIED VERTICALLY OR HORIZONTALLY ON FINISHED SIDE OF WALL AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION SERIES DESIGN. A MAX 1 IN. (25 MM) GAP WHEN CP 606 SEALANT (ITEM 3) IS USED, OR 3/4 IN. (19 MM) GAP WHEN CP 605 SEALANT (ITEM 3) IS USED, SHALL BE MAINTAINED BETWEEN THE BOTTOM OF THE GYPSUM BOARD AND THE TOP SURFACE OF THE CONCRETE FLOOR. THE SCREWS ATTACHING THE GYPSUM BOARD LAYERS TO THE C-H STUDS SHALL BE LOCATED 1 IN. (25 MM) ABOVE THE TOP OF THE J-RUNNER OR SLOTTED CEILING TRACK. NO GYPSUM BOARD ATTACHMENT SCREWS ARE TO PENETRATE THE CEILING J-RUNNER AND SLOTTED CEILING TRACK.

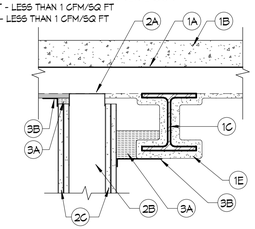
THE HOURLY FIRE RATING OF THE JOINT SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL.

3. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MAX SEPARATION BETWEEN TOP OF FLOOR AND BOTTO

HEAD OF WALL

SYSTEM NO. HW-D-0388
DECEMBER 16 2015
ASSEMBLY RATINGS - 1 AND 2 HR (SEE ITEM 2)
NOMINAL JOINT WIDTH - 1-1/2 IN.
CLASS II OR III MOVEMENT CAPABILITIES - 50% COMPRESSION OR EXTENSION
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT





1. **FLOOR ASSEMBLY** — THE FIRE-RATED FLUTED STEEL DECK/CONCRETE FLOOR ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL D700 OR D900 SERIES FLOOR-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. THE HOURLY FIRE RATING OF THE FLOOR ASSEMBLY SHALL BE EQUAL TO OR GREATER THAN THE HOURLY FIRE RATING OF THE WALL ASSEMBLY. THE FLOOR ASSEMBLY SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL FLOOR AND FLOOR UNITS*** — MAX 3 IN. (76 MM) DEEP GALV STEEL FLUTED FLOOR UNITS.
B. **CONCRETE** — MIN 2-1/2 IN. (64 MM) THICK REINFORCED CONCRETE, AS MEASURED FROM THE TOP PLANE OF THE FLOOR UNITS.
C. **STRUCTURAL STEEL SUPPORT** — STEEL BEAM OR OPEN-WEB STEEL JOIST, AS SPECIFIED IN THE INDIVIDUAL D700 OR D900 SERIES FLOOR-CEILING DESIGN, USED TO SUPPORT STEEL FLOOR UNITS. STRUCTURAL STEEL SUPPORT ORIENTED PARALLEL TO AND 1 TO 8 IN. (25 TO 152 MM) FROM WALL ASSEMBLY.
D. **STEEL LATH** — WHEN STRUCTURAL STEEL SUPPORT (ITEM 1C) CONSISTS OF OPEN-WEB STEEL JOISTS, 3/8 IN. (10 MM) DIAMOND MESH EXPANDED STEEL LATH HAVING A NOM WEIGHT OF 1.7 TO 3.4 LB PER SQ YD (0.9 TO 1.8 KG/M²) SHALL BE INSTALLED TO COMPLETELY COVER ONE SIDE OF EACH JOIST WHICH IS LOCATED WITHIN 8 IN. (152 MM) OF WALL ASSEMBLY. THE LATH SHALL BE SECURED WITH STEEL TIE WIRE AND SHALL BE FULLY COVERED WITH SPRAY APPLIED FIRE RESISTIVE MATERIAL.
E. **SPRAY-APPLIED FIRE RESISTIVE MATERIALS*** — AFTER INSTALLATION OF THE CEILING RUNNER (ITEM 2A), STEEL FLOOR UNITS AND STRUCTURAL STEEL SUPPORTS TO BE SPRAYED WITH THE THICKNESS OF MATERIAL SPECIFIED IN THE INDIVIDUAL D700 SERIES DESIGN OR THE STRUCTURAL STEEL SUPPORTS TO BE SPRAYED IN ACCORDANCE WITH THE SPECIFICATIONS IN THE INDIVIDUAL D900 SERIES DESIGN. THE FLUTES OF THE STEEL FLOOR UNITS ABOVE THE STRUCTURAL STEEL SUPPORTS AND ABOVE THE CEILING RUNNER (ITEM 2A) SHALL BE FILLED WITH SPRAY-APPLIED FIRE RESISTIVE MATERIAL. AS AN ALTERNATE, THE SPRAY-APPLIED FIRE RESISTIVE MATERIAL IN THE FLUTES ABOVE THE CEILING RUNNER MAY BE APPLIED TO FOLLOW THE CONTOUR OF THE STEEL FLOOR UNITS. EXCESS MATERIAL SHALL BE REMOVED FROM THE FLANGES OF THE CEILING RUNNER BEYOND THE REQUIRED THICKNESS OF SPRAY-APPLIED FIRE RESISTIVE MATERIAL ON THE STEEL FLOOR UNITS.
ISOLATEK INTERNATIONAL — TYPE 300

GCP APPLIED TECHNOLOGIES INC — TYPE MK-6/HY, MK-6/HY ES, MK-66, RG

1A. **ROOF ASSEMBLY** — (NOT SHOWN) — AS AN ALTERNATE TO THE FLOOR ASSEMBLY (ITEM 1), A FIRE RATED FLUTED STEEL DECK ROOF ASSEMBLY MAY BE USED. THE ROOF ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL P100 OR P900 SERIES ROOF-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. THE HOURLY FIRE RATING OF THE ROOF ASSEMBLY SHALL BE EQUAL TO OR GREATER THAN THE HOURLY FIRE RATING OF THE WALL ASSEMBLY. THE ROOF ASSEMBLY SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL ROOF DECK** — MAX 3 IN. (76 MM) DEEP GALV STEEL FLUTED ROOF DECK.
B. **ROOF INSULATION** — MINERAL AND FIBER BOARD* — MIN 3/4 IN. (19 MM) THICK BOARDS APPLIED IN ONE OR MORE LAYERS DIRECTLY OVER STEEL ROOF DECK OR OVER GYPSUM BOARD SHEATHING LAD ATOP STEEL ROOF DECK.
C. **ROOF COVERING*** — HOT-MOPPED OR COLD-APPLICATION MATERIALS COMPATIBLE WITH MINERAL AND FIBER BOARD INSULATION.
D. **STRUCTURAL STEEL SUPPORT** — STEEL BEAM OR OPEN-WEB STEEL JOIST, AS SPECIFIED IN THE INDIVIDUAL P100 OR P900 OR P900 SERIES ROOF-CEILING DESIGN USED TO SUPPORT STEEL DECK. STRUCTURAL STEEL SUPPORT ORIENTED PARALLEL TO AND 1 IN. TO 8 IN. (25 TO 152 MM) FROM WALL ASSEMBLY.
E. **STEEL LATH** — WHEN STRUCTURAL STEEL SUPPORT (ITEM 1D) CONSISTS OF OPEN-WEB STEEL JOISTS, 3/8 IN. (10 MM) DIAMOND MESH EXPANDED STEEL LATH HAVING A NOM WEIGHT OF 1.7 TO 3.4 LB PER SQ YD (0.9 TO 1.8 KG/M²) SHALL BE INSTALLED TO COMPLETELY COVER ONE SIDE OF EACH JOIST WHICH IS LOCATED WITHIN 8 IN. (152 MM) OF WALL ASSEMBLY. THE LATH SHALL BE SECURED WITH STEEL TIE WIRE AND SHALL BE FULLY COVERED WITH SPRAY APPLIED FIRE RESISTIVE MATERIAL.
F. **SPRAY-APPLIED FIRE RESISTIVE MATERIAL*** — AFTER INSTALLATION OF THE CEILING RUNNER (ITEM 2A), STEEL ROOF DECK (P700 SERIES ROOF-CEILING DESIGN) AND STRUCTURAL STEEL SUPPORTS TO BE SPRAYED WITH A THICKNESS OF SPRAY APPLIED FIRE RESISTIVE MATERIAL AS SPECIFIED IN THE INDIVIDUAL ROOF-CEILING DESIGN. IN ADDITION, THE FLUTES OF THE STEEL DECK ABOVE THE STRUCTURAL STEEL SUPPORTS AND ABOVE THE CEILING RUNNER (ITEM 2A) SHALL BE FILLED WITH SPRAY-APPLIED FIRE RESISTIVE MATERIAL. AS AN ALTERNATE, THE SPRAY-APPLIED FIRE RESISTIVE MATERIAL IN THE FLUTED ABOVE THE CEILING RUNNER MAY BE APPLIED TO FOLLOW THE CONTOUR OF THE STEEL ROOF DECK. EXCESS MATERIAL SHALL BE REMOVED FROM THE FLANGES OF THE CEILING RUNNER BEYOND THE REQUIRED THICKNESS OF SPRAY-APPLIED FIRE RESISTIVE MATERIAL ON THE STEEL ROOF DECK.
ISOLATEK INTERNATIONAL — TYPE 300

GCP APPLIED TECHNOLOGIES INC — TYPE MK-6/HY, MK-6/HY ES, MK-66, RG

2. **WALL ASSEMBLY** — THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STEEL STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U400 OR V400 SERIES WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL FLOOR AND CEILING RUNNERS** — FLOOR AND CEILING RUNNERS OF WALL ASSEMBLY SHALL CONSIST OF GALV STEEL CHANNELS SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2B). FLANGE HEIGHT OF CEILING RUNNER TO BE 3/4 IN. (19 MM) GREATER THAN MAX EXTENDED JOINT WIDTH. CEILING RUNNER IS SECURED TO STEEL FLOOR UNITS (ITEM 1A) WITH STEEL FASTENERS OR WELDS SPACED MAX 24 IN. (610 MM) OC. CEILING RUNNER TO BE INSTALLED PARALLEL WITH STRUCTURAL STEEL SUPPORT AND LOCATED SUCH THAT A MAX CLEARANCE OF 4 IN. (102 MM) IS PRESENT BETWEEN THE FINISHED WALL AND THE SPRAY-APPLIED FIRE RESISTIVE MATERIAL AT THE LOWEST ELEVATION OF THE STRUCTURAL STEEL SUPPORT.
A1. **LIGHT GAUGE FRAMING* — SLOTTED CEILING RUNNER** — AS AN ALTERNATE TO THE CEILING RUNNER IN ITEM 2A, CEILING RUNNER TO CONSIST OF GALV STEEL CHANNEL WITH SLOTTED FLANGES SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2B). CEILING RUNNER SECURED TO VALLEYS WITH STEEL FASTENERS SPACED MAX 24 IN. (610 MM) OC.
BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK, SLPTRK32S

CALIFORNIA EXPANDED METAL PRODUCTS CO — GST

MARINO/WARE, DIV OF WARE INDUSTRIES INC — TYPE SLT

THE STEEL NETWORK INC — VERTITRACK VT SERIES, 250VT, 362VT, 400VT, 600VT AND 800VT

A2. **LIGHT GAUGE FRAMING* — CLIPPED CEILING RUNNER** — AS AN ALTERNATE TO THE CEILING RUNNER IN ITEMS 2A AND 2A1, CLIPPED RUNNER TO CONSIST OF GALV STEEL CHANNEL WITH CLIPS PREFORMED IN TRACK FLANGES WHICH POSITIVELY ENGAGE THE INSIDE FLANGE OF THE STEEL STUDS (ITEM 2B). TRACK SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2B). TRACK FLANGES TO BE MIN 2-1/2 IN. (64 MM). CLIPPED CEILING RUNNER SECURED WITH STEEL FASTENERS SPACED MAX 24 IN. (610 MM) OC.
TOTAL STEEL SOLUTIONS L L C — SNAP TRAK

A3. **LIGHT GAUGE FRAMING*- NOTCHED CEILING RUNNER** — AS AN ALTERNATE TO THE CEILING RUNNERS IN ITEMS 2A THROUGH 2A2, NOTCHED CEILING RUNNERS TO CONSIST OF C-SHAPED GALV STEEL CHANNEL WITH NOTCHED RETURN FLANGES SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2B). NOTCHED CEILING RUNNER SECURED TO VALLEYS WITH STEEL MASONRY ANCHORS SPACED MAX 24 IN. (610 MM) OC.
OLMAR SUPPLY INC — TYPE SCR

A4. **LIGHT GAUGE FRAMING* — SLOTTED CEILING RUNNER** — AS AN ALTERNATE TO THE CEILING RUNNER IN ITEM 2A. CEILING RUNNER TO CONSIST OF GALV STEEL CHANNEL WITH SLOTTED FLANGES SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2B). FLANGE HEIGHT OF SLOTTED CEILING RUNNER SHALL BE 3-1/4 IN. (83 MM) WITH 2 IN. (51 MM) DEEP SLOTS. CEILING RUNNER SECURED TO VALLEYS WITH STEEL FASTENERS OR WELDS SPACED MAX 24 IN. (610 MM) OC.
SCAFCO STEEL STUD MANUFACTURING CO — SLOTTED TRACK-TYPE SDLT

B. **STUDS** — STEEL STUDS TO BE MIN 3-1/2 IN. (64 MM) WIDE. STUDS CUT 3/4 IN. TO 1 IN. (19 TO 25 MM) LESS N LENGTH THAN ASSEMBLY HEIGHT WITH BOTTOM NESTING IN AND SECURED TO FLOOR RUNNER. WHEN SLOTTED CEILING RUNNER (ITEM 2A1) IS USED, STEEL STUDS SECURED TO SLOTTED CEILING RUNNER WITH NO. 8 BY 1/2 (13 MM) LONG WAFER HEAD STEEL SCREWS AT MID-HEIGHT OF SLOT ON EACH SIDE OF WALL. WHEN SLOTTED CEILING RUNNER (ITEM 2A4) IS USED, STEEL STUDS CUT IN LENGTHS 3/4 TO 1-3/4 IN. (19 TO 44 MM) LESS THAN FLOOR TO CEILING HEIGHT AND SECURED TO SLOTTED CEILING RUNNER WITH NO. 8 BY 1/2 (13 MM) LONG WAFER HEAD STEEL SCREWS AT +/- 3/16 IN. (5 MM) OF THE MID-HEIGHT OF SLOT ON EACH SIDE OF WALL.
C. **GYPSUM BOARD*** — GYPSUM BOARD SHEETS INSTALLED TO A MIN TOTAL 5/8 IN. (16 MM) OR 1-1/4 IN. (32 MM) THICKNESS ON EACH SIDE OF WALL FOR 1 AND 2 HR FIRE RATED ASSEMBLIES, RESPECTIVELY. WALL TO BE CONSTRUCTED AS SPECIFIED IN THE INDIVIDUAL U400, V400 OR W400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY EXCEPT THAT A MAX 1 IN. (25 MM) GAP SHALL BE MAINTAINED BETWEEN THE TOP OF THE GYPSUM BOARD AND THE BOTTOM PLANE OF THE SPRAY APPLIED FIRE RESISTIVE MATERIAL ON THE STEEL DECK WHEN D700 SERIES ASSEMBLY IS USED OR BETWEEN THE TOP OF GYPSUM BOARD AND THE STEEL FLOOR UNITS WHEN D900 SERIES ASSEMBLY IS USED. ON BOTH SIDES OF THE WALL ASSEMBLY, SCREWS ATTACHING THE GYPSUM BOARD TO THE STUDS ALONG THE TOP OF THE WALL SHALL BE LOCATED 1 TO 1-1/2 IN. (25 TO 38 MM) BELOW THE BOTTOM OF THE CEILING RUNNER. NO GYPSUM BOARD ATTACHMENT SCREWS SHALL BE DRIVEN INTO THE CEILING RUNNER. WHERE THE TOP OF THE WALL ASSEMBLY IS INACCESSIBLE ABOVE THE LOWEST ELEVATION OF THE STRUCTURAL STEEL SUPPORT, THE GYPSUM BOARD ATTACHMENT SCREWS MAY BE OMITTED. **THE HOURLY FIRE RATING OF THE JOINT SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL.**

3. **JOINT SYSTEM — MAX SEPARATION BETWEEN BOTTOM OF THE SPRAY APPLIED FIRE RESISTIVE MATERIAL ON THE STEEL FLOOR UNITS AND TOP OF GYPSUM BOARD (AT TIME OF INSTALLATION OF JOINT SYSTEM) IS 1-1/2 IN. (38 MM) WHEN D700 SERIES ASSEMBLY IS USED, MAX SEPARATION BETWEEN BOTTOM OF THE STEEL FLOOR UNITS AND TOP OF GYPSUM BOARD (AT TIME OF INSTALLATION OF JOINT SYSTEM) IS 1-1/2 IN. (38 MM) WHEN D900 SERIES ASSEMBLY IS USED. MAX SEPARATION BETWEEN SPRAY APPLIED FIRE RESISTIVE MATERIAL ON STRUCTURAL SUPPORT MEMBER AND SURFACE OF WALL IS 4 IN. (102 MM).** THE JOINT SYSTEM IS DESIGNED TO ACCOMMODATE A MAX 50 PERCENT COMPRESSION OR EXTENSION FROM ITS INSTALLED WIDTH AS MEASURED BETWEEN THE BOTTOM PLANE OF THE STEEL FLOOR UNITS OR SPRAY-APPLIED FIRE RESISTIVE MATERIAL ON THE STEEL FLOOR UNITS AND THE TOP OF THE GYPSUM BOARD. THE JOINT SYSTEM SHALL CONSIST OF FORMING AND FILL MATERIALS, AS FOLLOWS:

A. **FORMING MATERIAL*** — NOM 4 PCF (64 KG/M³) DENSITY MINERAL WOOL BATT INSULATION. SECTIONS OF MINERAL WOOL BATT CUT TO A WIDTH OF 4 IN. (102 MM) AND STACKED TO ATTAIN A THICKNESS WHICH IS 50 PERCENT GREATER THAN THE WIDTH OF THE LINEAR GAP BETWEEN THE SPRAY APPLIED FIRE RESISTIVE MATERIAL ON THE STRUCTURAL STEEL MEMBER AND THE SURFACE OF THE WALL ASSEMBLY. STACKED SECTIONS OF MINERAL WOOL, COMPRESSED 33 PERCENT IN THICKNESS AND INSTALLED CUT EDGE FIRST INTO LINEAR GAP UNTIL THE BOTTOM EDGE IS FLUSH WITH THE BOTTOM SURFACE OF THE SPRAY APPLIED FIRE RESISTIVE MATERIAL ON THE STRUCTURAL STEEL MEMBER. WHEN THE SPRAY-APPLIED FIRE RESISTIVE MATERIAL IN THE FLUTES ABOVE THE WALL FOLLOWS THE CONTOUR OF THE STEEL DECK, SECTIONS OF MINERAL WOOL BATT CUT TO THE SHAPE OF THE FLUTED DECK AND INSTALLED IN THE FLUTES OF THE STEEL FLOOR OR ROOF DECK BETWEEN THE TOP OF THE CEILING RUNNER AND THE SPRAY-APPLIED FIRE RESISTIVE MATERIAL. THE MINERAL WOOL BATT INSULATION IS TO BE INSTALLED FLUSH WITH THE GYPSUM BOARD SURFACE ON THE SIDE OF THE WALL OPPOSITE THE STRUCTURAL STEEL SUPPORT. ADDITIONAL SECTIONS OF MINERAL WOOL BATT INSULATION ARE COMPRESSED 50 PERCENT IN THICKNESS AND ARE INSTALLED CUT EDGE FIRST TO COMPLETELY FILL THE GAP ABOVE THE TOP OF THE GYPSUM BOARD.
INDUSTRIAL INSULATION GROUP L L C — MINWOOL-1200 SAFING

JOHNS MANVILLE — SAFING
ROCK WOOL MANUFACTURING CO — DELTA BOARD
ROCKWOOL MALAYSIA SDN BHD — SAFE
ROCKWOOL — SAFE
THERMAFIBER INC — TYPE SAF

A1. **FORMING MATERIAL* — PLUGS** — (OPTIONAL, NOT SHOWN) - PREFORMED MINERAL WOOL PLUGS, FORMED TO THE SHAPE OF THE FLUTED DECK, FRICTION FIT TO COMPLETELY FILL THE FLUTES. THE PLUGS SHALL BE FLUSH WITH BOTH WALL SURFACES. ADDITIONAL FORMING MATERIAL, DESCRIBED IN ITEM 3A, TO BE USED IN CONJUNCTION WITH THE PLUGS TO FILL THE GAP BETWEEN THE TOP OF THE WALL AND BOTTOM OF STEEL DECK.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP111 SPEED PLUGS

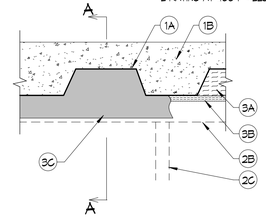
B. **FILL, VOID OR CAVITY MATERIAL* — SEALANT** — MIN 1/3 IN. (9.2 MM) WET THICKNESS OR 1/16 IN. (1.6 MM) DRY THICKNESS OF FILL MATERIAL SPRAY OR BRUSH APPLIED OVER THE FORMING MATERIAL ON EACH SIDE OF THE WALL. FILL MATERIAL TO OVERLAP A MIN OF 1/2 IN. (13 MM) ONTO THE GYPSUM BOARD AND A MIN 2 IN. (51 MM) ONTO THE STEEL FLOOR UNITS OR SPRAY-APPLIED FIRE RESISTIVE MATERIAL ON THE STEEL FLOOR UNITS AND ON THE STRUCTURAL STEEL SUPPORT MEMBER.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-SP WB FIRESTOP JOINT SPRAY

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

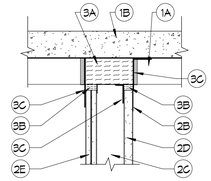
UL HW-D-0388

HEAD OF WALL

SYSTEM NO. HW-D-0569
SEPTEMBER 1, 2016
ASSEMBLY RATINGS - 1 AND 2 HR (SEE ITEMS 2)
NOMINAL JOINT WIDTH - 1 1/2 IN.
CLASS II MOVEMENT CAPABILITIES - 50% COMPRESSION OR EXTENSION
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



SECTION A-A



1. **FLOOR ASSEMBLY** — THE FIRE-RATED FLUTED STEEL DECK/CONCRETE FLOOR ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL D700 OR D900 SERIES FLOOR-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. THE FLOOR ASSEMBLY SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL FLOOR AND FORM UNITS*** — MAX 3 IN. (76 MM) DEEP GALV STEEL FLUTED FLOOR UNITS.
B. **CONCRETE** — MIN 2-1/2 IN. (64 MM) THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M³) CONCRETE, AS MEASURED FROM THE TOP PLANE OF THE FLOOR UNITS.

C. **SPRAY-APPLIED FIRE RESISTIVE MATERIALS*** — (OPTIONAL, NOT SHOWN) — PRIOR TO OR AFTER INSTALLATION OF THE STEEL CEILING RUNNERS (ITEM 2B) THE STEEL FLOOR UNITS MAY BE SPRAYED WITH A MIN 5/16 IN. (8 MM) TO MAX 1 3/4 IN. (48 MM) THICKNESS OF FIRE RESISTIVE MATERIAL.

GCP APPLIED TECHNOLOGIES INC — TYPE MK-6/HY

ISOLATEK INTERNATIONAL — TYPE 300

D. **STEEL ATTACHMENT CLIPS** — (OPTIONAL, NOT SHOWN) - USED TO SECURE CEILING RUNNER WHEN SPRAY-APPLIED FIRE RESISTIVE MATERIAL IS APPLIED TO FLOOR UNITS PRIOR TO INSTALLATION OF CEILING RUNNER OF WALL. Z-SHAPED CLIPS FORMED FROM 1 IN. (25 MM) WIDE STRIPS OF MIN 20 GA GALV STEEL. CLIPS TO BE SIZED TO EXTEND THROUGH THE THICKNESS OF THE SPRAY-APPLIED FIRE-RESISTIVE MATERIAL ON THE FLOOR UNITS WITH 1-1/2 IN. (38 MM) LONG UPPER AND LOWER LEGS. LEGS OF CLIPS FASTENED TO BOTTOM OF ROOF DECK (PRIOR TO APPLICATION OF SPRAY-APPLIED FIRE-RESISTIVE MATERIALS) WITH STEEL FASTENERS OR WELDS. CLIPS SPACED MAX 16 IN. (406 MM) OC AND EXTEND TO WITHIN 1/4 TO 3/4 IN. (6 TO 19 MM) FROM THE SURFACE OF THE WALL.

1A. **ROOF ASSEMBLY** — (NOT SHOWN) — AS AN ALTERNATE TO THE FLOOR ASSEMBLY, A FIRE RATED FLUTED STEEL DECK ROOF ASSEMBLY MAY BE USED. THE ROOF ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL P100 SERIES ROOF-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. THE HOURLY RATING OF THE ROOF ASSEMBLY SHALL BE EQUAL TO OR GREATER THAN THE HOURLY RATING OF THE WALL ASSEMBLY. THE ROOF ASSEMBLY SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL ROOF DECK** — MAX 3 IN. (76 MM) DEEP GALV STEEL FLUTED ROOF DECK.

B. **ROOF INSULATION** — MIN 2-1/4 IN. (57 MM) THICK POURED INSULATING CONCRETE, AS MEASURED FROM THE TOP PLANE OF THE STEEL ROOF DECK.

1B. **ROOF ASSEMBLY** — AS AN ALTERNATE TO ITEMS 1 AND 1A, A FIRE RATED PROTECTED FLUTED STEEL DECK ROOF ASSEMBLY MAY BE USED. THE ROOF ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL P100 SERIES ROOF-CEILING DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. THE HOURLY RATING OF THE ROOF ASSEMBLY SHALL BE EQUAL TO OR GREATER THAN THE HOURLY RATING OF THE WALL ASSEMBLY. THE ROOF ASSEMBLY SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **STEEL ROOF DECK** — MAX 3 IN. (76 MM) DEEP GALV STEEL FLUTED ROOF DECK.

B. **STEEL ATTACHMENT CLIPS** — (OPTIONAL, NOT SHOWN) - USED TO SECURE CEILING RUNNER WHEN SPRAY-APPLIED FIRE RESISTIVE MATERIAL IS APPLIED TO ROOF DECK PRIOR TO INSTALLATION OF CEILING RUNNER OF WALL. Z-SHAPED CLIPS FORMED FROM 1 IN. (25 MM) WIDE STRIPS OF MIN 20 GA GALV STEEL. CLIPS TO BE SIZED TO EXTEND THROUGH THE THICKNESS OF THE SPRAY-APPLIED FIRE-RESISTIVE MATERIAL ON THE ROOF DECK WITH 1-1/2 IN. (38 MM) LONG UPPER AND LOWER LEGS. LEGS OF CLIPS FASTENED TO BOTTOM OF ROOF DECK (PRIOR TO APPLICATION OF SPRAY-APPLIED FIRE-RESISTIVE MATERIALS) WITH STEEL FASTENERS OR WELDS. CLIPS SPACED MAX 16 IN. (406 MM) OC AND EXTEND TO WITHIN 1/4 TO 3/4 IN. (6 TO 19 MM) FROM THE SURFACE OF THE WALL.

C. **SPRAY—APPLIED FIRE RESISTIVE MATERIALS*** — (NOT SHOWN)—PRIOR TO OR AFTER THE INSTALLATION OF THE STEEL CEILING RUNNERS, THE ROOF ASSEMBLY SHALL BE SPRAYED WITH THE TYPE AND THICKNESS OF FIRE RESISTIVE MATERIAL INDICATED IN THE INDIVIDUAL P700 SERIES DESIGN.
ISOLATEK INTERNATIONAL — TYPE 300

GCP APPLIED TECHNOLOGIES INC — TYPE MK-6/HY

2. **SHAFT WALL ASSEMBLY** — THE 1 HR OR 2 HR FIRE RATED GYPSUM BOARD/STEEL STUD SHAFT WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U400, V400 OR W400 SERIES WALL AND PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. **FLOOR AND WALL RUNNERS** — (NOT SHOWN) - J-SHAPED RUNNER, EQUAL IN WIDTH TO STEEL STUDS (ITEM 2C), WITH UNEQUAL LEGS OF 1 IN. (25 MM) AND 2 IN. (51 MM). FABRICATED FROM 24 MSG GALV STEEL. RUNNERS POSITIONED WITH SHORT LEG TOWARD FINISHED SIDE OF WALL. RUNNERS ATTACHED TO FLOOR WITH STEEL FASTENERS LOCATED NOT GREATER THAN 2 IN. (51 MM) FROM ENDS AND NOT GREATER THAN 24 IN. (610 MM) OC.

B. **CEILING RUNNER** — CEILING RUNNER OF WALL ASSEMBLY SHALL CONSIST OF GALV STEEL CHANNEL SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2C). FLANGE HEIGHT OF CEILING RUNNER TO BE MIN 1/4 IN. (6 MM) GREATER THAN MAX EXTENDED JOINT WIDTH. CEILING RUNNER INSTALLED PERPENDICULAR TO DIRECTION OF FLUTED STEEL DECK AND SECURED TO STEEL DECK VALLEYS WITH STEEL FASTENERS OR WELDS SPACED MAX 24 IN. (610 MM) OC OR TO STEEL ATTACHMENT CLIPS (ITEM 1D) WITH STEEL FASTENERS SPACED MAX 16 IN. (406 MM) OC.

B1. **LIGHT GAUGE FRAMING* - SLOTTED CEILING RUNNER** — AS AN ALTERNATE TO THE CEILING RUNNER IN ITEM 2B. SLOTTED CEILING RUNNER TO CONSIST OF GALV STEEL CHANNEL WITH SLOTTED FLANGES SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2C). FLANGE HEIGHT OF SLOTTED CEILING RUNNER SHALL BE MIN 1/4 IN. (6 MM) GREATER THAN MAX EXTENDED JOINT WIDTH. SLOTTED CEILING RUNNER INSTALLED PERPENDICULAR TO DIRECTION OF FLUTED STEEL DECK AND SECURED TO STEEL DECK VALLEYS BEFORE OR AFTER OPTIONAL SPRAY-APPLIED FIRE RESISTIVE MATERIAL IS USED WITH STEEL MASONRY ANCHORS SPACED MAX 24 IN. (610 MM) OC. THE USE OF WELDS TO SECURE THE CEILING RUNNER MAY ONLY BE USED PRIOR TO THE INSTALLATION OF THE OPTIONAL SPRAY-APPLIED MATERIAL.
BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK, SLPTRK32S

CALIFORNIA EXPANDED METAL PRODUCTS CO — GST

CLARKDIETRICH BUILDING SYSTEMS — TYPES SLT, SLT-H

MARINO/WARE, DIV OF WARE INDUSTRIES INC — TYPE SLT

METAL-LITE INC — THE SYSTEM

RAM SALES L L C — RAM SLOTTED TRACK

SCAFCO STEEL STUD MANUFACTURING CO — SLOTTED TRACK

TELLING INDUSTRIES L L C — TRUE-ACTION DEFLECTION TRACK

B2. **LIGHT GAUGE FRAMING* — SLOTTED CEILING RUNNER** — AS AN ALTERNATE TO THE CEILING RUNNER IN ITEM 2B, SLOTTED CEILING RUNNER TO CONSIST OF GALV STEEL CHANNEL SIZED TO ACCOMMODATE STEEL STUDS (ITEM 2C). FLANGE HEIGHT OF SLOTTED CEILING RUNNER SHALL BE 3-1/4 IN. (83 MM) WITH 2 IN. (51 MM) DEEP SLOTS. SLOTTED CEILING RUNNER INSTALLED PERPENDICULAR TO DIRECTION OF FLUTED STEEL DECK AND SECURED TO STEEL DECK VALLEYS AS DESCRIBED IN ITEM B1.
SCAFCO STEEL STUD MANUFACTURING CO — SLOTTED TRACK-TYPE SDLT

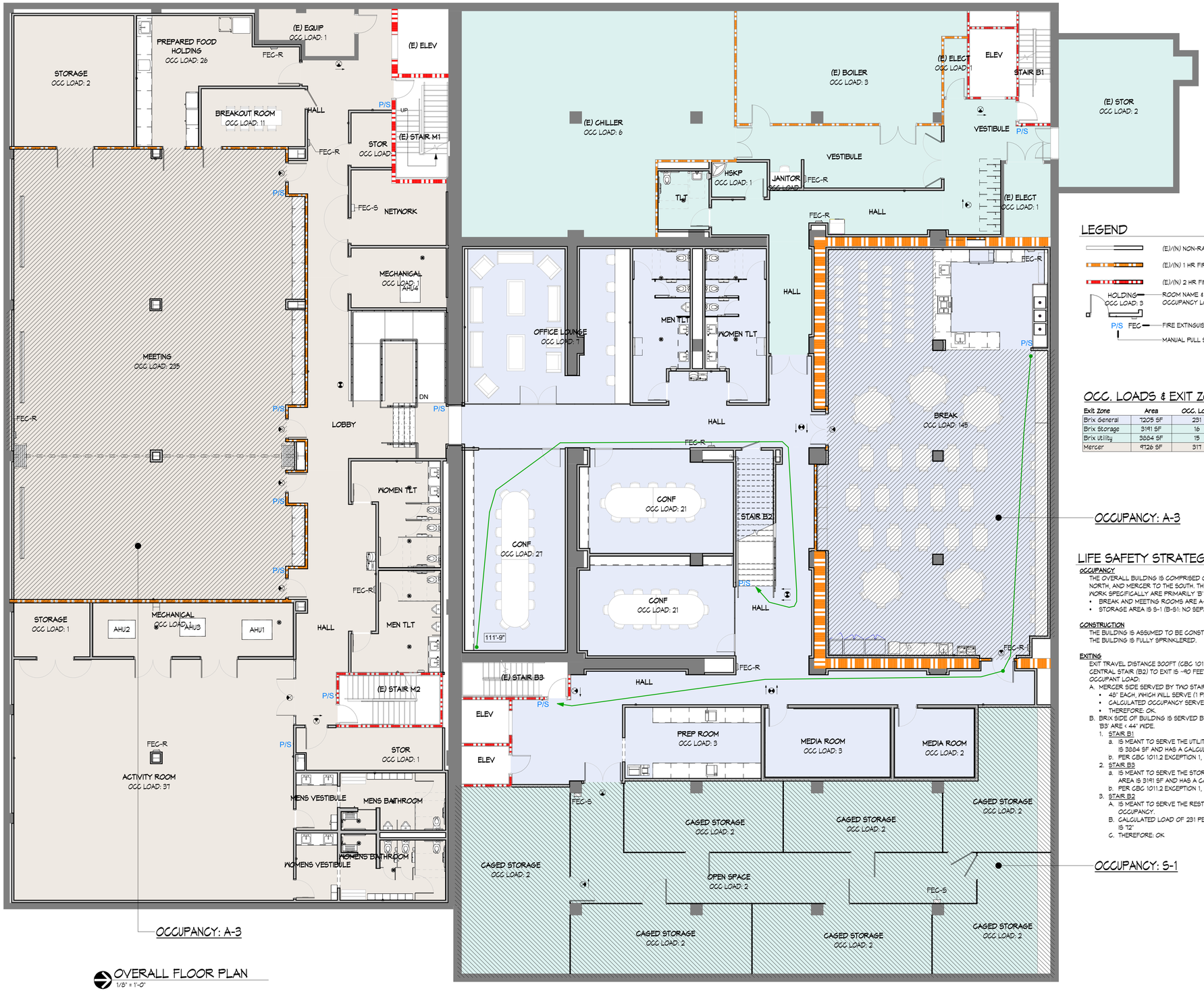
C. **STEEL STUDS** — C-H-SHAPED STUDS, MIN 4 IN. (102 MM) WIDE BY 1-1/2 IN. (38 MM) DEEP, FABRICATED FROM 25 MSG GALV STEEL, CUT TO LENGTHS 3/4 TO 1 IN. (19 TO 25 MM) LESS THAN FLOOR TO CEILING HEIGHT AND SPACED 24 IN. (610 MM) OC. WHEN SLOTTED CEILING RUNNER SPECIFIED IN ITEM 2B2 IS USED THE C-H-SHAPED STUDS CUT N LENGTHS 3/4 TO 1-3/4 IN. (19 TO 44 MM) LESS THAN FLOOR TO CEILING HEIGHT.

D. **GYPSUM BOARD*** — NOM 1 IN. (25 MM) THICK GYPSUM BOARD LINER PANELS. PANELS CUT 1-1/2 IN. (38 MM) LESS N LENGTH THAN FLOOR TO CEILING HEIGHT. VERTICAL EDGES INSERTED IN H-SHAPED SECTION OF C-H STUDS. AT THE ENDS OF THE ASSEMBLY, THE FREE EDGE OF THE END PANELS ARE ATTACHED TO THE LONG LEG OF VERTICAL J-RUNNERS (ITEM 2A) WITH 1-5/8 IN. (41 MM) LONG TYPE S STEEL SCREWS SPACED MAX 12 IN. (305 MM) OC.

E. **GYPSUM BOARD*** — NOM 5/8 IN. (16 MM) THICK GYPSUM BOARD APPLIED VERTICALLY IN ONE OR TWO LAYERS FOR 1 HR AND 2 HR FIRE RATED ASSEMBLIES, RESPECTIVELY. PANELS CUT 1-1/2 IN. (38 MM) LESS N LENGTH THAN FLOOR TO CEILING HEIGHT. THE SCREWS ATTACHING THE GYPSUM BOARD LAYERS TO THE C-H STUDS SHALL BE LOCATED 1 TO 1-1/2 IN. (25 TO 38 MM) BELOW THE BOTTOM OF THE CEILING RUNNER OR SLOTTED CEILING TRACK. NO GYPSUM BOARD ATTACHMENT SCREWS ARE TO PENETRATE THE CEILING RUNNER OR SLOTTED CEILING TRACK.
THE HOURLY RATINGS OF THE JOINT SYSTEM ARE EQUAL TO THE HOURLY FIRE RATING OF THE WALL.

3. **JOINT SYSTEM — MAX SEPARATION BETWEEN BOTTOM OF FLUTED DECK SURFACE AND TOP OF GYPSUM BOARD (AT THE TIME OF INSTALLATION OF THE JOINT SYSTEM) IS 1 1/2 IN. (38 MM). THE JOINT SYSTEM IS DESIGNED TO ACCOMMODATE A MAX 50 PERCENT COMPRESSION OR EXTENSION FROM ITS INSTALLED WIDTH.** THE JOINT SYSTEM CONSISTS OF THE FOLLOWING:

A. **FORMING MATERIAL*** — MIN 4 PCF (64 KG/M³) DENSITY MINERAL WOOL BATT INSULATION SIZED TO ATTAIN A MIN COMPRESSION RATE OF 25 PERCENT IN THE THICKNESS DIRECTION AND FIRMLY PACKED TO COMPLETELY FILL THE FLUTES OF THE STEEL FLOOR UNITS OR ROOF DECK ABOVE THE CEILING RUNNER AS A PERMANENT FORM. THE MINER



OVERALL FLOOR PLAN

1/8" = 1'-0"

LEGEND

- (E)/(N) NON-RATED PARTITION
- (E)/(N) 1 HR FIRE BARRIER
- (E)/(N) 2 HR FIRE BARRIER
- HOLDING OCC LOAD: 3 — ROOM NAME & OCCUPANCY LOAD (IF > 0)
- P/S FEC — FIRE EXTINGUISHER CABINET
- MANUAL PULL STATION

OCC. LOADS & EXIT ZONES

Exit Zone	Area	OCC. Load	Stair Serving
Brix General	7205 SF	231	Stair B2
Brix Storage	3191 SF	16	Stair B3
Brix Utility	3884 SF	15	Stair B1
Mercer	9726 SF	317	Stair M1 or M2

LIFE SAFETY STRATEGY

OCCUPANCY

THE OVERALL BUILDING IS COMPRISED OF TWO SEPARATE BUILDINGS, BRIX TO THE NORTH, AND MERCER TO THE SOUTH. THE BUILDING IN GENERAL AND THE AREA OF WORK SPECIFICALLY ARE PRIMARILY 'B' OCCUPANCY, WITH SOME 'A-3' AND SOME 'S-1'.

- BREAK AND MEETING ROOMS ARE A-3 (A-B: 1 HOUR SEPARATION)
- STORAGE AREA IS S-1 (B-S1: NO SEPARATION

CONSTRUCTION

THE BUILDING IS ASSUMED TO BE CONSTRUCTION TYPE 'IIA'.
THE BUILDING IS FULLY SPRINKLERED.

EXITING

EXIT TRAVEL DISTANCE 300FT (CBC 1017.2). DISTANCE ON FIRST FLOOR FROM CENTRAL STAIR (B2) TO EXIT IS ~90 FEET; STAIRS ARE 25 FEET : 115 FEET.
OCCUPANT LOAD:

A. MERCER SIDE SERVED BY TWO STAIRS, 'M1' AND 'M2'
   - 48" EACH, WHICH WILL SERVE (1 PER/0.3") 160 PEOPLE EACH, OR 320 TOTAL.
   - CALCULATED OCCUPANCY SERVED IS 314.
   - THEREFORE: OK.
B. BRIX SIDE OF BUILDING IS SERVED BY THREE STAIRS: 'B1', 'B2' AND 'B3'; 'B1' AND 'B3' ARE < 44" WIDE.
   1. STAIR B1
      a. IS MEANT TO SERVE THE UTILITY AREA INDICATED ON THIS SHEET. THIS AREA IS 3884 SF AND HAS A CALCULATED OCCUPANT LOAD OF 15 PEOPLE.
      b. PER CBC 1011.2 EXCEPTION 1, < 50 PPL SERVED, THIS STAIR IS ACCEPTABLE
   2. STAIR B3
      a. IS MEANT TO SERVE THE STORAGE AREA INDICATED ON THIS SHEET. THIS AREA IS 3191 SF AND HAS A CALCULATED OCCUPANT LOAD OF 16 PEOPLE
      b. PER CBC 1011.2 EXCEPTION 1, < 50 PPL SERVED, THIS STAIR IS ACCEPTABLE
   3. STAIR B2
      A. IS MEANT TO SERVE THE REST OF BRIX, WHICH IS ~7200 SF, MIXED OCCUPANCY.
      B. CALCULATED LOAD OF 231 PEOPLE. AT 0.3"/PERSON = 69". EXISTING STAIR IS 72"
      C. THEREFORE: OK

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
NO. C38020
RENEWAL: 8/23
STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N. BRAWLEY AVE.
FRESNO, CA 93711
559-369-6504
info@muratoreassociates.com

CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

FLS/ACCESS

SHEET NUMBER

A2.01

INTERNAL NUMBER: 024

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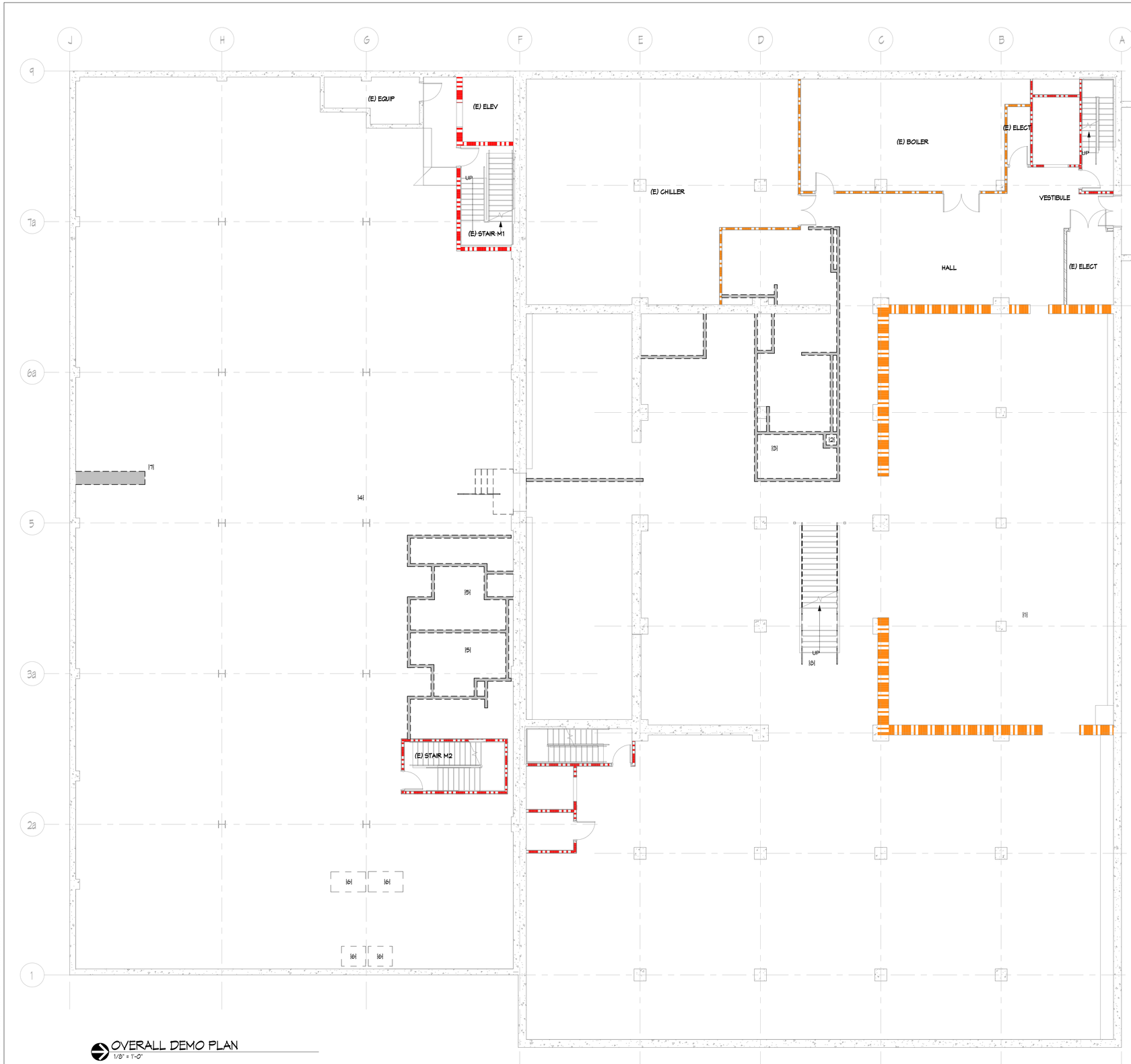

OVERALL DEMO PLAN
1/8" = 1'-0"

KEYED DEMO NOTES

|1|	PREP FOR LEVELING OF THE FLOOR AREA
|2|	REMOVE (E) PLUMBING FIXTURES TO PREPARE FOR (N) FLOORING
|3|	DEMO ALL (E) STUDS IN THE AREA
|4|	DEMO ALL (E) CURBS IN THE AREA
|5|	REMOVE (E) CURBS, INFILL DEPRESSED SLAB - ROUGHEN (E) DEPRESSED AREA, APPLY A BONDING AGENT (IF REQUIRED), POUR NEW TOPPING SLAB.
|6|	SAW CUT FLOORING FOR SHOWER RECEPTOR/(N) TILING
|7|	REMOVE EXISTING RAISED CONCRETE PLATFORM. INFILL SLAB (SEE DETAIL 3/A9.01).
|8|	EXISTING STAIRS TO REMAIN, REMOVE EXISTING GUARDS AND HANDRAILS, PREP STRINGERS FOR NEW RAILING ATTACHMENT

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03/17/2023
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DEVELOPMENT SERVICES

DEMO NOTES

1. DEMO EXISTING FLOORING IN AREAS OF WORK, PREP CONCRETE FOR (N) FLOORING.
2. REMOVE ALL EXISTING CEILINGS, INCLUDING HVAC GRILLES, LIGHTS, ETC. WITHIN THE AREA OF WORK UNLESS NOTED OTHERWISE.
3. REMOVAL OF EXISTING DOORS, FRAMES, FURNITURE, CABINETRY, EQUIPMENT AND FIXTURES SHALL BE UNDERTAKEN IN SUCH A WAY AS TO NOT MAKE THEM UNSUITABLE FOR FUTURE USE. STORE ITEMS AS DIRECTED BY THE OWNER.
4. EXISTING FIRE SPRINKLER SYSTEM SHALL REMAIN - HEADS TO BE RE-LOCATED AS REQUIRED BY THE NEW WORK.
5. THE SEQUENCING AND LOCATIONS OF THE TEMPORARY CONSTRUCTION BARRIER(S) WITHIN THE AREA OF WORK SHALL BE REVIEWED WITH FIELD FIRE MARSHAL PRIOR TO START OF ANY WORK AFFECTING THESE AREAS
6. ALL TEMPORARY CONSTRUCTION BARRIER(S) SHALL BE SEQUENCED SUCH THAT A MINIMUM 6'-0" PATHWAY IS AVAILABLE AT ALL TIMES AT CORRIDORS REQ'D TO HAVE 8'-0" WIDTH AND MINIMUM 4'-0" PATHWAY IS AVAILABLE AT ALL OTHERS.
7. WHERE THE INTEGRITY OF THE EXISTING 1 HOUR FIRE RATED CONSTRUCTION HAS BEEN COMPROMISED BY NEW CONSTRUCTION, ONE LAYER OF 5/8" TYPE 'X' GYP. BD. COVERING THE ENTIRE OPENING IS AN ACCEPTABLE ALTERNATE SO LONG AS A FIRE SPRINKLER SYSTEM OR FIRE ALARM SYSTEM IS IN OPERATION AT ALL TIMES.

LEGEND

- (E)/(D) 1 HR. FIRE BARRIER
- (E)/(D) 2 HR. FIRE BARRIER
- (E)/(D) NON-RATED PARTITION
- DEMO DOOR

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
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CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

BASEMENT DEMO PLAN

SHEET NUMBER

A3.01

INTERNAL NUMBER: 0.01

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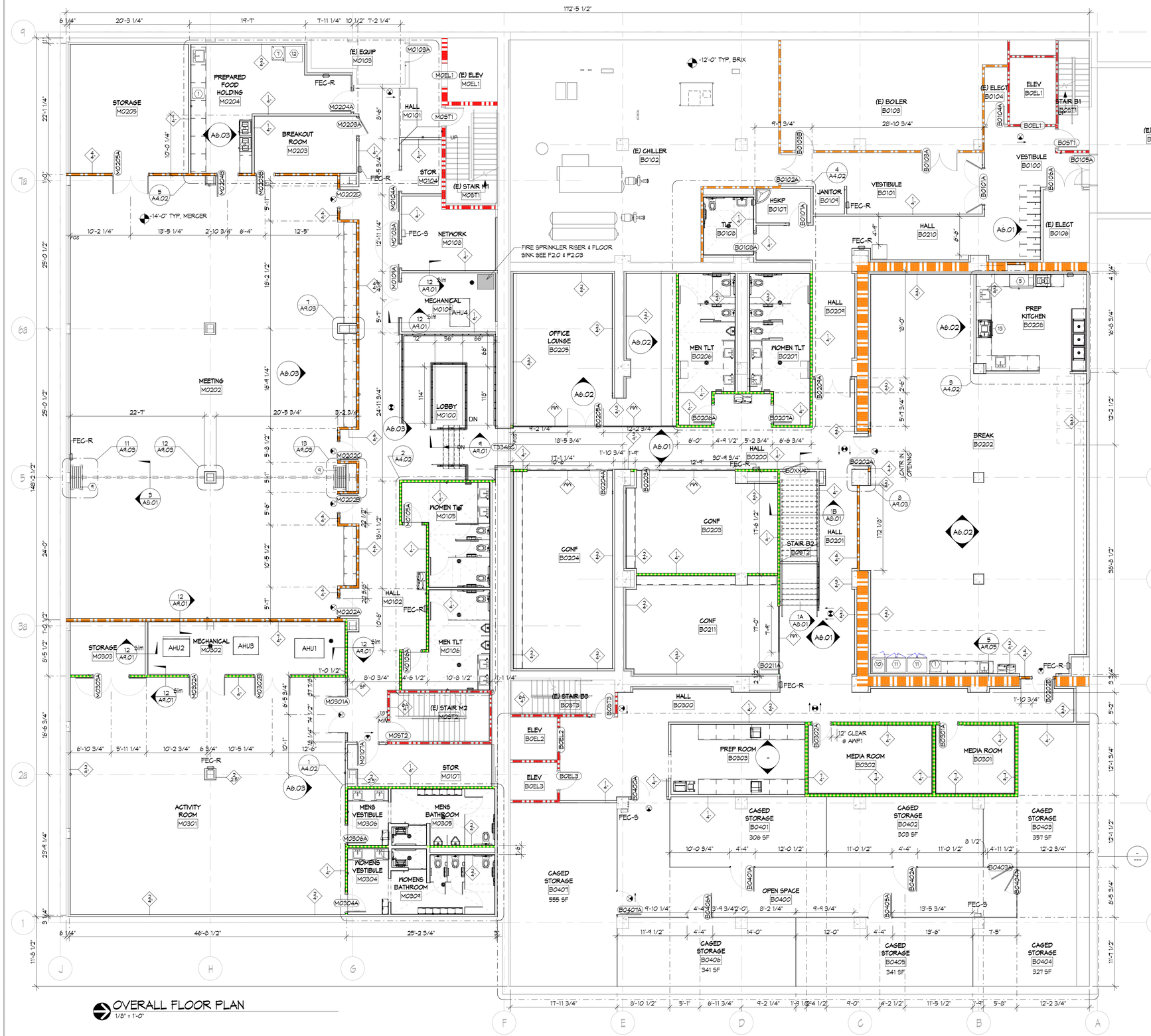

OVERALL FLOOR PLAN

1/8" = 1'-0"

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

GENERAL NOTES

1. SEE MECHANICAL & ELECTRICAL DRAWINGS FOR SPECIFIC SCOPE OF WORK IN THESE TRADES.
2. DEMOLITION AND RECONSTRUCTION RATED PARTITIONS WILL OCCUR WITHIN ONE SINGLE 8-HOUR SHIFT, SUBJECT TO THE PRIOR REVIEW AND APPROVAL OF THIS APPROACH BY THE FELD FIRE MARSHAL. WORK MAY NOT PROCEED UNTIL THAT APPROVAL HAS BEEN OBTAINED. IN THE EVENT THE WORK CANNOT BE COMPLETED IN THAT SINGLE SHIFT, A RATED TEMPORARY BARRIER OF THE SAME FIRE RESISTANT RATING OF THE WALL SHALL BE PROVIDED. PER 2019 C.F.C. SECTION 703.1.
3. ALL AREAS IN WHICH WORK IS DONE SHALL BE VACATED AND SEALED FROM OCCUPIED AREAS DURING DURATION OF WORK. PHASING & CONTROL OF WORK AREA WILL BE REVIEWED WITH OWNER TO ADDRESS CONTAINMENT, STAFF SAFETY AND ANY OTHER CONCERNS PRIOR TO COMMENCEMENT.
4. ANY DAMAGE TO FIRE RATED CONSTRUCTION SHALL BE REPAIRED TO MAINTAIN EXISTING RATING. ALL PENETRATIONS OF EXISTING RATED CONSTRUCTION SHALL BE CONSTRUCTED TO MAINTAIN EXISTING PROTECTION.
5. TYPICAL DIMENSIONS ARE TO FACE OF STUD (SOLID LINE) OR CENTER OF STUD (DASH-DOT). DIMENSIONS IN *ITALICS* ARE TO FACE OF FINISH, AND MAY ALSO BE NOTED "FOF".
6. INFILL EXISTING OPENINGS IN RATED CONCRETE WALLS PER UL SYSTEM W420. INFILL TO EXTENT OF REQUIRED ANNULAR CLEARANCE WHERE DUCT PENETRATIONS OR FIRE DAMPERS OCCUR, SEE MECHANICAL.

LEGEND

- (E)/(N) FURRED CONSTRUCTION
- (E)/(N) NON-RATED PARTITION
- (E)/(N) FULL HEIGHT PARTITION
- (E)/(N) 1 HR FIRE BARRIER
- (E)/(N) 2 HR FIRE BARRIER
- HOLDING 2053 — ROOM NAME & NUMBER
- 5 / SHT — SECTION OR DETAIL CALLOUT, ELEVATION SIMILAR
- 205A — (N) DOOR, DOOR NUMBER
- FEC — FIRE EXTINGUISHER CABINET
- 4 / A6.01 — PARTITION TYPE, SEE SHEET A9.01

EQUIPMENT SCHEDULE - 1

ITEM	DESCRIPTION	MANUF.	MODEL
1	ICE MACHINE	FOLLETT CORPORATION	25CI425A-L 25LB. COUNTERTOP, AIR COOLED, LEVER ACTION
2	WIRE RACK SHELVING	METRO	60X18X72
3	LOCKERS	ASI STORAGE SOLN	THREE TIER
4	WALL MTD BIKE RACK	DERO BIKE RACKS	ULTRA SPACE SAVER SINGLE
5	FULL SIZE REFR/FREEZER	TRUE	TR-48SB6-S6-B
6	ICE MAKER	ICE-O-MATIC	ICEU36
7	CABINET, WARMING / HOLDING	ALTO-SHAAM	1200-UP
8	MICROWAVE OVEN		
9	OPERABLE PARTITION	MODERFOLD	ACOUSTISEAL PREMIER PAIRED PANEL
10	FREEZER, SWING DOOR STD LOOK	TRUE	GDM-23F-HC-TSL01
11	REFRIGERATOR, SWING DOOR STD LOOK	TRUE	GDM-35-HC-TSL01
12	REFRIGERATOR / FREEZER		
13	INDUCTION RANGE	WOLF	
14	KEURIG COFFEE MACHINE	KEURIG	
15	ACCESS DOOR	Nystrom	NON RATED, 1" FLANGE, WHITE POWDER COAT, KEYED LATCH, 24"X24"
16	VENT HOOD	GREENHECK	GXEV-60.00-S
FEC-R	RECESSED EXTINGUISHER CABINET	JL Industries	1032 STAINLESS, VERTICAL DUO GLAZED, ROLLER CATCH, 10# ABC EXTING.
FEC-S	SURF MTD EXTINGUISHER CABINET	JL Industries	1033 STAINLESS, VERTICAL DUO GLAZED, ROLLER CATCH, 10# ABC EXTING.

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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CONSULTANT STAMP

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REV.	DESCRIPTION	DATE

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

BASEMENT FLOOR PLAN

SHEET NUMBER

A4.01

INTERNAL NUMBER: 624

11/30/2022 8:13:29 PM
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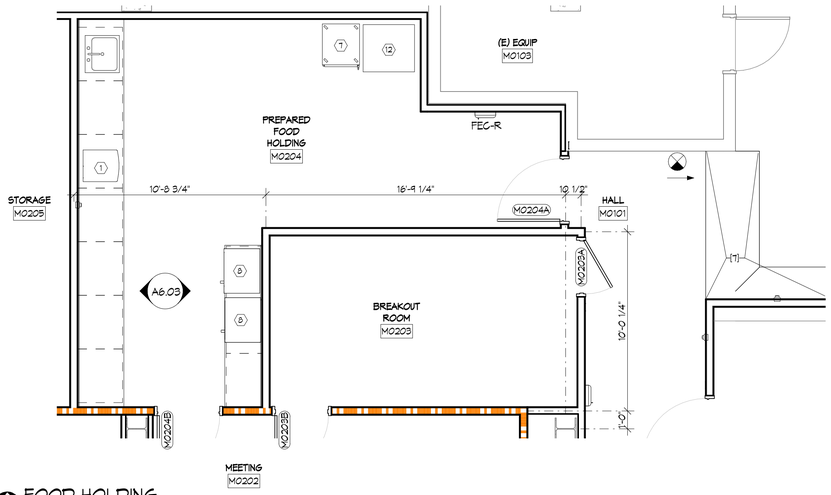
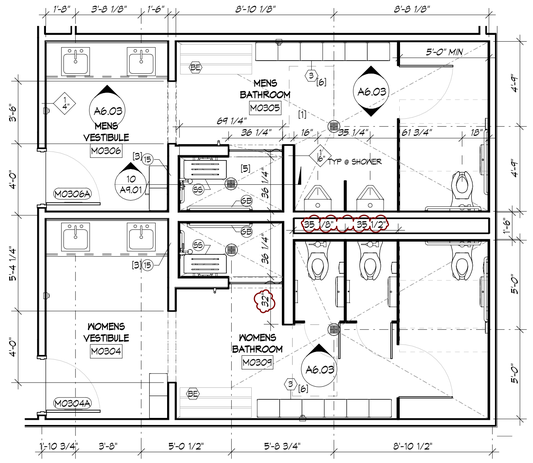
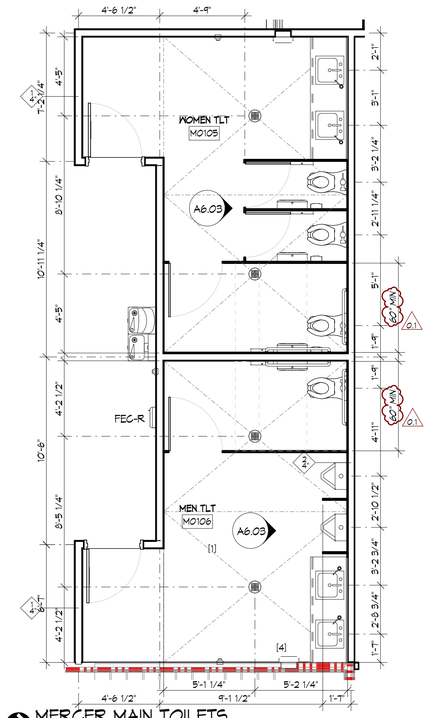


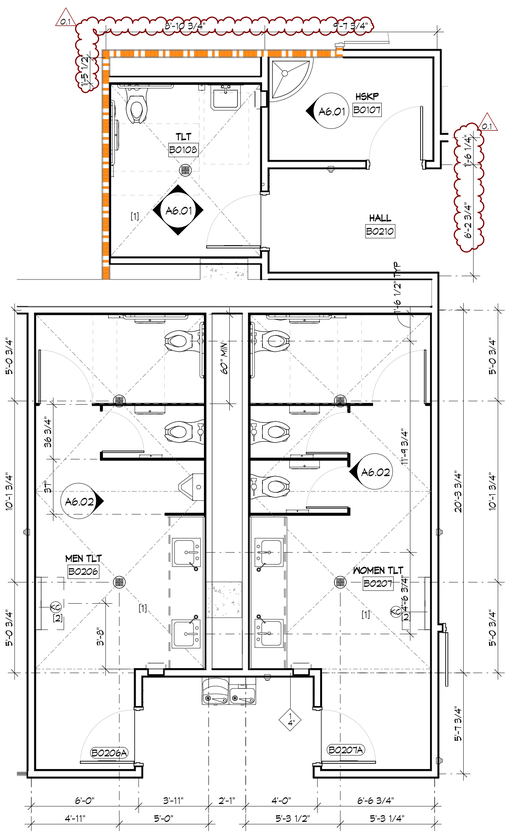
FOOD HOLDING
1/4" = 1'-0"



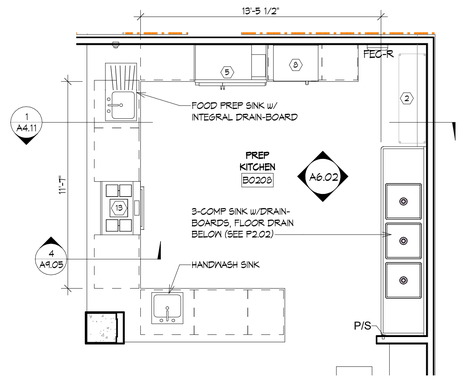
MERCER LOCKER ROOM BATHROOM
1/4" = 1'-0"



MERCER MAIN TOILETS
1/4" = 1'-0"



BRIX MAIN BATHROOM
1/4" = 1'-0"



BRIX KITCHEN
1/4" = 1'-0"

KEYED FLOOR NOTES

[1]	SLOPE FLOORS TO DRAIN, MAX 1/4" PER FOOT
[2]	INSTALL BABY CHANGING STATION PER MFR INSTRUCTIONS. HANDLE SHALL BE 42 1/4" A.F.F. PROVIDE BACKING AT INSTALLATION.
[3]	INSTALL PLUMBING ACCESS PANEL IN A CONCEALED LOCATION, TYP. AT BOTH SHOWERS.
[4]	FIVE SIDE DETAIL AT SEMI RECESSED TOWEL DISPENSER
[5]	IN SHOWER, SLOPE FLOORS TO DRAIN, 1/8" PER FOOT TYP, MAX 1/4" PER FOOT.
[6]	AT LEAST ONE OF THE LOCKERS SHALL MEET THE REQUIREMENTS OF ACCESSIBILITY AS DESCRIBED IN CH 11B-225.2.1 AND 11B-811.
[7]	CUT OR GRIND OUT EXISTING STEP TRANSITION IN SLAB IN THE APPROXIMATE AREA SHOWN. PATCH AREA WITH NEW SLAB, FLUSH WITH EXISTING SLABS AT TOP & BOTTOM OF TRANSITION AND HAVING A SMOOTH, CONTINUOUS SLOPE OF NO MORE THAN 1/2" PER 12'.

EQUIPMENT SCHEDULE - ⟨1⟩

ITEM	DESCRIPTION	MANUF.	MODEL
1	ICE MACHINE	FOLLETT CORPORATION	25CI425A-L 25LB. COUNTERTOP, AIR COOLED, LEVER ACTION
2	WIRE RACK SHELVING	METRO	60x18x72
3	LOCKERS	ASI STORAGE SOLN	THREE TIER
4	WALL MTD BIKE RACK	DERO BIKE RACKS	ULTRA SPACE SAVER SINGLE
5	FULL SIZE REFR/FREEZER	TRUE	TR-49SB6-SS-B
6	ICE MAKER	ICE-O-MATIC	ICEU36
7	CABINET, WARMING / HOLDING	ALTO-SHAAM	1200-UP
8	MICROWAVE OVEN		
9	OPERABLE PARTITION	MODERFOLD	ACOUSTISEAL PREMIER PAIRED PANEL
10	FREEZER, SWING DOOR STD LOCK	TRUE	GDM-23F-HC-T5L01
11	REFRIGERATOR, SWING DOOR STD LOCK	TRUE	GDM-35-HC-T5L01
12	REFRIGERATOR / FREEZER		
13	INDUCTION RANGE	WOLF	
14	KEURIG COFFEE MACHINE	KEURIG	
15	ACCESS DOOR	Nystrom	NON RATED, 1" FLANGE, WHITE POWDER COAT, KEYED LATCH, 24"x24"
16	VENT HOOD	GREENHECK	GXEV-60.00-S
FEC-R	RECESSED EXTINGUISHER CABINET	JL Industries	1032 STAINLESS, VERTICAL DUO GLAZED, ROLLER CATCH, 10# A:B:C EXTING.
FEC-S	SURF MTD EXTINGUISHER CABINET	JL Industries	1033 STAINLESS, VERTICAL DUO GLAZED, ROLLER CATCH, 10# A:B:C EXTING.

TOILET ACCESSORIES

ITEM	DESCRIPTION	MANUF.	MODEL
A1	AUTO FOAM SOAP DISPENSER	BOBRICK	B-2013, FOAM SOAP
A2	MANUAL FOAM SOAP DISPENSER	BOBRICK	B-8236
B2	TOWEL DISPENSER	GEORGIA-PACIFIC	enMotion
GB	GRAB BAR	BOBRICK	8806 - 1 1/2" DIAM.
KC	KOALA BABY CHANGING STATION	BOBRICK	KB110-SSWM, STAINLESS SURFACE MTD.
RH	ROBE HOOK	BOBRICK	B-76117
SD	SEAT COVER DISPENSER	BRADLEY CORP.	583
SN	SANITARY NAPKIN DISPOSAL	BOBRICK	B-270
SS	SHOWER SEAT	BRADLEY CORP.	9562, WHITE PHENOLIC
TP	TOILET PAPER DISPENSER (2 JUMBO-ROLLS)	GEORGIA-PACIFIC	59209

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
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RENEWAL: 8/23
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CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE
0.1	BACKCHECK	8/15/2022

DATE: 11/11/22
SCALE: 1/4" = 1'-0"
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

ENLARGED PARTIAL FLOOR PLANS

SHEET NUMBER

BC01
A4.02

INTERNAL NUMBER: 024

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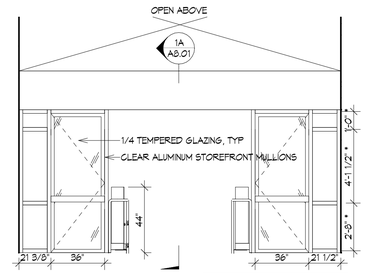
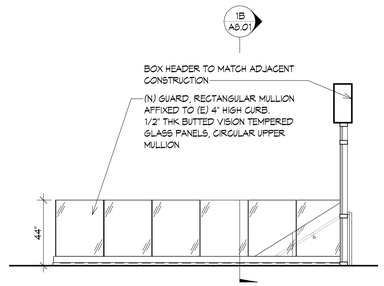
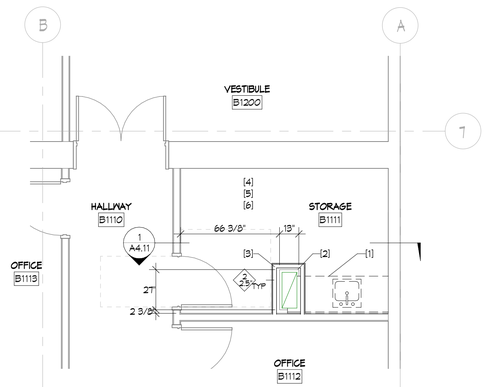


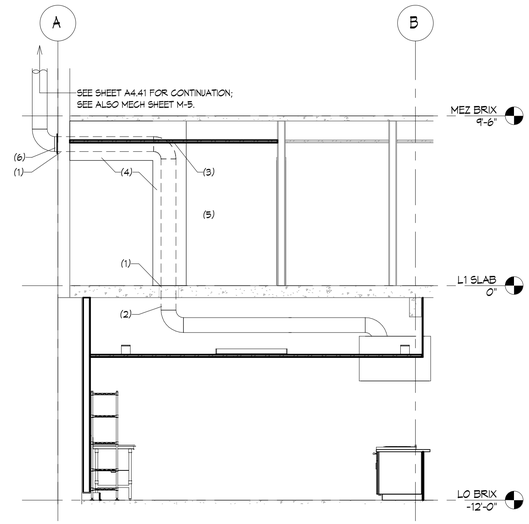
EAST
B1101 - PRIVATE LOBBY
1/4" = 1'-0"



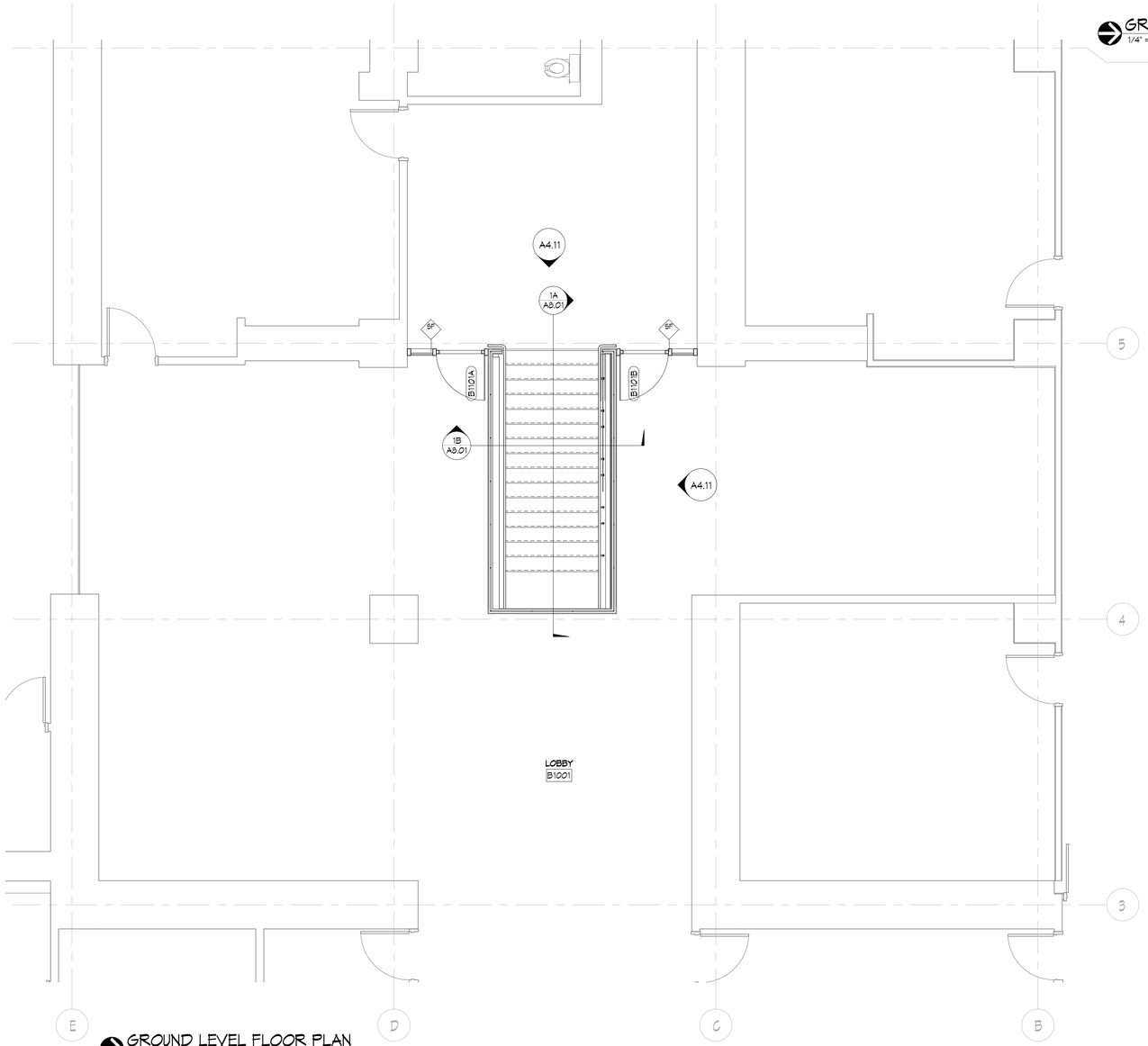
SOUTH
B1001-S - PUBLIC LOBBY
1/4" = 1'-0"



GROUND FLOOR PLAN (CONTINUED)
1/4" = 1'-0"



1 KITCHEN HOOD DUCT
1/4" = 1'-0"



GROUND LEVEL FLOOR PLAN
1/4" = 1'-0"

KEYED FLOOR NOTES

[1]	EXISTING CASEWORK (UPPER & LOWER) & SINK TO BE DEMOLISHED. REMOVE PLUMBING FIXTURE AND CAP SUPPLY AND WASTE IN WALL. PATCH GYPSUM BOARD TO MATCH EXISTING.
[2]	SAWCUT FLOOR FOR EXHAUST DUCT. VERIFY EXACT SIZE AND LOCATION IN FIELD.
[3]	TYPICAL FURRED WALL CONSTRUCTION, USING 2 1/2" STUDS 25ga MINIMUM, AROUND DUCT AND FORMING SOFFIT.
[4]	TRIM CEILING GRID AS REQUIRED TO ACCOMODATE NEW CHASE AND SOFFIT CONSTRUCTION. RELOCATED EXISTING 2x4 LIGHT FIXTURE TO ADJACENT TILE LOCATION.
[5]	TRIM CARPET TO ACCOMODATE NEW CHASE. INSTALL NEW TOP-SET BASE TO MATCH EXISTING ADJACENT COLOR AND PROFILE.
[6]	REMOVE CHAIR RAIL ENTIRE EAST WALL. PATCH ANY DAMAGE TO GYP BOARD AND FINISH TO LEVEL 4. ENTIRE WALL TO BE REPAINTED TO MATCH EXISTING ADJACENT WALL COLOR UPON COMPLETION OF WORK IN AREA.

KEYED SECTION NOTES

(1)	SECTION SHOWS APPROXIMATE LOCATION AND ROUTING OF DUCT, SEE MECHANICAL AND FIELD VERIFY LOCATIONS PRIOR TO SAW-CUTTING OR CORING.
(2)	DUCT TO BE WRAPPED WITH FIRE RESISTIVE DUCT WRAP, 3M FIRE BARRIER 615+ OR EQUAL.
(3)	TRIM CEILING GRID AS REQUIRED TO ACCOMODATE NEW CHASE AND SOFFIT CONSTRUCTION. RELOCATED EXISTING 2x4 LIGHT FIXTURE TO ADJACENT TILE LOCATION.
(4)	TYPICAL FURRED WALL CONSTRUCTION, USING 2 1/2" STUDS 25ga MINIMUM, AROUND DUCT AND FORMING SOFFIT.
(5)	REMOVE EXISTING CHAIR RAIL THIS WALL. PATCH ANY DAMAGE TO GYP BOARD AND FINISH TO LEVEL 4. ENTIRE WALL TO BE REPAINTED TO MATCH EXISTING ADJACENT WALL COLOR UPON COMPLETION OF WORK IN AREA.
(6)	SEAL DUCTWORK AT EXTERIOR WALL W/GALV. SHEET METAL FLANGE SET IN TWO CONTINUOUS BEADS OF MASTIC SEALANT.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
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1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
GROUND LEVEL FLOOR PLAN

SHEET NUMBER
A4.11

INTERNAL NUMBER: 029

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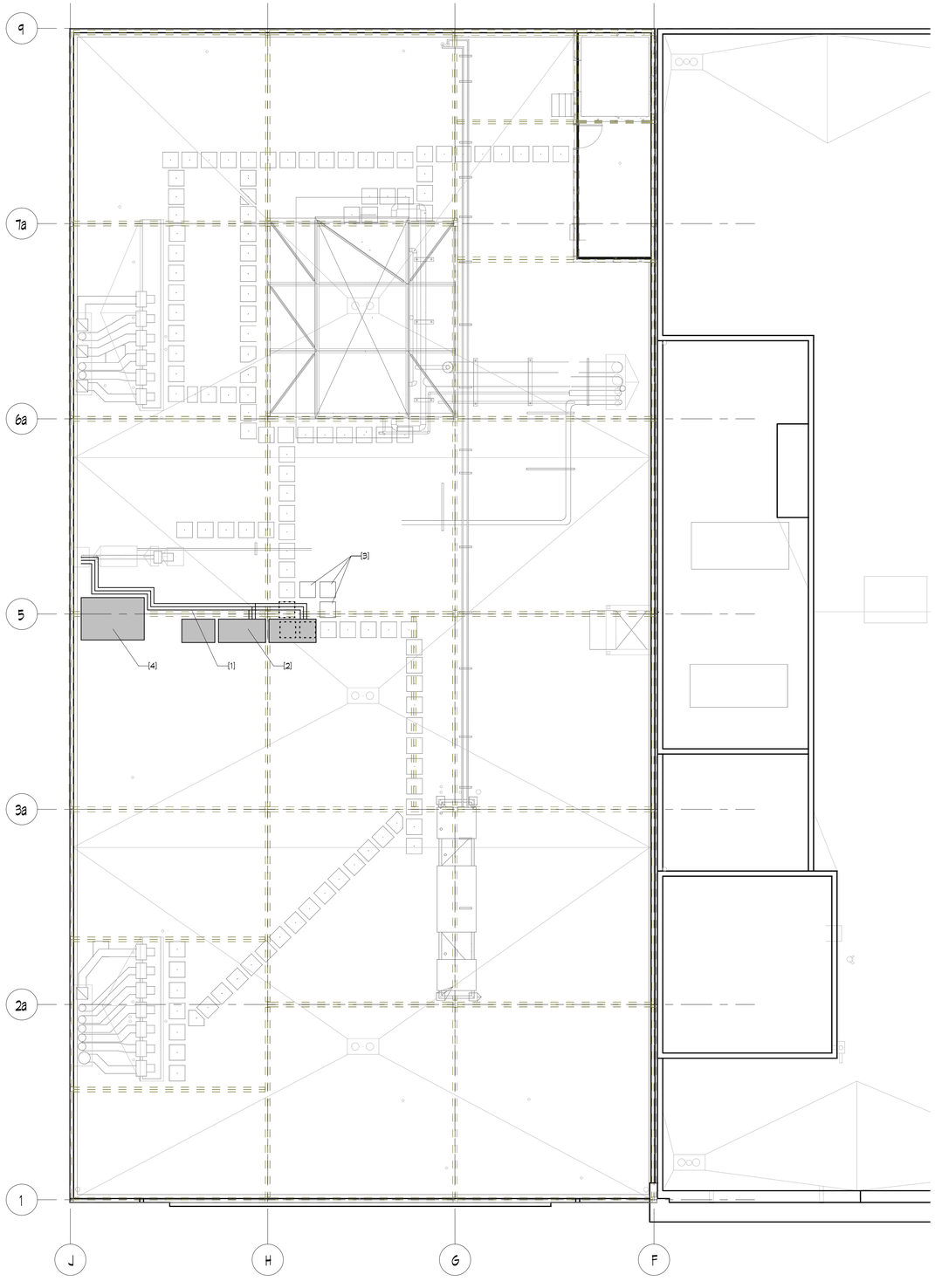
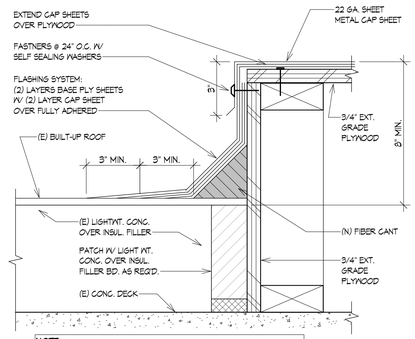
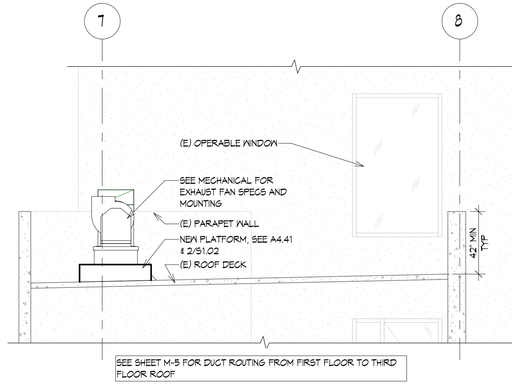


MERCER ROOF PLAN
1/8" = 1'-0"



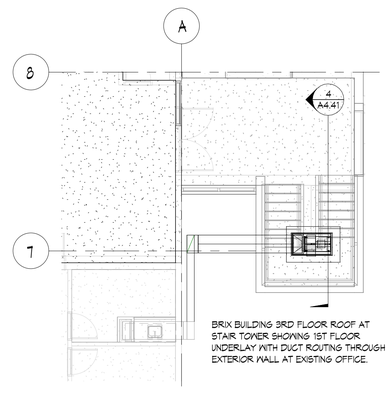
NOTE:
AT NEW EXHAUST FAN ON 3rd FLOOR ROOF, ROOFING SYSTEM CONSISTS OF A SINGLE PLY MEMBRANE. HOWEVER, FLASHING, CANT AND OTHER DETAILS ARE THE SIMILAR.

3 EQUIPMENT CURB
3" = 1'-0"



SEE SHEET M-5 FOR DUCT ROUTING FROM FIRST FLOOR TO THIRD FLOOR ROOF

4 EXHAUST FAN @ 3RD FLOOR ROOF
1/4" = 1'-0"



BRIX BUILDING 3RD FLOOR ROOF AT STAIR TOWER SHOWING 1ST FLOOR UNDERLAY WITH DUCT ROUTING THROUGH EXTERIOR WALL AT EXISTING OFFICE.

BRIX ROOF @ STAIR TOWER
1/8" = 1'-0"

GENERAL NOTES

ALL ROOFING SYSTEMS SHALL MATCH EXISTING ROOFING SYSTEM AND MEMBRANE MATERIALS SHALL MATCH EXISTING MATERIALS.

ALL ROOF MEMBRANE REPAIRS SHALL BE DONE BY FRESNO ROOFING OR AN ARCHITECT & CLIENT APPROVED ALTERNATE.

PRIOR TO THE START OF ANY WORK ON THE ROOF PROVIDE PLYWOOD SHEATHING AT ALL AREAS SUBJECT TO DAMAGE. CONTRACTOR SHALL REPAIR ANY DAMAGE TO ROOF CAUSED TO THE ROOF SURFACE BY THE EXECUTION OF THIS WORK. ALL REPAIRS SHALL MAINTAIN AND EXTEND ORIGINAL WARRANTY.

TYPICAL NOTES AT MERCER ROOF

PRIOR TO THE START OF ANY ROOFING ACTIVITY, THE CONTRACTOR SHALL MEET WITH MALARKEY ROOFING COMPANY REPRESENTATIVE AND SHALL MAKE REPAIRS SUCH THAT ALL EXISTING WARRANTIES SHALL BE MAINTAINED AS ORIGINALLY SPECIFIED.

PRIME EXISTING CAP SHEET PRIOR TO THE INSTALLATION NEW BASE SHEETS AND CAP SHEET.

INSTALL THE FIRST LAYER OF #605 BASE SHEET WITH A MINIMUM LAP OF 6" PAST ROOF CUT.

INSTALL THE SECOND LAYER OF #605 BASE SHEET WITH A MINIMUM LAP OF 3" BEYOND FIRST SHEET.

INSTALL #650 CAP SHEET WITH A MINIMUM LAP OF 3" BEYOND SECOND SHEET, AND EXTEND CAP SHEET TO AND BUTT TO NEAREST SEAM ABOVE PATCH SUCH THAT WATER FLOW SHALL NOT BE RESTRICTED.

4# LEAD FLASHING SHALL BE USED AROUND NEW 6" SQ. TUBE COL. AND SHALL BE SET IN ROOFING CEMENT AND BE SECURED WITH STAINLESS STEEL SCREW CLAMPS. MEMBRANE FLASHING SHALL BE AS INDICATED PREVIOUSLY.

COLD PROCESS ADHESIVE SHALL BE MALARKEY #105 TO MATCH EXISTING CONSTRUCTION.

NEW TRAFFIC PADS SHALL BE W.R. MEADOWS WHITEWALL TO MATCH EXISTING.

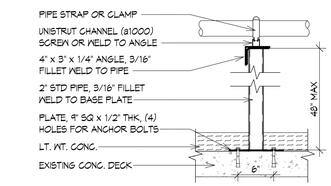
TYPICAL NOTES AT BRIX 3rd FLOOR ROOF

EXISTING ROOFING TO REMAIN TO EXTENT POSSIBLE.

NEW ROOFING TO BE SELECTED TO ENSURE THE PRODUCTS WORK & BOND TOGETHER, AND THAT ANY WARRANTY IS NOT COMPROMISED.

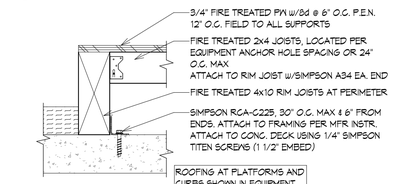
KEYED ROOF NOTES

[1]	LAYOUT OF REFRIGERANT PIPING ON THIS DRAWING IS DIAGRAMATIC REPRESENTATION ONLY, SEE MECHANICAL FOR MORE DETAILS. PIPING SUPPORT FRAMING DETAILS ARE SHOWN ON THIS SHEET, SEE ALSO STRUCTURAL. SUPPORT LOCATIONS SHALL BE DETERMINED BY THE MECHANICAL ENGINEER UPON VERIFICATION OF FINAL ROUTING LAYOUT IN THE FIELD.
[2]	OUTDOOR UNITS, SEE MECHANICAL SHEET M-3 FOR MORE INFORMATION.
[3]	REMOVE WALK PADS IN AREA OF WORK AND SALVAGE TO OWNER FOR REUSE. PLACE NEW (OR SALVAGED) WALK PADS AS INDICATED
[4]	EXHAUST FAN ON EXISTING PLATFORM, SEE MECHANICAL SHEET M-3 FOR MORE INFORMATION.



LOCATE PIPE SUPPORTS AS INDICATED BY MECHANICAL OR ELECTRICAL DESIGN

1 PIPE SUPPORT FRAMING
1" = 1'-0"



ROOFING AT PLATFORMS AND CURBS SHOWN IN EQUIPMENT CURB DETAIL 3/A4.41

2 ROOF PLATFORM
1 1/2" = 1'-0"

SEE ALSO STRUCTURAL DETAIL 2/S1.02

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03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
NO. C38020
RENEWAL: 8/23
STATE OF CALIFORNIA

MURATORE ASSOCIATES
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CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
ROOF PLAN & DETAILS

SHEET NUMBER:
A4.41

INTERNAL NUMBER: 029

11/21/2022 10:56 AM
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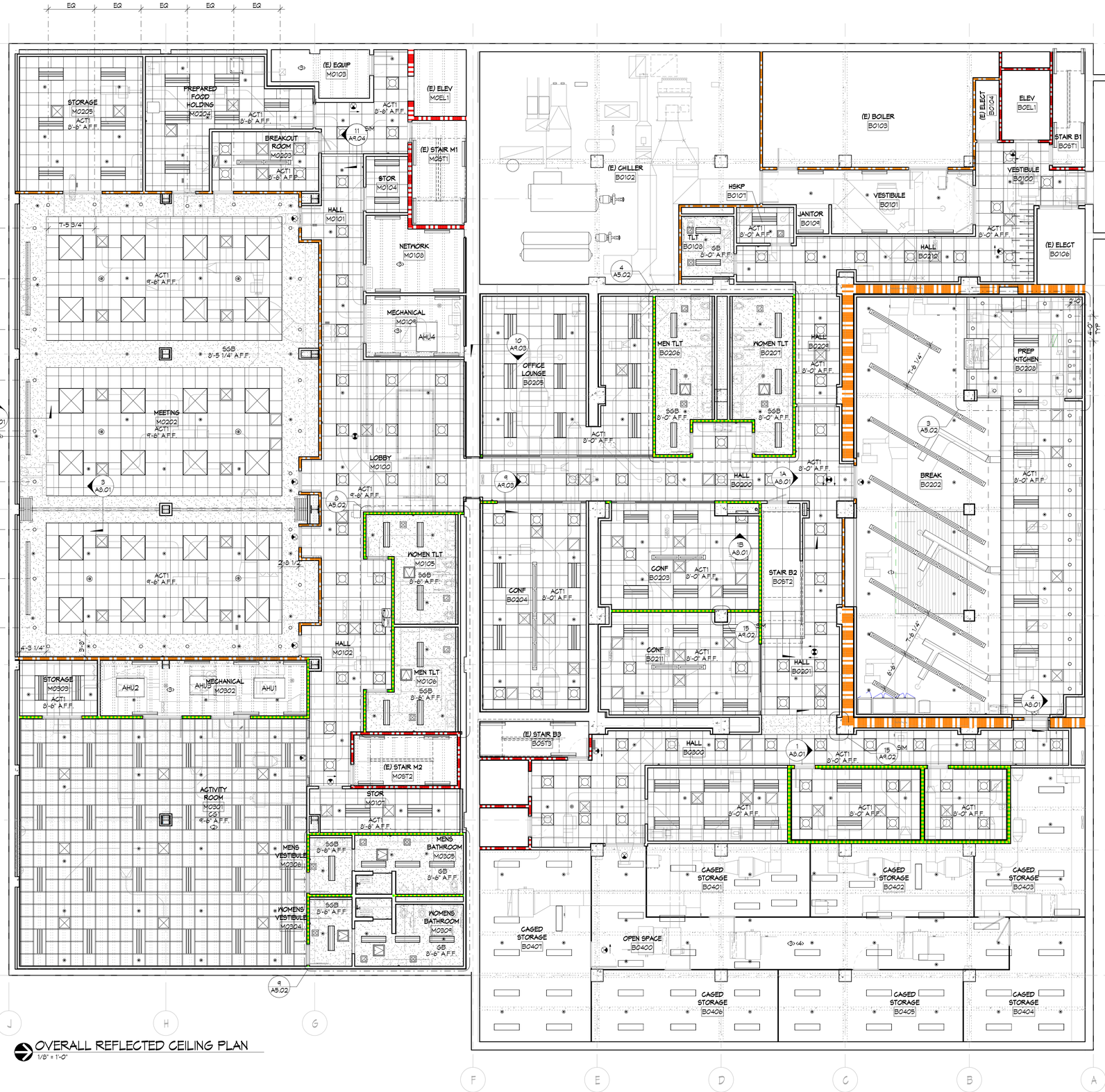


OVERALL REFLECTED CEILING PLAN
1/8" = 1'-0"

GENERAL NOTES

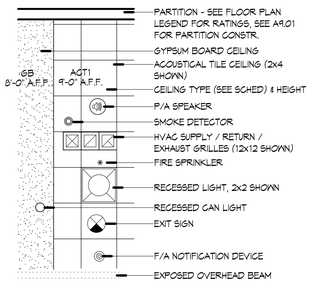
ABOVE CEILING MECHANICAL EQUIPMENT AND DUCTS SHOWN FOR REFERENCE SEE MECHANICAL DRAWINGS FOR EXTENT & DESCRIPTION OF WORK.

GENERAL LAYOUT OF LIGHTING SHOWN FOR REFERENCE, SEE ELECTRICAL DRAWINGS & SPECS FOR COMPLETE DESCRIPTION OF WORK.

EXISTING STRUCTURE (FIRST FLOOR FRAMING) SHOWN FOR REFERENCE. GC SHALL CONFIRM ACTUAL SIZE & LOCATION OF EXISTING STRUCTURAL ELEMENTS PRIOR TO WORK AFFECTING THE AREA.

CONTRACTOR SHALL PATCH ANY DAMAGE TO EXISTING FINISHES IN ALL AREAS OF WORK. PATCHED FINISHES SHALL MATCH EXISTING FINISH COLOR AND TEXTURE AND SHALL NOT BE NOTICEABLE WHEN COMPLETE.

LEGEND



KEYED RCP NOTES

<1> CEILING OPEN TO STRUCTURE ABOVE IN THIS AREA. HATCHED AREA INDICATES REGION OF EXISTING METAL DECK. REMOVE ALL EXISTING EQUIPMENT MOUNTED TO THE UNDERSIDED OF THE STRUCTURE. PATCH ANY HOLES IN CONCRETE. PAINT.

<2> SUSPENDED TEE-BAR GRID SYSTEM WITHOUT PANELS. ALL LOOSE CABLES NOT IN CONDUIT WITHIN THIS AREA SHALL BE GROUPED TOGETHER AND HUNG FROM J-HOOKS ATTACHED TO THE BEAMS TO MINIMIZE VISIBILITY.

<3> NO CEILING THIS ROOM. DASHED LINES INDICATE VISIBLE STRUCTURE ABOVE.

<4> REMOVE ALL EXISTING EQUIPMENT MOUNTED TO THE UNDERSIDED OF THE STRUCTURE. PATCH ANY HOLES IN CONCRETE. PAINT.

<5> PROJECTION SCREEN, RECESSED, ELECTRIC MOTOR, TAB TENSIONED, DRAPER ACCESS V SERIES OR EQUAL. TYP OF 3.

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LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

REFLECTED CEILING PLAN

SHEET NUMBER

A5.01

INTERNAL NUMBER: 024

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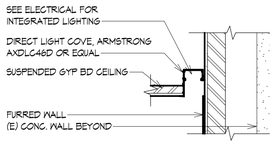
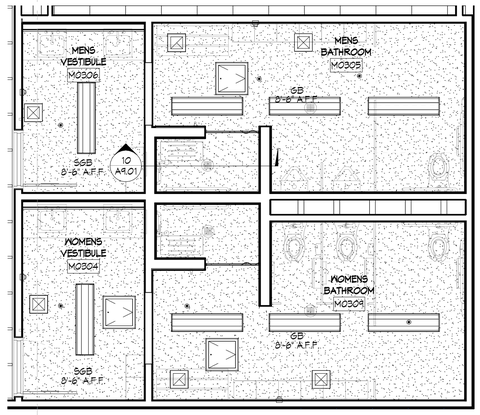
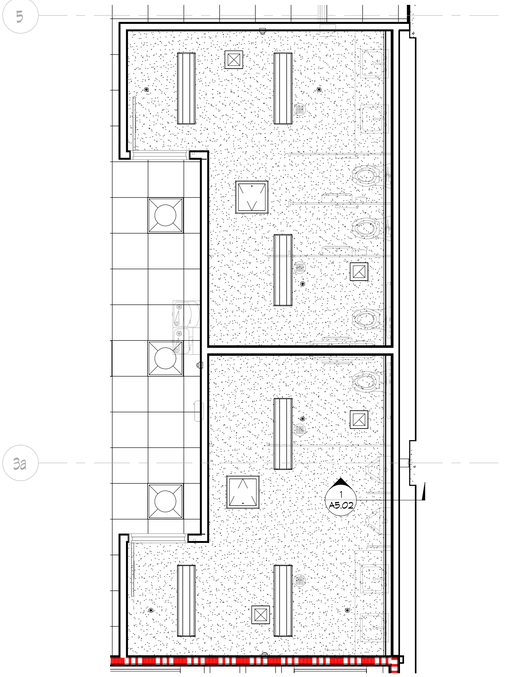


1 DIRECT LIGHT COVE IN TOILET ROOMS
3/4" = 1'-0"

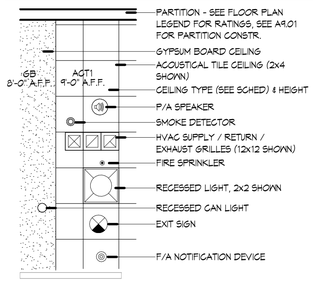


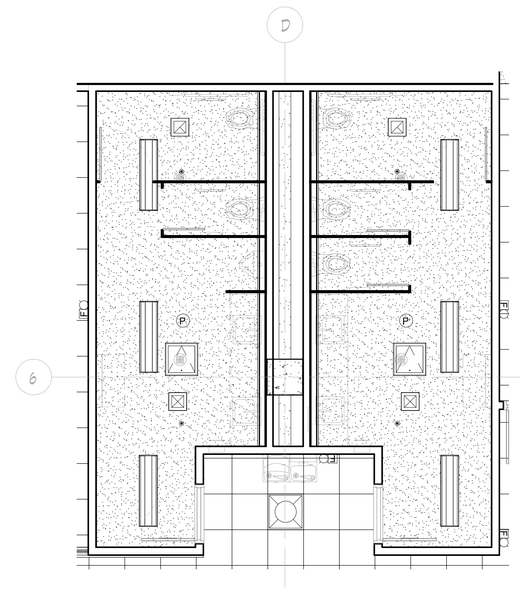
MERCER LOCKER ROOM BATHROOM
1/4" = 1'-0"



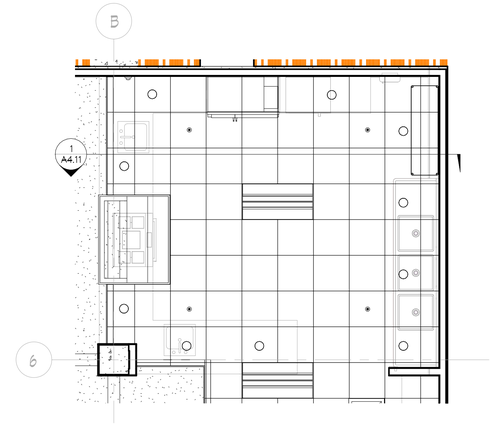
MERCER MAIN TOILETS
1/4" = 1'-0"

LEGEND





BRIX MAIN BATHROOM
1/4" = 1'-0"



DEMONSTRATION KITCHEN
1/4" = 1'-0"

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info@muratoreassociates.com

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
ENLARGED PARTIAL REFLECTED CEILING PLANS

SHEET NUMBER
A5.02

INTERNAL NUMBER: 024

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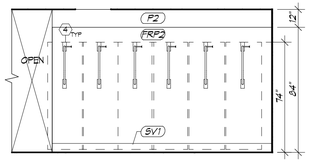
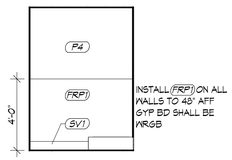
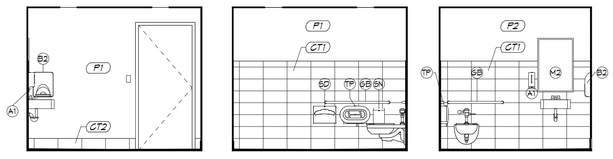


NORTH
B0100 - VESTIBULE
1/4" = 1'-0"



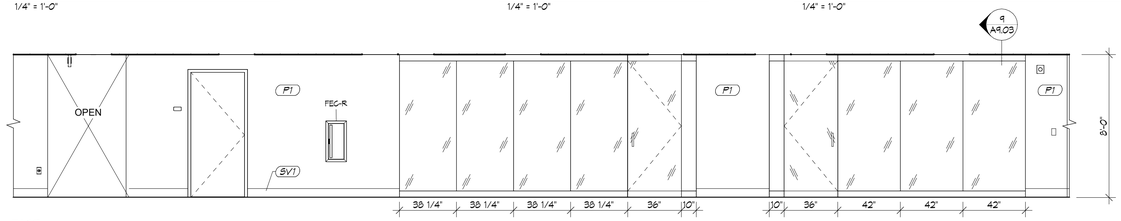
SOUTH
B0107 - HOUSEKEEPING
1/4" = 1'-0"



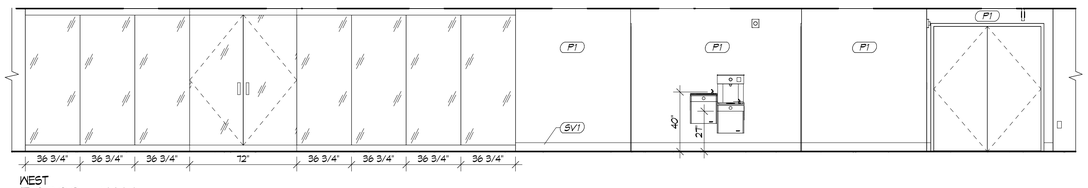
NORTH
B0108 - TOILET
1/4" = 1'-0"

SOUTH

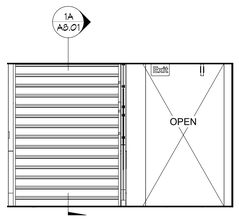
WEST



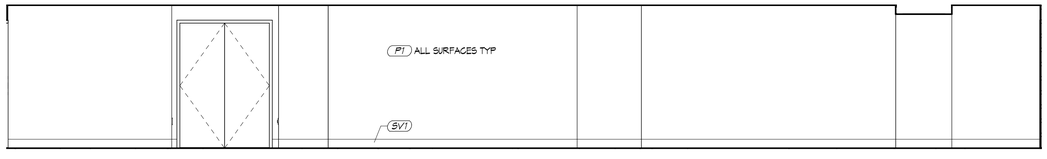
EAST
B0200 - HALL
1/4" = 1'-0"



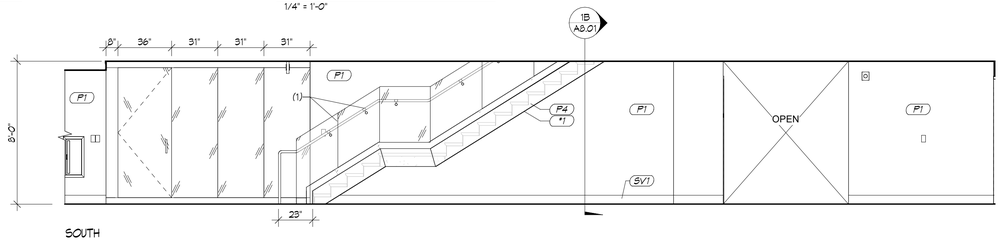
WEST
B0200 - HALL
1/4" = 1'-0"



WEST
B0201 - HALL
1/4" = 1'-0"



NORTH
B0201 - HALL
1/4" = 1'-0"



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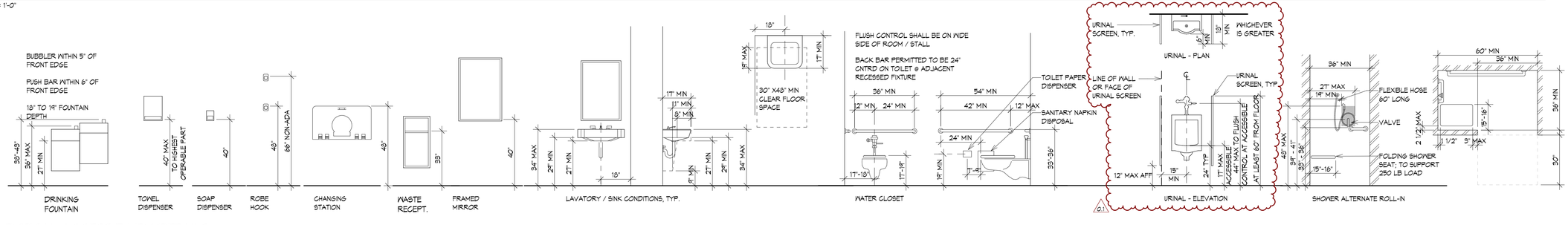
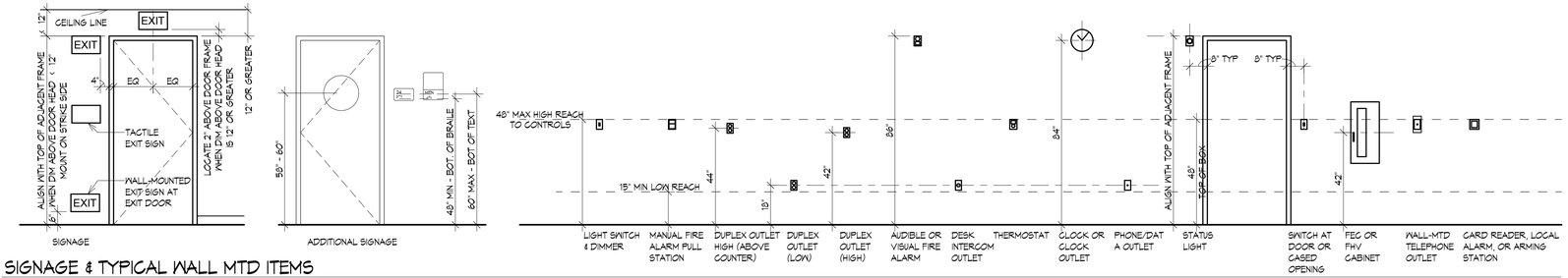


TYPICAL ACCESSIBILITY DETAILS
3/8" = 1'-0"



SIGNAGE & TYPICAL WALL MTD ITEMS

TOILET ACCESSORIES

ITEM	DESCRIPTION	MANUF.	MODEL
A1	AUTO FOAM SOAP DISPENSER	BOBRICK	B-2013, FOAM SOAP
A2	MANUAL FOAM SOAP DISPENSER	BOBRICK	B-8236
B2	TOWEL DISPENSER	GEORGIA-PACIFIC	enMotion
GB	GRAB BAR	BOBRICK	6806 - 1 1/2" DIAM.
KC	KOALA BABY CHANGING STATION	BOBRICK	KB110-SSWM, STAINLESS SURFACE MTD.
RH	ROBE HOOK	BOBRICK	B-76717
SD	SEAT COVER DISPENSER	BRADLEY CORP.	583
SN	SANITARY NAPKIN DISPOSAL	BOBRICK	B-270
SS	SHOWER SEAT	BRADLEY CORP.	9562, WHITE PHENOLIC
TP	TOILET PAPER DISPENSER (2 JUMBO-ROLLS)	GEORGIA-PACIFIC	59209

KEYED FINISH NOTES
FOR NOTES W/O ASTERISK SEE FINISH MAT'L SCHED.

(*1) FACE OF GYP BD FLUSH TO, OR SLIGHTLY INBOARD OF, FACE OF STRINGER TUBE STEEL. SEALANT APPLIED BETWEEN STRINGER AND GYP BD.

KEYED ELEVATION NOTES

(1) LOCATION OF (BREAKS IN) GLAZING PANELS AND HANDRAIL SUPPORT IS TYPICALLY SHOWN SCHEMATICALLY IN THESE DRAWINGS AND SHALL BE DETERMINED AND CALCULATED BY THE RAILING AND GUARD MANUFACTURER.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL 8-23 STATE OF CALIFORNIA

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CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE
D.1	BACKCHECK	8/15/2022

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
INTERIOR ELEVATIONS

SHEET NUMBER
B.C01
A6.01

INTERNAL NUMBER: 624

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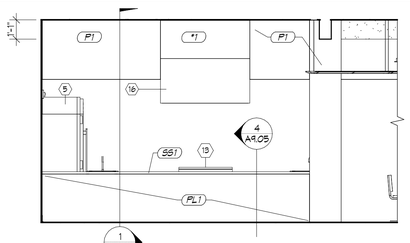
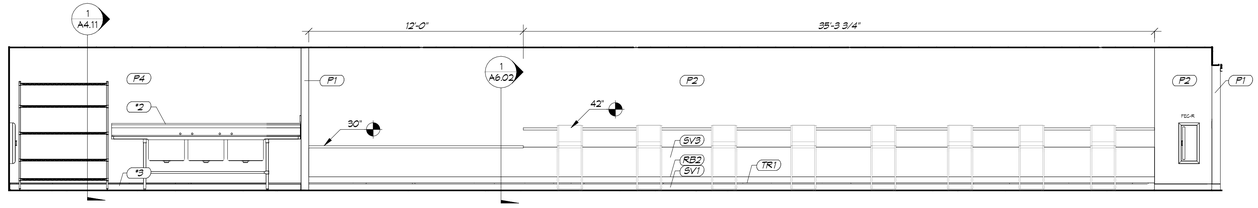
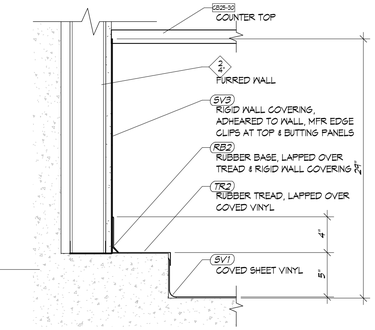


NORTH
B0202 - BREAK @ PREP KITCHEN
1/4" = 1'-0"

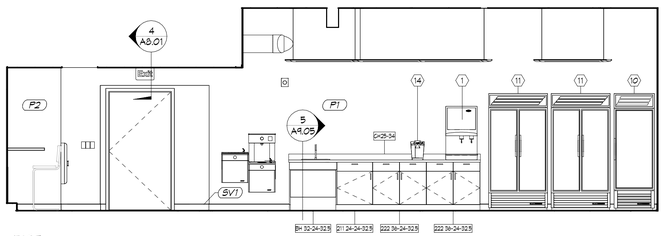


NORTH
B0208 - PREP KITCHEN
1/4" = 1'-0"

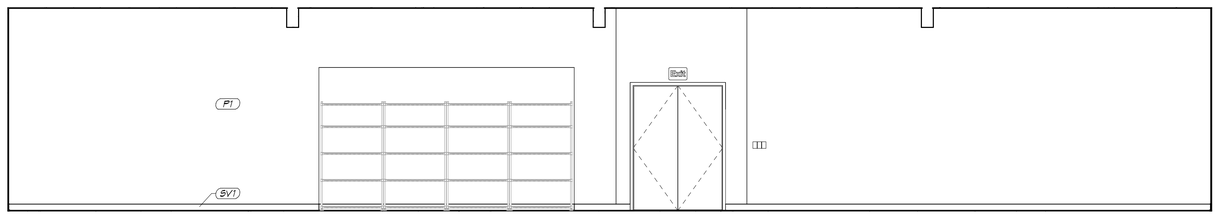
NORTH
B0202 - BREAK
1/4" = 1'-0"



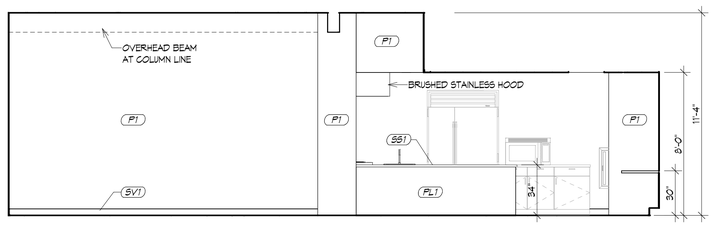
1 CURB AT COUNTERTOP
1 1/2" = 1'-0"



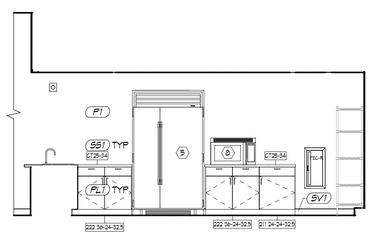
EAST
B0202 - BREAK
1/4" = 1'-0"



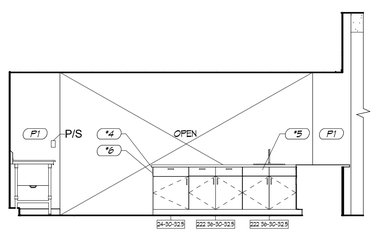
SOUTH
B0202 - BREAK
1/4" = 1'-0"



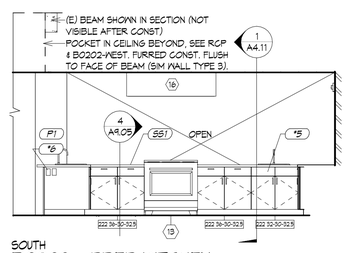
WEST
B0202 - BREAK
1/4" = 1'-0"



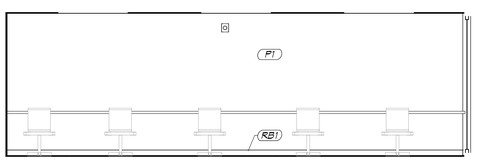
WEST
B0208 - PREP KITCHEN
1/4" = 1'-0"



EAST
B0208 - PREP KITCHEN
1/4" = 1'-0"

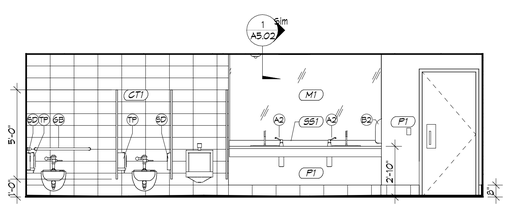


SOUTH
B0208 - PREP KITCHEN
1/4" = 1'-0"

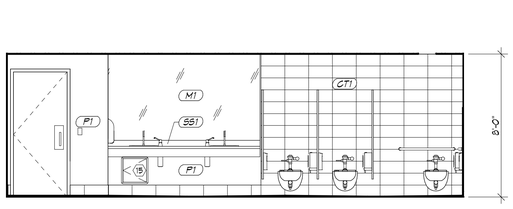


NORTH
B0205 - OPEN OFFICE
1/4" = 1'-0"

WEST



NORTH
B0206 - MEN TOILET
1/4" = 1'-0"



SOUTH

KEYED FINISH NOTES

FOR NOTES w/o ASTERISK SEE FINISH MAT'L SCHED.

(*1)	CUSTOM FABRICATED STAINLESS SHEET METAL SHROUD TO MATCH DIMENSIONS AND FINISH OF HOOD AND CONTINUE TO UNDERSIDE OF SLAB ABOVE.
(*2)	STAINLESS THREE COMPARTMENT SINK WITH INTEGRAL DRAINBOARDS, SEE PLUMBING. WATER RESISTANT GYP BOARD THIS WALL AND ADJACENT WINS WALL.
(*3)	COVED SHEET VINYL TO TOP OF CURB (APPROX. 5"). TOP OF CURB PAINTED PT4.
(*4)	1" OVERHANG AT COUNTERTOPS, TYP
(*5)	FIXED (FAUX) DRAWERS AT SINK, SLAB FRONT WITHOUT HARDWARE
(*6)	SWITCHES FOR KITCHEN LIGHTING TO BE LOCATED AT CABINET

CASEWORK NOTES

CASEWORK TAG: 12S-32-18-30

TYPE - SEE NOTES
WIDTH - INCHES
HEIGHT - INCHES
DEPTH - INCHES

TYPE
- TYPE NUMBER IS BASED CABINET DESIGN SERIES FROM THE NORTH AMERICAN ARCHITECTURAL WOODWORKING STANDARDS V3.1 (2020)
- DEPARTURES FROM THE NAAWS ARE NOTED, SUCH AS 'L' TO INDICATE LIGHTED APRON
- COUNTERTOPS ARE NOTED AS TYPE IS 'CT, DEPTH AND HEIGHT ARE INDICATED.

TOILET ACCESSORIES

ITEM	DESCRIPTION	MANUF.	MODEL
A1	AUTO FOAM SOAP DISPENSER	BOBRICK	B-2013, FOAM SOAP
A2	MANUAL FOAM SOAP DISPENSER	BOBRICK	B-8236
B2	TOWEL DISPENSER	GEORGIA-PACIFIC	enMotion
GB	GRAB BAR	BOBRICK	6806 - 1 1/2" DIAM.
KC	KOALA BABY CHANGING STATION	BOBRICK	KB110-SSWM, STAINLESS SURFACE MTD.
RH	ROBE HOOK	BOBRICK	B-76117
SD	SEAT COVER DISPENSER	BRADLEY CORP.	583
SN	SANITARY NAPKIN DISPOSAL	BOBRICK	B-270
SS	SHOWER SEAT	BRADLEY CORP.	9562, WHITE PHENOLIC
TP	TOILET PAPER DISPENSER (2 JUMBO-ROLLS)	GEORGIA-PACIFIC	54209

EQUIPMENT SCHEDULE - 1

ITEM	DESCRIPTION	MANUF.	MODEL
1	ICE MACHINE	FOLLETT CORPORATION	25CI425A-L 25LB, COUNTERTOP, AIR COOLED, LEVER ACTION
2	WIRE RACK SHELVING	METRO	60X18X72
3	LOCKERS	ASI STORAGE SOLN	THREE TIER
4	WALL MTD BIKE RACK	DERO BIKE RACKS	ULTRA SPACE SAVER SINGLE
5	FULL SIZE REFR/FREEZER	TRUE	TR-48SBS-SS-B
6	ICE MAKER	ICE-O-MATIC	ICEU36
7	CABINET, WARMING / HOLDING	ALTO-SHAAM	1200-UP
8	MICROWAVE OVEN		
9	OPERABLE PARTITION	MODERFOLD	ACOUSTISEAL PREMIER PAIRED PANEL
10	FREEZER, SWING DOOR STD LOOK	TRUE	GDM-23F-HC-T5L01
11	REFRIGERATOR, SWING DOOR STD LOOK	TRUE	GDM-35-HC-T5L01
12	REFRIGERATOR / FREEZER		
13	INDUCTION RANGE	WOLF	
14	KEURIG COFFEE MACHINE	KEURIG	
15	ACCESS DOOR	Nystrom	NON RATED, 1" FLANGE, WHITE POWDER COAT, KEYED LATCH, 24"X24"
16	VENT HOOD	GREENHECK	GXEV-60.00-S
FEC-R	RECESSED EXTINGUISHER CABINET	JL Industries	1032 STAINLESS, VERTICAL DUO GLAZED, ROLLER CATCH, 10# A:B:C EXTING.
FEC-S	SURF MTD EXTINGUISHER CABINET	JL Industries	1033 STAINLESS, VERTICAL DUO GLAZED, ROLLER CATCH, 10# A:B:C EXTING.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
NO. C38020
RENEWAL: 8/23
STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE.
FRESNO, CA 93711
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info@muratoreassociates.com

CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

INTERIOR ELEVATIONS

SHEET NUMBER

A6.02

INTERNAL NUMBER: 029

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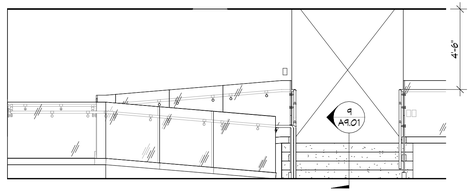
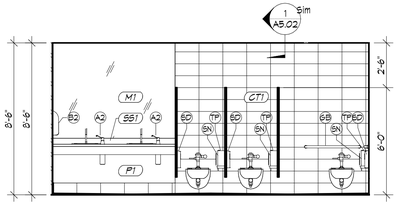


NORTH
M0100 - LOBBY
1/4" = 1'-0"



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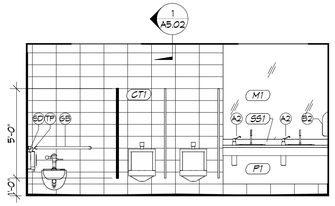
M0105 - WOMEN TOILET
1/4" = 1'-0"



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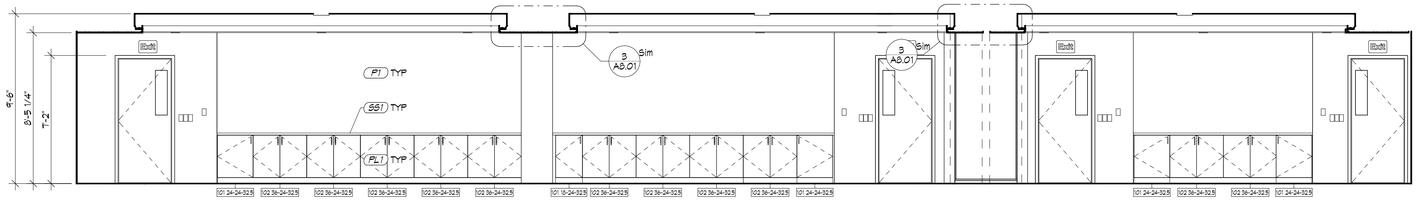
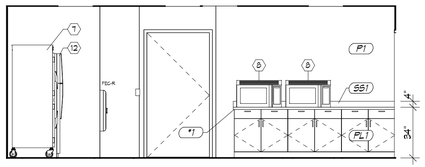
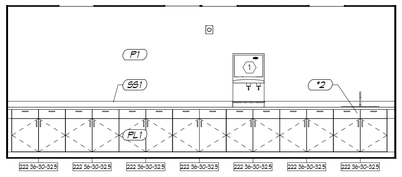
M0106 - MEN TOIL ET
1/4" = 1'-0"



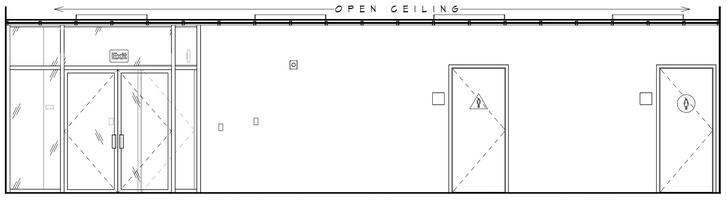
NORTH
M0202 - MEETING ROOM
1/4" = 1'-0"



NORTH
M0204 - PREPARED FOOD HOLDING
1/4" = 1'-0"



SOUTH
M0204 - PREPARED FOOD HOLDING
1/4" = 1'-0"



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M0301 - ACTIVITY ROOM
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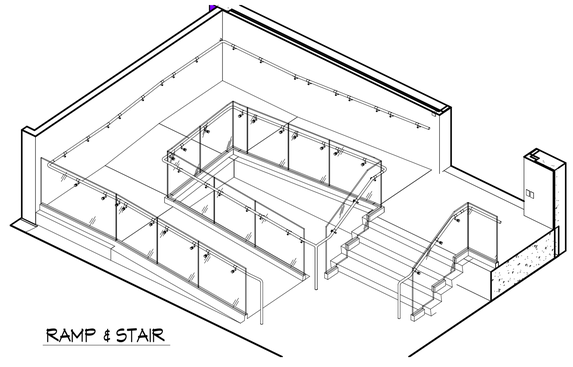

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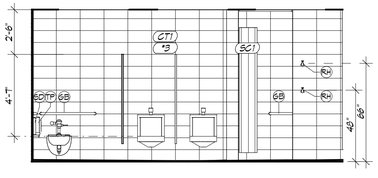
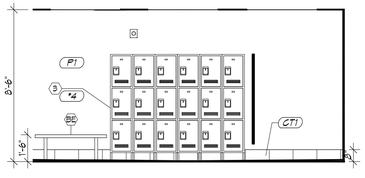
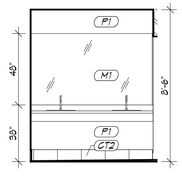


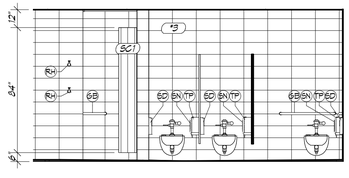
EAST
M0305 - MEN BATHROOM
1/4" = 1'-0"



WEST
M0305 - MEN BATHROOM
1/4" = 1'-0"



WEST
M0306 - MEN VESTIBULE
1/4" = 1'-0"



EAST
M0309 - WOMAN BATHROOM
1/4" = 1'-0"

EQUIPMENT SCHEDULE - 1

ITEM	DESCRIPTION	MANUF.	MODEL
1	ICE MACHINE	FOLLETT CORPORATION	250425A-L 25LB, COUNTERTOP, AIR COOLED, LEVER ACTION
2	WIRE RACK SHELVING	METRO	60x18x12
3	LOCKERS	ASI STORAGE SOLN	THREE TIER
4	WALL MTD BIKE RACK	DERO BIKE RACKS	ULTRA SPACE SAVER SINGLE
5	FULL SIZE REFR/FREEZER	TRUE	TR-49SB-SS-B
6	ICE MAKER	ICE-O-MATIC	ICEU36
7	CABINET, WARMING / HOLDING	ALTO-SHAAM	1200-UP
8	MICROWAVE OVEN		
9	OPERABLE PARTITION	MODERFOLD	ACOUSTISEAL PREMIER PAIRED PANEL
10	FREEZER, SWING DOOR STD LOOK	TRUE	GDM-23F-HC-TSL01
11	REFRIGERATOR, SWING DOOR STD LOOK	TRUE	GDM-35-HC-TSL01
12	REFRIGERATOR / FREEZER		
13	INDUCTION RANGE	WOLF	
14	KEURIG COFFEE MACHINE	KEURIG	
15	ACCESS DOOR	Nystrom	NON RATED, 1" FLANGE, WHITE POWDER COAT, KEYED LATCH, 24"x24"
16	VENT HOOD	GREENHECK	GXEV-60.00-S
FEC-R	RECESSED EXTINGUISHER CABINET	JL Industries	1032 STAINLESS, VERTICAL DUO GLAZED, ROLLER CATCH, 10# A:B:C EXTING.
FEC-S	SURF MTD EXTINGUISHER CABINET	JL Industries	1033 STAINLESS, VERTICAL DUO GLAZED, ROLLER CATCH, 10# A:B:C EXTING.

KEYED FINISH NOTES

FOR NOTES W/O ASTERISK SEE FINISH MAT'L SCHED.

(*1) 1" OVERHANG AT COUNTERTOPS; FINISH EXPOSED END PANEL SAME AS FACES, TYP

(*2) FIXED (FAUX) DRAWERS AT SINK, SLAB FRONT WITHOUT HARDWARE

(*3) SHOWER SHALL USE CEMENTITIOUS TILE BACKER BOARDS; OTHER WALLS SHALL USE WATER & MOLD RESISTANT GYPSUM BOARD. ALL WALL BOARDS SHALL BE 5/8" THICK. CEILINGS MAY ALTERNATIVELY USE 1/2" LIGHTWEIGHT WATER & MOLD RESISTANT (USG LIGHTWEIGHT MOLD TOUGH OR EQUIV.)

(*4) AT LEAST ONE LOCKER SHALL BY INDICATED AS ACCESSIBLE AND SHALL MEET THE REQUIREMENTS OF ACCESSIBILITY AS DESCRIBED IN CH 11B-225.2.1 AND 11B-811.

TOILET ACCESSORIES

ITEM	DESCRIPTION	MANUF.	MODEL
A1	AUTO FOAM SOAP DISPENSER	BOBRICK	B-2013, FOAM SOAP
A2	MANUAL FOAM SOAP DISPENSER	BOBRICK	B-8236
B2	TOWEL DISPENSER	GEORGIA-PACIFIC	enMotion
GB	GRAB BAR	BOBRICK	6806 - 1 1/2" DIAM.
KC	KOALA BABY CHANGING STATION	BOBRICK	KB110-SSWM, STAINLESS SURFACE MTD.
RH	ROBE HOOK	BOBRICK	B-76717
SD	SEAT COVER DISPENSER	BRADLEY CORP.	583
SN	SANITARY NAPKIN DISPOSAL	BOBRICK	B-270
SS	SHOWER SEAT	BRADLEY CORP.	9562, WHITE PHENOLIC
TP	TOILET PAPER DISPENSER (2 JUMBO-ROLLS)	GEORGIA-PACIFIC	59209

CASEWORK NOTES

CASEWORK TAG: 123-32-15-30

TYPE - SEE NOTES
WIDTH - INCHES
DEPTH - INCHES
HEIGHT - INCHES

TYPE

- TYPE NUMBER IS BASED CABINET DESIGN SERIES FROM THE NORTH AMERICAN ARCHITECTURAL WOODWORKING STANDARDS v3.1 (2020)
- DEPARTURES FROM THE NAAWS ARE NOTED, SUCH AS 'L' TO INDICATE LIGHTED APRON
- COUNTERTOPS ARE NOTED AS TYPE IS 'CT', DEPTH AND HEIGHT ARE INDICATED.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURPHORE
NO. C38020
RENEWAL: 8/23
STATE OF CALIFORNIA

AURATORE ASSOCIATES
1222 N SHAW AVE.
FRESNO, CA 93711
559-369-6924
info@auratoreassociates.com

CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
INTERIOR ELEVATIONS

SHEET NUMBER
A6.03

INTERNAL NUMBER: 029

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ROOM FINISH SCHEDULE

RM #	NAME	CEILING			NORTH WALL		EAST WALL		SOUTH WALL		WEST WALL		WAINSCOT	BASE	FLOOR	COMMENTS
		HEIGHT	MAT'L	FINISH	MAT'L	FINISH	MAT'L	FINISH	MAT'L	FINISH	MAT'L	FINISH			MAT'L	
B0EL1	ELEV	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0EL2	ELEV	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0EL3	ELEV	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0ST1	STAIR B1	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0ST2	STAIR B2	-	-	-	GB	P1	GB	P1	GB	P1	GB	P1	-	-	CONC	NOTES HERE REFER TO STORAGE AREA UNDER STAIRS
B0ST3	(E) STAIR B3	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0100	VESTIBULE	8'-0"	ACT1	CLEAN	(E)	P2	GB	P1	GB	P1	(E)	P1	FRP2 TO 84" AT BIKE STORAGE	SV1	SV1	PAINT P2 ON NORTH WALL AT BIKE STORAGE ONLY.
B0101	VESTIBULE	11'-4" TO DECK	OPEN	CLEAN	GB	P1	GB	P1	(E)	P1	(E)	P1	-	-	CONC	
B0102	(E) CHILLER	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0103	(E) BOILER	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0104	(E) ELECT	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0105	(E) STOR	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0106	(E) ELECT	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
B0107	HSKP	8'-0"	ACT1	CLEAN	WRGB	P4	WRGB	P4	WRGB	P4	WRGB	P4	FRP TO 48" AFF, SEE ELEVATIONS	SV1	SV1	
B0108	TLT	8'-0"	GB	P1	GB	P1, CT1	GB	P1, CT1	WRGB	P1, CT1	GB	P1, CT1	SEE ELEVATIONS FOR TILE LAYOUT	PT1	PT1	
B0200	HALL	8'-0"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
B0201	HALL	8'-0"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
B0202	BREAK	VARIES	OPEN, ACT1	P1, CLEAN	GB	P2	GB	P1	GB	P1	GB	P1	SV3 UNDER NORTH COUNTER	SV1	SV1	SEE ELEVATIONS FOR PAINT COLORS, WAINSCOT; ALL COLUMNS SHALL BE FURRED AND PAINTED P1.
B0203	CONF	8'-0"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GLASS, GB	P1	-	RB1	CP1	
B0204	CONF	8'-0"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GLASS	-	-	RB1	CP1	
B0205	OFFICE LOUNGE	8'-0"	ACT1	CLEAN	GB	P1, P2	GLASS	-	GB	P1	GB	P1	-	RB1	CP1	PAINT NORTH WALL IN WORK-AREA P2; NORTH WALL IN LOUNGE AREA P1
B0206	MEN TLT	8'-0"	SGB	P1	WRGB	P1, CT1	GB	P1, CT1	GB	P1, CT1	GB	P1, CT1	SEE ELEVATIONS FOR TILE LAYOUT	PT1	PT1	
B0207	WOMEN TLT	8'-0"	SGB	P1	GB	P1, CT1	GB	P1, CT1	WRGB	P1, CT1	WRGB	P1, CT1	SEE ELEVATIONS FOR TILE LAYOUT	PT1	PT1	
B0208	PREP KITCHEN	8'-0"	ACT1	CLEAN	WRGB	P4	WRGB	P4	-	-	GB	P1	-	SV1	SV1	PAINT FURRED COLUMN B-6 P1
B0209	HALL	8'-0"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
B0210	HALL	8'-0"	ACT1	CLEAN	-	-	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
B0211	CONF	8'-0"	ACT1	CLEAN	GLASS, GB	P1	GB	P1	GB	P1	GB	P1	-	RB1	CP1	
B0300	HALL	8'-0"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
B0301	MEDIA ROOM	8'-0"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	AWP1 24" AFF TO CEILNG	RB1	CP1	
B0302	MEDIA ROOM	8'-0"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	AWP1 24" AFF TO CEILNG	RB1	CP1	
B0303	PREP ROOM	8'-0"	ACT1	CLEAN	GB	P2	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
B0400	OPEN SPACE	11'-4" TO DECK	OPEN	P1	CAGE	CLEAN	CAGE	CLEAN	CAGE	CLEAN	CAGE	CLEAN	-	-	CONC	PAINT UNDERSIDE OF DECK, EXPOSED CONCRETE COLUMNS & WALLS P1
B0401	CAGED STORAGE	11'-4" TO DECK	OPEN	P1	CAGE	CLEAN	CAGE	CLEAN	CAGE	CLEAN	GB	P1	-	-	CONC	PAINT UNDERSIDE OF DECK, EXPOSED CONCRETE COLUMNS & WALLS P1
B0402	CAGED STORAGE	11'-4" TO DECK	OPEN	P1	CAGE	CLEAN	CAGE	CLEAN	CAGE	CLEAN	GB	P1	-	-	CONC	PAINT UNDERSIDE OF DECK, EXPOSED CONCRETE COLUMNS & WALLS P1
B0403	CAGED STORAGE	11'-4" TO DECK	OPEN	P1	(E)	P1	CAGE	CLEAN	CAGE, GB	P1	GB	P1	-	-	CONC	PAINT UNDERSIDE OF DECK, EXPOSED CONCRETE COLUMNS & WALLS P1
B0404	CAGED STORAGE	11'-4" TO DECK	OPEN	P1	(E)	P1	(E)	P1	CAGE	CLEAN	CAGE	CLEAN	-	-	CONC	PAINT UNDERSIDE OF DECK, EXPOSED CONCRETE COLUMNS & WALLS P1
B0405	CAGED STORAGE	11'-4" TO DECK	OPEN	P1	CAGE	CLEAN	(E)	P1	CAGE	CLEAN	CAGE	CLEAN	-	-	CONC	PAINT UNDERSIDE OF DECK, EXPOSED CONCRETE COLUMNS & WALLS P1
B0406	CAGED STORAGE	11'-4" TO DECK	OPEN	P1	CAGE	CLEAN	(E)	P1	CAGE	CLEAN	CAGE	CLEAN	-	-	CONC	PAINT UNDERSIDE OF DECK, EXPOSED CONCRETE COLUMNS & WALLS P1
B0407	CAGED STORAGE	11'-4" TO DECK	OPEN	P1	CAGE	CLEAN	(E)	P1	(E)	P1	GB	P1	-	-	CONC	PAINT UNDERSIDE OF DECK, EXPOSED CONCRETE COLUMNS & WALLS P1
B1001	LOBBY	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
MOEL1	(E) ELEV	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
MOST1	(E) STAIR M1	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
MOST2	(E) STAIR M2	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
M0100	LOBBY	9'-6"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
M0101	HALL	VARIES	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	NOTE CEILING HEIGHT CHANGE AT WEST END OF HALL
M0102	HALL	9'-6"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
M0103	(E) EQUIP	(E)	(E)	CLEAN	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	
M0104	STOR	8'-6"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
M0105	WOMEN TLT	8'-6"	SGB	P1	WRGB	P1, CT1	WRGB	P1, CT1	GB	P1, CT1	GB	P1, CT1	SEE ELEVATIONS FOR TILE LAYOUT	PT1	PT1	
M0106	MEN TLT	8'-6"	SGB	P1	WRGB	P1, CT1	GB	P1, CT1	GB	P1, CT1	WRGB	P1, CT1	SEE ELEVATIONS FOR TILE LAYOUT	PT1	PT1	
M0107	STOR	8'-6"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
M0108	NETWORK	13'-4 TO DECK	OPEN	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	FIRE RESIST PVI OVER GB, 12" TO 108" AFF	-	CONC	GB TO 120" AFF (FULL HGT AT STAIR WALL), PAINT GB AND PVI. MASK FR STAMPS ON PVI
M0109	MECHANICAL	13'-4 TO DECK	OPEN	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	-	CONC	
M0202	MEETING	VARIES	VARIES	P1, CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	RB1	CP1	
M0203	BREAKOUT ROOM	8'-6"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	RB1	CP1	
M0204	PREPARED FOOD HOLDING	8'-6"	ACT1	CLEAN	GB	P4	GB	P4	GB	P4	GB	P4	-	SV1	SV1	
M0205	STORAGE	8'-6"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
M0301	ACTIVITY ROOM	9'-6"*	CG1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	M1 FROM 36" AFF TO 96" AFF ON SOUTH WALL	RB1	SV2	* CEILNG GRID ONLY, NO TILES. PAINT FURRED COLUMN h-28 P1
M0302	MECHANICAL	13'-4 TO DECK	OPEN	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	-	CONC	
M0303	STORAGE	8'-6"	ACT1	CLEAN	GB	P1	GB	P1	GB	P1	GB	P1	-	SV1	SV1	
M0304	WOMENS VESTIBULE	8'-6"	SGB	P1	GB	P1	GB	P1	GB	P1	GB	P1	-	PT1	PT1	
M0305	MENS BATHROOM	8'-6"	GB	P1	WRGB	P1, CT1	WRGB	P1, CT1	WRGB	P1, CT1	WRGB	P1, CT1	SEE ELEVATIONS FOR TILE LAYOUT	PT1	PT1	SEE ELEVATIONS FOR NOTES ABOUT CBB & WRGB, SEE TYPICAL ACCESSIBLE DETAILS FOR LAYOUT OF SHOWER ITEMS.
M0306	MENS VESTIBULE	8'-6"	SGB	P1	GB	P1	GB	P1	GB	P1	GB	P1	-	PT1	PT1	
M0309	WOMENS BATHROOM	8'-6"	GB	P1	WRGB	P1, CT1	WRGB	P1, CT1	WRGB	P1, CT1	WRGB	P1, CT1	SEE ELEVATIONS FOR TILE LAYOUT	PT1	PT1	SEE ELEVATIONS FOR NOTES ABOUT CBB & WRGB, SEE TYPICAL ACCESSIBLE DETAILS FOR LAYOUT OF SHOWER ITEMS.

FINISH NOTES

ACCOUSTICAL CEILING TILE			
ACT1	ARMSTRONG	CIRRUS BEVELED TEGULAR SECOND LOOK	ITEMS 513; CLASS A FIRE RATING; WHITE; NRC: 0.65, CAC: 35; USE WITH CG1
ACCOUSTICAL WALL PANEL			
AWP1	ACOUSTICAL SURFACES	FABRISORB, FABRIC WRAPPED FIBERGLASS	1" THK, HALF-BEVEL EDGE, FLAMABILITY: ASTM E-84 CLASS A; FABRIC TBD
CARPET TILE			
CPT1	MOHAWK		COLOR TBD
CEILING GRID			
CG1	ARMSTRONG	PRELUDE ML 15/16" EXPOSED TEE SYSTEM	
CG2	ARMSTRONG	DRYWALL GRID SYSTEM	
CERAMIC TILE			
CT1	DAL TILE	WALL FIELD	D203 SUEDE GREY SPECKLE; 2x2, NON ABRASIVE; USE WITH GR1
CT2	DAL TILE	COVE	C-833 D203 SUEDE GREY SPECKLE; 1x1 COVE; USE WITH GR 1
CT3	DAL TILE	FLOOR MOSAIC	0184 WATERFALL; 6x6; USE WITH GR2
CT4	DAL TILE	ACCENT	X114 DESERT GREY; 6x6; USE WITH GR2
CUBICLE CURTAIN TRACK			
CCT1	INPRO	OPTITRAC CUBICLE TRACK	WHITE; PROVIDE BACKING & INSTALL PER MFR INSTRUCTIONS
FIBER REINFORCED PLASTIC			
FRP1	MARLITE	STANDARD FRP	PEBBLED SURFACE; WHITE P-100 CLASS A; MATCHING PVC TRIM
FRP2	MARLITE	COLORED FRP	PEBBLED SURFACE; ***COLOR TBD*** CLASS A; MATCHING PVC TRIM
GENERAL			
CLEAN	-	-	UPON COMPLETION OF WORK, FINISH SHOULD BE CLEANED AS RECOMMENDED BY MANUFACTURER
OPEN	-	-	OPEN TO DECK ABOVE OR ROOM BEYOND
GROUT			
GR1	C.B.P.	POLYBLEND SANDED GROUT	COLOR #19 PEWTER
MIRROR			
M1	-	MIRROR	1/4" THICK, FIELD VERIFY DIMENSIONS
PAINT			
P1	SHERWIN WILLIAMS	SUPERPAINT	EGGSHELL FINISH; ICI COLOR: body 1
P2	SHERWIN WILLIAMS	SUPERPAINT	EGGSHELL FINISH; ICI COLOR: accent 1
P3	SHERWIN WILLIAMS	SUPERPAINT	EGGSHELL FINISH; ICI COLOR: accent 2
P4	SHERWIN WILLIAMS	PRO INDUSTRIAL WATERBORNE CATALYZED EPOXY	SEMI-GLOSS FINISH; ICI COLOR: body 1
P5	SHERWIN WILLIAMS	SUPERPAINT	EGGSHELL FINISH; ICI COLOR: ceiling 1
PLASTIC LAMINATE			
PL1	WILSONART	WOODGRAINS	FUSION MAPLE (COLOR # 7904); #TB FINE GRAIN TEXTURE
RUBBER BASE			
RB1	BURKE	WALL BASE FOR RESILIENT FLOORING	GINGER
SHEET VINYL			
SV1	ARMSTRONG	REJUVENATIONS TIMBERLINE	RUSTIC BEECH SUNSCREEN (COLOR #51502)
SV2	TARKET	INERTIA RUBBER TILE	24" x 24" SLIDE-LOCK LOOSE LAY TILES; COLOR BY OWNER
SV3	ACROVYN	"BY-DESIGN" PATTERNS COLLECTION	0.04" THK RIGID SHEET; COLOR-MATCHED CAULK AT BUTT JOINTS, ACROVYN TRIM AT EXPOSED EDGES; COLOR BY OWNER
SHOWER CURTAIN			
SC1	INPRO	SUPER BIO STAT	7'-0" HEIGHT, 12" EZE-MESH AT TOP, 6" CLEAR AT BOTTOME; USE WITH CCT1; COLOR TBD
SOLID SURFACE			
SS1	DUPONT	CORIAN	COLOR TBD
TREAD			
TR1	MANNINGTON	CONNECT STEP	SCULPTURED PROFILE, #V#VI STRIP; TREAD & STRIP COLOR TBD
TR2	MANNINGTON	PERPETUAL STAIR TREAD	#V/O VI STRIP; COLOR TBD

ADD'L FINISH NOTES

1. PAINT
   A. ALL PAINTED GYP. BD. WALLS SHALL RECEIVE A LEVEL 5 FINISH PRIOR TO COATING, U.N.O.
   B. TYPICAL PAINT FINISH SHALL BE EGGSHELL, PAINT WET AREAS SEMI-GLOSS IN THE SAME COLOR AS INDICATED IN SCHEDULE & ELEVATIONS.
   C. PAINT DOOR FRAMES SEMI-GLOSS, SAME COLOR AS WALL INTO WHICH THEY ARE INSTALLED, U.N.O.
   D. WHERE WALL IS DIFFERENT COLOR ON EACH SIDE, PAINT FRAME TO EDGE OF STOP, U.N.O.
2. GYPSUM WALL BOARD
   A. ALL GYPSUM BOARD (GB) SHALL BE 5/8" THICK U.N.O, GB SHALL BE TYPE 'X' WHERE RATED WALLS ARE INDICATED.
   B. SHOWER WALLS SHALL USE CEMENTITIOUS TILE BACKER BOARDS (CBB); OTHER WALLS IN WET AREAS SHALL USE WATER & MOLD RESISTANT GYPSUM BOARD (WRGB). ALL WALL BOARDS SHALL BE 5/8" THICK. CEILINGS MAY ALTERNATIVELY USE 1/2" LIGHTWEIGHT WATER & MOLD RESISTANT (USG LIGHTWEIGHT MOLD TOUGH OR EQUIV.)
3. FLOORING
   A. IN AREAS OF EXPOSED CONCRETE FLOORING, HOLES, SPALLING AND CRACKS SHALL BE PATCHED WITH EPOXY AND LEVELLED SMOOTH. FLOOR SHALL BE COATED WITH CLEAR ACRYLIC SEALER.
   B. IN AREAS WHERE FLOORING WILL BE INSTALLED OVER CONCRETE, PREPARE THE CONCRETE WITH MAPEI "PLANISEAL VS" MOISTURE BARRIER, "PRIMER ME" PRIMER, AND "ULTRAPLAN 1PLUS" SELF LEVELING UNDERLAYMENT.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
NO. C38020
RENEWAL: 8/23
STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N. Shaw Ave.
Fresno, CA 93711
559-369-6924
info@muratoreassociates.com

CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: 1 1/2" = 1'-0"
JOB NUMBER:
ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379
PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

SCHEDULES

SHEET NUMBER

A7.01

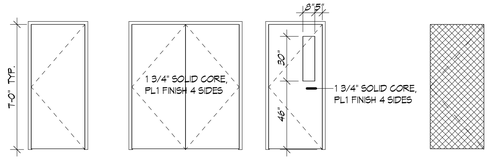
INTERNAL NUMBER: 029

11/01/2022 12:09 PM
FILE PATH: P:\Projects\Clients\County of Fresno\29-Brix Mercer Basement Design\Documents\Drawings\Working\29-Brix Mercer Basement.rvt

11/21/2022 12:34 PM

DOOR & HARDWARE SCHEDULE

DOOR #	SIZE	PANEL TYPE	UL LABEL	HDWR ID	HARDWARE NOTES	SIGNAGE TYPE	SIGNAGE MESSAGE	OTHER COMMENTS
B0EL1	0" x 0"	(E)	-	E		-	-	(E) ELEVATOR
B0EL2	0" x 0"	(E)	-	E		-	-	(E) ELEVATOR
B0EL3	T'-0" x 3'-0"	(E)	-	E		-	-	(E) DOOR & HARDWARE
B0ST1	T'-0" x 3'-0"	(E)	-	E		-	-	(E) DOOR & HARDWARE
B0ST3	T'-0" x 3'-0"	(E)	-	E		-	-	(E) DOOR & HARDWARE
B0XXA	T'-0" x 3'-0"	A	-	5		A3	STORAGE	
B0101A	T'-0" x 6'-0"	AA	-	8	36" KICK PLATE	-	-	
B0102A	T'-0" x 5'-0"	(E)	-	E		-	-	(E) DOOR & HARDWARE
B0103A	T'-0" x 6'-0"	(E)	-	E		-	-	(E) DOOR & HARDWARE
B0103B	T'-0" x 3'-0"	(E)	-	E		-	-	
B0104A	T'-0" x 3'-0"	(E)	-	E		-	-	
B0105A	T'-0" x 5'-0"	(E)	-	E		-	-	(E) DOOR & HARDWARE
B0106A	T'-0" x 6'-0"	(E)	-	E		-	-	
B0107A	T'-0" x 3'-0"	A	-	5'	36" KICK PLATE	A3	HSKPS	
B0108A	T'-0" x 3'-0"	A	-	19		B2, G2	ACCESSIBLE TOILET	
B0202A	T'-0" x 5'-0"	AA	45 MIN	12	RECESS HOLD OPEN WHERE POSSIBLE	A1	BREAK	
B0202B	6'-8" X 3'-6"	A	45 MIN	11		A1	BREAK	
B0203A	T'-3 1/2" x 3'-0" VIF	G	-	3	ALL HDWR BY PRL, BRUSHED STAINLESS FINISH	A2	CONFERENCE	FIELD VERIFY DIMENSIONS; DOOR & SIDELIGHTS 1/2" TEMPERED CLEAR VISION GLASS; ALL COMPONENTS BY PRL GLASS SYSTEMS, INC
B0204A	T'-3 1/2" x 3'-0" VIF	G	-	3	ALL HDWR BY PRL, BRUSHED STAINLESS FINISH	A2	CONFERENCE	FIELD VERIFY DIMENSIONS; DOOR & SIDELIGHTS 1/2" TEMPERED CLEAR VISION GLASS; ALL COMPONENTS BY PRL GLASS SYSTEMS, INC
B0205A	T'-3 1/2" x 5'-11 15/16" VIF	GG	-	3	ALL HDWR BY PRL, BRUSHED STAINLESS FINISH	A1	QUIET LOUNGE	FIELD VERIFY DIMENSIONS; DOOR & SIDELIGHTS 1/2" TEMPERED CLEAR VISION GLASS; ALL COMPONENTS BY PRL GLASS SYSTEMS, INC
B0206A	T'-0" x 3'-0"	A	-	1		B1, C1	ACCESSIBLE MENS TOILET	
B0207A	T'-0" x 3'-0"	A	-	1		B1, C1	ACCESSIBLE WOMENS TOILET	
B0209A	T'-0" x 6'-0"	AA	-	7		-	-	
B0211A	T'-3 1/4" x 3'-0" VIF	G		3	ALL HDWR BY PRL, BRUSHED STAINLESS FINISH	A2	CONFERENCE	FIELD VERIFY DIMENSIONS; DOOR & SIDELIGHTS 1/2" TEMPERED CLEAR VISION GLASS; ALL COMPONENTS BY PRL GLASS SYSTEMS, INC
B0301A	T'-0" x 3'-0"	B	-	4		A1	MEDIA ROOM	
B0302A	T'-0" x 3'-0"	B	-	4		A1	MEDIA ROOM	
B0303	0" x 0"	-	-	OP		-	-	FINISHED OPENING
B0400A	T'-0" x 6'-0"	AA	-	7	36" KICK PLATE	A1	CAGED STORAGE	
B0401A	T'-0" x 4'-0"	C	-	2	BY CAGE MFR.	-	-	BY CAGE MFR.
B0402A	T'-0" x 4'-0"	C	-	2	BY CAGE MFR.	-	-	BY CAGE MFR.
B0403A	T'-0" x 4'-0"	C	-	2	BY CAGE MFR.	-	-	BY CAGE MFR.
B0404A	T'-0" x 4'-0"	C	-	2	BY CAGE MFR.	-	-	BY CAGE MFR.
B0405A	T'-0" x 4'-0"	C	-	2	BY CAGE MFR.	-	-	BY CAGE MFR.
B0406A	T'-0" x 4'-0"	C	-	2	BY CAGE MFR.	-	-	BY CAGE MFR.
B0407A	T'-0" x 4'-0"	C	-	2	BY CAGE MFR.	-	-	BY CAGE MFR.
B1101A	T'-9 1/2" x 3'-0"	S	-	SF2	CARD READER ACTIVATED, FAIL-SAFE	-	-	KAWNEER WIDE STILE 500, 1/4" TEMPERED CLEAR VISION GLAZING
B1101B	T'-9 1/2" x 3'-0"	S	-	SF2	CARD READER ACTIVATED, FAIL-SAFE	-	-	KAWNEER WIDE STILE 500, 1/4" TEMPERED CLEAR VISION GLAZING
M0EL1	0" x 0"	(E)	-	E		-	-	(E) ELEVATOR
M0ST1	T'-0" x 3'-0"	(E)	-	E		-	-	(E) DOOR & HARDWARE
M0ST2	T'-0" x 3'-0"	(E)	-	E		-	-	(E) DOOR & HARDWARE
M0103A	T'-0" x 3'-0"	A	-	6		-	-	
M0105A	T'-0" x 3'-0"	A	-	1		B1, C1	ACCESSIBLE WOMENS TOILET	
M0106A	T'-0" x 3'-0"	A	-	1		B1, C1	ACCESSIBLE MENS TOILET	
M0107A	T'-0" x 3'-6"	A	-	6		A3	STORAGE	
M0108A	T'-0" x 4'-0"	A	-	5		A3	IDF / TELECOM	
M0109A	T'-0" x 6'-0"	AA	-	9		A3	MECHANICAL	ACTIVE IS RH
M0202A	T'-0" x 3'-0"	B	45 MIN	4		A2	MEETING EAST	
M0202B	T'-0" x 3'-0"	B	45 MIN	4		A2	MEETING EAST	
M0202C	T'-0" x 3'-0"	B	45 MIN	4		A2	MEETING WEST	
M0202D	T'-0" x 3'-0"	B	45 MIN	4		A2	MEETING WEST	
M0203A	T'-0" x 3'-0"	A	-	4'		A1	PRIVATE MEETING	
M0203B	T'-0" x 3'-0"	A	45 MIN	4'		A3	PRIVATE MEETING	
M0204A	T'-0" x 3'-6"	B	-	6'	36" KICK PLATE	A3	PREPARED FOOD	
M0204B	T'-0" x 3'-6"	A	45 MIN	14	36" KICK PLATE	-	-	
M0205A	T'-0" x 6'-0"	AA	45 MIN	10	36" KICKPLATE	A3	STORAGE	ACTIVE IS RH
M0301A	6'-10 3/4" x 6'-0"	SS	-	SF		A1	ACTIVITY ROOM	KAWNEER WIDE STILE 500, 1/4" TEMPERED CLEAR VISION GLAZING
M0302A	T'-0" x 6'-0"	AA	-	8		A3	MECHANICAL	
M0302B	T'-0" x 6'-0"	AA	-	8		A3	MECHANICAL	
M0303A	T'-0" x 6'-0"	AA	-	9		A3	STORAGE	
M0304A	T'-0" x 3'-0"	A	-	1		B1, C1	ACCESSIBLE WOMENS TOILET & SHOWER	
M0305	0" x 0"	-	-	OP		-	-	FINISHED OPENING
M0306A	T'-0" x 3'-0"	A	-	1		B1, C1	ACCESSIBLE MENS TOILET & SHOWER	
M0309	0" x 0"	-	-	OP		-	-	FINISHED OPENING
M0104A	T'-0" x 3'-6"	A	-	5		A3	STORAGE	



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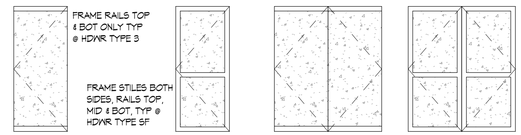

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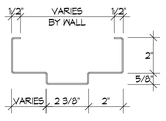
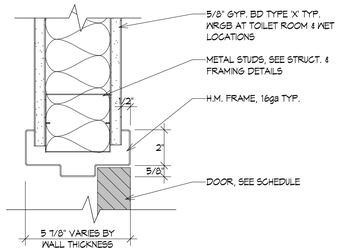
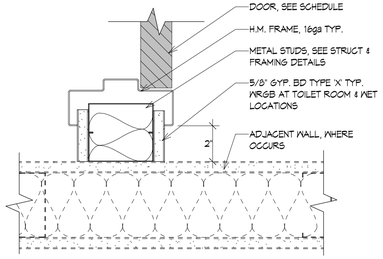


DOOR FRAME 'A'



1 DOOR JAMB (HEAD SIM)
3" = 1'-0"



2 DOOR JAMB @ WALL
3" = 1'-0"

HARDWARE SCHEDULE

HDWR ID	HINGES	LOCKSET	CLOSER	SMOKE GASKET	DOOR STOP	HARDWARE NOTES
1	HAGER: BB1199	IVES: PUSH & PULL PLATES, 6X16, w/F-MOUNT HANDLE 8190EZHD-10", US32D; SCHLAGE: B663P DEADBOLT, US26D	LCN: 4040		IVES: WS401CVX	
2	BY VENDOR	BY VENDOR				BY CAGE MFR
3	BOTTOM PIVOT: PRL 3010DP; TOP PIVOT (SEE CLOSER)	HANDLE: PRL: PL3-EOS-10"; NO LATCH	DORMA: RTS88, PRL: 3010A 1" END LOAD ARM		-	ALL HDWR BY PRL, BRUSHED STAINLESS FINISH
4	HAGER: BB1199	SCHLAGE: CLASSROOM (ND10PD)	LCN: 4040		IVES: WS401CVX	
4'	HAGER: BB1199	SCHLAGE: CLASSROOM (ND10PD)	LCN: 4040		-	
5	HAGER: BB1199	SCHLAGE: STOREROOM (ND80PD)	-		IVES: WS401CVX	
5'	HAGER: BB1199	SCHLAGE: STOREROOM (ND80PD)	-		IVES: FS445 STOP & HOLDER	36" KICK PLATE
6	HAGER: BB1199	SCHLAGE: STOREROOM (ND80PD)	LCN: 4040		IVES: WS401CVX	
6'	HAGER: BB1199	SCHLAGE: STOREROOM (ND80PD)	LCN: 4040		IVES: FS445 STOP & HOLDER	36" KICK PLATE
7	HAGER: BB1199	VON DUPRIN: AX-9821-F-996LNL ACCESSIBLE, FIRE RATED PANIC DEVICE, VERTICAL SURFACE MTD RODS, PULL-SIDE RHODES LEVER WITH NIGHT LATCH, SMOOTH 626 FINISH	LCN: 4040; IVES: COR SERIES BAR COORDINATOR		IVES: WS401CVX	
8	HAGER: BB1199	ACTIVE LEAF: SCHLAGE: STOREROOM (ND80PD); INACTIVE LEAF: IVES: FB358 MANUAL TOP FLUSH BOLT	-		IVES: WS401CVX	
9	HAGER: BB1199	ACTIVE LEAF: SCHLAGE: PASSAGE (ND10S); INACTIVE LEAF: IVES: FB358 MANUAL TOP FLUSH BOLT	-		IVES: WS401CVX	
10	HAGER: BB1199	ACTIVE LEAF: SCHLAGE: STOREROOM (ND80PD); INACTIVE LEAF: IVES: FB41P AUTO FLUSH BOLTS TOP/BOT	LCN: 4040; IVES: COR SERIES BAR COORDINATOR		-	36" KICKPLATE
11	HAGER: BB1199	VON DUPRIN: AX-98RIm-F-996LNL ACCESSIBLE, FIRE RATED PANIC DEVICE, RIM LATCH, PULL-SIDE RHODES LEVER WITH NIGHT LATCH, SMOOTH 626 FINISH	LCN: 4040		IVES: WS401CVX	
12	HAGER: BB1199	VON DUPRIN: AX-9821-F-996LNL ACCESSIBLE, FIRE RATED PANIC DEVICE, VERTICAL SURFACE MTD RODS, PULL-SIDE RHODES LEVER WITH NIGHT LATCH, SMOOTH 626 FINISH	LCN: 4040; IVES: COR SERIES BAR COORDINATOR		LCN: 7800 MAGNETIC HOLD OPEN LINKED TO FA SYS.	RECESS HOLD OPEN WHERE POSSIBLE
13	HAGER: BB1199	SCHLAGE: BATHROOM PRIVACY (ND40S)			IVES: WS401CVX	
14	HAGER: BB1199	SCHLAGE: PASSAGE (ND10S)	LCN: 4040		IVES: WS401CVX	36" KICK PLATE
E	(E)	(E)				
OP	N/A	N/A	N/A		N/A	
SF	KAWNEER: OFFSET PIVOT	CO-9 / CP-II, ADAMS-RITE: MS1850	LCN: 4040			
SF2	KAWNEER: OFFSET PIVOT	CO-9, 1786 MEL RIM Exit Device	LCN: 4040			CARD READER ACTIVATED, FAIL-SAFE

ADD'L HARDWARE NOTES

1. ALL HINGES SHALL BE 304L STAINLESS, US32D FINISH, 5" HIGH x 4" WIDE, U.N.O.
2. ALL HARDWARE FINISHES SHALL BE US32D (FOR STAINLESS ITEMS) OR US26D (FOR NON-STAINLESS STEEL ITEMS).
3. ALL LOCKS SHALL BE CYLINDRICAL TYPE U.N.O.
4. ALL LOCK CYLINDERS SHALL BE PROVIDED WITH FULL SIZE INTERCHANGABLE CORES (FSICs).
5. ALL LEVERS SHALL BE "SCHLAGE RHODES" STYLE.
6. ALL DOOR PANELS ARE SOLID CORE WOOD 1 3/4" THICK, WITH PLASTIC LAMINATE FINISH ALL SIDE (LESS TOP & BOTTOM), U.N.O.
7. ALL FRAMES ARE 16ga HOLLOW METAL, FACE WELDED, DOUBLE RABET, FACTORY PRIMED.
8. ALL OPERABLE DOORS SHALL HAVE TYPE 'D' SIGNAGE ADHERED TO FRAME WITH 3M 1/16" THICK DOUBLE SIDED FOAM TAPE.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

DOOR SIGNAGE NOTES

PERMANENT SIGNAGE TO BE INSTALLED ON WALL ADJACENT TO LATCH SIDE OF DOOR OR AS INDICATED ON ELEVATIONS. SIGNS WITH RAISED CHARACTERS AND BRAILLE SHALL BE LOCATED AS INDICATED ON TYPICAL ACCESSIBILITY DETAILS, 48" MINIMUM AFF, MEASURED FROM THE BASE LINE OF THE LOWEST LINE OF BRAILLE AND 60" MAXIMUM AFF, MEASURED FROM THE BASELINE OF THE HIGHEST LINE OF RAISED CHARACTERS OR GRAPHIC.

ALL SIGNS SHALL BE ADHERED USING 3M 1/16" THICK DOUBLE SIDED FOAM TAPE AND SILICONE ADHESIVE.

11B-216.8 -TOILET ROOMS AND BATHING ROOMS
DOORWAYS LEADING TO TOILET ROOMS AND BATHING ROOMS COMPLYING WITH SETION 11B-603 SHALL BE INDETIFIED BY A GEOMETRIC SYMBOL COMPLYING WITH SECTION 11B-703.7.2.8. SIGN SHALL COMPLY WITH SECTION 11B-1019.5 AND SHALL INCLUDE THE INTERNATION SYMBOL OF ACCESSIBILITY COMPLY WITH SECTION 11B-703.7.2.1.

11B-703.2
RAISTED CHARACTERS ON SIGNS SHALL COMPLY WITH CBC 11B-703.2. CHARACTERS SHALL BE UPPER CASE, SAN SERIF, RAISED 1/32" MINIMUM ABOVE THE BACKGROUND, 5/8" MIN. - 2" MAX IN HEIGHT BASED ON THE UPPER CASE 'I'. THE WIDTH OF THE UPPERCASE 'O' IS TO BE 60% MIN. AND 110% MAX. OF THE HEIGHT OF THE UPPERCASE LETTER 'I'. STROKE THICKNESS OF THE UPPECASE LETTER 'I' SHALL BE 15% MAC. OF THE HEIGHT OF THE CHARACTER.

11B-703.3 - BRAILLE
BRAILLE SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH SECTIONS 11B-703.3 FOR DIMENSIONS, CAPITALIZATION AND POSITION AND 11B-703.4. FOR INSTALLATION HEIGHT AND LOCATION. CBC TABLE 11B-1019.3.1

BRAILLE SHALL BE POSITIONED BELOW THE CORRESPONDING TEXT IN A HORIZONTAL FORMAT. BRAILLE SHALL BE SEPARATED 3/8" MIN. AND 1/2" MAX. FROM ANY OTHER TACTILE CHARACTERS. TACTILE CHARACTERS ON SIGNS SHALL BE LOCATED 48 MIN. ABOVE FINISH FLOOR MEASURED FROM THE BASELINE OF THE LOWEST BRAILLE CELLS AND 60 MAX. ABOVE FINISH FLOOR, MEASURED FROM THE BASELINE OF THE HIGHEST LINE OF RAISED CHARACTERS.

WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE. AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. AT DOUBLE DOORS WITH TWO ACTIVE LEAVES, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. WHERE THERE IS NOT WALL SPACE AT THE LATCH SIDE OF A SINGE DOOR OR AT THE RIGHT SIDE OF A DOUBLE DOOR, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL.

SIGNS CONTAINING TACTILE CHARACTER SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18"x 18 MIN CENTERED ON THE TACTILE CHARACTES IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING. WHERE PERMANENT IDENTIFICATION SIGNAGE IS PROVIDE FOR ROOMS AND SPACES THEY SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE ENTERS THE ROOM OR SPACE. SIGNS THAT IDENTIFY EXITS SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE EXISTS THE ROOM OR SPACE."

11B-1019.5 - VISUAL CHARACTERS
CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH AND CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND. CHARACTER SHALL BE UPPERCASE OR LOWERCASE OR A COMBINATION OF BOTH. MINIMUM CHARACTER HEIGHT SHALL COMPLY WITH TABLE 11B-1019.5.9. VISUAL CHARACTERS SHALL BE 40" MIN. ABOVE FINISH FLOOR. TEXT SHALL BE IN A HORIZONTAL FORMAT. CHARACTERS SHALL COMPLY WITH 11B-1019.5.4 AND 11B-1019.5.5 REGARDING THER PROPORTION AND HEIGHT.

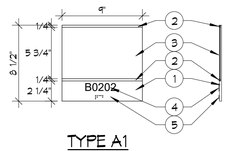
11B.703.7.2.8 - TOILET AND BATHING FACILITES GEOMETRIC SYMBOLS
DOORWAYS LEADING TO TOILET ROOMS AND BATING ROOMS SHALL BE IDENTIFIED BY A GEOMETRIC SYMBOL. THE SYMBOL SHALL BE MOUNTED AT 58" MIN. AND 60" MAX. ABOVE FINISH FLOOR MEASURED TO THE CENTERLINE OF THE SYMBOL. WHERE A DOOR IS PROVIDED THE SYMBOL SHALL BE MOUNTED WITHIN 1" OF THE VERTICAL CENTERLINE OF THE DOOR.

MENS TOILET AND BATHING FACLITES SHALL BE IDENTIFIED WITH AN EQUILATERAL TRIANGE, 1/4 in THICK WITH EDGES 12 in LONG AND A VERTEX POINTING UPWARD. THE SYMBOL SHALL CONTRAST WITH THE DOOR.

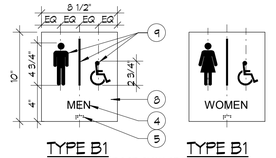
WOMENS TOILET AND BATHING FACLITES SHALL BE IDENTIFIED BY A CIRCLE, 1/4 in THICK AND 12 in DIAMETER. THE SYMBOL SHALL CONTRAST WITH THE DOOR.

UNISEX TOILET AND BATHING FACLITES SHALL BE IDENTIFIED BY A CIRCLE, 1/4 in THICK AND 12 in DIAMETER WITH A1/4 in THICK TRIANGLE WITH A VERTEX POINTING UPWARD SUPERIMPOSED ON THE CIRCLE AND WITHIN THE DIAMETER. THE TRIANGLE SYMBOL SHALL CONTRAST WITH THE CIRCLE SYMBOL AND THE CIRCLE SYMBOL SHALL CONTRAST WITH THE DOOR

DOOR SIGNAGE TYPES



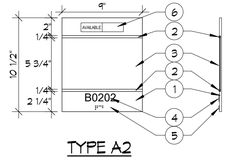
TYPE A1



TYPE B1 TYPE B1

MATCH DOOR SIGNAGE FOR SEX

TYPE B2



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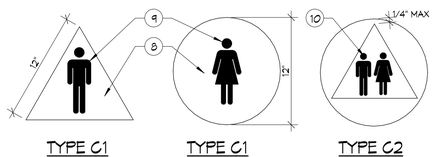
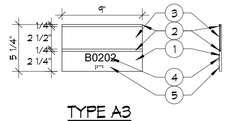


TYPE C1 TYPE C1 TYPE C2

MATCH DOOR SIGNAGE FOR SEX



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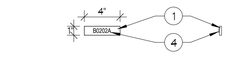


TYPE D

SIGNAGE MATERIAL NOTES

1. 1/8" THICK NON-GLARE ACRYLIC WITH SANDED EDGES. PAINTED SECOND-SURFACE. PAINT: P3
2. ALUMINUM LAMINATE DETAIL.
3. 1/8" NON-GLARE ACRYLIC FACE AND BACKER WITH SPACERS TO ALLOW FOR INSERT. SANDED EDGES.
4. 1-3/8" TEXT, RAISED 1/32" ABOVE SIGN FACE; FONT: TBD; TEXT COLOR: P5
5. GRADE 2 GLASS BEAD BRAILLE.
6. SLIDER WITH LAMINATED PAPER INSERT. COVER TO MATCH ACRYLIC ITEM 1. VENDOR TO DETERMINE METHOD OF CONSTRUCTION.
7. 1/2" TEXT, RAISED 1/32" ABOVE SIGN FACE; FONT: TBD; TEXT COLOR: P5
8. 1/4" THICK NON-GLARE ACRYLIC WITH SANDED EDGES. PAINTED SECOND-SURFACE. PAINT: P3
9. GRAPHIC RAISED 1/32" ABOVE SIGN FACE; FONT: TBD; TEXT COLOR: P5
10. RAISED GRAPHICS OPTIONAL FOR ALL-GENDER DOOR SIGNAGE

DOOR LIST

HDWR ID	DOOR #
1	
	B0206A
	B0207A
	M0105A
	M0106A
	M0304A
	M0306A
2	
	B0401A
	B0402A
	B0403A
	B0404A
	B0405A
	B0406A
	B0407A
3	
	B0203A
	B0204A
	B0205A
	B0211A
4	
	B0301A
	B0302A
	M0202A
	M0202B
	M0202C
	M0202D
4'	
	M0203A
	M0203B
5	
	B0XXA
	M0108A
	M0104A
5'	
	B0107A
6	
	M0103A
	M0107A
6'	
	M0204A
7	

DOOR LIST

HDWR ID	DOOR #
	B0209A
	B0400A
8	
	B0101A
	M0109A
	M0302A
	M0302B
9	
	M0303A
10	
	M0205A
11	
	B0202B
12	
	B0202A
13	
	B0108A
14	
	M0204B
E	
	B0EL1
	B0EL2
	B0EL3
	B0ST1
	B0ST3
	B0102A
	B0103A
	B0103B
	B0104A
	B0105A
	B0106A
	M0EL1
	M0ST1
	M0ST2
OP	
	B0303
	M0305
	M0309
SF	
	M0301A
SF2	
	B1101A
	B1101B

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8-23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE.
FRESNO, CA 93711
559-369-6924
info@muratoreassociates.com

CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

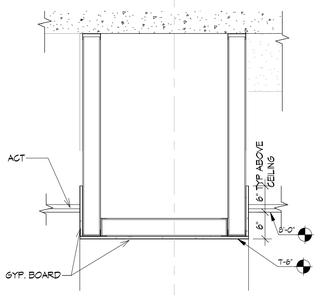
SCHEDULES - DOORS/WINDOWS

SHEET NUMBER

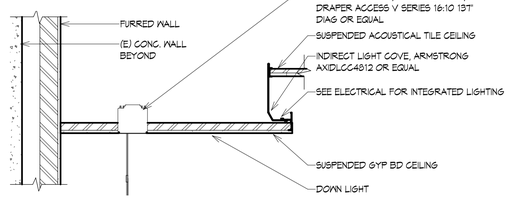
A7.02

INTERNAL NUMBER: 024

FILE PATH: P:\Projects\2021\2021-07 Brix Mercer Basement Design Documents\01-Design Work\A7.02 - Door Schedules.rvt



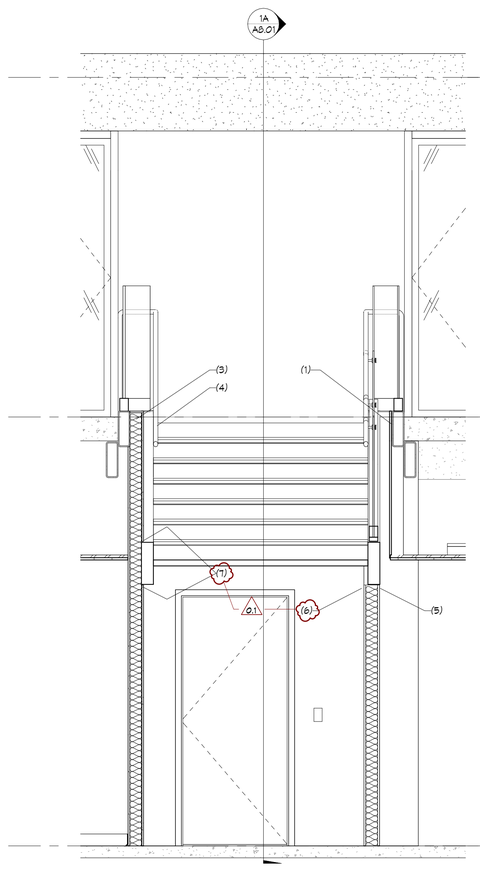
1 SOFFIT AT BEAM
3/4" = 1'-0"



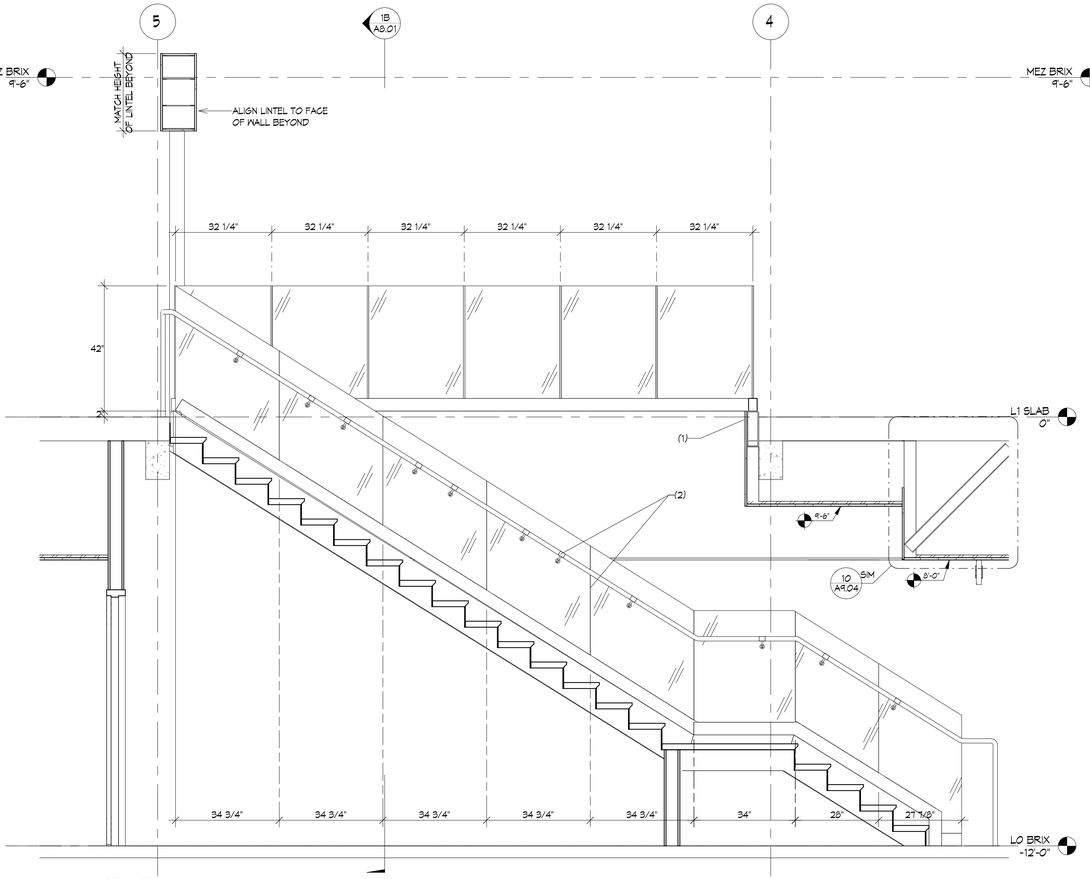
2 MEETING ROOM SOFFIT
3/4" = 1'-0"

KEYED SECTION NOTES

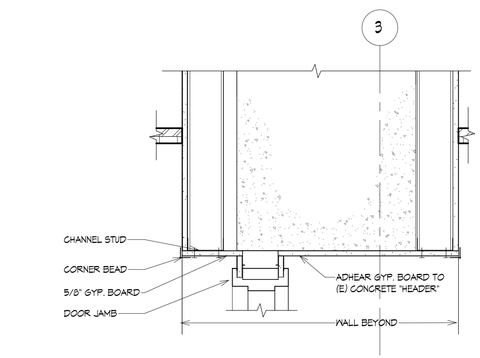
(1)	EXTEND GYPSUM BOARD PANEL TO TOP OF TUBE STEEL FRAME, FINISH WITH J-BEAD EDGE MOLDING AND SEAL GAPS WITH CAULK. TYP AT NORTH AND EAST PERIMETER OF OPENING.
(2)	LOCATION OF (BREAKS IN) GLAZING PANELS AND HANDRAIL SUPPORT IS TYPICALLY SHOWN SCHEMATICALLY IN THESE DRAWINGS AND SHALL BE DETERMINED AND CALCULATED BY THE RAILING AND GUARD MANUFACTURER.
(3)	EXTEND STUD FRAMING TO TOP OF TUBE STEEL FRAME, STUD FLANGES SHOULD BE FLUSH WITH FACE OF STRINGER AND FACE OF TUBE STEEL. FINISH WITH GYPSUM BOARD PANEL BOTH SIDES, TRIM TO STRINGER AND TUBE STEEL. SEAL GAPS WITH CAULK. TYP ALONG SOUTH SIDE OF OPENING.
(4)	RAILING ON SOUTH SIDE OF STAIR SHALL ATTACH TO STUD WALL, HANDRAIL SUPPORTS SHALL MIRROR LOCATIONS ON NORTH (GLAZED GUARD RAIL) SIDE OF STAIRS. LOCATE BACKING IN STUD WALL ACCORDINGLY.
(5)	FACE OF GYP BD FLUSH TO, OR SLIGHTLY INBOARD OF, FACE OF STRINGER TUBE STEEL. FINISH GYP BD WITH J-BEAD EDGE MOLDING, SEAL GAPS WITH CAULK.
(6)	EXTEND GYP BD TO TOP TRACK. FINISH TOP EDGE OF GYP BD WITH J-BEAD EDGE MOLDING. PAINT THIS SIDE OF STRINGER & UNDERSIDE OF STAIRS TO MATCH WALLS.
(7)	EXTEND GYP BD TO TOP OR BOTTOM FACE OF STRINGER - INSTALL BLOCKING IN WALL AS REQUIRED TO SUPPORT EDGE OF GYPSUM BOARD. FINISH TOP EDGE OF GYP BD WITH J-BEAD EDGE MOLDING, SEAL ANY GAPS TO STRINGER WITH CAULK.



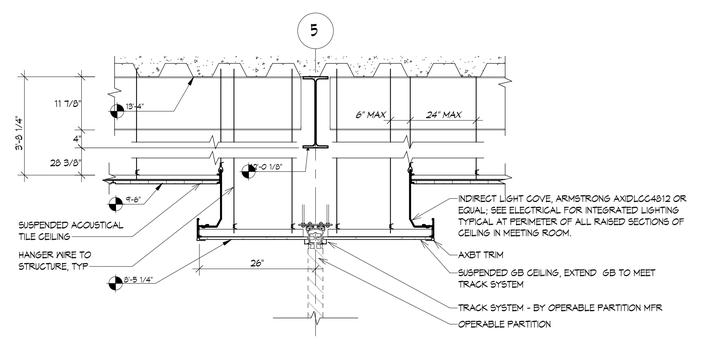
1B MAIN STAIRS B
1/2" = 1'-0"



1A MAIN STAIRS A
1/2" = 1'-0"



4 BREAK ROOM EAST DOOR
1 1/2" = 1'-0"



3 MEETING ROOM CEILING W/ PARTITION
3/4" = 1'-0"

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03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
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CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE
0.1	BACKCHECK	8/15/2022

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

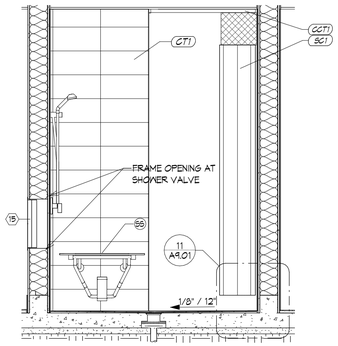
SECTIONS

SHEET NUMBER

BC01
A8.01

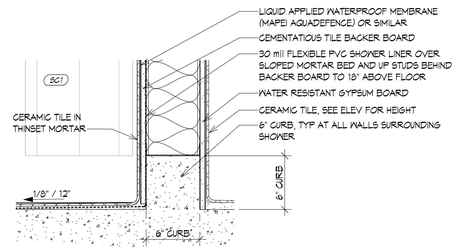
INTERNAL NUMBER: 029

FILEPATH: P:\Projects Work Customers\County of Fresno\BHS-Brix-Mercer Basement\Design Documents\Drawings\Arch\BHS-Arch-Brix-Mercer Basement.rvt

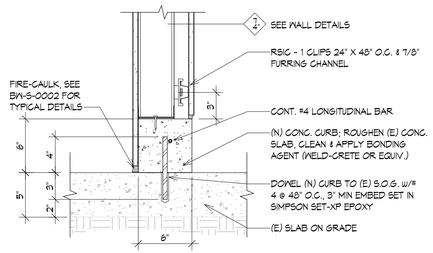


DEPRESS SLAB IN SHOWER AND TOILET ROOM AS REQ. TO ACHIEVE FLOOR SLOPES WITH TILE FINISH, SEE DEPRESSED SLAB DETAILS

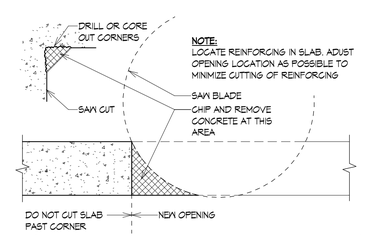
10 SHOWER SECTION
1/2" = 1'-0"



11 SHOWER CURB & WALL DETAIL
1 1/2" = 1'-0"



12 CURB AT MECHANICAL ROOM
1 1/2" = 1'-0"



DETAILING IS SIMILAR FOR CUTTING OF CONCRETE WALLS WHERE REQUIRED

13 SAWCUT OPENING IN EXISTING SLAB

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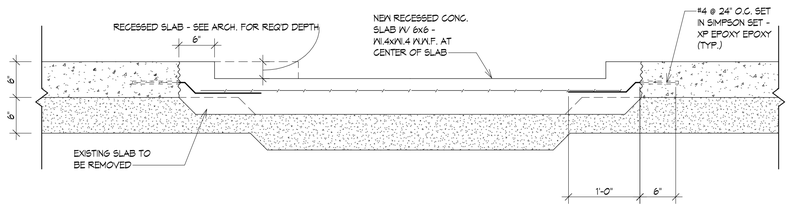
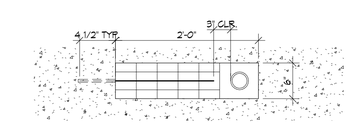
DEVELOPMENT SERVICES

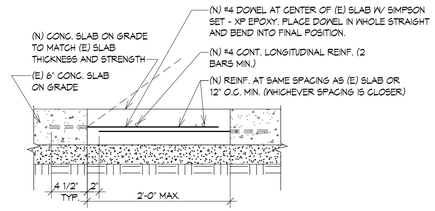


1 TYP. RECESSED SLAB
1" = 1'-0"

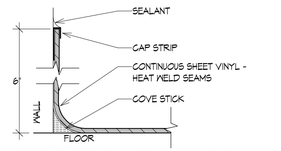


2 CONCRETE SLAB REPAIR
1" = 1'-0"

TYPICAL REPAIR NOTES
AT AREAS OF SLAB REPAIR, PRIOR TO INSTALLING NEW CONCRETE, EXISTING CONCRETE SHALL BE PREPARED FOR NEW CONCRETE BY
- ROUGHENING ALL JOINING SURFACES
- INSTALLING REINFORCEMENT AS INDICATED
- THOROUGHLY CLEANING ALL JOINING SURFACES OF DUST OR OTHER CONTAMINATES
- APPLYING A BONDING AGENT PER MFR RECOMMENDATIONS (POSSIBLY INCLUDING WETTING OF RECEIVING SURFACE, AND COATING OF REINFORCEMENT)

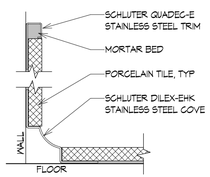


3 TYP. CONCRETE SLAB REPAIR AT TRENCHES
1" = 1'-0"

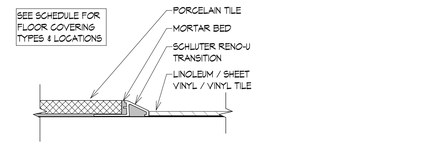


- ADHERE TO FLOOR & WALL USING MFR REC. ADHESIVE.
- AT CASEWORK, FLASH TO TOE-KICK.

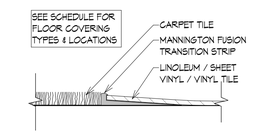
4 INTEGRAL COVE BASE
6" = 1'-0"



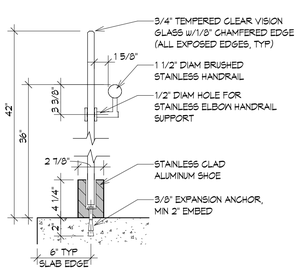
6 SCHLUTER COVE & TOP TRIM
6" = 1'-0"



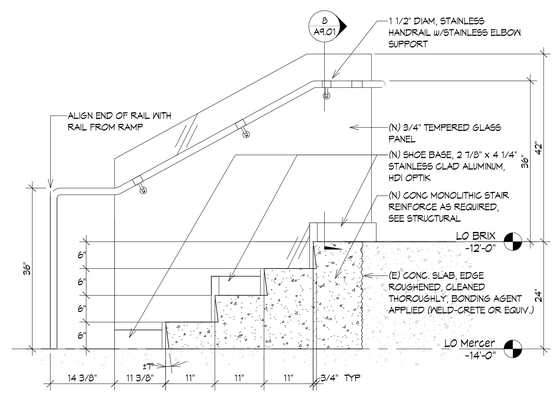
5 TRANSITION: POR. TILE TO SHEET
6" = 1'-0"



7 TRANSITION: CARPET TO SHEET
6" = 1'-0"



8 GLASS GUARD & HANDRAIL
1 1/2" = 1'-0"



9 BRIX TO MERCER STAIRS
3/4" = 1'-0"

DESIGN REFERENCES

BUILDING CODE	2019 CALIFORNIA BUILDING CODE, CCR T24, PART 2 VOLUME 2	
DESIGN LOADS	ASCE/SEI 7-16	MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES
STEEL	AISC 325-17	AISC STEEL CONSTRUCTION MANUAL, 15TH EDITION
	AISC 360-16	AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS
	AISC 327-18	AISC SEISMIC DESIGN MANUAL, 3RD EDITION
	AISC 341-16	AISC SEISMIC PROVISIONS FOR SPECIAL STEEL BUILDINGS
	AISC 358-16	AISC PREQUALIFIED CONNECTIONS FOR SPECIAL & INTERMEDIATE STEEL MOMENT FRAMES FOR SEISMIC APPLICATIONS
COLD FORMED STEEL	AISI S100-16	NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS
	AISI S202-15	CODE OF STANDARD PRACTICE FOR COLD-FORMED STEEL FRAMING
	AISI S220-15	NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING NONSTRUCTURAL MEMBERS
	AISI S230-15	STANDAD FOR COLD-FORMED STEEL FRAMING - PRESCRIPTIVE METHOD FOR ONE & TWO FAMILY DWELLINGS
	AISI S240-15	NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL STRUCTURAL FRAMING
	AISI S400-15	NORTH AMERICAN STANDARD FOR SEISMIC DESIGN OF COLD-FORMED STEEL STRUCTURAL SYSTEMS
CONCRETE	ACI 318-14	BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
MATERIAL STANDARDS	ASTM STANDARDS: AS REFERENCED IN THE 2018 IBC	

STRUCTURAL MATERIALS

EXCEPT AS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATIONS

CONCRETE:	EXISTING CONCRETE SHALL BE: • NORMAL WEIGHT CONCRETE (150 PCF) f'c = 4000 PSI @28 DAYS FOR SLAB ON GRADE & FOOTINGS • NORMAL WEIGHT CONCRETE (150 PCF) f'c = 4000 PSI @28 DAYS FOR SLAB ON METAL DECK
REINFORCED STEEL:	60,000 PSI (ASTM A615, GRADE 60)
STRUCTURAL STEEL:	Fy = 36 KSI Fu = 58 KSI (ASTM A36 FOR CHANNELS, ANGLE & PLATES) Fy = 50 KSI Fu = 65 KSI (ASTM A992 FOR WIDE FLANGES & WT SECTIONS)
TUBE STEEL:	Fy = 46 KSI Fu = 58 KSI (ASTM A500 GRADE B FOR RECTANGULAR HSS) Fy = 42 KSI Fu = 58 KSI (ASTM A500 GRADE B FOR CIRCULAR HSS) Fy = 35 KSI Fu = 60 KSI (ASTM A53 GRADE B FOR PIPES)
WELD MATERIAL:	F_{EXX} = 70 KSI E70XX RODS OR WIRE 5356 RODS OR WIRE FOR ALUMINUM
MACHINE BOLTS:	ASTM A307 Fnt/Ω = 22.5 KSI Fnv/Ω = 13.5 KSI Ω = 2.00 ASTM A307 Fnt/Ω = 22.5 KSI Fnv/Ω = 13.5 KSI Ω = 2.00
STAINLESS BOLTS:	ASTM A593C FY = 65 KSI Fu = 100 KSI
ANCHOR RODS:	Fy = 36 KSI Fu = 58 KSI (ASTM F1554 GRADE A36) Fy = 30 KSI Fu = 75 KSI (ASTM A193 TYPE 316)
THREADED RODS:	Fy = 36 KSI Fu = 58 KSI (ASTM A36) Fy = 30 KSI Fu = 75 KSI (ASTM A193 TYPE 316)

STRUCTURAL STEEL & MISC. IRON

1. STRUCTURAL STEEL W & WT SECTIONS SHALL BE ASTM A992. STRUCTURAL STEEL CHANNELS, ANGLES AND PLATES SHALL BE ASTM A36 .
2. RECTANGULAR HSS TUBE COLUMNS SHALL BE ASTM A500, GRADE B. CIRCULAR HSS TUBE COLUMNS SHALL BE ASTM A500, GRADE B. PIPE COLUMNS SHALL BE ASTM A53.
3. SHOP PAINT SHALL BE COMEX A-10 ALKYD SHOP KOTE PRIMER, OR EQUAL .
4. WELDING SHALL BE PER AMERICAN WELDING SOCIETY USING AWS-E-70 SERIES RODS OR WIRE.
5. ALL WELDING SHALL BE INSPECTED BY AN APPROVED LABORATORY WITH REPORTS SUBMITTED TO THE GOVERNING AGENCY, ARCHITECT, AND STRUCTURAL ENGINEER.
6. MINIMUM SIZE OF FILLET WELDS :

TABEL J1.4 AISC MINIMUM SIZE OF FILLET WELDS	
MATERIAL THICKNESS OF THINNER PART JOINED (IN.)	MINIMUM SIZE OF FILLET WELD^ (IN.)
TO 1/4" INCLUSIVE	3/16"
OVER 1/4" TO 1/2"	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4"	5/16"
^LEG DIMENSION OF FILLET WELDS. SINGLE-PASS WELDS MUST BE USED	

7. MACHINE BOLTS SHALL BE ASTM A307
8. ALL UNFINISHED BOLTS FOR WOOD TO STEEL SHALL BE ASTM A307 UNLESS OTHERWISE NOTED. BOLTS FOR STEEL TO STEEL CONNECTIONS SHALL BE A307 U.N.O., EXCEPT THAT BOLTS FOR BEAM CONNECTIONS SHALL BE PER BEAM CONNECTION SCHEDULE.
9. ALL BOLT HOLES IN STEEL SHALL BE 1/16" LARGER DIAMETER THAN NOMINAL SIZE OF BOLT USED UNLESS OTHERWISE NOTED.
10. WHERE SLOTTED OR OVERSIZED HOLES ARE SPECIFIED ON THE DRAWINGS, PROVIDE WASHERS PER AISC UNDER BOLT HEADS AND NUTS WHICH ARE IN CONTACT WITH SLOTTED OR OVERSIZED HOLES.
11. WHEN FABRICATING BEAMS, PLACE NATURAL CAMBER UP.
12. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION. SHOP DRAWINGS SHALL BE SUBMITTED BEFORE FABRICATION.
13. THE STEEL FABRICATOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR ERECTION.
14. PROVIDE STEEL SHIMS AT SPLICES OF PARTS HAVING MORE THAN 1/8" DIFFERENCE IN THICKNESS.
15. PROVIDE BEVELED WASHERS ON ALL CONNECTIONS TO SLOPING FLANGES OF SECTIONS AND CHANNELS.
16. PROVIDE ¾" DIAMETER STITCH BOLTS AND FILL PLATE (OR EQUIVALENT WELDED FILL PLATES) CONNECTING ALL DOUBLE ANGLE MEMBERS AT 2'- 0" O.C. MAX. PROVIDE TWO FASTENERS MIN. FOR EACH BUILT UP MEMBER.
17. OPENINGS SHALL NOT BE PLACED IN STEEL MEMBERS UNLESS SPECIFICALLY DETAILED. STEEL MEMBERS SHALL BE SHORED WHEN PERMISSIBLE HOLES ARE CUT WITH TORCH AFTER STEEL IS ERECTED. THE SHORES SHALL REMAIN IN PLACE UNTIL STEEL TEMPERATURE HAS RETURNED TO AIR TEMPERATURE.
18. ALL STUD BOLTS SHALL BE NELSON STUDS OR EQUIVALENT PER ESR 2856 AND SHALL BE INSTALLED BY A LICENSED FABRICATOR.
19. ALL STEEL EXPOSED TO EARTH SHALL HAVE A MINIMUM CONCRETE COVER OF THREE INCHES UNLESS NOTED OTHERWISE.
20. LIGHT GAUGE COLD- FORMED STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATIONS OF THE AISI MANUAL UNLESS OTHERWISE NOTED.

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE.
FRESNO, CA 93711
559-569-6924
info@muratoreassociates.com

CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

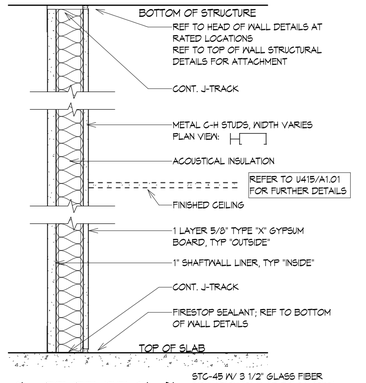
PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
DETAILS - TYPICAL NOTES, FLOORS

SHEET NUMBER
A9.01

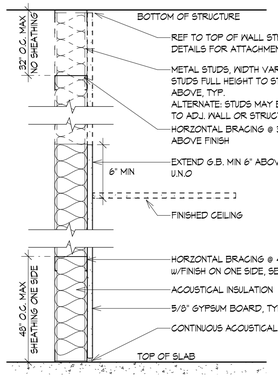
INTERNAL NUMBER: 624

11/21/2022 12:49 PM
File Path: P:\Projects\Clients\County of Fresno\BHS-Interior Basement\Design Documents\Drawings\Arch\BHS-Arch-Interior Basement.rvt

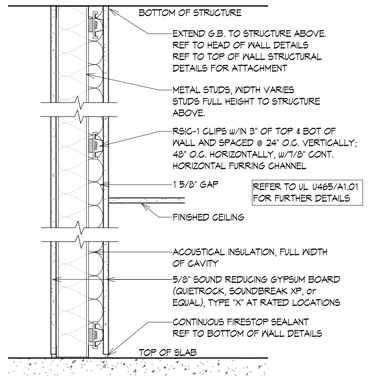


5 1hr FP/FB/SB Shaft
1 1/2" = 1'-0"

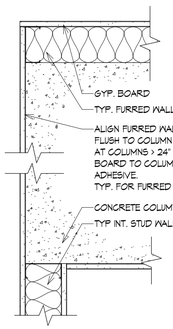
STC-45 W/ 3 1/2" GLASS FIBER INSULATION (SIMILAR TO GA-1072)



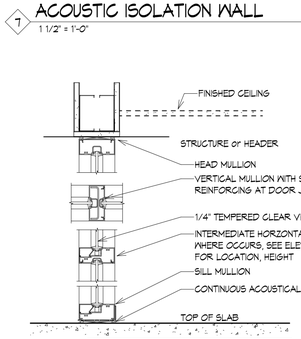
2 FURRED
1 1/2" = 1'-0"



7 ACOUSTIC ISOLATION WALL
1 1/2" = 1'-0"

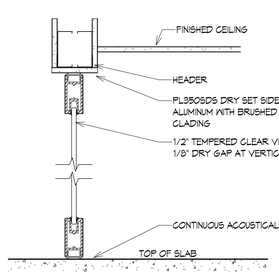


3 GYPSUM CONCRETE WRAPPING
1 1/2" = 1'-0"



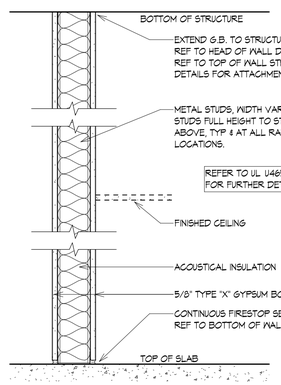
STOREFRONT SHALL BE KAWNEER TRIFAB 400

SF STOREFRONT
1 1/2" = 1'-0"



WINDOW WALLS SHALL BE BY PRL GLASS SYSTEMS

WW WINDOW WALL
1 1/2" = 1'-0"



STC-45 W/ 3 1/2" GLASS FIBER INSULATION (SIMILAR TO GA-1072)

4 1hr FP/FB/SB
1 1/2" = 1'-0"

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

PARTITION NOTES

1. CONTRACTOR SHALL VERIFY AND COORDINATE WALL, PARTITION AND FRAMING THAT REQUIRE A NON-TYPICAL WALL THICKNESS DUE TO STRUCTURAL, ELECTRICAL, EQUIPMENT OR OTHER REQUIREMENTS.
2. WHERE EQUIPMENT OR CABINETS ARE SHOWN TO BE RECESSED ON OR MOUNTED IN 1-HR OR 2-HR RATED PARTITIONS, THE FINISH SURFACE SHALL BE MADE TO RUN CONTINUOUSLY BEHIND AND AROUND SUCH EQUIPMENT OR CABINETS BEFORE THEIR INSTALLATIONS TO MAINTAIN FIRE RATING. PROTECT ALL PANELS, FIXTURES AND OTHER PENETRATIONS IN PARTITIONS & CEILINGS IN ORDER TO MAINTAIN REQUIRED FIRE SEPARATIONS AND RATED ASSEMBLIES.
3. AT CONTINUOUS WALL SURFACE WHERE CONSTRUCTION INVOLVES MORE THAN ONE MATERIAL FINISH, OR MATERIAL THICKNESS, ALIGN FACE OF FINISH UNLESS OTHERWISE NOTED. THE PARTITION TAG IS NOTED ON THE SIDE WHERE THE ADDITIONAL LAYER OR MATERIAL OCCURS.
4. PROVIDE CASING BEAD AT GYPSUM WALL BOARD EDGES WHEREVER EXPOSED GYP. BD. ABUTS A DIFFERENT MATERIAL.
5. PROVIDE CORNER BEAD AT GYPSUM WALL BOARD CORNERS, U.O.N.
6. PROVIDE BACKING FOR WALL MOUNTED EQUIPMENT AS REQUIRED. VERIFY ALL MOUNTING HEIGHTS AND SPECIAL STRUCTURAL SUPPORT REQUIREMENTS WITH EQUIPMENT MANUFACTURERS BEFORE INSTALLING BACKING AND SUPPORTS. PROVIDE BACKING FOR ALL RAILS, CASEWORK, COUNTERS OR FIXTURES UNLESS NOTED OTHERWISE. SEE DETAIL DRAWINGS FOR TYPICAL BACKING DETAILS AS REQUIRED BY WEIGHT TO BE SUPPORTED.
7. STEEL COLUMNS ENGAGED BY PARTITIONS SHALL BE FURRED WITH THE SAME MATERIAL AS THE ADJACENT WALLS.
8. SEE PLANS FOR ADDITIONAL PARTITION INFORMATION.
9. AT WET AREAS, USE WATER RESISTANT GYP. BD. INSTALL CERAMIC TILE OVER CEMENT BOARD. TYPICAL AT ALL SHOWERS & TOILET U.O.N.
10. STUD SPACING IS 16" O.C., U.O.N.
11. ALL STUDS 16ga, U.O.N
12. ACOUSTICAL INSULATION THICKNESS TO EQUAL STUD DEPTH. FILL STUD VOIDS FROM FLOOR (BOT TRACK / SOLE PLATE) TO CEILING (TOP TRACK / PLATE).
13. SEE STRUCTURAL SHEET FOR SPECIFIC REINFORCEMENT REQUIREMENTS WHERE EQUIPMENT AND UTILITY PANELS ARE ATTACHED TO THE PARTITION.
14. SEE INTERIOR ELEVATIONS AND ROOM FINISH SCHEDULE FOR ADDITIONAL PARTITION INFORMATION.
15. PARTITIONS WITH SPECIAL REQUIREMENTS ARE NOTED WITH A LETTER POSTSCRIPT.

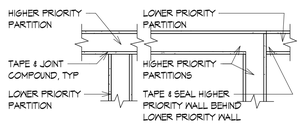
3 — PARTITION TYPE & STUD SIZE
4" — 4# — INDICATES LEAD SHIELDING WEIGHT IN POUNDS

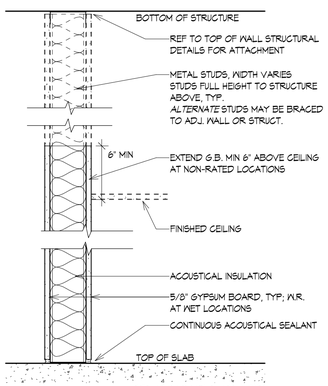
WALL PRIORITY

2 HOUR FIRE & SMOKE BARRIER.....PRIORITY 1
2 HOUR FIRE BARRIER.....PRIORITY 2
1 HOUR FIRE & SMOKE BARRIER.....PRIORITY 2
1 HOUR FIRE BARRIER.....PRIORITY 3
1 HOUR FIRE PARTITION.....PRIORITY 3
NON-RATED PARTITION (FULL HEIGHT).....PRIORITY 4
NON-RATED PARTITION (PARTIAL HEIGHT).....PRIORITY 4

GENERAL NOTES

1. REFER TO THE PARTITION TYPE DIAGRAMS & LEGENDS FOR # OF LAYERS & TYPES OF GYP BD.
2. REFER TO UL DETAILS FOR CONST. OF RATED WALLS
3. THE HIGHER PRIORITY WALL MUST PASS THROUGH THE LOWER PRIORITY WALL
4. TAPE AND SEAL JOINTS IN GYPSUM BOARD IN HIGHER PRIORITY WALLS BEHIND INTERSECTION OR ABUTTING LOWER PRIORITY WALLS.
5. ALTERNATE LAYERS OF GYP BD SHALL OVERLAP AT CORNER INTERSECTIONS OF MULTI-LAYERED RATED PARTITIONS.





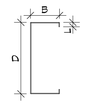
STC-45 W/ 3 1/2" GLASS FIBER INSULATION (SIMILAR TO GA-1072)

1 NON-RATED
1 1/2" = 1'-0"

METAL STUD/JOIST SCHEDULE

NOMINAL SIZE	SSMA SECTION	GA	AREA (IN²)	DIMENSIONS (IN) D	B	L	EFFECTIVE SECTION PROPERTIES Ix IN⁴	Sx IN³	ASTM SPEC	Fy (ksi)
STUD SECTION										
4"x18ga.	400S162-43	18	0.351	4.000	1.625	0.500	0.892	0.446	A653	33
4"x16ga.	400S162-54	16	0.443	4.000	1.625	0.500	1.098	0.498	A653	50
4"x14ga.	400S162-68	14	0.550	4.000	1.625	0.500	1.346	0.648	A653	50
6"x18ga.	600S162-43	18	0.441	6.000	1.625	0.500	2.316	0.772	A653	33
6"x16ga.	600S162-54	16	0.556	6.000	1.625	0.500	2.860	0.953	A653	50
TRACK SECTION										
4"x16ga.	400T150-54	16	0.396	4.000	1.500	N/A	1.025	0.489	A653	33
6"x16ga.	600T150-54	16	0.509	6.000	1.500	N/A	2.611	0.843	A653	33

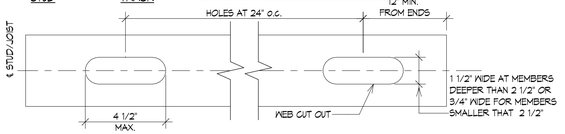
NOTE:
1. ALL SECTIONS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE AISI S100-07 AND S100-07 WITH SUPPLEMENT S2-10 SPECIFICATIONS.
2. BENT, KINKED, DISTORTED, OR DAMAGED SECTIONS SHALL NOT BE USED.
3. MEMBERS GREATER THAN 2 1/2" DEEP MAY HAVE A MAXIMUM OF 1 1/2" x 4 1/2" PUNCHOUTS, AND MEMBERS WITH DEPTHS 2 1/2" AND SMALLER MAY HAVE 3/4" x 4 1/2" PUNCHOUTS, AT A MINIMUM CENTER TO CENTER SPACING OF 24". CUT OUTS SHALL NOT BE CLOSER THAN 12" FROM SECTIONS ENDS.
4. SECTION PROPERTIES SHALL ARE BASED UPON THE "STEEL STUD MANUFACTURERS'S ASSOCIATION" (SSMA) CATALOG OF PARTICIPATING PRODUCERS. (PER ICC ESR-3064P)
5. STRUCTURAL STUDS MAY BE PUNCHED UNLESS NOTES OTHERWISE. STRUCTURAL TRACK SHALL BE UNPUNCHED UNLESS NOTED OTHERWISE.



STUD TRACK

METAL TO METAL FASTENER SIZE*	
METAL THICKNESS 'T'	SCREW TYPE
T < 12 GA.	#8, #10, #12 w/ #2 POINT
12 GA. < T < 3/16"	#10, #12, 1/4" w/ #3 POINT
3/16" < T < 5/16"	#12, 1/4" w/ #4 POINT
5/16" < T < 1/2"	#12, 1/4" w/ #5 POINT

*MIN. SCREW HEAD DIAMETER SHALL BE:
1. 1/4" FOR #8 & 10 SCREWS
2. 5/16" FOR #10 & #12 SCREWS
3. 3/8" FOR 1/4" SCREWS

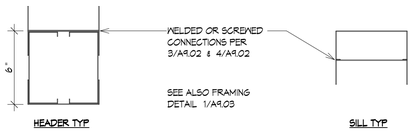


HOLE SPACING AT STUDS

1 LIGHT GAUGE METAL STUDS/JOISTS

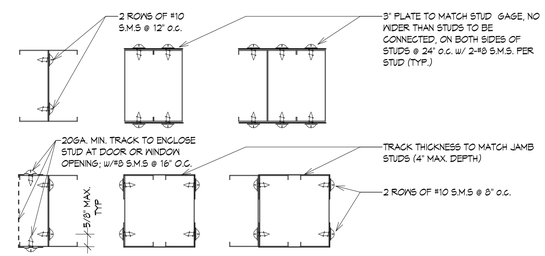
METAL HEADER & SILL SCHEDULE

OPENING WIDTH	SDS	WALL HEIGHT	JAMBS - MALL SIZE (# OF STUDS)-MIL 3-5/8"	4"	6"	HEADER 54 mil TYP FRAMING	SILL 43 mil MIN FRAMING
4'-0" TO 10'-0"	0.25 - 0.99	9'-0"	(1)-54 or (2)-33	(1)-54 or (2)-33	(1)-43 or (2)-33	(1) TRACK	(1) TRACK
		12'-0"	(2)-33	(2)-33	(2)-33	(2) TRACK	& (1) STUD
		16'-0"	(2)-54	(2)-54	(2)-43	& (1) STUD	
	1.00 - 1.25	9'-0"	(1)-54 or (2)-33	(1)-54 or (2)-33	(1)-43 or (2)-33	(2) TRACK	(1) TRACK
		12'-0"	(2)-43 or (3)-33	(2)-43 or (3)-33	(2)-33	(2) TRACK	& (1) STUD
		16'-0"	(3)-54	(2)-43 or (3)-33	(2)-43	& (1) STUD	
	1.25 - 1.45	9'-0"	(1)-54 or (2)-33	(1)-54 or (2)-33	(1)-43 or (2)-33	(2) TRACK	(1) TRACK
		12'-0"	(2)-43 or (3)-33	(2)-43 or (3)-33	(2)-33	(2) TRACK	& (1) STUD
		16'-0"	(3)-54	(2)-54	(2)-43	& (1) STUD	
	1.45-1.95	9'-0"	(2)-33	(2)-33	(1)-54 or (2)-33	(2) TRACK	(1) TRACK
		12'-0"	(2)-43 or (3)-33	(2)-43 or (3)-33	(2)-33	(2) TRACK	& (1) STUD
		16'-0"	(3)-54	(3)-54	(2)-43	& (1) STUD	



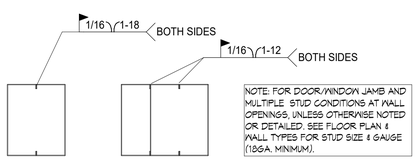
HEADER TYP SILL TYP

2 WALL OPENING FRAMING SCHEDULE



NOTE: FOR DOOR/WINDOW JAMB AND MULTIPLE STUD CONDITIONS AT WALL OPENINGS, UNLESS OTHERWISE NOTED OR DETAILED, SEE FLOOR PLAN & WALL TYPES FOR STUD SIZE & GAUGE (18GA. MINIMUM).

3 PARTIAL HEIGHT PARTITION BRACING



4 PARTIAL HEIGHT PARTITION BRACING

EXPANSION ANCHOR TESTING

1. INSTALL ALL ANCHORS IN ACCORDANCE WITH THE APPLICABLE ICC-ES EVALUATION REPORT.
2. USE EXPANSION ANCHORS ONLY WHERE SHOWN ON DRAWINGS.
3. EXPANSION ANCHORS SHALL NOT REPLACE CAST-IN-PLACE ANCHORS UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
4. EXPANSION ANCHORS SHALL NOT BE USED AS A REPAIR FOR MISSING OR DAMAGED CAST-IN-PLACE ANCHORS UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
5. ANCHORS SHALL BE TESTED IN THE PRESENCE OF THE SPECIAL INSPECTOR AND THE PROJECT INSPECTOR OF RECORD. A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY.
6. TESTING SHALL OCCUR AT LEAST 24 HOURS AFTER THE ANCHORS HAVE BEEN INSTALLED.
7. TEST EQUIPMENT SHALL BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD, RECOGNIZED PROCEDURES.
8. REACTION LOADS FROM THE TEST FIXTURE MAY BE APPLIED NEAR THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE TEST FIXTURE.
9. TEST 50% OF THE INSTALLED ANCHORS. TEST ALTERNATE ANCHORS IN ANY BOLT GROUP.
10. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS THE TEST, THEN RESUME THE INITIAL TESTING FREQUENCY.
11. ANCHOR DIAMETER REFERS TO THE THREAD SIZE FOR WEDGE AND SHELL TYPE ANCHORS.
12. APPLY PROOF TEST LOADS TO THE WEDGE TYPE ANCHORS WITHOUT REMOVING THEIR NUTS, IF POSSIBLE. IF NOT, REMOVE THE NUT AND INSTALL A THREADED COUPLER TO THE SAME TIGHTNESS AS THE ORIGINAL NUT (USING A TORQUE WRENCH) AND APPLY THE LOAD.
13. THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF THE INSTALLED ANCHORS:
   A. HYDRAULIC RAM METHOD: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD (FOR WEDGE-TYPE ANCHORS). A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE.
   B. TORQUE WRENCH METHOD: THE APPLICABLE TEST-TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS (FOR WEDGE-TYPE ANCHORS):
      a. 1/2 TURN OF THE NUT.
      b. 1/4 TURN OF THE NUT FOR 3/8 INCH DIAMETER ANCHORS

ALLOWABLE AND TEST LOADS FOR EXPANSION ANCHORS

MINIMUM CONCRETE STRENGTH f'c = 3000 psi
NORMAL WEIGHT CONCRETE

HILTI "KWIK BOLT TZ" ANCHOR
ESR 1917 VALUES
CARBON STEEL ANCHORS

DIAM	MIN EMBED	MIN. CONC. THKNS	MIN. EDGE DIST.	MIN. SPACING	SHEAR	TENSION	TENSION TEST	TORQUE TEST
3/8"	1 1/2"	3 1/4"	6"	4 1/2"	1197	706	1411	25 FT. LB
	2"	4"	4 3/8"	6"	1466	1212	2424	
	2 3/4"	5"	4 1/8"	8 1/4"	1466	1688	3375	
1/2"	2"	4"	5 1/2"	6"	1844	1284	2568	40 FT. LB
	3 1/4"	6"	7 1/2"	9 3/4"	4972	2625	5250	
5/8"	3 1/8"	5"	7"	9 3/8"	4940	2508	5015	60 FT. LB
	4"	6"	8 3/4"	12"	4940	3631	7263	
3/4"	3 1/4"	5 1/2"	12"	9 3/4"	7634	2660	5318	110 FT LB
	3 3/4"	6"	10"	11 1/4"	7634	3296	6593	
	4 3/4"	8"	9"	14 1/4"	7634	4698	9396	

HILTI "KWIK BOLT TZ" ANCHOR
ESR 1917 VALUES
STAINLESS STEEL ANCHORS

DIAM	MIN EMBED	MIN. CONC. THKNS	MIN. EDGE DIST.	MIN. SPACING	SHEAR	TENSION	TENSION TEST	TORQUE TEST
3/8"	2"	4"	4 3/8"	6"	1836	1284	2568	25 FT. LB
1/2"	2"	4"	5 1/2"	6"	2603	1236	2472	40 FT. LB
	3 1/4"	6"	7 1/2"	9 3/4"	4472	2660	5318	
5/8"	3 1/8"	5"	7"	9 3/8"	5422	2508	5015	60 FT. LB
	4"	6"	8 7/8"	12"	6019	3631	7263	
3/4"	3 3/4"	6"	10"	11 1/4"	8319	4654	9307	110 FT LB
	4 3/4"	8"	9"	14 1/4"	8319	4698	9396	

HILTI "KWIK BOLT TZ2" ANCHOR
ESR 1917 VALUES
CARBON STEEL ANCHORS

DIAM	MIN EMBED	MIN. CONC. THKNS	MIN. EDGE DIST.	MIN. SPACING	SHEAR	TENSION	TENSION TEST	TORQUE TEST
1/4"	1 1/2"	3 1/4"	4"	4 1/2"	874	248	495	4 FT. LB
3/8"	1 1/2"	3 1/4"	5"	4 1/2"	1479	1030	2060	30 FT. LB
	2"	4"	4 3/8"	6"	2102	1586	3172	
	2 1/2"	5"	5 1/2"	7 1/2"	2200	1794	3588	
1/2"	1 1/2"	3 1/2"	8"	4 1/2"	1940	1171	2395	50 FT. LB
	2"	4"	5 1/2"	6"	2271	1586	3172	
	2 1/2"	5"	6 3/4"	7 1/2"	4469	2216	4433	
	3 1/4"	5 1/2"	10"	9 3/4"	4469	2660	5318	
5/8"	2 3/4"	5"	10"	8 1/4"	6666	2551	5114	40 FT. LB
	3 1/4"	5 1/2"	11 1/2"	9 3/4"	6666	3295	6572	
	4"	6"	8 3/4"	12"	6666	3631	7263	
3/4"	3 1/4"	5 1/2"	12"	9 3/4"	8473	3285	6571	110 FT LB
	3 3/4"	6"	10"	11 1/4"	8473	4072	8144	
	4 3/4"	8"	9"	14 1/4"	8473	4697	9394	

HILTI "KWIK BOLT TZ2" ANCHOR
ESR 1917 VALUES
STAINLESS STEEL ANCHORS

DIAM	MIN EMBED	MIN. CONC. THKNS	MIN. EDGE DIST.	MIN. SPACING	SHEAR	TENSION	TENSION TEST	TORQUE TEST
1/4"	1 1/2"	3 1/4"	4"	4 1/2"	722	248	495	6 FT. LB
3/8"	1 1/2"	3 1/4"	4 1/2"	4 1/2"	1479	1030	2060	30 FT. LB
	2"	4"	5 1/2"	6"	2271	1586	3172	
	2 1/2"	5"	4 1/8"	7 1/2"	2012	1794	3588	
1/2"	2"	4"	5 1/2"	6"	1844	1384	2568	40 FT. LB
	2 1/2"	5"	6 1/4"	7 1/2"	4091	2216	4433	
	3 1/4"	5 1/2"	7 1/2"	9 3/4"	5424	2660	5318	
5/8"	2 3/4"	5"	10"	8 1/4"	7344	2551	5114	60 FT. LB
	3 1/4"	5 1/2"	8 1/2"	9 3/4"	4940	3295	6571	
	4"	6"	8 3/4"	12"	7981	3631	7263	
3/4"	3 1/4"	5 1/2"	12"	9 3/4"	8756	3285	6571	125 FT. LB
	3 3/4"	6"	10"	11 1/4"	78756	4072	8144	
	4 3/4"	8"	10"	14 1/4"	8756	4697	9394	

1. *TABULATED LOADS FOR HILTI KWIK BOLT TZ" ANCHORS ARE THE STRENGTH (LRFD) VALUES BASED ON CALCULATIONS USING THE ICC ESR EVALUATION REPORT.*
2. *WHEN EXPANSION ANCHORS ARE USED FOR NON STRUCTURAL APPLICATIONS, SUCH AS EQUIPMENT ANCHORAGE, FIELD TEST 50% OF THE INSTALLED ANCHORS TO THE TORQUE TEST VALUE LISTED ABOVE. SEE EXPANSION ANCHOR TESTING NOTES FOR ADDITIONAL REQUIREMENTS.*
3. *VALUES ARE FOR ANCHORAGE IN NORMAL WEIGHT CONCRETE HAVING ATTAINED THE MAXIMUM CONCRETE STRENGTH AT THE TIME OF INSTALLATION.*
4. *VALUES ARE ONLY VALID FOR ANCHORS MEETING THE MINIMUM EDGE DISTANCE AND SPACING CRITERIA LISTED IN THIS TABLE.*

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURPHREE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 W. SHAW AVE. FRESNO, CA. 93711
559-549-6924
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CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

DETAILS - PARTITIONS

SHEET NUMBER:

A9.02

INTERNAL NUMBER: .024

11/21/2022 12:48 PM
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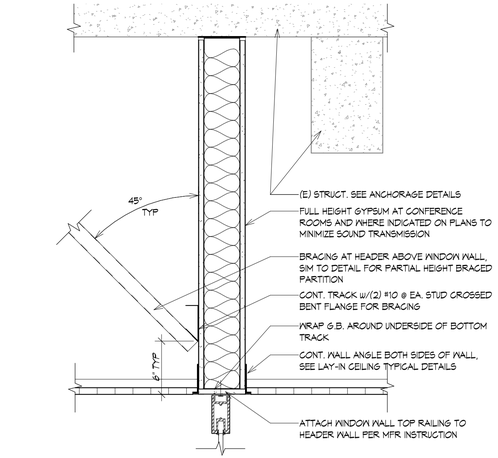
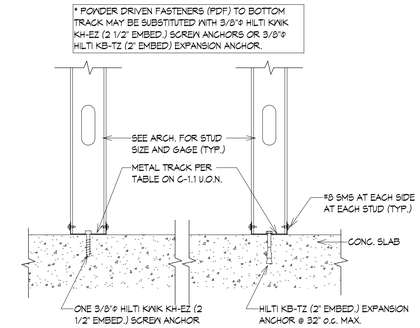
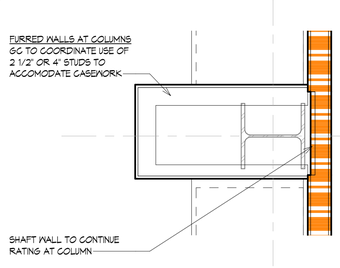


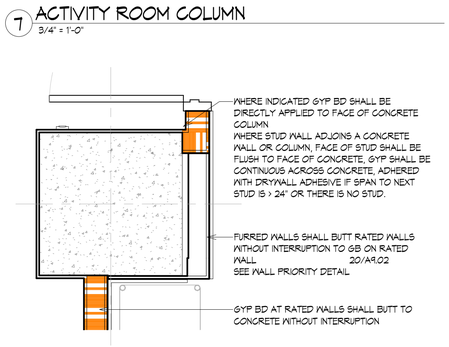
9 STOREFRONT BASEMENT
1 1/2" = 1'-0"



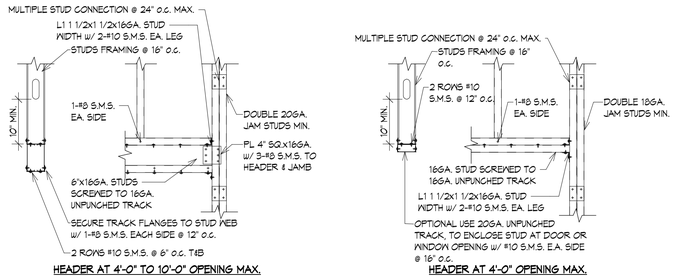
6 WALL BOTTOM TRACK ANCHORAGE



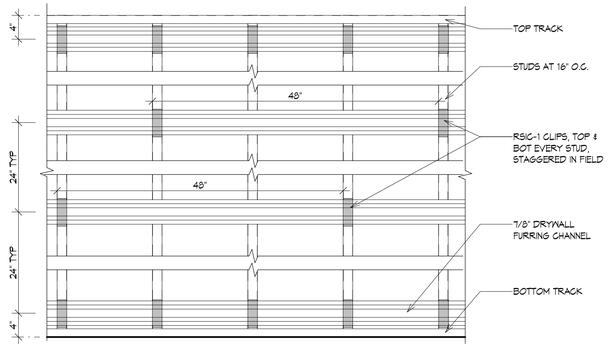
7 ACTIVITY ROOM COLUMN
3/4" = 1'-0"



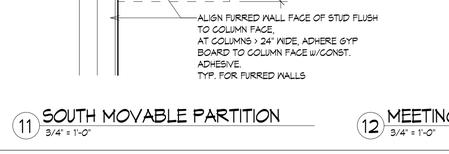
8 WALLS @ CONCRETE COLUMNS
3/4" = 1'-0"



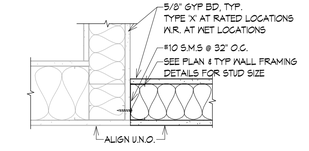
1 WALL OPENING, HEADER & SILL DETAILS



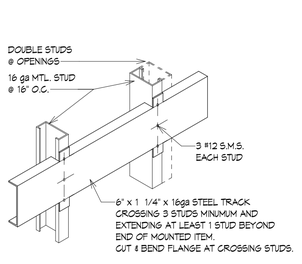
2 ACOUSTIC WALL SPACER PLACEMENT
1" = 1'-0"



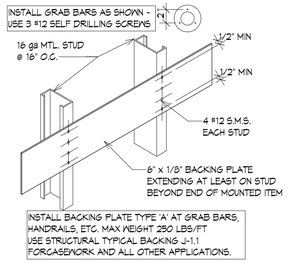
10 RATED PLENUM
1" = 1'-0"



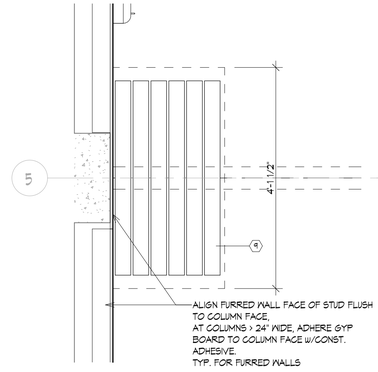
3 WALL CONNECTION (N) TO (E)
1 1/2" = 1'-0"



4 BACKING PLATE (TYPE B)

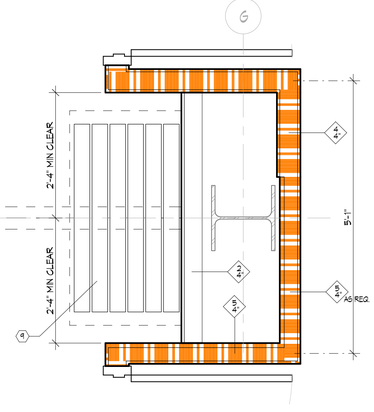


5 BACKING PLATE (TYPE A)



11 SOUTH MOVABLE PARTITION
3/4" = 1'-0"

12 MEETING ROOM COLUMN
3/4" = 1'-0"



13 NORTH MOVABLE PARTITION
3/4" = 1'-0"

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
DETAILS - PARTITIONS

SHEET NUMBER
A9.03

INTERNAL NUMBER: 024

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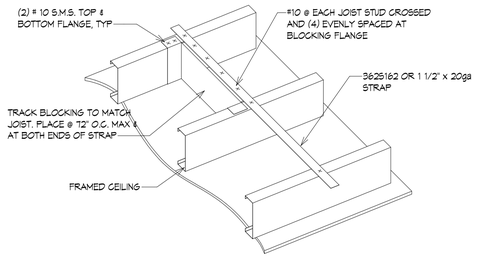
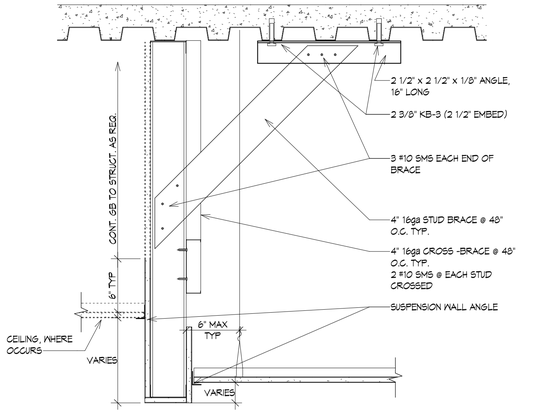
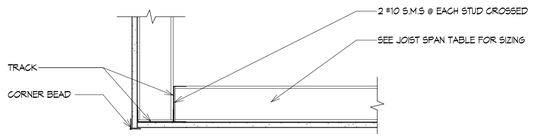


13 CEILING BLOCKING



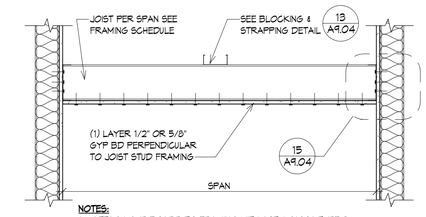
FRAMED WALL SUSPENDED CEILING



FRAMED WALL FRAMED CEILING

10 WALL BULKHEAD DECK CONNECTIONS SUSPENDED

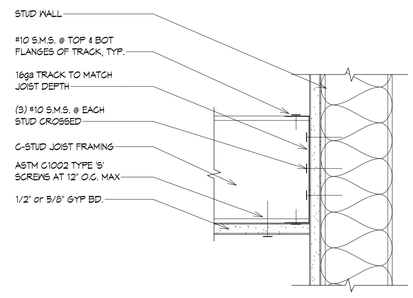
1 1/2" = 1'-0"



NOTES:
1. ATTACH GYP BOARD TO FRAMING WITH ASTM C1002 TYPE S SCREWS WITH CORROSION RESISTANT TREATMENT AT 12" O.C. MAX
2. WHEN GYPSUM BOARD IS TO BE APPLIED TO BOTH CEILING AND WALLS GYPSUM BOARD SHALL BE APPLIED FIRST TO THE CEILING AND THEN TO THE WALLS IN ACCORDANCE WITH ASTM C 840

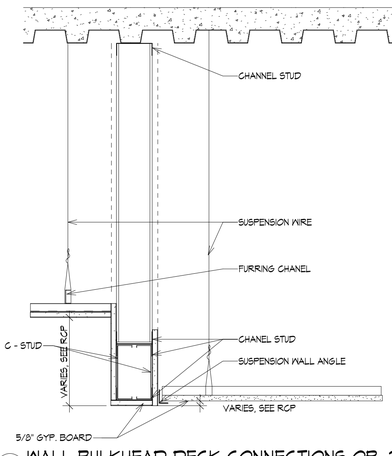
14 CEILING SECTION

1" = 1'-0"



15 CEILING CONNECTION @ WALL

3" = 1'-0"



11 WALL BULKHEAD DECK CONNECTIONS OP. 2

1 1/2" = 1'-0"

NOMINAL ANCHOR DIAMETER

	3/8	1/2		5/8	
EFFECTIVE MIN EMBEDMENT (IN)	2	2.25	3.25	3.125	4
MIN MEMBER THICKNESS NWC SLAB OR BEAM ONLY (IN)	4.5	4.5	6	6	7.25
MIN ANCHOR SPACING (3xEMBED) (IN)	6.75	6.75	9.75	9.375	12
MIN EDGE DISTANCE (IN)	6	7	7.5	6.5	8.75

EXPANSION ANCHOR ALLOWABLE STRENGTH

TABLE 1
EXPANSION ANCHORS INSTALLED IN TO THE UNDERSIDE OF STRUCTURAL SAND-LIGHTWEIGHT CONCRETE (F'c MIN = 3KSI) OVER METAL DECK

ANCHOR DIAM (IN)	EMBED (IN)	SHEAR (LB)	TENSION (LB)
3/8	2	1147	610
1/2	2.25	1029	610
1/2	3.25	1173	1045
5/8	3.125	1393	836
5/8	4	3070	1941

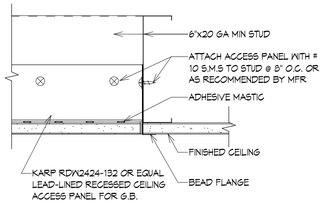
TABLE 2
EXPANSION ANCHORS INSTALLED IN TO THE TOP OF STRUCTURAL SAND-LIGHTWEIGHT CONCRETE (F'c MIN = 3KSI) OVER METAL DECK

ANCHOR DIAM (IN)	EMBED (IN)	SHEAR (LB)	TENSION (LB)
3/8	2	949	624
1/2	2.25	949	660

TABLE 3
EXPANSION ANCHORS INSTALLED IN NORMAL WEIGHT CONCRETE (F'c MIN = 3KSI)

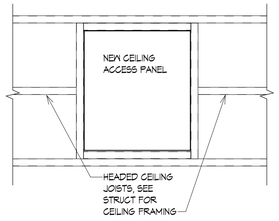
ANCHOR DIAM (IN)	EMBED (IN)	SHEAR (LB)	TENSION (LB)
3/8	2	1147	610
1/2	2.25	1029	610
1/2	3.25	1173	1045
5/8	3.125	1393	836
5/8	4	3070	1941

12 EXPANSION ANCHOR INSTALLATION



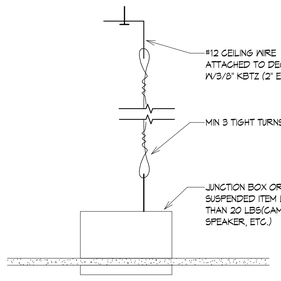
5 CEILING ACCESS PANEL SECTION

3" = 1'-0"



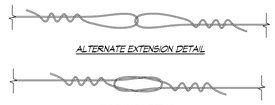
6 CEILING ACCESS PANEL

3/4" = 1'-0"



7 CEILING MOUNTED ITEMS

3/4" = 1'-0"



CONNECTION NOTE:
- WIRE TIED END CONNECTIONS SHOWN ABOVE HAVE THE SAME CAPACITY TO TRANSFER THE WIRE TENSION LOADS AS TYPICAL END CONNECTIONS TO A METAL PLATE OR CLIP ANGLE.
- THE ELONGSATION OF THE WIRE SYSTEM MAY BE GREATER THAN TYPICAL DEPENDING ON HOW TIGHT THE WIRES WERE ORIGINALLY INSTALLED.

8 CEILING SPLAY WIRE EXTENSION

1 1/2" = 1'-0"

METAL STUD CEILING JOIST

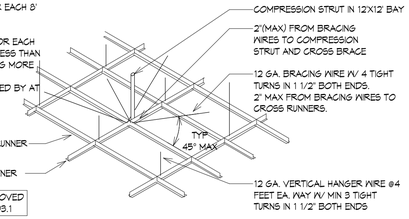
STUD SIZE	SPACING	SPAN (DEFLECTION IS A MAX OF L/360)			
		NON-ACCESSIBLE = 6 PSF		ACCESSIBLE = 13 PSF	
		UNSUPPORTED	MIDSPAN BLKG.	UNSUPPORTED	MIDSPAN BLKG.
2S0S162-33	16"	10'-10"	10'-10"	8'-5"	8'-5"
2S0S162-33	24"	9'-8"	9'-8"	7'-4"	7'-4"
2S0S162-43	16"	11'-10"	11'-10"	9'-2"	9'-2"
2S0S162-43	24"	10'-4"	10'-4"	8'-0"	8'-0"
4OOS162-33	16"	12'-6"	15'-7"	10'-2"	12'-0"
4OOS162-33	24"	11'-2"	13'-7"	9'-1"	10'-6"
4OOS162-43	16"	13'-8"	16'-11"	11'-0"	13'-1"
4OOS162-43	24"	12'-2"	14'-10"	9'-11"	11'-5"
6OOS162-33	16"	14'-1"	20'-5"	11'-7"	16'-6"
6OOS162-33	24"	12'-8"	18'-5"	10'-5"	14'-5"
6OOS162-43	16"	15'-3"	21'-11"	12'-5"	17'-11"
6OOS162-43	24"	13'-8"	19'-4"	11'-2"	15'-4"

1. TABULATED SPANS ARE FROM THE SSMA PRODUCT TECHNICAL GUIDE FOR CEILING/SOFFIT SPANS (S-SECTIONS) TABLE, FOR INTERIOR ALLOWABLE CEILING / SOFFIT SPANS (S-SECTIONS) FOR L/360.
2. VALUES ARE ONLY VALID FOR CEILING JOISTS WITH 1 LAYER OF GYP BD. MAXIMUM.

9 CEILING JOIST SPAN TABLE

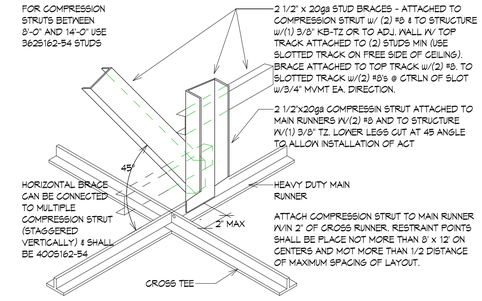
PROVIDE MIN:
- ONE (1) HANGER WIRE FOR EACH 8' OF DUCT LENGTH.
- TWO (2) HANGER WIRES FOR EACH LIGHT FIXTURE WEIGHING LESS THAN 56 LBS. FIXTURES WEIGHING MORE THAN 56 LBS SHALL BE INDEPENDENTLY SUPPORTED BY AT LEAST 4 #12 TAUT WIRES.

SEE ALSO, OSHPD PRE-APPROVED DETAIL CL2.10 ON SHEET A9.03.1



1 SUSPENDED T-BAR CEILING

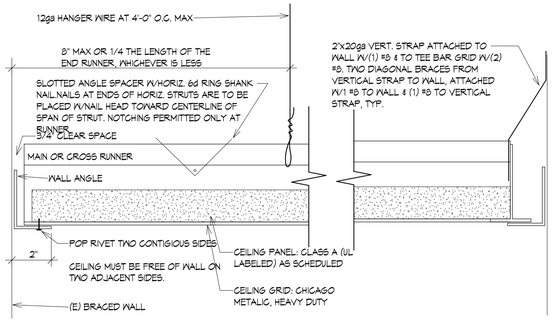
3/4" = 1'-0"



NOTE: IN LIEU OF THE STUD BRACING INDICATED ABOVE, THE FOLLOWING IS ACCEPTABLE:
- LATERAL FORCE BRACING ASSEMBLIES CONSISTING OF COMPRESSION STRUT AND 4 #12 GA SPLAYED BRACING WIRES ORIENTED 90° FROM EACH OTHER.
- WIRES SHALL BE SECURED TO THE MAIN TEE W/ 4 TIGHT TURNS IN 1 1/2" AND WITHIN 2" OF THE CROSS TEE INTERSECTION AND SPLAYED 90° FROM EACH OTHER AT AN ANGLE NOT EXCEEDING 45° FROM THE PLANE OF THE CEILING AND SHALL BE TAUT.
- A STRUT FASTENED TO THE MAIN RUNNER AT THE CONVERGENCE OF THE SPLAYED WIRES SHALL BE EXTENDED TO & FASTENED TO THE FLOOR/ROOF STRUCTURE ABOVE.

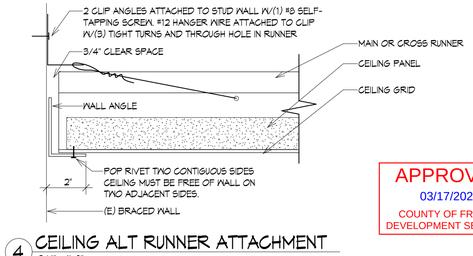
2 COMPRESSION STRUT DETAIL - T-BAR

3/4" = 1'-0"



3 TYPICAL RUNNER ATTACHMENT

3/4" = 1'-0"



4 CEILING ALT RUNNER ATTACHMENT

3/4" = 1'-0"

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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JOB NUMBER:

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FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
DETAILS - CEILING

SHEET NUMBER
A9.04

INTERNAL NUMBER: 029

FILE PATH: P:\PROJECTS\2021\21-105379\CAD\Construction\Drawing Set Files\Arch\A9.04 Ceiling Details.dwg 11/11/2022 1:21:48 PM

DSA IR 25-2
METAL SUSPENSION SYSTEMS FOR LAY-IN PANEL CEILINGS: 2013 CBC

1. CEILING SYSTEM GENERAL NOTES:
   1. Ceiling system components shall comply with ASTM C635-07 and Section 5.1 of ASTM E580-10a.
   2. The ceiling grid system must be rated heavy duty as defined by ASTM C635-08.
   3. Ceiling systems. The following ceiling system(s) is/are part of the scope of this project:
      [For each system used, the RDP shall indicate in the construction documents, the information that follows]
      Manufacturer's Name _____
      Product Evaluation Report Type and Number _____.
      Manufacturer's Model Number - main runner _____ .
      Manufacturer's catalog number - cross runner _____ .
   4. Seismic Hall Clip: [RDP to specify if used]
      Manufacturer's Model _____
   5. Ceiling panels shall not support any light fixtures, air terminals or devices.
   6. For ceiling installations utilizing acoustical tile panels of mineral or glass fiber, it is not mandatory to provide ¾" clearance between the acoustical tile panels and the wall on the sides of the ceiling which are free to slip. For all other ceiling panel types, provide ¾" clearance between the ceiling panel and the wall on the sides of the ceiling free to slip.

2. MATERIALS:
   1. Ceiling wire shall be Class 1 zinc coated (galvanized) carbon steel conforming to ASTM A641-09a. Wire shall be #12 gage (0.106" diameter) with soft temper and minimum tensile strength = 70 ksi.
   2. Galvanized sheet steel (including that used for metal stud and track compression struts/post) shall conform to ASTM A653-11, or other equivalent sheet steel listed in Section A2.1 of the North American Specification for the Design of Cold-Formed Steel Structural Members 2007, including supplement 2 dated 2010 (AISI S100-07/S2-10). Material 43 mil (18 gage) and lighter shall have minimum yield strength of 33 ksi. Material 54 mil (16 gage) and heavier shall have a minimum yield strength of 50 ksi.
   3. Electrical metallic tube (EMT) shall be ANSI C80.3/UL 797 carbon steel with G90 galvanizing. EMT shall have minimum yield strength (Fy) of 30 ksi and minimum ultimate strength (Fu) of 48 ksi.

3. ATTACHMENT OF HANGER AND BRACING WIRES:
   1. Separate all ceiling hanger and bracing wires at least six (6) inches from all unbraced ducts, pipes, conduit, etc.
   2. Hanger and bracing wires shall not attach to or bend around obstructions including but not limited to: piping, ductwork, conduit and equipment.
   3. Hanger wires that are more than one (horizontal) in six (vertical) out of plumb shall have counter-sloping wires.
   4. Slack safety wires shall be considered hanger wires for installation and testing requirements.
   5. Hanger and bracing wire anchorage to the structure shall be installed in such a manner that the direction of the anchorage aligns closely with the direction of the wire. (e.g. bracing wire ceiling clips must be bent as shown in the details and rotated as required to align closely with the direction of the wire, screw eyes in wood must be installed so they align closely with the direction of the wire, etc.)

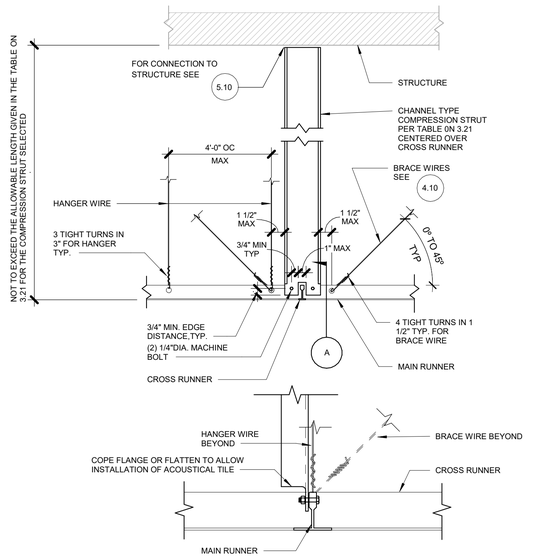
4. FASTENERS AND WELDING:
   1. Sheet metal screws shall comply with ASTM C1513-10, ASME B18.6.4-98 (R2005). Penetration of screws through joined material shall not be less than three exposed threads.
   2. Expansion anchors shall be: [RDP to indicate manufacturer, product, evaluation report number and load for each size specified per CBC 1913A.1.2.]
   3. Power-Actuated Fasteners shall be: [RDP to indicate manufacturer, product, evaluation report number]
   4. If not otherwise specified in the evaluation report, power-actuated fasteners installed in steel shall be installed so the entire pointed end of the fastener is driven through the steel member.
   5. Power-actuated fasteners in concrete are not permitted for bracing wires.
   6. Concrete reinforcement and prestressing tendons shall be located by non-destructive means prior to installing post - installed anchor.
   7. Welding shall be in accordance with AWS D1.3 using E60XX series electrodes.

5. TESTING: All field testing must be performed in the presence of the project inspector.
   1. Post-installed anchors in concrete used to support hanger wires shall be tested at a frequency of 10 percent. Power actuated fasteners in concrete shall be field tested for 200 lbs. in tension. All other post-installed anchors in concrete shall be tested in accordance with CBC Section 1913A.7.
   2. Post-installed anchors in concrete used to attach bracing wires shall be tested at a frequency of 50 percent in accordance with CBC Section 1913A.7.

6. LIGHT FIXTURES:
   1. All light fixtures shall be positively attached to the ceiling suspension systems by mechanical means to resist a horizontal force equal to the weight of the fixture. A minimum of two screws or approved fasteners are required at each light fixture, per ASTM E580, Section 5.3.1.
   2. Surface-mounted light fixtures shall be attached to the main runner with at least two positive clamping devices. The clamping device shall completely surround the supporting ceiling runner and be made of steel with a minimum thickness of #14 gage. Rotational spring catches do not comply. A #12 gage slack safety wire shall be connected from each clamping device to the structure above. Provide additional supports when light fixtures are eight (8) feet or longer or exceed 56 lb. Maximum spacing between supports shall not exceed eight (8) feet.
   3. Light fixtures weighing less than or equal to 10 lb. shall have a minimum of one (1) #12 gage slack safety wire connected from the fixture housing to the structure above.
   4. Light fixtures weighing less than or equal to 10 lb. shall have a minimum of one (1) #12 gage slack safety wire connected from the fixture housing to the structure above.
   5. Light fixtures weighing greater than 10 lb. but less than or equal to 56 lbs. may be supported directly on the ceiling runners, but they shall have a minimum of two (2) #12 gage slack safety wires connected from the fixture housing at diagonal corners to the structure above.
      Exception: All light fixtures greater than two by four feet weighing less than 56 lbs. shall have a #12 gage slack safety wire at each corner.
   6. All Light fixtures weighing greater than 56 lb. shall be independently supported by not less than four (4) taut #12 gage hanger wires (one at each corner) attached from the fixture housing to the structure above or other approved hangers. The four (4) taut #12 gage wires or other approved hangers, including their attachment to the structure above, shall be capable of supporting four (4) times the weight of the fixture.

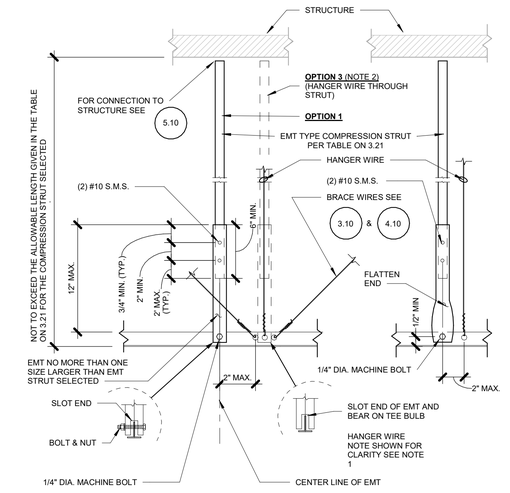
7. SERVICES WITHIN THE CEILING:
   1. All flexible sprinkler hose fitting mounting brackets, ceiling-mounted air terminals or other services shall be positively attached to the ceiling suspension systems by mechanical means. Screws or approved fasteners are required. A minimum of two attachments are required at each component.
   2. Ceiling-mounted air terminals or other services weighing less than or equal to 20 lb. shall have one (1) #12 gage slack safety wire attached from the terminal or service to the structure above.
   3. Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 20 lb. but less than or equal to 56 lb. shall have two (2) #12 gage slack safety wires (at diagonal corners) connected from the terminal or service to the structure above.
   4. Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 56 lb. shall be supported directly from the structure above by not less than four (4) taut #12 gage hanger wires attached from the terminal or service to the structure above or other approved hangers.

8. OTHER DEVICES WITHN THE CEILING:
   1. All lightweight miscellaneous devices, such as strobe lights, occupancy sensors, speakers, exit signs, etc., shall be attached to the ceiling grid. In addition, devices weighing more than 10 lbs. shall have a #12 gage slack safety wire anchored to the structure above. Devices weighing more than 20 lb. shall be supported independently from the structure above.



3.10 SECT A

3.10 SUSPENDED ACOUSTICAL CEILING - CHANNEL TYPE STRUT



OPTION 1 & 3 **OPTION 2**

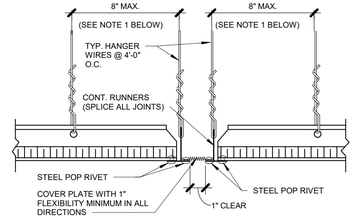
NOTES:
1. MACHINE BOLT IS NOT REQUIRED ON OPTION 3
2. APPLICABLE TO SAWN TIMBER WITHOUT GYPSUM BOARD ONLY.

3.20 SUSPENDED ACOUSTICAL CEILING - EMT TYPE STRUT

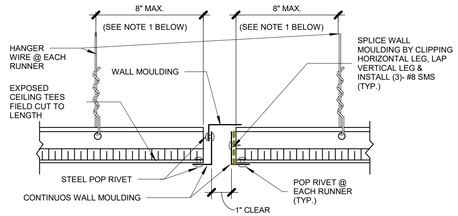
EMT COMPRESSION STRUT	MAXIMUM LENGTH
1/2" DIAMETER EMT (0.042" WALL THICKNESS)	3'-11"
3/4" DIAMETER EMT (0.049" WALL THICKNESS)	6'-4"
1" DIAMETER EMT (0.057" WALL THICKNESS)	9'-9"
1 1/4" DIAMETER EMT (0.065" WALL THICKNESS)	12'-9"
1 1/2" DIAMETER EMT (0.065" WALL THICKNESS)	14'-9"
2" DIAMETER EMT (0.065" WALL THICKNESS)	18'-10"

CHANNEL COMPRESSION STRUT	MAXIMUM LENGTH
250S125-33	5'-0"
250S137-33	6'-10"
362S137-33	8'-0"
250137-43	8'10"
400S137-43	10'-10"

3.21 COMPRESSION STRUT TABLE



EXPANSION JOINT

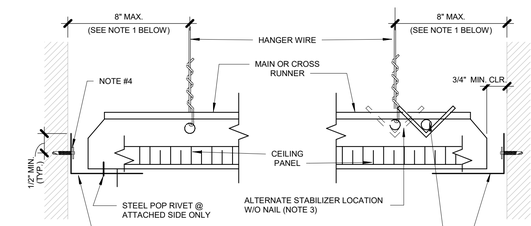


EXPANSION JOINT ALTERNATE

EXPANSION JOINTS AT THE INTERSECTION OF CORRIDORS AND AT JUNCTIONS OF CORRIDORS AND LOBBIES OR OTHER SIMILAR AREAS

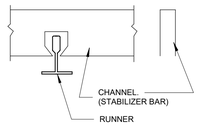
NOTES:
1. PROVIDE #12 GAGE HANGER WIRES AT THE ENDS OF ALL MAIN AND CROSS RUNNERS WITHIN EIGHT (8) INCHES OF THE SUPPORT OR WITHIN ONE-FOURTH (1/4) OF THE LENGTH OF THE END TEE. WHICHEVER IS LESS. FOR THE PERIMETER OF THE CEILING AREA. PERIMETER WIRES ARE NOT REQUIRED WHEN THE LENGTH OF THE END TEE IS EIGHT (8) INCHES OR LESS.

2.40 SUSPENDED ACOUSTICAL CEILING - EXPANSION JOINT AT INTERSECTIONS



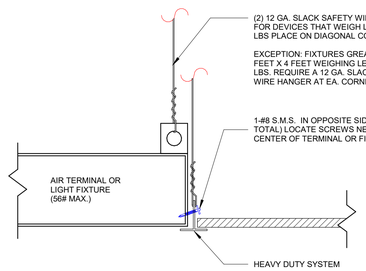
ATTACHED JOINT **FREE JOINT**

NOTES:
1. PROVIDE #12 GAGE HANGER WIRES AT THE ENDS OF ALL MAIN AND CROSS RUNNERS WITHIN EIGHT (8) INCHES OF THE SUPPORT OR WITHIN ONE-FOURTH (1/4) OF THE LENGTH OF THE END TEE. WHICHEVER IS LESS. FOR THE PERIMETER OF THE CEILING AREA. PERIMETER WIRES ARE NOT REQUIRED WHEN THE LENGTH OF THE END TEE IS EIGHT (8) INCHES OR LESS.
2. NAILS AT ENDS OF HORIZONTAL STABILIZERS ARE TO BE PLACED WITH NAIL HEAD TOWARD CENTER LINE OF SPAN OF STRUT.
3. STABILIZER BAR MAY BE SLOTTED APPROVED ANGLES OR CHANNELS WITH "DIAMOND POINTS" OF SPRING STEEL WHICH SNAP TIGHT TO PREVENT MOVEMENT OF STRUT.
4. (1) #10 SMS TO 20 GA. MIN. WALL STUD @ 24" O.C.

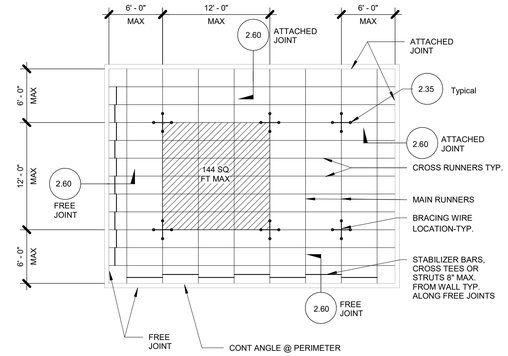


APPROVED STABILIZER
(SEE NOTE 3)

2.60 CEILING PERIMETER

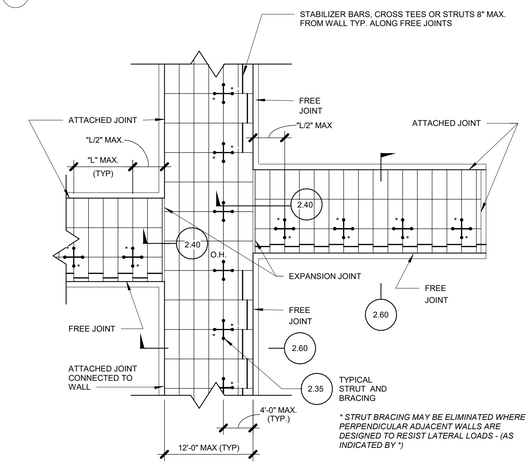


2.80 SUSPENDED ACOUSTICAL CEILING - LIGHT FIXTURES/ AIR TERMINAL SUPPORT DETAIL



NOTE:
BRACING WIRES AND COMP. STRUT SHALL OCCUR AT EVERY 144 SQ. FT. MAX. IN ROOMS OVER 144 SQ. FT.

2.12 TYPICAL CEILING PLAN FOR 12'-0" x 12'-0" Brace Assembly Spacing

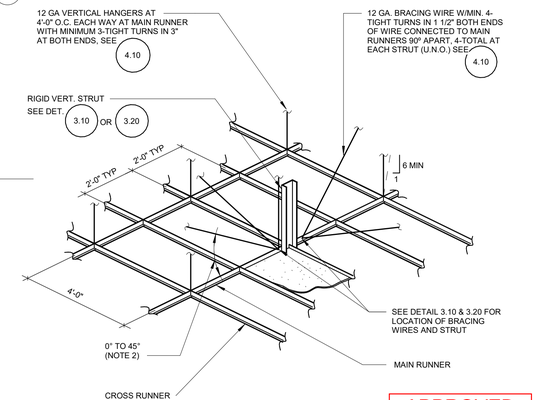


** STRUT BRACING MAY BE ELIMINATED WHERE PERPENDICULAR ADJACENT WALLS ARE DESIGNED TO RESIST LATERAL LOADS - (AS INDICATED BY *)*

LOCATION OF EXPANSION/SLIP JOINTS IN CORRIDORS

NOTES:
1. "L"IS MAX. BRACE ASSEMBLY SPACING PER CEILING PLAN DETAIL. FOR EXAMPLE, WHERE 6' x 12' SPACING IS SPECIFIED, USE "L" = 8'.

2.30 SUSPENDED ACOUSTICAL CEILING - CORRIDOR CEILING PLAN



NOTES:
1. STRUTS SHALL NOT REPLACE HANGER WIRES.
2. THE MINIMUM ACCEPTABLE ANGLE IS DETERMINED SUCH THAT THE WIRES DO NOT INTERFERE WITH THE RUNNERS, LIGHT FIXTURES, ETC. AND REMAIN STRAIGHT AND UNOBSTRUCTED.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

2.35 SUSPENDED CEILING - SUSPENSION AND BRACING ASSEMBLY

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURPHREE NO. C38020 RENEWAL: 8-/23 STATE OF CALIFORNIA

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AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TYPICAL SUSPENDED CEILING DETAILS FOR ACOUSTICAL TILE OR LAY-IN PANEL CEILINGS

SHEET NUMBER

A9.04.1

INTERNAL NUMBER: 624

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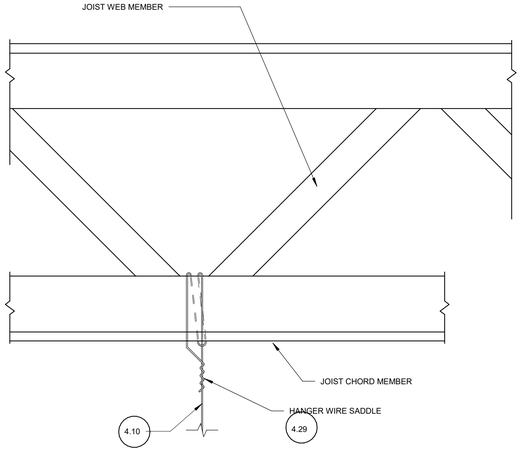
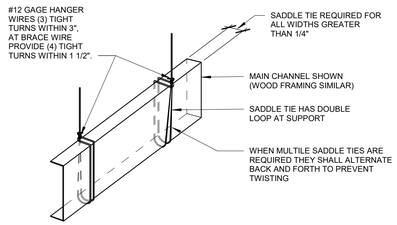


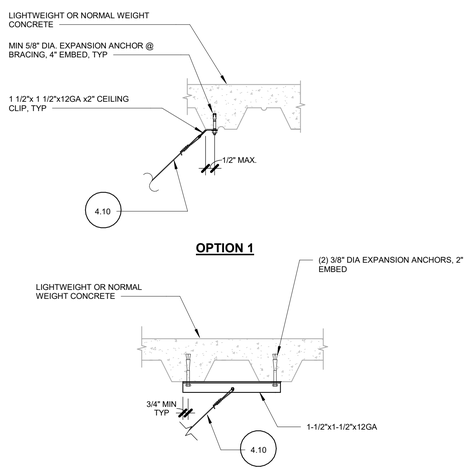
4.28 HANGER WIRE CONNECTION TO OPEN WEB STEEL JOIST



TYPICAL SADDLE TIE DETAIL

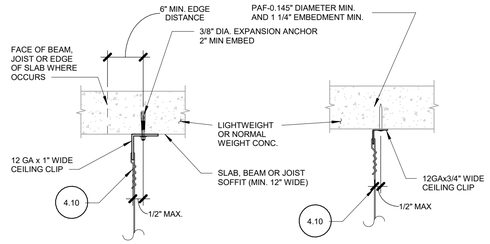
HANGER WIRE CONDITION SHOWN. BRACE WIRE CONDITION SIMILAR

4.29 TYPICAL SADDLE TIE DETAIL



NOTES:
1. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTE 5.02
2. REFER TO 4.10 FOR ADDITIONAL DETAILS
3. POST INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE.

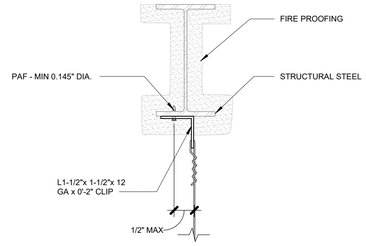
4.31 BRACING WIRE CONNECTION TO CONCRETE OVER METAL DECK



OPTION 1 **OPTION 2**

NOTES:
1. REFER TO 4.10 FOR ADDITIONAL DETAILS.
2. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTE 5.01.

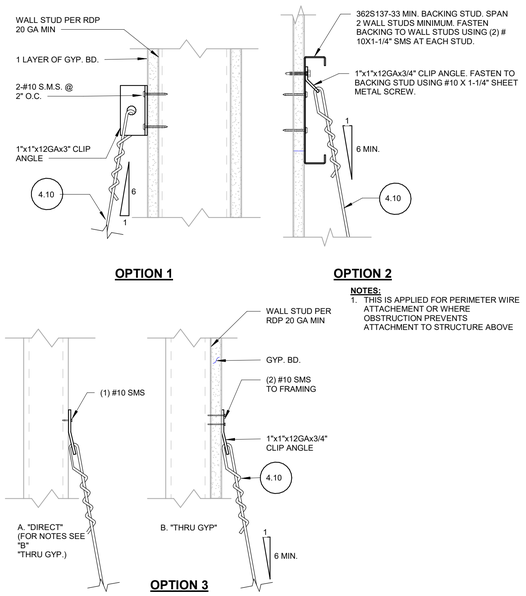
4.22 HANGER WIRE CONNECTION TO CONCRETE SLAB, BEAM, OR JOIST



HANGER WIRE

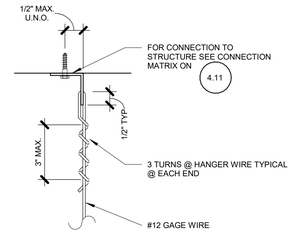
NOTES :
1. BEAM FLANGE THICKNESS SHALL NOT BE LESS THAN 3/16".
2. RDP IN RESPONSIBLE CHARGE, IOR AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER. SEE ANSI/AISC 341-10
3. REFER TO 4.10 FOR ADDITIONAL DETAILS

4.23 HANGER WIRE CONNECTION TO STRUCTURAL STEEL

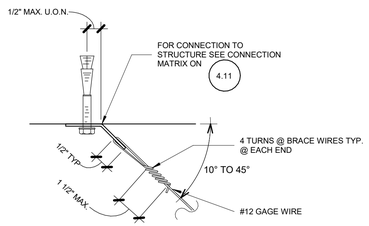


NOTES:
1. THIS IS APPLIED FOR PERIMETER WIRE ATTACHEMENT OR WHERE OBSTRUCTION PREVENTS ATTACHMENT TO STRUCTURE ABOVE

4.24 HANGER WIRE CONNECTION TO METAL STUD WALL



HANGER WIRE

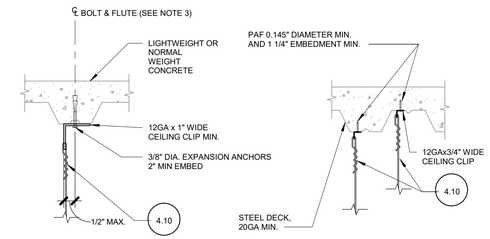


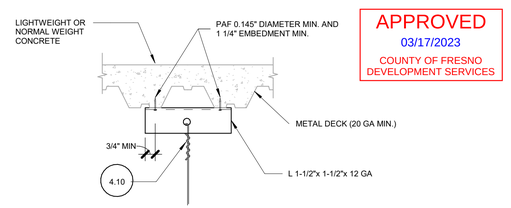
BRACING WIRE

4.10 HANGER AND BRACING WIRE CONNECTION - TYPICAL WIRE TURNS

STRUCTURAL CONDITION OF FLOOR/ ROOF ABOVE SUSPENDED CEILING	APPLICABLE HANGER WIRE DETAIL	APPLICABLE BRACING WIRE DETAIL
METAL DECK	4.20	4.30
CONCRETE OVER METAL DECK	4.21	4.31
CONCRETE SLAB, BEAM, OR JOIST	4.22	4.32
STRUCTURAL STEEL	4.23	4.33
METAL STUD WALL	4.24	4.34
SAWN TIMBER	4.25 , 4.29	4.35
WOOD I JOIST	4.26	4.36, 4.37
WOULD CHORD TRUST	4.27, 4.29	4.38, 4.29
OPEN WEB STEEL JOIST	4.28 , 4.29	4.39, 4.29

4.11 HANGER AND BRACING WIRE CONNECTION MATRIX





NOTES:
1. REFER TO 4.10 FOR ADDITIONAL DETAILS.
2. POST INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE
3. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTE 5.01.

4.21 HANGER WIRE CONNECTION TO CONCRETE OVER METAL DECK

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
NO. C38020
RENEWAL: 8-23
STATE OF CALIFORNIA

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TYPICAL SUSPENDED CEILING DETAILS FOR ACOUSTICAL TILE OR LAY-IN PANEL CEILINGS

SHEET NUMBER

A9.04.2

INTERNAL NUMBER: 024

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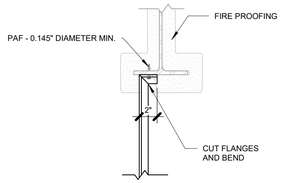
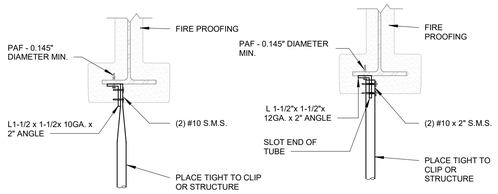


CHANNEL STRUT

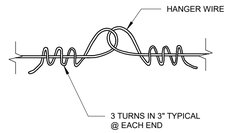


OPTION 1 **OPTION 2**

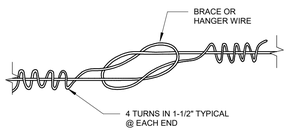
TUBE STRUT

NOTES:
1. STRUCTURAL STEEL MEMBER SHALL NOT BE LESS THAN 3/16".
2. RDP IN RESPONSIBLE CHARGE, I.O.R. AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER. SEE ANSI/AISC 341-10.
3. REFER TO 5.20 AND 5.30 FOR ADDITIONAL INFORMATION.

5.40 STRUT CONNECTION TO STRUCTURAL STEEL



HANGER WIRE ONLY



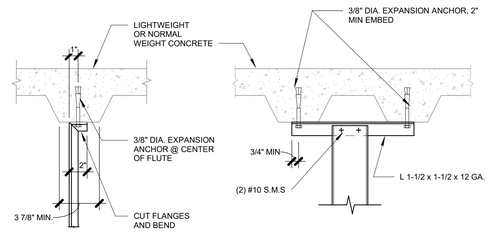
HANGER OR BRACE WIRE

NOTES:
WIRE SPLICES ARE SHOWN LOOSELY TIED FOR ILLUSTRATIVE PURPOSES ONLY AND SHALL BE DRAWN TIGHT TO COMPLETE INSTALLATION WHEN CONSTRUCTED.

6.10 CEILING WIRE SPLICES

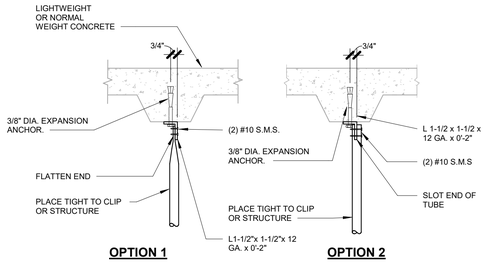
STRUCTURAL CONDITION OF FLOOR / ROOF ABOVE COMPRESSION STRUT	APPLICABLE DETAIL
METAL DECK	5.20
CONCRETE OVER METAL DECK	5.21
CONCRETE SLAB, BEAM, OR JOIST	5.30
STRUCTURAL STEEL	5.40
SAWN TIMBER WITH GYPSUM BOARD	5.50
SAWN TIMBER WITHOUT GYPSUM BOARD	5.60

5.10 COMPRESSION STRUT CONNECTION TO STRUCTURE - CONNECTION MATRIX



OPTION 1 **OPTION 2**

CHANNEL STRUT

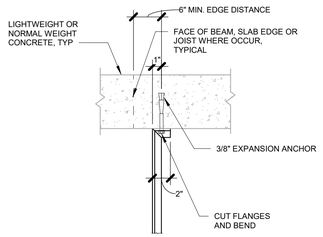


OPTION 1 **OPTION 2**

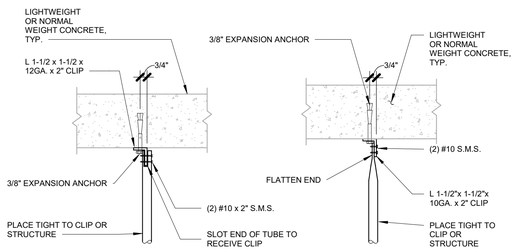
NOTES:
1. POST INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE
2. TEST POST INSTALLED ANCHORS IN ACCORDACE WITH CEILING NOTE 5.01

TUBE STRUT

5.21 STRUT CONNECTION TO CONCRETE OVER METAL DECK



CHANNEL STRUT

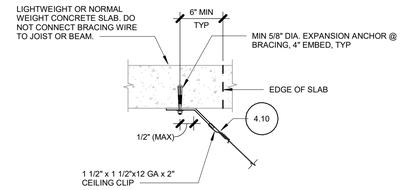


OPTION 1 **OPTION 2**

NOTES:
1. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTE 5.01

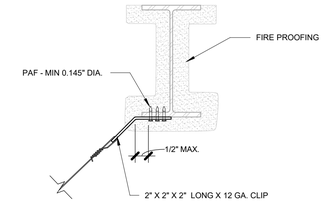
TUBE STRUT

5.30 STRUT CONNECTION TO CONCRETE SLAB, BEAM, JOIST SOFFIT



NOTES:
1. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTE 5.02
2. REFER TO 4.10 FOR ADDITIONAL DETAILS

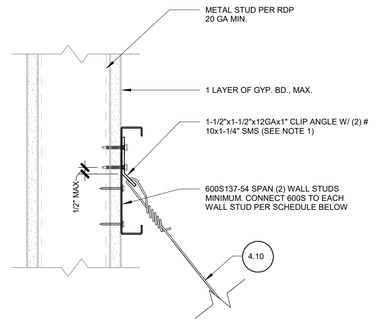
4.32 BRACING WIRE CONNECTION TO CONCRETE SLAB, BEAM OR JOIST



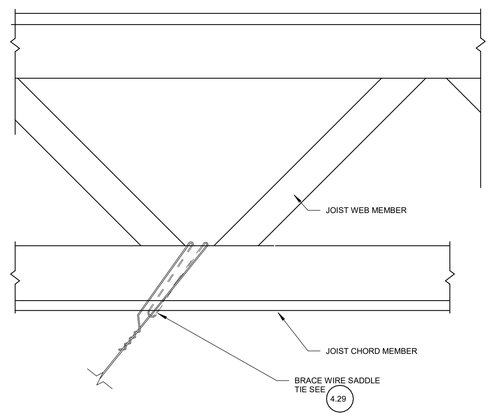
BRACING WIRE

NOTES :
1. BEAM FLANGE THICKNESS SHALL NOT BE LESS THAN 3/16".
2. RDP IN RESPONSIBLE CHARGE, IOR, AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER. SEE ANSI/AISC 341-10
3. REFER TO 4.10 FOR ADDITIONAL DETAILS

4.33 BRACING WIRE CONNECTION TO STRUCTURAL STEEL



4.34 BRACING WIRE CONNECTION TO METAL STUD WALL



NOTES:
1. BRACE WIRE SHALL ALIGN PARALLEL WITH THE TRUSS BOTTOM CHORD

4.39 BRACE WIRE CONNECTION TO OPEN-WEB STEEL JOIST

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
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DSA IR 25-3*

SUSPENDED GYPSUM BOARD CEILINGS: 2019 CBC

SCOPE

This IR is applicable to flat and level suspended gypsum board ceiling systems complying with the following limitations:

- Total ceiling weight shall not exceed 4 pounds per square foot (PSF) including luminaires, services, and devices.
- Ceiling shall consist of no more than one layer of gypsum board not exceeding 5/8 inch in thickness.
- Ceiling shall not be accessible.
- Ceiling shall not support building components other than luminaires, heating/ventilation/ air conditioning (HVAC) terminals, flexible sprinkler hose fittings, or other lightweight devices such as strobe lights, occupancy sensors, exit signs, etc. as described herein.

Two basic prescriptive systems are established in this IR for incorporation by design professionals into their construction documents.

- T-Bar System: Refer to Section 2 below.
- Legacy System: Refer to Section 3 below.

1. GENERAL

1.1 Materials

Materials shall comply with CBC Section 2508 and applicable ASTM standards.

1.1.1 Gypsum board shall be either 1/2 inch or 5/8 inch in thickness.

1.1.2 Cold formed steel (CFS) sections shall be identified by a product designation, which has been standardized by the American Iron and Steel Institute (AISI) in collaboration with the Steel Stud Manufacturers Association (SSMA).

1.1.3 Hanger and brace wires shall conform to American Society for Testing and Materials (ASTM) A641 and the material properties required by *IR 25-1: Maximum Allowable Load for Ceiling Wires.*

1.1.3.1 Hanger wires shall be #12 gauge (0.106 inch diameter) or larger. Turn of wire connections shall consist of a minimum of three turns within a 3-inch length. Loops shall be tightly wrapped and sharply bent to prevent any vertical movement or rotation of the member within the loops in accordance with ASTM E580 Section 5.2.1.2.

1.1.3.2 Brace wires shall be #12 gauge (0.106 inch diameter) or larger. Turn of wire connections shall consist of a minimum of four turns within a 1½-inch length.

1.1.4 Compression struts, when required, shall comply with one of the following. Compression struts are required as a component of lateral bracing assemblies per Section 4.2 below or whenever the code-prescribed seismic loads result in a net upward force on the ceiling.

1.1.4.1 Electrical Metallic Tubing (EMT) material shall conform to the American National Standards Institute (ANSI) C80.3/UL 797 carbon steel with G40 galvanizing. EMT shall have minimum yield strength (F_y) of 30 kips per square inch (ksi) and minimum ultimate strength (F_u) of 48 ksi.

1.1.4.2 Galvanized CFS channel shall conform to ASTM A653 material, or other equivalent ASTM standard listed in Section A3.1 of AISI S100 with a minimum yield strength as follows:

1.1.4.2.1 43 mil (#18 gauge) material and thinner: 33 ksi.

1.1.4.2.2 54 mil (#16 gauge) material and thicker: 50 ksi.

1.1.5 Post-installed anchors (e.g., expansion anchors, screw anchors, power actuated fasteners, etc.) shall have a current evaluation report acceptable to DSA in accordance with *IR A-5: Acceptance of Products, Materials and Evaluation Reports.*

1.2 Construction Details

1.2.1 The T-Bar System outlined in Section 2 below may employ applicable construction notes and details published in Appendix A of IR 25-2. The details published in IR 25-2 were developed for suspended lay-in panel ceilings and require some modification for conversion to appropriate use with suspended gypsum board ceilings, including the following:

1.2.1.1 Throughout the details the graphical representation and specification of lay-in panels should be replaced with gypsum board located beneath and screwed into the bottom flange of the T-bar sections.

1.2.1.2 Details illustrating the dimension of ceiling grid member ends to adjacent walls at the "free joint" condition (e.g., sheets 2.5D, 2.6D, etc.) when the lateral force bracing system is used shall be revised to 1-inch clear in accordance with Section 4.2.6 below.

1.2.1.3 Details illustrating the maximum dimension of hangers from the edge of the ceiling (i.e., wall or expansion/seismic joint) shall be revised to 6 inches.

1.3 Ceiling Support Hangers

Suspended ceilings constructed in accordance with either Section 2 or Section 3 below shall comply as follows:

1.3.1 Hanger wire material, gauge, and turn of wire connections shall comply with Section 1.1.3 above.

1.3.2 Hanger wire shall be attached to main runners as defined in Section 2 or 3 below.

1.3.3 Hanger wire spacing shall not exceed 4 feet on center in both plan directions.

1.3.4 Hanger wire shall be located at the ends of all main and cross runners within 6 inches of the edge of the ceiling (i.e., wall or expansion/seismic joint,) and within one-fourth (1/4) of the length of the end tee, whichever is least. Perimeter wires are not required when the length of the end tee is 6 inches or less.

1.3.5 Hanger wires shall not be out of plumb by more than 1:6 (horizontal to vertical) unless counter-sloping wires are provided in accordance with ASTM C1658 Figure 1. Counter-sloping wires are not allowed unless detailed on the DSA-approved construction documents.

1.3.6 Hanger wires shall be separated at least 6 inches from all unbraced components (e.g., ducts, pipes, conduit, etc.) above the ceiling.

1.3.7 Hanger wires shall be attached to the floor or roof structure above in accordance with ASTM C636. Sheets 4.2D through 4.2F provided in Appendix A of IR 25-2 are acceptable means of connecting hanger wires to the structure.

1.3.8 Where obstructions occur above the ceiling, trapeze or other supplementary supports are required to maintain the required hanger spacing. Sheets CG6.1D and CG6.2D of OPD-0003-13 show acceptable means of supporting hanger wires at obstructions.

1.3.9 Provide additional hanger wires as required at expansion joints, discontinuities, breaks, or other special conditions.

1.3.10 Where post-installed anchors supporting hanger wires are installed in existing concrete, construction embedment depths shall be designed to avoid existing reinforcement. Special care shall be taken to protect the tendons in prestressed concrete.

1.4 Access Panels

Access to the space between the ceiling and the floor or roof above is not permitted. A ceiling that is required by the CBC to be accessible shall be designed by the responsible design professional to meet the applicable requirements of CBC Sections 1607A and 2508.1, and ASCE 7 Section 13.3.1.

1.4.1 Small access panels for the inspection, adjustment or repair of utility switches, valves, sensors, etc. may be allowed if the panel is less than 300 square inches.

1.4.2 Small access panels shall have a permanently attached warning label stating the following: "Warning: Do not climb, walk, or crawl on the gypsum board ceiling panels or metal framing. Do not store or stow anything on the gypsum board ceiling panels or metal framing."

1.4.3 If Fire fighter access is required per CBC Section 1209.2 in attics of combustible construction, the prescriptive suspended ceiling systems prescribed in this IR are not applicable, and the ceiling shall be designed and framed for such loading.

1.5 Ceiling Luminaires, Services and Other Devices

Suspended gypsum board ceilings shall not support building components other than luminaires, HVAC terminals, flexible sprinkler hose fittings, or other lightweight devices weighing 20 pounds or less such as strobe lights, occupancy sensors, exit signs, etc. Luminaires, HVAC terminals, flexible sprinkler hose fittings, and other lightweight devices are referred to in this section generally as fixtures.

1.5.1 Fixtures shall be mounted to resist gravity loads in accordance with this section in a manner that will not compromise the ceiling performance. Independent supports as required by Sections 1.5.1.4 and 1.5.1.5 below shall have a capacity to resist four times the weight of the fixture.

1.5.1.1 No gravity loads other than the gypsum board weight shall be applied to the typical cross runners or cross furring. Additional cross runners or cross furring members may be added to the system and specifically dedicated to the support of fixtures.

1.5.1.2 Gypsum board shall not support any fixture.

1.5.1.3 Fixtures weighing 20 pounds or less may be supported by main runners or by supplemental framing connected to the main runners. Fixtures weighing more than 10 pounds shall have a minimum of one #12-gauge safety wire connected from the fixture to the structure above. Safety wires are not required to be taut.

1.5.1.4 Fixtures weighing 56 pounds or less but more than 20 pounds shall be independently supported to the structure above by not less than two taut #12-gauge wires. Other means of supporting the fixture independent of the ceiling system are acceptable when approved by DSA.

1.5.1.5 Fixtures weighing more than 56 pounds shall be independently supported to the structure above by not less than four taut #12-gauge wires. Other means of supporting the fixture independent of the ceiling system are acceptable when approved by DSA.

1.5.2 Fixtures shall be positively attached to the ceiling suspension system by mechanical means to resist a horizontal force equal to the weight of the fixture. The total weight of the suspended ceiling system inclusive of all fixtures resisted by its seismic force resisting system as described in Section 4 below shall not exceed 4 PSF.

1.5.2.1 A minimum of two screws or approved fasteners are required at each fixture.

1.5.2.2 Surface-mounted fixtures shall be attached to main runners with positive clamping devices complying with the following:

1.5.2.2.1 Provide at least two positive clamping devices on each fixture. Provide additional devices for fixtures exceeding 56 pounds or 8 feet in length.

1.5.2.2.2 Clamping device shall completely surround the supporting ceiling runner.

1.5.2.2.3 Clamping device shall be made of steel with a minimum thickness of #14 gauge.

1.5.2.2.4 Rotational spring catches are not compliant.

1.5.2.2.5 Spacing of clamping device shall not exceed 8 feet.

1.5.2.3 When seismic forces are resisted by lateral force bracing assemblies per Section 4.2 below, fixtures shall comply with ASTM E580 Sections 5.3 and 5.4.

1.5.3 When code-prescribed seismic forces induce lateral movement of the suspended ceiling of ¼ inch or more, penetrations through the ceiling for sprinkler heads and other similar devices that are not integrally tied to the ceiling system in the lateral direction shall comply with one of the following per ASTM E580 Section 5.2.2.5:

1.5.3.1 Provide a 2-inch oversized ring, sleeve, or adapter through the gypsum board to allow free movement of 1 inch in all horizontal directions.

1.5.3.2 Provide a flexible sprinkler hose fitting that can accommodate 1 inch of ceiling movement.

2. T-BAR SYSTEM

2.1 Vertical Support System

2.1.1 Ceiling suspension system and its components shall comply with ASTM C635, ASTM C645, the applicable sections of ASTM E580, and the product's evaluation report. Ceiling system shall be installed in accordance with ASTM C636 and ASTM E580 Section 5.2.

2.1.2 Main runner spacing shall not exceed 4 feet on center and the ceiling area supported by each hanger wire shall not exceed 16 square feet. Hanger wires shall comply with Section 1.3 above.

2.1.3 Main runners shall be heavy duty "T" shaped sections in accordance with ASTM C635.

2.1.3.1 Heavy duty main runners shall be capable of carrying an equivalent uniform load of 16 pounds per linear foot (PLF).

2.1.3.2 Wire attachments to main runners shall be made in pre-punched holes or holes drilled in accordance with the manufacturer's installation requirements.

2.1.4 Cross runners shall be "T" shaped sections with sufficient capacity to support the screwattached gypsum board and meeting the following requirements:

2.1.4.1 Cross runners shall be spaced no further than 24 inches on center.

2.1.4.2 Cross runners shall meet the deflection criteria of ASTM C635 Section 4.2.

2.1.4.3 Cross runners shall be connected to main runners in accordance with the manufacturer's requirements.

2.1.4.4 Hanger wires are required at the ends of cross runners greater than 6 inches in length adjacent to the edge of the ceiling (i.e., wall or expansion/seismic joint.)

2.1.5 Main runners, cross runners, splices, expansion devices, and intersection connectors shall be designed to carry a mean ultimate test load of not less than 180 pounds in compression and tension per ASTM E580 Section 5.1.2.

2.1.6 Main and cross runners shall have a bottom flange width of 1-1/4 inches or larger to provide sufficient attachment of the gypsum board at panel edges.

2.2 Seismic Force Resistance

Suspended gypsum board ceilings using the T-Bar System shall have a system to resist seismic loads in accordance with Section 4 below.
Exception: Suspended ceiling systems with an area of 144 square feet or less surrounded by walls that are laterally braced to the structure above do not require lateral bracing assemblies per Section 4.2 below nor diaphragm analysis per Section 4.3 below.

3. LEGACY SYSTEM

3.1 Vertical Support System

3.1.1 Main runner spacing shall not exceed 4 feet on center and the ceiling area supported by each hanger wire shall not exceed 16 square feet. Hanger wires shall comply with Section 1.3 above.

3.1.2 Main runner size, spacing, and spans shall comply with ASTM C754 Table 7. The main runner most frequently used is a 1-1/2-inch cold-rolled channel conforming to SSMA designation 150U050-54, weighing 0.414 PLF, and spaced no more than 4 feet on center maximum.

3.1.3 Cross furring shall be 7/8-inch galvanized steel hat channel sections conforming to SSMA designation 087F125-18 and spaced at 24 inches on center maximum.

3.1.4 Hanger wires shall be saddle-tied to the main runners. Refer to IR 25-2 Appendix A, Sheet 4.2A or OPD-0003-13, Sheet CG2.31 for acceptable saddle tie details.

3.1.5 Cross-furring shall be saddle-tied to the main runners with at least one strand of #16gauge or two strands of #18-gauge wire. Refer to OPD-0003-13, Sheet CG2.32 for an acceptable saddle tie detail.

3.1.6 Main runners shall be spliced by lapping and interlocking flanges and installing two #8 sheet metal screws at each end of splice (four screws total). The lap shall be 12 inches long minimum. Refer to OPD-0003-13, Sheet CG2.31 for an acceptable splice detail.

3.1.7 Cross-furring shall be spliced by lapping and interlocking the pieces and installing two #8 sheet metal screws at each end of splice (four screws total). The lap shall be 8 inches long minimum. Refer to OPD-0003-13, Sheet CG2.31 for an acceptable splice detail.

3.2 Seismic Force Resistance

Suspended gypsum board ceilings using the Legacy System shall have a system to resist seismic loads in accordance with Section 4 below.
Exception: Suspended ceiling systems with an area of 144 square feet or less surrounded by walls that are laterally braced to the structure above do not require bracing assemblies per Section 4.2 below nor diaphragm analysis per Section 4.3 below.

4. SEISMIC FORCE RESISTING SYSTEM

Suspended gypsum board ceilings shall resist the seismic forces resulting from the mass of the ceiling itself. The ceilings and their seismic force resisting system shall not resist seismic forces resulting from the mass of other components, such as partition walls.

4.1 General Requirements

4.1.1 Seismic loads are permitted to be resisted by either of the systems defined in this Section as follows:

4.1.1.1 Lateral force bracing assemblies in accordance with Section 4.2 below.

4.1.1.2 Diaphragm system in accordance with Section 4.3 below.

4.1.2 Only one option can be used for each separate ceiling area.

4.1.3 Fire-resistance-rated systems shall be installed per their listing (i.e., Underwriter Laboratories [UL], Factory Mutual [FM], etc.) and the manufacturer's installation instructions, which may dictate the lateral system used.

4.2 Lateral Force Bracing

Lateral force bracing assemblies shall comply with ASTM E580 as modified by ASCE 7 Section 13.5.6 and CBC Section 1617A.1.21.

4.2.1 Lateral force bracing assemblies shall consist of a compression strut and four #12-gauge splayed bracing wires oriented 90 degrees from each other.

4.2.1.1 For the T-Bar System per Section 2 above refer to IR 25-2 Appendix A, Sheet 2.3S.

4.2.1.2 For the Legacy System per Section 3 above refer to OPD-0003-13, Sheet CG2.10.

4.2.2 Lateral force bracing assemblies shall be spaced, per Table 1 below for all values of the component importance factor (I_p) of the ceiling. Where different brace spacing is specified at various stories, the respective ceiling plan shall clearly indicate the brace spacing.

4.2.2.1 For the T-Bar System per Section 2 above refer to IR 25-2 Appendix A, Sheets 2.1D through 2.1Z.

4.2.2.2 For the Legacy System per Section 3 above refer to OPD-0003-13, Sheets CG2.20 through CG2.22.

TABLE 1: LATERAL FORCE BRACE ASSEMBLY SPACING

Design Spectral Acceleration Parameter, (SDS)	Brace Assembly Spacing	
	z/h ≤ 0.5[a]	z/h > 0.5[a]
SDS <= 1.15	12'-0" x 12'-0"	12'-0" x 12'-0"
1.15 < SDS <= 1.73	12'-0" x 12'-0"	8'-0" x 12'-0"
SDS > 1.73	8'-0" x 12'-0"	8'-0" x 8'-0"

4.2.3 There shall be a brace assembly a distance of not more than one-half (1/2) of the spacing listed in Table 1 above from each surrounding wall, expansion joint, and edge of any ceiling vertical offset. For example, where the brace spacing is 8 feet by 12 feet, the edge distance shall be 4 feet in the direction of the 8-foot spacing and 6 feet in the direction of the 12foot spacing.

4.2.4 Bracing wires shall be taut and their slope shall not exceed 45 degrees from the plane of the ceiling.

4.2.5 Bracing wire material, gauge, and turn of wire connections shall comply with Section 1.1.3 above.

4.2.5.1 Bracing wires shall be separated at least 6 inches from all unbraced components (e.g., ducts, pipes, conduit, etc.) above the ceiling.

4.2.5.2 Screw-type anchors (i.e., screws, lag screws, eye screws, etc.) supporting brace wires and installed in wood structure shall be installed to align as closely possible with the direction of the wire. Clips supporting bracing wires shall be bent and rotated as required to align closely with the direction of the wire.

4.2.5.3 Splices in bracing wires shall develop the wire allowable load. No more than one splice is allowed in each hanger wire. Refer to IR 25-2 Appendix A, Sheet 6.1D for an acceptable wire splice detail.

4.2.5.4 The attachment of bracing wire to main runner shall not be more than 2 inches away from the compression strut.

4.2.5.5 Power actuated fasteners in concrete are not permitted to support bracing wires.

4.2.5.6 Where custom connections are required, attachment of the bracing wires shall be adequate for the load imposed. The ceiling weight shall not be taken as less than 4 PSF for calculating seismic forces in accordance with ASCE 7 Chapter 13.

4.2.6 Ceiling grid members shall be connected to two adjacent walls and disconnected from the two opposite walls per ASTM E580 Section 5.2.3. Ceiling grid members shall be at least 1inch clear of the disconnected walls.

4.2.6.1 Walls run diagonally to ceiling grid system runners, one end of the main and cross runners shall be disconnected and a minimum of 1-inch clear of the wall.

4.2.6.2 The width of the perimeter supporting closure angle shall be not less than 2 inches. Use of angles with smaller widths in conjunction with proprietary perimeter clips may be acceptable in accordance with Section 1.6 above.

4.2.6.3 The closure angle shall be attached to the wall directly to studs spaced at no more than 24 inches on center.

4.2.7 Compression struts shall meet the following requirements:

4.2.7.1 Struts shall be sized to adequately resist the sum of the vertical component of the bracing wire force and the vertical seismic force. The slenderness (kl_c/r) ratio of struts shall not exceed 300. Sections listed in IR 25-2 Appendix A, Sheet 3.2I meet this requirement for the maximum lengths listed.

4.2.7.2 Compression strut material shall comply with Section 1.1.4 above.

4.2.7.3 The strut shall not be out of plumb by more than 1:6 (horizontal to vertical).

4.2.7.4 Compression struts weighing more than 10 pounds or longer than 10 feet shall be provided with a #12-gauge safety wire connected to the structure above. Safety wires are not required to be taut.

4.2.7.5 Compression struts shall be separated at least 6 inches from all unbraced components (e.g., ducts, pipes, conduit, etc.) above the ceiling.

4.2.8 Expansion and seismic separation joints shall be provided as follows:

4.2.8.1 Expansion joints shall be provided in the ceiling at intersections of corridors and at junctions of corridors and lobbies or other similar areas.

4.2.8.2 For ceiling area exceeding 2,500 square feet, a seismic separation joint shall be provided to divide the ceiling into areas not exceeding 2,500 square feet in accordance with ASTM E580 Section 5.2.9.

4.3 Diaphragm System

A suspended gypsum board ceiling may be designed as a horizontal diaphragm to resist its own seismic loads as prescribed in this section.

4.3.1 As prohibited by CBC Section 2508.6.6, gypsum board shall not be used in diaphragm ceilings to resist lateral forces imposed by partitions.

4.3.2 Horizontal gypsum board ceiling diaphragm proportions shall comply with CBC Section 2508.6.1, including the maximum span-to-depth ratio of 1.5:1.

4.3.3 There shall be no steps or vertical offsets in the ceiling plane within the span of the gypsum board diaphragm.

4.3.4 The gypsum board installation shall comply with ASTM C840.

4.3.5 An allowable diaphragm shear equal to 50 PLF is permitted for allowable stress design when the gypsum board is fastened to the cross furring with Hi-Lo Type S or S-12 bugle head screws complying with the following conditions:

4.3.5.1 Screw size: #6 (0.136-inch diameter) or larger.

4.3.5.2 Screw length: 1 inch or 1-1/4 inch.

4.3.5.3 Screw spacing: 12 inches on center maximum at all gypsum board edges and intermediate supports.

4.3.5.4 Screw edge distance: 3/8 inch minimum.

4.3.6 A complete load path for the seismic loads transferred by the gypsum board diaphragm to the primary lateral force resisting system (e.g., diaphragm, shear wall, etc.) must be provided and substantiated.

4.3.7 Ceiling diaphragm forces may be resisted through walls sheathed with gypsum board fastened in accordance with Section 4.3.5 above, which can be used to resist 50 PLF in the plane of the wall. The maximum height-to-width ratio of gypsum sheathed walls used for this purpose shall not exceed 1:1.

4.3.8 Details are required to demonstrate the seismic load transfer from the gypsum board ceiling to the primary lateral force resisting system on all four sides of the diaphragm.

5. EXISTING CEILING ALTERATION

5.1 Cut or Altered

Where any portion of an existing suspended ceiling is cut or altered, the entire ceiling in the affected space shall be evaluated to the provisions of the current applicable codes, standards, and this IR. When the evaluation identifies a deficiency, the existing ceiling shall be upgraded to conform to the current provisions.

5.1.1 Where the existing suspended ceiling has lateral force bracing assemblies spaced in compliance with Table 1 above, an evaluation and upgrade of the entire ceiling shall be required only if the area of alteration exceeds 10 percent of the entire ceiling area.

5.1.2 For the purpose of determining upgrade requirements, the "entire" ceiling in the affected space is defined as the area of ceiling bounded by four walls or a combination of walls and expansion or seismic separation joints.

5.1.3 With DSA concurrence, other existing lateral force bracing systems may be deemed equivalent to a four-way splay wire and compression post lateral force bracing system.

5.2 Replacement in Kind

Where the ceiling grid is not cut or altered and the scope of work complies with the following, an upgrade of the ceiling, suspension system, and lateral force bracing assemblies is not required:

5.2.1 Replacement of luminaires or fixtures with units of equal size and equal or lesser weight placed in the same location.

5.3 Reuse of Existing Ceiling Wires

Existing ceiling hanger and bracing wires may be reused provided they comply with the following:

5.3.1 The gauge and spacing of wires must comply with the current applicable codes, standards, and this IR.

5.3.2 Where a new wire is to be spliced to an existing wire, the design professional in general responsible charge must prepare and obtain DSA approval of a detail defining how the splice is to be made. Detail 6.1D provided in Appendix A of IR 25-2 is an acceptable means of splicing hanger or brace wires.

5.3.3 Existing hanger and bracing wire assemblies shall be tested in accordance with Section 7.3 below.

6. TESTING

6.1 General

All field testing must be performed in the presence of the project inspector or a special inspector. Slack safety wires required for luminaires, services, or other devices shall be considered hanger wires for testing requirements.

6.2 New Ceiling Wires

Installation of new hanger and bracing wires requires testing as follows. These testing requirements shall be indicated on the construction documents.

6.2.1 Post-installed anchors in concrete shall be tested in accordance with CBC Section 1910A.5.

6.2.2 Hanger Wires: Post-installed anchors in concrete used to fasten hanger wires shall be tested at a frequency of 10 percent.

6.2.2.1 Tension test load shall be 200 pounds minimum.

6.2.2.2 When allowed by its evaluation report, anchors may be torque tested. Power actuated fasteners shall be tension tested; torque testing is not allowed.

6.2.3 Bracing Wires: Post-installed anchors in concrete used to fasten bracing wires shall be tested at a frequency of 50 percent.

6.2.3.1 Tension test load shall be 440 pounds minimum.

6.2.3.2 Power actuated fasteners in concrete are not permitted for bracing wires.

6.2.4 If any post-installed anchor fails testing additional testing is required in accordance with CBC Section 1910A.5.

6.3 Reuse of Existing Ceiling Wires

Existing hanger and bracing wires to be reused in accordance with Section 5.3 above shall be tested as follows. These testing requirements shall be indicated on the construction documents.

6.3.1 All existing ceiling hanger wire/anchor assemblies must be field tested to 200 pounds.

6.3.2 All existing bracing wire/anchor assemblies must be field tested to 440 pounds.

6.3.3 Where a new wire is spliced to an existing wire, each spliced wire/anchor assembly must be field tested to the loads given for existing assemblies above.

*relevent sections of the DSA publication are included here

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURPHY
NO. C38020
RENEWAL: 8-23
STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE.
FRESNO, CA 93711
559-549-6934
info@muratoreassociates.com

CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/22

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

JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TYPICAL SUSPENDED CEILING DETAILS FOR GYPSUM BOARD CEILINGS

SHEET NUMBER

A9.04.4

INTERNAL NUMBER: 024

11/21/2022 1:21 PM
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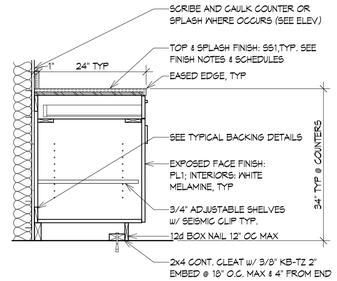
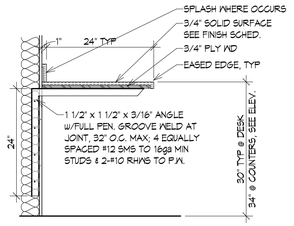
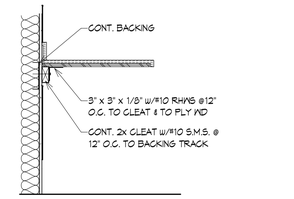


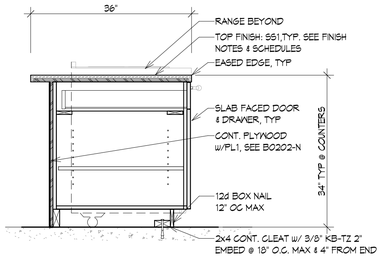
3 CASEWORK - BASE CABINET
3/4" = 1'-0"



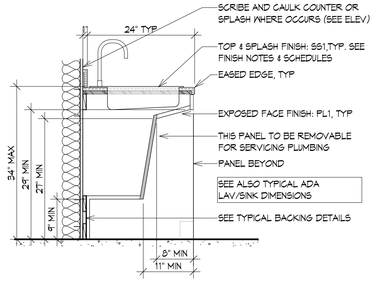
1 COUNTER - ANGLE MOUNT
3/4" = 1'-0"



2 COUNTER - ALT LEDGER MOUNT
3/4" = 1'-0"



4 CASEWORK AT KITCHEN
3/4" = 1'-0"



5 CASEWORK SHROUDED BASE CABINET @ SINK
3/4" = 1'-0"

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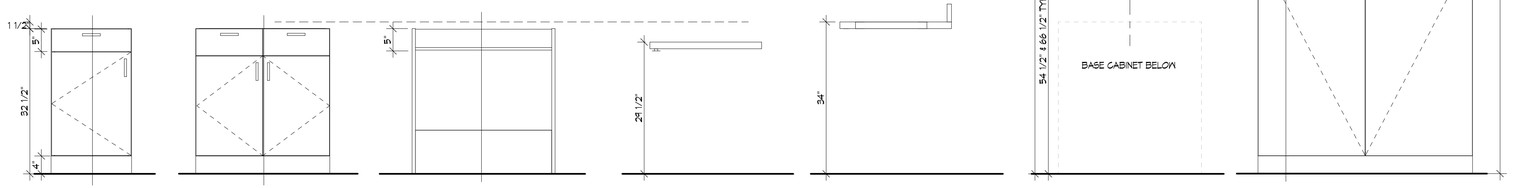
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES



BA — BASE CABINET WITH DRAWER
BB — BASE DOUBLE DOOR CABINET WITH DRAWERS
BH — BASE CABINET WITH PLUMBING SHROUD
CB — SOLID SURFACE COUNTERTOP, NO SPLASH, DESK HEIGHT SHOWN
CH — SOLID SURFACE COUNTERTOP, W/ SINK HOLE & SPLASH, ADA HEIGHT SHOWN
WB or WL — WALL CABINET WITH LIGHT APRON
FB — FULL HEIGHT CABINET W/DOUBLE DOOR, SHROUD TO CEILING

STANDARD CASEWORK

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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info@muratoreassociates.com

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AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

DETAILS - CASEWORK

SHEET NUMBER

A9.05

INTERNAL NUMBER: 0.09

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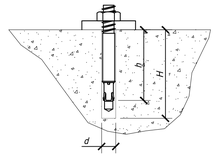
4. POST-INSTALLED WEDGE-TYPE ANCHORS IN CONCRETE

POST-INSTALLED WEDGE-TYPE ANCHORS		
ANCHOR DIAMETER (in.)	INSTALLATION TORQUE (ft-lb.) HILTI KB-TZ2 ICC ESR-4266	
	CONCRETE	
	CS	SS
3/8	30	30
1/2	50	40
5/8	40	60
3/4	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.

5. EXISTING BUILDING - STRUCTURAL WORK LIMITATIONS:

1. ALL FRAMING AND FOUNDATIONS ARE EXISTING UNLESS SPECIFICALLY IDENTIFIED AS 'NEW 'OR (N).
2. EVALUATION OF THE STRUCTURAL INTEGRITY OF EXISTING STRUCTURAL COMPONENTS IS NOT IN THE SCOPE OF THIS WORK.
3. CODE COMPLIANCE VERIFICATION AND UPGRADES OF EXISTING STRUCTURAL SYSTEMS AND COMPONENTS IS NOT IN THE SCOPE OF THIS WORK.
4. WHERE EXISTING ROOF TRUSSES AND JOISTS ARE MODIFIED BY THIS WORK, CONTRATOR SHALL VERIFY THE INTEGRITY OF THE AFFECTED STRUCTURAL COMPONENTS PRIOR TO PROCEEDING WITH THE WORK AFFECTING THE COMPONENTS AND DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR REMEDIATION.

3. LIGHT-GAUGE STEEL FRAMING

1. DESIGN OF LIGHT-GAUGE STEEL HAS BEEN BASED ON THE 2019 CBC, CHAPTER 2211A. ALL WORK SHALL CONFORM TO THE CALIFORNIA BUILDING CODE AND THE AISI NAS.
2. ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS.
3. DETAILS SHOWN ON STRUCTURAL DRAWINGS ARE TYPICAL. SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS.
4. DIMENSIONS SHOWN SHALL TAKE PRECEDENCE OVER SCALE ON PLANS, SECTIONS, AND DETAILS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE PROJECT IMMEDIATELY.
5. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FLOOR OR ROOF FRAMING MEMBERS. LOAD SHALL NOT EXCEED DESIGN LIVE LOAD.
6. ALL STUD, JOIST AND MISCELLANEOUS MATERIAL SHALL HAVE STIFFENED FLANGES WITH 90° RETURNS AND SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST AISI SPECIFICATION. MATERIAL SHALL CONFORM TO THE FOLLOWING:

MATERIAL STRENGTH:

16 GAUGE AND HEAVIER - 50 KSI MIN. YIELD
ASTM A653 SS CASE 1 OR 3 (GALV.)

18 GAUGE AND LIGHTER - 33 KSI MIN. YIELD
ASTM A653 SS (GALV.)

MATERIAL DESIGN THICKNESS:

12 GA. = .1017" 18 GA. = .0451"
14 GA. = .0713" 20 GA. = .0346"
16 GA. = .0566"

FASTENERS: ASTM C1315 - SCREWS SHALL EXTEND THRU STEEL CONNECTION A MIN. OF 3 EXPOSED THREADS.

METAL-TO-METAL: SELF TAPPING SHEET METAL SCREWS.

METAL-TO-METAL SCREW SIZE	NOMINAL DIAMETER
#8	.161"
#10	.183"
#12	.209"

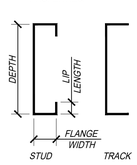
WOOD-TO-METAL: SELF-TAPPING SHEET METAL SCREW WITH BUGLE HEAD DESIGNED FOR ATTACHMENT OF WOOD TO METAL.

WOOD-TO-METAL SCREW SIZE	NOMINAL DIAMETER
#8	.161"
#10	.183"
#12	.209"

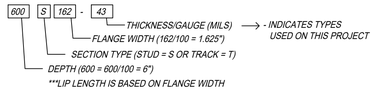
METAL-TO-WOOD: WOOD SCREW WITH FLUSH BEARING OF HEAD TO METAL SURFACE. PRE-DRILL METAL SURFACE WITH HOLES EQUAL TO SCREW DIAMETER.

METAL-TO-WOOD SCREW SIZE	NOMINAL DIAMETER
#8	.164"
#10	.190"
#12	.216"
#14	.242"

7. WIRE TYING OF FRAMING IS NOT ALLOWED.
8. ALL COMPONENTS SHALL BE CUT SQUARELY OR AS REQUIRED FOR AN ANGULAR FIT TO RECEIVING MEMBERS. BENT, DISTORTED OR OTHERWISE DAMAGED COMPONENTS SHALL NOT BE USED.
9. ALL JOIST MEMBERS SHALL BE UN-PUNCHED UNLESS OTHERWISE INDICATED. BEARING AND NON-BEARING PARTITION WALL STUDS MAY BE PUNCHED.
10. LATERAL STRAP/BRACING FOR WALL STUDS SHALL BE APPLIED TO BOTH SIDES OF WALL AT 8'-0" VERTICAL SPACING FOR WALLS EXCEEDING 8'-0" IN HEIGHT AND WHERE INDICATED OTHERWISE ON THE DRAWINGS. INSTALL STRAP BRACING @ 24"oc VERT. SPACING WHERE WALL FINISH DOES NOT OCCUR.
11. AXIALLY LOADED STUDS SHALL HAVE FULL BEARING AGAINST INSIDE TRACK WEB PRIOR TO STUD AND TRACK ATTACHMENT. SPLICES IN STUDS SHALL NOT BE PERMITTED.
12. STUD WALLS SHALL BE BOLTED TO THE SLAB WITH ANCHOR BOLTS AS DETAILED . SHOT PINS AND EXPANSION ANCHORS ARE NOT ALLOWED AT CURBS. SHOT PINS ARE NOT ALLOWED AT SLAB EDGES. INTERIOR WALLS MAY BE ATTACHED WITH 0.177" DIAMETER x 1½" POWDER DRIVEN FASTENERS AT 24"oc & 8" FROM ENDS OF SILL TRACKS UNLESS NOTED OTHERWISE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY BRACING OF WALLS, DURING ERECTION.
14. BOTTOM SILL TRACK AT CURVED WALLS (IF THEY OCCUR ON THIS PROJECT) SHALL BE COLD FORMED TO REQUIRED RADIUS. CUTTING OFF FLANGE AND WEB SECTIONS IS NOT ALLOWED FOR PURPOSES OF BENDING SECTION TO REQUIRED RADIUS.
15. MANUFACTURER SHALL BE A MEMBER OF THE SSMA - STEEL STUD MANUFACTURERS ASSOCIATION. SECTIONS OF METAL COMPONENTS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES.



MARK	ASTM SPEC	Fy (kel)	LIP (in)
STRUCTURAL STUD SECTION PROPERTIES			
400S162-43	A653	33	0.500
STRUCTURAL TRACK SECTION PROPERTIES			
400T150-43	A653	33	N/A



2. 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). ALL WELDS USED IN MEMBERS AND CONNECTIONS OF THE SEISMIC FORCE RESISTING SYSTEM AND DESIGNATED AS "DEMAND CRITICAL" SHALL BE MADE WITH FILLER METALS MEETING THE REQUIREMENTS SPECIFIED IN CLAUSE 6.1, 6.2, AND 6.3 OF STRUCTURAL WELDING CODE - SEISMIC SUPPLEMENT (AWS D1.8:2016).
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 THE LOCAL BUILDING OFFICIALS. ONLY STEEL FABRICATORS ACCREDITED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) OR THE INTERNATIONAL ACCREDITED SERVICE (IAS - A SUBSIDIARY OF THE INTERNATIONAL CODE COUNCIL) WILL BE CONSIDERED AN APPROVED STEEL FABRICATOR, AND THEREFORE EXEMPT FROM SPECIAL INSPECTION FOR SHOP WELDING PER CBC 1704.2.5.1. ALL FIELD WELDING SHALL BE INSPECTED.
7. FABRICATION SHALL NOT TAKE PLACE UNTIL SHOP DRAWINGS HAVE BEEN RECEIVED, RETURNED, AND ISSUES IN QUESTION HAVE BEEN RESOLVED.
8. COLUMN BASE PLATES MAY HAVE 1/16" MAX. OVERSIZE BOLT HOLES WITH STANDARD NUT AND 5/16" MAX. OVERSIZE BOLT HOLES WITH HEAVY-HEX NUTS.

B. MATERIALS:
1. STRUCTURAL STEEL
   a. WIDE FLANGES - ASTM A992 (Gr. 50)
   b. CHANNELS, ANGLES & BASE PLATES - ASTM A36, Gr. A
   c. STRUCTURAL PIPE - ASTM A53, GRADE B
   d. STRUCTURAL HSS RECTANGULAR TUBING - ASTM A500, GRADE C (Fy = 50 KSI)
   e. STRUCTURAL HSS ROUND TUBING - ASTM A500, GRADE C (Fy = 46 KSI)
   f. FRAME BASE PLATES AND GUSSETS - ASTM A572, Gr. 50.
2. MISC. METALS - ASTM A36, Gr. A
3. STANDARD BOLTS - ASTM A307, Gr. A - TYPICAL UNLESS NOTED OTHERWISE.
4. STANDARD AND HEAVY-HEX NUTS - ASTM A563 - TYPICAL UNLESS NOTED OTHERWISE.
5. STANDARD ANCHOR BOLTS - ASTM F1554 (Gr. 36 OR Gr. 55 WHERE NOTED)
6. HIGH STRENGTH BOLTS - LESS THAN OR EQUAL TO 1 1/4 " DIAMETER - ASTM F3125, Gr. A325, TYPE 1 OR 3. HIGH STRENGTH BOLTS EXPOSED TO WEATHER SHALL BE TYPE 3.
7. TWIST-OFF-TYPE TENSION-CONTROL BOLTS - LESS THAN OR EQUAL TO 1 1/4 " DIAMETER ASTM F3125, Gr. F1852, TYPE 1 OR 3. HIGH STRENGTH BOLTS EXPOSED TO WEATHER SHALL BE TYPE 3.
8. WASHERS - AS REQUIRED BY THE AISC, RCSC, SECTION 6 - USE OF WASHERS.
9. 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 SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION. SEE SPECIFICATIONS FOR SUBMITTALS REQUIRED.
2. SHOP DRAWINGS SHALL NOT BE PREPARED UNTIL ALL CONDITIONS HAVE BEEN VERIFIED. ELEVATIONS AND DIMENSIONS ON STRUCTURAL DRAWINGS SHALL BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT 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.
4. FABRICATOR SHALL SUBMIT SHOP DRAWINGS IN MULTIPLE SUBMITTALS OF SIZES TO ALLOW FOR ARCHITECT/ENGINEER REVIEW IN THE SPECIFIED ALLOTTED TIME (SEE SPECIFICATIONS).
5. FABRICATOR SHALL BE RESPONSIBLE FOR DETERMINING THE SIZE AND ORDER OF SHOP DRAWINGS TO ALLOW FOR INCREMENTING THE WORK WITHIN THE FABRICATION AND CONSTRUCTION SCHEDULES.
6. SHOP DRAWING PREPARATION SHALL INCLUDE A CONTINGENCY TO ALLOW FOR MINOR REVISIONS RESULTING FROM ARCHITECTS' AND ENGINEERS' REVIEW.
7. SHOP DRAWINGS SHALL BE SUBMITTED IN PORTIONS AND INCREMENTS COMPATIBLE WITHIN THE INTENDED FABRICATION SCHEDULE. IF SUBMITTALS ARE IN SIZES TOO LARGE TO REVIEW IN THE TIME ALLOTTED PER THE SPECIFICATIONS, SUBMITTAL WILL BE RETURNED FOR CORRECTIONS AND RE-SUBMITTAL WILL BE REQUIRED.

D. FRAMING AND DETAILS SHOWN IN THESE DRAWINGS FOR THE SUPPORT OF ROOF AND/OR FLOOR MOUNTED EQUIPMENT AND OPENINGS IN ROOF AND/OR FLOOR DECKS ARE TYPICAL CONDITIONS. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, PLUMBING ELECTRICAL AND OTHER CONTRACT DOCUMENTS FOR EQUIPMENT AND OPENING LOCATIONS, SIZES AND MOUNTING REQUIREMENTS.

E. CONTRACTOR SHALL VERIFY AND ACCEPT ALL STEEL BEAM CAMBERS PRIOR TO INSTALLATION. VERIFICATION OF CAMBER SHALL BE WITH THE BEAM ON ITS SIDE IN AN UNLOADED CONDITION.

F. THE QUANTITY, TYPES AND LOCATIONS OF ROOF AND FLOOR MOUNTED EQUIPMENT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED.

G. LOCATIONS OF ROOF AND FLOOR EQUIPMENT SHALL BE COORDINATED AND VERIFIED WITH ALL RELATED DOCUMENTS. LOCATIONS OF EQUIPMENT SHOWN ON THE STRUCTURAL DRAWINGS ARE GENERAL REPRESENTATIONS FOR REQUIRED FRAMING.

1. GENERAL NOTES

A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE CALIFORNIA BUILDING CODE (CBC), 2019 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. 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, 2019 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 THE JURISDICTIONAL BUILDING DEPARTMENT. 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.

WIND DESIGN DATA	
ULTIMATE WIND SPEED (3 SECOND GUST)	94 mph
WIND EXPOSURE CATEGORY	C
RISK CATEGORY	II
INTERNAL PRESSURE COEFFICIENT	±0.18

SEISMIC DESIGN DATA	
SITE COORDINATES	36° 44' 10" N -119° 47' 35" W
SEISMIC IMPORTANCE FACTOR (I)	1.0
RISK CATEGORY	II
MAPPED SPECTRAL RESPONSE	S_s = .608 S_1 = .233
SITE CLASS	D
SPECTRAL RESPONSE COEFFICIENTS	S_{DS} = .532
SEISMIC DESIGN CATEGORY	D

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COUNTY OF FRESNO
DEVELOPMENT SERVICES

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THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL 8/23 STATE OF CALIFORNIA

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CONSULTANT STAMP

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 8/1/2018

SCALE:

JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TYPICAL NOTES

SHEET NUMBER

S0.01

INTERNAL NUMBER: 829

FILE PATH P:\Project files\Customers\County of Fresno\829-Brix Mercer Basement\Design Documents\Drawings\Working\829-dwg-Brix Mercer Basement.vwx

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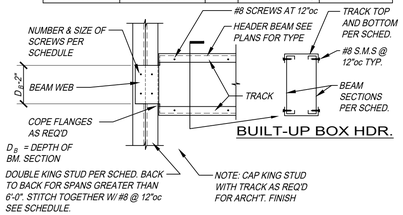
INTERIOR/NON-STRUCTURAL WALL HEADER BEAM SCHEDULE				
TRACKS (X=WALL WIDTH)	UNPUNCHED BEAM	BEAM SPAN	SCREWS	KING STUD (X=WALL WIDTH)
X00T150-43	800S162-43	6'-0"	4-#10 (2 EA. SIDE)	1-X00S162-43
X00T150-43	800S162-43	10'-0"	8-#10 (4 EA. SIDE)	2-X00S162-43
X00T150-43	1000S162-54	12'-0"	12-#10 (6 EA. SIDE)	2-X00S162-54

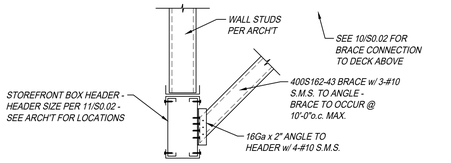


BUILT-UP BOX HDR.

INTERIOR/NON-STRUCTURAL WALLS

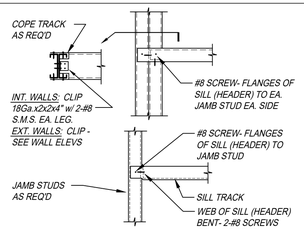
DETAIL 11 S0.02

SCALE: 3/4" = 1'-0" TMET11

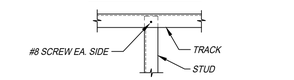


DETAIL 12 S0.02

SCALE: 3/4" = 1'-0" TMET99



CONDITION 'A'



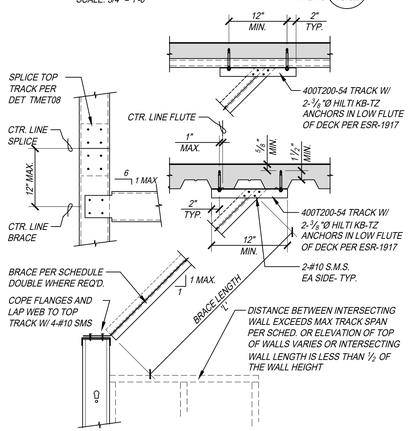
CONDITION 'B'

SILL TRACK ATTACHMENTS

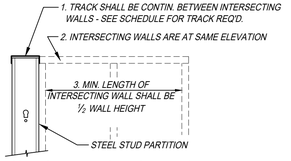
INT. WALLS: SILL TRACK = TYP. WALL TRACK
EXT. WALLS: SILL TRACK = SEE WALL ELEVATIONS

DETAIL 9 S0.02

SCALE: 3/4" = 1'-0" TMET16

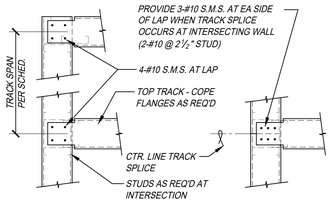


CONDITION 'B' - BRACED REQUIREMENTS



CONDITION 'A' - UN-BRACED REQUIREMENTS

CONSTRUCTION CONDITION MUST MEET ALL 3 REQUIREMENTS OF CONDITION 'A' OR WALL SHALL BE BRACED PER CONDITION 'B'.



INTERSECTING PARTITION LAP

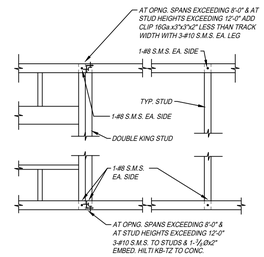
MAX. TOP TRACK SPAN BETWEEN INTERSECTING WALLS AND/OR BRACES		
WALL WIDTH	TRACK SIZE	MAX SPAN
2 1/2"	250T150-43	5'-0"
4"	400T150-43	8'-0"

BRACE SCHEDULE		
BRACE	MAX LENGTH	CONFIG.
400S162-43	8'-6"	
400S162-43	11'-0"	

NON-STRUCTURAL INTERIOR PARTITION SUPPORT/BRACING

DETAIL 10 S0.02

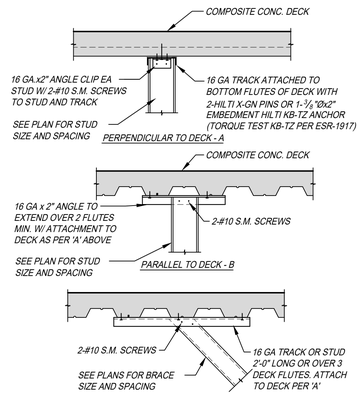
SCALE: 3/4" = 1'-0" TMET34



STUDS TO TRACKS

DETAIL 6 S0.02

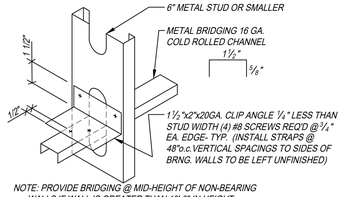
SCALE: 3/4" = 1'-0" TMET41



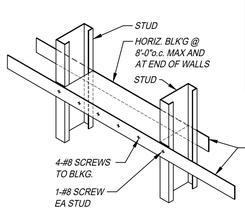
SUSPENDED FRAMING ATTACHMENT TO DECK

DETAIL 6 S0.02

SCALE: 3/4" = 1'-0" TMET06



ALTERNATE STEEL STUD BRACING



DETAIL A

STRAP & BLK'G. VERT. SPACING SCHEDULE		
WALL TYPE	BEARING / SHEAR	NON-BRNG.
FINISHED SIDE	8'-0"	10'-0"
UN-FINISHED SIDE	4'-0"	10'-0"

NOTE: BRACING SHALL BE INSTALLED OTHERWISE AT CLOSER SPACINGS AS CONTR. REQUIRES FOR ERECTION STABILITY OF WALL STUDS.

2" x 20 Ga. HORIZ. STRAP @ MID. HT. OF WALLS EXCEEDING 8'-0" (96"oc VERT. MAX.) WHERE WALL FINISH IS TO BE APPLIED. SPLICE @ BLK'G ONLY WHEN REQD. (INSTALL STRAPS @ 48"o.c. VERT. SPACINGS TO SIDES OF BRNG. WALLS TO BE LEFT UNFINISHED)

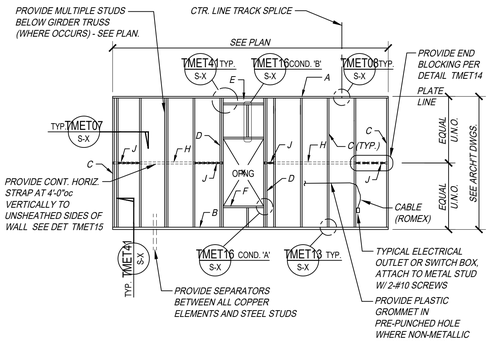
TYPICAL STEEL STUD BRACING (BEARING AND NON-BEARING WALLS)

DETAIL 8 S0.02

SCALE: 3/4" = 1'-0" TMET15

SCHEDULE		
MARK	DESCRIPTION	REF. DETAIL
A	TOP TRACK	TMET08
B	BOTTOM TRACK	TMET13 & 40
C	STUD	———
D	KING STUDS	TMET11
E	HEADER	TMET11
F	SILL	TMET16
G	———	———
H	STRAP	TMET15
J	BLOCKING	TMET14

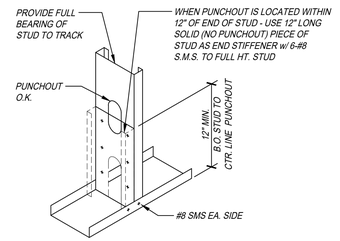
NOTES:
1. REFER TO ARCHITECTURAL DWGS. AND SECTION PROPERTIES SCHEDULE, THIS SHEET FOR MEMBER SIZES.
2. ALL STUDS SHALL BE SPACED AT 16"oc EXCEPT AS SHOWN OTHERWISE.
3. JAMB STUDS SHALL BE CARRIED DOWN THROUGH ALL WALLS TO FOUNDATION.
4. STUDS SHALL NOT BE NOTCHED, CUT OR MODIFIED WITHOUT ENGINEERS APPROVAL.
5. PROVIDE CONT HORIZ STRAP AT MID-HEIGHT OF ALL LOAD BEARING WALLS



INTERIOR/NON-BEARING WALLS

DETAIL 1 S0.02

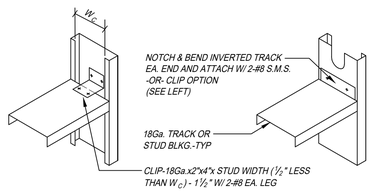
SCALE: 3/4" = 1'-0" TMET10 - INTERIOR



TYPICAL BASE ATTACHMENT

DETAIL 4 S0.02

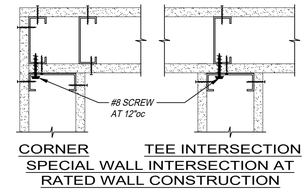
SCALE: 3/4" = 1'-0" TMET13



TYPICAL BLOCKING

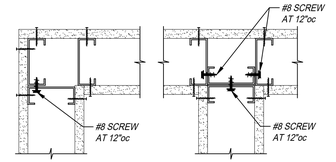
DETAIL 5 S0.02

SCALE: 3/4" = 1'-0" TMET14



CORNER TEE INTERSECTION

SPECIAL WALL INTERSECTION AT RATED WALL CONSTRUCTION

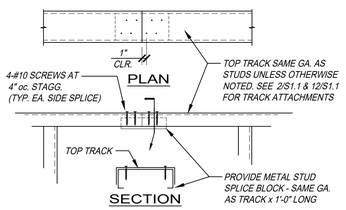


CORNER TEE INTERSECTION

TYPICAL WALL INTERSECTION

DETAIL 2 S0.02

SCALE: 3/4" = 1'-0" TMET07



EXTERIOR BEARING WALLS AND INTERIOR/NON-BEARING WALLS

(SEE DETAILS FOR INTERIOR WALL SLIP TRACK CONDITIONS)

DETAIL 3 S0.02

SCALE: 3/4" = 1'-0" TMET08

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COUNTY OF FRESNO
DEVELOPMENT SERVICES

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THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38030 RENEWAL: 8/23 STATE OF CALIFORNIA

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TYPICAL DETAILS

SHEET NUMBER

S0.02

INTERNAL NUMBER: 829

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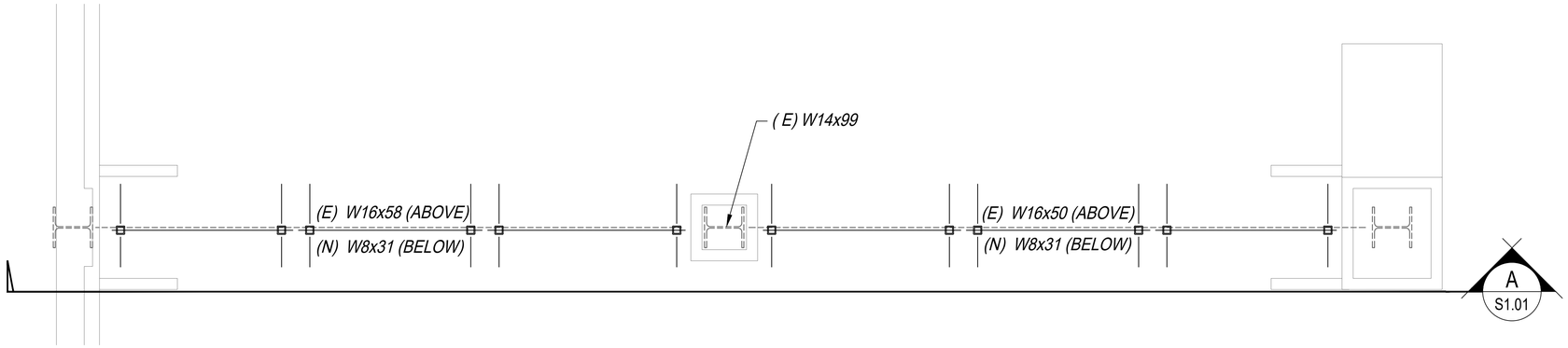
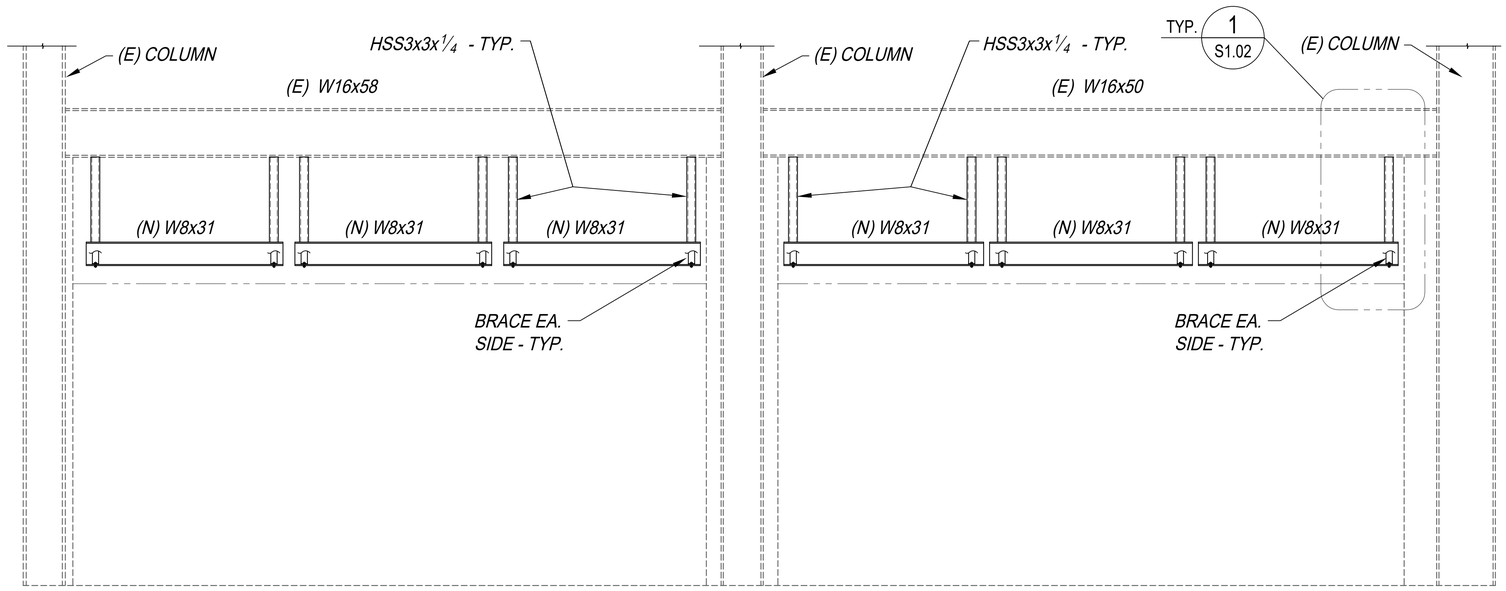


PARTIAL FLOOR FRAMING PLAN @ PARTITION WALL

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



ELEVATION OF PARTITION WALL FRAMING

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

SEC01 A S1.01

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DEVELOPMENT SERVICES

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PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

BASEMENT – PARTITION WALL

SHEET NUMBER

S1.01

INTERNAL NUMBER: 829

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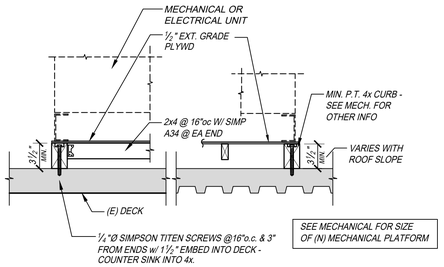
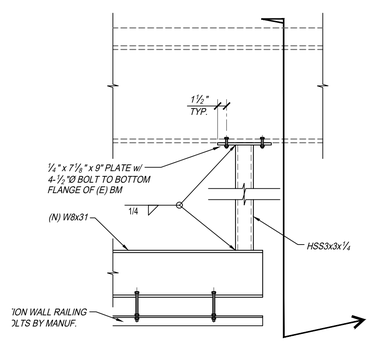


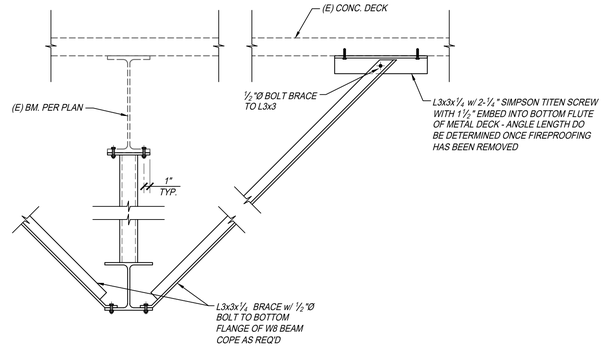
TYPICAL UNIT SUPPORT FRAMING

DETAIL

SCALE: 3/4" = 1'-0"

TMECH21A | S1.02 | 2





DETAIL

SCALE: 1" = 1'-0"

DET01 | S1.02 | 1

FLOOR OPENING @ MECHANICAL DUCT
(REFLECTED VIEW OF UNDERSIDE)

DETAIL

SCALE: 3/4" = 1'-0"

TDECK47A | S1.02 | 4

DETAIL

SCALE: 1" = 1'-0"

MECH01 | S1.02 | 3

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DEVELOPMENT SERVICES

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DETAILS

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FILE PATH: P:\Project Work\Customers\County of Fresno\[01]--Brix--Mercer Basement\Qxmdpy Documents\Qxmdpy\Working\[01]--dwg--Brix Mercer Basement.rvt

0 5' 25'
Scale 1/8" = 1'-0"

0 1' 12'
Scale

GENERAL NOTES

FIRE SPRINKLER LAYOUT DESIGNED IN ACCORDANCE WITH NFPA 13 (2016), CFC/CBC (2016), CITY OF FRESNO FIRE PREVENTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THESE PLANS AND ALL NATIONAL, STATE, AND LOCAL CODES.

THESE DRAWINGS ARE SCHEMATIC IN NATURE, AND ARE NOT INTENDED TO REFLECT FINAL, COORDINATED (AMONGST OTHER TRADES), INSTALLATION PLANS. THESE DRAWINGS ARE FOR BID REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE ACCEPTABLE WORKING INSTALLATION, WHETHER SHOWN OR NOT SHOWN, APPLICABLE TO ALL CITED CODES AND STANDARDS. IT SHALL BE THE RESPONSIBILITY OF THE SPRINKLER INSTALLATION CONTRACTOR TO COORDINATE WITH ALL TRADES. IT IS THE SPRINKLER INSTALLATION CONTRACTOR TO OBTAIN A PERMIT THROUGH CITY OF FRESNO FIRE PREVENTION.

CONTRACTOR TO REVIEW FOR BID, SCHEMATIC "FOR REFERENCE" PLANS AS DESIGNED BY ENGINEER. AFTER AWARD OF BID, ALL DEVIATIONS FROM THE ORIGINAL DESIGN INTENTION SHALL BE CLOUDED AND NOTED ON THE CONTRACTOR ISSUED SHOP DRAWINGS TO ENGINEER, WHICH HAVE BEEN COORDINATED AMONGST THE TRADES, FOR REVIEW AND APPROVAL BY ENGINEER BEFORE SUBMITTAL TO CITY OF FRESNO FIRE PREVENTION.

GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR INSURING ALL SUB-CONTRACTORS COORDINATE SHOP DRAWINGS PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, DEVICE, MATERIAL, ETC. SUBMISSION OF SHOP DRAWINGS TO THE ENGINEER CONSTITUTES THAT THE DRAWINGS SUBMITTED HAVE BEEN COORDINATED AMONGST THE TRADES. FAILURE TO COORDINATE ALL SHOP DRAWINGS AMONGST THE TRADES, FOR REVIEW AND APPROVAL BY THE ENGINEER, WILL NOT CONSTITUTE A CHANGE ORDER TO THE OWNER, FOR UNIDENTIFIED FIELD COORDINATION ISSUES.

ANY DESIGN REVISIONS OR DEVIATIONS THAT ARISE FROM COORDINATION OF INSTALLATION MEANS AND METHODS AMONGST THE TRADES DURING CONSTRUCTION, SHALL BE PROVIDED TO THE ARCHITECT BY RFI, DETAILING COORDINATION ISSUE AND PROPOSED SOLUTION. ONCE REVIEWED AND APPROVED BY ENGINEER, THE DESIGN REVISIONS OR DEVIATIONS SHALL BE COORDINATED IN THE FIELD AMONGST THE IMPACTED TRADES, AND SHOWN ON THE ADDENDUM TO CITY OF FRESNO FIRE PREVENTION. A COMPLETE ACCURATE SET OF 'AS-BUILTS SHALL BE MAINTAINED ON SITE DURING CONSTRUCTION PER FFD 405 POLICY, AND ARE TO BE ISSUED TO ARCHITECT AND ENGINEER UPON COMPLETION, INSPECTION, AND TESTING OF INSTALLATION.

CONTRACTOR TO PROVIDE ONE (1) HARD COPY AND ELECTRIC SET OF THE FOLLOWING:

A. FULLY COORDINATED AMONGST THE TRADES INSTALLATION SHOP DRAWINGS INCLUDING ALL PIPE CUT LENGTHS, FITTINGS, HANGERS, SPRINKLERS WITH LEGEND, HYDRAULIC CALCULATIONS AND PRODUCT SUBMITTAL.
B. BOUND SUBMITTAL TO INCLUDE COVER PAGE, TABLE OF CONTENTS, PIPING, HARDWARE, AND MATERIALS (INCLUDING FIRE STOPPING). COVER PAGE TO INCLUDE PROJECT NAME, SPRINKLER CONTRACTOR, GENERAL CONTRACTOR, ARCHITECT, AND DATE SUBMITTED FOR REVIEW. ELECTRONIC SUBMITTAL TO THE ENGINEER SHALL BE BOOKMARKED.

ALL ITEMS REQUIRED BY NFPA 13 (2016) CHAPTER 23 (FOR WORKING DRAWINGS) AND FFD 405 POLICY SHALL BE PROVIDED ON THE SHOP DRAWINGS. SUBMITTALS ARE IN ADDITION TO, AND NOT IN LIEU OF, THIS REQUIREMENT.

FINAL INSTALLATION SPACING FOR SPRINKLER SYSTEM PIPING AND SPRINKLERS, MAY VARY WITH FIELD COORDINATION ISSUES. ALL DEVIATIONS TO COMPLY WITH SPRINKLER LISTINGS, NFPA 13 (2016), CFC/CBC (2016), AND CITY OF FRESNO FIRE PREVENTION.

SPRINKLERS ARE TO BE LOCATED CENTER OF ALL ACOUSTIC CEILING TILES (1' X 1', 2' X 1') WHERE APPLICABLE. SPRINKLERS IN HARD LID CEILINGS SHALL LINE UP WITH OTHER DISCIPLINE WHERE APPLICABLE.

LOCATION OF HANGERS ARE SCHEMATIC IN NATURE AND INTENDED TO SHOW APPROXIMATE LOCATIONS. INSTALLING SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING HANGERS PER NFPA 13 (2016) TABLE 9.2.2.1(a).

Jory Rothenfluh

From: Justin Beal <Justin.Beal@fresno.gov>
Sent: Monday, December 20, 2021 4:19 PM
To: Jory Rothenfluh
Subject: RE: 1221 Fulton St. Flow Curve - FFD Occ, #20106

Hi Jory,

Here is the data for 1221 Fulton:

This location has an existing 6" fire service fed from the 12" main in the alley. Curve is COF prescriptive curve "A" (45s, 35r @ 1800 gpm).

Source to the DC is 10' from the alley...

DC loss should be shown as actual.

DC to BOR should be shown as actual pipe I.D., C-factor and fittings.

As a side note, if the riser is in the alley (and outside), you will need to include on your plans an approved bollard detail, FDC detail, etc. both of which must show compliant access, as well as proper vehicle impact protection for the equipment as a condition of issuance of a new permit. FFD will verify these requirements on field inspection and will hold permit final and occupancy until these requirements are met...You may also want to let the UG contractor know that the Water Division no longer allows riser mounted detector checks, so they must now install the DC to Public Works Std. W-16 & 17 and it must be in a traffic rated box, with a traffic rated lid.

Please include a copy of this email when submitting your plans.

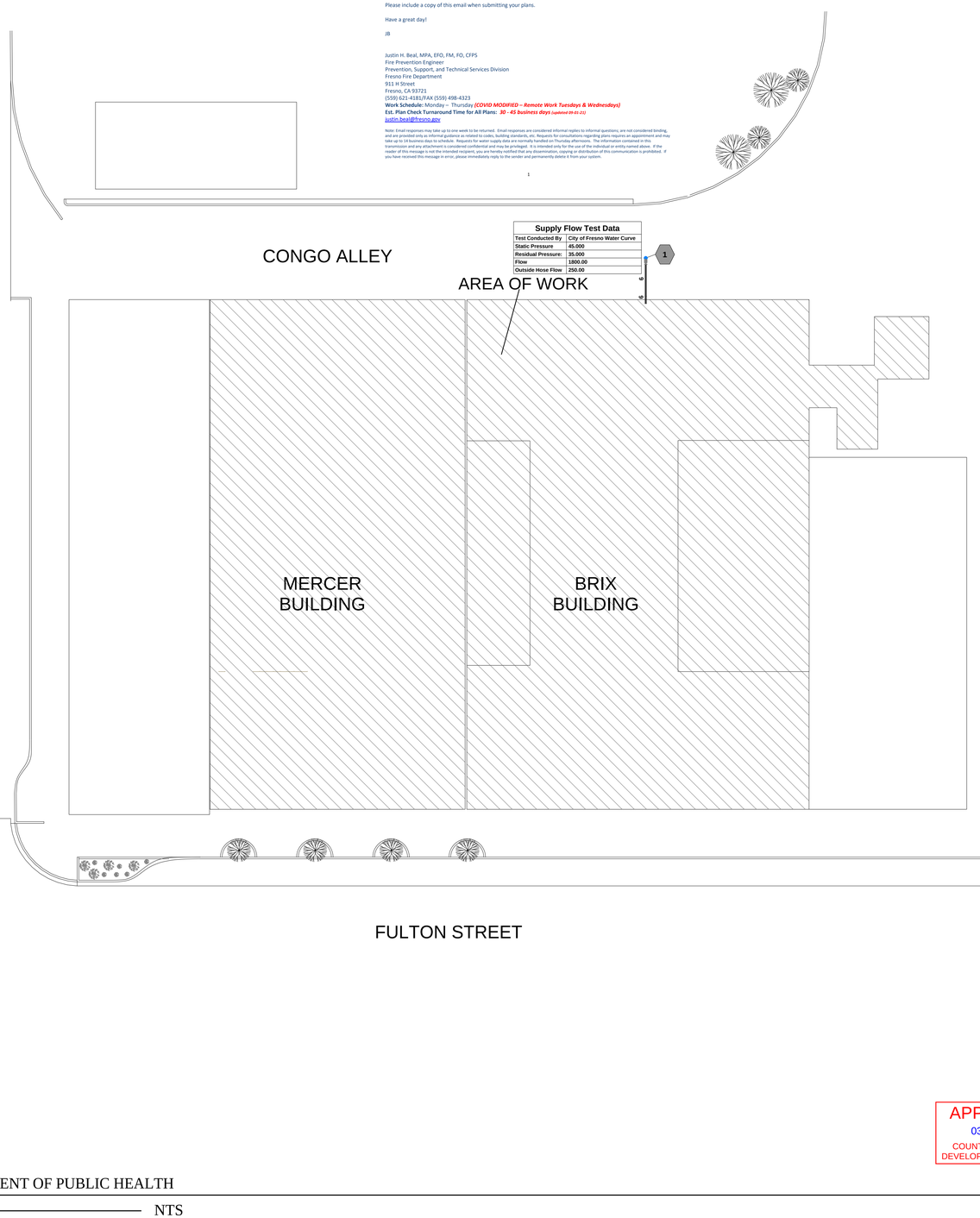
Have a great day!

JB

Justin H. Beal, MPA, EFO, FM, FO, CFPS
Fire Prevention Engineer
Prevention, Support, and Technical Services Division
Fresno Fire Department
911 H Street
Fresno, CA 93721
(559) 621-4181/FAX (559) 498-4323
Work Schedule: Monday – Thursday ***(COVID MODIFIED – Remote Work Tuesdays & Wednesdays)***
Est. Plan Check Turnaround Time for All Plans: *30 - 45 business days (updated 09-01-21)*
justin.beal@fresno.gov

Note: Email responses may take up to one week to be returned. Email responses are considered informal replies to informal questions; are not considered binding, and are provided only as informal guidance as related to codes, building standards, etc. Requests for consultations regarding plans requires an appointment and may take up to 14 business days to schedule. Requests for water supply data are normally handled on Thursday afternoons. The information contained in this transmission and any attachment is considered confidential and may be privileged. It is intended only for the use of the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, copying or distribution of this communication is prohibited. If you have received this message in error, please immediately reply to the sender and permanently delete it from your system.

1



Supply Flow Test Data

Test Conducted By	City of Fresno Water Curve
Static Pressure	45.000
Residual Pressure:	35.000
Flow	1800.00
Outside Hose Flow	250.00

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

OVERALL SITE PLAN - FRESNO COUNTY DEPARTMENT OF PUBLIC HEALTH
SCALE NTS

Sprinkler Components Legend

FLEXIBLE GROOVED COUPLING	HYDRAULIC NODE REF
PIPING W/ GROOVED FITTINGS	(EXISTING) PIPING
PIPING W/ THREADED FITTINGS	(DEMO) PIPING
PIPING W/ PENDENT SPRINKLER (Varies - See Details)	(NEW) PIPING
PIPING W/ UPRIGHT SPRINKLER (Varies - See Details)	FP1 FIRE PENETRATION THRU RATED WALL

Sprinkler Brace / Hanger Legend

Symbol	Description	Detail Reference
	LATERAL SEISMIC BRACE (Perpindicular)	Sheet(s) FP2.0
	LONGITUDINAL SEISMIC BRACE (Parallel)	Sheet(s) FP2.0
	4-WAY SEISMIC BRACE (Parallel / Perpindicular)	Sheet(s) FP2.0
	END OF LINE RESTRAINT	Sheet(s) FP1.0
	PIPE HANGER	Sheet(s) FP1.0-2.0

Details are specific to construction type

Project Information

Project Contruction	Building Height	Project Occupancy
SINGLE STORY, V-B	30'	A-3, S-1

Project System Sqft (Per Floor / Building)		Project System Types (Wet / Dry / Preaction)
	BRIX BUILDING: 16,000 SQ.FT MERCER BUILDING: 10,500 SQ.FT	WET SYSTEM

Project Water Flow	Water Flow Test Location / Date	U.G. Fire Main - Size / Type
45PSI - STATIC 1,800 - GPM 35PSI - RESIDUAL	45 Static , 35 Residual 1,800gpm 12/20/2021	6" AC Piping

System Alarm Valve Type / Model	Water FLow Alarm Type / Model	Backflow Preventor Model / Detector Check Model
N/A	EXISTING	--

SPRINKLER SYSTEM DESIGN CRITERIA:
1. SYSTEM SHALL BE DESIGNED TO CONFORM WITH NFPA 13 (2016 CALIFORNIA EDITION), CFC/CBC (2016), CITY OF FRESNO FIRE PREVENTION STANDARDS.
2. BRIX BUILDING - OBSTRUCTED CONCRETE TEE CONSTRUCTION.
MERCER BUILDING - - UNOBSTRUCTED METAL WEB JOIST CONSTRUCTION.
3. FIRE SPRINKLER SYSTEM POINT OF CONNECTION AT EXISTING OVERHEAD SPRINKLER SYSTEM.
4. SPRINKLER DISCHARGE DENSITY FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH NFPA 13 (2016) §11.2.1.2.4 WITH DENSITY CURVES IN ACCORDANCE WITH FIG. 11.2.3.1.1.
a. LIGHT HAZARD OCCUPANCY SHALL INCLUDE ALL OFFICE, CORRIDOR, DINING, CONCEALED ATTIC SPACES, RESTROOMS, AND SIMILAR AREAS. LIGHT HAZARD OCCUPANCY SHALL HAVE A DESIGN DENSITY OF 0.10 GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500 FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(a) AND SHALL NOT EXCEED 225FT².
b. ORDINARY HAZARD GROUP I (OH1) SHALL FOOD SERVICE AREAS, ELECTRICAL AND MECHANICAL EQUIPMENT ROOMS, PORTE COCHERES, AND SIMILAR AREAS INDICATED IN NFPA 13 (2016) §A.5.3.1. OH1 OCCUPANCY SHALL HAVE A DENSITY OF 0.15GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(b) – 130FT².
c. ORDINARY HAZARD GROUP II (OH2) SHALL INCLUDE AUTOMOTIVE WORKSHOP AREAS, SCIENCE LABRATORIES, STAGES, STORAGE ROOMS, SIMILAR AREAS INDICATED IN NFPA 13 (2016) A.5.3.2. OH2 OCCUPANCY SHALL HAVE A DESIGN DENSITY OF 0.20GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(b) – 130FT².
5. MAXIMUM SPRINKLER SPACING SHALL NOT EXCEED 15'-0" ON CENTER, UNLESS SPECIFICALLY LISTED BY THE SPRINKLER MANUFACTURER.
6. HOSE STREAM ALLOWANCE GPM FLOW SHALL BE IN ACCORDANCE WITH THE VALUES INDICATED IN TABLE 11.2.3.1.2: LIGHT HAZARD – 100 GPM; ORD HAZARD – 250 GPM.
7. PER NFPA 13 (2016) §11.2.3.2.3.1, WHERE LISTED QUICK-RESPONSE SPRINKLERS ARE USED THROUGHOUT A SYSTEM OR PORTION OF A SYSTEM HAVING THE SAME HYDRAULIC DESIGN BASIS, THE SYSTEM AREA OF OPERATION SHALL BEPERMITTED TO BE REDUCED WITHOUT REVISING THE DENSITY AS INDICATED IN FIG. 11.2.3.2.3.1. NOTE: REMOTE AREA REDUCTION EXCLUDES EXTENDED COVERAGE SPRINKLER HEADS AND ONLY APPLICABLE TO LIGHT HAZARD OCCUPANCY ONLY.
8. PER NFPA 13 (2016) §11.2.3.2.4, THE SYSTEM REMOTE AREA SHALL BE INCREASED BY 30% WITHOUT REVISING THE DENSITY WHEN SPRAY SPRINKLERS AND CMSA SPRINKLERS ARE USED ON SLOPED CEILINGS WITH A PITCH EXCEEDING 1 IN 6 (A RISE OF 2 UNITS IN A RUN OF 12 UNITS) IN NON-STORAGE APPLICATIONS.
9. PER NFPA 13 (2016) §11.2.3.2.7.1, MULTIPLE ADJUSTMENTS CAN BE MADE TO THE REMOTE AREA WHEN BOTH QUICK RESPONSE SPRINKLER AREA REDUCTIONS AND SLOPED CEILING AREA INCREASE ARE APPLICABLE.
10. THE HYDRAULIC CALCULATION SOURCE SHALL BE TO THE FLOW TEST HYDRANT OR APPLICABLE STREET CONNECTION, ACCORDING TO LOCAL FIRE PREVENTION DISTRICT WATER CURVE DETERMINATIONS AND OR TESTING PROCEDURES. REFER TO SITE PLAN AND HYDRAULIC CALCULATIONS.
11. STORAGE HEIGHT SHALL NOT EXCEED 8-FEET.
12. MICROBIAL INDUCED CORROSION WILL NOT BE A FACTOR FOR THIS SYSTEM.
13. THE FIRE SPRINKLER ALARM SYSTEM SHALL BE DESIGNED, INSTALLED AND PERMITTED BY OTHERS, AND IS NOT IN THE SCOPE OF WORK. SUPERVISORY FLOW DETECTORS AND TAMPER RESISTANT VALVES INSTALLED ON THE OVERHEAD SPRINKLER SYSTEM PIPING WILL BE SUPPLIED AND INSTALLED BY FIRE SPRINKLER CONTRACTOR AND WIRED BY ALARM CONTRACTOR.
14. PER PROJECT SPECIFICATIONS, IF DESIGN OR MATERIALS DEFFER FROM THAT SPECIFIED HEREIN, SUPPLEMENTAL ENGINEERING DESIGN, SUBMITTAL, AND REVIEW SHALL BE REQUIRED.

GENERAL INSTALLATION REQUIREMENTS:
1. OVERHEAD FIRE SPRINKLER PIPING SHALL BE AS FOLLOWS (UNLESS NOTED OTHERWISE ON PLANS):
a. PIPING 2-1/2" AND LARGER SHALL BE SCH.10 BLACK STEEL WITH ROLLED FITTINGS, RISER TO BE SCH.10 BLACK STEEL PIPE.
b. PIPING 2" AND LESS SHALL BE SCH.40 BLACK STEEL.
c. DRAINAGE PIPING 2" OR SMALLER, DOWNSTREAM OF THE DRAIN VALVE SHALL BE SCH. 40 BLACK STEEL WITH ROLLED FITTINGS.
2. WHERE APPLICABLE IN UNOBSTRUCTED CONSTRUCTION CONDITIONS (AS DEFINED PER NFPA 13 §3.7.2); PER NFPA 13 (2016) §8.6.4.1.1, THE DISTANCE BETWEEN THE SPRINKLER DEFLECTOR AND THE CEILING SHALL BE A MINIMUM OF 1-INCH AND A MAXIMUM OF 12-INCHES THROUGHOUT THE AREA OF COVERAGE OF THE SPRINKLER.
3. WHERE APPLICABLE IN OBSTRUCTION CONSTRUCTION CONDITIONS (AS DEFINED PER NFPA 13 §3.7.1); PER NFPA 13 (2016) §8.6.4.1.2, SPRINKLER DEFLECTORS SHALL BE INSTALLED WITH THE DEFLECTORS WITHIN THE HORIZONTAL PLANES OF 1-INCH TO 6-INCHES BELOW THE STRUCTURAL MEMBERS AND A MAXIMUM DISTANCE OF 22-INCHES FROM THE CEILING/ROOF DECK.
4. PER NFPA 13 (2016) §8.3.1.3 UPRIGHT SPRINKLERS SHALL BE INSTALLED WITH THE FRAME ARMS PARALLEL TO THE BRANCH LINE, UNLESS SPECIFICALLY LISTED FOR OTHER ORIENTATION.
5. PER NFPA 13 (2016) §8.5.4.2 DEFLECTORS OF SPRINKLERS SHALL BE ALIGNED PARALLEL TO CEILINGS, ROOFS, OR THE INCLINE OF STAIRS.
6. PER NFPA 13 (2016) §8.15.1.1 CONCEALED SPACES OF EXPOSED COMBUSTIBLE CONSTRUCTION SHALL BE PROTECTED BY SPRINKLERS EXCEPT IN CONCEALED SPACES WHERE SPRINKLERS ARE NOT REQUIRED TO BE INSTALLED BY 8.15.1.2.1 THROUGH 8.15.1.2.18 AND 8.15.6.
7. PER NFPA 13 (2016) 8.15.1.2.1 CONCEALED SPACES OF NONCOMBUSTIBLE WITH MINIMAL COMBUSTIBLE LOADING HAVING NO ACCESS SHALL NOT REQUIRE SPRINKLER PROTECTION.
8. PER NFPA 13 (2106) 8.15.1.2.3 CONCEALED SPACES FORMED BY STUDS OR JOISTS WITH LESS THAN 6-INCHES BETWEEN THE INSIDE OR NEAR EDGES OF THE STUDS OR JOISTS SHALL NOT REQUIRE SPRINKLER PROTECTION.
9. PER NFPA 13 (2016) 8.15.1.2.7 CONCEALED SPACES FILLED WITH NONCOMBUSTIBLE INSULATION SHALL NOT REQUIRE SPRINKLER PROTECTION; MAXIMUM 2-INCH AIR GAP AT THE TOP OFTHE SPACE SHALL BE PERMITTED.
10. PER NFPA 13 (2016) 8.15.7.3 SPRINKLERS SHALL BE PERMITTED TO BE OMITTED FROM BELOW THE EXTERIOR PROJECTIONS OF COMBUSTIBLE CONSTRUCTION, PROVIDED THE EXPOSED FINISH MATERIAL ON THE EXTERIOR PROJECTIONS ARE NON-COMBUSTIBLE AND THE EXTERIOR PROJECTIONS CONTAIN ONLY SPRINKLERED CONCEALED SPACES OR ANY OF THE FOLLOWING UNSPRINKLERED COMBUSTIBLE CONCEALED SPACES: (1) COMBUSTIBLE CONCEALED SPACES FILLED ENTIRELY WITH NON-COMBUSTIBLE INSULATION, (2) LIGHT OR ORDINARY HAZARD OCCUPANCIES WHERE NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE CEILINGS ARE DIRECTLY ATTACHED TO THE BOTTOM OF SOLID WOOD JOISTS SO AS TO CREATE ENCLOSED JOIST SPACES 160-FT³ OR LESS IN VOLUME, INCLUDING SPACE BELOW INSULATION THAT IS LAID DIRECTLY ON TOP OR WITHIN THE CEILING JOISTS IN AN OTHERWISE SPRINKLERED ATTIC, OR (3) CONCEALED SPACES OVER ISOLATED SMALL EXTERIOR PROJECTIONS NOT EXCEEDING 55FT² IN AREA
11. CAGE-TYPE SPRINKLER HEAD GUARDS SHALL BE INSTALLED TO PROTECT ALL SPRINKLERS SUBJECT TO MECHANICAL DAMAGE, INCLUDING ALL NON-CONCEALED PENDENT SPRINKLER BELOW 8-FEET ABOVE FINISH FLOOR OR EXPOSED UPRIGHTS AND PENDENT SPRINKLER INSTALLED DIRECTLY ON PIPING WITHIN A GYMNASIUM AREA.
12. ALL HANGERS, BRACES, AND RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 (2016 CALIFORNIA EDITION), CBC/CFC (2016), CITY OF FRESNO FIRE PREVENTION.
13. PER NFPA 13 (2016) §9.3.6.5 BRANCH LINE RESTRAINT SHALL NOT BE REQUIRED WHERE BRANCH LINES ARE SUPPORTED BY RODS LESS THAN 6" IN LENGTH WHEN MEASURED BETWEEN THE TOP OF THE PIPE TO THE POINT OF ATTACHMENT TO THE BUILDING STRUCTURE.

Sprinkler Legend

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
	Generic			17	5.6	Upright	½	Standard	Brass	165°F	Out of Scope
	Generic			3	5.6	Sidewall	½	Quick	Chrome	155°F	Out of Scope
	Minimax	MX7302		157	5.6	Pendent	½	Quick	Chrome	155°F	
	Minimax	MX7306		86	5.6	Upright	½	Quick	Brass	155°F	
	Minimax	MX7306		2	5.6	Upright	½	Quick	Brass	200°F	
	Generic			226	5.6	Pendent	½	Quick	Chrome	155°F	Demo
	Generic			115	5.6	Upright	½	Quick	Chrome	155°F	Demo
				Total = 600							

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO C38020 RENEWAL 6/23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 H SHAW AVE. FRESNO, CA 93711
559-265-6634
info@muratoreassociates.com

CONSULTANT STAMP

FIRE SYSTEM SOLUTIONS, INC.
LIC. C-16, 982763
4277 W. RICHERT AVE. STE. 103
FRESNO, CALIFORNIA
(559) 275-4894

LICENSED FIRE PROTECTION CONTRACTOR C-16 C-10 FIRE SYSTEM SOLUTIONS LIC. # 982763 FIRE SPRINKLER STATE OF CALIFORNIA

CWBSP-21-53
NICET# 154984

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 12/5/2021
SCALE: As indicated
JOB NUMBER:
ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721
AHJ #: 21-1137 21-105379
PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION
SHEET TITLE:
FIRE SPRINKLER SITE PLAN / GENERAL NOTES
SHEET NUMBER
FP0.1

INTERVAL NUMBER: 829

3/18/2023 4:21:24 PM
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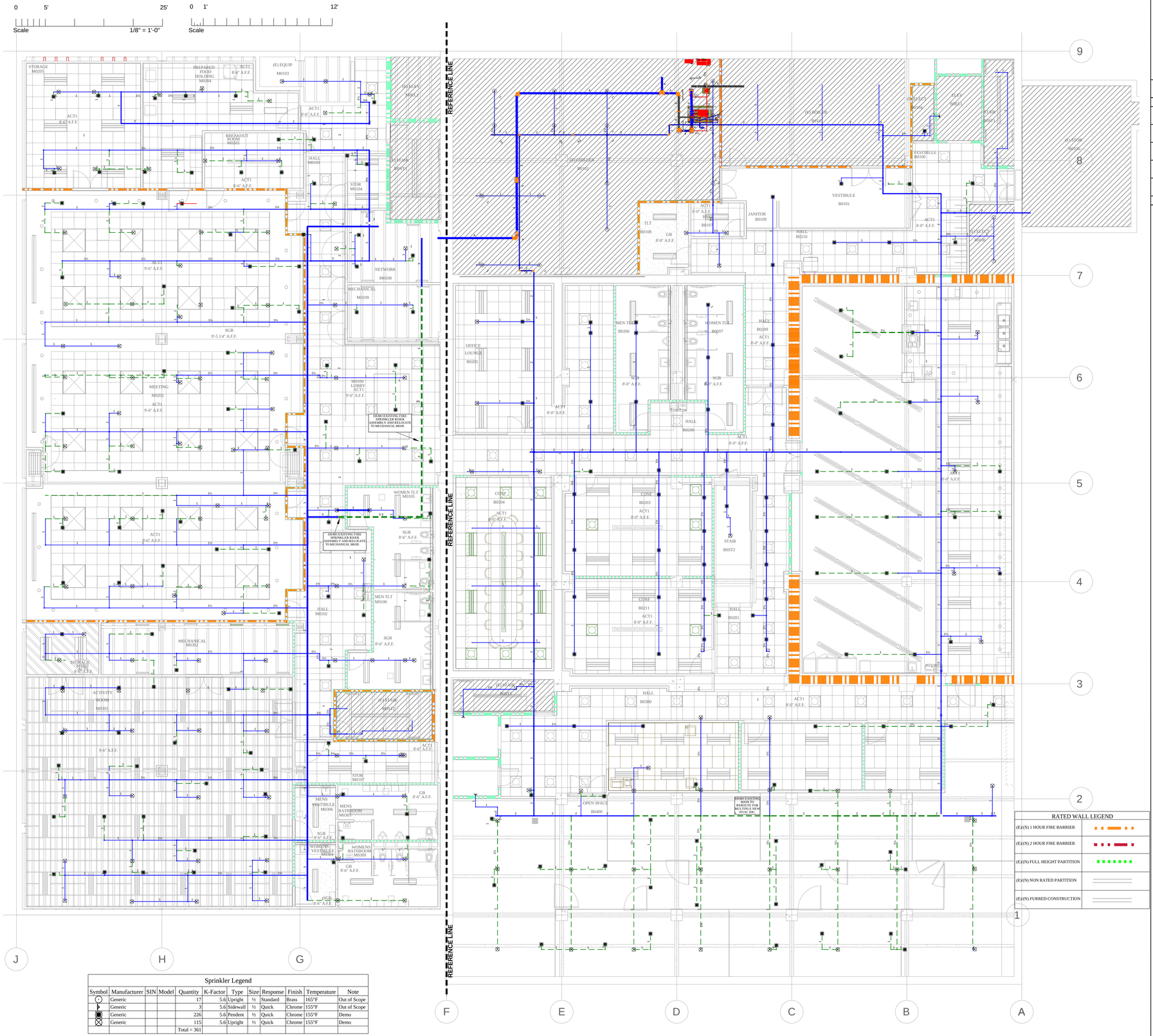
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Scale 1/8" = 1'-0"
0 1' 12'
Scale
REFERENCE LINE
REFERENCE LINE
REFERENCE LINE
9
8
7
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5
4
3
2
1
J
H
G
F
E
D
C
B
A
STORAGE M0205
PREPARED FOOD HOLDING M0204
(E) EQUIP M0103
BREAKOUT ROOM M0203
HALL M0101
STOR M0104
NETWORK M0108
MECHANICAL M0109
SGB 8'-5 1/4" A.F.F.
MEETING M0202
LOBBY M0100
DEMO EXISTING FIRE SPRINKLER RISER ASSEMBLY AND RELOCATE TO MECHANICAL M0109.
WOMEN TLT M0105
MEN TLT M0106
HALL M0102
MECHANICAL M0302
STORAGE M0301
ACTIVITY ROOM M0301
STOR M0107
MENS VESTIBULE M0306
MENS BATHROOM M0307
WOMENS VESTIBULE M0304
WOMENS BATHROOM M0309
ELEV M0107
ELEV M0108
ELEV M0109
ELEV M0110
ELEV M0111
ELEV M0112
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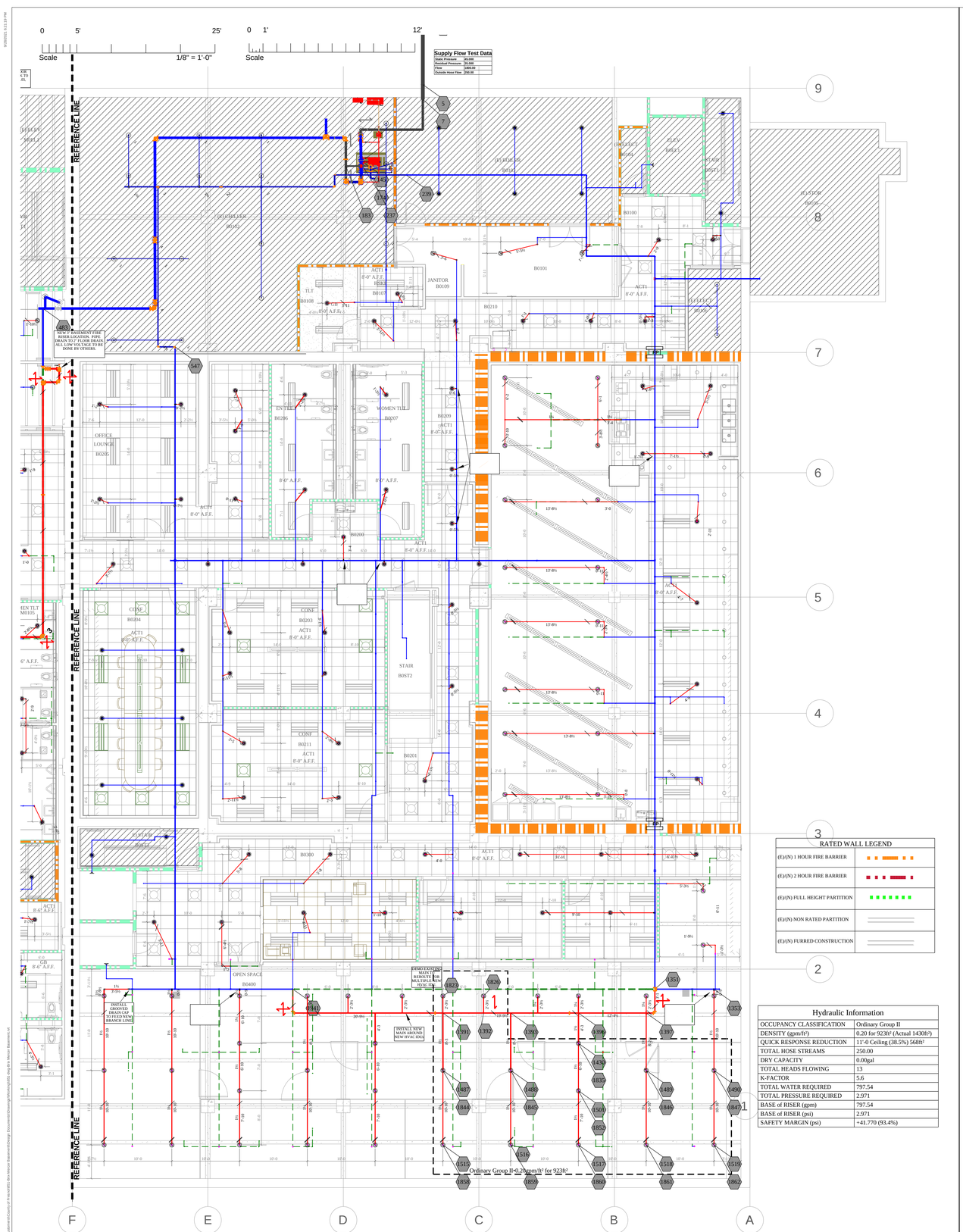
ELEV



RATED WALL LEGEND

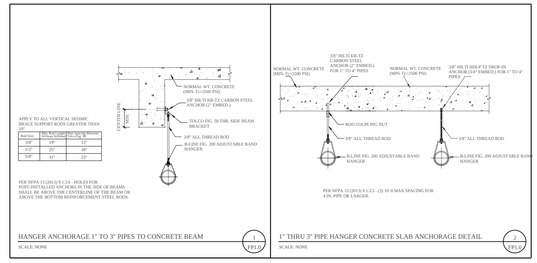
(E)/(N) 1 HOUR FIRE BARRIER	
(E)/(N) 2 HOUR FIRE BARRIER	
(E)/(N) FULL HEIGHT PARTITION	
(E)/(N) NON RATED PARTITION	
(E)/(N) FURRED CONSTRUCTION	

Hydraulic Information

OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft²)	0.20 for 923ft² (Actual 1430ft²)
QUICK RESPONSE REDUCTION	11'-0 Ceiling (38.5%) 568ft²
TOTAL HOSE STREAMS	250.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	13
K-FACTOR	5.6
TOTAL WATER REQUIRED	797.54
TOTAL PRESSURE REQUIRED	2.971
BASE of RISER (gpm)	797.54
BASE of RISER (psi)	2.971
SAFETY MARGIN (psi)	+41.770 (93.4%)

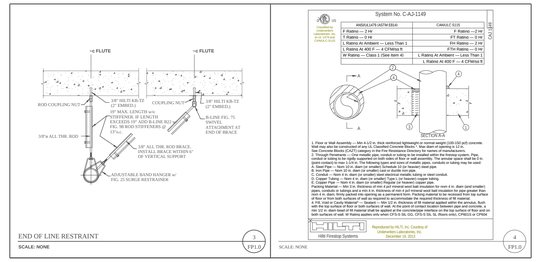
BRIX BUILDING FIRE SPRINKLER PIPING PLAN

SCALE 1/8" = 1'



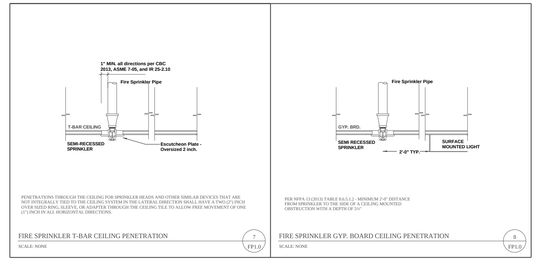
HANGER ANCHORAGE 1" TO 3" PIPES TO CONCRETE BEAM — SCALE: NONE — FP1.0 / 5

1" THRU 3" PIPE HANGER CONCRETE SLAB ANCHORAGE DETAIL — SCALE: NONE — FP1.0 / 6



END OF LINE RESTRAINT — SCALE: NONE — FP1.0 / 3

SCALE: NONE — FP1.0 / 4



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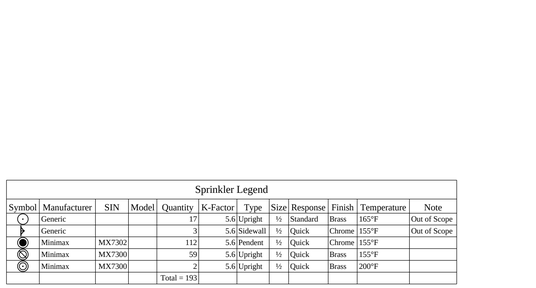
SCALE: NONE — FP1.0 / 2



FIRE SPRINKLER T-BAR CEILING PENETRATION — SCALE: NONE — FP1.0 / 7

FIRE SPRINKLER GYP. BOARD CEILING PENETRATION — SCALE: NONE — FP1.0 / 8

Sprinkler Legend

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
	Generic			17	5.6	Upright	½	Standard	Brass	165°F	Out of Scope
	Generic			3	5.6	Sidewall	½	Quick	Chrome	155°F	Out of Scope
	Minimax	MX7302		112	5.6	Pendent	½	Quick	Chrome	155°F	
	Minimax	MX7300		59	5.6	Upright	½	Quick	Brass	155°F	
	Minimax	MX7300		2	5.6	Upright	½	Quick	Brass	200°F	
				Total = 193							

Sprinkler Components Legend

- FLEXIBLE GROOVED COUPLING
- PIPING W/ GROOVED FITTINGS
- PIPING W/ THREADED FITTINGS
- PIPING W/ PENDENT SPRINKLER (Varies - See Details)
- PIPING W/ UPRIGHT SPRINKLER (Varies - See Details)
- HYDRAULIC NODE REF
- (EXISTING) PIPING
- (DEMO) PIPING
- (NEW) PIPING
- FP1 FIRE PENETRATION THRU RATED WALL

Sprinkler Brace / Hanger Legend

Symbol	Description	Detail Reference
	LATERAL SEISMIC BRACE (Perpindicular)	Sheet(s) FP2.0
	LONGITUDINAL SEISMIC BRACE (Parallel)	Sheet(s) FP2.0
	4-WAY SEISMIC BRACE (Parallel / Perpindicular)	Sheet(s) FP2.0
	END OF LINE RESTRAINT	Sheet(s) FP1.0
	PIPE HANGER	Sheet(s) FP1.0-2.0

SPRINKLER SYSTEM DESIGN CRITERIA:
1. SYSTEM SHALL BE DESIGNED TO CONFORM WITH NFPA 13 (2016 CALIFORNIA EDITION), CFC/CBC (2016), CITY OF FRESNO FIRE PREVENTION STANDARDS.
2. BRIX BUILDING - OBSTRUCTED CONCRETE TEE CONSTRUCTION.
MERCER BUILDING - UNOBSTRUCTED METAL WEB JOIST CONSTRUCTION.
3. FIRE SPRINKLER SYSTEM POINT OF CONNECTION AT EXISTING OVERHEAD SPRINKLER SYSTEM.
4. SPRINKLER DISCHARGE DENSITY FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH NFPA 13 (2016) §11.2.1.2.4 WITH DENSITY CURVES IN ACCORDANCE WITH FIG. 11.2.3.1.1.
a. LIGHT HAZARD OCCUPANCY SHALL INCLUDE ALL OFFICE, CORRIDOR, DINING, CONCEALED ATTIC SPACES, RESTROOMS, AND SIMILAR AREAS. LIGHT HAZARD OCCUPANCY SHALL HAVE A DESIGN DENSITY OF 0.10 GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500 FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(a) AND SHALL NOT EXCEED 225FT².
b. ORDINARY HAZARD GROUP I (OH1) SHALL FOOD SERVICE AREAS, ELECTRICAL AND MECHANICAL EQUIPMENT ROOMS, PORTE COCHERES, AND SIMILAR AREAS INDICATED IN NFPA 13 (2016) §A.5.3.1: OH1 OCCUPANCY SHALL HAVE A DENSITY OF 0.15GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(b) – 130FT².
c. ORDINARY HAZARD GROUP II (OH2) SHALL INCLUDE AUTOMOTIVE WORKSHOP AREAS, SCIENCE LABRATORIES, STAGES, STORAGE ROOMS, SIMILAR AREAS INDICATED IN NFPA 13 (2016) A.5.3.2. OH2 OCCUPANCY SHALL HAVE A DESIGN DENSITY OF 0.20GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(b) – 130FT².
5. MAXIMUM SPRINKLER SPACING SHALL NOT EXCEED 15'-0" ON CENTER, UNLESS SPECIFICALLY LISTED BY THE SPRINKLER MANUFACTURER.
6. HOSE STREAM ALLOWANCE GPM FLOW SHALL BE IN ACCORDANCE WITH THE VALUES INDICATED IN TABLE 11.2.3.1.2: LIGHT HAZARD – 100 GPM; ORD HAZARD – 250 GPM.
7. PER NFPA 13 (2016) §11.2.3.2.3.1, WHERE LISTED QUICK-RESPONSE SPRINKLERS ARE USED THROUGHOUT A SYSTEM OR PORTION OF A SYSTEM HAVING THE SAME HYDRAULIC DESIGN BASIS, THE SYSTEM AREA OF OPERATION SHALL BEPERMITTED TO BE REDUCED WITHOUT REVISING THE DENSITY AS INDICATED IN FIG. 11.2.3.2.3.1. NOTE: REMOTE AREA REDUCTION EXCLUDES EXTENDED COVERAGE SPRINKLER HEADS AND ONLY APPLICABLE TO LIGHT HAZARD OCCUPANCY ONLY.
8. PER NFPA 13 (2016) §11.2.3.2.4, THE SYSTEM REMOTE AREA SHALL BE INCREASED BY 30% WITHOUT REVISING THE DENSITY WHEN SPRAY SPRINKLERS AND CMSA SPRINKLERS ARE USED ON SLOPED CEILINGS WITH A PITCH EXCEEDING 1 IN 6 (A RISE OF 2 UNITS IN A RUN OF 12 UNITS) IN NON-STORAGE APPLICATIONS.
9. PER NFPA 13 (2016) §11.2.3.2.7.1, MULTIPLE ADJUSTMENTS CAN BE MADE TO THE REMOTE AREA WHEN BOTH QUICK RESPONSE SPRINKLER AREA REDUCTIONS AND SLOPED CEILING AREA INCREASE ARE APPLICABLE.
10. THE HYDRAULIC CALCULATION SOURCE SHALL BE TO THE FLOW TEST HYDRANT OR APPLICABLE STREET CONNECTION, ACCORDING TO LOCAL FIRE PREVENTION DISTRICT WATER CURVE DETERMINATIONS AND OR TESTING PROCEDURES. REFER TO SITE PLAN AND HYDRAULIC CALCULATIONS.
11. STORAGE HEIGHT SHALL NOT EXCEED 8-FEET.
12. MICROBIAL INDUCED CORROSION WILL NOT BE A FACTOR FOR THIS SYSTEM.
13. THE FIRE SPRINKLER ALARM SYSTEM SHALL BE DESIGNED, INSTALLED AND PERMITTED BY OTHERS, AND IS NOT IN THE SCOPE OF WORK. SUPERVISORY FLOW DETECTORS AND TAMPER RESISTANT VALVES INSTALLED ON THE OVERHEAD SPRINKLER SYSTEM PIPING WILL BE SUPPLIED AND INSTALLED BY FIRE SPRINKLER CONTRACTOR AND WIRED BY ALARM CONTRACTOR.
14. PER PROJECT SPECIFICATIONS, IF DESIGN OR MATERIALS DIFFER FROM THAT SPECIFIED HEREIN, SUPPLEMENTAL ENGINEERING DESIGN, SUBMITTAL, AND REVIEW SHALL BE REQUIRED.

GENERAL INSTALLATION REQUIREMENTS:
1. OVERHEAD FIRE SPRINKLER PIPING SHALL BE AS FOLLOWS (UNLESS NOTED OTHERWISE ON PLANS):
a. PIPING 2-1/2" AND LARGER SHALL BE SCH.10 BLACK STEEL WITH ROLLED FITTINGS, RISER TO BE SCH.10 BLACK STEEL PIPE.
b. PIPING 2" AND LESS SHALL BE SCH.40 BLACK STEEL.
c. DRAINAGE PIPING 2" OR SMALLER, DOWNSTREAM OF THE DRAIN VALVE SHALL BE SCH. 40 BLACK STEEL WITH ROLLED FITTINGS.
2. WHERE APPLICABLE IN UNOBSTRUCTED CONSTRUCTION CONDITIONS (AS DEFINED PER NFPA 13 §3.7.2); PER NFPA 13 (2016) §8.6.4.1.1, THE DISTANCE BETWEEN THE SPRINKLER DEFLECTOR AND THE CEILING SHALL BE A MINIMUM OF 1-INCH AND A MAXIMUM OF 12-INCHES THROUGHOUT THE AREA OF COVERAGE OF THE SPRINKLER.
3. WHERE APPLICABLE IN OBSTRUCTION CONSTRUCTION CONDITIONS (AS DEFINED PER NFPA 13 §3.7.1); PER NFPA 13 (2016) §8.6.4.1.2, SPRINKLER DEFLECTORS SHALL BE INSTALLED WITH THE DEFLECTORS WITHIN THE HORIZONTAL PLANES OF 1-INCH TO 6-INCHES BELOW THE STRUCTURAL MEMBERS AND A MAXIMUM DISTANCE OF 22-INCHES FROM THE CEILING/ROOF DECK.
4. PER NFPA 13 (2016) §8.3.1.3 UPRIGHT SPRINKLERS SHALL BE INSTALLED WITH THE FRAME ARMS PARALLEL TO THE BRANCH LINE, UNLESS SPECIFICALLY LISTED FOR OTHER ORIENTATION.
5. PER NFPA 13 (2016) §8.5.4.2 DEFLECTORS OF SPRINKLERS SHALL BE ALIGNED PARALLEL TO CEILINGS, ROOFS, OR THE INCLINE OF STAIRS.
6. PER NFPA 13 (2016) §8.15.1.1 CONCEALED SPACES OF EXPOSED COMBUSTIBLE CONSTRUCTION SHALL BE PROTECTED BY SPRINKLERS EXCEPT IN CONCEALED SPACES WHERE SPRINKLERS ARE NOT REQUIRED TO BE INSTALLED BY 8.15.1.2.1 THROUGH 8.15.1.2.18 AND 8.15.6.
7. PER NFPA 13 (2016) 8.15.1.2.1 CONCEALED SPACES OF NONCOMBUSTIBLE WITH MINIMAL COMBUSTIBLE LOADING HAVING NO ACCESS SHALL NOT REQUIRE SPRINKLER PROTECTION.
8. PER NFPA 13 (2016) 8.15.1.2.3 CONCEALED SPACES FORMED BY STUDS OR JOISTS WITH LESS THAN 6-INCHES BETWEEN THE INSIDE OR NEAR EDGES OF THE STUDS OR JOISTS SHALL NOT REQUIRE SPRINKLER PROTECTION.
9. PER NFPA 13 (2016) 8.15.1.2.7 CONCEALED SPACES FILLED WITH NONCOMBUSTIBLE INSULATION SHALL NOT REQUIRE SPRINKLER PROTECTION; MAXIMUM 2-INCH AIR GAP AT THE TOP OFTHE SPACE SHALL BE PERMITTED.
10. PER NFPA 13 (2016) 8.15.7.3 SPRINKLERS SHALL BE PERMITTED TO BE OMITTED FROM BELOW THE EXTERIOR PROJECTIONS OF COMBUSTIBLE CONSTRUCTION, PROVIDED THE EXPOSED FINISH MATERIAL ON THE EXTERIOR PROJECTIONS ARE NON-COMBUSTIBLE AND THE EXTERIOR PROJECTIONS CONTAIN ONLY SPRINKLERED CONCEALED SPACES OR ANY OF THE FOLLOWING UNSPRINKLERED COMBUSTIBLE CONCEALED SPACES: (1) COMBUSTIBLE CONCEALED SPACES FILLED ENTIRELY WITH NON-COMBUSTIBLE INSULATION, (2) LIGHT OR ORDINARY HAZARD OCCUPANCIES WHERE NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE CEILINGS ARE DIRECTLY ATTACHED TO THE BOTTOM OF SOLID WOOD JOISTS SO AS TO CREATE ENCLOSED JOIST SPACES 160-FT³ OR LESS IN VOLUME, INCLUDING SPACE BELOW INSULATION THAT IS LAID DIRECTLY ON TOP OR WITHIN THE CEILING JOISTS IN AN OTHERWISE SPRINKLERED ATTIC, OR (3) CONCEALED SPACES OVER ISOLATED SMALL EXTERIOR PROJECTIONS NOT EXCEEDING 55FT² IN AREA.
11. CAGE-TYPE SPRINKLER HEAD GUARDS SHALL BE INSTALLED TO PROTECT ALL SPRINKLERS SUBJECT TO MECHANICAL DAMAGE, INCLUDING ALL NON-CONCEALED PENDENT SPRINKLER BELOW 8-FEET ABOVE FINISH FLOOR OR EXPOSED UPRIGHTS AND PENDENT SPRINKLER INSTALLED DIRECTLY ON PIPING WITHIN A GYMNASIUM AREA.
12. ALL HANGERS, BRACES, AND RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 (2016 CALIFORNIA EDITION), CBC/CFC (2016), CITY OF FRESNO FIRE PREVENTION.
13. PER NFPA 13 (2016) §9.3.6.5 BRANCH LINE RESTRAINT SHALL NOT BE REQUIRED WHERE BRANCH LINES ARE SUPPORTED BY RODS LESS THAN 6" IN LENGTH WHEN MEASURED BETWEEN THE TOP OF THE PIPE TO THE POINT OF ATTACHMENT TO THE BUILDING STRUCTURE.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

LICENSED ARCHITECT — JUSTIN DOUGLAS MURATORE — NO C38020 — RENEWAL 6/23 — STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N MAIN AVE.
FRESNO, CA 93711
559-265-6554
info@muratoreassociates.com

CONSULTANT STAMP

FIRE SYSTEM SOLUTIONS, INC.
LIC. C-16, 982763
4277 W. RICHERT AVE. STE. 103
FRESNO, CALIFORNIA
(559) 275-4894
LICENSED FIRE PROTECTION CONTRACTOR — FIRE SYSTEM SOLUTIONS — C-16 C-10 — LIC. # 982763 — FIRE SPRINKLER — STATE OF CALIFORNIA

CWBSP-21-53
NICET# 154984

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:
ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379
PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

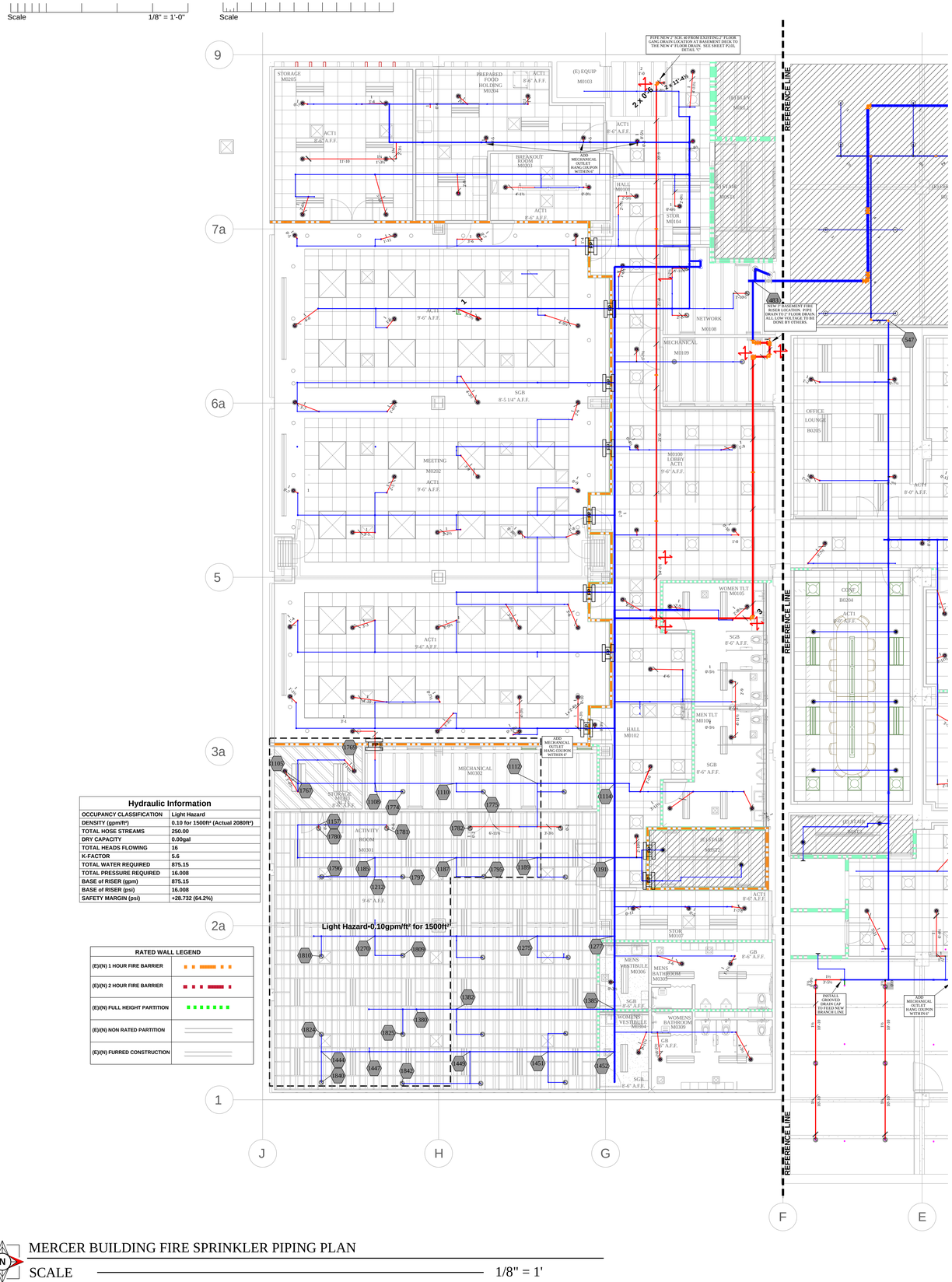
SHEET TITLE:

BRIX BUILDING FIRE SPRINKLER PIPING PLAN

SHEET NUMBER

FP1.0

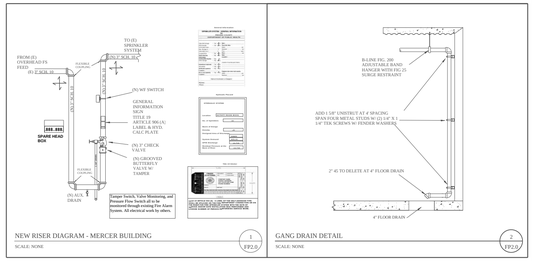
INTERNAL NUMBER: 829



Hydraulic Information	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft²)	0.10 for 1500ft² (Actual 2080ft²)
TOTAL HOSE STREAMS	250.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	16
K-FACTOR	5.6
TOTAL WATER REQUIRED	875.15
TOTAL PRESSURE REQUIRED	16.008
BASE of RISER (gpm)	875.15
BASE of RISER (psi)	16.008
SAFETY MARGIN (psi)	+28.732 (64.2%)

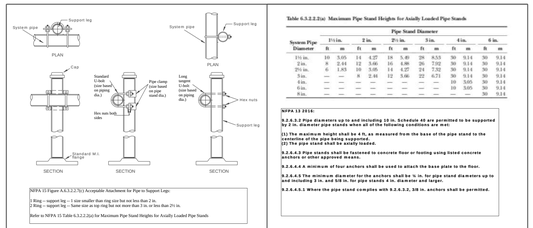
RATED WALL LEGEND	
(E)/(N) 1 HOUR FIRE BARRIER	
(E)/(N) 2 HOUR FIRE BARRIER	
(E)/(N) FULL HEIGHT PARTITION	
(E)/(N) NON RATED PARTITION	
(E)/(N) FURRED CONSTRUCTION	

MERCER BUILDING FIRE SPRINKLER PIPING PLAN
SCALE 1/8" = 1'



NEW RISER DIAGRAM - MERCER BUILDING
SCALE: NONE
1 FP2.0

GANG DRAIN DETAIL
SCALE: NONE
2 FP2.0



NFPA 13 Figure A.9.3.2.2.7(c) Acceptable Attachment for Pipe to Support Legs:
1 Ring – support leg – 1 size smaller than ring size but not less than 2 in.
2 Ring – support leg – Same size as top ring but not more than 3 in. or less than 2½ in.
Refer to NFPA 13 Table 6.3.2.2.1(a) for Maximum Pipe Stand Heights for Axially Loaded Pipe Stands

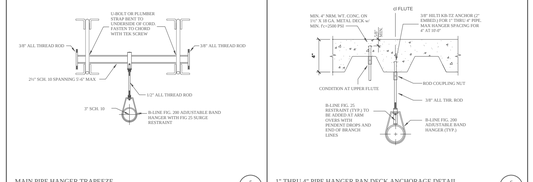
PIPE STAND DETAIL - PIPING BELOW STORAGE TANKS
SCALE: NONE
3 FP2.0

Table 6.3.2.2.1(a) Maximum Pipe Stand Heights for Axially Loaded Pipe Stands

System Pipe Diameter	Pipe Stand Diameter 2½ in. ft	m	2 in. ft	m	2½ in. ft	m	3 in. ft	m	4 in. ft	m	6 in. ft	m
1¼ in.	10	3.05	11	4.27	16	5.48	28	8.53	50	9.14	50	9.14
2 in.	8	2.44	12	3.66	16	4.86	26	7.92	50	9.14	50	9.14
2½ in.	6	1.83	10	3.05	14	4.27	24	7.32	50	9.14	50	9.14
3 in.	—	—	8	2.44	12	3.66	22	6.71	50	9.14	50	9.14
4 in.	—	—	—	—	—	—	—	—	50	9.14	50	9.14
6 in.	—	—	—	—	—	—	—	—	50	3.05	50	9.14
8 in.	—	—	—	—	—	—	—	—	—	—	50	9.14

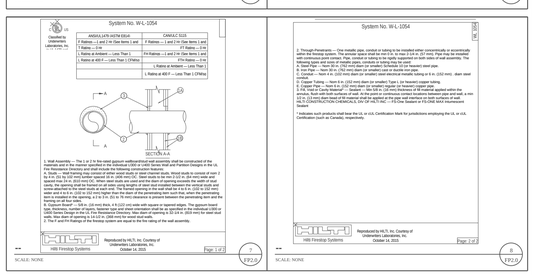
NFPA 13 2016:
9.2.4.5.2 Pipe diameters up to and including 16 in. Schedule 40 are permitted to be supported by 2 in. diameter pipe stands when all of the following conditions are met:
(1) The maximum height shall be 4 ft, as measured from the base of the pipe stand to the connection of the pipe being supported.
(2) The pipe stand shall be axially loaded.
9.2.4.5.3 Pipe stands shall be fastened to concrete floor or footing using listed concrete anchors or other approved means.
9.2.4.4.4 A minimum of four anchors shall be used to attach the base plate to the floor.
9.2.4.4.5 The minimum diameter for the anchors shall be ½ in. for pipe stand diameters up to and including 3 in. and 5/8 in. for pipe stands 4 in. diameter and larger.
9.2.4.4.5.1 Where the pipe stand complies with 9.2.4.5.2, 3/8 in. anchors shall be permitted.

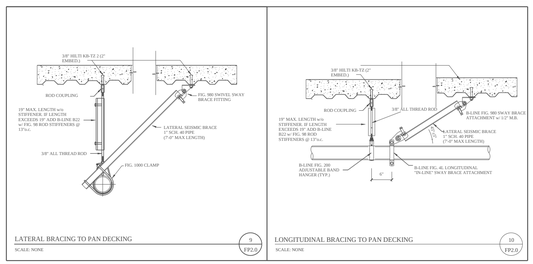
PIPE STAND NOTES
SCALE: NONE
4 FP2.0



MAIN PIPE HANGER TRAPEEZE
SCALE: NONE
5 FP2.0

1" THRU 4" PIPE HANGER PAN DECK ANCHORAGE DETAIL
SCALE: NONE
6 FP2.0





LATERAL BRACING TO PAN DECKING
SCALE: NONE
9 FP2.0

LONGITUDINAL BRACING TO PAN DECKING
SCALE: NONE
10 FP2.0

Sprinkler Legend											
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
	Generic			12	5.6	Upright	½	Standard	Brass	165°F	Out of Scope
	Generic			2	5.6	Sidewall	½	Quick	Chrome	155°F	Out of Scope
	Minimax	MX7302		117	5.6	Pendent	½	Quick	Chrome	155°F	
	Minimax	MX7300		43	5.6	Upright	½	Quick	Brass	155°F	
	Minimax	MX7300		2	5.6	Upright	½	Quick	Brass	200°F	
				Total = 176							

Sprinkler Components Legend

- FLEXIBLE GROOVED COUPLING
- PIPING W/ GROOVED FITTINGS
- PIPING W/ THREADED FITTINGS
- PIPING W/ PENDENT SPRINKLER (Varies - See Details)
- PIPING W/ UPRIGHT SPRINKLER (Varies - See Details)
- HYDRAULIC NODE REF
- (EXISTING) PIPING
- (DEMO) PIPING
- (NEW) PIPING
- FP1 FIRE PENETRATION THRU RATED WALL

Sprinkler Brace / Hanger Legend

Symbol	Description	Detail Reference
	LATERAL SEISMIC BRACE (Perpindicular)	Sheet(s) FP2.0
	LONGITUDINAL SEISMIC BRACE (Parallel)	Sheet(s) FP2.0
	4-WAY SEISMIC BRACE (Parallel / Perpindicular)	Sheet(s) FP2.0
	END OF LINE RESTRAINT	Sheet(s) FP1.0
	PIPE HANGER	Sheet(s) FP1.0-2.0

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5. PER NFPA 13 (2016) §8.5.4 DEFLECTORS OF SPRINKLERS SHALL BE ALIGNED PARALLEL TO CEILINGS, ROOFS, OR THE INCLINE OF STAIRS.
6. PER NFPA 13 (2016) §8.15.11 CONCEALED SPACES OF EXPOSED COMBUSTIBLE CONSTRUCTION SHALL BE PROTECTED BY SPRINKLERS EXCEPT IN CONCEALED SPACES WHERE SPRINKLERS ARE NOT REQUIRED TO BE INSTALLED BY 8.15.1.2.1 THROUGH 8.15.1.2.18 AND 8.15.6.
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8. PER NFPA 13 (2106) 8.15.1.2.3 CONCEALED SPACES FORMED BY STUDS OR JOISTS WITH LESS THAN 6-INCHES BETWEEN THE INSIDE OR NEAR EDGES OF THE STUDS OR JOISTS SHALL NOT REQUIRE SPRINKLER PROTECTION.
9. PER NFPA 13 (2016) 8.15.1.2.7 CONCEALED SPACES FILLED WITH NONCOMBUSTIBLE INSULATION SHALL NOT REQUIRE SPRINKLER PROTECTION: MAXIMUM 2-INCH AIR GAP AT THE TOP OFTHE SPACE SHALL BE PERMITTED.
10. PER NFPA 13 (2016) 8.15.7.3 SPRINKLERS SHALL BE PERMITTED TO BE OMITTED FROM BELOW THE EXTERIOR PROJECTIONS OF COMBUSTIBLE CONSTRUCTION, PROVIDED THE EXPOSED FINISH MATERIAL ON THE EXTERIOR PROJECTIONS ARE NON-COMBUSTIBLE AND THE EXTERIOR PROJECTIONS CONTAIN ONLY SPRINKLERED CONCEALED SPACES OR ANY OF THE FOLLOWING UNSPRINKLERED COMBUSTIBLE CONCEALED SPACES: (1) COMBUSTIBLE CONCEALED SPACES FILLED ENTIRELY WITH NON-COMBUSTIBLE INSULATION, (2) LIGHT OR ORDINARY HAZARD OCCUPANCIES WHERE NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE CEILINGS ARE DIRECTLY ATTACHED TO THE BOTTOM OF SOLID WOOD JOISTS SO AS TO CREATE ENCLOSED JOIST SPACES 160-FT² OR LESS IN VOLUME, INCLUDING SPACE BELOW INSULATION THAT IS LAID DIRECTLY ON TOP OR WITHIN THE CEILING JOISTS IN AN OTHERWISE SPRINKLERED ATTIC, OR (3) CONCEALED SPACES OVER ISOLATED SMALL EXTERIOR PROJECTIONS NOT EXCEEDING 55FT² IN AREA
11. CAGE-TYPE SPRINKLER HEAD GUARDS SHALL BE INSTALLED TO PROTECT ALL SPRINKLERS SUBJECT TO MECHANICAL DAMAGE, INCLUDING ALL NON-CONCEALED PENDENT SPRINKLER BELOW 8-FEET ABOVE FINISH FLOOR OR EXPOSED UPRIGHTS AND PENDENT SPRINKLER INSTALLED DIRECTLY ON PIPING WITHIN A GYMNASIUM AREA.
12. ALL HANGERS, BRACES, AND RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 (2016 CALIFORNIA EDITION), CBC/CFC (2016), CITY OF FRESNO FIRE PREVENTION.
13. PER NFPA 13 (2016) §5.3.6.5 BRANCH LINE RESTRAINT SHALL NOT BE REQUIRED WHERE BRANCH LINES ARE SUPPORTED BY RODS LESS THAN 6" IN LENGTH WHEN MEASURED BETWEEN THE TOP OF THE PIPE TO THE POINT OF ATTACHMENT TO THE BUILDING STRUCTURE.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO C38020 RENEWAL 6/23 STATE OF CALIFORNIA

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LICENSED FIRE PROTECTION CONTRACTOR FIRE SYSTEM SOLUTIONS C-16 C-10 LIC. # 982763 FIRE SPRINKLER STATE OF CALIFORNIA

CWBSP-21-53
NICET# 154984

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
MERCER BUILDING FIRE SPRINKLER PIPING PLAN

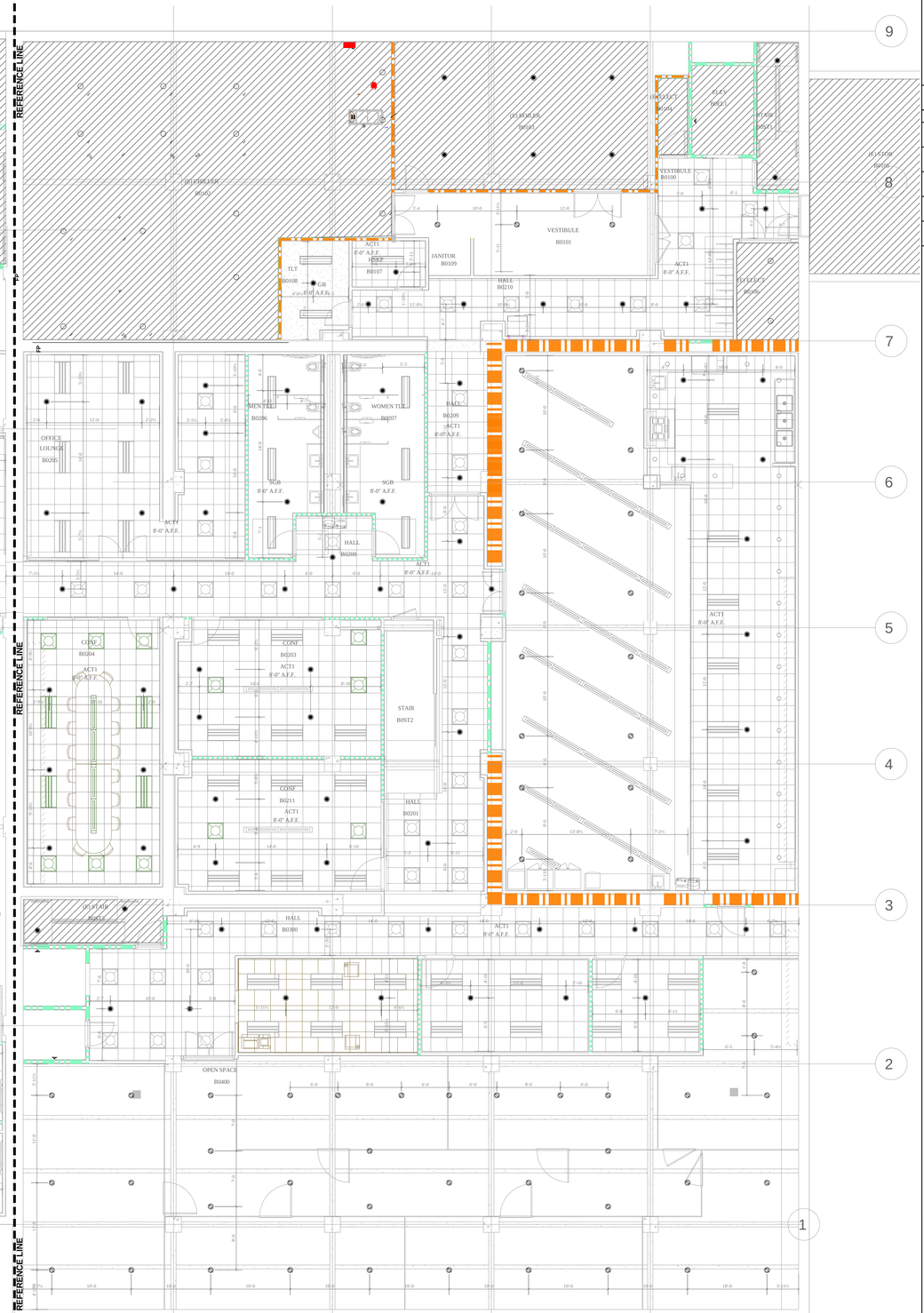
SHEET NUMBER
FP2.0

INTERNAL NUMBER: 929

FILE PATH: P:\Projects\2021\21-1137 Fresno County IT Fresno\01 Bric Mercer B\autocad\Design Documents\Drawings\Working\01 Reg Bric Mercer B.dwg

0 5' 25' — Scale 1/8" = 1'-0"

0 1' 12' — Scale



Sprinkler Components Legend

FLEXIBLE GROOVED COUPLING	HYDRAULIC NODE REF
PIPING W/ GROOVED FITTINGS	(EXISTING) PIPING
PIPING W/ THREADED FITTINGS	(DEMO) PIPING
PIPING W/ PENDENT SPRINKLER (Varies - See Details)	(NEW) PIPING
PIPING W/ UPRIGHT SPRINKLER (Varies - See Details)	FIRE PENETRATION THRU RATED WALL

Sprinkler Brace / Hanger Legend

Symbol	Description	Detail Reference
	LATERAL SEISMIC BRACE (Perpindicular)	Sheet(s) FP2.0
	LONGITUDINAL SEISMIC BRACE (Parallel)	Sheet(s) FP2.0
	4-WAY SEISMIC BRACE (Parallel / Perpindicular)	Sheet(s) FP2.0
	END OF LINE RESTRAINT	Sheet(s) FP1.0
	PIPE HANGER	Sheet(s) FP1.0-2.0

SPRINKLER SYSTEM DESIGN CRITERIA:
1. SYSTEM SHALL BE DESIGNED TO CONFORM WITH NFPA 13 (2016 CALIFORNIA EDITION), CFC/CBC (2016), CITY OF FRESNO FIRE PREVENTION STANDARDS.
2. BRIX BUILDING - OBSTRUCTED CONCRETE TEE CONSTRUCTION.
MERCER BUILDING - UNOBSTRUCTED METAL WEB JOIST CONSTRUCTION.
3. FIRE SPRINKLER SYSTEM POINT OF CONNECTION AT EXISTING OVERHEAD SPRINKLER SYSTEM.
4. SPRINKLER DISCHARGE DENSITY FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH NFPA 13 (2016) §11.2.1.2.4 WITH DENSITY CURVES IN ACCORDANCE WITH FIG. 11.2.3.1.1.
a. LIGHT HAZARD OCCUPANCY SHALL INCLUDE ALL OFFICE, CORRIDOR, DINING, CONCEALED ATTIC SPACES, RESTROOMS, AND SIMILAR AREAS. LIGHT HAZARD OCCUPANCY SHALL HAVE A DESIGN DENSITY OF 0.10 GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500 FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(a) AND SHALL NOT EXCEED 225FT².
b. ORDINARY HAZARD GROUP 1 (OH1) SHALL FOOD SERVICE AREAS, ELECTRICAL AND MECHANICAL EQUIPMENT ROOMS, PORTE COCHERES, AND SIMILAR AREAS INDICATED IN NFPA 13 (2016) §A.5.3.1. OH1 OCCUPANCY SHALL HAVE A DENSITY OF 0.15GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(b) – 130FT².
c. ORDINARY HAZARD GROUP II (OH2) SHALL INCLUDE AUTOMOTIVE WORKSHOP AREAS, SCIENCE LABRATORIES, STAGES, STORAGE ROOMS, SIMILAR AREAS INDICATED IN NFPA 13 (2016) A.5.3.2. OH2 OCCUPANCY SHALL HAVE A DESIGN DENSITY OF 0.20GPM/FT² OVER A MINIMUM REMOTE AREA OF 1500FT². THE MAXIMUM ALLOWABLE PROTECTION AREA OF COVERAGE FOR A SPRINKLER SHALL BE IN ACCORDANCE WITH THE VALUE INDICATED IN TABLE 8.6.2.2.1(b) – 130FT².
5. MAXIMUM SPRINKLER SPACING SHALL NOT EXCEED 15'-0" ON CENTER, UNLESS SPECIFICALLY LISTED BY THE SPRINKLER MANUFACTURER.
6. HOSE STREAM ALLOWANCE GPM FLOW SHALL BE IN ACCORDANCE WITH THE VALUES INDICATED IN TABLE 11.2.3.1.2: LIGHT HAZARD – 100 GPM; ORD HAZARD – 250 GPM.
7. PER NFPA 13 (2016) §11.2.3.2.3.1, WHERE LISTED QUICK-RESPONSE SPRINKLERS ARE USED THROUGHOUT A SYSTEM OR PORTION OF A SYSTEM HAVING THE SAME HYDRAULIC DESIGN BASIS, THE SYSTEM AREA OF OPERATION SHALL BEPERMITTED TO BE REDUCED WITHOUT REVISING THE DENSITY AS INDICATED IN FIG. 11.2.3.2.3.1. NOTE: REMOTE AREA REDUCTION EXCLUDES EXTENDED COVERAGE SPRINKLER HEADS AND ONLY APPLICABLE TO LIGHT HAZARD OCCUPANCY ONLY.
8. PER NFPA 13 (2016) §11.2.3.2.4, THE SYSTEM REMOTE AREA SHALL BE INCREASED BY 30% WITHOUT REVISING THE DENSITY WHEN SPRAY SPRINKLERS AND CMSA SPRINKLERS ARE USED ON SLOPED CEILINGS WITH A PITCH EXCEEDING 1 IN 6 (A RISE OF 2 UNITS IN A RUN OF 12 UNITS) IN NON-STORAGE APPLICATIONS.
9. PER NFPA 13 (2016) §11.2.3.2.7.1, MULTIPLE ADJUSTMENTS CAN BE MADE TO THE REMOTE AREA WHEN BOTH QUICK RESPONSE SPRINKLER AREA REDUCTIONS AND SLOPED CEILING AREA INCREASE ARE APPLICABLE.
10. THE HYDRAULIC CALCULATION SOURCE SHALL BE TO THE FLOW TEST HYDRANT OR APPLICABLE STREET CONNECTION, ACCORDING TO LOCAL FIRE PREVENTION DISTRICT WATER CURVE DETERMINATIONS AND OR TESTING PROCEDURES. REFER TO SITE PLAN AND HYDRAULIC CALCULATIONS.
11. STORAGE HEIGHT SHALL NOT EXCEED 8-FEET.
12. MICROBIAL INDUCED CORROSION WILL NOT BE A FACTOR FOR THIS SYSTEM.
13. THE FIRE SPRINKLER ALARM SYSTEM SHALL BE DESIGNED, INSTALLED AND PERMITTED BY OTHERS, AND IS NOT IN THE SCOPE OF WORK. SUPERVISORY FLOW DETECTORS AND TAMPER RESISTANT VALVES INSTALLED ON THE OVERHEAD SPRINKLER SYSTEM PIPING WILL BE SUPPLIED AND INSTALLED BY FIRE SPRINKLER CONTRACTOR AND WIRED BY ALARM CONTRACTOR.
14. PER PROJECT SPECIFICATIONS, IF DESIGN OR MATERIALS DIFFER FROM THAT SPECIFIED HEREIN, SUPPLEMENTAL ENGINEERING DESIGN, SUBMITTAL, AND REVIEW SHALL BE REQUIRED.

GENERAL INSTALLATION REQUIREMENTS:
1. OVERHEAD FIRE SPRINKLER PIPING SHALL BE AS FOLLOWS (UNLESS NOTED OTHERWISE ON PLANS):
a. PIPING 2-1/2" AND LARGER SHALL BE SCH.10 BLACK STEEL WITH ROLLED FITTINGS, RISER TO BE SCH.10 BLACK STEEL PIPE.
b. PIPING 2" AND LESS SHALL BE SCH.40 BLACK STEEL.
c. DRAINAGE PIPING 2" OR SMALLER, DOWNSTREAM OF THE DRAIN VALVE SHALL BE SCH. 40 BLACK STEEL WITH ROLLED FITTINGS.
2. WHERE APPLICABLE IN UNOBSTRUCTED CONSTRUCTION CONDITIONS (AS DEFINED PER NFPA 13 §3.7.2); PER NFPA 13 (2016) §8.6.4.1.1, THE DISTANCE BETWEEN THE SPRINKLER DEFLECTOR AND THE CEILING SHALL BE A MINIMUM OF 1-INCH AND A MAXIMUM OF 12-INCHES THROUGHOUT THE AREA OF COVERAGE OF THE SPRINKLER.
3. WHERE APPLICABLE IN OBSTRUCTION CONSTRUCTION CONDITIONS (AS DEFINED PER NFPA 13 §3.7.1); PER NFPA 13 (2016) §8.6.4.1.2, SPRINKLER DEFLECTORS SHALL BE INSTALLED WITH THE DEFLECTORS WITHIN THE HORIZONTAL PLANES OF 1-INCH TO 6-INCHES BELOW THE STRUCTURAL MEMBERS AND A MAXIMUM DISTANCE OF 22-INCHES FROM THE CEILING/ROOF DECK.
4. PER NFPA 13 (2016) §8.3.1.3 UPRIGHT SPRINKLERS SHALL BE INSTALLED WITH THE FRAME ARMS PARALLEL TO THE BRANCH LINE, UNLESS SPECIFICALLY LISTED FOR OTHER ORIENTATION.
5. PER NFPA 13 (2016) §8.5.4.2 DEFLECTORS OF SPRINKLERS SHALL BE ALIGNED PARALLEL TO CEILINGS, ROOFS, OR THE INCLINE OF STAIRS.
6. PER NFPA 13 (2016) §8.15.1.1 CONCEALED SPACES OF EXPOSED COMBUSTIBLE CONSTRUCTION SHALL BE PROTECTED BY SPRINKLERS EXCEPT IN CONCEALED SPACES WHERE SPRINKLERS ARE NOT REQUIRED TO BE INSTALLED BY 8.15.1.2.1 THROUGH 8.15.1.2.18 AND 8.15.6.
7. PER NFPA 13 (2016) 8.15.1.2.1 CONCEALED SPACES OF NONCOMBUSTIBLE WITH MINIMAL COMBUSTIBLE LOADING HAVING NO ACCESS SHALL NOT REQUIRE SPRINKLER PROTECTION.
8. PER NFPA 13 (2106) 8.15.1.2.3 CONCEALED SPACES FORMED BY STUDS OR JOISTS WITH LESS THAN 6-INCHES BETWEEN THE INSIDE OR NEAR EDGES OF THE STUDS OR JOISTS SHALL NOT REQUIRE SPRINKLER PROTECTION.
9. PER NFPA 13 (2016) 8.15.1.2.7 CONCEALED SPACES FILLED WITH NONCOMBUSTIBLE INSULATION SHALL NOT REQUIRE SPRINKLER PROTECTION; MAXIMUM 2-INCH AIR GAP AT THE TOP OFTHE SPACE SHALL BE PERMITTED.
10. PER NFPA 13 (2016) 8.15.7.3 SPRINKLERS SHALL BE PERMITTED TO BE OMITTED FROM BELOW THE EXTERIOR PROJECTIONS OF COMBUSTIBLE CONSTRUCTION, PROVIDED THE EXPOSED FINISH MATERIAL ON THE EXTERIOR PROJECTIONS ARE NON-COMBUSTIBLE AND THE EXTERIOR PROJECTIONS CONTAIN ONLY SPRINKLERED CONCEALED SPACES OR ANY OF THE FOLLOWING UNSPRINKLERED COMBUSTIBLE CONCEALED SPACES: (1) COMBUSTIBLE CONCEALED SPACES FILLED ENTIRELY WITH NON-COMBUSTIBLE INSULATION, (2) LIMIT OR ORDINARY HAZARD OCCUPANCIES WHERE NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE CEILINGS ARE DIRECTLY ATTACHED TO THE BOTTOM OF SOLID WOOD JOISTS SO AS TO CREATE ENCLOSED JOIST SPACES 160-FT³ OR LESS IN VOLUME, INCLUDING SPACE BELOW INSULATION THAT IS LAID DIRECTLY ON TOP OR WITHIN THE CEILING JOISTS IN AN OTHERWISE SPRINKLERED ATTIC, OR (3) CONCEALED SPACES OVER ISOLATED SMALL EXTERIOR PROJECTIONS NOT EXCEEDING 55FT² IN AREA
11. CAGE-TYPE SPRINKLER HEAD GUARDS SHALL BE INSTALLED TO PROTECT ALL SPRINKLERS SUBJECT TO MECHANICAL DAMAGE, INCLUDING ALL NON-CONCEALED PENDENT SPRINKLER BELOW 8-FEET ABOVE FINISH FLOOR OR EXPOSED UPRIGHTS AND PENDENT SPRINKLER INSTALLED DIRECTLY ON PIPING WITHIN A GYMNASIUM AREA.
12. ALL HANGERS, BRACES, AND RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 (2016 CALIFORNIA EDITION), CBC/CFC (2016), CITY OF FRESNO FIRE PREVENTION.
13. PER NFPA 13 (2016) §9.3.6.5 BRANCH LINE RESTRAINT SHALL NOT BE REQUIRED WHERE BRANCH LINES ARE SUPPORTED BY RODS LESS THAN 6" IN LENGTH WHEN MEASURED BETWEEN THE TOP OF THE PIPE TO THE POINT OF ATTACHMENT TO THE BUILDING STRUCTURE.

Sprinkler Legend										
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
	Generic			17	5.6	Upright	½	Standard	Brass	165°F	Out of Scope
	Generic			3	5.6	Sidewall	½	Quick	Chrome	155°F	Out of Scope
	Minimax	MX7302		158	5.6	Pendent	½	Quick	Chrome	155°F	
	Minimax	MX7300		82	5.6	Upright	½	Quick	Brass	155°F	
	Minimax	MX7300		2	5.6	Upright	½	Quick	Brass	200°F	
				Total = 262							

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

BRIX MERCER BUILDING FIRE SPRINKLER LAYOUT PLAN

SCALE 1/8" = 1'

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO C38020 RENEWAL 6/23 STATE OF CALIFORNIA

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LICENSED FIRE PROTECTION CONTRACTOR FIRE SYSTEM SOLUTIONS C-16 C-10 LIC. # 982763 FIRE SPRINKLER STATE OF CALIFORNIA

CWBSP-21-53
NICET# 154984

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
BRIX MERCER BUILDING FIRE SPRINKLER LAYOUT PLAN

SHEET NUMBER
FP3.0

INTERNAL NUMBER: 829

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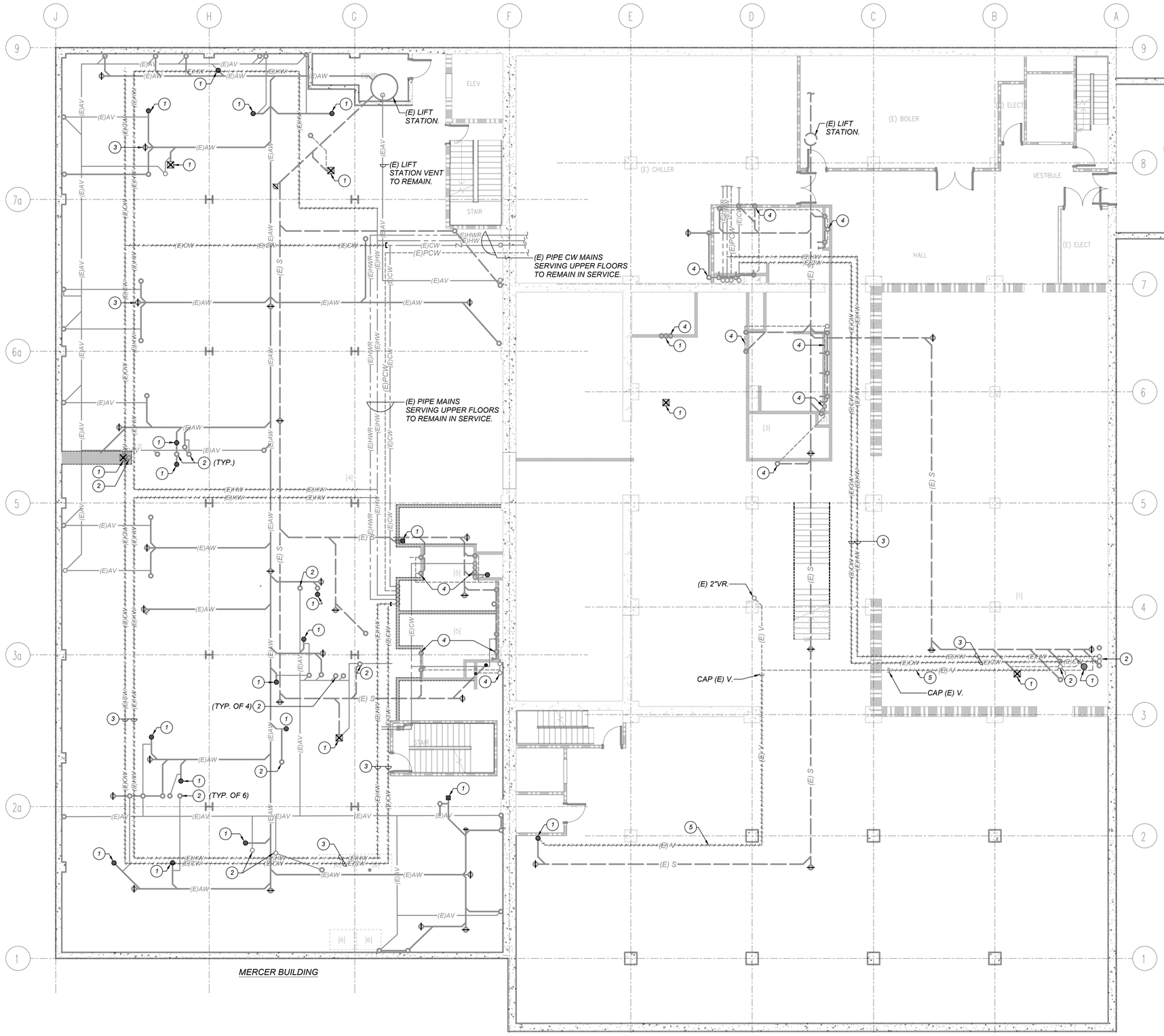

KEYNOTES:

1. *REMOVE (E) FLOOR DRAIN (OR FLOOR SINK) GRATE GRIND RIM DOWN FLUSH w/FLOOR AND FILL HOLE w/GROUT. TROWEL FLUSH w/FINISHED FLOOR.*
2. *REMOVE (E) PLUMBING PIPES STUBBED UP THRU FLOOR SLAB AND CAP (E) PIPING BELOW FINISH FLOOR.*
3. *REMOVE ALL (E) HW, HWR & CW PIPING & SUPPORTS OVERHEAD AND CAP BACK AT MAIN RISERS (SHOWN CROSS-HATCHED)*
4. *REMOVE ALL (E) CW, HW, S, V PIPING ABOVE FLOOR FROM (E) TOILET ROOMS & REMOVE ALL (E) FIXTUR SUPPORT CARRIERS.*
5. *REMOVE (E) V PIPING & SUPPORTS.*

DEMO NOTES:

1. *REMOVE ALL EXISTING PIPING IN BASEMENT THAT DOES NOT SERVE THE UPPER FLOOR LEVELS. NOT ALL (E) PIPING TO BE REMOVED IS SHOWN. CONTRACTOR SHALL VERIFY EXTENT OF PIPING DEMOLITION.*
2. *ANY (E) PIPING THAT SERVES FIXTURES ON UPPER FLOORS SHALL REMAIN IN SERVICE.*

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

BASEMENT DEMO PLUMBING PLAN

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

FILE PATH:

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
NO. C38220
RENEWAL: 8/23
STATE OF CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

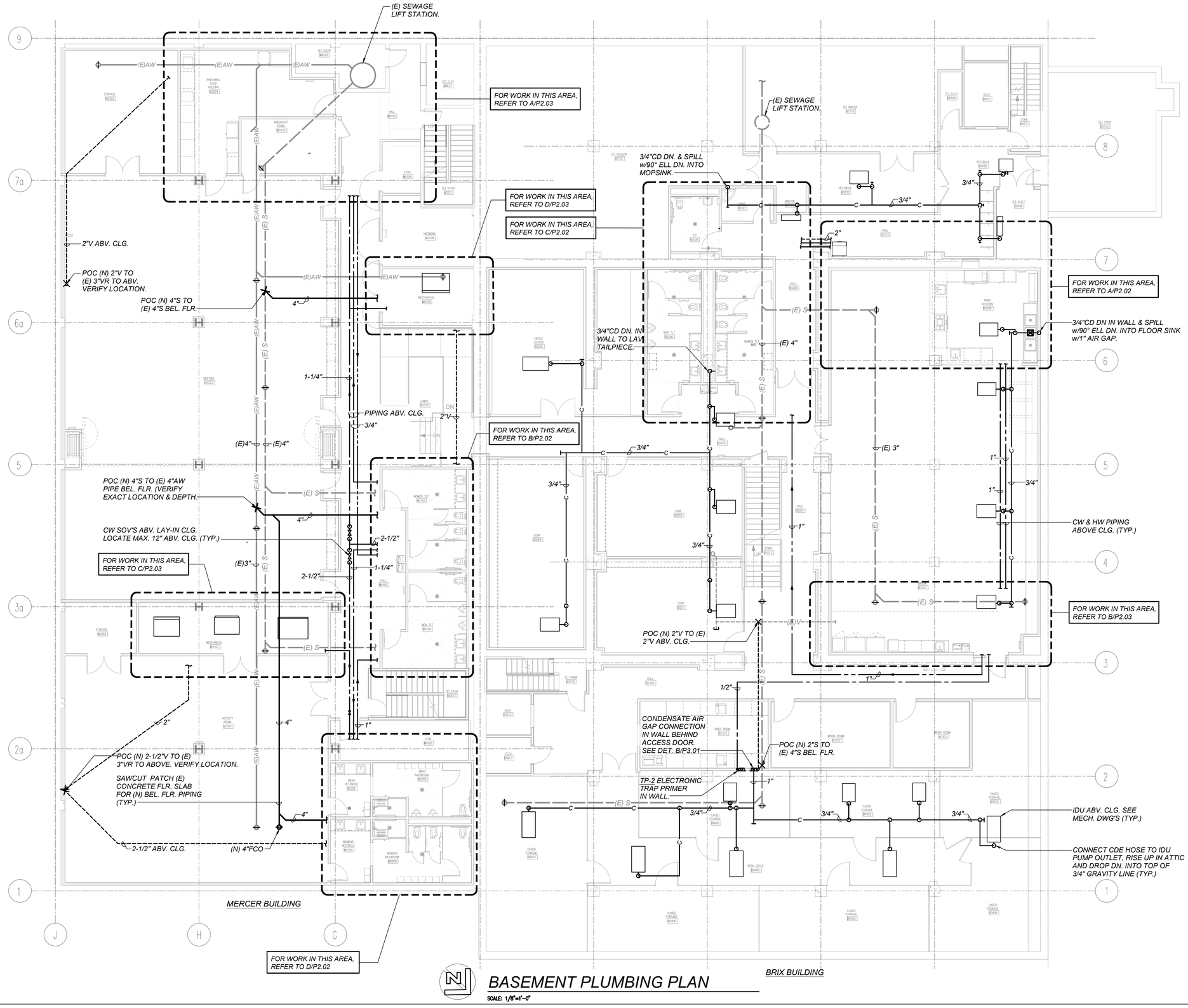
SHEET TITLE:

BASEMENT DEMO PLUMBING PLAN

SHEET NUMBER

P1.01

INTERNAL NUMBER: 829



BASEMENT PLUMBING PLAN

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

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

FILE PATH:

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
No. C38220
RENEWAL: 8/23
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1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

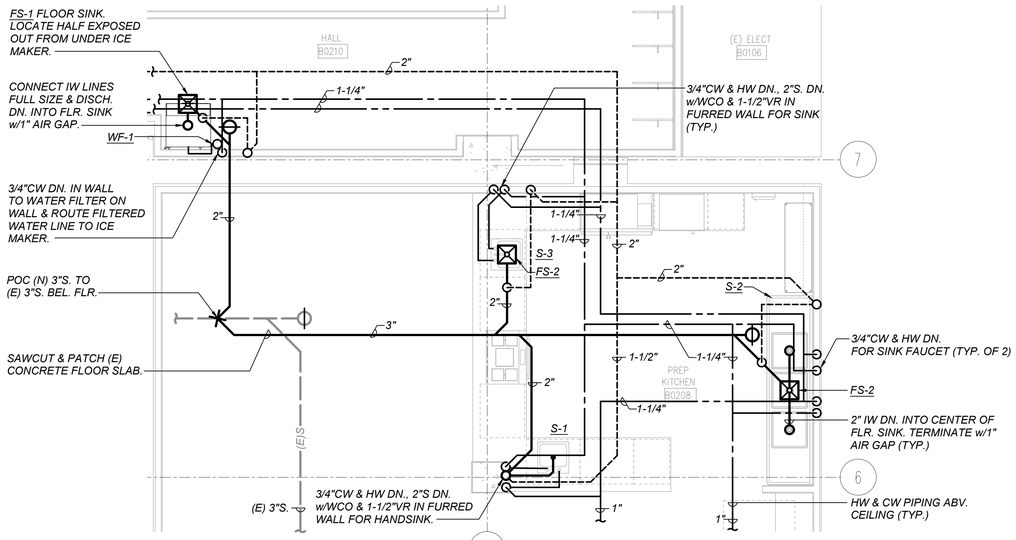
SHEET TITLE:

BASEMENT PLUMBING PLAN

SHEET NUMBER

P2.01

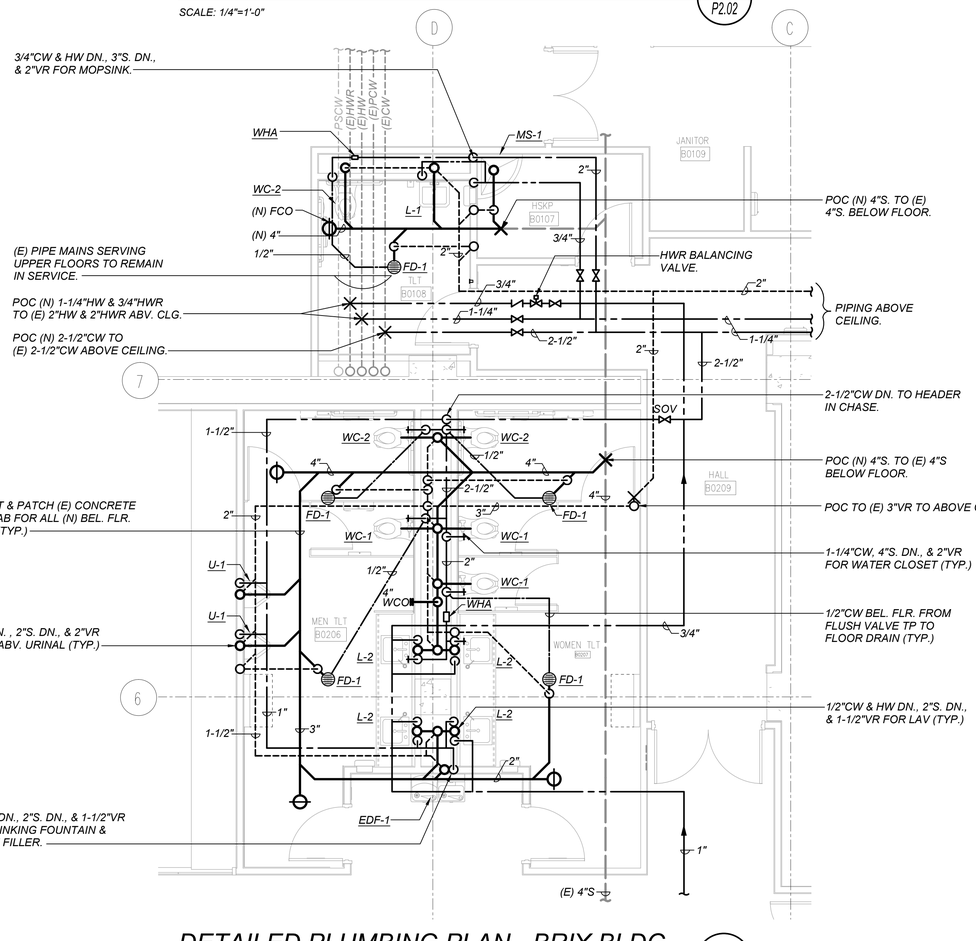
INTERNAL NUMBER: 829



DETAILED PLUMBING PLAN - BRIX BLDG.

A P2.02

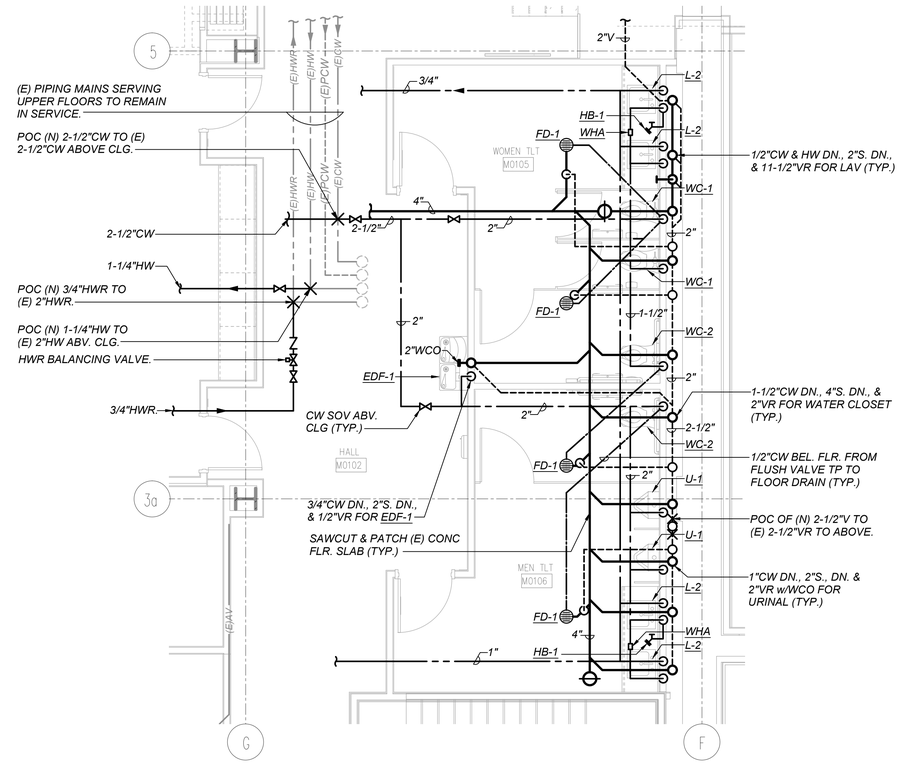
SCALE: 1/4"=1'-0"



DETAILED PLUMBING PLAN - BRIX BLDG.

C P2.02

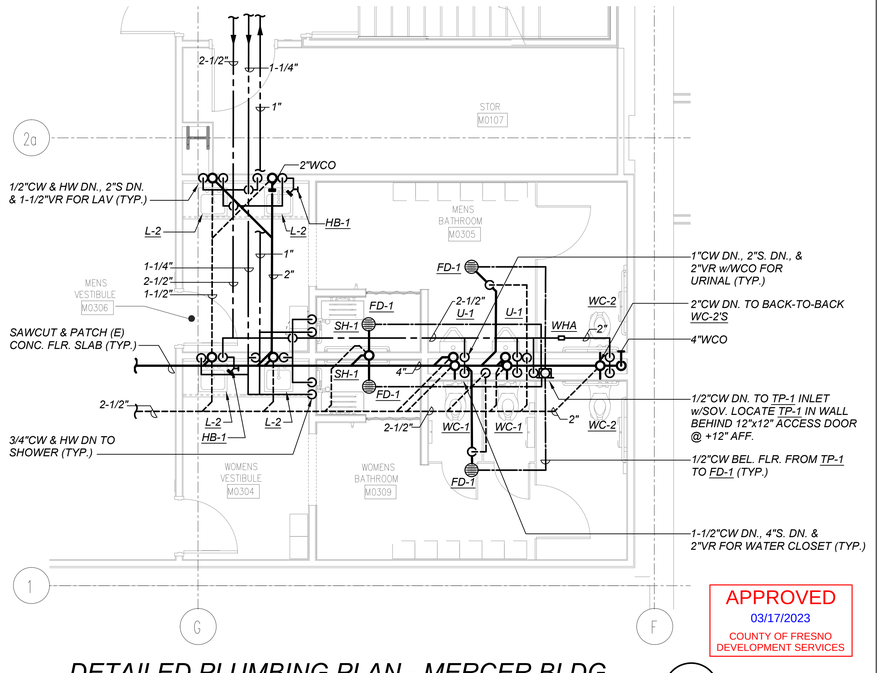
SCALE: 1/4"=1'-0"



DETAILED PLUMBING PLAN - MERCER BLDG.

B P2.02

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



APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

DETAILED PLUMBING PLAN - MERCER BLDG.

D P2.02

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

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REVISION TABLE:

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

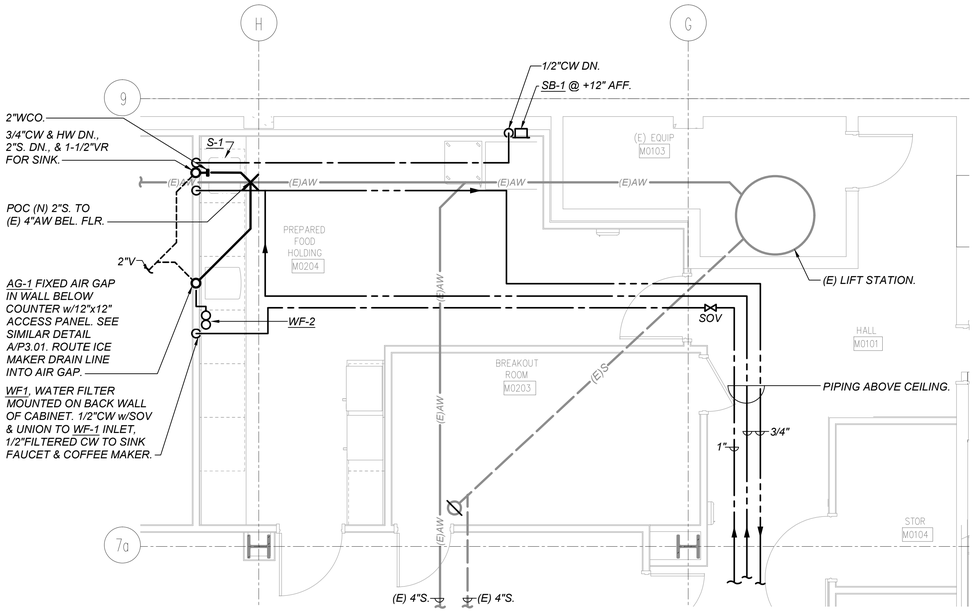
ENLARGED BASEMENT PLUMBING PLANS

SHEET NUMBER

P2.02

FILE PATH:

INTERNAL NUMBER: 829



DETAILED PLUMBING PLAN - MERCER BLDG.

A P2.03

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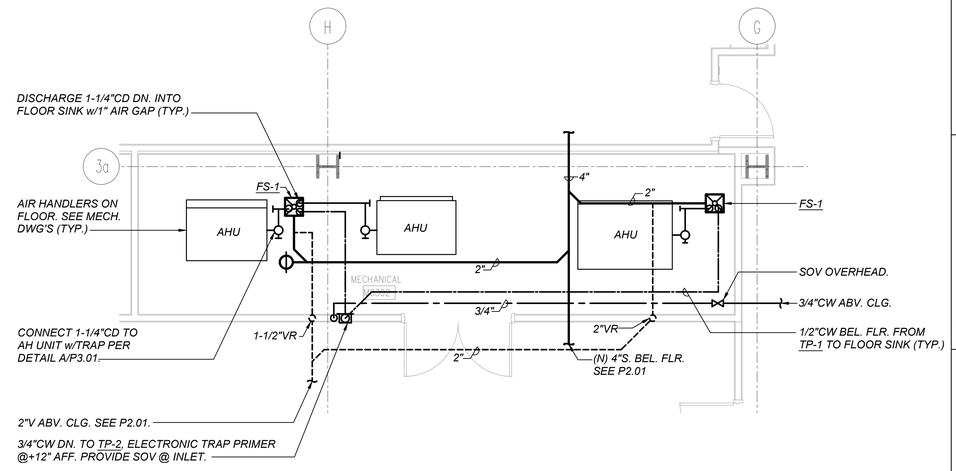

DETAILED PLUMBING PLAN - BRIX BLDG.

B P2.03

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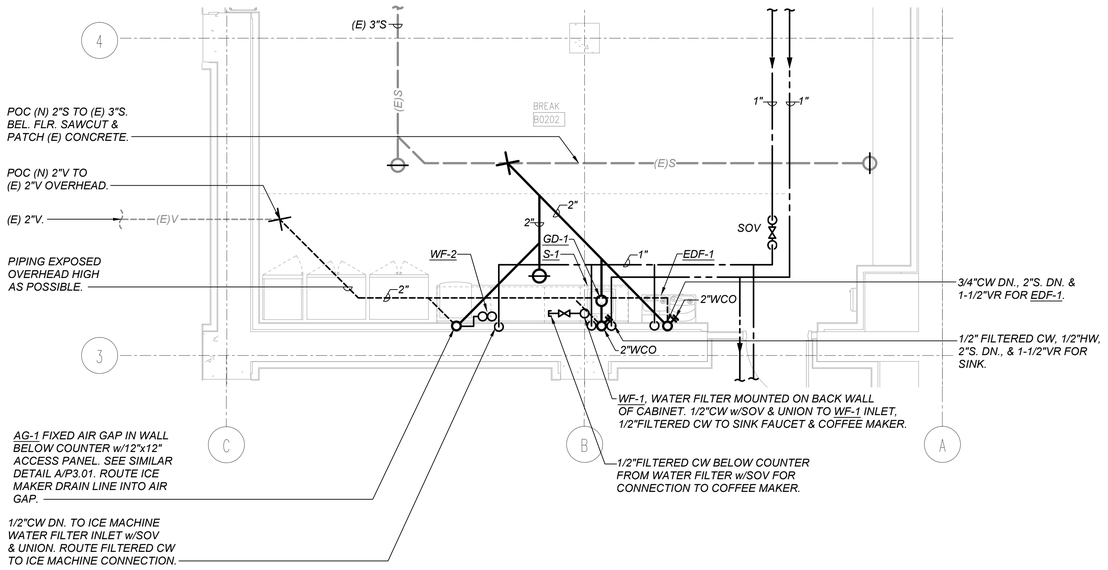
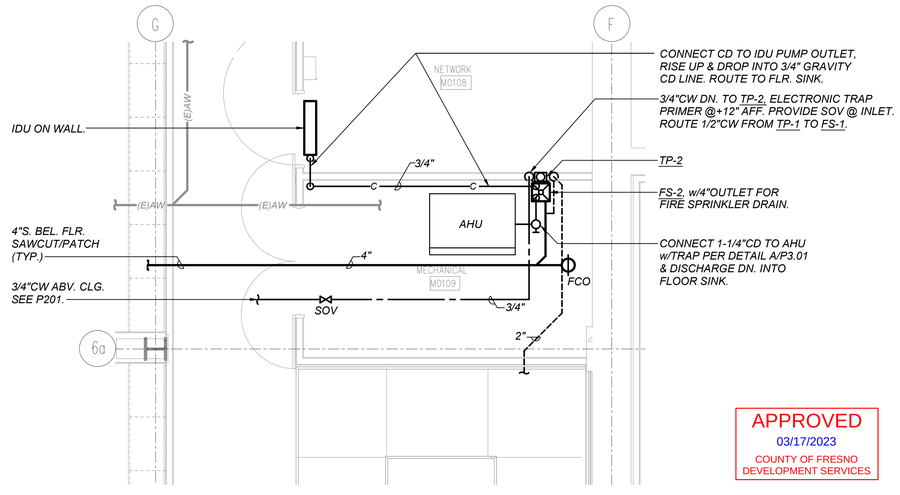


DETAILED PLUMBING PLAN - MERCER BLDG.

C P2.03

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



APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER ANDREW D. CONNELLY M23558 REN. 9-30-2023 MECHANICAL STATE OF CALIFORNIA

LAWRENCE ENGINEERING GROUP
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(559) 431-0101 21003 FAX (559) 431-1362

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022

SCALE: As indicated

JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

ENLARGED BASEMENT PLUMBING PLANS

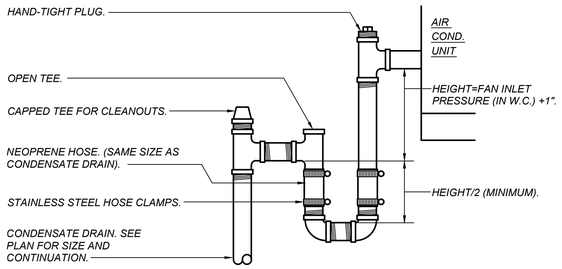
SHEET NUMBER

P2.03

FILE PATH:

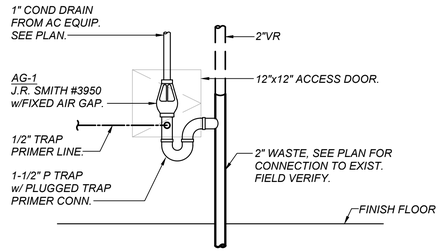
INTERNAL NUMBER: 829

	PLUMBING LEGEND	
SYMBOL	ITEM	ABBR
	SOIL or WASTE	S or W
	VENT	V
	VENT RISER	VR
	VENT THRU ROOF	VTR
—C—	DOMESTIC COLD WATER	CW
—H—	DOMESTIC HOT WATER	HW
—HR—	DOMESTIC HOT WATER RETURN	HWR
—G—	LOW PRESSURE NATURAL GAS	G
5#G	5 PSI GAS	5#G
—GSM—	GAS SERVICE MAIN BY THE LOCAL GAS UTILITY	GSM
—C—	CONDENSATE DRAIN	CD
—RWL—	RAIN WATER LEADER	RWL
—OD—	OVERFLOW DRAIN	OD
—SD—	STORM DRAIN	SD
—IW—	INDIRECT WASTE	IW
—F—	FIRE PROTECTION LINE	F
	EXISTING PIPING	(E)
(E)	EXISTING	
(N)	NEW	
	ABOVE CEILING	ABV CLG
	BELOW FLOOR	BEL FLR
	BELOW GRADE	BEL GR
	TYPICAL	TYP
	CONTINUATION	CONT
	DOWN	DN
	FLOOR CLEANOUT	FCO
	CLEANOUT TO GRADE	COTG
	WALL CLEANOUT	WCO
	PIPING TURN UP	
	PIPING TURN DOWN	
	POINT OF CONNECTION	P.O.C
	SHUT-OFF VALVE IN BOX	SOV
	SHUT-OFF VALVE	SOV
	SHUT-OFF VALVE IN RISER	-
	SHUT-OFF VALVE IN DROP	-
	GATE VALVE	-
	BUTTERFLY VALVE	-
	GLOBE VALVE	-
	CHECK VALVE	-
	PLUG VALVE	-
	BALL VALVE	-
	BALANCE COCK	-
	REDUCER	-
	MANHOLE	MH
	FLOW LINE	FL
	UNION	-
	RELIEF VALVE	-
	BALANCING VALVE	-
	PRESSURE GAUGE	-
	THERMOMETER	-
-AW-	ACID WASTE	AW



CONDENSATE DRAIN CONNECTION DETAIL — A / P3.01

SCALE: NONE



CONDENSATE DRAIN CONNECTION DETAIL — B / P3.01

SCALE: NONE

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

PLUMBING FIXTURE SCHEDULE

WC-1
"KOHLER" K-84325 KINGSTON ULTRA, WALL MOUNTED ELONGATED WATER CLOSET, 1.28 GPF, "CHURCH" #295SSC OPEN-FRONT SEAT WITH CHECK STAINLESS STEEL HINGE POSTS AND FASTENERS AND SELF-SUSTAINING HINGES, LESS COVER, BOLT CAPS, "SLOAN ROYAL" #111-1.28 (OR #111-1.28-TP WITH TRAP PRIMER CONNECTION WHERE SHOWN ON DRAWINGS) MANUAL LEVER FLUSH VALVE, (1.28 GALLONS/FLUSH)., "JAY R. SMITH" SERIES #410 COMPACT VERTICAL SUPPORT CARRIER, SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS, 1" C.W., 4" S., 2" V.

WC-2
"KOHLER" #K-84325 KINGSON ULTRA, ACCESSIBLE WALL MOUNTED ELONGATED WATER CLOSET ,1.28 GPF, "CHURCH" #295SSC OPEN-FRONT SEAT WITH CHECK STAINLESS STEEL HINGE POSTS AND FASTENERS AND SELF-SUSTAINING HINGES, LESS COVER, BOLT CAPS, ""SLOAN ROYAL" #111-1.28 (OR #111-1.28-TP WITH TRAP PRIMER CONNECTION WHERE SHOWN ON DRAWINGS) MANUAL LEVER FLUSH VALVE WITH LEVER POINTING TOWARDS WIDE SIDE OF STALL, (1.28 GALLONS/FLUSH), "JAY R. SMITH" SERIES #410 COMPACT VERTICAL SUPPORT CARRIER, SEE ARCHITECTURAL DRAWINGS FOR ACCESSIBLE MOUNTING HEIGHTS, 1" C.W., 4" S., 2" V.

U-1
"KOHLER" #K-4991-ET BARDON, ACCESSIBLE WALL MOUNTED URINAL WITH STAINLESS STEEL STRAINER, "SLOAN ROYAL" #186-0.125-DBP MANUAL LEVER FLUSH VALVE, (0.125 GALLONS/FLUSH), "JAY R. SMITH" #637 SUPPORT CARRIER WITH BOTTOM PLATE FOR FLOOR AND WALL ATTACHMENT. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS, ACCESSIBLE MOUNTING HEIGHT SHALL BE 17" AFF TO LIP, 3/4" C.W., 2" S., 1-1/2" V., 2" W.C.O.

L-1
"KOHLER" KINGSTON
#K-2005, ACCESSIBLE WALL HUNG VITREOUS CHINA LAVATORY, (20" X 18") WITH BACKSPLASH AND WALL BRACKET, 4" CENTER FAUCET HOLES, "MOEN" #8886 SELF CLOSING METERING FAUCET WITH 0.5 GPM LAMINAR FLOW OUTLET. ADJUST FAUCET TO STAY OPEN FOR 10-15 SECONDS. "WATTS" #LFUSG-B-M2 THERMOSTATIC MIXING VALVE WITH COLD WATER BYPASS, "MCGUIRE" 155WC OFFSET GRID DRAIN, "JAY R. SMITH" #700-Z FLOOR MOUNTED, CONCEALED ARM CARRIER. SEE ARCHITECTURAL DRAWINGS FOR ACCESSIBLE MOUNTING HEIGHTS, LOOSE KEY COMPRESSION ANGLED WALL STOPS WITH SUPPLY, 17 GA. C.P. P-TRAP/TAILPIECE WITH ESCUTCHEON, (WRAP C.W. AND TRAP/TAILPIECE PER SPECIFICATIONS), 1/2" H.W./C.W., 2" S., 1- 1/2" V.

L-2
"KOHLER" CAXTON RECTANGLE #K-20000, ACCESSIBLE UNDER COUNTER MOUNT VITREOUS CHINA LAVATORY WITH UNDER DECK MOUNTING CLAMPS,
#1281904-7 UNDER MOUNT TEMPLATE 4" CENTER FAUCET HOLES IN COUNTER, "MOEN" #8886 SELF CLOSING METERING FAUCET WITH 0.5 GPM LAMINAR FLOW OUTLET. ADJUST FAUCET TO STAY OPEN FOR 10-15 SECONDS, "WATTS" #LFUSG-B-M2 THERMOSTATIC MIXING VALVE WITH COLD WATER BYPASS, "MCGUIRE" 155WC OFFSET GRID DRAIN, (2) LOOSE KEY COMPRESSION ANGLED WALL STOPS WITH SUPPLIES, 17 GA. C.P. P-TRAP/TAILPIECE WITH ESCUTCHEON, (WRAP C.W., H.W. AND TRAP/TAILPIECE PER SPECIFICATIONS)1/2" H.W./C.W., 2" S., 1- 1/2" V.

S-1
"JUST" #SL-ADA-2119-A-GR, ACCESSIBLE COUNTER MOUNTED, 18 GAUGE TYPE 304 STAINLESS STEEL SINGLE BOWL HAND SINK, 16"X 16" X 6 ½" DEEP BOWL SIZE, WITH CENTER REAR DRAIN OUTLET, WITH "JUST" # J35-GS BASKET STRAINER, "CHICAGO" #201-AHA8AE35ABCP FAUCET WITH HIGH ARC SWING SPOUT, LEVER HANDLES, AND 1.5 GPM AERATOR, "WATTS" #LFUSG-B-M2 THERMOSTATIC MIXING VALVE WITH COLD WATER BYPASS,, (2) LOOSE KEY ANGLED WALL STOPS WITH SUPPLIES, 17 GA. C.P. TRAP/TAILPIECE WITH ESCHUTCHEON, (WRAP C.W., H.W. AND TRAP/TAILPIECE PER SPECIFICATIONS), 1/2" H.W./C.W., 2" W., 1-1/2" V., 2" W.C.O.

S-2
"JUST" # NSFB-372-24RL, THREE COMPARTMENT, FREE STANDING NSF SINK WITH DRAINBOARDS, 14 GAUGE TYPE 304 STAINLESS STEEL, 12" DEEP EACH BOWL SIZE, 12" HIGH BACKSPLASH, WITH 24" RIGHT AND LEFT DRAINBOARDS, THREE "JUST" #J-35-LAC-1-1/2 TWIST HANDLE DRAINS, TWO "CHICAGO" #445-L12E35ABCP BACKSPLASH MOUNT FAUCETS WITH 12" SPOUT AND LEVER HANDLES AND WITH 1.5 GPM AERATOR, (2) LOOSE KEY ANGLED WALL STOPS PER FAUCET, WITH SUPPLIES, (2) 1/2" H.W./C.W., 2" I.W.

S-3
"JUST" #SL-ADA-2125-A-GR, ACCESSIBLE COUNTER MOUNTED, 18 GAUGE TYPE 304 STAINLESS STEEL SINGLE BOWL PREP SINK, 16"X 25" X 6 ½" DEEP BOWL SIZE, WITH CENTER REAR DRAIN OUTLET, WITH "JUST" # J35-GS BASKET STRAINER, "CHICAGO" #201-AHA8AE35ABCP FAUCET WITH HIGH ARC SWING SPOUT, LEVER HANDLES, AND 1.5 GPM AERATOR, "WATTS" #LFUSG-B-M2 THERMOSTATIC MIXING VALVE WITH COLD WATER BYPASS,, (2) LOOSE KEY ANGLED WALL STOPS WITH SUPPLIES, 17 GA. C.P. TRAP/TAILPIECE WITH ESCHUTCHEON, (WRAP C.W., H.W. AND TRAP/TAILPIECE PER SPECIFICATIONS), 1/2" H.W./C.W., 2" W., 1-1/2" V., 2" W.C.O.

MS-1
FLOOR MOUNTED ENAMELED CAST IRON 28" X 28" MOP SINK, "KOHLER" #K-6710 WHITBY, WITH #K-8940 RIM GUARD, AND #K-9146 GRID DRAIN, "CHICAGO" # 897-CP FAUCET WITH VACUUM BREAKER AND TOP BRACE, "FLORESTONE" #MR-0360 5 FT. HOSE WITH WALL BRACKET, AND "FLORESTONE" #MR-372 MOP HANGER,
3" P-TRAP, 3/4" H.W./C.W., 3" S., 2" V., 3" W.C.O.

SH-1
ACCESSIBLE PRESSURE BALANCED SHOWER, "MOEN" #T8342EP15, SHOWER VALVE WITH LEVER HANDLE, DETACHABLE HAND-HELD SHOWERHEAD WITH 69" METAL HOSE, 30" WALL BAR, QUICK DISCONNECT AND IN-LINE VACUUM BREAKER, FIXED SHOWER HEAD, AND DIVERTER VALVE WITH LEVER HANDLE, 1.5 GPM FLOW, 1/2" H.W./C.W.

EDF-1
ACCESSIBLE IN-WALL MOUNT REFRIGERATED STAINLESS STEEL DUAL (HI-LO) DRINKING FOUNTAINS AND BOTTLE FILLING STATION, "ELKAY" #LZWS-LRPBM28K, WITH RECESSED CHILLER, MOUNTING FRAME, STAINLESS STEEL LOUVER, MECHANICAL PUSH ACTIVATED BUBBLERS, ELECTRONIC POWERED SENSOR BOTTLE FILLER STATION, AND WATER FILTER. PROVIDE ADDITIONAL 12 PACK BOTTLE FILLER WATER FILTERS (#51300C-12PK). UNIT REQUIRES 120V, 1.0 FLA, 370 WATTS ELECTRICAL POWER. (1) SERVICE STOP, (2) 17 GA. C.P. TRAP/TAILPIECE, 1/2" C.W., 2" S., 1-1/2" V. OPERATING WEIGHT = 173 LBS.

SB-1
RECESSED METAL WATER SUPPLY BOX WITH WHITE FINISH, INTEGRAL SHUTOFF VALVE, AND MINI WATER HAMMER ARRESTOR, "SPECIALTY PRODUCTS" #OB-509.

WF-1
EVERPURE "INSURICE SINGLE i2000" MODEL #EV9324-01 ICE MACHINE WATER FILTER SYSTEM WITH #EV9612-22 0.5 MICRON CARTRIDGE (PROVIDE TWO ADDITIONAL #EV9612-22 REPLACEMENT CARTRIDGES), 1.67 GPM MAXIMUM FLOW RATE, 9,000 GALLONS RATED CAPACITY, WALL MOUNTING BRACKET, OVERALL DIMENSIONS: 29.64" HIGH X 8.04" WIDE X 5.25" DEEP. WEIGHT = 9 LBS.

FD-1
CAST IRON FLOOR DRAIN, "JAY.R. SMITH" # 2005Y02-P050-HP-NB, WITH 5" DIAMETER NICKEL BRONZE HEEL-PROOF GRATE (OR 2005-B WITH SQUARE GRATE SEE PLANS), 1/2" TRAP PRIMER CONNECTION, 2" S., 2" P-TRAP AND 1-1/2" V. BELOW SLAB.

FS-1
CAST IRON FLOOR SINK, "JAY.R. SMITH" #3140Y02-12, (12-1/2" X 12-1/2" X 6" DEEP) WITH ACID RESISTANT COATED INTERIOR, FLASHING CLAMP, NICKEL BRONZE RIM AND HALF GRATE, # 2697 AUXILLARY TRAP PRIMER CONNECTION, 1/2" C.W., 2" S., 2" P-TRAP AND 1-1/2" V BELOW SLAB.

FS-2
CAST IRON FLOOR SINK, "JAY.R. SMITH" #310Y04-12, (12-1/2" X 12-1/2" X 10" DEEP) WITH ACID RESISTANT COATED INTERIOR, FLASHING CLAMP, NICKEL BRONZE RIM AND HALF GRATE, # 2697 AUXILLARY TRAP PRIMER CONNECTION, 1/2" C.W., 4" S., 2" P-TRAP AND 2" V BELOW SLAB.

HB-1
WALL MOUNTED BENT NOSE ROUGH CHROME PLATED BRASS LOOSE TEE KEY HOSE BIBB, "WOODFORD" # 24P WITH INTEGRAL VACUUM BREAKER, 3/4" C.W.

TP-1
TRAP PRIMER IN WALL ACCESS DOOR, "PRECISION PLUMBING PRODUCTS"
#PR-500 WITH #DU-4/DU-U DISTRIBUTION UNIT AS REQUIRED FOR MULTIPLE TRAPS, AND 12" X 12" STAINLESS STEEL ACCESS DOOR WITH CYLINDER LOCK, 1/2" C.W. W/ BALL VALVE TO PRIMER INLET.

TP-2
ELECTRONIC TRAP PRIMER IN WALL WITH ACCESS DOOR, "PRECISION PLUMBING PRODUCTS" #MPB-500 WITH BOX AND "PPP" #D-814SS STAINLESS STEEL ACCESS DOOR, SOLENOID VALVE ACTIVATED, 120V/1ø.

WHA
SEAMLESS COPPER CHAMBER APPROVED FOR CONCEALED INSTALLATIONS, "SIOUX CHIEF" HYDRA-RESTER MODELS 653-AS (PDI B) OR 654-AS (PDI C) SIZED AS REQUIRED.

GD-1
SINK BOWL MOUNT WITH SINK ADAPTOR, CONTINUOUS FEED FOOD WASTE DISPOSER, "IN-SINK-ERATOR" PRO SERIES COMPACT, WITH STAINLESS STEEL GRINDING ELEMENTS, SOUNDSEAL TECHNOLOGY, 3/4 HP. MOTOR, 120V/1 PH.,
4 YEAR WARRANTY.

COUNTY OF FRESNO 1856

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
No. C38020
RENEWAL: 6/23
STATE OF CALIFORNIA

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MICHAEL D. CONNELLY
M23558
REN. 9-30-2023
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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
PLUMBING SCHEDULES AND DETAILS

SHEET NUMBER
P3.01

FILE PATH:

INTERNAL NUMBER: 829

GRILLE SCHEDULE

CD-1
Titus Model MCD modular core diffuser with adjustable throw pattern for T-bar ceiling mounting. Complete with OBD, round-to-square neck adapter & off-white finish. Adapter shall match inlet duct diameter unless otherwise shown. With the following round ducts, provide adapter as shown.

8" Round to 12" x 12" neck
10" Round to 12" x 12" neck
12" Round to 12" x 12" neck

When the S.A. duct is 9" diameter, provide 9" to 10" increaser at neck of grille and use the 10" Round to 12" x 12" neck.

CD-2
Titus Model MCD modular core diffuser with adjustable throw pattern for surface mounting. All else per CD-1, above. See plans for throw pattern and neck size. Contractor to provide round-to-square adapter when required. Face size shall be only large enough to accommodate specified neck size.

CD-3
Titus Model TDC louver faced diffuser for surface mounting. Complete with OBD, round neck & off-white finish. See plans for throw pattern and neck size. Face size shall be only large enough to accommodate specified neck size.

CR-1 & CE-1
Titus Model 50F aluminum eggcrate grille with 1/2" x 1/2" x 1/2" eggcrate core and off-white finish for mounting in T-bar ceiling. Size shall be 24"x24", 48"x24", or 24"x12" as shown on the plans.

CR-2 & CE-2
Titus Model 350RL steel grille with 3/4" blades at 35-degree deflection, off-white finish for mounting in T-bar ceiling. Nominal size shall be 24"x24", 48"x24", or 24"x12" as shown on the plans.

CR-3, CE-3, & WR-1
Titus Model 350RL steel grille with 3/4" blades at 35-degree deflection, off-white finish for surface mounting.

FG-1
Titus Model 3FFL aluminum aeroblade filter-return grille with 3/4" blades at
45-degree deflection, and off-white finish for mounting in nominal 24"x24" T-bar ceiling. Provide (1) 20"x 20"x2" Camfil AP-13 (MERV13) filter with each grille.

WS-1
Titus Model 272RS steel wall supply grille with 3/4" double deflection blades and off-white finish.

Notes:

1. Paint all exposed shiny surfaces, behind grille face, flat black.

OUTDOOR UNIT SCHEDULE

DESIGNATION	ODU-1, ODU-2	ODU-3
COOLING CAPACITY (MBH)	228 (SEE NOTE1)	69 (SEE NOTE 1)
HEATING CAPACITY (MBH)	256 (SEE NOTE 2)	77 (SEE NOTE 2)
VOLTS/PHASE	460 / 3	460 / 3
RLA	26 AMPS	9.4 AMPS
MCA / MOP	34 / 40	19 / 25
EER / IEER (AT ARI)	N.A.	13.9 / 21.3
HEATING COP	N.A.	3.7
REFRIG. LINE SIZE	SEE SHEET M-11.1	SEE SHEET M-11.1
GAS (IN. OD)	1-3/8	3/4
LIQUID (IN. OD)	5/8	3/8
H/L LIQUID (IN. OD)	1-1/8	5/8
REFRIGERANT	R410A	R410A
MANUFACTURER	DAIKIN	DAIKIN
TYPE	ROTARY INVERTER	ROTARY INVERTER
MODEL NUMBER	REYQ240AAYDA	REYQ72XAYDA
AREA SERVED	BRIX BASEMENT	BRIX BASEMENT
LOCATION	MERCER BUILDING ROOF	MERCER BUILDING ROOF
OPER. WT (LBS)	1,000	750
ACCESSORIES		

NOTES:
1. COOLING CAPACITY IS AT 80/67 INDOORS AND 95/75 OUTDOORS.
2. HEATING CAPACITY IS AT 70/60 INDOORS AND 47/43 OUTDOORS.

INDOOR UNIT SCHEDULE (VRV HEAT PUMP WITH HEAT RECOVERY)

UNIT TYPE	NOMINAL TONS	MODEL NUMBER (See Note 1)	BLOWER SUPPLY AIR MAX CFM	BLOWER SUPPLY AIR MIN CFM	BLOWER EXT. S P. IN. WC	MCA AMPS	MOCP AMPS	FLA AMPS	VOLTS/PHASE	COOLING CAPACITY TOTAL MBH	COOLING CAPACITY SENSIBLE MBH	HEATING CAPACITY MBH	OPER. WT. (LBS)	ACCESSORIES & NOTES
DHS	4.5	FXMQ54PBVJU	1600	1125	0.40	3.4	15	2.7	208/1	54.00	40.30	60.00	110	2, 3
DHS	4.0	FXMQ48PBVJU	1375	975	0.00	3.4	15	2.7	208/1	48.0	35.8	54.0	110	2, 3
DHS	3.0	FXMQ36PBVJU	1125	800	0.00	2.9	15	2.3	208/1	36.0	28.8	40.0	110	2, 3
DHS	2.0	FXMQ24PBVJU	675	575	0.00	1.8	15	1.4	208/1	24.0	15.6	27.0	90	2, 3
DHS	1.5	FXMQ18PBVJU	625	525	0.00	1.6	15	1.3	208/1	18.0	14.4	20.0	90	2, 3
DHS	1.0	FXMQ12PBVJU	450	400	0.60	1.4	15	1.1	208/1	12.0	9.7	13.5	75	2, 3
HSW	2.0	FXAQ24PVJU	625	470	0	0.6	15	0.50	208/1	24.0	18.0	26.5	40	3, 4
HSW	1.5	FXAQ18PVJU	500	400	0	0.5	15	0.40	208/1	18.0	13.5	20.0	40	3, 4
HSW	0.9	FXAQ09PVJU	280	175	0	0.4	15	0.30	208/1	9.5	7.1	10.5	30	3, 4
CC	1.5	FXZQ18MVJU9	495	350	0	0.9	15	0.70	208/1	18.0	13.5	21.0	50	2, 3

NOTES:
1. Model Numbers are Daiken. DHS = Ducted High Static, HSW = High Sidewall, CC = Ceiling Cassette (4-way)
2. Provide with condensate lift pump and hard wired controller.
3. Cooling capacities rated at 95/75 (db/wb) ambient and 80/67 indoor. Heating capacities rated at 47/43 ambient and 70 indoor. Heating and cooling capacities include indoor fan heat..
4. Provide with external condensate pump and 72" of lift.

VRF FAN COIL SCHEDULE

Zone / Fan Coils	Room Number(s)	IDU Type	Nominal Tons of A/C	Supply CFM	O.A. CFM	Filters 2" - Merv 13	Notes
IDU / B-1	Caged Storage - Southeast	DHS	3.0	1100	250	(2) 25" x 20"	1
IDU / B-2	Caged Storage - Center	DHS	3.0	1100		(4) 24" x 12"	1
IDU / B-3	Caged Storage - Northwest	DHS	3.0	1100	250	(4) 24" x 12"	1
IDU / B-4	Ground Floor Lobby - Southeast	DHS	4.5	1350	300	(4) 24" x 12"	1
IDU / B-5	Ground Floor Lobby - Northwest	DHS	4.5	1350	300	(4) 24" x 12"	1
IDU / B-6	Prep Room / Hall	DHS	2.0	650	200	At filter/return grille	
IDU / B-7	Media Room B0302	DHS	2.0	650	250	At filter/return grille	
IDU / B-8	Media Room B0301	DHS	2.0	650	425	At filter/return grille	
IDU / B-9	Conference B0204	DHS	2.0	650	250	At filter/return grille	
IDU / B-10	Conference B0211	DHS	1.5	550	200	At filter/return grille	
IDU / B-11	Conference B0203	DHS	1.5	550	200	At filter/return grille	
IDU / B-12	Office / Lounge / Hall	DHS	4.0	1350	550	At filter/return grille	
IDU / B-13	Men's and Women's Toilet Rooms	DHS	2.0	650		At filter/return grille	
IDU / B-14	Break Room #4	DHS	2.0	650	225	At filter/return grille	6
IDU / B-15	Break Room #3	DHS	2.0	650	225	At filter/return grille	6
IDU / B-16	Break Room #2	DHS	2.0	650	225	At filter/return grille	6
IDU / B-17	Prep Kitchen	CC	1.5	350		See Notes	4, 5
IDU / B-18	Break Room w/ Aud. Seating	HSW	1.5	400	225	See Notes	4, 5, 6, 7
IDU / B-19	Mercer Network Room M0108	HSW	2.0	625		See Notes	4, 5, 7
IDU / B-20	Vestibule & Electrical Room B0106	DHS	2.0	650	100	(1) 25" x 16"	1
IDU / B-21	Hall B0210	HSW	0.75	275		See Notes	4, 5, 7
IDU / B-22	Vestibule B0101	DHS	2.0	650	100	(1) 25" x 16"	1
	Total		**50.8**		**4275**	At EF/B-7 Low Speed	
					5875	At EF/B-7 High Speed	

NOTES:
1. Filters at unit require a shop fabricated filter box on the inlet of the unit. Filters shall be side and/or bottom access.
2. Match Cooling Tons in this schedule with Indoor Unit Schedule for additional fan coil information.
3. Unit type: DHS = Ducted High Static, HSW = High Sidewall, CC = 4-way Ceiling Cassette.
4. HWS and CC units use the manufacturer's standard washable filter.
5. When the manufacturer's standard filter is used, MERV rating is less than 13 and the filter is 1" thick.
6. Outdoor Air CFM shown is with EF/B-7 on Low Speed. O.A. to Zone = 625 CFM when EF/B-7 is on High Speed.
7. Refer to Detail F/M-8 for remote condensate pump and field wiring.

SINGLE DUCT VARIABLE VOLUME TERMINAL SCHEDULE

Tag	AHU Tag	Room	Model	Size Unit	Size Outlet	CFM Max	CFM Min	Static Pressure Inlet	Static Pressure Down	Static Pressure Min	NC Levels Rad	NC Levels Dis	Hot Water Heat Coil CFM	MBH	EAT	EWT	LAT	APd	GPM	LWT	WPd	Rows	FPI	Weight Lb.
MERCER ZONE CONTROL																								
VAV / B-1	AH / B-2	Staff T.R.s and Storage	DESV	10	14x12.5	700	600	1	0.25	0.17	22	27	600	21.0	55	170	87.2	0.16	1.1	130.4	0.14	2	10	50
VAV / B-2	AH / B-2	Toilet Rooms - M0105 and M0106	DESV	09	14x12.5	400	300	1	0.25	0.04	14	18	300	11.0	55	170	88.8	0.03	1.6	155.5	0.26	1	10	50
VAV / B-3	AH / B-2	Hall - M0102	DESV	09	14x12.5	400	150	1	0.25	0.04	14	18	200	7.5	55	170	89.5	0.03	0.7	147.2	0.08	1	10	50
		Total for AH / B-2				**1500**																		
VAV / B-4	AH / B-1	Meeting Room - East Zone	DESV	14	20x17.5	1400	450	1	0.25	0.1	20	20	700	25.2	55	170	88.2	0.08	4.3	158.1	0.93	1	10	75
VAV / B-5	AH / B-1	Meeting Room - Middle Zone	DESV	14	20x17.5	1400	450	1	0.25	0.1	20	20	700	25.2	55	170	88.2	0.08	4.3	158.1	0.93	1	10	75
VAV / B-6	AH / B-1	Meeting Room - West Zone	DESV	14	20x17.5	1400	450	1	0.25	0.1	20	20	700	25.2	55	170	88.2	0.08	4.3	158.1	0.93	1	10	75
		Total for AH / B-1				**4200**																		
VAV / B-7	AH / B-4	Storage Room - M0203	DESV	10	14x12.5	550	200	1	0.25	0.06	22	23	300	11.2	55	170	89.4	0.05	1.8	157.1	0.33	1	10	50
VAV / B-8	AH / B-4	Prepared Food Holding	DESV	10	14x12.5	550	175	1	0.25	0.06	22	23	300	11.2	55	170	89.4	0.05	1.8	157.1	0.33	1	10	50
VAV / B-9	AH / B-4	Breakout Room	DESV	10	14x12.5	300	100	1	0.25	0.03	19	18	150	5.3	55	170	95.2	0.02	0.7	149.6	0.08	1	10	50
VAV / B-10	AH / B-4	Hall, Storage, and Lobby	DESV	14	20x17.5	1300	500	1	0.25	0.1	20	20	700	25.2	55	170	88.2	0.08	4.3	158.1	0.93	1	10	75
		Total for AH / B-4				**2700**																		
BRIX GROUND FLOOR ZONE CONTROL																								
VAV / B-11	AHU-2	4 SE Offices on Ground Floor	DESV	10	14x12.5	480	175	1	0.25	0.06	20	23	250	9.3	55	170	89.3	0.05	1	150.6	0.13	1	10	50
VAV / B-12	AHU-2	3 SE Offices on Ground Floor	DESV	09	14x12.5	420	140	1	0.25	0.05	14	18	210	7.4	55	170	88.3	0.08	0.7	146.3	0.08	1	10	50
VAV / B-13	AHU-2	7 NW Offices on Ground Floor	DESV	12	16x15	880	300	1	0.25	0.08	19	23	450	17.0	55	170	89.8	0.07	3.5	160.1	1.5	1	10	50
VAV / B-14	AHU-2	5 NW Offices on Ground Floor	DESV	10	14x12.5	500	175	1	0.25	0.06	20	23	250	9.3	55	170	89.3	0.05	1	150.6	0.13	1	10	50
		Partial Airflow from AHU-2				**2280**																		
BRIX MINIMUM OUTDOOR AIR CONTROL																								
VAV / B-15	AH-B5	Open Space (South) and IDU/B-4	DESV	09	14x12.5	550	550	1	0.25	0.02	17	23	N.A.											50
VAV / B-16	AH-B5	Open Space (North) and IDU/B-5	DESV	12	16x15	1000	1000	1	0.25	0.01	22	24	N.A.											60
VAV / B-17	AH-B5	Break Room - East	DESV	09	14x12.5	625	225	1	0.25	0.02	18	24	N.A.											50
VAV / B-18	AH-B5	Break Room - East Middle	DESV	09	14x12.5	625	225	1	0.25	0.02	18	24	N.A.											50
VAV / B-19	AH-B5	Break Room - West Middle	DESV	09	14x12.5	625	225	1	0.25	0.02	18	24	N.A.											50
VAV / B-20	AH-B5	Break Room - West	DESV	09	14x12.5	625	225	1	0.25	0.02	18	24	N.A.											50
VAV / B-21	AH-B5	Office/Lounge to IDU/B-12	DESV	09	14x12.5	550	550	1	0.25	0.02	17	23	N.A.											50

NOTES:
1. Selections are based on Titus as Manufacturer.
2. All performance based on tests conducted in accordance with ASHRAE 130-2008 and AHRI 880-2008.
3. All NC levels determined using AHRI 885-2008 Appendix E.
4. All airflow, pressure losses and heating performance values have been corrected for altitude.
5. Units of measure: dimensions (in), airflow (cfm), water flow (gpm), air pressure (in wg), water head losses (ft) and temperatures (degF).
6. Water pressure drop (WPd) units is in ft. water.

REFRIGERANT SYSTEM BRANCH SELECTOR BOX SCHEDULE

DESIGNATION	BSB / B-1	BSB / B-2	BSB / B-3	BSB / B-4	BSB / B-5	BSB / B-6	BSB / B-7
BRANCH PORTS (TOTAL / USED)	6 / 4	6 / 4	1 / 1	4 / 4	4 / 2	4 / 3	4 / 3
POWER INPUT (W)	64	64	10	50	50	50	50
VOLTS/PHASE	208/1	208/1	208/1	208/1	208/1	208/1	208/1
MCA	0.50	0.50	0.10	0.40	0.40	0.40	0.40
MOCP	15	15	15	15	15	15	15
ODU ASSIGNMENT	ODU-1	ODU-1	ODU-1	ODU-2	ODU-2	ODU-2	ODU-3
MANUFACTURER	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN
TYPE	MAIN	MAIN	MAIN	MAIN	MAIN	MAIN	MAIN
MODEL NUMBER	BSF6Q54TVJ	BSF6Q54TVJ	BSQ36TVJ	BSF4Q54TVJ	BSF4Q54TVJ	BSF4Q54TVJ	BSF4Q54TVJ
OPER. WT (LBS)	50	50	30	50	50	50	50
ACCESSORIES	1, 2	1, 2	1	1, 2, 3	1, 2	1, 2	1, 2

1. PROVIDE WITH BC-SERIES BALL VALVES FOR EACH BRANCH OUTLET CONNECTION.
2. PROVIDE WITH BC-SERIES BALL VALVES FOR UNUSED OUTLET CONNECTION.
3. ONE OUTLET SERVES TWO IDUS.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

SHEET INDEX

M-1.0	SCHEDULES
M-1.1	SCHEDULES
M-2.0	BASEMENT HVAC DEMO PLAN
M-2.1	BASEMENT MECH ROOM - DEMO AND NEW
M-3	PARTIAL ROOF PLAN
M-4.0	DETAILS AND KEYNOTES FOR M-4.3 & M-4.4
M-4.1	BASEMENT HVAC PLAN - MERCER NORTHEAST
M-4.2	BASEMENT HVAC PLAN - MERCER SOUTHHEAST
M-4.3	BASEMENT HVAC PLAN - BRIX SOUTHWEST
M-4.4	BASEMENT HVAC PLAN - BRIX NORTHWEST
M-5	HOOD EXHAUST SECTIONS
M-6	SECTIONS
M-7	DETAILS
M-8	DETAILS
M-9	KITCHEN HOOD EXHAUST DETAILS
M-10	CONTROL DIAGRAMS
M-11.1	VRF PIPING DIAGRAMS
M-11.2	VRF WIRING DIAGRAMS
M-12.1	TITLE 24
M-12.2	TITLE 24
M-12.3	TITLE 24
M-12.4	TITLE 24
M-15	FIRE ALARM - HVAC FANS AND FSDS SHUTDOWN DIAGRAM

LICENSED ARCHITECT
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MARREL D. DAVIDSON
M23568
REN. 9-30-2023
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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

SCHEDULES

SHEET NUMBER

M-1.0

INTERNAL NUMBER: 829

FILE PATH:

AIR CONDITIONING LEGEND

SYMBOL	ITEM	ABBR.
	ROUND METAL DUCT	–
	ROUND FLEXIBLE DUCT	–
	RECTANGULAR METAL DUCT	–
	DUCT W/ACOUSTIC LINING	–
	SUPPLY AIR DUCT DROP	–
	RETURN AIR DUCT DROP	–
	EXHAUST DUCT AIR DROP	–
	SUPPLY AIR DUCT RISE	–
	RETURN AIR DUCT RISE	–
	EXHAUST AIR DUCT RISE	–
	TURNING VANES	TV
	EXTRACTOR	–
	VOLUME CONTROL DAMPER w/LOCKING QUADRANT	VCD
	VOLUME CONTROL DAMPER w/REMOTE OPERATOR	VCD
–OR–	FIRE/SMOKE DAMPER WITH ACCESS PANEL	F/SD
	SMOKE DAMPER	SD
CFM	CUBIC FEET OF AIR PER MINUTE	CFM
T	THERMOSTAT @ +4'-0"	T'STAT
S	ROOM SENSOR @ 4'-0"	-
	DIRECTION OF FLOW	–
	SUPPLY AIR	SA
	RETURN AIR	RA
	EXHAUST AIR	EA
	OUTSIDE AIR	OA
	PIPE/DUCT TURN DOWN	–
	PIPE/DUCT TURN UP	–
	BYPASS TIMER	BPT
	POINT OF CONNECTION	POC
— — —	EXISTING (DESIGNATED)	(E)
— T —	THERMOSTAT WIRING	
— E —	ELECTRICAL WIRING	
HWS	HOT WATER SUPPLY	HWS
HWR	HOT WATER RETURN	HWR
CWS	CHILLED WATER SUPPLY	CWS
CWR	CHILLED WATER RETURN	CWR
######	BACKDRAFT DAMPER	BDD
D	DRAIN	D
RD	REFRIGERANT DISCHARGE	RD
RL	REFRIGERANT LIQUID	RL
RS	REFRIGERANT SUCTION	RS
	BALANCING COCK	–
	BALL VALVE	–
	BUTTERFLY VALVE	–
	CHECK VALVE	–
	GATE VALVE	–
	PLUG VALVE	–
	PRESSURE RELIEF VALVE	PRV
	UNION	–
	INSTRUMENT WELL	–
	FLOW SWITCH	FS
	STRAINER	–
	FLEXIBLE CONNECTION	FLEX
	REDUCER OR INCREASER	–

AIR HANDLER SCHEDULE

DESIGNATION	AH / B-1	AH / B-2	AH / B-3	AH / B-4	AH / B-5
SUPPLY FAN					
SUPPLY AIR FLOW (CFM)	4,200	3,300	1,600	3150 (2700 Now)	7,000
EXTERNAL SP (IN. WC.)	3.00	1.25	3.00	3.00	3.00
TOTAL SP (IN. WC)	3.71	2.3	3.84	3.61	
OCCUPIED MIN. O.A. (CFM)	SEE NOTE 4, UP TO 1800	SEE NOTE , UP TO 1000	1,000	1,000	7000 (ALL OUTDOOR AIR)
UNOCCUPIED MIN. O.A. (CFM)	600	300	1000		
MOTOR HP	7.5	5	3	5	10
TOTAL OPERATING BHP	4.5	2.7	1.7	2.9	8.8
VOLTS/PHASE	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3
RPM	3248	1611	1904	2785	3480
FAN TYPE/DIA.	AIRFOIL / 13.2	FORWARD CURVED / 10.62	FORWARD CURVED / 10.62	AIRFOIL / 13.2	AIRFOIL / 14.5
ISOLATOR DFLEC (IN.)	2	2	2	2	2
CONNECTION	TOP	TOP	TOP	TOP	FRONT
COOLING COIL	11.0	8.5	5.9	8.6	26.8
TOTAL (MBH)	131.9	101.6	70.7	103.3	321.5
SENSIBLE (MBH)	115.7	89.8	64.6	92.9	321.5
MINIMUM COIL SIZE (FT.²)	11.2	7.50	5.69	7.50	17.00
AIR PD (IN. WC)	0.48	0.73	0.28	0.39	0.34
EADB/EAWB (°F)	80.0 / 64	78 / 63	92 / 68	83 / 65	105 / 70
LAT (DB/WB)	54.8 / 53.3	53.1 / 52.3	55.1 / 53.6	56.0 / 54.0	63.0 / 55.6
ROWS / FINS PER INCH	6 / 6	5 / 10	4 / 10	5 / 9	3 / 10
GPM / PD (FT.)	24.9 / 6.2	20 / 5.4	13.8 / 2.6	20.7 / 5.8	64.3 / 9.3
EWT (°F)	45	45	45	45	45
BRANCH SIZE (IN.)	1.5	1.5	1.5	1.5	(2) 1.5
VALVE TYPE	2-WAY	2-WAY	2-WAY	2-WAY	2-WAY
HEATING COIL					
CAPACITY (MBH)	141.9	113	80	98.7	401.9
MINIMUM COIL SIZE (FT.²)	10.54	7.0	5.25	7.0	16.0
AIR PD (IN. WC)	0.10	0.14	0.07	0.09	0.25
EADB (°F)	60	60	45	60	25
LAT (DB)	91	91.3	91	88.7	77.5
ROWS / FINS PER INCH	1 / 8	1 / 9	1 / 10	1 / 10	2 / 10
GPM/PD (FT.)	13.8 / 3.5	10.8 / 3.3	7.9 / 2.0	10.3 / 2.7	38.3 / 1.1
EWT (°F)	170	170	170	170	170
BRANCH SIZE (IN.)	1.5	1.5	1.5	1.5	
VALVE TYPE	2-WAY	2-WAY	2-WAY	2-WAY	2-WAY
FILTER/MIXING BOX					
AREA (SQ. FT.) OR FILTER / QUAN. SIZE	(6) 20" x 20" x 2"	(2) 24" x 24" x 2"	(6) 20" x 20" x 2"	(6) 20" x 20" x 2"	(9) 20" x 20" x 2"
TYPE	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13
FINAL PD (IN WC)	0.6	0.6	0.6	0.6	0.6
MANUFACTURER	DAIKIN VISION	DAIKIN VISION	DAIKIN VISION	DAIKIN VISION	DAIKIN VISION
TYPE	INDOOR	INDOOR	INDOOR	INDOOR	INDOOR
MODEL NUMBER	CAH012GDAM	CAH008GDAC	CAH006GDAC	CAH008GDAC	CAH019GDAM
AREA SERVED	MEETING ROOMS	ACTIVITY AREA	NORTHWEST TOILET, SHOWER, AND VESTIBULES	LOBBY, COFFEE AND STORAGE ROOMS	BRIX BASEMENT
AIR HANDLER LOCATION	MERCER BASEMENT	MERCER BASEMENT	MERCER BASEMENT	MERCER BASEMENT	BRIX MECHANICAL ROOM
OPER. WT (LBS)	1,700	1,600	1,300	1,600	2,400
ACCESSORIES	1, 2	1, 2	1, 2	1, 2, 6	1, 2, 3, 5

1. DOUBLE WALL CONSTRUCTION WITH R-13 INJECTED FOAM INSULATION, INVERTER DUTY MOTORS ON SUPPLY FAN(S), AND 6" HIGH BASE RAIL.
2. REFER TO SECTIONS FOR FILTER SIZE AND QUANTITY.
3. (2) STACKED HEATING COILS AND (2) STACKED COOLING COILS.
4. DETERMINED BY CO2 SENSOR.
5. SUPPLY AIR CFM SHOWN IS FOR AIR HANDLER SELECTION PURPOSES. FOR ACTUAL AIRFLOW, SEE VRF FAN COIL SCHEDULE, SHEET M-1.0.
6. SELECT AH AT 3150 CFM SHOWN, BUT ADJUST TO 2700 CFM NOW.

LIST OF FIRE/SMOKE DAMPERS FOR THE BRIX AND MERCER BASEMENTS

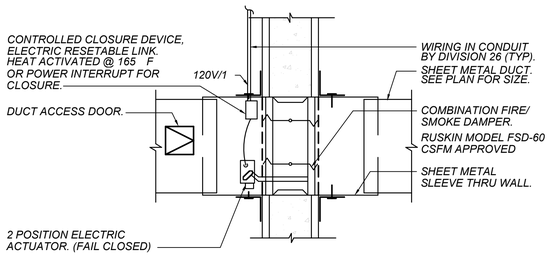
Damper I.D.	Duty	Damper Positon During Normal Operation	Damper Position When with Smoke Detected
FSD B- 1	S.A. to Mercer Meeting Rooms	OPEN	Close
FSD B- 2	R.A. from Mercer Meeting Rooms	OPEN	Close
FSD B- 3	O.A. to AH / B-1	OPEN	Close
FSD B- 4	R.A. to AH / B-4	OPEN	Close
FSD B- 5	E.A. duct from Equipment and Food Storage Room	OPEN	Close
FSD B- 6	R.A. from Storage and Breakout Room	OPEN	Close
FSD B- 7	R.A. from Hall	OPEN	Close
FSD B- 21	South S.A. riser off IDU / B-4 to Mercer Lobby floor grille	OPEN	Close
FSD B- 22	North S.A. riser off IDU / B-4 to Mercer Lobby floor grille	OPEN	Close
FSD B- 23	South S.A. riser off IDU / B-5 to Mercer Lobby floor grille	OPEN	Close
FSD B- 24	North S.A. riser off IDU / B-5 to Mercer Lobby floor grille	OPEN	Close
FSD B- 25	S.A. from AHU-2 to VAV / B-16	OPEN	Close
FSD B- 26	S.A. from VAV / B-14 through east wall of Breakroom	OPEN	Close
FSD B- 27	S.A. from VAV / B-14 to S.A. plenum and risers to Ground Floor	OPEN	Close
FSD B- 28	S.A. from VAV / B-12 to S.A. plenum and risers to Ground Floor	OPEN	Close
FSD B- 29	S.A. from VAV / B-11 to S.A. plenum and risers to Ground Floor	OPEN	Close
FSD B- 30	O.A. duct to north side of Brix Basement (See Note 5)	OPEN	Close
FSD B- 31	S.A. from AHU-2 to VAV / B-13 and VAV / B-14 (See Note 5)	OPEN	Close
FSD B- 32	S.A. from VAV / B-13 to S.A. plenum and risers to Ground Floor	OPEN	Close
SD B- 40	Smoke damper to isolate AH/B-5 from common plenum with Ground Floor	OPEN	Close

NOTES (Typical for all FSDs shown):
1. Refer to Detail B/M-1.1 for FSD installation of FSD B21, B-22, B-23, and B-24. Refer to Detail A/M-1.1 for all others.
2. There must a duct, smoke detector associated with each Fire/Smoke Damper and located within 5' of the FSD. Refer to Electrical Drawings.
3. Access panels for each FSD shall be located on the open ceiling or T-bar side whenever possible.
4. Field measurement of existing openings is required before ordering dampers.
5. FSDs B-30 & B-31 must be vertical with actuators on the bottom. Other dampers may need to be vertical if space is not available on side of duct. The contractor must make this determination.

EXHAUST FAN SCHEDULE

DESIGNATION	EF / 4	EF / 7	EF / 12
CFM	3,600	2,500	2,800
EXT. S P (IN. WC)	1.00	3.10	1.00
MOTOR HP/ BHP	2.0 / 0.98	3.0 / 2.13	1.5 / 0.76
VOLTS/ PHASE	460/3	460/3	460/3
RPM	1202	2160	1202
DRIVE	DIRECT	BELT	DIRECT
MOUNTING	SEE NOTE 2	SEE NOTE 2	SEE NOTE 2
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK
TYPE	UPBLAST UTILITY SET	UPBLAST UTILITY SET	UPBLAST UTILITY SET
MODEL NUMBER	USF-20	USF-15	USF-20
CONTROL	INTERLOCK WITH AH/B-1	SEE DETAIL A/M-10	INTERLOCK WITH AH/B-3
LOCATION	MERCER ROOF	EAST STAIRWAY ROOF	MERCER ROOF
DUTY	MEETING ROOMS ECON. RELIEF	KITCHEN HOOD & GEN. EXHAUST	ACTIVITY ROOM ECON. RELIEF
OPER. WT. (LBS)	375	250	375
ACCESSORIES	1 - 7	1 - 8	1 - 7

NOTES:
1. PREMIUM EFFICIENCY, INVERTER-DUTY MOTOR, ADJUSTABLE DRIVE PULLEY, AND WEATHERHOOD.
2. 1" SPRING ISOLATORS WITH SEISMIC RESTRAINTS.
3. INLET AND OUTLET COMPANION FLANGES.
4. BOLTED ACCESS DOOR AND 1" DRAIN PLUG.
5. UP DISCHARGE AND BAKED ENAMEL FINISH.
6. UP DISCHARGE AND BAKED ENAMEL FINISH.
7. WELDED SCROLL HOUSING.
8. UL/cUL-762 POWER VENTILATOR FOR RESTAURANT EXHAUST APPLIANCES.

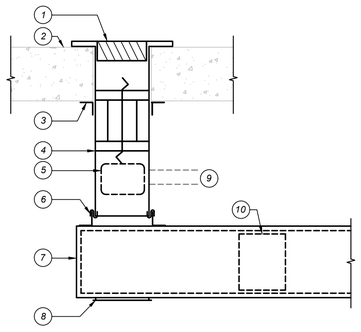


NOTES:
1. 16 GA. L FRAME WELDED, (MIN. 50% PERIMETER) TO ALL 4 SIDES OF SLEEVE. L FRAME SHALL BE DESIGNED TO LAP WALL NOT LESS THAN 1". ROUGH OPENING IN MASONRY WALLS AND NET OPENING IN FRAME WALLS SHALL EXCEED NET O.D. OF DAMPER ASSEMBLY. DO NOT FASTEN SIDES OR TOP OF L TO WALL OR PARTITION.
2. FIRE DAMPER SHALL BE SFM LISTED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

FIRE/SMOKE DAMPER THROUGH WALL

SCALE: N.T.S.

A / M-1.1



FIRE/SMOKE DAMPER THROUGH FLOOR TO LOBBY FLOOR GRILLE

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

B / M-1.1

KEYNOTES

1. Remove existing floor grille and reinstall within frame of damper sleeve. Nominal size is 6" x 48, but field verification is required.
2. Existing concrete floor of Ground Floor Lobby.
3. Perimeter angle frame. Refer to Ruskin installation instructions.
4. Ruskin Model FSD60-2-1 fire/smoke damper with TS-150 firestat and 20" length sleeve. Damper shall be installed in accordance with manufacturer's recommendations. CSFM Listing 3235-0245:126.
5. 2-position electric actuator (fail close).
6. Breakaway duct connection.
7. Supply air duct. See Sheet M-4.4 for size.
8. 6" x 24" access panel in bottom of duct.
9. 120-volts to actuator provided by Electrical.
10. Duct, smoke detector. Refer to Electrical Drawings for specifications, installation, and wiring.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL 8/23 STATE OF CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

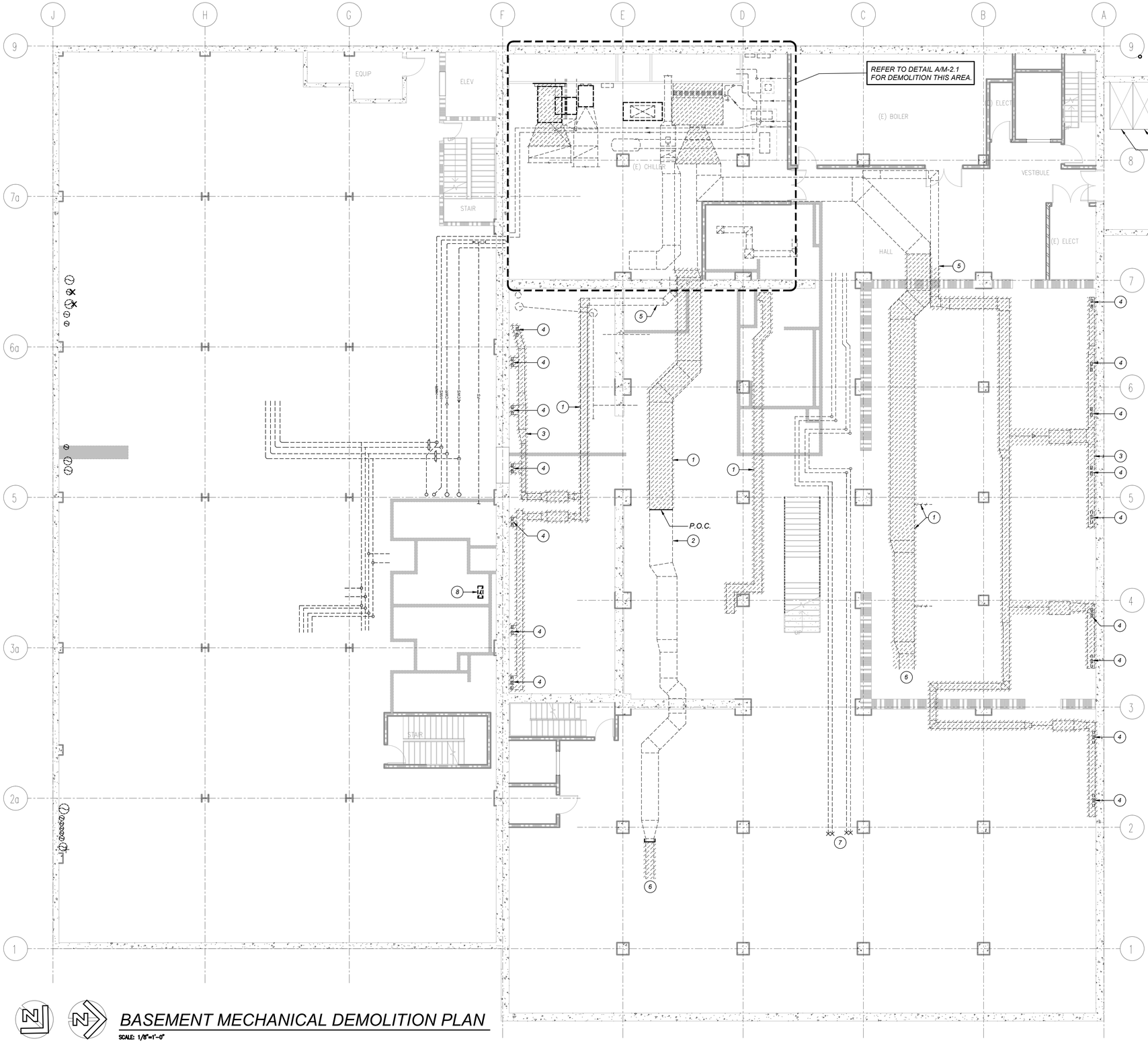
PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
SCHEDULES

SHEET NUMBER
M-1.1

FILE PATH:

INTERNAL NUMBER: 829



DEMOLITION PLANNING

The Contractor shall give the County 14 days notice when any of the following services will be interrupted. If off-hours construction is required, arrangements shall be made with the County.

A. Space cooling chilled water

B. Space heating hot water

C. Airflow to various rooms served by AHU-2

D. Domestic cold-water chilling (for drinking fountains)

The contractor is responsible for researching the locations of existing shut off valves when draining the hot and chilled water systems to make new connections or to remove existing equipment and/or piping. The extend of system drainage and down time must be minimized.

There are four zones (with multiple rooms) serving the Ground Floor from ductwork in the Brix Basement. Supply air comes from AHU-2. Either the north two or south two zones may be taken out of service at a time. New FSDs may be temporarily energized and wired "open" during this time and the hot-water reheat coils do not need to be immediately piped for temporary occupation of the Ground Floor offices.

DEMOLITION KEYNOTES:

1. Remove existing ductwork (shown crosshatched) and connected unused branch ductwork (shown or not). Remove unused duct supports, typical.
2. Existing ductwork to remain. Remove unused branch ducts and seal all openings air tight.
3. Remove horizontal supply air ductwork to Ground Floor risers, typical.
4. Supply air riser to Ground Floor riser to remain. Refer to Section E/M-9.
5. Existing ductwork from AHU-2 to remain.
6. Remove existing ductwork downstream.
7. Remove existing piping downstream.
8. Existing O.A. drop for Mercer basement to be reused.

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03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

TRUE NORTH

PROJECT NORTH

BASEMENT MECHANICAL DEMOLITION PLAN

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

FILE PATH:

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

BASEMENT HVAC PLAN

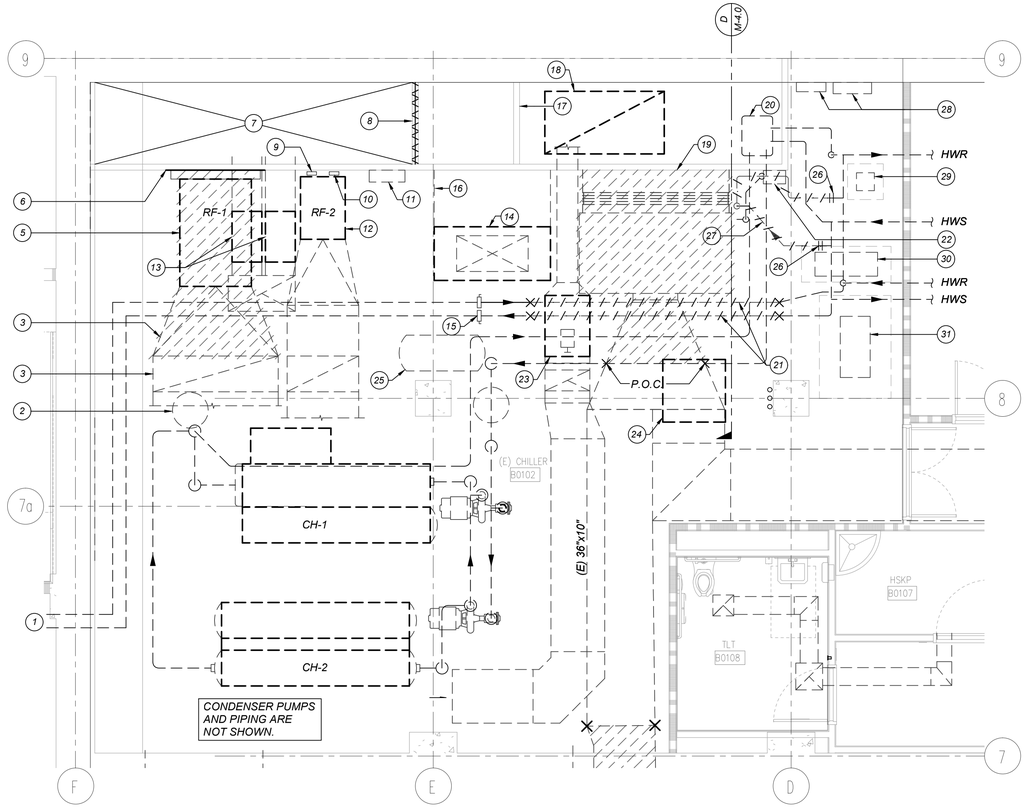
SHEET NUMBER

M-2.0

INTERNAL NUMBER: 829

DEMOLITION KEYNOTES:

1. Existing HWS and HWR routed to Mercer equipment.
2. Existing chilled water expansion tank to be temporarily removed to permit removal of RF-1 and ductwork.
3. Remove existing duct supports and R.A. drop from floor to finished floor +100". Support existing duct (including elbow drop) from structure above as floor supports are removed.
4. Remove existing ductwork.
5. Remove RF-1 serving the Brix Basement. Fan may need to be cut up to remove.
6. Provide permanent sheet metal cover of R.A. opening and seal airtight. Reinforce with vertical supports if required. Patch does not require insulation.
7. Existing R.A. plenum to remain active during construction.
8. Existing R.A. damper to remain active during construction.
9. Existing 5 HP VFD for RF-1 to be abandoned in place.
10. Existing 2 HP VFD for RF-2 to remain active.
11. Existing EMS panel for AHU-1 and AHU-2. Replace existing AHU-1 controls with new EMS controls.
12. Existing RF-2 (serving Ground Floor) to remain active during construction.
13. Existing mechanical room exhaust fans to remain.
14. Existing AHU-2 (serving Ground Floor) to remain active during construction. Approximately 5400 supply cfm.
15. Existing HW shut-off valves.
16. Access panel to mixed air plenum.
17. South end of O.A. plenum on level above.
18. Remove existing O.A. damper. Actuator will be reused.
19. Remove AHU-1, filter rack, hot and chilled water piping, and discharge ductwork up to P.O.C. shown on the drawings. The opening to mixed air plenum must be temporarily sealed.
20. Existing chilled and hot water piping to and from upper floors. There are no shut off valves, at this location, to isolate these upper floors.
21. Remove existing HWS and HWR in front of AHU-1.
22. Existing VFD for AHU-1 shall remain and be reused for new AH/B-5.
23. Existing refrigerant-leak purge fan to remain active during construction.
24. Existing domestic water chiller. Disconnect electrical and piping connections and temporarily relocate to remove AHU-1 and install AH-5B. Provide temporary bypass of CW to maintain supply to drinking fountains.
25. Existing control air compressor to remain.
26. Cut piping and provide a removable cap.
27. Remove existing HW piping to and from existing HW coil.
28. Existing fire pump controls.
29. Existing fire jockey pump.
30. Existing fire pump.
31. Existing domestic water booster pump assembly.
32. Existing exhaust air riser to remain. See Sheet M-4.3 for new connections.



MECHANICAL ROOM DEMOLITION PLAN

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

A M-2.1

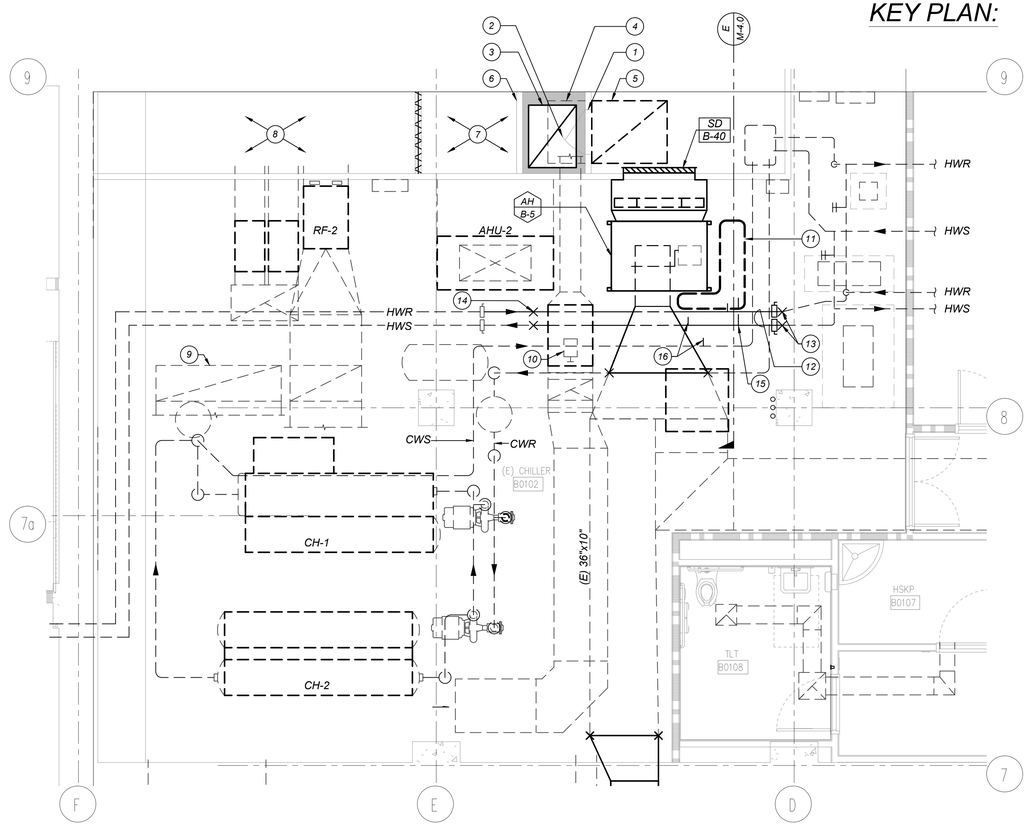
TRUE NORTH

PROJECT NORTH

KEYNOTES:

1. Floor to ceiling double wall partition with 2" insulation and threshold for access door. This partition separates the existing O.A. plenum into two plena. Seal around all sides.
2. 30" x 76" high door, with gasketing, double wall construction with 2" insulation, and access handle on both sides. **Verify sizes of all dampers and doors prior to ordering.**
3. 30" x 42" outdoor air, opposed blade damper in ceiling of plenum for AHU-2. Damper shall be furnished by Control Contractor and installed by Mechanical Contractor. Control Contractor to relocate the existing actuator to this damper and test for proper operation during the economizer cycle.
4. Shaded area requires sheet metal work to frame in new O.A. damper in ceiling of plenum.
5. Unobstructed O.A. opening to AH/B-5.
6. Existing partition is in the O.A. plenum in the level above.
7. Mixed air plenum for AHU-2.
8. Return air plenum for AHU-2.
9. Existing elbow abandoned in place.
10. Provide S/M cover over belt and pulley of purge fan.
11. Area around side and front of air handler for hot and chilled water manifolds for AH/B-5. Piping on the side shall not interfere with access to the fan motor.
12. Restore 2-1/2" (verify) HWS and HWR offset loop between P.O.C.s 1 and 2. Piping on this loop shall be grooved to facilitate removal. Provide floor or ceiling support.
13. P.O.C. 1 with grooved piping and shut-off valves where shown.
14. P.O.C. 2 with grooved piping.
15. 2" HWS to and HWR from hot water coils. See Detail F/M-7.
16. 2-1/2" CWS to and CWR from chilled water coils. See Detail F/M-7.

KEY PLAN:



MECHANICAL ROOM (NEW WORK) PLAN

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

B M-2.1

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03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

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1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

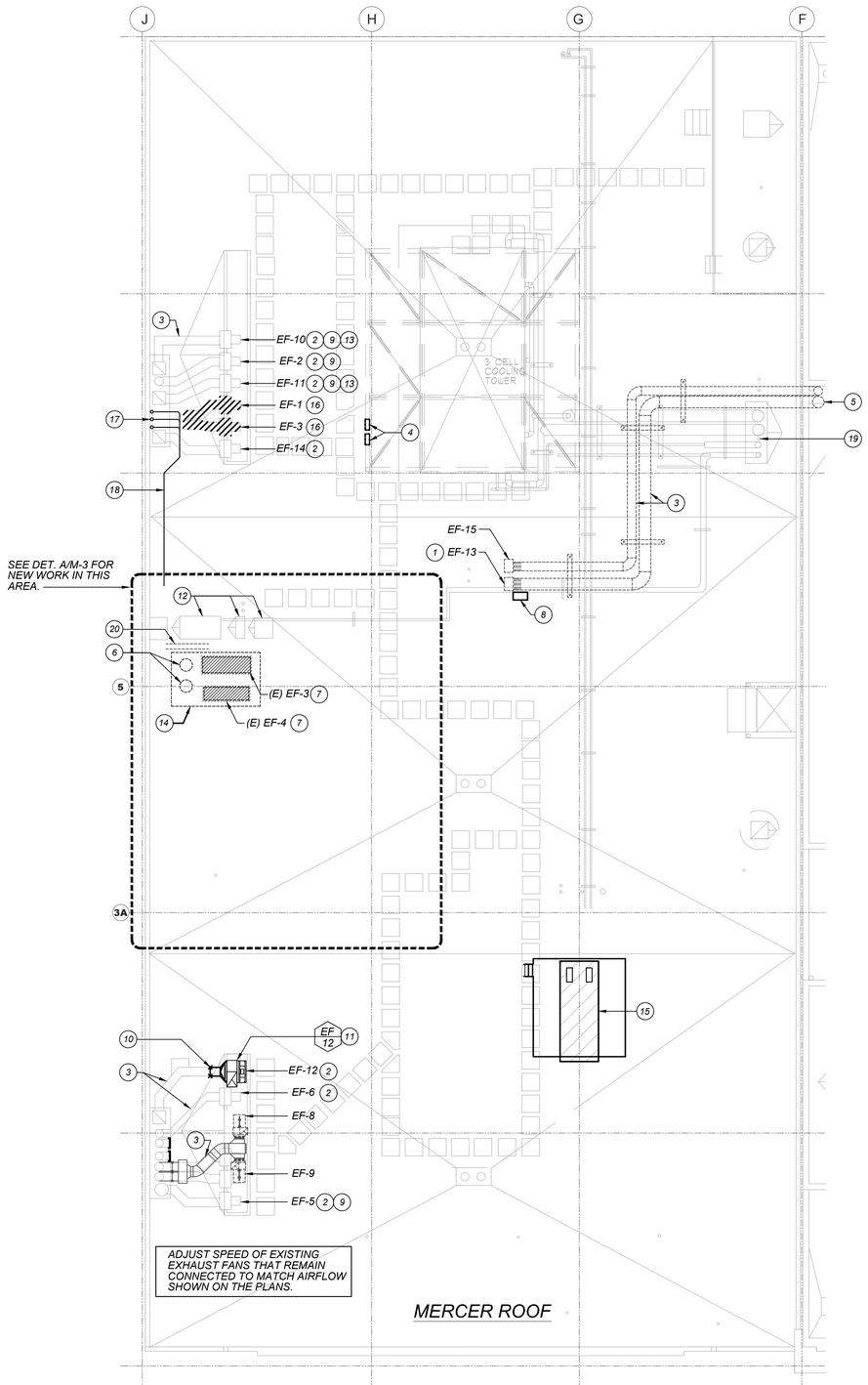
MECHANICAL ROOM DEMO & NEW PLAN

SHEET NUMBER

M-2.1

FILE PATH:

INTERNAL NUMBER: 829



MERCER ROOF

PARTIAL MECHANICAL ROOF PLAN

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

KEYNOTES:

(A) Extend existing ductwork to plenum. Stainless steel not required.

(B) Sheet metal exhaust plenum with 18" in direction of airflow. Provide 14" x 14" access panel at side of duct.

(C) VFD cabinet for EF-10. Cabinet shall be NEMA 3R with thermostatically controlled fan and ABB drive with BACnet card. VFD shall be 2 HP (connected motor will be less horsepower). Cabinet shall be furnished by Controls Contractor, installed by Electrical.

(D) VFD cabinet for EF-11. All else per Keynote C.

(E) VFD cabinet for EF-12 with 3 HP VFD (connected motor will be less horsepower). All else per Keynote C.

(F) VFD cabinet for EF-4 with 3 HP VFD (connected motor will be less horsepower). All else per Keynote C.

(G) Square, sheet metal reducer to accommodate inlet cone companion flange. Attach flex connection with sheet metal cover over top and sides.

(H) Remove existing spring isolators and pedestal support and install new isolators per Detail E/M-5. Seal existing openings caused by removal of bolts.

(J) Install 24" high discharge duct on outlet and expand to 18" x 24" to accommodate a Ruskin BD6 backdraft damper. Provide 1/2" x 1/2" mesh screen on top of duct just beyond BDD open blades.

(K) Electrical subpanel on roof for mechanical equipment. See Electrical Drawings.

(L) Refer to Sheet M-11.1 for refrigerant pipe sizing. One line (on the drawing) represents three refrigerant lines.

(M) Remove roofing down to top of concrete. Install pipe support per Detail F/M-6 and restore roof. See Specifications for spacing.

(N) Refer to Detail B/M-3 for ODU attachments. Also refer to Structural Detail 3/S1.02 and Architectural details.

KEYNOTES:

(1) At the top of existing discharge duct, install a backdraft damper (approximately 13" x 10") and cover with 1" square-mesh screen.

(2) Provide 1/2" x 1/2" square-mesh screen over fan discharge duct.

(3) Existing exhaust duct(s) to remain.

(4) Existing VFDs for EF-8 and EF-9 to remain.

(5) See Sheet M-4.3 for continuation.

(6) Existing, welded exhaust risers to remain. See Detail A/M-3 for modification and extension of ductwork.

(7) Remove existing fan. Patch holes in existing platform cover to maintain weather-tight condition, typical at all existing platforms. Fill existing screw holes with wood putty and use heavy mastic on holes in sheet metal cover.

(8) VFD cabinet for EF-13 with 2 HP VFD (motor may be less HP). All else per Keynote C/Detail A/M-3.

(9) Install full-size Ruskin BD-6 in discharge duct just below 1" mesh screen.

(10) Provide increaser from existing duct to new EF-12 inlet. Provide flex connection with sheet metal cover over top and sides.

(11) Remove existing fan and install new EF-12. Install 24" high discharge duct on outlet and expand to 18" x 24" to accommodate a Ruskin BD6 backdraft damper. Provide 1/2" x 1/2" mesh screen on top of duct just beyond BDD open blades.

(12) Remove equipment from existing platforms and seal holes. Existing platforms may be used to support refrigerant piping.

(13) Replace existing motor with new. Refer to Roof Exhaust Fan Schedule.

(14) Existing platform and sheet metal cover to remain. Patch unused holes and seal weather tight.

(15) Future Emergency Generator will replace existing generator.

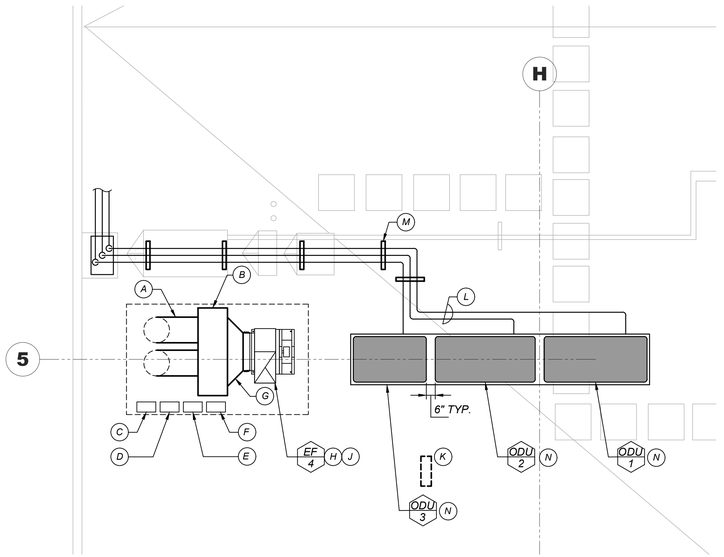
(16) Remove exhaust fan, support rail, isolators, and exhaust duct through platform. Provide weatherproof sealant over bolt holes in platform.

(17) Three sets of (3) refrigerant lines through platform into duct shaft. See Detail K/M-8.

(18) Three sets of (3) refrigerant lines on roof.

(19) Existing gas up through roof. See Plumbing Drawings.

(20) Remove existing water supply and drain piping above roof that is no longer required. Provide S.O.V. on supply lines, insulate, and cap above roof. Restore roofing as required.

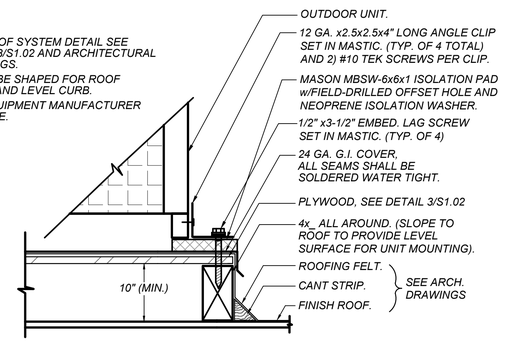


NEW OUTDOOR UNITS

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

A M-3

NOTES:
1. FOR ROOF SYSTEM DETAIL SEE DETAIL 3/S1.02 AND ARCHITECTURAL DRAWINGS.
2. 4X_ TO BE SHAPED FOR ROOF SLOPE AND LEVEL CURB.
3. SEE EQUIPMENT MANUFACTURER FOR SIZE.



ODU ATTACHMENTS

SCALE: NONE

B M-3

ROOF EXHAUST FAN ACTION REQUIRED
(from top to bottom of this sheet)

Fan I.D.	Duty	Action	Balance to CFM	Notes
EF-10	General Relief Air (from Corridor)	Replace existing motor with 1 HP motor	1600	2
EF-2	General Exhaust	Replace/adjust drives for new CFM	700	4
EF-11	Economizer Relief Air for AH-B4	Replace existing motor with 1 HP motor	1900	2
EF-1	No Longer Required	Remove fan and inlet ductwork		6
EF-3 (west)	No Longer Required	Remove fan and inlet ductwork		6
EF-14	Serves Floors above the Basement	Remain Active		1
EF-15	None	Abandon in place		3
EF-13	Brix Toilet Rooms	Remain Active	600	5
EF-3 (east)	None	Remove Under This Project		
(existing) EF-4	None	Remove Under This Project		
EF-4	Econ. Relief for Mercer Meeting Rooms	New fan replaces existing EF-4	3600	
EF-12	Econ. Relief for Mercer Activity Room	New fan replaces existing EF-12	2500	
EF-6	None	Abandon in place		
EF-8	None	Abandon in place		
EF-9	None	Abandon in place		
EF-5	Mercer East Toilet Rooms	Replace/adjust drives for new CFM	850	4

Notes:
1. Balancing of this fan is not within scope.
2. New motor shall be inverter duty, 460-volt, 3-phase.
3. Exhaust duct terminates near Brix toilet rooms and is reserved for future use.
4. Reconnect existing, 120-volt exhaust fan circuit and route circuit through an EMS start contactor. Use existing wiring and contactors where possible. Field verify, see Electrical Drawings, and coordinate with Electrical Contractor.
5. Existing plans show motor to be 1 HP at 460/3. Field verify.
6. Refer to Keynote 16.

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03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

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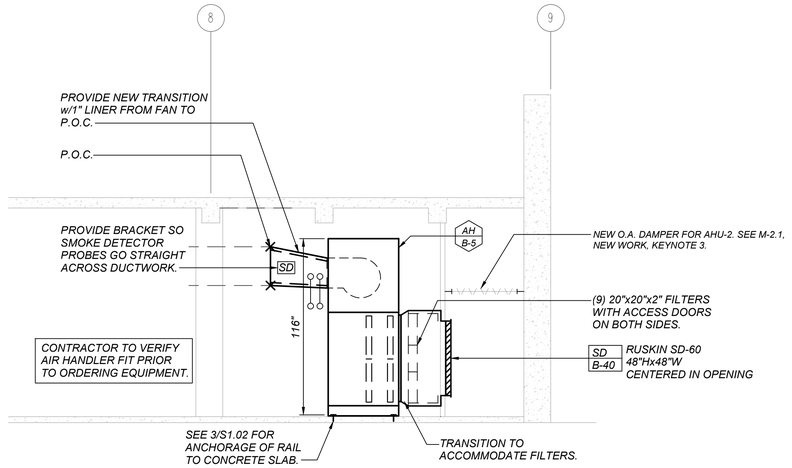
PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
MERCER ROOF PLAN

SHEET NUMBER
M-3

FILE PATH:

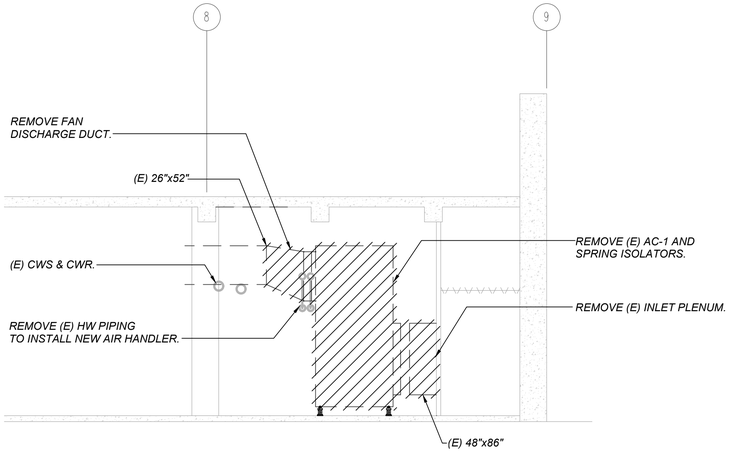
INTERNAL NUMBER: 829



SECTION AT AH / B-5

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

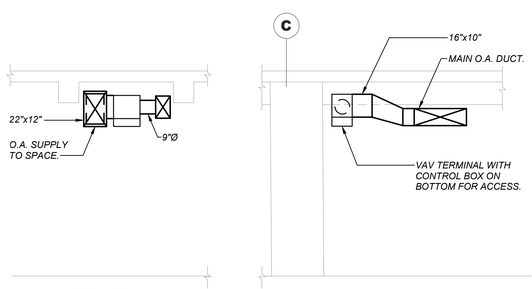
E M-4.0



DEMOLITION SECTION AT AC-1 (AHU-1)

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

D M-4.0



SECTION

SCALE: NONE

A M-4.0

KEYNOTES FOR M-4.3 AND M-4.4

1. Liquid, suction, and gas refrigerant lines between BSBs and ODU (listed). Refer to VRF piping diagrams (Sheet M-11.1) for line sizes.
2. Liquid and gas refrigerant lines between BSBs and IDUs. Refer to VRF piping diagrams (Sheet M-11.1) for line sizes.
3. Refrigerant piping through existing masonry wall. If the penetration is not shown on the Structural Drawings, submit an RFI for approval.
4. Refer to Detail A/M-8 for branch dampers, typical.
5. VAV box (by Controls Contractor) set at constant volume to maintain constant Outdoor Air airflow. Refer to Detail E/M-7 for mounting. Controls Contractor to provide 24 VAC. For VAV-17, 18, 19, 20 (in the Brix Break Room), boxes are mounted with the control box on the bottom, for access.
6. O.A. grille for minimum outside air to the south portion of the Caged Storage area.
7. O.A. grille for minimum outside air to the north portion of the Caged Storage area.
8. O.A. grille within 18" of inlet to IDU/B-4. This provides ventilation air to the (south) Ground Floor Lobby.
9. O.A. grille within 18" of inlet to IDU/B-5. This provides ventilation air to the (north) Ground Floor Lobby.
10. CFM shown is the supply air (in the existing riser) to a typical Ground Floor office. Refer to Section E/M-9 for typical notations.
11. Typical duct-mounted, smoke detector, located within 5' of FSD. Refer to Electrical Drawings for specifications and wiring.
12. Refer to Detail G/M-8 for equipment support, typical.
13. Refer to Detail A/M-8 for typical S.A. grille connections.
14. Refer to Detail B/M-8 for typical R.A. or E.A. grille connections.
15. Air quantity up to Ground Floor Lobby.
16. Offset ductwork down below beam.
17. Automatic Balancing Damper (ABD) to maintain constant outdoor airflow to fan coil or supply-air grille during occupancy hours. ABD shall be duct size unless otherwise indicated. Refer to "VRF Fan Schedule," Sheet M-1.0, for O.A. CFM.
18. Branch dampers not required upstream of VAV boxes or ABDs, typical.
19. Duct insulation not required.
20. Provide 5' of insulated flex duct at connection to grille, and then connect to sheet metal duct with no insulation required.
21. Duct, hot water piping, or refrigerant lines through existing opening in wall. Refer to Architectural Drawings for sealing the opening, if required.
22. Refer to Detail B/M-10 for Conference Room fan coil control (by EMS Contractor).
23. When R.A. duct connects to plenum with O.A. duct, no balancing dampers are required.
24. O.A. duct from AH/B-5. Air is pre-tempered, so insulation not required unless shown.
25. Refer to Details C, D, & E/M-7 for VAV box controls, piping, and mounting.
26. Refer to Detail A/M-1.1 for fire/smoke damper installation, typical.
27. FSD access panel, typical at all FSDs weather or not shown.
28. Refer to Detail A/M-8 for support, but all duct must be sheet metal in exposed areas.
29. Ducts, grilles, pipes (insulated or not), hangers, etc. shall be painted flat black in Break Room. VAV boxes shall also be painted, but do not paint over any labels.
30. Provide sheet metal escutcheon (with 2" flange) where duct meets wall framing.
31. EMS control panel with controller for Conference Room controls (Detail B/M-10) and control transformer for nearby VAV boxes. Panel requires 120 volts, see Electrical.
32. Duct increases in height to allow duct taps. May be required in other areas.
33. Refrigerant piping through holes in existing 1/4" steel plate. Piping insulation may be reduced to 1/4" neoprene to fit existing holes in plate and concrete wall.
34. Existing 16" diameter S.S. duct to be reused. See Sheet M-3 for roof exhaust fan notes.
35. P.O.C. of existing 16" diameter exhaust to reducer and connect to 12" round.
36. Refer to Detail D/M-8 for "Ceiling Cassette" IDU.
37. Provide new Tee with 1-1/2" top connection on exiting HWS and HWR. Provide 1-1/2" ball valves and connect into new reheat piping.
38. Hold ductwork tight to north-south beams.
39. Actual dimension may be different than shown on the plan. Field verify.
40. Maximum air temperature rise at full-range output and 2,500 CFM exhaust is 20 degrees.
41. Duct shall be welded stainless steel from hood connection to flex connection at exhaust fan. Provide access panels as required by Code. Connection to hood may be offset to the north (within hood limits) to lessen the duct offset. Hood must be ordered this way.
42. 16" x 16" sheet metal sleeve. Verify for fit.
43. End of acoustic lining. Downstream duct shall be wrapped.
44. Location of ABD and diffuser may be relocated to fit field conditions and avoid conduit.
45. Field coordinate IDU location to maintain access to fan compartment and filter. Existing fire sprinkler in this area will need to be relocated.
46. Exposed S.A. duct does not require insulation. Ducts over ceilings require insulation.
47. ABD with 6" diameter discharge duct into 30" of 6" x 6" acoustic lined duct. Locate high. This duct supplies outdoor air to the vestibule area.
48. Refer to Detail F & J/M-8 for "High-wall" IDUs.
49. I-touch controller for VRF system. Refer to Sheet M-11.2. The 120-volt circuit to the EMS panel also feeds this panel.
50. Connect new exhaust grilles (with balancing dampers) to existing exhaust system.
51. Existing exhaust riser is active and also serves floors above.
52. Refer to Detail B/M-4.0 for piping through masonry wall.
53. Existing S.A. ductwork from AHU-2 to remain. This duct serves the offices at the Ground Floor, above.
54. Refer to Detail D/M-4.0 for end-of-line piping connections.
55. Provide sheet metal cap with sealant over existing opening, typical where ducts have been removed.
56. Provide sheet metal cap over existing R.A. opening.
57. Exposed ductwork in storage areas does not require painting.
58. Hard connect fan coil R.A. duct to side of plenum box over R.A. grille.

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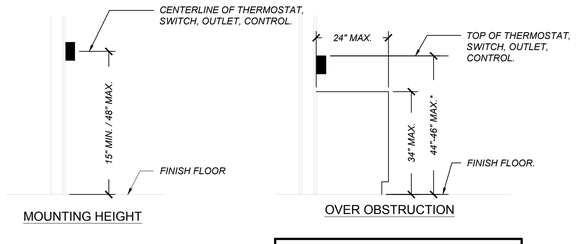
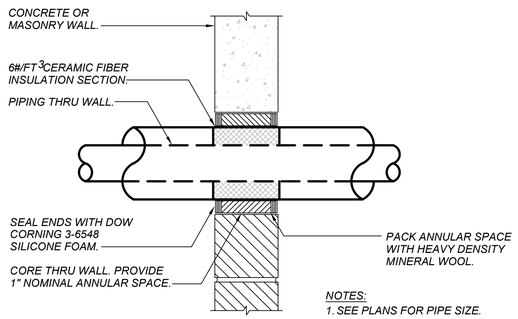


* 44" MAX. FOR WHEEL CHAIR FORWARD APPROACH AND 46" MAX. FOR SIDE APPROACH PER CBC 1127A.9.6.

THERMOSTAT OR CONTROL SWITCH MOUNTING HEIGHT

SCALE: NONE

F M-4.0

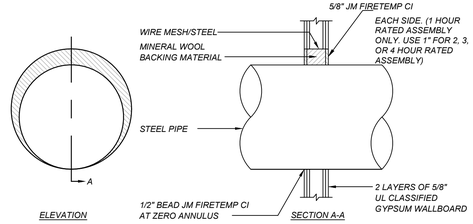


NOTES:
1. SEE PLANS FOR PIPE SIZE.

PIPE THROUGH CONCRETE WALL W/ FIRESTOP

SCALE: NONE

B M-4.0



PENETRATION FIRESTOP FOR AN UNINSULATED PIPE THROUGH A GYPSUM WALLBOARD ASSEMBLY

NOTES:

1. WALL ASSEMBLY - THE 1,2,3, OR 4 HR FIRE -RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES.
   A. STUDS: WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2x4 IN. LUMBER SPACED 16" O.C. STEEL STUDS TO BE MIN 3 5/8" WIDE AND SPACED MAXIMUM 24" O.C.
   B. WALLBOARD, GYPSUM*: THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IS 9".
   THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.
2. THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN 0 (POINT CONTACT) IN TO MAX 1 3/8" PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
   THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
   A. STEEL PIPE: NOM 24" DIAM (OR SMALLER) SCHEDULE ST 40 (OR HEAVIER) STEEL PIPE.
      1A. NOM 4" DIAM (OR SMALLER) SCHEDULE 7 (OR HEAVIER) STEEL PIPE.
      2A. NOM 8" DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
      3A. NOM 10" DIAM (OR SMALLER) SCHEDULE 20 (OR HEAVIER) STEEL PIPE.
      4A. NOM 24" DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE: NOM 24" DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE. WHEN IRON PIPE IS USED T RATING IS 1/4" HR. WHEN STEEL OR IRON PIPE IS USED T RATING IS 1/4 HR FOR NOM 4" DIAM (OR SMALLER) AND 0 HR FOR STEEL OR IRON PIPES GREATER THAN NOM 4" DIAM.
   C. CONDUIT: NOM 6" DIAM (OR SMALLER) STEEL ELECTRICIAL METALLIC TUBING (EMT). WHEN EMT IS USED T RATING IS 1/4 HR.
   D. CONDUIT: NOM 6" DIAM (OR SMALLER) STEEL CONDUIT. WHEN STEEL CONDUIT IS USED T RATING IS 1/4 HR.
   E. COPPEER TUBING: NOM 6" DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE IS USED T RATING IS 1/4 HR.
   F. COPPEER PIPE: NOM 6" DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. WHEN COPPER PIPE IS USED T RATING IS 0 HR.
3. FILL, VOID OR CAVITY MATERIAL* - SEALANT - MIN 5/8" THICKNESS OF FILL MATERIAL FOR 1 HR FIRE RATED WALL ASSEMBLIES AND MIN 1" THICKNESS OF FILL MATERIAL FOR 2, 3 OR 4 HR FIRE RATED WALL ASSEMBLIES, APPIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT POINT CONTACT LOCATION BETWEEN PIPE COVERING AND WALLBOARD, A MIN 1/2" DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE WALLBOARD / PIPE COVERING INTERFACE ON BOTH SURFACES OF WALL.

PIPE THROUGH STUD WALL w/FIRESTOP

SCALE: NONE

C M-4.0

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
DETAILS

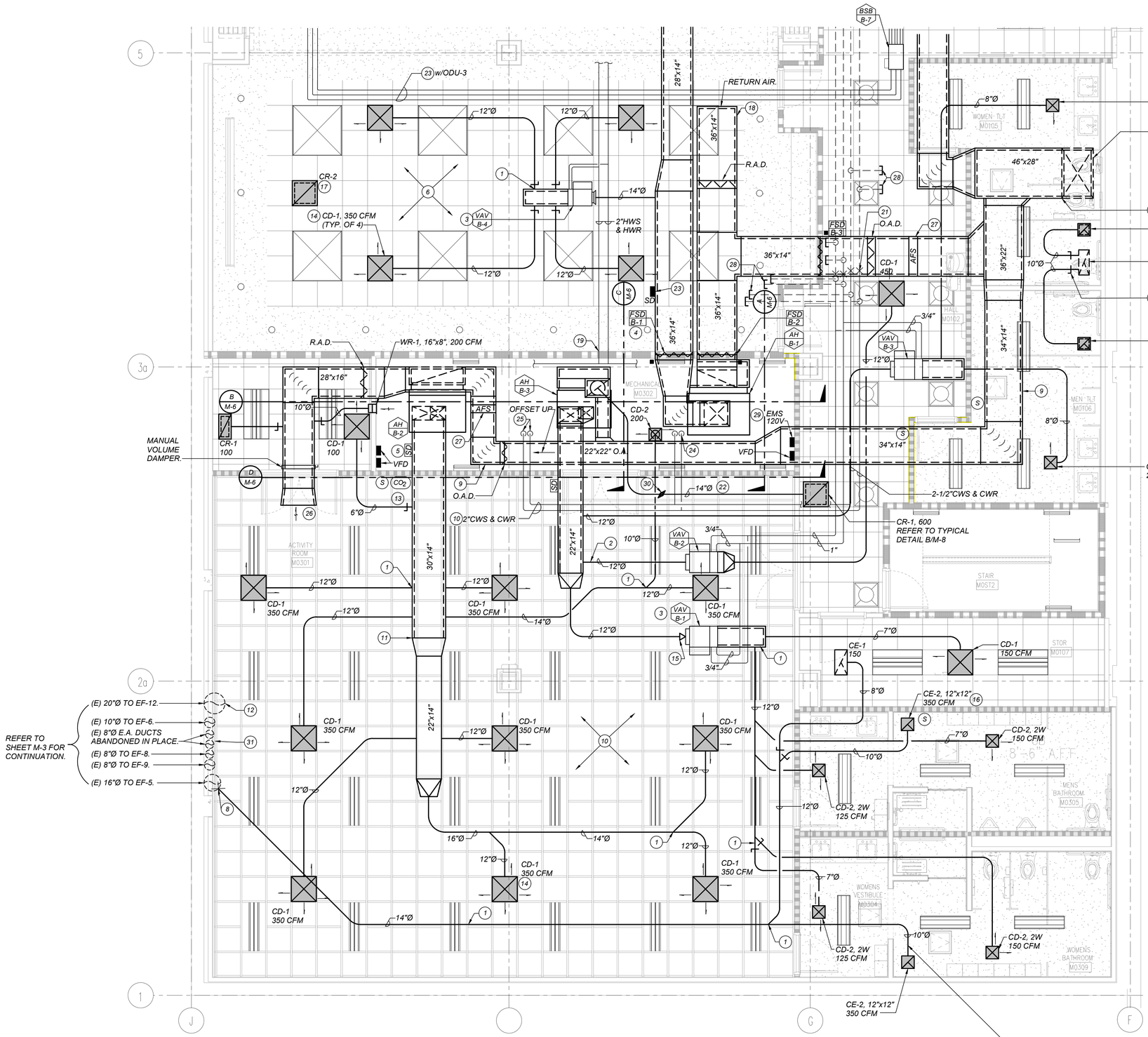
SHEET NUMBER
M-4.0

FILE PATH:

INTERNAL NUMBER: 829

KEYNOTES:

1. Refer to Detail A/M-8 for branch dampers, typical.
2. Branch dampers not required upstream of VAV boxes.
3. Refer to typical Details C, D, and E/M-7 for VAV box mounting, controls, and piping.
4. Fire/smoke damper. Refer to Detail A/M-1.1.
5. Duct, smoke detector, typical. Refer to Electrical Drawings for specifications, installation, and wiring. When installed in conjunction with an FSD, the detector must be within 5' of the FSD.
6. Space above Meeting Rooms ceilings is used as a return air plenum. Materials and wiring in this plenum must be plenum rated.
7. EMS control panel with one transformer for controller and one transformer for VAV boxes. Wiring to VAV boxes by Control Contractor.
8. Point of connection of new E.A. duct to existing.
9. Outdoor air duct with 1" thermal liner. Liner required on all Mercer O.A. ducts to prevent condensation as the inlet temperatures may be below freezing.
10. Ceiling in Activity Room is a grid only. Diffusers and lights are attached to grid, but there are no ceiling tiles. See Architectural plans. All ductwork, piping (with or without insulation), hangers, dampers, etc. visible from below and must be painted flat black. Do not paint over any nameplates or model numbers.
11. End of acoustic lining. No insulation is required downstream.
12. Existing ductwork will be used for Activity Room economizer relief.
13. Typical Room Sensor and CO2 sensor. CO2 only required for selected zones. Refer to Control Diagrams.
14. Refer to Detail A/M-8 for S.A. diffuser connections.
15. Provide concentric reducer when required to match VAV inlet, typical.
16. Exhaust grille mounted similar to B/M-8 except attaching ductwork must be sheet metal, internal lining is not required unless shown, and no filter is required.
17. Return air grille open to plenum above ceiling.
18. Return duct open to plenum. See Detail E/M-8.
19. Insulated piping through rated wall. Refer to Detail G/M-7. In Mechanical Room, provide tees, and route 1-1/2" HWS & HWR to AH/B-1 and route 2" HWS & HWR towards AH/B-2 and AH/B-3. Then split to 1/-1/2" HWS and HWR to AH/B-2, and 1" HWS and HWR to AH/B-3. Refer to Detail B/M-7.
20. Point of connection on new O.A. duct to existing drop. Provide turning vanes in elbow.
21. Point of connection of new 2-1/2" CWS to CWR to existing.
22. Duct does not require insulation.
23. This duct detector serves FSD/B-1 and AH/B-1 supply air.
24. 2" CWS drop to and CWR riser from AH/B-1.
25. 1-1/2" CWS to and 1-1/2" CWR from AH/B-2 and 1-1/2" CWS to and 1-1/2" CWR from AH/B-3. Refer to Detail B/M-7.
26. 34" x 22" (net inside) R.A. opening.
27. "AFS" airflow station, rectangular or round, required on AH/B-1, B-2, B-3 and B-4. Refer to Detail A/M-7.
28. Cap unused chilled or hot water piping and insulate ends, typical.
29. Refer to Detail A/M-11.1.
30. Motorized return air damper for AH/B-3.
31. Sealing around ductwork is not required at this shaft, but do replace vinyl covered ducts with a sheet metal cap and seal air tight.
32. When balancing damper is located over a hard ceiling, provide a cable-controlled damper, flexible cable, and ceiling-mounted cable controller. When ceiling controller is more than 36" from the damper, provide ceiling label or a record drawing showing which ceiling controller is connected to which damper. This note applies throughout the project.



WHEN CONNECTING NEW HW OR CW PIPING TO EXISTING, VERIFY SUPPLY AND RETURN AND THAT THE EXISTING, VERIFY THAT THE EXISTING PIPE SIZE IS EQUAL TO OR LARGER.

EXHAUST DUCTWORK ON THIS PROJECT SHALL BE SHEET METAL OR SHEET METAL w/ACOUSTIC LINING (WHERE SHOWN) TYP.

TRUE NORTH

PROJECT NORTH

PARTIAL MERCER BASEMENT RCP PLAN

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

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

KEY PLAN:

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL 8/23 STATE OF CALIFORNIA

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

ENLARGED BASEMENT HVAC PLAN

SHEET NUMBER

M-4.1

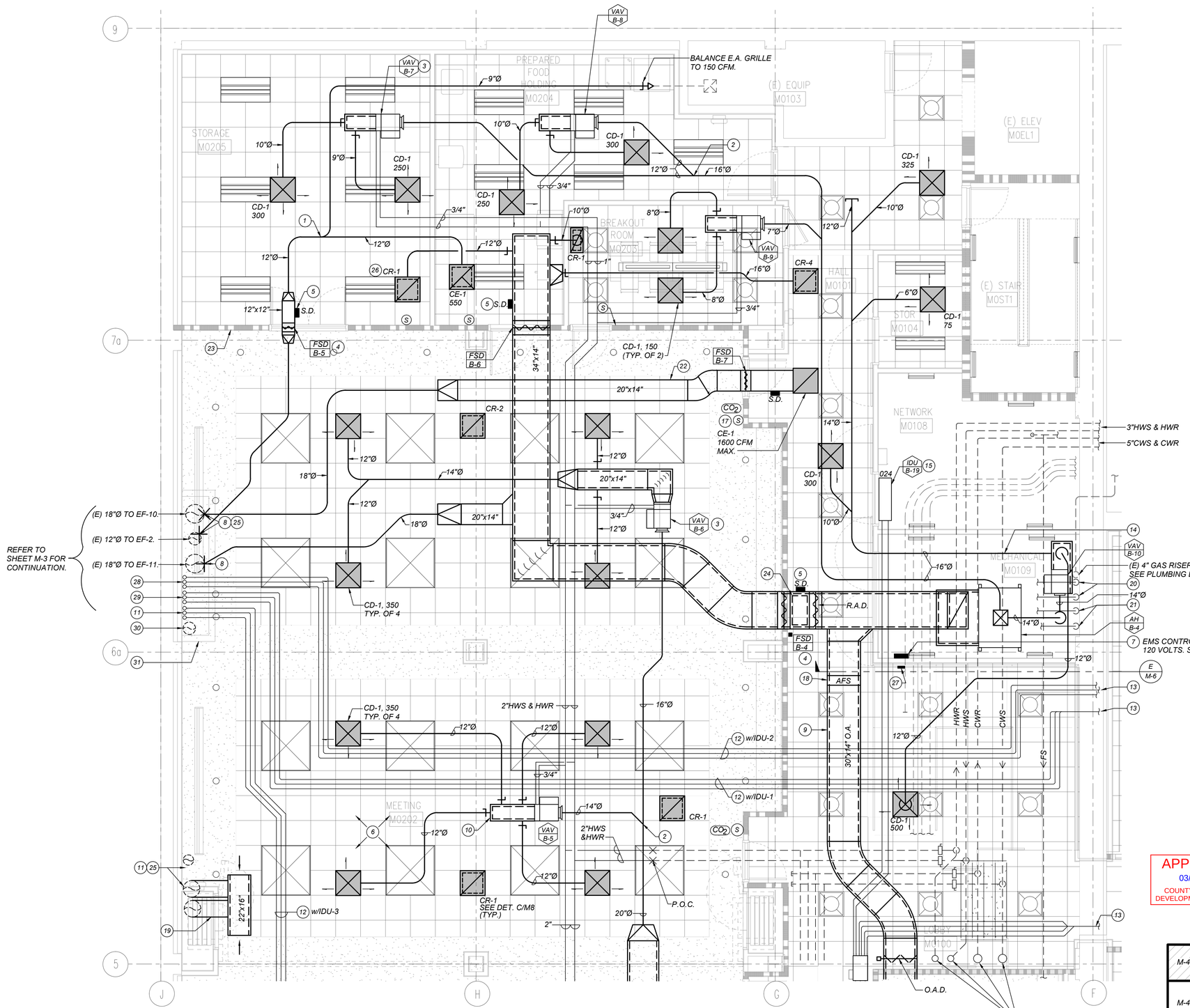
FILE PATH:

INTERNAL NUMBER: 829

KEYNOTES:

1. Refer to Detail A/M-8 for branch dampers, typical.
2. Branch dampers not required upstream of VAV boxes.
3. Refer to typical Details C, D, and E/M-7 for VAV box mounting, controls, and piping.
4. Fire/smoke damper. Refer to Detail A/M-1.1.
5. Duct, smoke detector installed within 5' of fire/smoke dampers, typical. Refer to Electrical Drawings for specifications, installation, and wiring.
6. Space above Meeting Rooms ceilings is used as a return air plenum. Materials and wiring in this plenum must be plenum rated.
7. EMS control panel with one transformer for controller and one transformer for VAV boxes. Wiring to VAV boxes by Control Contractor.
8. Point of connection of new E.A. duct to existing.
9. Outdoor air duct with 1" thermal liner. Liner required on all Mercer O.A. ducts to prevent condensation as the inlet temperatures may be below freezing.
10. 18" x 16" (inside clear) discharge plenum with 1" liner.
11. Liquid, suction, and pressure equalizing lines routed up, in the existing, rated duct shaft, to ODUs on roof. See Sheet M-3 for continuation. Attach piping to shaft at 5' o.c. Any penetrations of the shaft in the upper floors, to gain access, must be restored to the original construction at the end of each day to maintain a 1-hour shaft rating.

    Piping shall be attached to the outer wall and will require 45 offsets around horizontal protrusions. Determine exact routing in field.
12. Liquid, suction, and pressure equalizing lines between Branch Selector Boxes and Outdoor Unit. Refer to details on Sheet M-11.1 for sizing. Horizontal runs of refrigerant piping should be routed within 12" of the structure whenever possible. All lines shall be insulated in all locations.
13. Liquid, suction, and pressure equalizing lines through existing holes in the masonry wall. See notations on Sheet M-4.3.
14. Sheet metal duct. Offset up.
15. Refer to Detail J/M-8 for installation.
16. Refrigerant lines through existing holes in masonry wall.
17. Typical room sensor with adjustable set point. See Control Diagrams and typical detail F/M-4.0.
18. Airflow station. Refer to Detail A/M-7.
19. Extend existing round ducts to relief air plenum.
20. HW supply and return piping to VAV and AH manifolds.
21. CHW supply and return piping to AH manifold.
22. Offset ductwork to avoid vertical framing of soffit, typical.
23. One-hour fire barrier where shown.
24. Access panel on bottom of duct. Coordinate locations of FSD, return air damper, and smoke detector in this area.
25. Seal around ducts and pipes entering shaft to prevent leaks into the R.A. plenum over the Meeting Rooms. Where abandoned exhaust risers have a vinyl covering, replace covering with a sheet metal cap and seal airtight. Bottom opening shall be sealed to prevent airflow, but it does not need to be enclosed to 1-hour construction.
26. Return air grille CFM equals the sum of the supply diffusers for that room unless otherwise noted, typical throughout project. Where R.A. grille CFM is shown, it shall be balanced at full, air handler VAV airflow.
27. Pressure sensor for control of EF-11.
28. Remove entire section of exhaust duct (in shaft) to EF-1 to get space for new refrigerant piping.
29. Remove entire section of exhaust duct (in shaft) to EF-3 to get space for new refrigerant piping.
30. Existing exhaust riser from floor above to roof to remain.
31. Outline of existing, rated, duct shaft to roof. Shaft is open at the bottom. Seal around ducts and piping at bottom of shaft. Opening shall be sealed to prevent airflow, but it does not need to be enclosed to 1-hour construction.

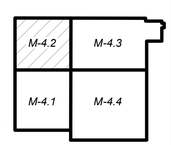


TRUE NORTH

PROJECT NORTH

ENLARGED BASEMENT RCP PLAN

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



KEYPLAN:

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

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ADDRESS:

BRIX & MERCER BLDGS
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FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

ENLARGED BASEMENT HVAC PLAN

SHEET NUMBER

M-4.2

FILE PATH:

INTERNAL NUMBER: 829

ENLARGED BASEMENT RCP PLAN

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

TRUE NORTH

PROJECT NORTH

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

REFER TO SHEET M-4.0 FOR M-4.3 AND M-4.4 KEYNOTES.

KEYPLAN:

M-4.2 | M-4.3
M-4.1 | M-4.4

FOR DEMO AND NEW WORK IN MECHANICAL ROOM, SEE SHT. M-2.1

SEE SHEET M-4.2 FOR CONTINUATION.

(E) 12"Ø S.S.CAP AND ABANDON IN PLACE.

S.A. DISCHARGE INTO PLENUM.

FROM BSB B-7

HWR
HWS
HWR
HWS

AH B-5

(E) 52"x26"

(E) CHILLER B0102

(E) 36"x10"

(E) BOILER B0103

(E) ELECT B0104

ELEV B0ELT

STAIR B0ST1

VESTIBULE B0100

(E) ELECT B0106

HALL B0210

JANITOR B0109

VESTIBULE B0101

HSKP B0107

TLP B0108

HALL B0209

LOUNGE B0205

MEN TLT B0206

WOMEN TLT B0207

HALL B0204

BREAK B0203

KITCHEN B0202

(E) 16"x16" (95.5)

(E) 16"x16" (102)

CE-2, 75 CFM

CD-1, 50 CFM

CE-3, 10"x10" 150 CFM

8"Ø DROP TO CD-3 225 CFM, 3W

CE-3 10"x10" 50 CFM

(E) 12"x8"

(E) 48"x16"

P.O.C.

CD-3 275

100 CFM O.A.

CD-1 100 CFM O.A.

CR-1, 325

CD-1 325

WS-1, 16"x6" 325 CFM

WR-1, 16"x6" 325 CFM

(E) 6" F.S. TO REMAIN.

ANSUL HOOD FIRE SUPPRESSION PANEL. REFER TO DET. A/M-10

VFD FOR HOOD EXHAUST FAN.

EMS CONTROL PANEL (120V)

HOOD SWITCH PANEL. REFER TO DETAIL A/M-10

SEE FIRE SPRINKLER NOTE

(E) JUNCTION BOX.

CE-2, 14"x14" 300 CFM (TYP. OF 2)

CD-2 10"Ø NECK 225 CFM

CD-1 200

CD-1 250

CD-1 275

FG-1 800 CFM

1-1/2"HWS & HWR.

225 CFM MIN. O.A. 625 CFM MAX. O.A. TYPICAL OF 4 SYSTEMS SEE DETAIL C/M-10

RANGE HOOD MANUAL PULL STATION, REFER TO DET. A/M-10.

CWR CWS HWR HWS

24"x10" E.A. RISER TO FIRST FLOOR.

CD-1 300

DD-1 175

FSD B-29

FSD B-30

FSD B-31

FSD B-32

BSB B-4

BSB B-5

VAV B-11

VAV B-13

VAV B-14

VAV B-16

VAV B-17

VAV B-18

VAV B-19

VAV B-20

VAV B-21

IDU B-12

IDU B-13

IDU B-16

IDU B-17

IDU B-18

IDU B-20

IDU B-21

IDU B-22

BS B-6

A M-4.0

A M-5

E M-9

THE COUNTY OF FRESNO 1856

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FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

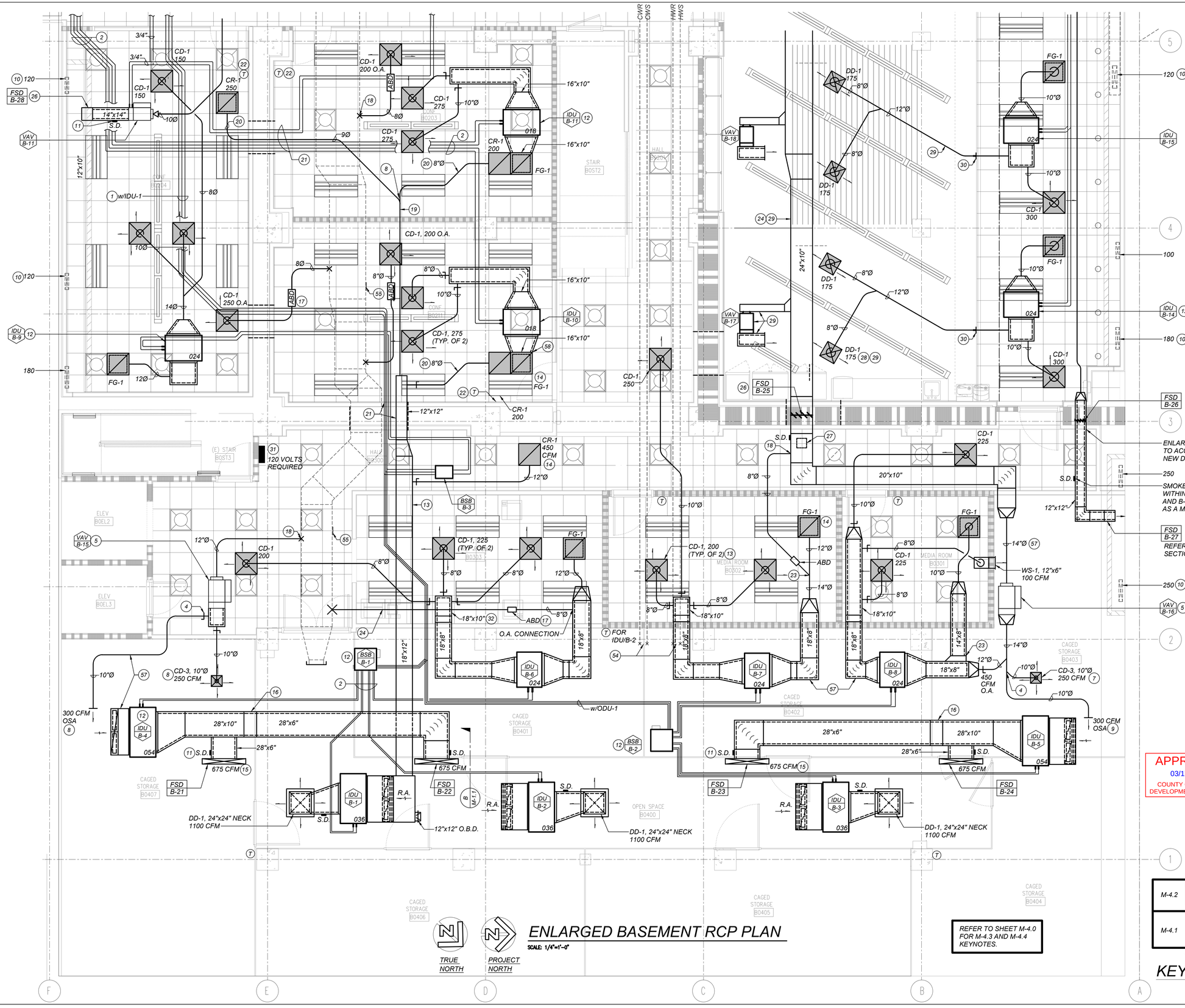
ENLARGED BASEMENT HVAC PLAN

SHEET NUMBER

M-4.3

FILE PATH:

INTERNAL NUMBER: 829



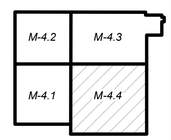
ENLARGED BASEMENT RCP PLAN

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

REFER TO SHEET M-4.0 FOR M-4.3 AND M-4.4 KEYNOTES.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

KEYPLAN:



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1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

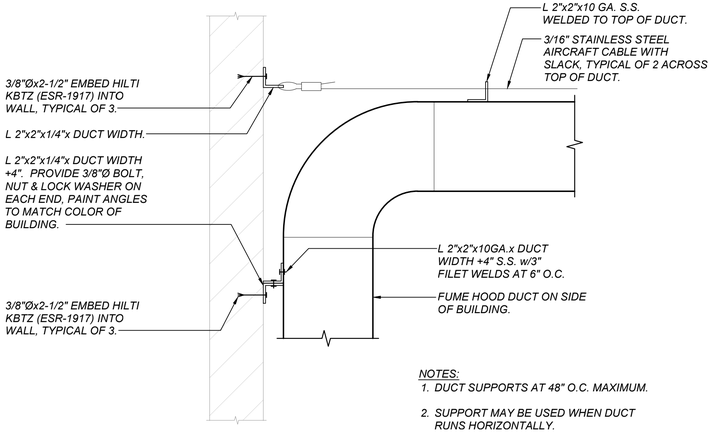
ENLARGED BASEMENT HVAC PLAN

SHEET NUMBER

M-4.4

INTERNAL NUMBER: 829

FILE PATH:



NOTES:

1. DUCT SUPPORTS AT 48" O.C. MAXIMUM.
2. SUPPORT MAY BE USED WHEN DUCT RUNS HORIZONTALLY.
3. NO SCREWS MAY PENETRATE DUCTWORK.

DUCT SUPPORT

C M-5

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

SEQUENCE OF OPERATION

Air conditioning for the Brix Break Room consists of five VRF fan coils and a range hood exhaust system. The range hood exhaust system operates at low speed (900 CFM) during occupied hours to offset outside air introduced into the space. When there is a cooking demonstration and the electric range is used, the range hood exhaust fan goes to high speed (2,500 CFM) and (4) VAV terminals open to let more outdoor air into the space to maintain neutral room pressurization. The up/down ramping of VFD needs to react slowly to approximate VAV operation.

The hood exhaust is manually started with a switch (in the Control Panel, CP-1) that instructs (through the EMS) the EF-7 VFD to go to high speed (refer to Control Diagram A/M-10).

In conjunction with the air balancer, measure the motor amps (FLA-1) at full-speed CFM to establish a baseline value of a clean-filter system. Block off the fan discharge so than fan delivers 2,200 CFM. This is FLA-2. Record values on the Air Balance Report.

If after startup, the motor amps are greater than FLA-2, the system is delivering adequate airflow to safely operate the electric range, and a green pilot will be lit. If the motor amps are less than FLA-2, the system is partially blocked, and a red pilot will be lit.

With the exception of the hood lights, I/O components of CP-1 are interfaced with the EMS controller.

If a fire at the hood trips the fusible link at the Ansul Control Panel, the following will occur:

1. Fire retardant agent will discharge into the hood.
2. A contact will close sending a signal to the Fire Alarm Panel.
3. A contact will close sending a signal to the EMS (information only).

The Fire Alarm Panel will respond and do the following:

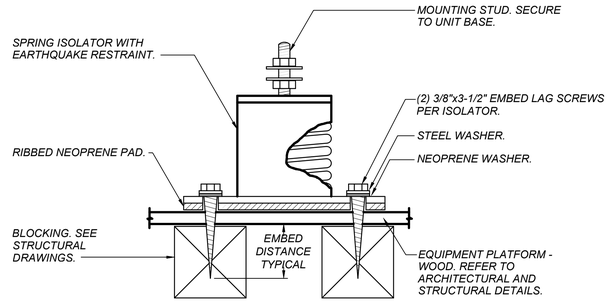
1. Activate a relay killing power to the electric range.
2. Activate a relay forcing the exhaust fan VFD to high speed (to purge the space).
3. Stop the AH/B-5 and the IDUs putting the Basement into a Passive System.

During testing, ensure that the Break Room doors can be opened due to the room negative pressure.

BREAK ROOM SEQUENCE OF OPERATION

D M-5

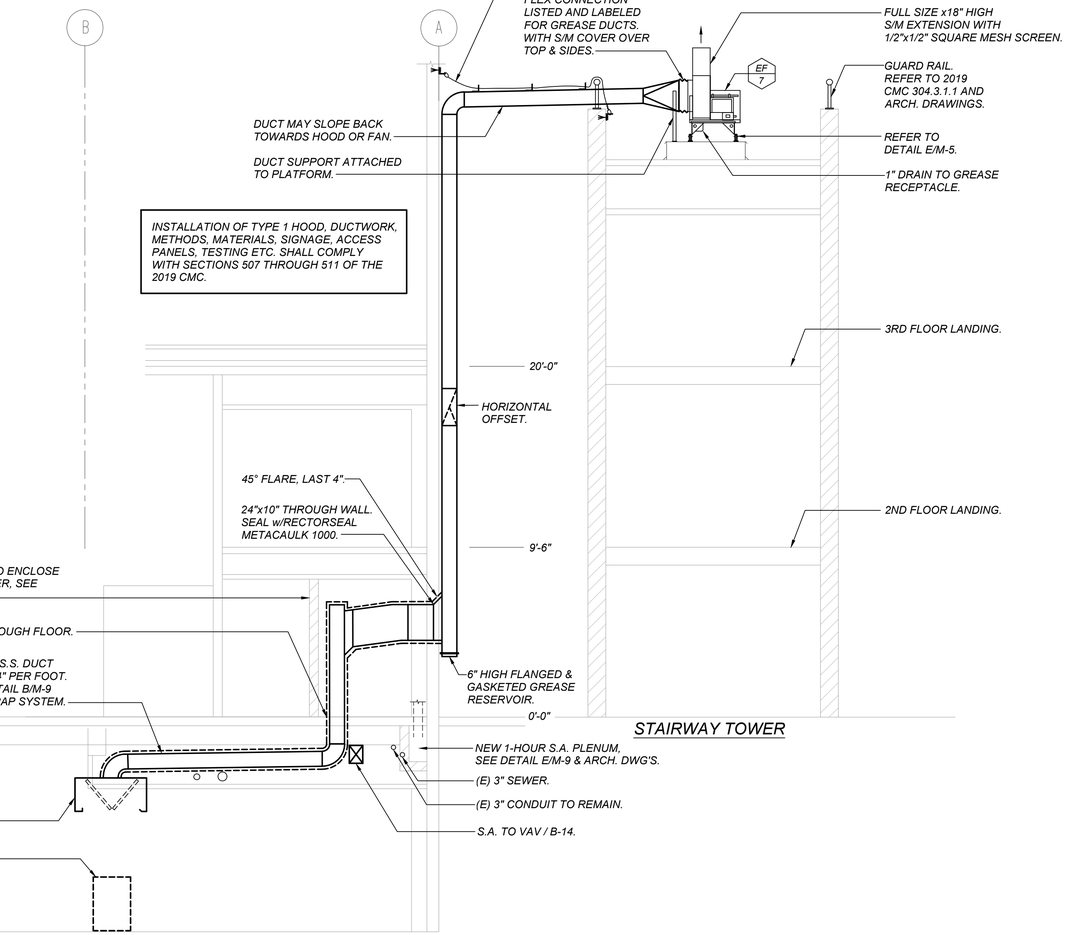
SCALE: NONE



SPRING ISOLATOR ON WOOD PLATFORM

E M-5

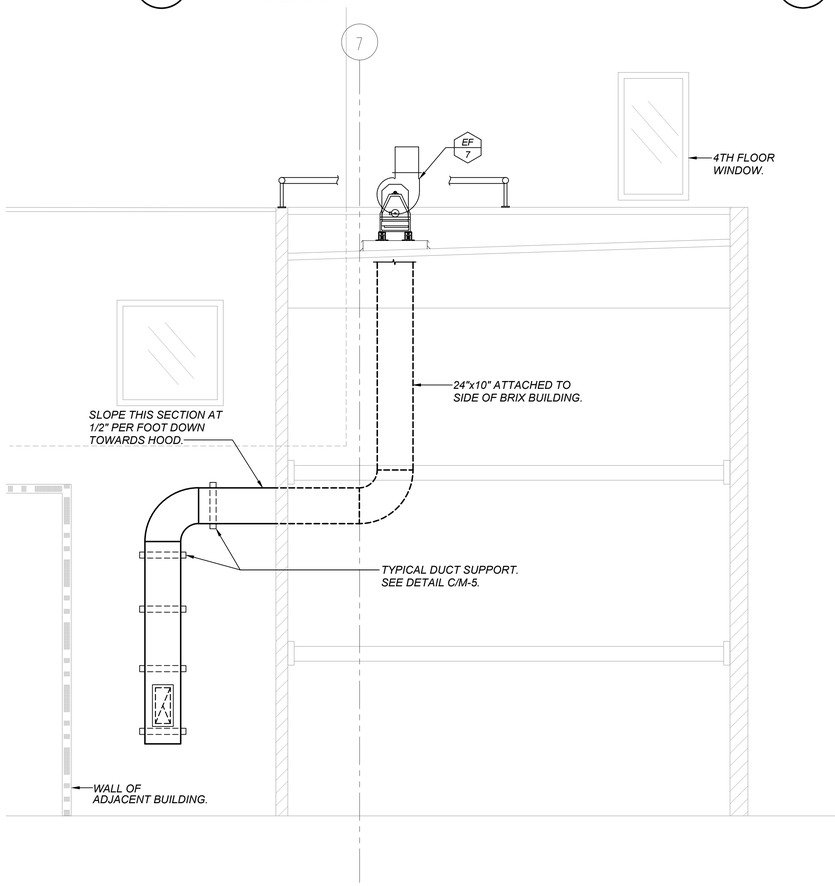
SCALE: NONE



SECTION AT BRIX BREAK ROOM

A M-5

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



SECTION AT STAIRS

B M-5

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

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COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

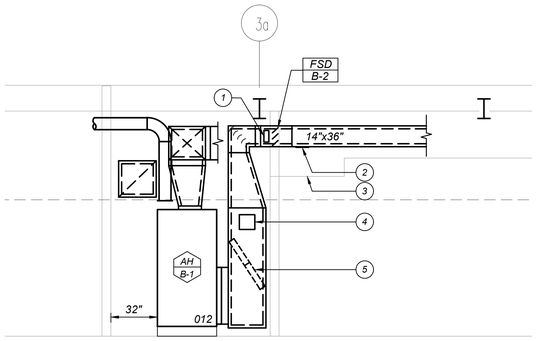
ENLARGED BASEMENT HVAC PLAN

SHEET NUMBER

M-5

INTERNAL NUMBER: 829

FILE PATH:



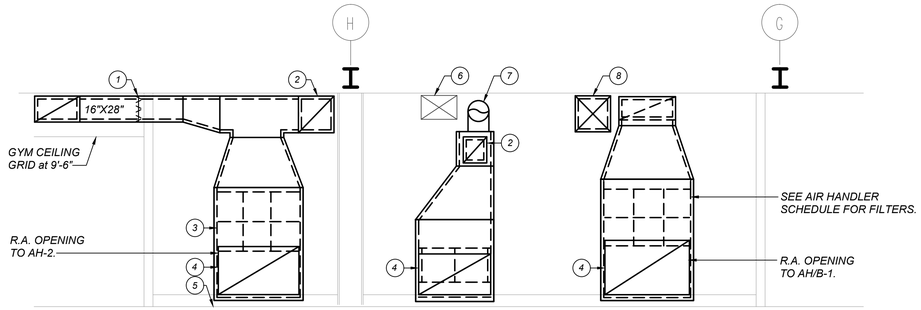
KEYNOTES:

1. FSD actuator.
2. FSD duct access panel. An access panel is also required in the soffit.
3. Meeting Room soffit at 8'-6".
4. Duct detector, see Electrical drawings. Detector must be within 5' of FSD/B-2.
5. Shop-fabricated filter rack with side access and door.

SECTION

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

A / M-6



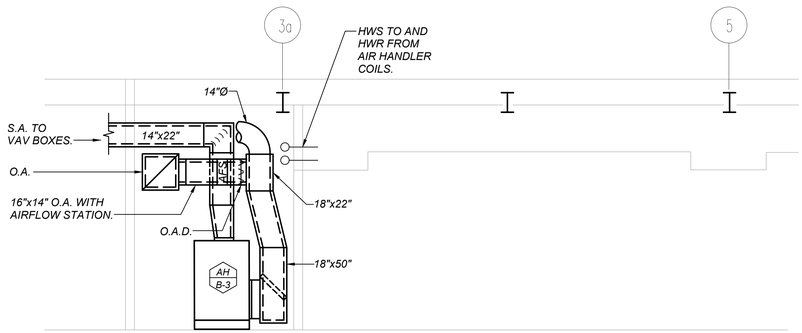
KEYNOTES:

1. Return air damper.
2. O.A. connection to mixed-air plenum.
3. Side-access filters in shop fabricated filter rack. Provide hinged door with latch. See Air Handler Schedule, Sheet M-1.1, for size and specifications.
4. R.A. opening at air handler.
5. R.A. duct supported from slab, typical.
6. S.A. duct in foreground.
7. 14" diameter from corridor grille.
8. S.A. duct to Meeting Rooms.

SECTION AT AIR HANDLER RETURN AIR DUCTS

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

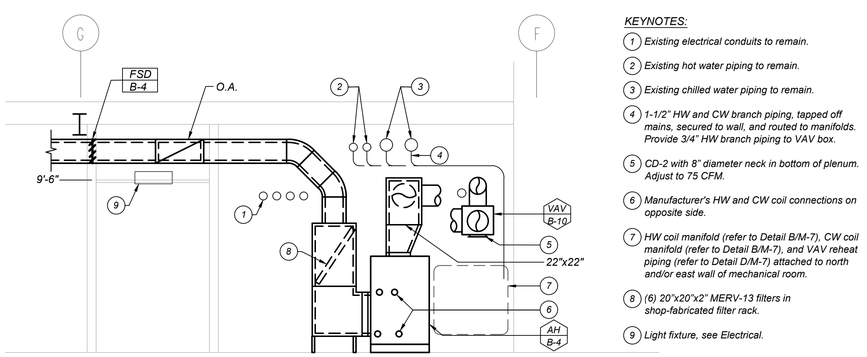
B / M-6



SECTION AT AH / B-3

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

C / M-6



KEYNOTES:

1. Existing electrical conduits to remain.
2. Existing hot water piping to remain.
3. Existing chilled water piping to remain.
4. 1-1/2" HW and CW branch piping, tapped off mains, secured to wall, and routed to manifolds. Provide 3/4" HW branch piping to VAV box.
5. CD-2 with 8" diameter neck in bottom of plenum. Adjust to 75 CFM.
6. Manufacturer's HW and CW coil connections on opposite side.
7. HW coil manifold (refer to Detail B/M-7), CW coil manifold (refer to Detail B/M-7), and VAV reheat piping (refer to Detail D/M-7) attached to north and/or east wall of mechanical room.
8. (6) 20"x20"x2" MERV-13 filters in shop-fabricated filter rack.
9. Light fixture, see Electrical.

SECTION AT AH / B-4

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

E / M-6

KEYNOTES:

1. Clearance shown is minimum.
2. Fan motor access. Filter access is on same side.
3. Hot and chilled water coil connections per Detail B/M-7. Chilled water piping for AH/B-1 shall be 2", all other hot and chilled piping shall be 1-1/2".
4. Outdoor Air duct, beyond.
5. Manufacturer's 6" high base rail, typical. See 3/S1.02 for anchorage of rail to concrete slab.
6. Activity Room ceiling height.
7. O.A. damper for AH/B-2.
8. Mechanical Room supply air diffuser with 10" diameter neck and bottom of diffuser at finished floor +7'-0". Refer to Detail A/M-8. Supply duct does not require insulation.

SECTION AT FRONT OF AIR HANDLERS

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

D / M-6

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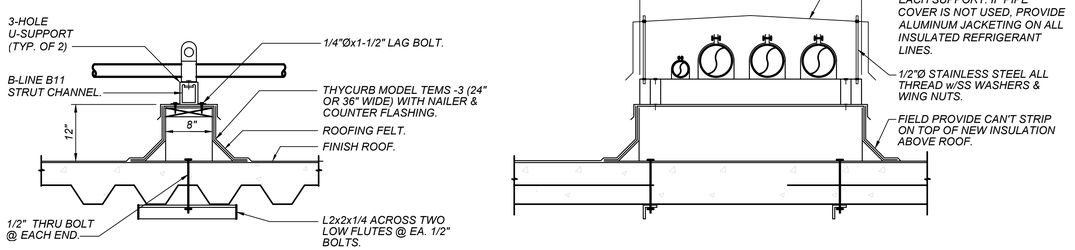

SECTION

NOTE:
1. REMOVE ROOFING & INSULATION BELOW ROOF DOWN TO TOP OF CONCRETE.

ELEVATION

REFRIGERANT PIPE SUPPORTS ON ROOF.

SCALE: NONE

F / M-6

FILE PATH:

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT
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REVISION TABLE:

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

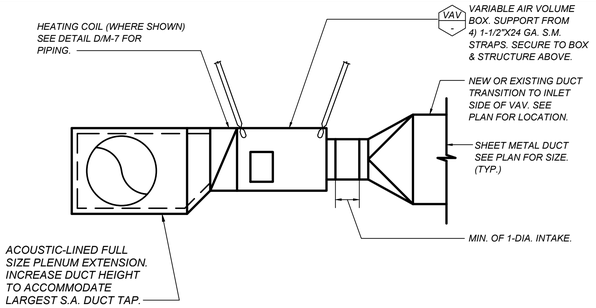
AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
SECTIONS

SHEET NUMBER
M-6

INTERNAL NUMBER: 829



VAV BOX MOUNTING

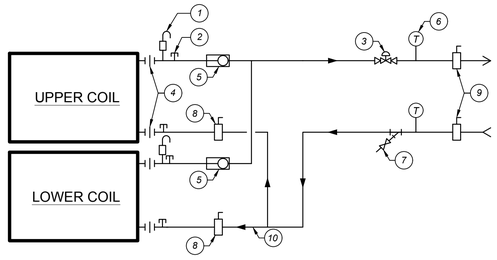
E / M-7

SCALE: NONE

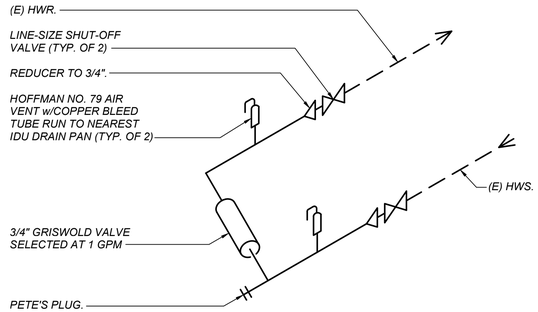
KEYNOTES:

1. AIR VENT AND PETCOCK DRAIN PIPING TO CONDENSATE PAN.
2. PETE'S PLUG, SEE PETE'S PLUG NOTE.
3. CONTROL VALVE WITH REDUCERS AND INCREASERS AS REQUIRED. FURNISH UNIONS OR FLANGES FOR VALVE REMOVAL.
4. UNION, TYPICAL. PROVIDE REDUCERS AND INCREASERS AS REQUIRED.
5. COMBINATION BALANCING/SHUTOFF VALVE WITH MEMORY STOP.
6. THERMOMETER AND WELL, SEE SPECS.
7. STRAINER WITH BLOWDOWN VALVE AND 3/4" HOSE END CONNECTION.
8. COIL ISOLATION VALVES.
9. SHUT OFF VALVE. LOCATE CLOSE TO MAINS.
10. BRANCH PIPING TO COILS SHALL EQUAL MFR'S COIL SIZE UNLESS OTHERWISE NOTED.

PETE'S PLUG NOTE (Typical)
Pete's Plugs, or other devices with serviceable parts, must extend at least 1/2" beyond pipe insulation. Use extended length Pete's Plugs if required. Provide vapor barrier continuity by sealing opening with reinforcing mesh, one coat of lagging adhesive, and a final coat of vapor barrier coating. Provide same sealing method on insulation without a vapor barrier.



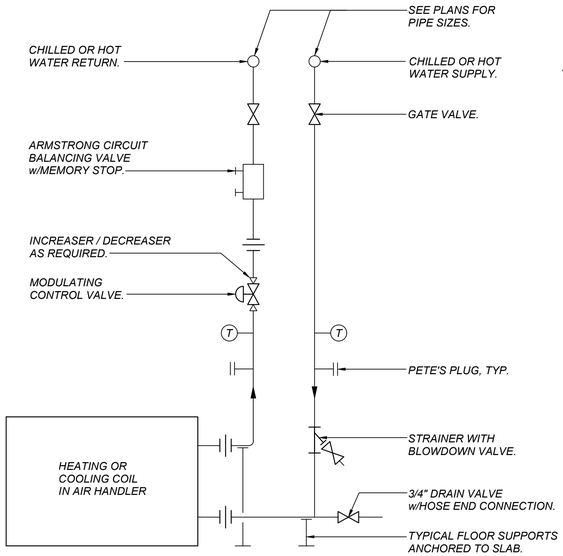
HOT OR CHILLED WATER COIL



STACKED COIL PIPING CONNECTIONS FOR AH / B-5

F / M-7

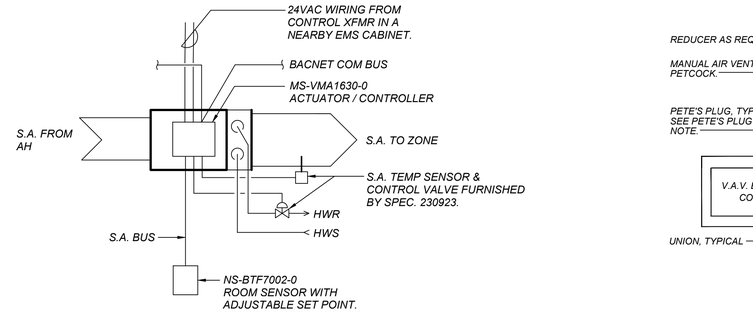
SCALE: NONE



AIR HANDLER COIL CONNECTIONS

B / M-7

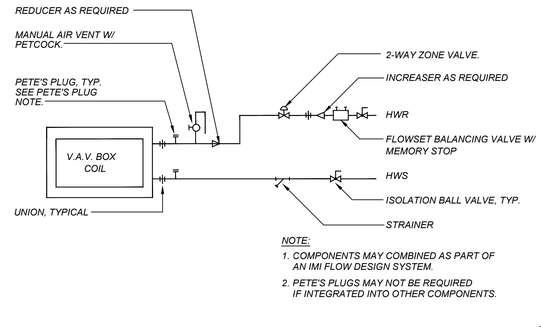
DIAGRAMMATIC



END-OF-LINE CONNECTION

G / M-7

SCALE: NONE

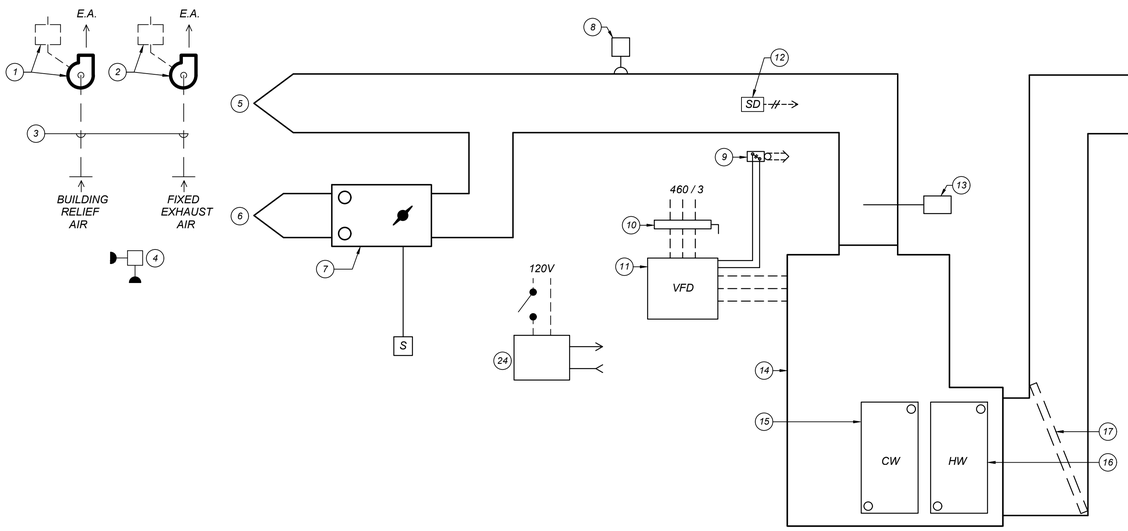


NOTE:
1. COMPONENTS MAY COMBINED AS PART OF AN IMI FLOW DESIGN SYSTEM.
2. PETE'S PLUGS MAY NOT BE REQUIRED IF INTEGRATED INTO OTHER COMPONENTS.

TYPICAL VAV CONTROL

C / M-7

SCALE: N.T.S.



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COUNTY OF FRESNO
DEVELOPMENT SERVICES

VAV BOX COIL DETAIL

D / M-7

SCALE: NONE

KEYNOTES:

1. Exhaust fan(s) and starter system(s), to remain. Fans work in conjunction with room pressure sensors (Keynote 4) to relief excess air.
2. Exhaust fan and starter system which are connected to fixed exhausts grilles.
3. Existing exhaust ducts, in rated shaft, extending to the roof shall remain.
4. Room static pressure sensors.
5. Supply air to other VAV boxes. AH-2 has no VAV terminals.
6. Supply air to zone.
7. Typical VAV terminal with reheat coil, DDC controller, and room temperature readout with adjustable set point. Refer to Details C, D, and E, this sheet.
8. Duct supply air pressure static sensor and wiring back to EMS. Pressure is used to control fan speed.
9. Fire alarm relay which interrupts VFD enable in case of a Basement alarm. Wiring from VFD to duct detector by Specification Section 250900.
10. Typical power and disconnect switch by Electrical.
11. Typical VFD furnished under Specification Section 250900.
12. Duct detector notifies Fire Alarm Panel when smoke is detected. See Electrical Drawings and Sheet M-15
13. Supply air temperature sensor.
14. Typical Mercer air handler. AH-1, AH-3, and AH-4 are variable air volume. There are no VAV terminals on AH-2, but the supply air volume may vary at the air handler.
15. Chilled water coil. Refer to Detail B, this sheet.
16. Hot water coil. Refer to Detail B, this sheet.
17. Duct mounted MERV-13 filters, typical.
18. R.A. damper and actuator. Refer to plans to determine if R.A. and O.A. dampers are linked.
19. Outdoor air airflow station used to maintain a minimum O.A. CFM. The device shall be the thermistor type and must be removable and/or accessible for cleaning because O.A. is unfiltered.
20. O.A. damper and actuator. Damper closes to the O.A. when air handler is OFF.
21. Return air temperature sensor.
22. Outdoor air temperature sensor. This sensor is global and used for Mercer air handlers.
23. Existing O.A. drop common to other air handlers on the floors above. Pressure at this point may exceed -1.2" w.c. and the temperature may be less than 30 degrees.
24. Typical air handler EMS controller, in cabinet, with transformer, fuses, input/output wiring, BACnet communications, etc. by Specification Section 250900.

TYPICAL MERCER AIR HANDLER

A / M-7

SCALE: NONE

FILE PATH:

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

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DATE: 11/15/2022
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ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

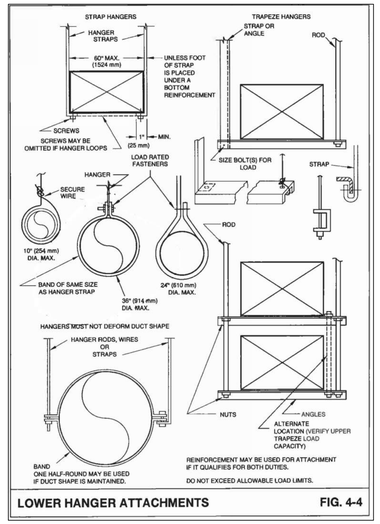
SHEET TITLE:

DETAILS

SHEET NUMBER

M-7

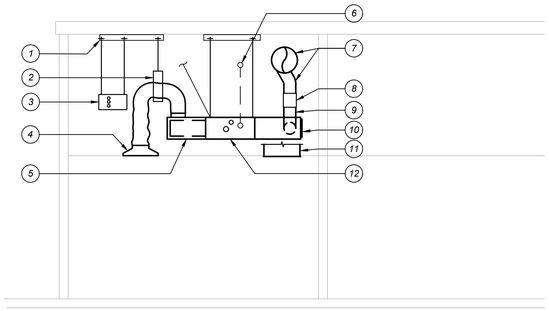
INTERNAL NUMBER: 829



DUCT SUPPORT DETAIL

H M-8

SCALE: NONE



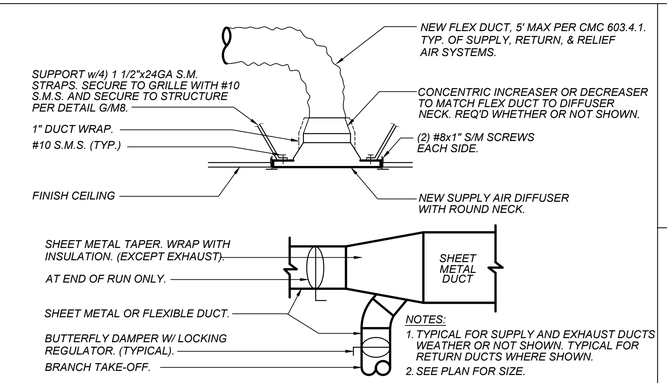
SECTION

E M-8

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

KEYNOTES

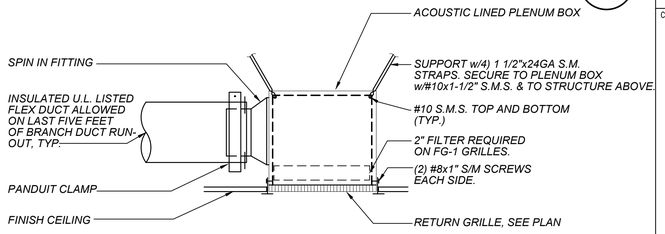
1. Construction channel secured to concrete deck with 3/8" diameter Hilti KBTZ concrete anchor w/2" minimum embed, typical of 3 per channel.
2. Flexible duct support and strap to structure. Five feet of flex duct, maximum. Refer to Specifications, DUCTWORK INSTALLATION.
3. Branch Selector Box, BSB. Refer to typical Detail G/M-8.
4. Flex duct connection to round-neck diffuser. Duct size equals neck size unless otherwise shown. Refer to Detail A/M-8.
5. Supply air plenum internally lined. Minimum inside clear height shall be 10".
6. Pumped condensate drain. Refer to Plumbing Drawings. Refer to IDU Schedules for which units are pumped.
7. Sheet metal duct for tempered outdoor air from AH/B-5. No insulation required on Brix side, tempered O.A. duct.
8. Greenheck Model ABD automatic balancing damper. Damper regulates O.A. CFM to +/- 10% when the upstream pressure is between 0.2 and 2.0 in w.c. Refer to IDU schedules for O.A. CFM. Damper size equals duct size unless otherwise shown. When O.A. CFM exceeds ABD capacity, a VAV box, set for constant volume, is required. A branch damper from the tempered O.A. duct to the IDU return plenum is not required.
9. Tempered, O.A. flex duct to IDU R.A. plenum.
10. Return air plenum. Insulation may be lined or external.
11. Filter/return grille beyond. Return air duct size matches supply duct size unless otherwise noted. Refer to Detail B/M-8.
12. Typical IDU. Refer to Detail for G/M-8 for support.



SUPPLY AIR PLENUM AND BRANCH DUCTS

A M-8

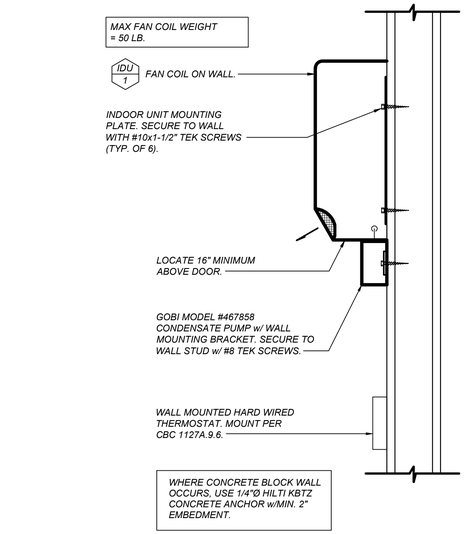
SCALE: NONE



RETURN AIR GRILLE w/FILTER

B M-8

SCALE: NONE



INDOOR UNIT - WALL CASSETTE

J M-8

SCALE: NONE

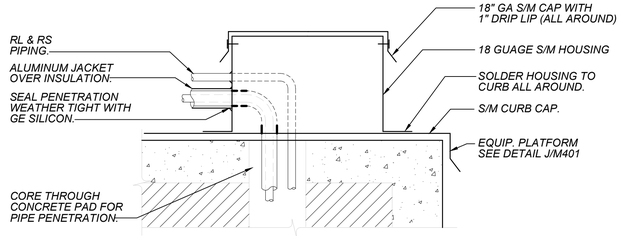
PUMP/FLOAT SWITCH INTERLOCK

SPLIT SYSTEM WIRING

HIGH-SIDE WALL SPLIT SYSTEM CONTROL

F M-8

SCALE: NONE



INSULATED PIPE ROOF PENETRATION

K M-8

SCALE: NONE

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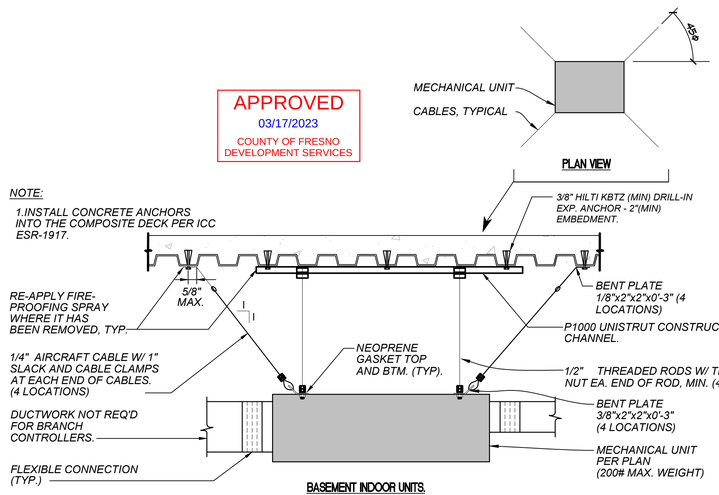
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES



BASEMENT INDOOR UNITS.

INDOOR UNIT /BRANCH CONTROLLER MOUNTING

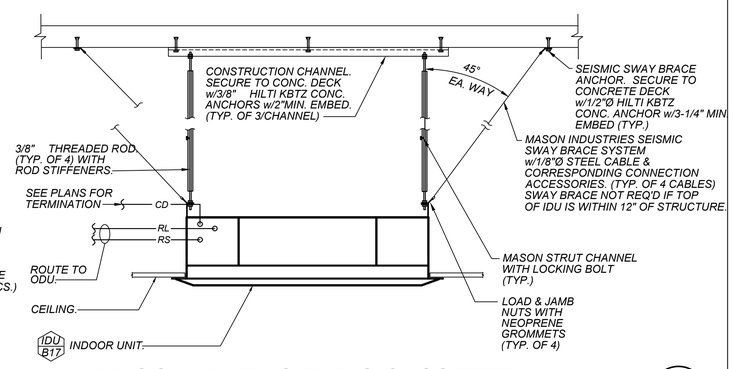
G M-8

SCALE: NONE

RETURN AIR PLENUM

C M-8

SCALE: NONE



INDOOR UNIT - CEILING CASSETTE

D M-8

SCALE: NONE

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL 8/23 STATE OF CALIFORNIA

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FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

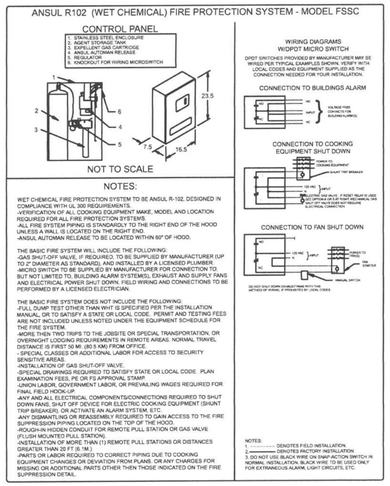
DETAILS

SHEET NUMBER

M-8

INTERNAL NUMBER: 829

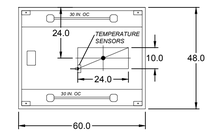
FILE PATH:



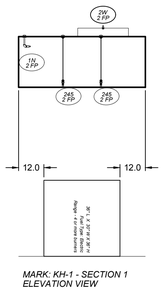
HOOD FIRE PROTECTION SYSTEM

C / M-9

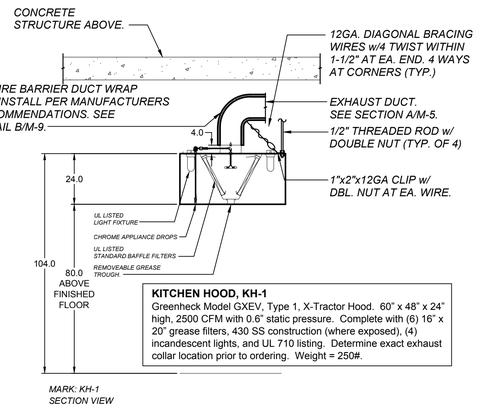
SCALE: NONE



MARK: KH-1 - SECTION 1
PLAN VIEW



MARK: KH-1 - SECTION 1
ELEVATION VIEW



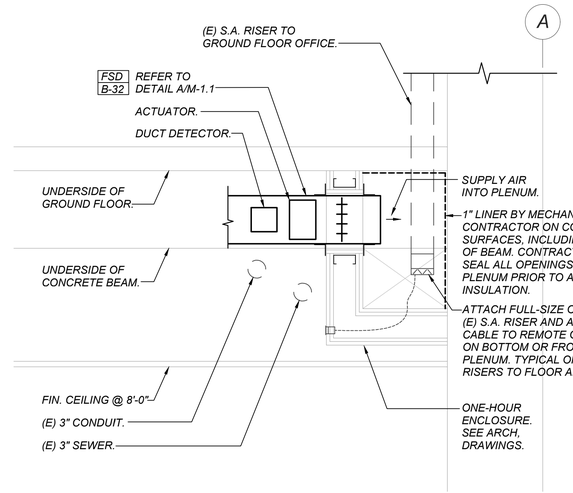
KITCHEN HOOD, KH-1
Greenheck Model GXEV, Type 1, X-Tractor Hood. 60" x 48" x 24" high, 2500 CFM with 0.6" static pressure. Complete with (6) 16" x 20" grease filters, 430 SS construction (where exposed), (4) incandescent lights, and UL 710 listing. Determine exact exhaust collar location prior to ordering. Weight = 250#.

MARK: KH-1
SECTION VIEW

KITCHEN HOOD

D / M-9

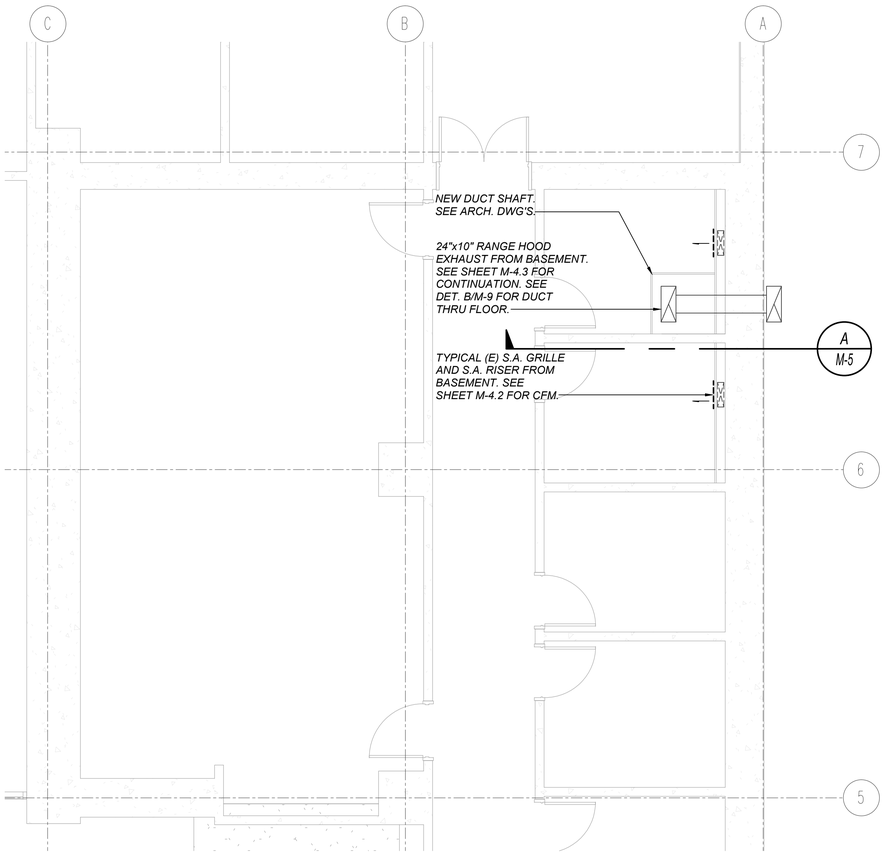
SCALE: NONE



SECTION AT 1-HOUR SUPPLY-AIR PLENUM

E / M-9

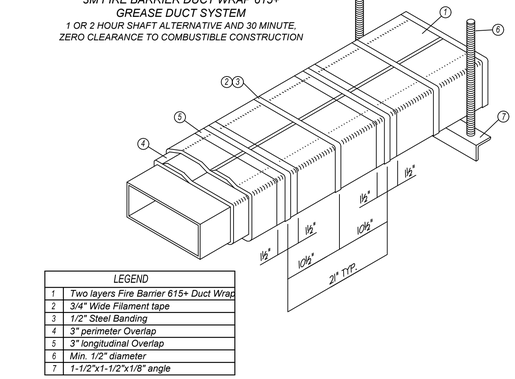
SCALE: 1"=1'-0"



PARTIAL GROUND FLOOR MECHANICAL PLAN

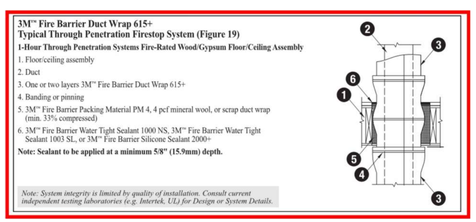
A / M-9

SCALE: NONE



LEGEND	
1	Two layers Fire Barrier 615+ Duct Wrap
2	3/4" Wide Filament tape
3	1/2" Steel Banding
4	3" perimeter Overlap
5	3" longitudinal Overlap
6	Min. 1/2" diameter
7	1-1/2"x1-1/2"x1/8" angle

DUCT WRAP & HANGERS



THROUGH PENETRATI0N DETAIL

3M FIRE WRAP - DUCT WRAP DETAILS

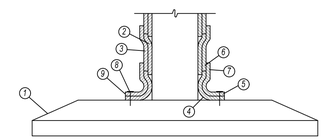
B / M-9

SCALE: NONE

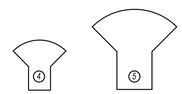
detail #

INSTALL FIRE BARRIER 615+ DUCT WRAP IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

SUGGESTED INSTALLATION FOR
TERMINATION OF DUCT WRAP AT NON-RATED HOOD LOCATION

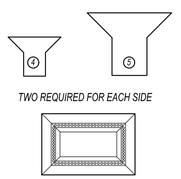


ROUND DUCT PATTERN:



TWO REQUIRED FOR EACH SIDE

RECTANGULAR DUCT PATTERN:



TWO REQUIRED FOR EACH SIDE

LEGEND	
1	Hood
2	1st layer Fire Barrier 615+ Duct Wrap
3	2nd layer Fire Barrier 615+ Duct Wrap
4	1st layer transition pattern Fire Barrier 615+ Duct Wrap
5	2nd layer transition pattern FireBarrier 615+ Duct Wrap
6	3" minimum overlap
7	Banding
8	Anchor fastner system
9	Bar stock 2" - 3" wide, 1/8" thick

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

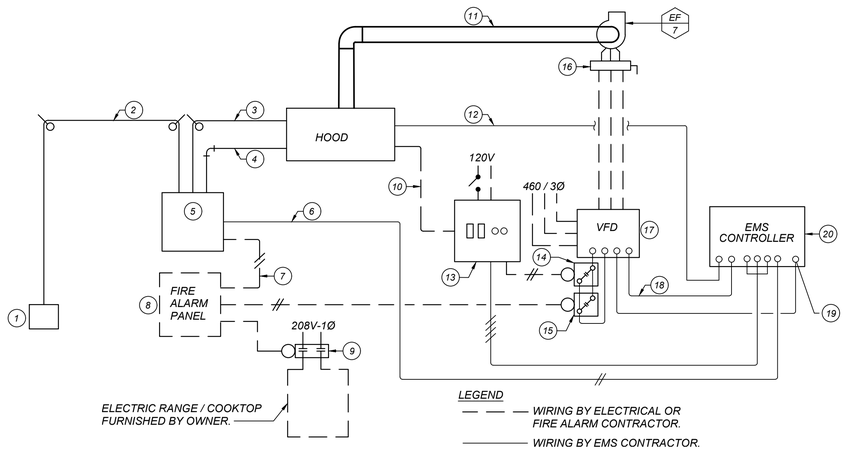
PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
DETAILS

SHEET NUMBER
M-9

INTERNAL NUMBER: 829

FILE PATH:



KEYNOTES:

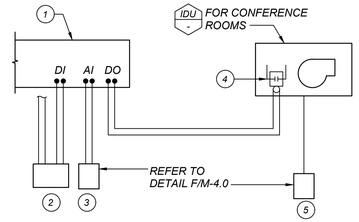
1. Manual pull station furnished with hood. Mount at finished floor + 42" at point of egress.
2. Cable and pulley system for manual pull station.
3. Cable and pulley system from hood to Ansul panel.
4. Expellant gas line piping to hood.
5. Ansul R102 (wet chemical) fire protection system cabinet. See plans for location.
6. Wiring from dry contacts at Ansul panel to EMS. Completion of this circuit notifies the EMS that liquid fire suppressant was released, but the EMS does not take any action.
7. Wiring from "Alarm Initiating Switch" that the Ansul system was activated.
8. Fire Alarm Panel (see Electrical Drawings) with input/output (for this system) as follows:
   A. Input from Ansul panel
   B. Output to high-speed relay
   C. Output to range-hood-off relay
9. Fire alarm relay to disconnect Range/cooktop during a hood fire. See Electrical Drawings.
10. Wiring from CP-1 to hood lights by Division 16.
11. Grease hood exhaust ducting.
12. Wiring from hood temperature sensors to EMS. EMS to provide conversions as required to read the correct temperature. If the hood temperature exceeds 100 degrees, the EMS will switch the exhaust fan to high speed.
13. CP-1 switch panel mounted per Detail F/M-4.0. Provide with inputs/outputs as follows:
    A. Hood lights
    B. Fan ON high speed
    C. "Ready for Cooking" green pilot light
    D. "Not Ready for Cooling" reg pilot light
14. High-speed relay from CP-1.
15. High-speed relay if given a signal from the FAP. This relay must be furnished by the Fire Alarm Contractor.
16. Typical disconnect by Spec. Division 16.
17. VFD for hood exhaust fan furnish by EMS contractor. Furnish with BACnet card. If the auxiliary contact circuit is completed, the fan will go to high speed. High speed and low speed RPMs are field determined with coordination from the air balancing agency.

    At High and Low speeds with clean filters, record the amperage of EF motor. Through BACnet, the EMS shall the check the VFD and determine if the amperage is within +/- 20% of the original determined speed. If it is not, this may indicate a motor fault or dirty filters, and an ALARM will be issued to the system.
18. VFD enable from the EMS. The default start position is low speed.
19. BACnet wiring by EMS contractor.
20. EMS BACnet controller with the minimum interfaces as follows:
    A. VFD enable
    B. Hood temperature reading
    C. Fan ON switch from CP-1
    D. "Ready for cooking" light enable
    E. "Not ready for cooking" light enable

RANGE HOOD VENTILATION CONTROL

A / M-10

DIAGRAMATIC



KEYNOTES:

1. *A portion of a nearby EMS controller using (1) digital input, (1) analog input, and (1) digital output. Provide a power source for the "DO" to activate a relay at the IDU. Wiring, sensors, power supplies, and relay shown shall be provided by the EMS contractor.*
2. *Occupancy sensor. Provide power from the EMS controller panel.*
3. *Wall plate temperature sensor.*
4. *Relay to interrupt the fan circuit at the IDU.*
5. *Hard-wired, room thermostat furnished with the IDU.*

TYPICAL OF CONFERENCE ROOMS B0203, BO204, & B0211

CONFERENCE ROOM CONTROL

B / M-10

DIAGRAMATIC

SEQUENCE OF OPERATION:

This sequence shuts off the IDU fan to save energy, it does not vary the Outdoor Air CFM to the room. AH/B-5 supplies Outdoor Air to this room during business hours.

The IDU shall operate one hour prior to occupancy to maintain set point temperature. At time of occupancy, the IDU shall shut OFF.

The IDU shall start if:

A. The occupancy sensor senses people, or if
B. The room temperature is outside the range of 68 to 76 degrees (software adjustable).

Once the IDU starts, it will stay ON for a period of 10 minutes. The EMS will then check for occupancy or temperature conditions to determine if the fan will stay ON.

BUILDING EMS POINTS LIST

Item	Point Description	Units	Point Type	Trend	Alarm	Totalize	Notes
Air Handlers (AH/B-1, AH/B-2, AH/B-3, AH/B-4)							
	Supply Fan Enable	Off On	DO	X			Hard wired
	Fan Status	Off On	DI	X	X	X	Through BACnet
	Fan Speed (to VFD)	%	AO	X			Through BACnet
	Supply Air Temperature	Deg F	AI	X	X		
	Return Air Temperature	Deg F	AI	X	X		
	Mixed Air Temperature	Deg F	AI	X	X		Not required for AH/B-5
	Chilled Water Control Valve	%	AO	X			
	Hot Water Control Valve	%	AO	X			
	Outside Air Airflow Station	CFM	AI	X			See Note 2
	Outside Air Damper	%	AO	X			
	Return Air Damper	%	AO	X			Not required for AH/B-5
	California Economizer Status	Working or Fault	DO	X	X		
	Downstream Duct Static Pressure	in. W.C.	AI	X	X		
	Total Supply Airflow	CFM	Calculation	X			Summation of VAV Boxes (N.A. to AH/B-2)
	Filter Status	in. W.C.	AI	X	X		
	Occupancy Sensor in room for AH/B-1	Occupied, Not Occupied	DI	X		X	To allow for CFM reduction
	Occupancy Sensor in room for AH/B-3	Occupied, Not Occupied	DI	X		X	To allow for CFM reduction
Air Handler AH/B-5							
	Supply Fan Enable	Off On	DO	X			Hard wired
	Fan Status	Off On	DI	X	X	X	Through BACnet
	Fan Speed (to VFD)	%	AO	X			Through BACnet
	Supply Air Temperature	Deg F	AI	X	X		
	Entering Air Temperature	Deg F	AI	X	X		
	Chilled Water Control Valve	%	AO	X			
	Hot Water Control Valve	%	AO	X			
	Outside Air Airflow Station	CFM	AI	X			
	Basement Isolation Damper, SD-40	Open Close	DO	X			
	Damper end switch - fully open	Open	DI				
	Damper end switch - fully closed	Closed	DI				
	Downstream Duct Static Pressure	in. W.C.	AI	X	X		
	Filter Status	in. W.C.	AI	X	X		
Typical VAV Box with Reheat							
	Air Volume Control	%	AO	X			
	Air Volume Monitor	CFM	AI	X			
	Leaving Air Temperature	Deg F	AI	X	X		
	Hot Water Control Valve	%	AO	X			
	Room Temperature Sensor with Adjustable Set Point	Deg F	AI	X	X		
Typical VAV Box for Volume Control Only							
	Air Volume Control	%	AO	X			
	Air Volume Monitor	CFM	AI	X			
VRF Systems							
	ODU-1 Status	Off On	DI	X			Through BACnet
	ODU-2 Status	Off On	DI	X			Through BACnet
	ODU-3 Status	Off On	DI	X			Through BACnet
	Interface EMS to iTouch Controller						Refer to Sheet M-11.2
General Building Existing Exhaust Fans, EF- 2, 5, 13							
	Fan Enable	Off On	DO	X			Field verify existing wiring
	Fan Status	Off On	DI	X	X		Current Sensor
Building Economizer Relief Fans - 3-phase (EF-4, 10, 11, 12)							See Note 3
	Fan Enable	Off On	DO	X			Hard wired
	Fan Status	Off On	DI	X	X	X	Through BACnet
	Speed Control	%					Through BACnet
Kitchen Hood Exhaust Fan, EF-7							See Detail A/M-10 for control
Ground Floor Temperature Control							
	Provide room thermostats on Ground Floor for IDU-B4 & IDU-B-5						See Note 4
	Provide room sensors for VAV/B-11, B-12, B-13, & B-14						See Note 4 and Detail C/M-7
Miscellaneous Mechanical Systems							
	Outside Air Temperature	Deg F	AI	X	X		Global in Mercer ductwork
	Mercer Network Room Temperature Sensor	Deg F	AI	X	X		Monitor only
	Conference Room Control (IDUs B-9, B-10, B-11)						See Detail B/M-10
	Occupancy Sensor	Off On	DI				
	IDU Disable	Off On	DO			X	
	Room Temperature	Deg F	AI	X			

NOTES:

1. For VAV terminals or IDUs serving the Ground Floor, replace the existing room sensor with a new sensor. Restore wall surfaces where existing sensors were removed.
2. Airflow station shall be the thermistor type because entering air is unfiltered. Airflow stations shall have access for cleaning.
3. Fans may be new or existing with new motors.
4. Remove existing controls on the Ground Floor and replace with new VRF or VAV room controllers. Locate new sensors or thermostats in the same location and patch wall.
5. This is a PARTIAL list. Other EMS points may be required by the Sequences of Operation.

EMS POINTS LIST

D / M-10

DIAGRAMATIC

GENERAL

Failure of any device commanded to start shall signal an alarm and cause the next device in the sequence to start.

No more than 10 HP shall start at one time. This applies during any startup, including startup after power interruption. When new systems are installed on existing buildings with existing motors, allowance shall be made for existing motors. Provide a four second delay between motor startups.

Under Specification Section 230923, provide labor, tools, services, electrical connections and equipment required by the specifications, mechanical plans, control drawings, points list, and sequences of operations. A control device, shown or referenced once, is required; it may not be cross referenced. Devices requiring control shown on the mechanical plans, but which are not addressed by control references or the Mechanical Equipment Schedule, must be interlocked with and/or controlled by the EMS.

Control diagrams are diagrammatic and show the intent of a sequence, but not the exact details pertaining to all points of connection. Provide power supplies and control interfaces as required. If systems are designed to operate under Emergency Power or UPS, the EMS controllers must also function under these modes.

Where existing systems are replaced with new systems, existing control devices, linkages, supports, wiring, conduit, pneumatic tubing, etc. shall be removed on exposed walls. Existing conduit and wiring above hard ceilings which remain, may be abandoned in place.

Timing Sequences

The opening and closing of dampers and the starting (or ramping) of VFD-controlled motors often involves various time delay sequences to prevent over or under pressurizing rooms or ducts. These timing sequences shall be provided under Specification Section 230923.

Variable Frequency Drives

Variable Frequency Drives shall communicate with the EMS. Input information shall include start/stop and a signal to indicate the desired speed. Information returned to the EMS shall include output speed (in %). A start signal to ENABLE the VFD shall come from a hard-wired connection from the EMS or device, not through BACnet. Drives shall be ABB.

Field programming of VFDs shall be provided by the supplier of that equipment. Programming shall include ramping characteristics, setting the full-load amps for the connected motors, maximum speed, and other information as may be required to satisfy the sequences of operation. VFDs shall be set to ramp down slowly. Output speed signal of equipment with BACnet cards shall be reported by BACnet.

EMS Control Panels

When existing EMS controllers are reused (with new connections) or replaced, existing connected inputs and outputs must be reconnected. With new controllers, existing circuits must be reprogrammed to operate "as before" or as noted. Whether the controller is reused or replaced, all connections must be documented on the Control Drawings for this project. Locations of new panels shown on the drawings are approximate and require field verification. Power for the controller panel shall come from the A/C unit transformer with wiring and conduit by Specification 230923 unless otherwise noted on the drawings. Provide a separate transformer if required by controller and other connected loads. Power (24 VAC) for VAV terminals shall come from nearby EMS panels.

Current Sensors

For fan systems with current sensors, the EMS shall be able to detect the difference between a fan under load and one with a broken belt. Current sensors are required on the supply blower, each compressor, and exhaust/relief fans within new equipment. If airflow stations or another method will detect "no flow," then current sensors are not required.

EXHAUST FANS

Exhaust fans shall be interlocked as shown on the Mechanical Equipment Schedule or the Control Diagrams. Toilet room exhaust fans interlocked with the EMS shall follow the same schedule as the A/C system that supplies supply air to the toilet room.

In addition to controlling new exhaust fans, the EMS must be able to start/stop existing fans as shown on Sheet M-3.

AIR CONDITIONING SYSTEMS (General)

For the purposes of this section, "air conditioning systems" described below shall include, packaged air conditioners and unit heater. General sequences shall apply to all such systems unless otherwise noted. Systems not specifically defined with a control sequence shall follow the sequence of the most similar system.

Air conditioning systems shall start one hour prior to occupancy. O.A. dampers shall open to a minimum position to admit O.A. CFM as specified on the plans.

Optimal Start: Required per Section 120.2 (k)

When cold, outdoor conditions occur, the EMS may start the units more than one hour before occupancy.

Supply Fan Control

Whenever supply fans are shut down, outdoor air dampers and exhaust/relief dampers (when automatic) will close, and exhaust fans serving that zone shall also shut down.

Once started, the supply fans of air conditioning systems will remain ON until turned OFF by the EMS at the end of the day.

Each system may have an individual start and stop time. Exhaust fans on any zone served by an air conditioning system shall be interlocked with the air conditioner.

Cooling

Unless otherwise specified, the first stage of cooling shall be with a mixture of return air and outside air as required to satisfy the cooling load. Provide temperature sensors to monitor supply air, return air, mixed air, and outdoor air.

Fire Alarm Shutdown: When Required by 2019 CMC Section 608.1

When any smoke or fire is detected by the Fire Alarm System, AH-1 through AH-5 and all the IDU's shall shut down and all fire/smoke dampers (in the Basement and those located in plane of the Ground Floor) will close. AHU-2 and its associated return fan will also shut off. Duct detectors and fire alarm relays will be furnished under Division 26. Duct detectors shall be installed under Division 23.

"Shut down" wiring from the fire alarm relays to air handler VFDs shall be furnished by the EMS contractor. "Shut down" wiring from the fire alarm relays to IDU's is high voltage and shall be provided under Division 26.

Off-Hours Operation

If off-hours operation is required in the Mercer-Basement side, AH/B-1 through AH/B-4, associated exhaust fans, and the hot and chilled central water plant will start as a system.

If off-hours operation is required in the Brix-Basement side, AH/B-5, IDU fan coils, the hot and chilled water central plant, and associated exhaust fans will operate as a system.

IDU/B-19, serving the I.T. Room, may start at any time.

Freeze Protection

If the supply air temperature of any handler drops to 45 degrees, this will indicate a failure in the control system valves, dampers, or hot water supply. If this occurs the air handler shall shut down and the EMS will issue an alarm.

VAV AIR HANDLERS (AH/B-1, B-3 & B-4)

Temperature Control

The supply-air set point temperature shall be maintained to satisfy the zone requiring the most cooling. The mixed air low limit shall be set at 45 degrees.

UNITS WITH BUILT-UP ECONOMIZERS (AH/B-1, B-2, B-3 & B-4)

Field-furnished economizer dampers and controls on air handlers must comply with the 2019 California Energy Code, Subchapter 3, Section 120.2 (i), with respect to function and economizer Fault Detection and Diagnostics.

Any fault shall be summarized as a digital output point and reported to the EMS which will issue an alarm. The EMS operator may access the system for further information.

Airflow Monitoring

Airflow monitoring of Outdoor Air is required to ensure minimum airflow when the supply fan reduces volume.

Relief Fan Control

When AH/B-1 goes into the economizer mode, relief fan EF-4 will start and modulate to offset outdoor air quantities caused by economizer operation.

When AH/B-2 goes into the economizer mode, relief fan EF-12 will start and modulate to offset outdoor air quantities caused by economizer operation.

When AH/B-4 goes into the economizer mode, relief fan EF-10 will start and modulate to offset outdoor air quantities caused by economizer operation. If more relief is required, then EF-11 will start and modulate.

Relief fans shall react slowly. The unit EMS controller measures the difference in building and outside air static pressure and modulates the fan VFD to maintain a pressure of 0.05" w.c.

Relief and/or exhaust fans operating in conjunction with an air conditioning system shall shut down when the supply fan stops. Three-phase relief fans shall have the "enable" hard wired through an auxiliary contact of the supply fan VFD. This is required.

AIRFLOW AND VENTILATION REDUCTION

The Meeting Room and Activities Room have occupancy sensors CO2 sensors to reduce the supply air and ventilation air if the room is not occupied. If occupancy is not detected for 30 minutes, the supply fan speed shall reduce speed as listed below. Minimum Outside Air is a function of CO2 sensor reading. As CO2 levels increase beyond 1000 ppm, the O.A. damper will open to the value listed in the Air Handler Schedule.

Zone	Air Handler	Min. Supply Air	Min. O.A. CFM
Meeting Room	AH/B-1	1200	600
Activities Room	AH/B-2	900	300

When occupied, supply airflow of AH/B-1 is determined by the VAV terminals. When the Activities Room is occupied, the supply airflow of AH/B-2 shall start at 60% of full airflow, and then increase as required by the cooling load.

EMS CONTROL OF NON-HVAC SYSTEMS

There are no additional interfaces with building systems.

SEQUENCE OF OPERATION

E / M-10

DIAGRAMATIC

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03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL 8/23 STATE OF CALIFORNIA

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

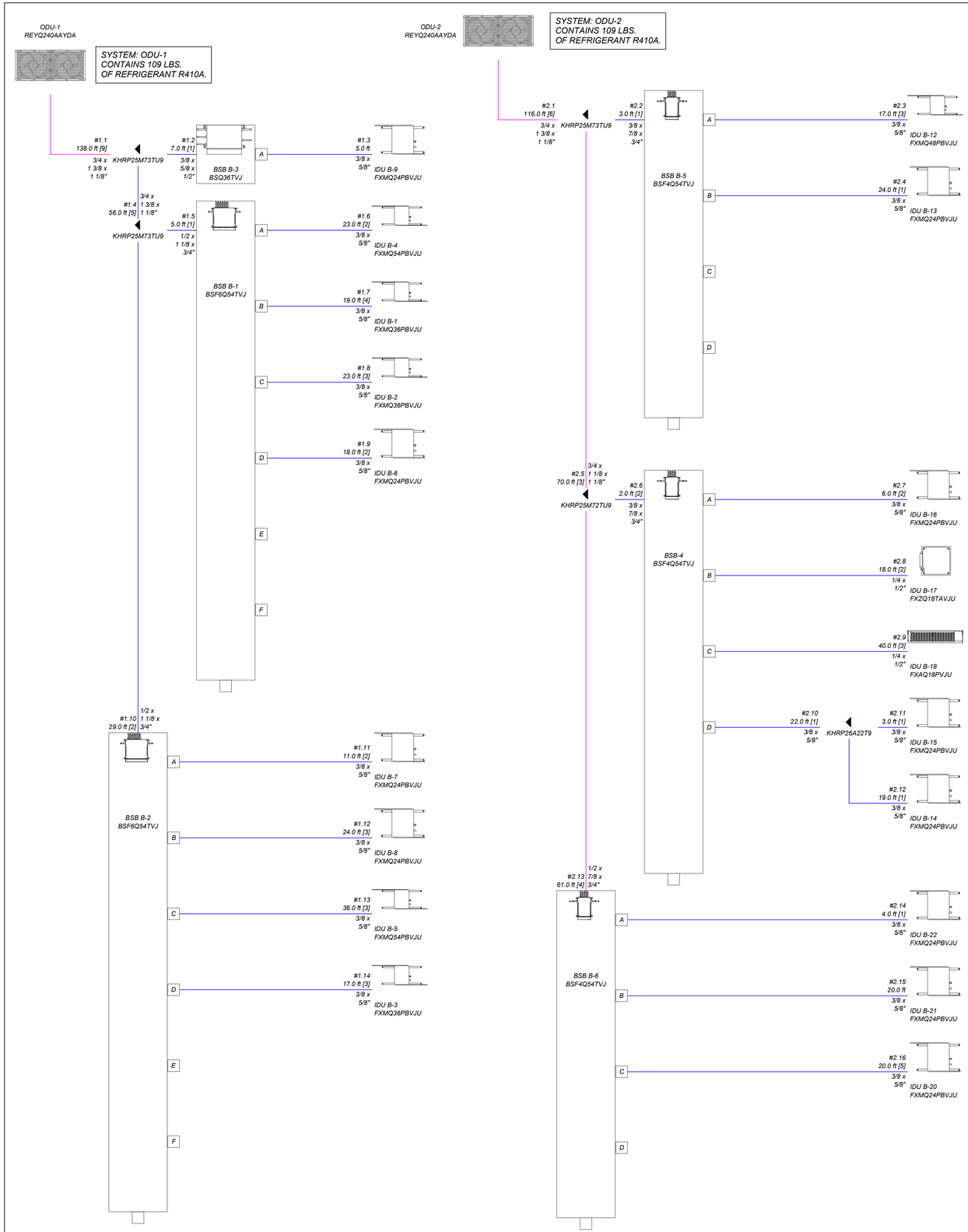
CONTROL DIAGRAMS

SHEET NUMBER

M-10

INTERNAL NUMBER: 829

FILE PATH:



ODU-1 PIPING

DIAGRAMATIC

ODU-2 PIPING

DIAGRAMATIC

ODU-3 PIPING

DIAGRAMATIC

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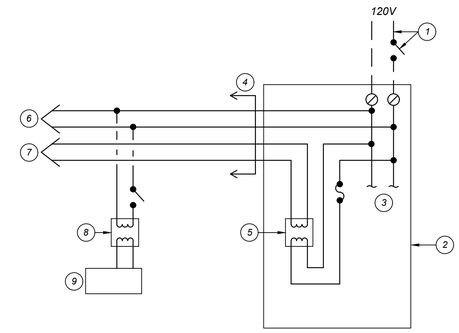
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES



KEYNOTES: (THIS SHEET ONLY)

1. Wiring, conduit, and disconnect switch by Electrical.
2. EMS controller cabinet with controls and devices as required. Refer to plans for location.
3. Wiring within panel to devices.
4. Wiring (120v and 24v), conduit, and disconnects from panel to controllers shall be provided by EMS Contractor.
5. Control transformer within cabinet. 24-volt power to remote controllers may be provided by a central transformer or a transformer at each device.
6. 120-volt wiring and conduit, if required.
7. 24-volt wiring. See Specifications where conduit is required.
8. Local transformer, if required.
9. EMS controller. Refer to Detail A-M11.2.

EMS CONTROLLER POWER

DIAGRAMATIC

A
M-11.1

THE COUNTY OF FRESNO 1856

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PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

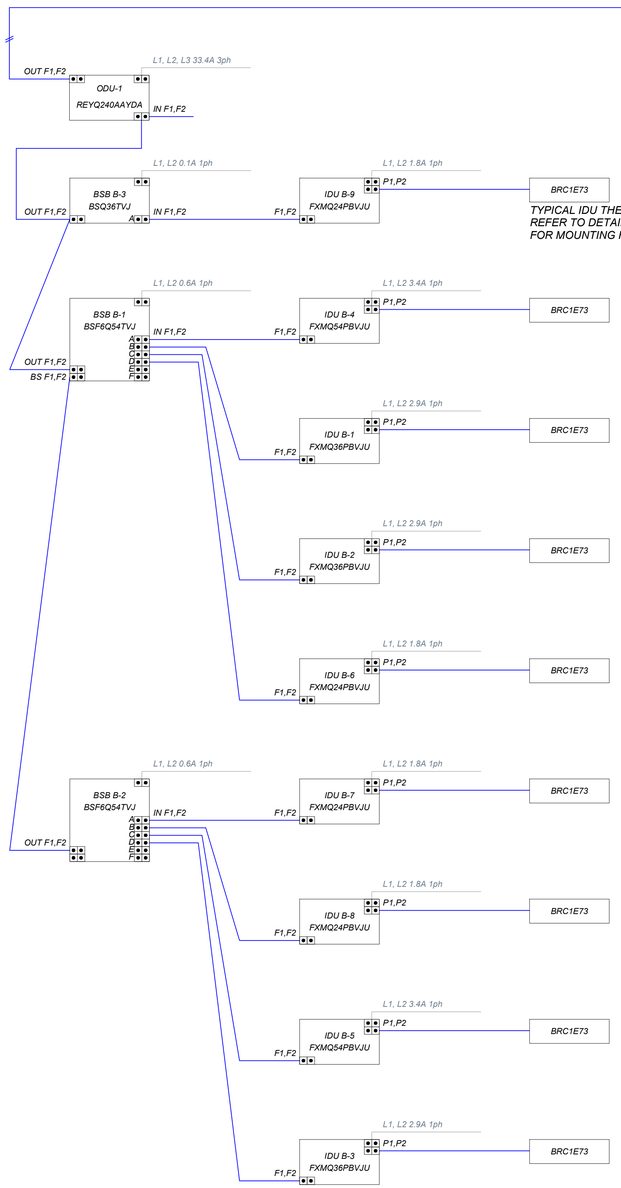
VRF PIPING DIAGRAMS

SHEET NUMBER

M-11.1

FILE PATH:

INTERNAL NUMBER: 829

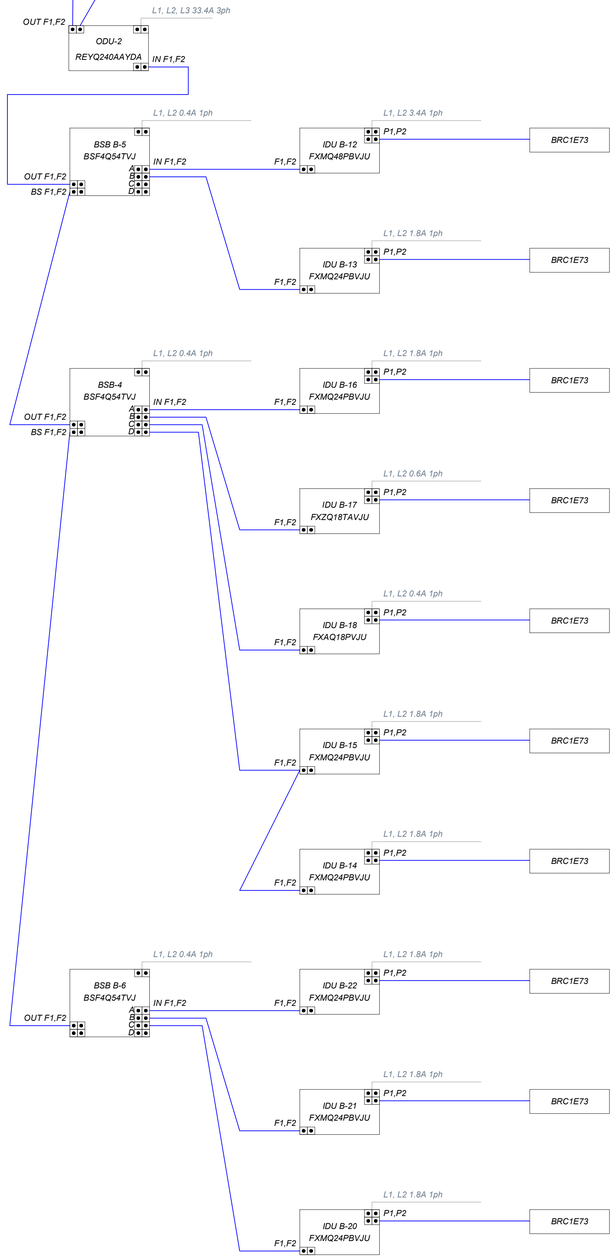


P1P2 = AWG 18-2 IS REQUIRED - HOWEVER ALWAYS, REFER TO LOCAL CODE FOR FURTHER INFORMATION.

F1F2 IN / OUT = AWG 18-2 IS REQUIRED - HOWEVER ALWAYS REFER TO LOCAL CODE FOR FUTHER INFORMATION.

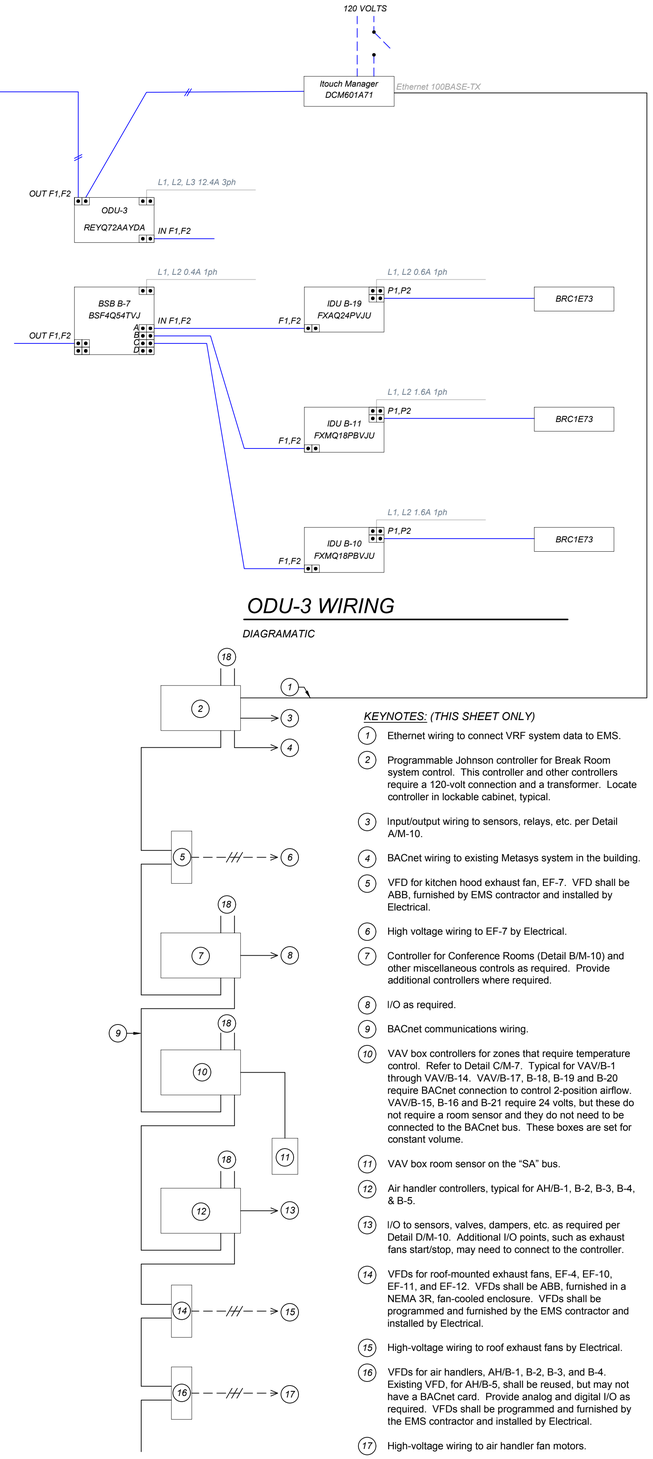
ODU-1 WIRING

DIAGRAMATIC



ODU-2 WIRING

DIAGRAMATIC



ODU-3 WIRING

DIAGRAMATIC

SYSTEM ARCHITECTURE

DIAGRAMATIC

A
M-11.2

KEYNOTES: (THIS SHEET ONLY)

1. Ethernet wiring to connect VRF system data to EMS.
2. Programmable Johnson controller for Break Room system control. This controller and other controllers require a 120-volt connection and a transformer. Locate controller in lockable cabinet, typical.
3. Input/output wiring to sensors, relays, etc. per Detail A/M-10.
4. BACnet wiring to existing Metasys system in the building.
5. VFD for kitchen hood exhaust fan, EF-7. VFD shall be ABB, furnished by EMS contractor and installed by Electrical.
6. High voltage wiring to EF-7 by Electrical.
7. Controller for Conference Rooms (Detail B/M-10) and other miscellaneous controls as required. Provide additional controllers where required.
8. I/O as required.
9. BACnet communications wiring.
10. VAV box controllers for zones that require temperature control. Refer to Detail C/M-7. Typical for VAV/B-1 through VAV/B-14. VAV/B-17, B-18, B-19 and B-20 require BACnet connection to control 2-position airflow. VAV/B-15, B-16 and B-21 require 24 volts, but these do not require a room sensor and they do not need to be connected to the BACnet bus. These boxes are set for constant volume.
11. VAV box room sensor on the "SA" bus.
12. Air handler controllers, typical for AH/B-1, B-2, B-3, B-4, & B-5.
13. I/O to sensors, valves, dampers, etc. as required per Detail D/M-10. Additional I/O points, such as exhaust fans start/stop, may need to connect to the controller.
14. VFDs for roof-mounted exhaust fans, EF-4, EF-10, EF-11, and EF-12. VFDs shall be ABB, furnished in a NEMA 3R, fan-cooled enclosure. VFDs shall be programmed and furnished by the EMS contractor and installed by Electrical.
15. High-voltage wiring to roof exhaust fans by Electrical.
16. VFDs for air handlers, AH/B-1, B-2, B-3, and B-4. Existing VFD, for AH/B-5, shall be reused, but may not have a BACnet card. Provide analog and digital I/O as required. VFDs shall be programmed and furnished by the EMS contractor and installed by Electrical.
17. High-voltage wiring to air handler fan motors.
18. Refer to Detail A/M-11.2 for additional wiring.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

FILE PATH:

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MARATORE NO. C38020 RENEWAL 8/23 STATE OF CALIFORNIA

MARATORE ASSOCIATES
1222 N SHAW AVE, FRESNO, CA 93711
559-365-9534
info@maratoreassociates.com

CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER MICHAEL D. CONNER M23588 REN. 9-30-2023 MECHANICAL STATE OF CALIFORNIA

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101, Fresno, CA 93720
[559] 431-0101 21003 FAX [559] 431-1362

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022

SCALE: As indicated

JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

VRF WIRING DIAGRAMS

SHEET NUMBER

M-11.2

INTERNAL NUMBER: 829

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

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page: (Page 2 of 34)
Project Address:	1221 Fulton Street	Date Prepared: 3/4/2022

C. COMPLIANCE RESULTS

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

01		02		03		04		05		06		07		08	09
System Summary §110.1, §110.2, §140.4	AND	Pumps §140.4(k)	AND	Fans/ Economizers §140.4(c), §140.4(e)	AND	System Controls §110.2, §120.2, §140.4(f)	AND	Ventilation §120.1	AND	Terminal Box Controls §140.4(d)	AND	Distribution §120.3, §140.4(i)	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND	Yes	AND	Yes	AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details)												COMPLIES			

D. EXCEPTIONAL CONDITIONS

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

E. ADDITIONAL REMARKS

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

Registration Number: — Registration Date/Time: — Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance — Report Version: 2019.1.003, Schema Version: rev 20200601 — Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page: (Page 1 of 34)
Project Address:	1221 Fulton Street	Date Prepared: 3/4/2022

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

A. GENERAL INFORMATION

01	Project Location (city)	Fresno	04	Total Conditioned Floor Area	22747
02	Climate Zone	13	05	Total Unconditioned Floor Area	173
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1
☒ Office (B)	☐ Retail (M)		☐ Non-refrigerated Warehouse (S)		
☐ Hotel/ Motel Guest Rooms (R-1)	☐ School (E)		☐ Healthcare Facility (I)		
☐ High-Rise Residential (R-2/R-3)	☐ Relocatable Class Bldg (E)		☒ Other (write in)		See Table J

B. PROJECT SCOPE

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

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☒ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
Mechanical Controls	☐ System Piping	☒ Fan Systems
☒ Mechanical Controls (existing to remain, altered or new)	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	☒ Ventilation
	☐ Boilers	☒ Zonal Systems/ Terminal Boxes

Registration Number: — Registration Date/Time: — Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance — Report Version: 2019.1.003, Schema Version: rev 20200601 — Report Generated: 2022-03-04 09:13:03

BUILDING ENERGY ANALYSIS REPORT

PROJECT:
Brix Mercer Basement Remodel
1221 Fulton Street
Fresno , CA 93721

Project Designer:
Muratore Associates
2697 W Robinwood LN
Fresno , CA 93711
559-365-6543

Report Prepared by:
Abel Lopez
Lawrence Engineering Group
7084 N Maple Avenue Suite 101
Fresno, CA 93720
559-431-0101

Job Number:
21003

Date:
3/4/2022

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2019 Building Energy Efficiency Standards.

This program developed by EnergySoft Software – www.energysoft.com.

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

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page: (Page 5 of 34)
Project Address:	1221 Fulton Street	Date Prepared: 3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

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

System Name:	AH - B1	Economizer:[1]	Differential Temperature	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Variable Air Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
SF	Supply	1	4200	BHP	3.5	NA	NA
Total System Design Supply Airflow (CFM):			4200	Total System Design (B)HP:	3.5	Maximum System Fan Power (B)HP:	

System Name:	AH - B2	Economizer:[1]	Differential Temperature	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Variable Air Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
SF	Supply	1	3300	BHP	2.5	NA	NA
EF	Exhaust	1	0	BHP	0.4	NA	NA
Total System Design Supply Airflow (CFM):			3300	Total System Design (B)HP:	2.9	Maximum System Fan Power (B)HP:	

Registration Number: — Registration Date/Time: — Registration Provider: Energysoft

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

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page: (Page 4 of 34)
Project Address:	1221 Fulton Street	Date Prepared: 3/4/2022

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP))

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
AH -B5	>=240,000					EER IEER	9.8 11.4	12.2 12.9
VRF ODU 1	>=240,000	47 °Fdb/ 43 °Fwb OSA	COP	3.2	4	EER IEER	9.5 12.7	13 18
ODU 2	>=240,000	47 °Fdb/ 43 °Fwb OSA	COP	3.2	4	EER IEER	9.5 12.7	13 18
ODU 3	>=65,000 and <135,000	47 °Fdb/ 43 °Fwb OSA	COP	3.3	4.5	EER IEER	11.0 14.6	13.9 21.3

G. PUMPS

This section does not apply to this project.

Registration Number: — Registration Date/Time: — Registration Provider: Energysoft

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

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page: (Page 3 of 34)
Project Address:	1221 Fulton Street	Date Prepared: 3/4/2022

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

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

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

01	02	03	04	05	06	07	08	09	10	11
				Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4 (a&b)						
				Heating Output[2,3]			Cooling Output[2,3]		Load Calculations[3,4]	
Name or Item Tag	Equipment Category per Tables 110.2	Equipment Type per Tables 110.2 / Title 20	Smallest Size Available[1] §140.4(a)	Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
AH -B5	Unitary AC/ Condensers	AC, air-cooled pkg (3 phase)	NA: Load Controls	401.9	401.9	0	330.24	321.5	865.17	415.74
VRF ODU 1	Variable Refrigerant Flow	VRF heat pump, air cooled	NA: Load Controls	199.65	228	0	250.21	200	319.77	263.01
ODU 2	Variable Refrigerant Flow	VRF heat pump, air cooled	NA: Load Controls	199.65	228	0	243.3	200	200.54	245.37
ODU 3	Variable Refrigerant Flow	VRF heat pump, air cooled	NA: Load Controls	67.43	77	0	62.58	60	60.28	65.23

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

Registration Number: — Registration Date/Time: — Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance — Report Version: 2019.1.003, Schema Version: rev 20200601 — Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page: (Page 8 of 34)
Project Address:	1221 Fulton Street	Date Prepared: 3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 4,5 (4.5 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	1350	BHP	0.4	NA	NA
Total System Design Supply Airflow (CFM):			1350	Total System Design (B)HP:	0.4	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 4,5 (4.5 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	1350	BHP	0.4	NA	NA
Total System Design Supply Airflow (CFM):			1350	Total System Design (B)HP:	0.4	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 6,7,8,9,13,14,15,16 (2 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	650	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			650	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

Registration Number: — Registration Date/Time: — Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance — Report Version: 2019.1.003, Schema Version: rev 20200601 — Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page: (Page 7 of 34)
Project Address:	1221 Fulton Street	Date Prepared: 3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 1,2,3 (3 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	1100	BHP	0.3	NA	NA
Total System Design Supply Airflow (CFM):			1100	Total System Design (B)HP:	0.3	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 1,2,3 (3 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	1100	BHP	0.3	NA	NA
Total System Design Supply Airflow (CFM):			1100	Total System Design (B)HP:	0.3	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 1,2,3 (3 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	1100	BHP	0.3	NA	NA
Total System Design Supply Airflow (CFM):			1100	Total System Design (B)HP:	0.3	Maximum System Fan Power (B)HP:	

Registration Number: — Registration Date/Time: — Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance — Report Version: 2019.1.003, Schema Version: rev 20200601 — Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page: (Page 6 of 34)
Project Address:	1221 Fulton Street	Date Prepared: 3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	AH - B3	Economizer:[1]	Differential Temperature	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Variable Air Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
SF	Supply	1	1600	BHP	1.2	NA	NA
Total System Design Supply Airflow (CFM):			1600	Total System Design (B)HP:	1.2	Maximum System Fan Power (B)HP:	

System Name:	AH - B4	Economizer:[1]	Differential Temperature	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Variable Air Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
SF	Supply	1	3150	BHP	2.3	NA	NA
EF	Exhaust	1	0	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			3150	Total System Design (B)HP:	2.4	Maximum System Fan Power (B)HP:	

System Name:	AH -B5	Economizer:[1]	NA: System operates @ 100% OSA	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Design Airflow through Device (CFM)
SF	Supply	1	7000	BHP	6		
Total System Design Supply Airflow (CFM):			7000	Total System Design (B)HP:	6	Maximum System Fan Power (B)HP:	6.58

Registration Number: — Registration Date/Time: — Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance — Report Version: 2019.1.003, Schema Version: rev 20200601 — Report Generated: 2022-03-04 09:13:03

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT — JUSTIN DOUGLAS MURATORE — NO. C38020 — RENEWAL 8/23 — STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE, FRESNO, CA 93711 — 559-365-6534 — info@muratoreassociates.com

CONSULTANT STAMP

LICENSED PROFESSIONAL ENGINEER — DARREL D. LAWRENCE — M23568 — REN. 9-30-2023 — MECHANICAL — STATE OF CALIFORNIA

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101 (559) 431-0101 — 21003 — Fresno, CA 93720 FAX (559) 431-1362

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
TITLE 24 DOCUMENTS

SHEET NUMBER
M-12.1

FILE PATH:

INTERNAL NUMBER: 829

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 11 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 20,23 (HSW .75 ton, 275 CFM)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	275	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			275	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 12 (4 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	1350	BHP	0.3	NA	NA
Total System Design Supply Airflow (CFM):			1350	Total System Design (B)HP:	0.3	Maximum System Fan Power (B)HP:	

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 10 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 6,7,8,9,13,14,15,16 (2 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	650	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			650	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 17(cc 1.5 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	350	BHP	0.1	NA	NA
EF	Exhaust	1	0	BHP	2	NA	NA
Total System Design Supply Airflow (CFM):			350	Total System Design (B)HP:	2.1	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 18 (HSW 1.5 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	400	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			400	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 9 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 6,7,8,9,13,14,15,16 (2 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	650	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			650	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 6,7,8,9,13,14,15,16 (2 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	650	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			650	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 14 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 20,23 (HSW .75 ton, 275 CFM)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	275	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			275	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

System Name:	IDU B-10,11(1.5 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	550	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			550	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

System Name:	IDU B-10,11(1.5 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	550	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			550	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 13 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 21 (1 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	400	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			400	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 6,7,8,9,13,14,15,16 (2 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	650	BHP	0.1	NA	NA
EF	Exhaust	1	0	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			650	Total System Design (B)HP:	0.2	Maximum System Fan Power (B)HP:	

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CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 12 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 6,7,8,9,13,14,15,16 (2 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	650	BHP	0.1	NA	NA
EF	Exhaust	1	0	BHP	0.15	NA	NA
Total System Design Supply Airflow (CFM):			650	Total System Design (B)HP:	0.25	Maximum System Fan Power (B)HP:	

System Name:	IDU B - 6,7,8,9,13,14,15,16 (2 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	3	1950	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			1950	Total System Design (B)HP:	0.3	Maximum System Fan Power (B)HP:	

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 17 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

I. SYSTEM CONTROLS

ODU 3	Multi-zone w/ DDC to zone	<= 25,000 ft[2]	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided

[1] *FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.*

*Notes: Controls with a * require a note in the space below explaining how compliance is achieved. EX: system 1: SA Temp Reset: Exempt because zones compliant with §140.4(d) ; EXCEPTION 1 to §140.4(f)

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 and §120.2(e)3B for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential or Hotel/Motel spaces
	☐	Check this box if the project included new or altered high-rise residential dwelling units.
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.

Nonresidential and Hotel/ Motel Ventilation Systems

04		05			06		07
System Name	AH - B1	System Design OA CFM Airflow[3]	1873		System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 [2]: Provided per §120.1(c) (NR and Hotel/Motel))

08	09	10	11	12	13	14	15	16
	Mechanical Ventilation Required per §120.1(c)3				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 [6]
Space Name ot item Tag	Occupancy Type[4]	Conditioned Floor Area (ft^2)	# of Shower/ heady/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
Z1 Mercer 202 - Meeting Room	Conference/ meeting	3568			1784	0	0	DCV: Provided per §120.1(d)4; Occ Sensor: NA: Not required space type

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 16 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.

01	02	03	04	05	06	07	08	09
System Name	System Zoning	Conditioned Floor Area Being Served (ft^2)	Thermostats §110.2(b) & (c)[1], §120.2(a)or §141.0(b)2E	Shut-Off Controls §120.2(e)	Isolation Zone Controls §120.2(a)	Demand Response §110.12 and §120.2(b)	Supply Air Temp. Reset §140.4(f)	Window Interlocks per §140.4(n)
AH - B1	Single zone	<= 25,000 ft^2	Setback	Auto Timer Switch	4 Hour Timer	EMCS	NA: Serves humidity sensitive process	Provided
AH - B2	Multi-zone w/ DDC to zone	<= 25,000 ft^2	Setback	Auto Timer Switch	4 Hour Timer	EMCS	NA: Serves humidity sensitive process	Provided
AH - B3	Single zone	<= 25,000 ft^2	Setback	Auto Timer Switch	4 Hour Timer	EMCS	NA: Serves humidity sensitive process	Provided
AH - B4	Multi-zone w/ DDC to zone	<= 25,000 ft^2	Setback	Auto Timer Switch	4 Hour Timer	EMCS	NA: Serves humidity sensitive process	Provided
VRF ODU 1	Multi-zone w/ DDC to zone	<= 25,000 ft^2	Setback	Auto Timer Switch	4 Hour Timer	EMCS	NA: Serves humidity sensitive process	Provided
ODU 2	Multi-zone w/ DDC to zone	<= 25,000 ft^2	Setback	Auto Timer Switch	4 Hour Timer	EMCS	Included	Provided

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 15 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name:	IDU B - 19 (HSW 2 ton)	Economizer:[1]	NA: <=54 kBtu/h cooling	Economizer Controls:	Designed per §140.4(e) and (m)	System Fan Type:	Constant Volume
01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B: Device	Fan Power Pressure Drop Adjustment - Table 140.4-B: Design Airflow through Device (CFM)
VRF	Other (Transfer, VAV box)	1	625	BHP	0.1	NA	NA
Total System Design Supply Airflow (CFM):			625	Total System Design (B)HP:	0.1	Maximum System Fan Power (B)HP:	

[1] *FOOTNOTES: Computer room economizers must meet requirements of §140.9(c) and will be documented on the NRCC-PRC-E document.*

[2] *The unit used for HP must be consistent for all fans within a system.*

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT — JUSTIN DOUGLAS MURATORE — NO. C38020 — RENEWAL 8/23 — STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE, FRESNO, CA 93711
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CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER — DARREL D. CONLEY — M22568 — REN. 9-30-2023 — MECHANICAL — STATE OF CALIFORNIA

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101, Fresno, CA 93720
(559) 431-0101 21003 FAX (559) 431-1362

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TITLE 24 DOCUMENTS

SHEET NUMBER

M-12.2

FILE PATH:

INTERNAL NUMBER: 829

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 20 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

J. VENTILATION AND INDOOR AIR QUALITY

17	Total System Required Min OA CFM				522	18	Ventilation for this System Complies?	Yes
04		05			06		07	
System Name	VRF ODU 1	System Design OA CFM Airflow[1]		4763	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 [2] Provided per §120.1(c) (NR and Hotel/Motel))	

08	09	10	11	12	13	14	15	16	
	Mechanical Ventilation Required per §120.1(c)3 [3]				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 [4]	
Space Name ot Item Tag	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower/ heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
B1	All others	1042			156.3	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B2	All others	1085			162.8	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B3	All others	1096			0	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B4 Ground Floor Lobby Southeast	Reception area	500			75	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B5 Ground Floor Lobby Northwest	Reception area	500			75	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 19 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

J. VENTILATION AND INDOOR AIR QUALITY

Z3	Assembly- multiuse	2010			1005	0	0	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type

17	Total System Required Min OA CFM				1005	18	Ventilation for this System Complies?	Yes
04		05			06		07	
System Name	AH - B4	System Design OA CFM Airflow[1]		705	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 [2] Provided per §120.1(c) (NR and Hotel/Motel))	

08	09	10	11	12	13	14	15	16	
	Mechanical Ventilation Required per §120.1(c)3 [3]				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 [4]	
Space Name ot Item Tag	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower/ heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
Z4 Prep Food Handling	Restaurant Dining Rooms	400			200	0	550	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
Z4 Storage	All others	449			67.4	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
Z4 Breakout Room	Conference/ meeting	175			87.5	0	0	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type
Z4 Lobby, Hall & Storage	All others	1113			167	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 18 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

J. VENTILATION AND INDOOR AIR QUALITY

17	Total System Required Min OA CFM				1784	18	Ventilation for this System Complies?	Yes
04		05			06		07	
System Name	AH - B2	System Design OA CFM Airflow[1]		1000	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 [2] Provided per §120.1(c) (NR and Hotel/Motel))	

08	09	10	11	12	13	14	15	16	
	Mechanical Ventilation Required per §120.1(c)3 [3]				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 [4]	
Space Name ot Item Tag	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower/ heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
Z2	Toilet, public	972	8		0	560	1000	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type
Z2	Corridor	658			98.7	0	0	DCV	Provided per §120.1(d)4
								Occ Sensor	NA: Not required space type

17	Total System Required Min OA CFM				99	18	Ventilation for this System Complies?	Yes
04		05			06		07	
System Name	AH - B3	System Design OA CFM Airflow[1]		1047	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 [2] Provided per §120.1(c) (NR and Hotel/Motel))	

08	09	10	11	12	13	14	15	16	
	Mechanical Ventilation Required per §120.1(c)3 [3]				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 [4]	
Space Name ot Item Tag	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower/ heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 23 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

J. VENTILATION AND INDOOR AIR QUALITY

B20	All others	110			16.5	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type

17	Total System Required Min OA CFM				1311	18	Ventilation for this System Complies?	Yes
04		05			06		07	
System Name	ODU 3	System Design OA CFM Airflow[1]		898	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 [2] Provided per §120.1(c) (NR and Hotel/Motel))	

08	09	10	11	12	13	14	15	16	
	Mechanical Ventilation Required per §120.1(c)3 [3]				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 [4]	
Space Name ot Item Tag	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower/ heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
B10 B211 Conference	Conference/ meeting	435			217.5	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B11 Conference	Conference/ meeting	448			224	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B19	All others	197			29.6	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type

17	Total System Required Min OA CFM				471	18	Ventilation for this System Complies?	Yes

[1] *FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system*

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 22 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

J. VENTILATION AND INDOOR AIR QUALITY

04		05			06		07	
System Name	ODU 2	System Design OA CFM Airflow[1]		2987	System Design Transfer Air CFM	0	Air Filtration per §120.1(c) and §141.0(b)2 [2] Provided per §120.1(c) (NR and Hotel/Motel))	

08	09	10	11	12	13	14	15	16	
	Mechanical Ventilation Required per §120.1(c)3 [3]				Exh. Vent per §120.1(c)4			DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3 [4]	
Space Name ot Item Tag	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower/ heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
B12	Office space	1445			216.8	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B13	Toilet, public	633	5		0	350	600	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B14-16	Break room	1919			959.5	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B21	Corridor	295			44.2	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B22	Corridor	492			73.8	0	275	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 21 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

J. VENTILATION AND INDOOR AIR QUALITY

B6	All others	696			104.4	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B7	All others	596			0	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B8	All others	476			71.4	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B9 204 Conference	Conference/ meeting	574			287	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B17	Kitchen (cooking)	296			44.4	207.2	2500	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B18	All others	294			44.1	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
B23	Corridor	273			40.9	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type

17	Total System Required Min OA CFM				1061	18	Ventilation for this System Complies?	Yes

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 26 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

L. DISTRIBUTION (DUCTWORK and PIPING)

		☐	In other unconditioned spaces
15			The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16			The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes		Duct system shall be sealed in acordance with the California Mechanical Code

The answers to the questions below apply to the following duct systems:	AH - B3	Duct leakage testing triggered for these systems?	No

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
		☐ Outdoors
		☐ In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
		☐ In an unconditioned crawl space
		☐ In other unconditioned spaces
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes	Duct system shall be sealed in acordance with the California Mechanical Code

The answers to the questions below apply to the following duct systems:	AH - B4	Duct leakage testing triggered for these systems?	No

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	No	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
		☐ Outdoors
		☐ In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
		☐ In an unconditioned crawl space

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 25 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and prescriptive requirements found in §140.4(l) for duct leakage testing.

Duct Leakage Sealing

The answers to the questions below apply to the following duct systems:	AH - B1	Duct leakage testing triggered for these systems?	No

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
		☐ Outdoors
		☐ In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
		☐ In an unconditioned crawl space
		☐ In other unconditioned spaces
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes	Duct system shall be sealed in acordance with the California Mechanical Code

The answers to the questions below apply to the following duct systems:	AH - B2	Duct leakage testing triggered for these systems?	No

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	No	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
		☐ Outdoors
		☐ In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
		☐ In an unconditioned crawl space

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

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

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name:	Brix Mercer Basement Remodel	Report Page:	(Page 24 of 34)
Project Address:	1221 Fulton Street	Date Prepared:	3/4/2022

J. VENTILATION AND INDOOR AIR QUALITY

[2] *Air filtration requirements apply to the following three system types per §120.1(c1A : space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.*

[3] *Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.*

[4] *See Standards Tables 120.1-A and 120.1-B.*

[5] *For lecture halls with fixed seating, the expected number of occupants shall be shall be determined in accordance with the California Building Code.*

[6] *§120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).*

K. TERMINAL BOX CONTROLS

This table is used to demonstrate compliance with prescriptive zone control requirements in §140.4(d).

01	02	03	04	05	06	07	08	09	10	11	12
		Design			Deadband Compliance			Reheated, Recooled, Mixed Air Compliance			
Zone/System/VAV Box Name or Item Tag	Zonal Control Strategy per §140.4(d)	Peak Primary Airflow CFM	Primary Air in Deadband CFM	Reheated Recooled Mixed Airflow CFM	Outside Air CFM	20% (30% if no DDC) of Peak Primary Airflow CFM	Max Deadband Airflow CFM	50% of Peak Primary Airflow	1st Stage Modulates <=95 °F and Maintains DB Rate?	2nd Stage Modulates from DB Flow to Heating Max Flow?	Complies
Z1 Mercer 202 - Meeting Room	NA: Peak SA <= 300 CFM	0	0	0	1873.2	0	1874.2	0	Yes	Yes	Yes
Z2	NA: Peak SA <= 300 CFM	0	0	0	0	0	1	0	Yes	Yes	Yes
Z2	NA: Peak SA <= 300 CFM	0	0	0	98.7	0	99.7	0	Yes	Yes	Yes
Z4 Prep Food Handling	NA: Peak SA <= 300 CFM	0	0	0	200	0	201	0	Yes	Yes	Yes
Z4 Storage	NA: Peak SA <= 300 CFM	0	0	0	67.4	0	68.4	0	Yes	Yes	Yes
Z4 Breakout Room	NA: Peak SA <= 300 CFM	0	0	0	87.5	0	88.5	0	Yes	Yes	Yes
Z4 Lobby, Hall & Storage	NA: Peak SA <= 300 CFM	0	0	0	167	0	168	0	Yes	Yes	Yes

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-03-04 09:13:03

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT — JUSTIN DOUGLAS MURATORE — NO. C38020 — RENEWAL 8/23 — STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N BRAWLEY, FRESNO, CA 93711 — 559-365-6534 — info@muratoreassociates.com

CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER — MARREL D. LAWRENCE — M22588 — REN. 9-30-2023 — MECHANICAL — STATE OF CALIFORNIA

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101, Fresno, CA 93720
(559) 431-0101 — 21003 — FAX (559) 431-1362

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
TITLE 24 DOCUMENTS

SHEET NUMBER
M-12.3

FILE PATH:

INTERNAL NUMBER: 829

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

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Brix Mercer Basement Remodel	**Report Page:**	**(Page 29 of 34)**
Project Address:	1221 Fulton Street	**Date Prepared:**	3/4/2022

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Form/Title	Field Inspector	
	Pass	Fail
NRCI-MCH-01-E - Must be submitted for all buildings	☐	☐

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

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Brix Mercer Basement Remodel	**Report Page:**	**(Page 32 of 34)**
Project Address:	1221 Fulton Street	**Date Prepared:**	3/4/2022

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance	*Daikin Vision - CAH012GDAM; **Daikin Vision - CAH008GDAC; ***Daikin Vision - CAH006GDAC; ****Daikin Vision - CAH008GDAC;	☐	☐
NRCA-MCH-16-A Supply Air Temperature Reset Controls	Rotary Inverter - REYQ240AAYDA; Daikin - REYQ72XAYDA;	☐	☐
NRCA-MCH-18-A Energy Management Control Systems	*Daikin Vision - CAH012GDAM; **Daikin Vision - CAH008GDAC; ***Daikin Vision - CAH006GDAC; ****Daikin Vision - CAH008GDAC; Rotary Inverter - REYQ240AAYDA; Rotary Inverter - REYQ240AAYDA; Daikin - REYQ72XAYDA;	☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION
There are no NRCV forms required for this project.

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

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Brix Mercer Basement Remodel	**Report Page:**	**(Page 28 of 34)**
Project Address:	1221 Fulton Street	**Date Prepared:**	3/4/2022

L. DISTRIBUTION (DUCTWORK and PIPING)

	☐	In other unconditioned spaces
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes	Duct system shall be sealed in acordance with the California Mechanical Code

The answers to the questions below apply to the following duct systems:	ODU 3	Duct leakage testing triggered for these systems?	No

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	No	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
	☐	Outdoors
	☐	In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
	☐	In an unconditioned crawl space
	☐	In other unconditioned spaces
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes	Duct system shall be sealed in acordance with the California Mechanical Code

M. COOLING TOWERS
This section does not apply to this project.

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

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Brix Mercer Basement Remodel	**Report Page:**	**(Page 31 of 34)**
Project Address:	1221 Fulton Street	**Date Prepared:**	3/4/2022

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-MCH-05-A - Air Economizer Controls	*Daikin Vision - CAH012GDAM; **Daikin Vision - CAH008GDAC; ***Daikin Vision - CAH006GDAC; ****Daikin Vision - CAH008GDAC;	☐	☐
NRCA-MCH-06-A Demand Control Ventilation Systems must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)3) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO_2) concentration setpoints.	*Daikin Vision - CAH012GDAM; **Daikin Vision - CAH008GDAC; ***Daikin Vision - CAH006GDAC; ****Daikin Vision - CAH008GDAC;	☐	☐
NRCA-MCH-07-A Supply Fan Variable Flow Controls	*Daikin Vision - CAH012GDAM; **Daikin Vision - CAH008GDAC; ***Daikin Vision - CAH006GDAC; ****Daikin Vision - CAH008GDAC;	☐	☐
NRCA-MCH-11-A Automatic Demand Shed Controls	*Daikin Vision - CAH012GDAM; **Daikin Vision - CAH008GDAC; ***Daikin Vision - CAH006GDAC; ****Daikin Vision - CAH008GDAC; Rotary Inverter - REYQ240AAYDA; Rotary Inverter - REYQ240AAYDA; Daikin - REYQ72XAYDA;	☐	☐

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

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Brix Mercer Basement Remodel	**Report Page:**	**(Page 34 of 34)**
Project Address:	1221 Fulton Street	**Date Prepared:**	3/4/2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Abel Lopez	Documentation Author Signature: Abel Lopez
Company: Lawrence Engineering Group	Signature Date: 22-03-04
Address: 7084 N Maple Avenue Suite 101	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Fresno CA 93720	Phone: 559-431-0101

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the building owner provides to the building owner at occupancy.

Responsible Designer Name: Michael D. Cantelmi	Responsible Designer Signature: Michael D. Cantelmi
Company: Lawrence Engineering Group	Date Signed: 2022-03-04
Address: 7084 North Maple Avenue Suite 101	License: M23588
City/State/Zip: Fresno CA 93720	Phone: 5594310101

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

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Brix Mercer Basement Remodel	**Report Page:**	**(Page 27 of 34)**
Project Address:	1221 Fulton Street	**Date Prepared:**	3/4/2022

L. DISTRIBUTION (DUCTWORK and PIPING)

	☐	In other unconditioned spaces
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes	Duct system shall be sealed in acordance with the California Mechanical Code

The answers to the questions below apply to the following duct systems:	VRF ODU 1	Duct leakage testing triggered for these systems?	No

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	No	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
	☐	Outdoors
	☐	In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
	☐	In an unconditioned crawl space
	☐	In other unconditioned spaces
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes	Duct system shall be sealed in acordance with the California Mechanical Code

The answers to the questions below apply to the following duct systems:	ODU 2	Duct leakage testing triggered for these systems?	No

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	No	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
	☐	Outdoors
	☐	In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
	☐	In an unconditioned crawl space

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

CERTIFICATE OF COMPLIANCE			**NRCC-MCH-E**
Project Name:	Brix Mercer Basement Remodel	**Report Page:**	**(Page 30 of 34)**
Project Address:	1221 Fulton Street	**Date Prepared:**	3/4/2022

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-MCH-02-A - Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.	*Daikin Vision - CAH012GDAM; **Daikin Vision - CAH008GDAC; ***Daikin Vision - CAH006GDAC; ****Daikin Vision - CAH008GDAC; Rotary Inverter - REYQ240AAYDA; Rotary Inverter - REYQ240AAYDA; Daikin - REYQ72XAYDA;	☐	☐

Q. MANDATORY MEASURES DOCUMENTATION LOCATION
This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

	01	02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	Yes	M-Sheets

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT — JUSTIN DOUGLAS MURATORE — NO. C38020 — RENEWAL: 8/23 — STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N BRAWLEY AVE, FRESNO, CA 93711 — 559-365-6534 — info@muratoreassociates.com

CONSULTANT STAMP

LICENSED PROFESSIONAL ENGINEER — MICHAEL D. CANTELMI — M23588 — REN. 9-30-2023 — MECHANICAL — STATE OF CALIFORNIA

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101 (559) 431-0101 — 21003 — Fresno, CA 93720 FAX (559) 431-1362

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

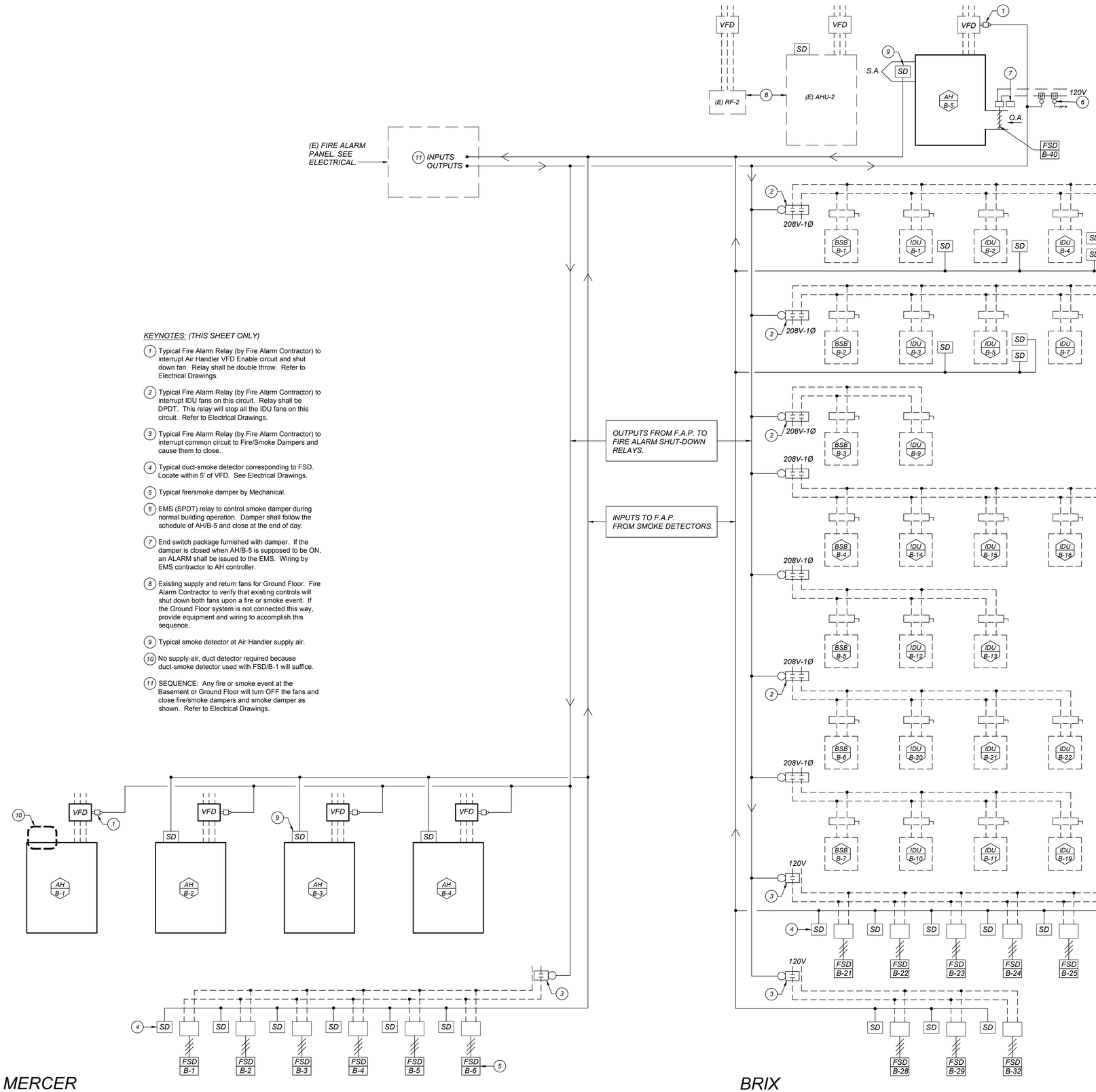
PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
TITLE 24 DOCUMENTS

SHEET NUMBER
M-12.4

FILE PATH:

INTERNAL NUMBER: 829



MERCER

SCALE: NONE

BRIX

SCALE: NONE

KEYNOTES: (THIS SHEET ONLY)

1. Typical Fire Alarm Relay (by Fire Alarm Contractor) to interrupt Air Handler VFD Enable circuit and shut down fan. Relay shall be double throw. Refer to Electrical Drawings.
2. Typical Fire Alarm Relay (by Fire Alarm Contractor) to interrupt IDU fans on this circuit. Relay shall be DPDT. This relay will stop all the IDU fans on this circuit. Refer to Electrical Drawings.
3. Typical Fire Alarm Relay (by Fire Alarm Contractor) to interrupt common circuit to Fire/Smoke Dampers and cause them to close.
4. Typical duct-smoke detector corresponding to FSD. Locate within 5' of VFD. See Electrical Drawings.
5. Typical fire/smoke damper by Mechanical.
6. EMS (SPDT) relay to control smoke damper during normal building operation. Damper shall follow the schedule of AH/B-5 and close at the end of day.
7. End switch package furnished with damper. If the damper is closed when AH/B-5 is supposed to be ON, an ALARM shall be issued to the EMS. Wiring by EMS contractor to AH controller.
8. Existing supply and return fans for Ground Floor. Fire Alarm Contractor to verify that existing controls will shut down both fans upon a fire or smoke event. If the Ground Floor system is not connected this way, provide equipment and wiring to accomplish this sequence.
9. Typical smoke detector at Air Handler supply air.
10. No supply-air, duct detector required because duct-smoke detector used with FSD/B-1 will suffice.
11. SEQUENCE: Any fire or smoke event at the Basement or Ground Floor will turn OFF the fans and close fire/smoke dampers and smoke damper as shown. Refer to Electrical Drawings.

DIAGRAM SHOWN IS FOR REFERENCE ONLY. SEE ELECTRICAL DRAWINGS FOR SCOPE OF WORK.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

FILE PATH:

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL 8/23 STATE OF CALIFORNIA

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[559] 431-0101 21003 FAX [559] 431-1362

REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/15/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

FIRE ALARM HVAC FANS AND FSDS SHUT-DOWN DIAGRAM

SHEET NUMBER

M-15

INTERNAL NUMBER: 829

EXPOSED/UNFINISHED CEILING EQUIPMENT INSTALLATION NOTE

ALL CONDUITS AND CABLES SHALL BE CONCEALED. IF THE CONSTRUCTION WILL NOT ALLOW THE CONDUIT OR CABLE TO BE CONCEALED THEN INSTALL THE EXPOSED CONDUITS AND CABLES USING THE FOLLOWING INSTALLATION METHODS.

1. REFER TO THE ARCHITECTURAL PLANS FOR AREAS WITHIN THE BUILDING STRUCTURE WHICH WILL UNFINISHED CEILINGS. ELECTRICAL CONDUIT, CABLING AND OTHER ITEMS VISUALLY EXPOSED SHALL BE NEATLY INSTALLED. THE CONDUIT AND CABLING WITHIN THESE AREAS SHALL BE INSTALLED AT THE SIDE WALLS ABOVE THE CEILING LEVEL OF THE ROOM WITH THE EXPOSED CEILINGS. ALL CONDUITS AND CABLE RUNS SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO THE STRUCTURE. J-BOXES SHALL SHALL ALSO BE INSTALLED ON THE SIDE WALLS ABOVE THE CEILING LEVEL WITHIN ROOMS THAT HAVE UNFINISHED CEILINGS. CONDUIT, CABLING, FLEXIBLE METAL CONDUIT IF REQUIRED TO TERMINATE AT THESE J-BOXES SHALL HAVE TERMINATE EITHER AT 90-DEGREE ANGLES FROM THE J-BOXES.

2. ALL LOW VOLTAGE CABLING BEING INSTALLED WITHIN HE AREAS ABOVE THE CEILING LEVEL WITH EXPOSED/UNFINISHED CEILINGS SHALL BE RUN IN CONDUITS.

3. ALL THESE CONDUIT SYSTEMS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE ROOF DECK LEVEL. IF THERE ARE PROTRUDING BEAMS THAT EXTEND DOWNWARD FROM THE ROOF DECK, THEN ADJUST THE CONDUIT LEVEL TO 3-INCHES BELOW THE BOTTOM OF THE BEAM LEVEL. AVOID ANY BENDING OF CONDUIT WHERE POSSIBLE .

ELECTRICAL DUCTWORK ANCHORING NOTES

DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTIONS 13.6.5.6, 13.6.7, AND 13.6.8, AND 2016 CBC SECTIONS 1616A.1.23 THROUGH 1616A.1.26.

THE BRACING AND ATTACHMENTS TO THE STRUCTURE SHALL BE DETAILED ON THE APPROVED DRAWINGS OR THEY SHALL COMPLY WITH ON OF THE OSHPD PRE-APPROVALS (OPM #) AS MODIFIED TO SATISFY ANCHORAGE REQUIREMENTS OF ACI 318, APPENDIX D.

COPIES OF THE MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF HANGING AND BRACING OF THE PIPE, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS.

THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

ELECTRICAL EQUIPMENT BRACING NOTES

ALL ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC SECTIONS 1616A AND ASCE 7-10 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.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MOTE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

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

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

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.

2. FOR THE EXACT LOCATION OF ELECTRICAL EQUIPMENT AND DEVICES SEE THE ARCHITECTURAL ELEVATIONS, DETAILS AND DIMENSIONS SHOWN ON THE DRAWINGS.

CALIFORNIA CODE OF REGULATIONS

PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS - CALIFORNIA CODE OF REGULATIONS TITLE 19
2019 CALIFORNIA ADMINISTRATIVE CODE - CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 1 (CAC)
2019 CALIFORNIA BUILDING CODE - CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 2 (CBC)
2019 CALIFORNIA ELECTRICAL CODE - CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 3 (CEC)
2019 CALIFORNIA MECHANICAL CODE - CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 4 (CMC)
2019 CALIFORNIA FIRE CODE - CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 9 (CFC)
2019 CALIFORNIA REFERENCED STANDARDS - CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 12

PARTIAL LIST OF APPLICABLE STANDARDS

2019 CALIFORNIA BUILDING CODE (FOR SFM) NATIONAL STANDARDS SECTION 3504.1.3
NFPA 72 NATIONAL FIRE ALARM CODE (CALIF. AMENDED) 2016 EDITION (NOTE SEE UL STANDARD 1971 FOR `VISUAL DEVICES')

REFERENCE CODE SECTION FOR NFPA STANDARDS - CBC (SFM) 3504.1

DEMOLITION AND CLEAN-UP NOTES

1. REMOVE ALL NONFUNCTIONAL SIGNAL SYSTEM EXPOSED WIRES, CABLES AND FASTENERS. KEEP ALL FUNCTIONAL WIRING SUCH AS THE ENERGY MANAGEMENT SYSTEMS (EMS) AND THE SECURITY ALARM SYSTEMS. VERIFY WITH OWNER PRIOR TO REMOVAL.

2. REMOVE ALL MATERIAL CAUSED BY THE DEMOLITION WORK FROM THE SITE AND LEAVE THE PREMISES CLEAN AND FREE OF DEBRIS.

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. THE FIELD MARKING SHALL INCLUDE THE DATE OF THE FAULT CURRENT CALCULATION WAS PERFORMED.

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 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. BIDDERS SHALL PREARRANGE A SITE VISIT WITH THE OWNER/ARCHITECT.

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. ALL EXTERIOR CONDUIT USED ON THIS PROJECT SHALL BE IMC OR RIGID.

21. COORDINATE WITH PLUMBING CONTRACTORS AND ELECTRICAL PLANS FOR CIRCUITRY OF TRANSFORMER AND ELECTRICAL PLUMBING EQUIPMENT.

22. ALL FASTENERS USED SHALL BE STAINLESS STEEL GRADE 316.

23. ALL THE DATA/TELEPHONE CABLING WITHIN THE BUILDING(S) SHALL BE ROUTED TO THE BUILDING(S) IDF.

24. ISOLATED GROUNDING CONDUCTORS WHERE INDICATED FOR RECEPTACLES SHALL BE SIZED TO MATCH THE EQUIPMENT GROUNDING CONDUCTOR SIZE AND INSTALLED AND CONNECTED ONLY TO THE RECEPTACLES REQUIRED TO BE CONNECTED TO THE ISOLATED GROUNDING SYSTEM AND GROUNDED AT THE MAIN GROUNDING BUS WITHIN THE THE PANEL OF CIRCUIT ORIGIN. THE ISOLATED GROUNDING CONDUCTOR SHALL NOT BE CONNECTED TO ANY OTHER GROUNDING SYSTEM ALONG IT'S PATH.

25. ALL EXTERIOR RECEPTACLES SHALL BE GFCI TYPE WITH A LOCKING, WEATHERPROOF IN-USE COVER.

26. 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.

27. ALL CONDUCTORS IN STALLED IN UNDERGROUND OR WET LOCATIONS SHALL BE LISTED FOR WET LOCATIONS AND MARKED WITH "W" PER CEC.

STANDARD SYMBOL LEGEND

- FIXTURE DESIGNATOR - '#' INDICATES FIXTURE TYPE.
- LIGHT FIXTURE - APPROXIMATELY TO SCALE
- FIXTURE WITH EMERGENCY BATTERY BACK-UP UNIT - SEE TYPICAL WIRING DETAIL
- FIXTURE OUTLET - WALL OR CEILING MOUNTED. '3' INDICATES CIRCUIT, 'a' INDICATES SWITCH CONTROL.
- EXIT LIGHTS- CEILING OR WALL MOUNTED, ARROW(S) INDICATES DIRECTION.
- LOW LEVEL EXIT MARKER, SELF ILLUMINATING TYPE, ACTIVE SAFETY #2002-S-WM SERIES.
- LOW LEVEL EXIT MARKER, SELF ILLUMINATING TYPE WITH KICKPLATE, ACTIVE SAFETY #2002-K18000 SERIES.
- 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 EACH OTHER WITHOUT A COMMA INDICATES 1 SWITCH LEG
- WATTSTOPPER LMSW-105 PROGRAMMABLE SCENE DIMMING SWITCH.
- WATTSTOPPER RT-200 ASTRONOMICAL TIME SWITCH.
- WATTSTOPPER LMLS-400 PHOTO-SENSOR, PROVIDE A LMLS-MB1 BRACKET FOR J-BOX MOUNTING CONDITIONS.
- WATTSTOPPER LMPL-201 RECEPTACLE CONTROLLER
- 'PNL'-#3a — PANEL IDENTIFICATION; CIRCUIT IDENTIFICATION; SWITCH-LEG IDENTIFICATION

LIGHTING AND ROOM RECEPTACLE 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
- THERMAL RATED SNAP SWITCH FOR CONTROLLING FRACTIONAL HORSEPOWER MOTORS.
- CEILING OR WALL MOUNTED JUNCTION BOX
- PULLBOX(S) - SIZE AND NUMBER AS INDICATED
- SINGLE RECEPTACLE - 20A, 120V & GROUND
- RECEPTACLE, DUPLEX - 20A, 120V & GROUND
- RECEPTACLE, DUPLEX - 20A, 120V & ISOLATED GROUND
- RECEPTACLE, DUPLEX CEILING MOUNTED
- RECEPTACLE, DUPLEX - WITH ONE-HALF SWITCHED/CONTROLLED
- RECEPTACLE, DUPLEX- WITH GFCI PROTECTION
- RECEPTACLE, DUPLEX - WITH GFCI PROTECTION IN WEATHERPROOF HOUSING
- 20A, 120V RECEPTACLE, DUPLEX- WITH TWO USB PORTS
- 20A, 120V RECEPTACLE, DUPLEX- WITH TWO USB PORTS WITH ONE-HALF SWITCHED/CONTROLLED
- 20A, 120V RECEPTACLE, DUPLEX- WITH TWO USB PORTS AND GFI PROTECTION
- RECEPTACLE, 50A, 3-WIRE, 250V
- 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.

  INTERCOM 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
- FUTURE CEILING OR WALL MOUNTED WIRELESS ACCESS POINT. PROVIDE AND INSTALL TWO DATA CABLES 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-6A 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. FOR EXPOSED CEILINGS, TERMINATE CABLING WITH DATA JACKS AND FASTEN WITHIN A TWO-GANG BOX. THE BOX SHALL BE LOCATED WITHIN THE ATTIC LEVEL.
- SPEAKER - WALL OR CEILING MOUNTED. PROVIDE AND INSTALL A 3/4-INCH CONDUIT AND ONE CAT-6A DATA CABLE BACK TO THE IDF.
- (5) (4)(2) NUMBER IN PARENTHESIS INDICATES QUANTITY OF DEVICES. TYPICAL FOR ALL TYPES OF DEVICES.
- VFD VARIABLE FREQUENCY DRIVE
- FIRE SPRINKLER (PROVIDED BY OTHERS)

- 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
- 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.
- T 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 NEC/CEC. MAINTAIN FRONTAL CLEARANCE OF 48-INCHES AND SIDE CLEARANCES OF 30-INCHES WIDE PER THE NEC/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 NEC/CEC. MAINTAIN FRONTAL CLEARANCE OF 48-INCHES AND SIDE CLEARANCES OF 30-INCHES WIDE PER THE NEC/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.
- GROUND ROD - 3/4" DIAMETER x 10-FEET LONG COPPER CLAD
- M METER
- SURGE SUPPRESSION DEVICE
- PROVIDE AND INSTALL JUNCTION BOX AND SURVEILLANCE CAMERA; REFER TO SPECIFICATIONS AND ELECTRICAL DETAILS. RUN 1" CONDUIT AND CAT-6A CABLE TO THE IDF. RUN 1/2" CONDUIT TO THE NEAREST 120V ELECTRICAL PANEL. MAKE ALL CONNECTIONS FOR A FULLY FUNCTIONAL SYSTEM.
- INTRUSION ALARM DOOR CONTACT PROVISION, SEE TYPICAL DETAILS.
- INTRUSION ALARM KEYPAD, INSTALL 1/2-INCH CONDUIT FROM PAD LOCATION TO NEAREST UTILITY CLOSET/INTRUSION ALARM PANEL LOCATION.
- INTRUSION ALARM MOTION DETECTOR, AIM AS INDICATED ON PLANS.
- CIRCUIT INTERCONNECTION
- GROUND
- CIRCUIT BREAKER
- CIRCUIT BREAKER, SIZE AS INDICATED
- FUSED SWITCH
- PANIC ALARM BUTTON
- PUSH BUTTON CONTROL STATION
- EXISTING ABOVE GROUND CONDUIT
- EXISTING UNDERGROUND CONDUIT
- 1 HOUR FIRE RATED WALL
- 2 HOUR FIRE RATED WALL
- 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 NECESARY 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 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. HASH MARKS INDICATE THE NUMBER OF CONDUCTORS AND THE ADJACENT NUMBER INDICATES CONDUCTOR SIZE.
- #10
- CONDUIT 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. HASH MARKS INDICATE THE NUMBER OF CONDUCTORS AND THE ADJACENT NUMBER INDICATES CONDUCTOR SIZE.
- #10
- CONDUIT- UP
- CONDUIT-DOWN
- QUANTITY OF SWITCHED/DIMMED VOLTAGE CONDUCTORS; QUANTITY OF UNSHIELDED, TWISTED, 0-10VDC CONTROL PAIRS; QUANTITY OF UNSWITCHED HOT CONDUCTORS; QUANTITY OF NEUTRAL CONDUCTORS; QUANTITY OF GROUND CONDUCTORS
- # 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
- # ADDENDUM OR REVISION NUMBER, SEE DESCRIPTION ON SAME SHEET.

ELECTRICAL SHEET LIST

E1.01	SHEET INDEX, SYMBOL LIST, ABBREVIATIONS AND NOTES
E1.02	ARC FLASH LABEL REQUIREMENTS, MOUNTING HEIGHTS
E1.03	PARTIAL SINGLE LINE DIAGRAM
E1.04	PARTIAL SINGLE LINE DIAGRAM
E1.05	PARTIAL SINGLE LINE DIAGRAM, DATA RISER DIAGRAM, AND IDF RACK ELEVATION
E1.06	LIGHTING FIXTURE & MECHANICAL SCHEDULES - ELECTRICAL EQUIPMENT WEIGHTS & DIMENSIONS
E1.07	PANEL SCHEDULES
E2.01	OVERALL ELECTRICAL SITE PLAN
E3.01	BASEMENT LIGHTING PLANS
E3.02	BASEMENT POWER & SIGNAL PLAN
E3.03	PARTIAL ELECTRICAL GROUND FLOOR PLAN & PARTIAL BASEMENT LIGHTING FLOOR PLAN
E3.04	DEMOLITION ELECTRICAL ROOF PLAN
E3.05	ELECTRICAL ROOF PLAN
E4.01	BASEMENT FIRE ALARM NOTES
E4.02	BASEMENT FIRE ALARM PLAN
E5.01	TYPICAL ELECTRICAL DETAILS
E5.02	TYPICAL ELECTRICAL DETAILS
E5.03	TYPICAL ELECTRICAL DETAILS
E5.04	TYPICAL ELECTRICAL DETAILS
E6.01	BRIX BUILDING BASEMENT POWER TITLE-24 FORMS
E6.02	MERCER BUILDING BASEMENT POWER TITLE-24 FORMS
E6.03	BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS
E6.04	BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS
E6.05	BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS
E6.06	MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS
E6.07	MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS
E6.08	MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS

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

ABBREVIATIONS

DEMOLITION NOTES

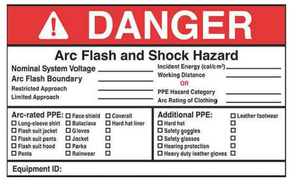
1. THE DEMOLITION PLANS GENERALLY SHOW ALL EXISTING EQUIPMENT TO BE REMOVED.
2. EXISTING CONDUITS IN WALLS TO BE REMOVED SHALL BE CUT AND CAPPED FLUSH WITH FLOOR AND/OR CEILING. REMOVE CONDUCTORS BACK TO LAST DEVICE ON CIRCUIT REMAINING. INSTALL PULL ROPE.
3. THE CONTRACTOR SHALL IDENTIFY LOCATIONS OF ALL CAPPED CONDUITS, WHETHER CUT AND CAPPED AS PART OF THIS PROJECT OR A PREVIOUS PROJECT, ON ALL THE RECORD DRAWINGS.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ELECTRICAL SERVICE TO ALL DEVICES DOWNSTREAM OF A DEVICE ABANDONED.
5. ALL ELECTRICAL DEVICES REMOVED THAT WILL NOT BE RELOCATED OR REPLACED SHALL HAVE ALL CONDUIT, CONDUCTORS, ETC. REMOVED BACK TO LAST DEVICE.
6. RELABEL ALL CIRCUITS THAT HAVE ALL LOADS REMOVED AS SPARE.
7. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO REMOVAL OF ANY ELECTRICAL EQUIPMENT. THE CONTRACTOR SHALL RETURN TO THE OWNER, IN THE AS-FOUND CONDITION, ANY EQUIPMENT THE OWNER REQUESTS BE RETURNED TO THE OWNER.
8. EXISTING CONDUIT MAY BE REUSED ONLY IF IT IS OF ADEQUATE SIZE AND IN GOOD CONDITION.
9. IF EXISTING EQUIPMENT REQUIRES RELOCATION, THE CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT IS OPERABLE, CONNECTED, AND DOES NOT POSE A HAZARD WHEN RELOCATED.
10. PATCH TO MATCH SURROUNDING SURFACE ANY HOLES CREATED BY REMOVING ANY EQUIPMENT, CONDUITS, ETC.
11. PANELS OR TERMINAL CABINETS IN WALLS TO BE REMOVED SHALL REMAIN OPERATIVE UNTIL ALL DEVICES FED FROM THE PANEL OR TC ARE REMOVED (IF APPLICABLE) OR NEW LOCATION FOR PANEL OR TC IS READY TO RECEIVED PANEL OR TC. IF NECESSARY, THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING TO SUPPORT PANEL OR TC. CHECK WITH ENGINEER FOR APPROVAL OF SUPPORTS. THE CONTRACTOR SHALL RELOCATE ALL DEVICES SERVED BY THE PANEL OR TC TO ANOTHER PANEL OR TC.
12. MAINTAIN CIRCUITS FEEDING DEVICES OUTSIDE OF BOUNDARIES OF CURRENT DEMOLITION PHASE DURING DEMOLITION FOR EACH PHASE OF DEMOLITION.

ARC FLASH WARNING LABEL REQUIREMENTS

CONDITION 1

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



1. 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

1. 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.

HILTI KWIK BOLT TZ NOTES

1. EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT TZ AS MANUFACTURED BY HILTI, INC., 5400 SOUTH 122ND EAST AVENUE, TULSA, OKLAHOMA 74146. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND I.C.C. REPORT NO. ESR-1917.

2. ULTIMATE TENSION VALUES SHALL BE AS FOLLOWS:
   - 2.1. FOR 3/8" DIAMETER BOLTS:
     - 2.1.1. MINIMUM EMBEDMENT: 2"
     - 2.1.2. MINIMUM DISTANCE FROM EDGE: 4-1/2"
     - 2.1.3. SPACING: 5"
     - 2.1.4. MINIMUM CONCRETE THICKNESS: 4"
     - 2.1.5. TENSION LOAD: 1600 POUNDS
     - 2.1.6. TORQUE TEST: 25 POUND-FEET
   - 2.2. FOR 1/2" DIAMETER BOLTS:
     - 2.2.1. MINIMUM EMBEDMENT: 3-1/4"
     - 2.2.2. MINIMUM DISTANCE FROM EDGE: 6"
     - 2.2.3. SPACING: 6"
     - 2.2.4. MINIMUM CONCRETE THICKNESS: 6-1/2"
     - 2.2.5. TENSION LOAD: 1600 POUNDS
     - 2.2.6. TORQUE TEST: 40 POUND-FEET

3. PLACEMENT GUIDELINES FOR ABOVE VALUES IN ITEM 2 REQUIRE THE FOLLOWING CONDITIONS:
   - 3.1. TABLE VALUES ARE BASED ON f'c = 3000 PSI
   - 3.2. HOLES DRILLED WITH A HAMMER DRILL AND CARBIDE BIT COMPLYING WITH ANSI B212.15-1994
   - 3.3. BIT DIAMETER EQUALS THE SIZE OF THE ANCHOR BEING INSTALLED
   - 3.4. HOLE DEPTH MUST EXCEED MINIMUM EMBEDMENT BY ONE BOLT DIAMETER
   - 3.5. ANY SEISMIC DESIGN CATEGORY PER 2013 C.B.C.
   - 3.6. TENSION LOAD VALUES SHALL BE MULTIPLIED BY 0.6 FOR LIGHTWEIGHT CONCRETE
   - 3.7. A.C.I. "CRACKED" CONCRETE CONDITION IS SUFFICIENT
   - 3.8. FOR CARBON OR STAINLESS STEEL BOLTS

4. WHEN INSTALLING EXPANSION ANCHORS IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A MINIMUM CLEARANCE OF ONE-INCH BETWEEN THE EXISTING REINFORCEMENT AND THE EXPANSION ANCHOR.

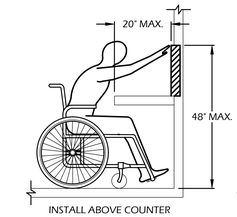
PLAN APPROVAL NOTE

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE AGENCY APPROVED SET OF PLANS.

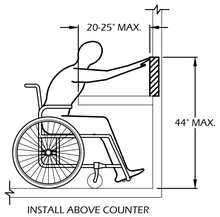
APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

TYPICAL WALL DEVICE MOUNTING HEIGHTS

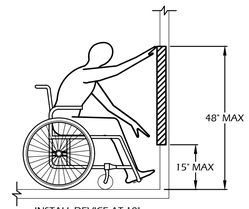
ADA GUIDELINES



INSTALL ABOVE COUNTER DEVICE AT 44" ABOVE FINISHED FLOOR.

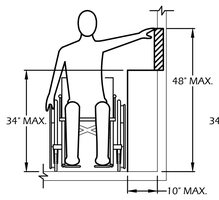


INSTALL ABOVE COUNTER DEVICE AT 40" ABOVE FINISHED FLOOR.

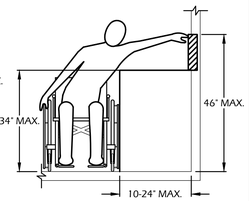


INSTALL DEVICE AT 18" ABOVE FINISHED FLOOR

FRONT ACCESS

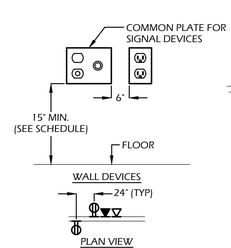


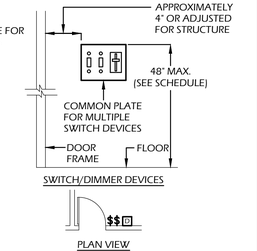
INSTALL DEVICE AT 44" ABOVE FINISHED FLOOR.



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
TELEPHONE OUTLETS (OFFICE)	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
TELEPHONE 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 RANGES 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.

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE.
FRESNO, CA 93711
559-369-6504
info@muratoreassociates.com

CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER TONY BORRELLI No. E14590 EXP. 6/30/23 ELECTRICAL CALIFORNIA

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Consulting Electrical Engineers
2032 N. Gateway Boulevard, Fresno, CA. 93727
Phone: 559-233-4138, Fax: 559-233-4354
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E-Mail: ca-bai@borrelliengineering.com
BAI# 21102

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

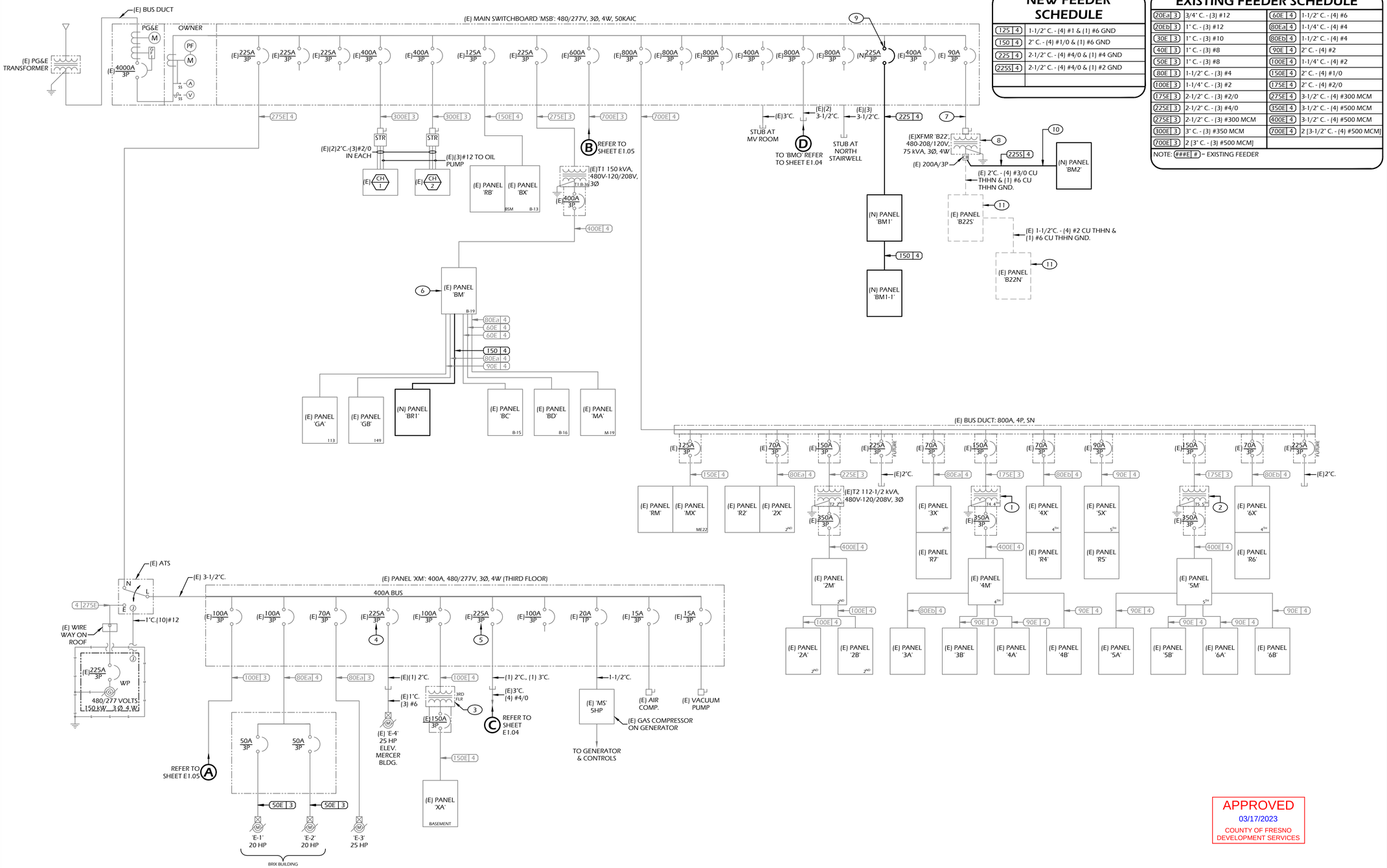
ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
ARC FLASH LABEL REQUIREMENTS, MOUNTING HEIGHTS

SHEET NUMBER
E1.02



NEW FEEDER SCHEDULE

125 4	1-1/2"C. - (4) #1 & (1) #6 GND
150 4	2"C. - (4) #1/0 & (1) #6 GND
225 4	2-1/2"C. - (4) #4/0 & (1) #4 GND
225S 4	2-1/2"C. - (4) #4/0 & (1) #2 GND

EXISTING FEEDER SCHEDULE

20Ea 3	3/4"C. - (3) #12	60E 4	1-1/2"C. - (4) #6
20Eb 3	1"C. - (3) #12	80Ea 4	1-1/4"C. - (4) #4
30E 3	1"C. - (3) #10	80Eb 4	1-1/2"C. - (4) #4
40E 3	1"C. - (3) #8	90E 4	2"C. - (4) #2
50E 3	1"C. - (3) #8	100E 4	1-1/4"C. - (4) #2
80E 3	1-1/2"C. - (3) #4	150E 4	2"C. - (4) #1/0
100E 3	1-1/4"C. - (3) #2	175E 4	2"C. - (4) #2/0
175E 3	2-1/2"C. - (3) #2/0	275E 4	3-1/2"C. - (4) #300 MCM
225E 3	2-1/2"C. - (3) #4/0	350E 4	3-1/2"C. - (4) #500 MCM
275E 3	2-1/2"C. - (3) #300 MCM	400E 4	3-1/2"C. - (4) #500 MCM
300E 3	3"C. - (3) #350 MCM	700E 4	2 [3-1/2"C. - (4) #500 MCM]
700E 3	2 [3"C. - (3) #500 MCM]		

NOTE: (###E #) = EXISTING FEEDER

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

PARTIAL SINGLE LINE DIAGRAM

NOT TO SCALE

SHEET NOTES (#)

1. EXISTING TRANSFORMER 'T4': 112-1/2KVA, 480V-120/208V, 3Ø.
2. EXISTING TRANSFORMER 'T5': 112-1/2KVA, 480V-120/208V,A 3Ø.
3. EXISTING TRANSFORMER 'TX': 50KVA, 480V-120/208V, 3Ø.
4. EXISTING 70A TRIP, 225A FRAME.
5. EXISTING 225A TRIP, 225A FRAME.
6. REFER TO PANEL 'BM' SCHEDULE ON SHEET E1.07.
7. EXISTING 1-1/2-INCH CONDUIT - (3) #2 CU THHN & (1) #6 CU THHN GROUND & (1) #4 CU THHN SERVICE GROUND.
8. EXISTING TRANSFORMER, SWITCH DISCONNECT, AND CIRCUIT BREAKER TO REMAIN AND BE UTILIZED TO FEED THE NEW PANEL 'BM2'
9. PROVIDE AND INSTALL NEW INDICATED CIRCUIT BREAKER AND ALL HARDWARE MOUNTING FOR A FULLY FUNCTIONAL SYSTEM.
10. PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS INDICATED BACK TO THE EXISTING CIRCUIT BREAKER ON THE SECONDARY SIDE OF THE EXISTING TRANSFORMER. MAKE ALL CONNECTIONS FOR A FULLY FUNCTIONAL SYSTEM.
11. DISCONNECT AND REMOVE EXISTING PANEL, ASSOCIATED CONDUITS, AND PULL ALL CONDUCTORS BACK TO THE EXISTING CIRCUIT BREAKER ON THE SECONDARY SIDE OF THE EXISTING TRANSFORMER.

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

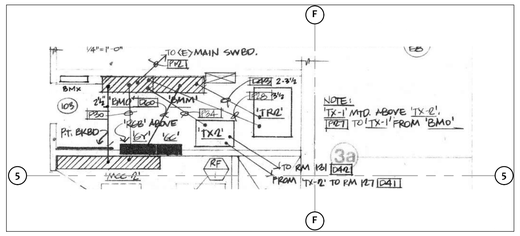
ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
PARTIAL SINGLE LINE DIAGRAM

SHEET NUMBER:
E1.03



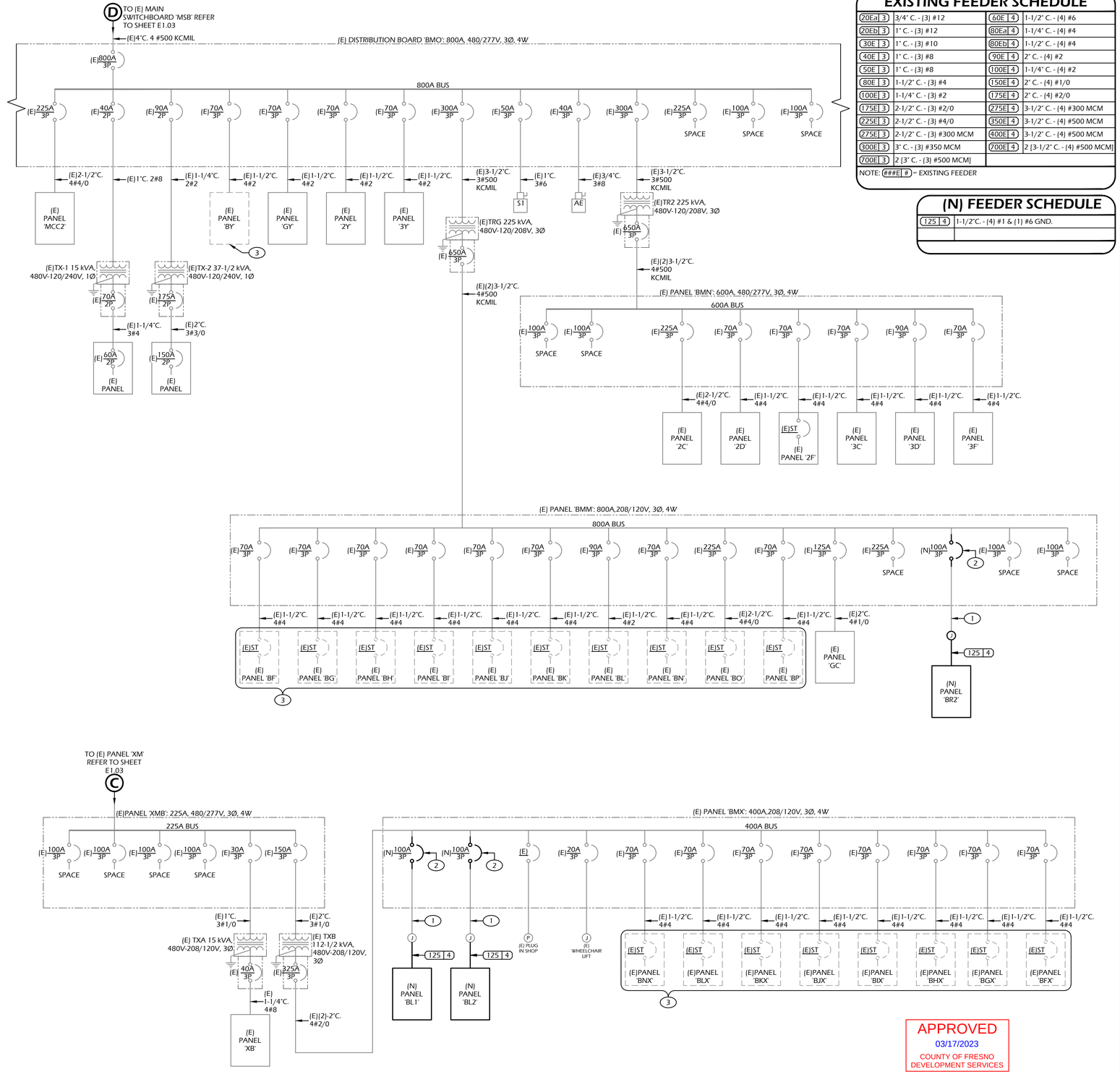
2
-

EXISTING GROUND LEVEL EQUIPMENT ROOM 103 - MERCER BUILDING

SCALE: N.T.S.

SHEET NOTES (#)

1. UTILIZE THE EXISTING 1-1/2 INCH CONDUIT PREVIOUSLY USED BY THE DEMOLISHED PANELS TO GO FROM THE GROUND LEVEL FLOOR TO THE BASEMENT. THEN UTILIZE NEW CONDUIT AS INDICATED TO ROUTE THE NEW CONDUCTORS TO THE NEW PANEL.
2. PROVIDE AND INSTALL NEW INDICATED CIRCUIT BREAKER. PROVIDE ALL MOUNTING HARDWARE FOR A FULLY FUNCTIONING SYSTEM.
3. EXISTING PANELS HAVE BEEN DEMOLISHED AND EXISTING FEEDERS WERE NOT REMOVED. CONTRACTOR TO PULL AND DISCONNECT ALL FEEDERS BACK TO SOURCE. CAP OFF AND ABANDON THE EXISTING CONDUITS.



EXISTING FEEDER SCHEDULE

20Ea 3	3/4" C. - (3) #12	60E 4	1-1/2" C. - (4) #6
20Eb 3	1" C. - (3) #12	80Ea 4	1-1/4" C. - (4) #4
30E 3	1" C. - (3) #10	80Eb 4	1-1/2" C. - (4) #4
40E 3	1" C. - (3) #8	90E 4	2" C. - (4) #2
50E 3	1" C. - (3) #8	100E 4	1-1/4" C. - (4) #2
80E 3	1-1/2" C. - (3) #4	150E 4	2" C. - (4) #1/0
100E 3	1-1/4" C. - (3) #2	175E 4	2" C. - (4) #2/0
175E 3	2-1/2" C. - (3) #2/0	275E 4	3-1/2" C. - (4) #300 MCM
225E 3	2-1/2" C. - (3) #4/0	350E 4	3-1/2" C. - (4) #500 MCM
275E 3	2-1/2" C. - (3) #300 MCM	400E 4	3-1/2" C. - (4) #500 MCM
300E 3	3" C. - (3) #350 MCM	700E 4	2 [3-1/2" C. - (4) #500 MCM]
700E 3	2 [3" C. - (3) #500 MCM]		

NOTE: (###E #) = EXISTING FEEDER

(N) FEEDER SCHEDULE

125 4	1-1/2"C. - (4) #1 & (1) #6 GND.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

1
-

PARTIAL SINGLE LINE DIAGRAM

NOT TO SCALE

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REVISION TABLE:

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DATE: 11/11/2022
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JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

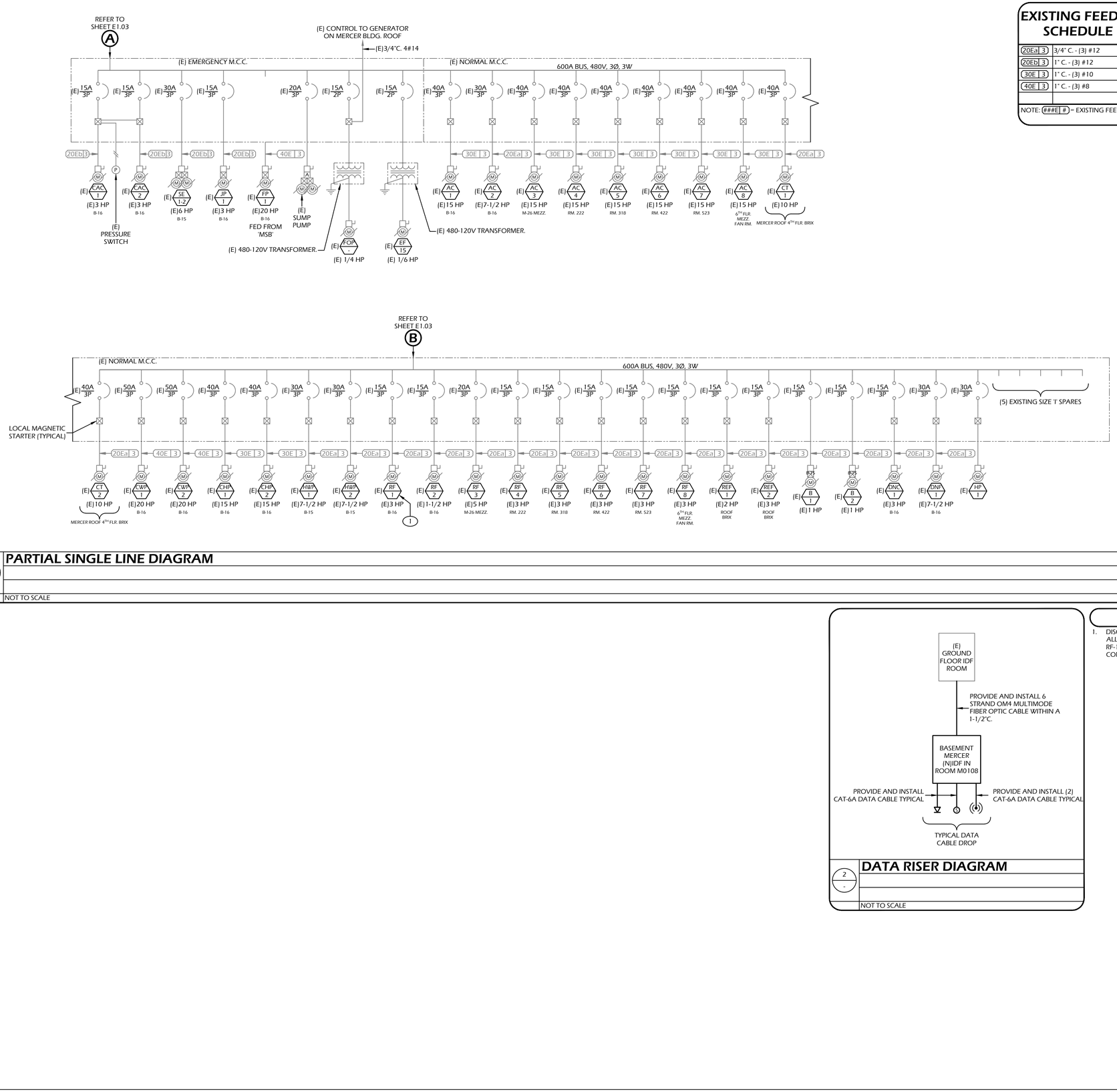
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

PARTIAL SINGLE LINE DIAGRAM

SHEET NUMBER:

E1.04



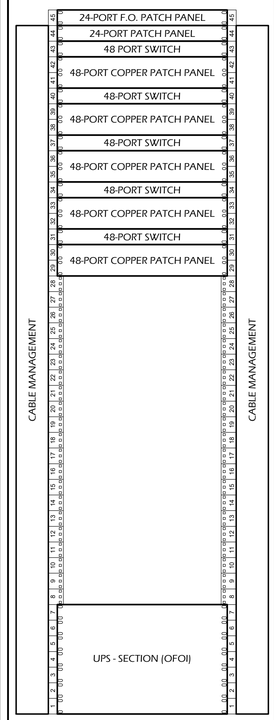
EXISTING FEEDER SCHEDULE

20Ea 3	3/4" C. - (3) #12
20Eb 3	1" C. - (3) #12
30E 3	1" C. - (3) #10
40E 3	1" C. - (3) #8

NOTE: (###E #) = EXISTING FEEDER

1 PARTIAL SINGLE LINE DIAGRAM

NOT TO SCALE



NOTES:
1. NETWORK SWITCHES PROVIDED & INSTALLED BY OWNER.
2. PROVIDE ALL MOUNTING HARDWARE, SQUARE CAGE NUTS, SWITCH MOUNTING BRACKETS AND SHELVES FOR A FULLY FUNCTIONAL SYSTEM.

3 (N) IDF RACK ELEVATION

NOT TO SCALE

2 DATA RISER DIAGRAM

NOT TO SCALE

SHEET NOTES

1. DISCONNECT AND REMOVE POWER TO THE EXISTING HVAC AND PULL ALL CONDUCTORS BACK TO SOURCE. THE EXISTING 5HP VFD OF THE RF-1 TO BE ABANDONED IN PLACE. COORDINATE WITH MECHANICAL CONTRACTOR.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
PARTIAL SINGLE LINE DIAGRAM, DATA RISER DIAGRAM, AND IDF RACK ELEVATION

SHEET NUMBER
E1.05

MECHANICAL EQUIPMENT SCHEDULE

DESIG. # #	DESCRIPTION	FLA/MCA/HP/W	STARTER/ FUSES	VOLT	PHASE	MAX. OCPD SIZE	CON-DUIT SIZE	CONDUCTOR #	CONDUCTOR SIZE	GND.
AH - B1	AIR HANDLER	7.5 HP	DISC./VFD	480V	3	NOTE 2	3/4"	4	#10	NOTE 3
AH - B2		5 HP								
AH - B3		3 HP								
AH - B4		5 HP								
AH - B5		10 HP								
BSB - B-1	REFRIGERANT SYSTEM	0.50 MCA	STARTER SIZE 0/DISC	208V	1			2		
BSB - B-2										
BSB - B-3		0.10 MCA								
BSB - B-4		0.40 MCA								
BSB - B-5										
BSB - B-6										
BSB - B-7										
EF-4	EXHAUST FAN	2 HP	DISC./VFD	480V	3			4		
EF-7	HOOD EXHAUST FAN	3 HP								
EF-10	EXHAUST FAN	1 HP							#12	
EF-11										
EF-12		1.5 HP								
IDU - B-1	FAN COILS	2.3 FLA	STARTER SIZE 0/DISC	208V	1			2	#10	
IDU - B-2		2.3 FLA								
IDU - B-3		2.3 FLA								
IDU - B-4		2.7 FLA								
IDU - B-5		2.7 FLA								
IDU - B-6		1.4 FLA								
IDU - B-7		1.4 FLA								
IDU - B-8		1.4 FLA								
IDU - B-9		1.4 FLA								
IDU - B-10		1.3 FLA								
IDU - B-11		1.3 FLA								
IDU - B-12		2.7 FLA								
IDU - B-13		1.4 FLA								
IDU - B-14		1.4 FLA								
IDU - B-15		1.4 FLA								
IDU - B-16		1.4 FLA								
IDU - B-17		0.7FLA								
IDU - B-18	FAN COILS**	0.4 FLA								
IDU - B-19		0.5 FLA								
IDU - B-20	FAN COILS	1.4 FLA								
IDU - B-21	FAN COILS**	0.3 FLA								
IDU - B-22	FAN COILS	1.4 FLA								
ODU - 1	OUTDOOR UNIT	26 FLA	FUSE/DISC.	480V	3		1"	4	#8	
ODU - 2										
ODU - 3		9.4 FLA					3/4"		#10	

NOTES:
1. * = THERMAL RATED SWITCH FOR FRACTIONAL HORSEPOWER MOTORS.
2. REFER TO THE PANEL SCHEDULE FOR THE CIRCUIT BREAKER SIZES.
3. GROUNDING CONDUCTOR SIZE TO MATCH CIRCUIT CONDUCTOR SIZE.
4. PROVIDE A NEMA SIZE (0) STARTER FOR THE EXHAUST FANS. COORDINATE WITH THE MECHANICAL CONTRACTOR PRIOR TO PURCHASING AND INSTALLING.
5. **= PROVIDE AND INSTALL (3) #12 CONDUCTORS WITHIN A 3/4-INCH CONDUITS FROM IDU TERMINAL STRIP TO THE TERMINAL STRIP AT THE CONDENSATE PUMP FOR POWER CONNECTIONS. PROVIDE AND INSTALL (3) #12 CONDUCTORS WITHIN 3/4-INCH CONDUIT FROM IDU TERMINAL STRIP TO THE TERMINAL STRIP AT THE CONDENSATE PUMP ALARM SAFETY CIRCUIT. COORDINATE WITH MECHANICAL CONTRACTOR.

GENERAL NOTES:
1. COORDINATE WITH MECHANICAL PLANS FOR LOCATIONS OF MECHANICAL EQUIPMENT.
2. PROVIDE FUSED DISCONNECT PER NAME PLATE RATING OF MECHANICAL UNITS.
3. VFD = VARIABLE FREQUENCY DRIVE.
4. VFD'S SHALL BE IEEE 519 COMPLIANT WITH BUILT-IN SWITCH DISCONNECT AND HAVE GFI/EARTH PROTECTION ON THE LOAD SIDE OF THE DRIVE. THE VFD'S WILL BE PROVIDED BY THE CONTROLS CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR TO PROVIDE THE POWER CONNECTIONS TO THE VFD, AND BETWEEN THE VFD AND THE CONNECTED EQUIPMENT, VFD'S ARE TO COME WITH AN HMI INCORPORATED INTO THE VFD TO ALLOW FOR BALANCE OF THE SYSTEM. THE CONTROLS CONTRACTOR SHALL PROVIDE THE CONTROLS/EMS CONNECTIONS TO THE VFD. IF THE SWITCH DISCONNECT IS PLACED BETWEEN THE LOAD AND THE VFD, THE SWITCH DISCONNECT SHALL HAVE EARLY BREAK AUXILIARY CONTACT AND WIRING/CONDUIT CONNECTIONS SHALL BE MADE TO THE VFD FOR EARLY BREAK.

CABLE SIZE SCHEDULE FOR 208V CIRCUIT

CIRCUIT LOAD(A)	CABLE SIZE PER DISTANCE 50FT	100FT	150FT	200FT	250FT	300FT
4	#12	#12	#12	#12	#12	#12
8	#12	#12	#12	#10	#10	#10
12	#12	#12	#10	#10	#8	#8
16	#12	#10	#10	#8	#8	#6
20	#12	#10	#8	#8	#6	#6
24	#10	#10	#8	#6	#6	#4
28	#10	#8	#6	#6	#4	#4
32	#8	#8	#6	#6	#4	#4
36	#8	#8	#6	#4	#4	#2
40	#8	#8	#6	#4	#4	#2

CABLE SIZE SCHEDULE FOR 480V CIRCUIT

CIRCUIT LOAD(A)	CABLE SIZE PER DISTANCE 50FT	100FT	150FT	200FT	250FT	300FT
4	#12	#12	#12	#12	#12	#12
8	#12	#12	#12	#12	#12	#12
12	#12	#12	#12	#12	#12	#12
16	#12	#12	#12	#12	#10	#10
20	#12	#12	#12	#10	#10	#8
24	#10	#10	#10	#10	#8	#8
28	#10	#10	#10	#10	#8	#8
32	#8	#8	#8	#8	#8	#6
36	#8	#8	#8	#8	#8	#6
40	#8	#8	#8	#8	#6	#6

CABLE SIZE SCHEDULE FOR 120V CIRCUIT

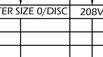
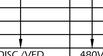
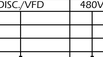
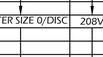
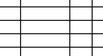
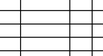
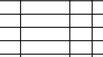
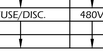
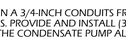
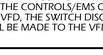
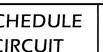
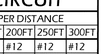
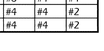
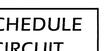
CIRCUIT LOAD(A)	CABLE SIZE PER DISTANCE 50FT	100FT	150FT	200FT	250FT	300FT
4	#12	#12	#10	#8	#8	#8
8	#12	#8	#8	#6	#4	#2
12	#10	#8	#6	#4	#4	#2
16	#8	#6	#4	#2	#2	#2
20	#8	#4	#4	#2	#1	#1
24	#8	#4	#2	#2	#1	#1/0
28	#6	#4	#2	#1	#1/0	#2/0
32	#6	#2	#2	#1/0	#2/0	#2/0
36	#6	#2	#1	#1/0	#2/0	#3/0
40	#4	#2	#1	#2/0	#3/0	#3/0

CABLE SIZE SCHEDULE FOR 277V CIRCUIT

CIRCUIT LOAD(A)	CABLE SIZE PER DISTANCE 50FT	100FT	150FT	200FT	250FT	300FT
4	#12	#12	#12	#12	#12	#10
8	#12	#12	#10	#10	#8	#8
12	#12	#10	#8	#8	#6	#6
16	#12	#10	#8	#6	#6	#4
20	#12	#8	#6	#6	#4	#4
24	#10	#8	#6	#4	#4	#2
28	#10	#6	#6	#4	#4	#2
32	#8	#6	#4	#4	#2	#2
36	#8	#6	#4	#2	#2	#2
40	#8	#6	#4	#4	#2	#1

NOTES:
1. MINIMUM CONDUCTOR SIZE AMPACITY AT 75 DEGREES CELSIUS FOR EACH CIRCUIT SHALL MATCH OR EXCEED THE CIRCUIT BREAKER RATING. CONDUCTOR SIZE SHALL BE INCREASED PER THE ABOVE TABLE AS CIRCUIT DISTANCES INCREASES, SO VOLTAGE DROP WILL NOT EXCEED 3% FROM PANEL CIRCUIT ORIGIN.
2. CONDUIT SHALL BE SIZED PER THE ABOVE TABLE AND SHALL NOT CARRY MORE THAN 6 CURRENT CARRYING CONDUCTORS.
3. UTILIZE THIS SCHEDULE AND NOTES IF CONDUCTORS AND CONDUIT SIZES ARE NOT SHOWN WITHIN THE PLANS.
4. FOR LOAD (A) VALUES NOT SHOWN USE NEXT HIGHEST VALUE FROM THE CHART.
5. THESE CHARTS ARE FOR COPPER CONDUCTORS ONLY.

LIGHTING FIXTURE SCHEDULE (#)

TYPE	LIGHTS	MANUFACTURER AND MODEL	LAMPS	REMARKS	WATTS	LBS
A1		DAY-BRITE # 2EVG54LH840-4-D-UNV-DIM-TAP	LED	2-FT. x 4-FT., 5,400 LUMENS (NOMINAL) LED FIXTURE RECESS MOUNTED IN A T-BAR CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING.	39	22
A2		DAY-BRITE # 2EVG48LH840-4-D-UNV-DIM-TAP	LED	2-FT. x 4-FT., 4,800 LUMENS (NOMINAL) LED FIXTURE RECESS MOUNTED IN A T-BAR CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING.	36	22
A3		DAY-BRITE # 2EVG38LH840-4-D-UNV-DIM-TAP	LED	2-FT. x 4-FT., 3,800 LUMENS (NOMINAL) LED FIXTURE RECESS MOUNTED IN A T-BAR CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING.	27	22
B1		DAY-BRITE # 2EVG30L840-2-D-UNV-DIM-TAP	LED	2-FT. x 2-FT., 3,000 LUMENS (NOMINAL) LED FIXTURE RECESS MOUNTED IN A T-BAR CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING.	25	14
C1		LIGHTOLIER # 7RN-C6L10840WZ10U-C7RLWCL	LED	1,000 LUMEN, LED, RECESSED FIXTURE MOUNTED ON HARD CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING.	9	25
C2		LIGHTOLIER # 7RN-C6L10840WZ10U-C7RLWCL	LED	1,000 LUMEN, LED, RECESSED FIXTURE MOUNTED IN A T-BAR CEILING CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING.	9	25
C3		VODE # 707-Z9 SL 4 ** AC 0 IP AT 2 0 Z LO 40 C1 0 AL	LED	1,676 LUMEN, LED, COVE LIGHT MOUNTED IN ARMSTRONG AXIOM CEILING-TO-CEILING COVE. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING. REFER TO LIGHTING FLOOR PLAN FOR SYSTEM LENGTH PRIOR TO ORDERING.	15.2	4.4
C4		FINELITE # HP-WS-4W-2D-4-S-840-SW-120-SC	LED	1,309 LUMEN, LED, COVE LIGHT. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING. ORDER FIXTURE IN 4-FT SEGMENTS AND INSTALL AS INDICATED ON LIGHTING PLAN.	14.4	22.4
F		FINELITE LIGHTING # HPT-RSE-4X4-S-840-96-120-SC-FC-10%-C1-96LG	LED	4-FT. x 4-FT., 8,332 LUMENS (NOMINAL) LED FIXTURE RECESS MOUNTED IN A T-BAR CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING.	55.8	77
H		H.E. WILLIAMS #39-4-L30/840-A-DIM-UNV	LED	1-FT. x 4-FT., 3,000 LUMEN (NOMINAL), LED FIXTURE SURFACE MOUNTED ON A HARD CEILING.FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING. ONE LIGHT FIXTURE TO BE WALL MOUNTED IN ROOM M0103, REFER TO THE LIGHTING FLOOR PLAN.	22.8	15
K1		H.E. WILLIAMS #50G-S24-L59/840-F-AF12125-DIM-UNV	LED	2-FT. x 4-FT., 6,231 LUMENS (NOMINAL) LED FIXTURE RECESS MOUNTED IN A T-BAR. FIXTURE SHALL HAVE 0-10V CONTINUOUS DIMMING.	48	25
K2		H.E. WILLIAMS #6DR-TL-L20/840-DIM-UNV-SW-OF-WH-I-F1	LED	6" DIAMETER, 2,000 LUMEN (NOMINAL) LED CAN LIGHT RECESS MOUNTED IN A HARD CEILING. FIXTURE SHALL HAVE 0-10V CONTINUOUS DIMMING.	19.5	10
P1		FINELITE LIGHTING #S12 12 LED ID-DCO-4-4E-S-840-20U80D-120-SC-FA-CE-C4	LED	9-IN. X 4-FT., 3,000 LUMEN (NOMINAL) LED FIXTURE PENDANT MOUNTED IN HARD CEILING. FIXTURE SHALL BE MOUNTED 34-IN. BELOW CEILING. FIXTURE SHALL HAVE CONTINUOUS 0-10V DIMMING. BOTTOM OF FIXTURE SHALL BE AT 8.5FT A.F.F.	27.2	14
P2		FINELITE LIGHTING # S12 12 LED ID-DCO-8-4E-S-840-20U80D-120-SC-FA-CE-CX* *C1- 1-IN. TBAR, C2- 9/16-IN. TBAR	LED	9-IN. X 8-FT., 6,000 LUMEN (NOMINAL) LED FIXTURE PENDANT MOUNTED IN T-BAR CEILING. FIXTURE SHALL BE MOUNTED. FIXTURE SHALL HAVE CONTINUOUS 0-10V DIMMING. BOTTOM OF FIXTURE SHALL BE AT 7FT A.F.F.	54.4	28
P3		FINELITE LIGHTING #S12 12 LED ID-DCO-12-4E-S-840-20U80D-120-SC-FA-CE-C4	LED	9-IN. X 12-FT., 9,000 LUMEN (NOMINAL) LED FIXTURE PENDANT MOUNTED IN HARD CEILING. FIXTURE SHALL BE MOUNTED 34-IN. BELOW CEILING. FIXTURE SHALL HAVE CONTINUOUS 0-10V DIMMING. BOTTOM OF FIXTURE SHALL BE AT 8.5FT A.F.F.	81.6	42
P4		FINELITE LIGHTING # S12 12 LED ID-DCO-16-4E-S-840-20U80D-120-SC-FA-CE-CX* *C1- 1-IN. TBAR, C2- 9/16-IN. TBAR	LED	9-IN. X 16-FT., 12,000 LUMEN (NOMINAL) LED FIXTURE PENDANT MOUNTED IN T-BAR CEILING. BELOW CEILING. FIXTURE SHALL HAVE CONTINUOUS 0-10V DIMMING. BOTTOM OF FIXTURE SHALL BE AT 7FT A.F.F.	108.8	56
P5		FINELITE LIGHTING #S12 12 LED ID-DCO-20-4E-S-840-20U80D-120-SC-FA-CE-C4	LED	9-IN. X 20-FT., 15,000 LUMEN (NOMINAL) LED FIXTURE PENDANT MOUNTED IN HARD CEILING. FIXTURE SHALL BE MOUNTED 34-IN. BELOW CEILING. FIXTURE SHALL HAVE CONTINUOUS 0-10V DIMMING. BOTTOM OF FIXTURE SHALL BE AT 8.5FT A.F.F.	136	70
P6		H.E. WILLIAMS #AVX-4-L36/840-CPC-AC(Y12)/D48-DIM-UNV	LED	11-IN. x 4-FT., 3,677 LUMEN (NOMINAL), LED FIXTURE PENDANT MOUNTED IN A HARD CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING. LIGHT FIXTURE TO BE WALL MOUNTED IN ROOM B0101, REFER TO THE LIGHTING FLOOR PLAN.	31	15
R		H.E. WILLIAMS #AVX-4-L36/840-CPC-DIM-UNV	LED	11-IN. x 4-FT., 3,677 LUMEN (NOMINAL), LED FIXTURE SURFACE MOUNTED ON A HARD CEILING. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING. LIGHT FIXTURE TO BE WALL MOUNTED IN ROOM B0101, REFER TO THE LIGHTING FLOOR PLAN.	31	15
S		ELITE LED LIGHTING # RL991-1200L-DIM10-120-40K-90	LED	7-7/8 IN DIAMETER, 1200 LUMENS (NOMINAL). RECESSED MOUNTED IN HARD CEILING. FIXTURE SHALL BE SHOWER/WET RATED AND HAVE CONTINUOUS 0-10V DIMMING.	18	8
W		H.E. WILLIAMS #SLF-4-L26/840-HIA-UNV	LED	6-IN. x4-FT., 2,600 LUMEN (NOMINAL), LED FIXTURE WALL MOUNTED. FIXTURE SHALL HAVE CONTINOUS 0-10V DIMMING. LIGHT FIXTURE TO BE SURFACE MOUNTED IN ROOM M109 AND B0106, REFER TO THE LIGHTING FLOOR PLAN.	20.1	15
X		CHLORIDE OR EQUAL #CN6GCA1ICTA	LED	UNIVERSAL MOUNTED, EDGE LIT EXIT SIGN WITH CLEAR AND GREEN LETTERS. PROVIDE INDICATING ECHELON ARROWS REQUIRED PER DIRECTION INDICATED. PROVIDE TEST SWITCH, INDICATING LEDS, AND BATTERY PACK WITH INTEGRAL CHARGER. REFER TO FLOOR PLANS FOR WALL OR CEILING MOUNTING LOCATIONS.	5	10

SCHEDULE NOTES

1. COORDINATE ALL COLORS WITH OWNER/ARCHITECT PRIOR TO ORDERING. CONTRACTOR SHALL PROVIDE COLOR SAMPLES DURING SUBMITTAL STAGE
2. ALL CLEAR, ACRYLIC, PRISMATIC LENSES ARE TO BE MINIMUM 0.125" PATTERN K12, U.O.N
3. ALL LEDS SHALL HAVE A CRI OF 0.8 AND COLOR TEMPERATURE OF 4000K
4. ALL HALF SHADED FIXTURES SHALL HAVE AN EMERGENCY DRIVER WITH BATTERY BACKUP IN ORDER TO PROVIDE A MINIMUM OF 90 MINUTES OF BACKUP IN THE EVENT OF POWER OUTAGE WITH MINIMUM 1100 LUMEN OUTPUT. THE BATTERY CHARGER SHALL BE CONNECTED TO THE UN-SWITCHED SOURCE.
5. ALL EXIT LIGHT FIXTURES SHALL BE CONNECTED TO AN UN-SWITCHED SOURCE.
6. ALL RECESS MOUNTED FIXTURES SHALL COME WITH BAR HANGERS. THE CONTRACTOR SHALL VERIFY CEILING TYPE PRIOR TO ORDERING.
7. ALL DRIVERS SHALL HAVE LESS THAN 10% THD.
8. FIXTURE TYPE IS SHOWN WITHIN MOST FIXTURES.
9. PRIOR TO ORDERING FIXTURES REFER TO THE LIGHTING PLAN FOR THE CORRECT VOLTAGES TO BE UTILIZED FOR THE FIXTURES.
10. THE SYSTEM DESIGNED HERE IN IS A WATTSTOPPER NETWORKED LIGHTING SYSTEM. ALL ROOM CONTROLLERS, NETWORK BRIDGES, OCCUPANCY SENSORS, PHOTO SENSORS, LIGHTING RELAY PANEL, ETC. SHALL BE NETWORKED TOGETHER WITH THE LMJA CONTROLLER AND/OR LIGHTING RELAY PANEL. REFER TO PLANS FOR SPECIFICS. REFER TO TYPICAL DETAILS.

ELECTRICAL DISTRIBUTION WEIGHT & DIMENSIONS SCHEDULE

NAME	CB	WEIGHT(Lb)	W	D	H	MOUNTING
BR1	150A	196	20"	5.75"	68"	SURFACE MOUNTED
BR2	100A	144	20"	5.75"	50"	SURFACE MOUNTED
BL1	100A	127	20"	5.75"	44"	SURFACE MOUNTED
BL2	100A	127	20"	5.75"	44"	SURFACE MOUNTED
BM1	225A	271	20"	8.75"	74"	SURFACE MOUNTED
BM1-1	150A	269	20"	6.5"	68"	SURFACE MOUNTED
BM2	200A	144	20"	5.75"	50"	SURFACE MOUNTED

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE. FRESNO, CA 93711
559-369-6804
info@muratoreassociates.com

CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER JOHN BORRELLI No. E-14590 EXP. 6/30/23 ELECTRICAL CALIFORNIA

Borrelli and Associates, Inc.
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2032 N. Gateway Boulevard, Fresno, CA. 93727
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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

LIGHTING FIXTURE & MECHANICAL SCHEDULES - ELECTRICAL EQUIPMENT WEIGHTS & DIMENSIONS

SHEET NUMBER:

E1.06

(N) PANEL 'BM2'

VOLTAGE: 208/120V, 3Ø, 4W | BUS: 225A | MAIN BREAKER: 200A/3P | BREAKER AIC: 35,000 | MOUNTING: SURFACE | NEMA 1 ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1	20A/1P	300			EMS CONTROL CABINET	FIRE SMOKE DAMPER			600	20A/1P	2
3	↓		300		EMS CONTROL CABINET	FIRE SMOKE DAMPER		600		↓	4
5	↓			300	EMS CONTROL CABINET	FIRE SMOKE DAMPER	450			↓	6
7	↓	300			EMS CONTROL CABINET	FIRE SMOKE DAMPER			600	↓	8
9	20A/2P		603.2		BSB-B6, IDU-B20, B21, B22	SPARE		0		↓	10
11				603.2		FIRE SMOKE DAMPER	750			↓	12
13	20A/2P	1206			BSB-B1, IDU-B1, B2, B4, B6	BSB-B5, IDU-B12, B13			582.4	20A/2P	14
15			1206					582.4			16
17	20A/2P			1092	BSB-B2, IDU-B3, B5, B7, B8	BSB-B4, IDU-B14, B15, B16, B17, B18	707.2			20A/2P	18
19		1092							707.2		20
21	20A/2P		436.8		BSB-B7, IDU-B19, B10, B11	SPARE		0		20A/2P	22
23				436.8			0				24
25	15A/1P	0				BSB-B3, IDU-B9			197.6	20A/2P	26
27	↓		1176		EF-2			197.6			28
29	↓			1176	EF-14	SPARE	0			20A/1P	30
31	↓	0			SPARE	↓			0	↓	32
33	↓		864		EF-13			0		15A/1P	34
35	↓			696	EF-5		0			↓	36
37	20A/1P	0			SPARE	SPACE			0		38
39	↓		0		↓	↓		0		↓	40
41	↓			0	↓	↓	0			↓	42
43		0			SPACE	↓			0	↓	44
45	↓		0		↓	↓		0		↓	46
47	↓			0	↓	↓	0			↓	48
49	↓	0			↓	↓			0	↓	50
51	↓		0		↓	↓				↓	52
53	↓			0	↓	↓	0			↓	54

TOTAL Ø LOADS (VA):	PHASE A = 5586	PHASE B = 5966	PHASE C = 6211
TOTAL Ø LOADS (A):	PHASE A = 47	PHASE B = 50	PHASE C = 52
SUB TOTAL LOAD:	17763 VA	49 A	
25% OF LARGEST MOTOR:	905 VA	3 A	
TOTAL LOAD:	18668 VA	52 A	

NOTES:

(E) PANEL 'BM'
EXISTING CONFIGURATION

VOLTAGE: 208/120V, 3Ø, 4W | BUS: 400A | MAIN BREAKER: MLO | NEMA 1 ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1		8000							8960		2
3	100A/3P		6000		PANEL 'BA'	PANEL 'BB'		13360		100A/3P	4
5				2000			9380				6
7		1596							7000		8
9	70A/3P		2628		PANEL 'BC'	PANEL 'GA'		6000		90A/3P	10
11				2258			5000				12
13		6528							6000		14
15	70A/3P		6000		PANEL 'MA'	PANEL 'GB'		4000		70A/3P	16
17				5500			4000				18
19		1160				SPACE			0	↓	20
21	50A/3P		1160		PANEL 'BD'	↓		0		↓	22
23				1688		↓	0			↓	24
25	↓	0			SPACE	↓			0	↓	26
27	↓		0		↓	↓		0		↓	28
29	↓			0	↓	↓	0			↓	30

TOTAL Ø LOADS (VA):	PHASE A = 39244	PHASE B = 39148	PHASE C = 29826
TOTAL Ø LOADS (A):	PHASE A = 327	PHASE B = 326	PHASE C = 248
TOTAL LOAD:	108218 VA	300 A	

(N) PANEL 'BR2'

VOLTAGE: 208/120V, 3Ø, 4W | BUS: 125A | MAIN BREAKER: 100A/3P | BREAKER AIC: 35,000 | MOUNTING: SURFACE | NEMA 1 ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1	20A/1P	720			RM#M0104,108,109 REC.	RM#M0202 REC.			1080	20A/1P	2
3	↓		720		RM#M0204 - M0205 REC.	RM#M0202 REC.		1080		↓	4
5	↓			800	RM#M0204 REF. REC.	RM#M0202 REC.	900			↓	6
7	↓	1500			RM#M0204 MW. REC.	SPARE			0	↓	8
9	↓		540		RM#M0204 REC.	HALLWAY REC.		1260		↓	10
11	↓			1500	RM#M0204 MW. REC.	RM#M0203 REC.	900			↓	12
13	↓	180			RM#M0105 REC.	RM#M0106 REC.			180	↓	14
15	↓		360		RM#WMEN REST & VEST.	IDF REC.		360		↓	16
17	↓			360	IDF REC.	IDF REC.	2496			30A/2P	18
19	↓	360			RM#MEN REST & VEST.				2496		20
21	↓		720		RM#M0301,302,303 REC.	WATER FOUNTAIN REC.		370		20A/1P	22
23	↓			720	RM#M0301 REC.	SPARE	0			↓	24
25	↓	120			FA BOOSTER PANEL	RM#M0202 PROJECTOR			400	↓	26
27	↓		720		RM#M0301 REC.	RM#M0202 PROJECTOR		400		↓	28
29	↓			19	ELECT. TRAP PRIMER	RM#M0202 PROJECTOR	400			↓	30
31	↓	180			ROOF HVAC REC.	ICE DESPENSER REC.			1265	15A/1P	32
33	↓		0		SPARE	HOT HOLD CABINET REC.		1900		20A/1P	34
35	↓			252	PROJECTOR SCREEN	SPARE	0			↓	36
37		0			SPACE	SPACE			0		38
39	↓		0		↓	↓		0		↓	40
41	↓			0	↓	↓	0			↓	42

TOTAL Ø LOADS (VA):	PHASE A = 8481	PHASE B = 8430	PHASE C = 8347
TOTAL Ø LOADS (A):	PHASE A = 71	PHASE B = 70	PHASE C = 70
TOTAL LOAD:	25258 VA	70 A	

NOTES:
1. PROVIDE AND INSTALL A CIRCUIT BREAKER COMPLYING WITH NFPA 72 (RED AND WITH MECHANICAL LOCKING DEVICE) FOR THE DEDICATED CIRCUIT SUPPLYING POWER TO THE FIRE ALARM PANEL.

(N) PANEL 'BM1'

VOLTAGE: 480/277V, 3Ø, 4W | BUS: 225A | MAIN BREAKER: 225A/3P | BREAKER AIC: 35,000 | MOUNTING: SURFACE | NEMA 1 ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1		3048							2106		2
3	20A/3P		3048		AIR HANDLER AH-B1	AIR HANDLER AH-B4		2106		15A/3P	4
5				3048			2106				6
7		1330							3880		8
9	15A/3P		1330		AIR HANDLER AH-B3	AIR HANDLER AH-B5		3880		30A/3P	10
11				1330			3880				12
13		2106							1330		14
15	15A/3P		2106		AIR HANDLER AH-B2	EF-7		1330		15A/3P	16
17				2106			1330				18
19		0				SPACE			0		20
21	15A/3P		0		SPARE	↓		0		↓	22
23				0		↓	0			↓	24
25		0				SPACE			0	↓	26
27	↓		0		↓	↓		0		↓	28
29	↓			0	↓	↓	0			↓	30
31	↓	0			↓	↓			0	↓	32
33	↓		0		↓	↓		0		↓	34
35	↓			0	↓	↓	0			↓	36
37	↓	0			↓	↓			0	↓	38
39	↓		0		↓	↓		0		↓	40
41	↓			0	↓	↓	0			↓	42

TOTAL Ø LOADS (VA):	PHASE A = 33754	PHASE B = 33754	PHASE C = 33754
TOTAL Ø LOADS (A):	PHASE A = 122	PHASE B = 122	PHASE C = 122
SUB TOTAL LOAD:	101262 VA	122 A	
25% OF LARGEST MOTOR:	2910 VA	4 A	
TOTAL LOAD:	104172 VA	126 A	

NOTES:

(E) PANEL 'BM'
NEW CONFIGURATION

VOLTAGE: 208/120V, 3Ø, 4W | BUS: 400A | MAIN BREAKER: MLO | NEMA 1 ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1		12821							0		2
3	150A/3P		12774		(N) PANEL 'BR1'	SPARE		0		100A/3P	4
5				14190			0				6
7		1596							7000		8
9	70A/3P		2628		PANEL 'BC'	PANEL 'GA'		6000		90A/3P	10
11				2258			5000				12
13		6528							6000		14
15	70A/3P		6000		PANEL 'MA'	PANEL 'GB'		4000		70A/3P	16
17				5500			4000				18
19		1160				SPACE			0	↓	20
21	50A/3P		1160		PANEL 'BD'	↓		0		↓	22
23				1688		↓	0			↓	24
25	↓	0			SPACE	↓			0	↓	26
27	↓		0		↓	↓		0		↓	28
29	↓			0	↓	↓	0			↓	30

TOTAL Ø LOADS (VA):	PHASE A = 35105	PHASE B = 32562	PHASE C = 32636
TOTAL Ø LOADS (A):	PHASE A = 292	PHASE B = 271	PHASE C = 272
TOTAL LOAD:	100303 VA	278 A	

(N) PANEL 'BM1-1'

VOLTAGE: 480/277V, 3Ø, 4W | BUS: 150A | MAIN BREAKER: 150A/3P | BREAKER AIC: 35,000 | MOUNTING: SURFACE | NEMA 3R ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1		942							831		2
3	15A/3P		942		EF-4	EF-12		831		15A/3P	4
5				942			831				6
7		7205							7205		8
9	40A/3P		7205		ODU-1	ODU-2		7205		40A/3P	10
11				7205			7205				12
13		2605							582		14
15	25A/3P		2605		ODU-3	EF-10		582		15A/3P	16
17				2605			582				18
19		582							582		20
21	15A/3P		582		EF-13	EF-11		582		15A/3P	22
23				582			582				24
25		0			SPACE	SPACE			0		26
27	↓		0		↓	↓		0		↓	28
29	↓			0	↓	↓	0			↓	30
31	↓	0			↓	↓			0	↓	32
33	↓		0		↓	↓		0		↓	34
35	↓			0	↓	↓	0			↓	36
37	↓	0			↓	↓			0	↓	38
39	↓		0		↓	↓		0		↓	40
41	↓			0	↓	↓	0			↓	42

TOTAL Ø LOADS (VA):	PHASE A = 20535	PHASE B = 20535	PHASE C = 20535
TOTAL Ø LOADS (A):	PHASE A = 74	PHASE B = 74	PHASE C = 74
SUB TOTAL LOAD:	61605 VA	74 A	
25% OF LARGEST MOTOR:	5404 VA	7 A	
TOTAL LOAD:	67009 VA	81 A	

NOTES:

(N) PANEL 'BL1'

VOLTAGE: 208/120V, 3Ø, 4W | BUS: 125A | MAIN BREAKER: 100A/3P | BREAKER AIC: 35,000 | MOUNTING: SURFACE | NEMA 1 ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1	20A/1P	601.4			RM#B0100-101,104-108	RM#B0400-403, B0407			820.8	20A/1P	2
3	↓		662.3		CORRIDORS,B0ST2	RM#B0300,B0302,B0303		908.4		↓	4
5	↓			1177	RM#B0202,B0208	RM#B0203,B0204,B0211	897.6			↓	6
7	↓	331.5			RM#B0202,B0208	RM#B0404,B0405,B0406			387.6	↓	8
9	↓		652.2		RM#B0205 - B0207	SPARE		0		↓	10
11	↓			45	EXIT LIGHTS	↓	0			↓	12
13		0			SPACE	SPACE			0		14
15	↓		0		↓	↓		0		↓	16
17	↓			0	↓	↓	0			↓	18
19	↓	0			↓	↓			0	↓	20
21	↓		0		↓	↓		0		↓	22
23	↓			0	↓	↓	0			↓	24
25	↓	0			↓	↓			0	↓	26
27	↓		0		↓	↓		0		↓	28
29	↓			0	↓	↓	0			↓	30

TOTAL Ø LOADS (VA):	PHASE A = 2141	PHASE B = 2223	PHASE C = 2119
TOTAL Ø LOADS (A):	PHASE A = 18	PHASE B = 19	PHASE C = 18
TOTAL LOAD:	6483 VA	18 A	

(N) PANEL 'BL2'

VOLTAGE: 208/120V, 3Ø, 4W | BUS: 125A | MAIN BREAKER: 100A/3P | BREAKER AIC: 35,000 | MOUNTING: SURFACE | NEMA 1 ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1	20A/1P	889.1			RM#M0203-205,103,104	RM#M0202			811.2	20A/1P	2
3	↓		625		RM#M0100,101,102	RM#M0202		364.8		↓	4
5	↓			892.8	RM#M0202	RM#M0202	634.8			↓	6
7	↓	381.6			RM#M105,M0106,M0ST2	EXIT LIGHT			55	↓	8
9	↓		1081		RM#M0301 - M0303	SPARE		0		↓	10
11	↓			332.4	RM#M0305-M0307. 309	LMJA CONTROLLER REC.	300			↓	12
13		0			SPACE	SPARE			0	↓	14
15	↓		0		↓	↓		0		↓	16
17	↓			0	↓	↓	0			↓	18
19	↓	0			↓	SPACE			0		20
21	↓		0		↓	↓		0		↓	22
23	↓			0	↓	↓	0			↓	24
25	↓	0			↓	↓			0	↓	26
27	↓		0		↓	↓		0		↓	28
29	↓			0	↓	↓	0			↓	30

TOTAL Ø LOADS (VA):	PHASE A = 2137	PHASE B = 2071	PHASE C = 2160
TOTAL Ø LOADS (A):	PHASE A = 18	PHASE B = 17	PHASE C = 18
TOTAL LOAD:	6368 VA	18 A	

(N) PANEL 'BR1'

VOLTAGE: 208/120V, 3Ø, 4W | BUS: 150A | MAIN BREAKER: 150A/3P | BREAKER AIC: 35,000 | MOUNTING: SURFACE | NEMA 1 ENCLOSURE

CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1	20A/1P	1656			GARBAGE DISPOSER	VESTIB./HSKP/HALL REC.			1080	20A/1P	2
3	↓		1080		RM#B0202 REC.	RM#B0108 REC.		180		↓	4
5	↓			720	RM#B0208 REC.	RM#B0206 REC.	180			↓	6
7	↓	1500			RM#B0208 MW. REC.	RM#B0207 REC.			180	↓	8
9	50A/2P		5100		RM#B0208 RANGE REC.	RM#B0208 REF. REC.		624		15A/1P	10
11				5100		RM#B0205 REC.	540			20A/1P	12
13	20A/1P	1080			RM#B0211 REC.	RM#B0205 REC.			540	↓	14
15	↓		1080		RM#B0203 REC.	SPARE		0		↓	16
17	↓			1080	RM#B0204 REC.	RM#B0205 REC.	900			↓	18
19	↓	720			RM#B0202 REC.	RM#B0202 REC.			720	↓	20
21	↓		0		SPARE	WATER FOUNTAIN REC.		370		↓	22
23	↓			80	SECURITY ALARM	WATER FOUNTAIN REC.	370			↓	24
25	15A/1P	1140			RM#B0202 REF. REC	FA BOOSTER PANEL			120	↓	26
27	15A/1P		780		RM#B0202 REF. REC.	HALL #B0300,301 REC.		1080		20A/1P	28
29	20A/1P			900	RM#B0202 REC.	RM#B0303 PRINTER REC.	300			↓	30
31	15A/1P	1265			ICE DESPENSER REC.	RM#B0303 PRINTER REC.			300	↓	32
33	15A/1P		780		RM#B0202 REF. REC.	RM#B0303 COPYER REC.		600		↓	34
35	20A/1P			360	RM#B0202 REC.	SPARE	0			↓	36
37	↓	900			RM#B0401 TO 404 REC.	RM#B0302 REC.			900	↓	38
39	↓		100		ITOUCH CONTROLLER	RM#B0303 REC.		900		↓	40
41	↓			360	RM#B0208 REC.	RM#B0405 TO 407 REC.	720			↓	42
43	↓	360			RM#B0208 REC.	RM#B0200,212 REC.			540	↓	44
45	↓		200		CP-1 SWITCH PANEL	SPARE		0		↓	46
47	↓			360	RM#B0202 REC.	ICE MACHINE	2400			30A/1P	48
49		0			SPACE	SPACE			0		50
51	↓		0		↓	↓		0		↓	52
53	↓			0	↓	↓	0			↓	54

TOTAL Ø LOADS (VA):	PHASE A = 13001	PHASE B = 12874	PHASE C = 14370
TOTAL Ø LOADS (A):	PHASE A = 108	PHASE B = 107	PHASE C = 120
TOTAL LOAD:	40245 VA	112 A	

NOTES:
1. PROVIDE AND INSTALL A CIRCUIT BREAKER COMPLYING WITH NFPA 72 (RED AND WITH MECHANICAL LOCKING DEVICE) FOR THE DEDICATED CIRCUIT SUPPLYING POWER TO THE FIRE ALARM PANEL.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
PANEL SCHEDULES

SHEET NUMBER:
E1.07

1 / - **PARTIAL ELECTRICAL SITE PLAN**
SCALE: 1"=20'-0"

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

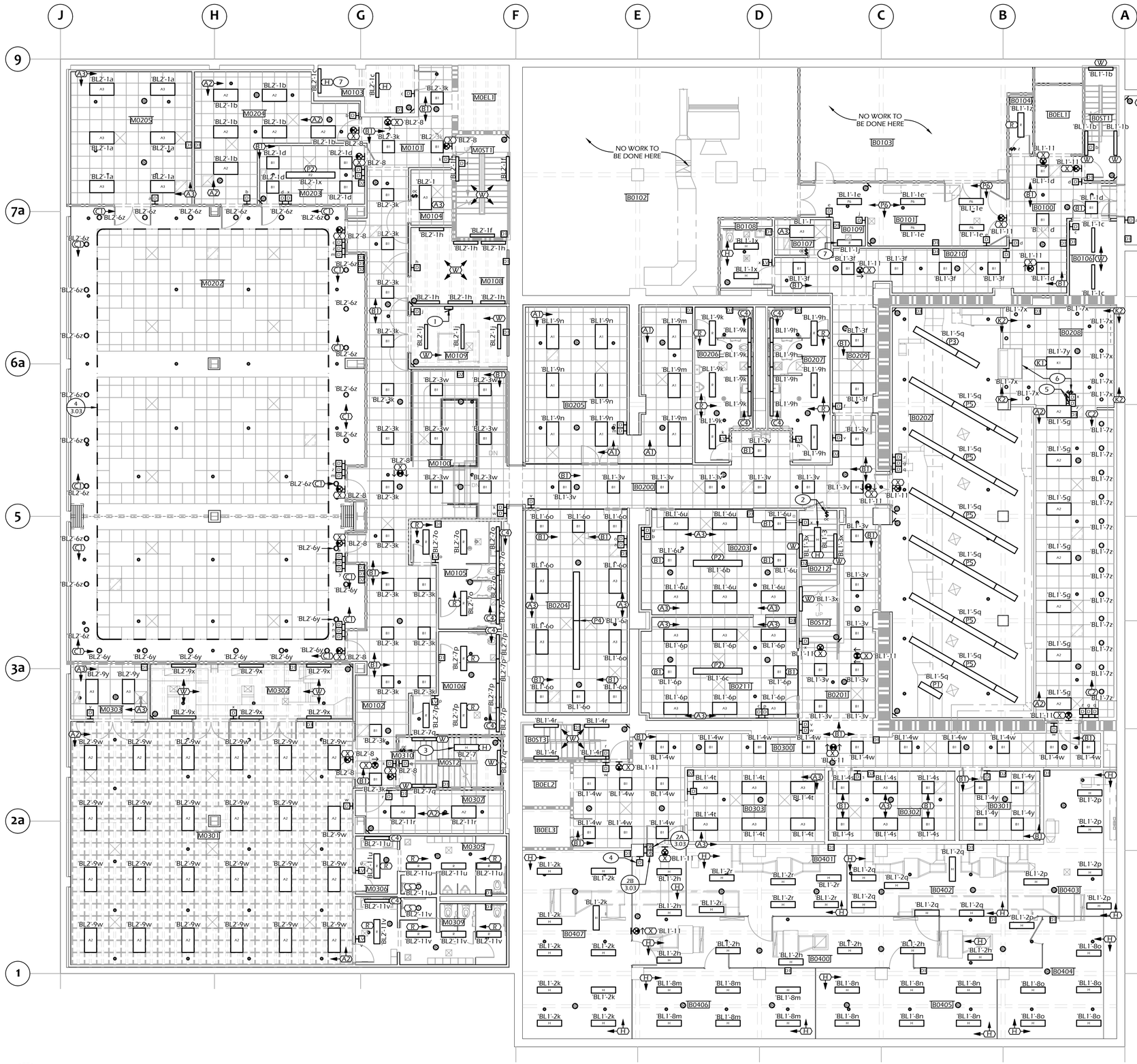
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

OVERALL ELECTRICAL SITE PLAN

SHEET NUMBER

E2.01



ROOM SCHEDULE

MERCER BUILDING		BRIX BUILDING	
###	ROOM NAME	###	ROOM NAME
M0EL1	ELEVATOR	B0101	VESTIBULE
M0ST1	STAIRS	B0102	CHILLER ROOM
M0ST2	STAIRS	B0103	BOILER ROOM
M0100	LOBBY	B0104	ELECTRICAL ROOM
M0101	HALLWAY	B0105	STORAGE
M0102	HALLWAY	B0106	ELECTRICAL ROOM
M0103	EQUIPMENT ROOM	B0107	HOUSEKEEPING
M0104	STORAGE	B0108	RESTROOM
M0105	WOMEN'S RESTROOM	B0109	JANITOR
M0106	MEN'S RESTROOM	B0200	HALLWAY
M0107	STORAGE	B0201	HALLWAY
M0108	NETWORK ROOM	B0202	BREAK ROOM
M0109	MECHANICAL ROOM	B0203	CONFERENCE ROOM
M0202	MEETING ROOM	B0204	CONFERENCE ROOM
M0203	BREAKOUT ROOM	B0205	OPEN OFFICE
M0204	PREPARED FOOD HOLD	B0206	MEN'S RESTROOM
M0205	STORAGE	B0207	WOMEN'S RESTROOM
M0301	ACTIVITY ROOM	B0208	PREP KITCHEN
M0302	MECHANICAL ROOM	B0209	HALLWAY
M0303	STORAGE	B0210	HALLWAY
M0304	WOMEN'S VESTIBULE	B0211	CONFERENCE ROOM
M0305	MEN'S RESTROOM	B0212	STORAGE ROOM
M0306	MEN'S VESTIBULE	B0300	HALLWAY
M0309	WOMEN'S RESTROOM	B0301	MEDIA ROOM
M0310	STORAGE ROOM	B0302	MEDIA ROOM
BRIX BUILDING		B0303	PREP ROOM
B0EL1	ELEVATOR	B0400	OPEN SPACE
B0EL2	ELEVATOR	B0401	CAGED STORAGE
B0EL3	ELEVATOR	B0402	CAGED STORAGE
B0ST1	STAIRS	B0403	CAGED STORAGE
B0ST2	STAIRS	B0404	CAGED STORAGE
B0ST3	STAIRS	B0405	CAGED STORAGE
B0100	VESTIBULE	B0406	CAGED STORAGE
		B0407	CAGED STORAGE

SHEET NOTES (#)

1. PROVIDE AND INSTALL ONE WATTSTOPPER #LMJA-8125 NETWORK CONTROLLER IN LMNC-ENC1 NEMA-1 WATTSTOPPER ENCLOSURE. PROVIDE 120V RECEPTACLE WITHIN AND CONNECT TO THE ELECTRICAL PANEL CIRCUIT 'BL2-12'. PROVIDE AND INSTALL CAT6A DATA CABLE BACK TO THE NEW IDF TO INTERFACE THE LMJA-8125 TO THE EXISTING BAS.
2. LIGHT FIXTURE TO BE CEILING MOUNTED WITHIN STORAGE ROOM B0212, BELOW STAIRWELLS. OCCUPANCY SENSOR COMBO WALL SWITCH TO BE INSTALLED IN SAME ROOM TO CONTROL FIXTURE.
3. LIGHT FIXTURES TO BE CEILING MOUNTED WITHIN STORAGE ROOM M0310, BELOW STAIRWELLS. OCCUPANCY SENSOR COMBO WALL SWITCH TO BE INSTALLED IN SAME ROOM TO CONTROL FIXTURE.
4. LMDM-101 DIMMER SWITCH TO CONTROL ALL LIGHTS IN ROOM B0400 TO B0407 FOR DIMMING AND ON/OFF CONTROL.
5. MOUNT DIMMERS TO SIDE OF THE COUNTER. COORDINATE WITH THE CABINET MANUFACTURER.
6. PROVIDE AND INSTALL (3) #10 AWG CONDUCTORS WITHIN A 3/4-INCH CONDUCTORS BACK TO THE CP-1 HOOD SWITCH PANEL FOR THE KITCHEN HOOD LIGHTS. MOUNT THE LIGHT SWITCH TO SIDE OF THE COUNTER. COORDINATE WITH THE CABINET MANUFACTURER. COORDINATE WITH MECHANICAL CONTRACTOR FOR HOOD LIGHTS WIRING.
7. FIXTURE TO BE WALL-MOUNTED.
8. INSTALL FIXTURE AFTER MECHANICAL EQUIPMENT HAS BEEN DROPPED INTO BASEMENT. COORDINATE WITH MECHANICAL CONTRACTOR.

GENERAL NOTES (#)

1. OCCUPANCY SENSOR TO BE INSTALLED 4 TO 6 FEET AWAY FROM AIR SUPPLY DUCTS. THE OCCUPANCY SENSOR SHALL BE INSTALLED BETWEEN 8 AND 10 FEET ABOVE FINISHED FLOOR.

NETWORK LIGHTING CONTROL SYSTEM NOTES

1. THE SYSTEM DESIGNED HERE IS A WATTSTOPPER NETWORKED LIGHTING SYSTEM. ALL ROOM CONTROLLERS, OCCUPANCY SENSORS, DIMMERS, LIGHTING SWITCHES, ETC. SHALL BE NETWORKED TO THE LMJA CONTROLLER.
2. OCCUPANT SENSING CONTROLS INSTALLED IN CORRIDORS AND STAIRWELLS SHALL SEPARATELY REDUCE THE LIGHTING POWER IN EACH SPACE BY AT LEAST 50 PERCENT WHEN THE SPACE IS UNOCCUPIED. WHEN THE SPACE IS OCCUPIED, THE SENSING CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY TURNING THE LIGHTING FULLY ON ONLY IN THE SEPARATELY CONTROLLED SPACE REGARDLESS OF ANY OTHER CONTROL.
3. PROGRAM THE LMJA NETWORK CONTROLLER AND THE ROOM CONTROLLERS IN THE MEETING ROOM AND THE ACTIVITY ROOM. FOR ASTRONOMICAL TIME SCHEDULING CONTROL. COORDINATE THE LIGHTING ON AND OFF TIME SCHEDULE WITH THE OWNER. INCLUDE THE HOLIDAY AN AUTOMATIC 'SHUT-OFF' TO TURN OFF ALL LOADS FOR AT LEAST 24 HOURS BEFORE RESUMING THE NORMALLY SCHEDULED OPERATION. PROGRAM ALL DIMMERS/SWITCHES TO INITIATE A 2-HOUR OVERRIDE ON THEIR RESPECTIVE LOAD LIGHTING CONTROL INDICATED PER THE SWITCH LEGS ON THE LIGHTING FLOOR PLAN. PROGRAM THE ROOM CONTROLLERS AND LIGHTING RELAY CONTROL PANEL TO INDICATE THE USER WITH A WARNING (BY MEANS OF BLINKING LIGHTING) 5 MINUTES PRIOR TO THE END OF THE 2-HOUR OVERRIDE COUNT DOWN. THE SWITCH/DIMMER OVERRIDE CONTROL CANNOT EXCEED 5000 SQUARE FEET.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

1 / - BASEMENT LIGHTING PLAN
SCALE: 1/8" = 1'-0"

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
BASEMENT LIGHTING PLAN

SHEET NUMBER:
E3.01

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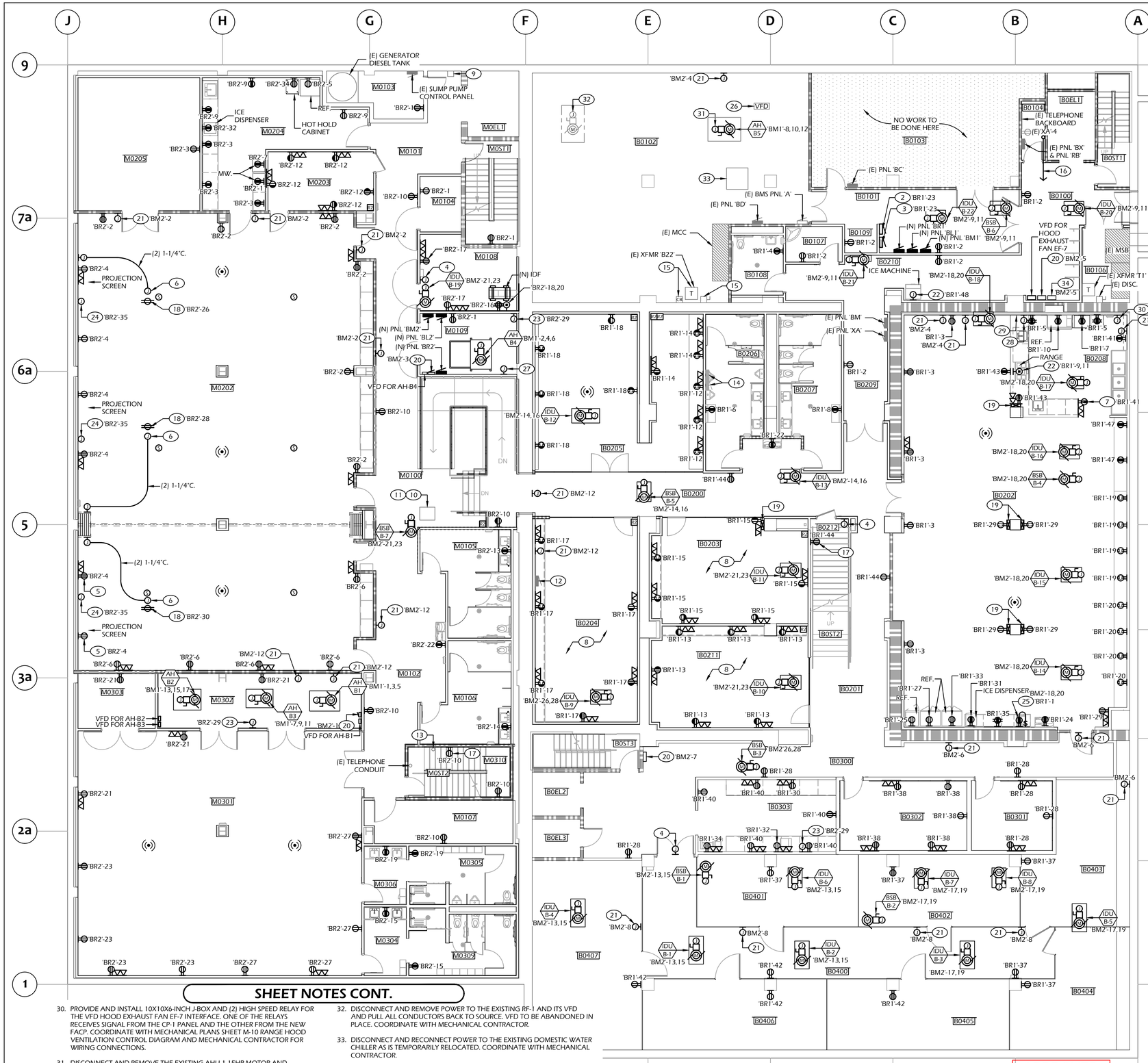

SHEET NOTES CONT.

30. PROVIDE AND INSTALL 10X10X6-INCH J-BOX AND (2) HIGH SPEED RELAY FOR THE VFD HOOD EXHAUST FAN EF-7 INTERFACE. ONE OF THE RELAYS RECEIVES SIGNAL FROM THE CP-1 PANEL AND THE OTHER FROM THE NEW FACP. COORDINATE WITH MECHANICAL PLANS SHEET M-10 RANGE HOOD VENTILATION CONTROL DIAGRAM AND MECHANICAL CONTRACTOR FOR WIRING CONNECTIONS.

31. DISCONNECT AND REMOVE THE EXISTING AHU-1 15HP MOTOR AND SWITCHDISCONNECT. EXISTING VFD TO REMAIN. PULL ALL CONDUCTORS BACK TO SOURCE. PROVIDE AND INSTALL NEW 10HP AIR HANDLER UNIT.

32. DISCONNECT AND REMOVE POWER TO THE EXISTING RF-1 AND ITS VFD AND PULL ALL CONDUCTORS BACK TO SOURCE. VFD TO BE ABANDONED IN PLACE. COORDINATE WITH MECHANICAL CONTRACTOR.

33. DISCONNECT AND RECONNECT POWER TO THE EXISTING DOMESTIC WATER CHILLER AS IS TEMPORARILY RELOCATED. COORDINATE WITH MECHANICAL CONTRACTOR.

34. I-TOUCH CONTROLLER FOR VRF SYSTEM.

1 / - **BASEMENT POWER & SIGNAL FLOOR PLAN**

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

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

ROOM SCHEDULE

MERCER BUILDING		BRIX BUILDING	
###	ROOM NAME	###	ROOM NAME
M0EL1	ELEVATOR	B0101	VESTIBULE
M0ST1	STAIRS	B0102	CHILLER ROOM
M0ST2	STAIRS	B0103	BOILER ROOM
M0100	LOBBY	B0104	ELECTRICAL ROOM
M0101	HALLWAY	B0105	STORAGE
M0102	HALLWAY	B0106	ELECTRICAL ROOM
M0103	EQUIPMENT ROOM	B0107	HOUSEKEEPING
M0104	STORAGE	B0108	RESTROOM
M0105	WOMEN'S RESTROOM	B0109	JANITOR
M0106	MEN'S RESTROOM	B0200	HALLWAY
M0107	STORAGE	B0201	HALLWAY
M0108	NETWORK ROOM	B0202	BREAK ROOM
M0109	MECHANICAL ROOM	B0203	CONFERENCE ROOM
M0202	MEETING ROOM	B0204	CONFERENCE ROOM
M0203	BREAKOUT ROOM	B0205	OPEN OFFICE
M0204	PREPARED FOOD HOLD	B0206	MEN'S RESTROOM
M0205	STORAGE	B0207	WOMEN'S RESTROOM
M0301	ACTIVITY ROOM	B0208	PREP KITCHEN
M0302	MECHANICAL ROOM	B0209	HALLWAY
M0303	STORAGE	B0210	HALLWAY
M0304	WOMEN'S VESTIBULE	B0211	CONFERENCE ROOM
M0305	MEN'S RESTROOM	B0212	STORAGE ROOM
M0306	MEN'S VESTIBULE	B0300	HALLWAY
M0309	WOMEN'S RESTROOM	B0301	MEDIA ROOM
M0310	STORAGE ROOM	B0302	MEDIA ROOM
	BRIX BUILDING	B0303	PREP ROOM
B0EL1	ELEVATOR	B0400	OPEN SPACE
B0EL2	ELEVATOR	B0401	CAGED STORAGE
B0EL3	ELEVATOR	B0402	CAGED STORAGE
B0ST1	STAIRS	B0403	CAGED STORAGE
B0ST2	STAIRS	B0404	CAGED STORAGE
B0ST3	STAIRS	B0405	CAGED STORAGE
B0100	VESTIBULE	B0406	CAGED STORAGE
		B0407	CAGED STORAGE

SHEET NOTES (#)

1. NOT USED.
2. PROVIDE AND INSTALL SECURITY ALARM POWER SUPPLY TERMINAL CABINET.
3. PROVIDE AND INSTALL SECURITY ALARM PANEL.
4. PROVIDE AND INSTALL A 3/4-INCH CONDUIT BACK TO THE SECURITY ALARM PANEL FOR THE ACCESS CARD READER AND DOOR STRIKE VIA THE SECURITY ALARM POWER SUPPLY TERMINAL CABINET. MAKE CONNECTIONS FOR A FULLY FUNCTIONAL SYSTEM.
5. RECEPTACLES TO BE INSTALLED ABOVE COUNTER. COORDINATE WITH ARCHITECTURAL ELEVATIONS.
6. PROVIDE AND INSTALL A TWO GANG BOX WITH (2) 1-1/4-INCH CONDUIT STUBBED INTO THE ATTIC SPACE FOR FUTURE CEILING MOUNTED PROJECTOR.
7. MOUNT TO SIDE OF THE COUNTER. COORDINATE WITH THE CABINET MANUFACTURE.
8. PROVIDE PORTABLE TABLE TOP 120V SOUND ASSISTIVE LISTENING SYSTEM WITH 10 RECHARGEABLE BUDS.
9. EXISTING SUMP PUMP HORN STROBE ALARM TO BE REPLACED BY A NEW HYDRA-O-MATIC HORN STROBE. RECONNECT TO THE EXISTING CIRCUIT. SYSTEM TO BE TIED INTO THE FIRE ALARM SYSTEM.
10. CUT/INTERCEPT AND UTILIZE THE EXISTING CONDUIT PREVIOUSLY USED BY THE DEMOLISHED PANELS TO GO FROM THE GROUND LEVEL FLOOR TO THE BASEMENT. THEN, PROVIDE AND INSTALL NEW CONDUIT AS INDICATED PER THE ONE LINE ON SHEET E1.03 AND E1.04 TO ROUTE THE NEW CONDUCTORS TO THE NEW PANELS.
11. EXISTING CONDUIT ROUTING PENETRATION FROM BASEMENT TO GROUND LEVEL EQUIPMENT ROOM 103.
12. EXISTING TEMPORARY POWER PANEL TO BE DISCONNECTED AND REMOVED. PULL ALL CONDUCTORS BACK TO SOURCE.
13. PULL AND REMOVE ALL EXISTING CONDUCTORS BACK TO SOURCE.
14. DISCONNECT AND REMOVE THE EXISTING PANEL 'B22S' AND 'B22N'. PULL ALL CONDUCTORS BACK TO SOURCE. REFER TO THE SINGLE LINE DIAGRAM.
15. EXISTING TRANSFORMER, EXISTING SWITCH DISCONNECT, AND EXISTING CIRCUIT BREAKER TO REMAIN AND BE UTILIZED TO FEED THE NEW PANEL 'BM2.' REFER TO THE ELECTRICAL SINGLE LINE DIAGRAM.
16. ROUTE THE MULTIMODE FIBER OPTIC CABLE WITHIN A 1-1/2-INCH CONDUIT ABOVE ATTIC SPACE TO THE NEW IDF RACK IN ROOM M0108 OF THE MERCER BUILDING.
17. PROVIDE AND INSTALL RECEPTACLE INDICATED WITHIN STORAGE ROOM BELOW STAIRWELL.
18. CEILING MOUNTED PROJECTOR RECEPTACLE. COORDINATE WITH OWNER FOR EXACT LOCATION.
19. PROVIDE AND INSTALL 8X8X4-INCH J-BOX ABOVE CEILING, ONE FOR POWER AND ON FOR DATA. PROVIDE AND INSTALL ALUMINUM WIREMOLD RACEWAY AL5200 SERIES DUAL SURFACE RACEWAY TO ROUTE POWER AND DATA IN DIFFERENT COMPARTMENTS. PROVIDE AND INSTALL RECEPTACLE AND DATA OUTLET INDICATED.
20. PROVIDE AND INSTALL (3)#12 AWG COPPER CONDUCTORS WITHIN A 3/4"C. BACK TO PANEL INDICATED TO POWER THE EMS CONTROL PANEL.
21. MAKE CONNECTIONS TO THE FIRE SMOKE DAMPER. COORDINATE WITH MECHANICAL CONTRACTOR, AND MECHANICAL DRAWINGS FOR EXACT LOCATION.
22. COORDINATE RECEPTACLE TYPE WITH MANUFACTURER.
23. PROVIDE AND INSTALL (3) #12 AWG CONDUCTORS WITHIN A 3/4-INCH CONDUIT AND ROUTE BACK TO PANEL INDICATED. MAKE CONNECTIONS TO THE ELECTRONIC TRAP PRIMER.
24. COORDINATE WITH PROJECTION SCREEN MANUFACTURE FOR WIRING CONNECTIONS.
25. INSTALL ADJACENT TO GARBAGE DISPOSAL.
26. UTILIZE THE EXISTING VFD FOR THE NEW AIR HANDLER UNIT. MAKE ALL CONNECTIONS FOR A FULLY FUNCTIONAL SYSTEM.
27. PROVIDE AND INSTALL (7) MECHANICALLY HELD ELECTRICALLY ACTIVATED 2-POLE RELAYS 120V, 20A RATED WITH 24 VDC COIL FOR THE FAN COIL CIRCUITS. COORDINATE WITH THE FIRE ALARM CONTRACTOR AND MECHANICAL CONTRACTOR FOR FIRE ALARM RELAY INTERFACE FOR UNITS SHUT OFF.
28. PROVIDE AND INSTALL 10X10X6-INCH J-BOX MOUNTED NEXT TO THE ANSUL SYSTEM. J-BOX SHALL HAVE A 6-POLE MECHANICALLY HELD ELECTRICALLY ACTIVATED RELAY CONTACTOR, ROUTE ALL RECEPTACLES BENEATH THE HOOD THROUGH THIS CONTACTOR. RELAY CONTACTOR SHALL BE DEACTIVATED UPON RECEIVING A SIGNAL FROM ANSUL SYSTEM.
29. PROVIDE AND INSTALL (3) #10 AWG CONDUCTORS BACK TO PANEL 'BR1'-45 FOR THE CP-1 SWITCH PANEL. COORDINATE WITH MECHANICAL PLANS FOR EXACT LOCATION. COORDINATE WITH MECHANICAL CONTRACTOR FOR HOOD LIGHTS WIRING.

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

BASEMENT POWER & SIGNAL FLOOR PLAN

SHEET NUMBER:

E3.02

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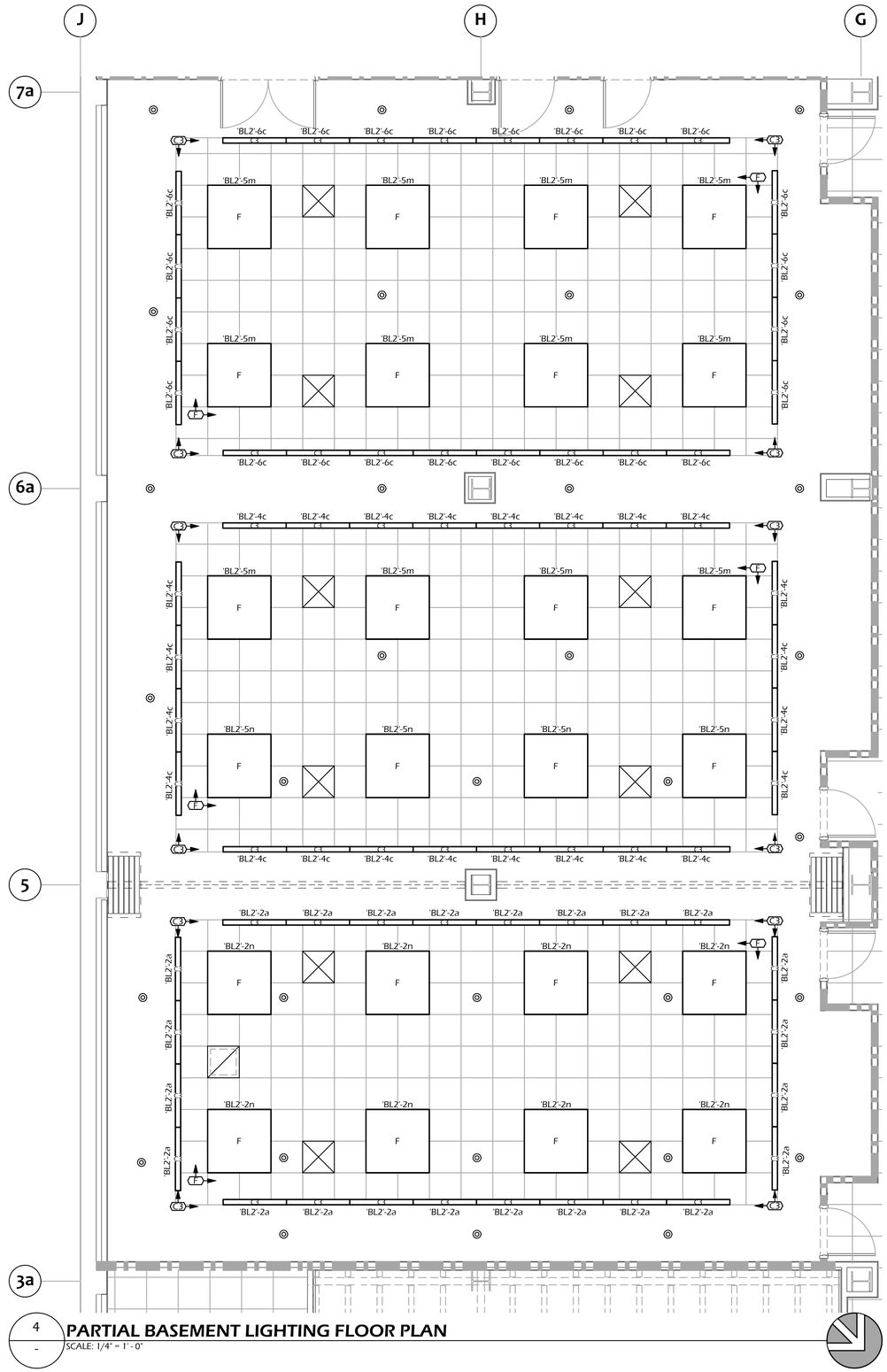
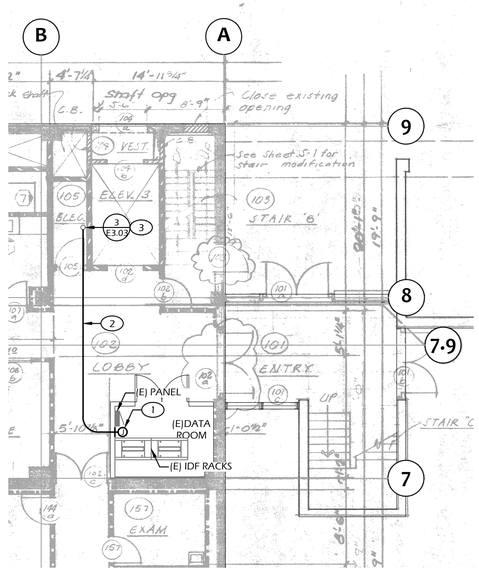
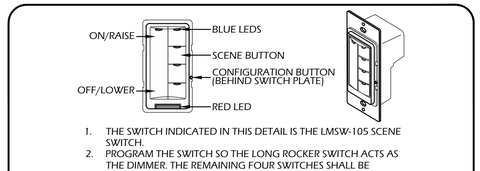


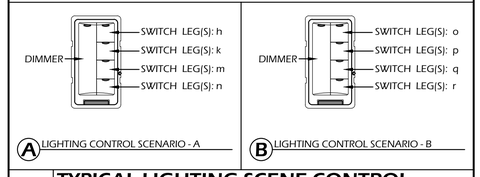
4 — PARTIAL BASEMENT LIGHTING FLOOR PLAN
SCALE: 1/4" = 1' - 0"



1 — EXISTING PARTIAL GROUND FLOOR - BRIX BUILDING
SCALE: 1/8" = 1' - 0"

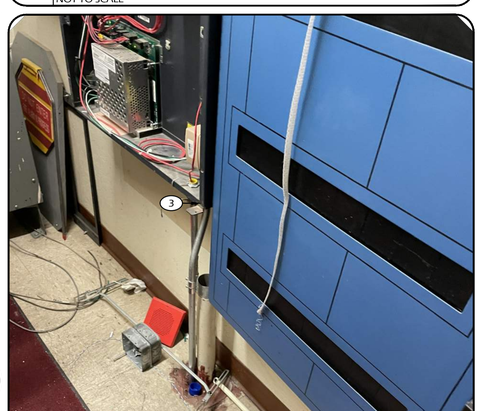


1. THE SWITCH INDICATED IN THIS DETAIL IS THE LMSW-105 SCENE SWITCH.
2. PROGRAM THE SWITCH SO THE LONG ROCKER SWITCH ACTS AS THE DIMMER. THE REMAINING FOUR SWITCHES SHALL BE PROGRAMMED AS FOLLOWS:
3. UTILIZE THE LMCT HANDLE HELD PROGRAMMER OR LMSI SOFTWARE AND LAPTOP TO PROGRAM THE LIGHT SWITCHING. PROVIDE TWO LMCT PROGRAMMERS TO OWNER.
4. ALL PART NUMBERS INDICATED IN THIS DETAIL ARE WATTSTOPPERS.



A LIGHTING CONTROL SCENARIO - A
B LIGHTING CONTROL SCENARIO - B

2 — TYPICAL LIGHTING SCENE CONTROL DETAIL
NOT TO SCALE



3 — PHOTO REFERENCE #1
NOT TO SCALE

ROOM SCHEDULE

MERCER BUILDING		BRIX BUILDING	
###	ROOM NAME	###	ROOM NAME
M0EL1	ELEVATOR	B0101	VESTIBULE
M0ST1	STAIRS	B0102	CHILLER ROOM
M0ST2	STAIRS	B0103	BOILER ROOM
M0100	LOBBY	B0104	ELECTRICAL ROOM
M0101	HALLWAY	B0105	STORAGE
M0102	HALLWAY	B0106	ELECTRICAL ROOM
M0103	EQUIPMENT ROOM	B0107	HOUSEKEEPING
M0104	STORAGE	B0108	RESTROOM
M0105	WOMEN'S RESTROOM	B0109	JANITOR
M0106	MEN'S RESTROOM	B0200	HALLWAY
M0107	STORAGE	B0201	HALLWAY
M0108	NETWORK ROOM	B0202	BREAK ROOM
M0109	MECHANICAL ROOM	B0203	CONFERENCE ROOM
M0202	MEETING ROOM	B0204	CONFERENCE ROOM
M0203	BREAKOUT ROOM	B0205	OPEN OFFICE
M0204	PREPARED FOOD HOLD	B0206	MEN'S RESTROOM
M0205	STORAGE	B0207	WOMEN'S RESTROOM
M0301	ACTIVITY ROOM	B0208	PREP KITCHEN
M0302	MECHANICAL ROOM	B0209	HALLWAY
M0303	STORAGE	B0210	HALLWAY
M0304	WOMEN'S VESTIBULE	B0211	CONFERENCE ROOM
M0305	MEN'S RESTROOM	B0212	STORAGE ROOM
M0306	MEN'S VESTIBULE	B0300	HALLWAY
M0309	WOMEN'S RESTROOM	B0301	MEDIA ROOM
M0310	STORAGE ROOM	B0302	MEDIA ROOM
BRIX BUILDING		B0303	PREP ROOM
B0EL1	ELEVATOR	B0400	OPEN SPACE
B0EL2	ELEVATOR	B0401	CAGED STORAGE
B0EL3	ELEVATOR	B0402	CAGED STORAGE
B0ST1	STAIRS	B0403	CAGED STORAGE
B0ST2	STAIRS	B0404	CAGED STORAGE
B0ST3	STAIRS	B0405	CAGED STORAGE
B0100	VESTIBULE	B0406	CAGED STORAGE
		B0407	CAGED STORAGE

SHEET NOTES (#)

1. ROUTE NEW FIBER OPTIC CABLE TO EXISTING IDF RACK FIBER OPTIC PORT SWITCH AND MAKE CONNECTIONS. COORDINATE WITH THE I.T. DEPARTMENT.
2. PROVIDE AND INSTALL 6 STRAND OM4 MULTIMODE FIBER OPTIC CABLE WITHIN A 1-1/2-INCH CONDUIT.
3. UTILIZE THE EXISTING SPARE DATA CONDUIT TO GO FROM THE GROUND FLOOR TO THE BASEMENT FLOOR WITH THE NEW FIBER OPTIC CABLE.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

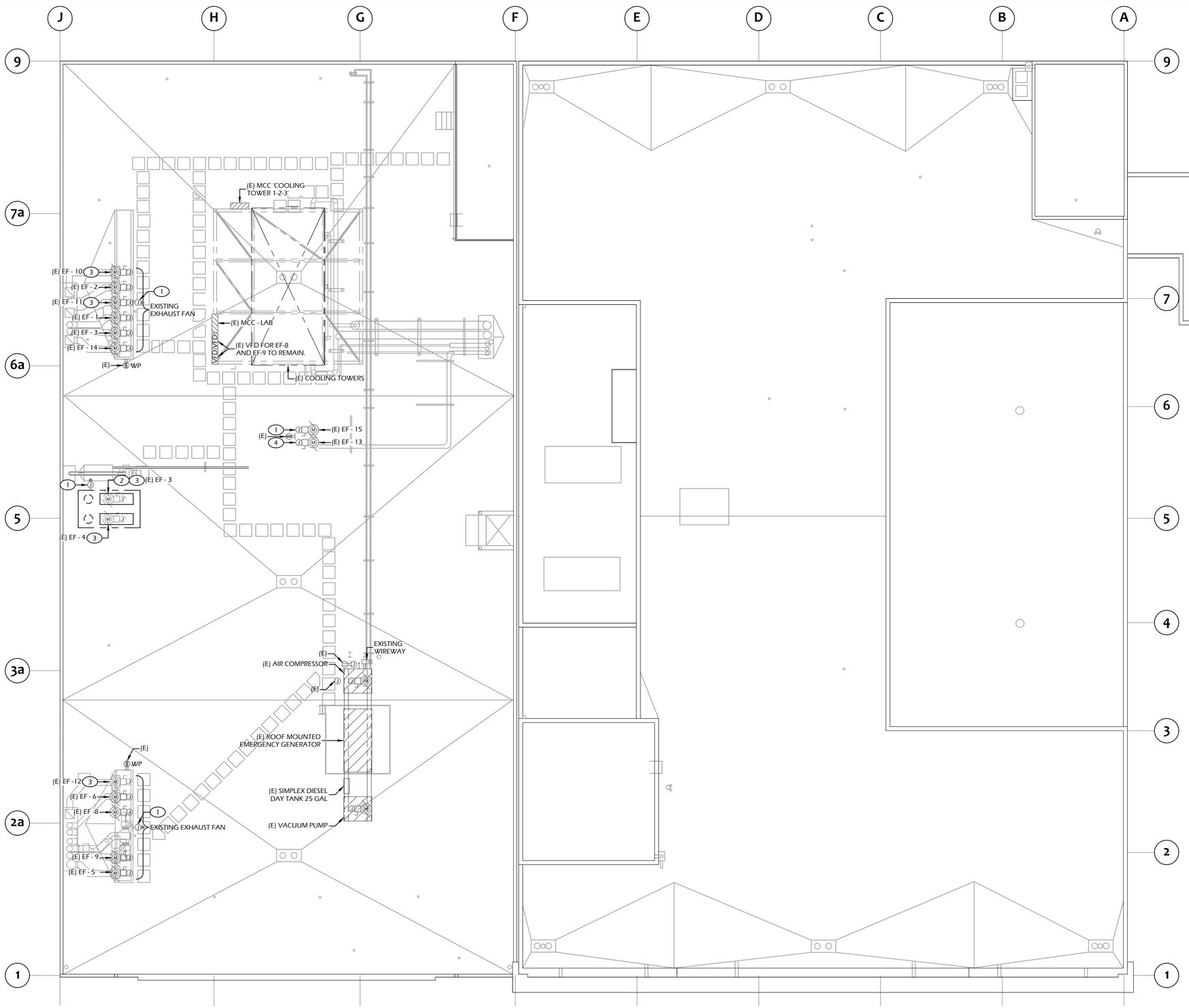
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

PARTIAL GROUND FLOOR PLAN & PARTIAL BASEMENT LIGHTING FLOOR PLAN

SHEET NUMBER:

E3.03



1 — SCALE: 1/8" = 1' - 0"

DEMOLITION ELECTRICAL ROOF PLAN

SHEET NOTES (#)

1. EXISTING EXHAUST FAN HAVE NO ELECTRICAL POWER. DISCONNECT AND REMOVE THE EXISTING CONDUCTORS OF THE EXISTING EF-1 TO EF-15 EXHAUST FANS AND PULL ALL CONDUCTORS BACK TO SOURCE UNLESS OTHERWISE NOTED. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO THE DISCONNECTION OF THE EXHAUST FANS. EXISTING CONDUIT TO REMAIN IN PLACE.
2. DISCONNECT AND REMOVE POWER AND ASSOCIATED ELECTRICAL DEVICES FROM EXISTING EQUIPMENT TO BE REMOVED. COORDINATE WITH MECHANICAL CONTRACTOR.
3. DISCONNECT AND REMOVE THE POWER TO THE EXISTING EXHAUST FAN. DISCONNECT AND REMOVE THE EXISTING SWITCH DISCONNECT AND ASSOCIATED CONDUIT. PULL ALL CONDUCTORS BACK TO SOURCE. INSTALL NEW EXHAUST FAN. REFER TO SHEET E3.05.
4. EXISTING EXHAUST FAN IS CONNECTED TO (E)MCC-LAB. DISCONNECT AND REMOVE THE EXISTING CIRCUIT BREAKER AND STARTER WITHIN THE MCC BUCKET. PROVIDE AND INSTALL NEW 15A/3P CIRCUIT BREAKER WITHIN THE MCC BUCKET TO FEED THE NEW EXHAUST FAN. DISCONNECT AND PULL BACK THE EXISTING CONDUCTORS. PROVIDE AND INSTALL (5)#12 AWG NEW CONDUCTORS VIA THE NEW VFD TO THE NEW EXHAUST FAN PER SHEET NOTE 5 ON SHEET E3.05.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

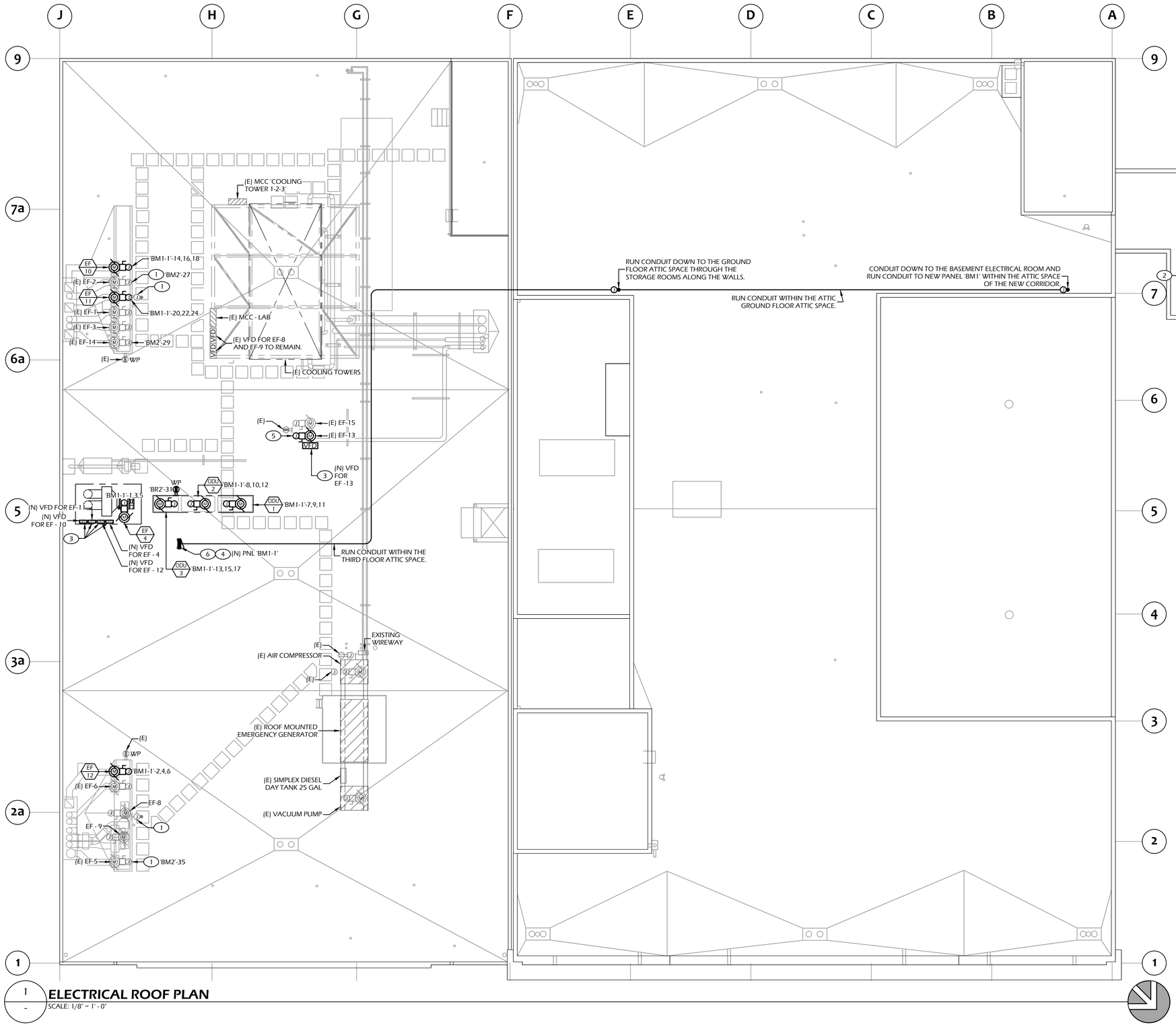
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

DEMOLITION ELECTRICAL ROOF PLAN - MERCER BUILDING

SHEET NUMBER

E3.04



1
-

ELECTRICAL ROOF PLAN

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

SHEET NOTES (#)

1. RECONNECT THE EXISTING INDICATED EXHAUST FAN TO THE PANEL CIRCUIT INDICATED LOCATED IN THE BASEMENT. PROVIDE AND INSTALL (2)#10 & (1)#12 GROUND CONDUCTOR WITHIN THE EXISTING CONDUIT GOING TO THE BASEMENT FOR EACH EXHAUST FAN. PROVIDE AND INSTALL A J-BOX TO INTERCEPT THE EXISTING CONDUIT AT THE BASEMENT. THEN PROVIDE AND INSTALL A NEW 1"C. FROM THE NEW J-BOX TO THE PANEL INDICATED PER THE ASSIGNED CIRCUIT. MAKE ALL CONNECTIONS FOR A FULLY FUNCTIONAL SYSTEM.
2. PROVIDE POWER CONNECTIONS VIA THE VFD SHOWN ON SHEET E3.02 WHICH IS FURNISHED BY THE EMS CONTRACTOR. COORDINATE WITH THE MECHANICAL CONTRACTOR FOR THE VFD LOCATION AND WIRING CONNECTIONS.
3. INSTALL THE VFD WITHIN THE WEATHERPROOF NEMA 3R ENCLOSURE PROVIDED BY THE CONTROLS CONTRACTOR. COORDINATE WITH THE MECHANICAL AND CONTROLS CONTRACTOR AND MAKE ALL POWER CONNECTIONS.
4. PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS AS INDICATED ON THE SINGLE LINE DIAGRAM. ROUTE CONDUIT AND CONDUCTORS TO THE NEW PANEL 'BM1' LOCATED IN THE BASEMENT.
5. DISCONNECT AND EXTEND/REROUTE THE EXISTING CIRCUIT WITH (4)#12 AWG &(1)#12 AWG GROUND CONDUCTORS WITHIN A 1"C. VIA THE NEW VFD AND MAKE ALL CONNECTIONS. COORDINATE WITH MECHANICAL AND CONTROLS CONTRACTOR. PROVIDE AND INSTALL NEW SWITCH DISCONNECT.
6. CONDUIT DOWN TO THE THIRD FLOOR ATTIC SPACE.

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

ELECTRICAL ROOF PLAN - MERCER BUILDING

SHEET NUMBER

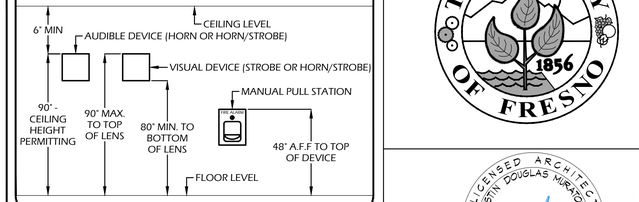
E3.05

FIRE ALARM SYSTEM NOTES

1. THE FIRE ALARM SYSTEM IS A DEFERRED APPROVED SYSTEM.
2. THE FIRE ALARM SYSTEM CONSISTS OF ADDITION OF ADDRESSABLE FIRE ALARM DETECTORS AND AUDIBLE/VISUAL DEVICES FOR NOTIFICATION.
3. ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST REGULATIONS OF THE STATE FIRE MARSHALL, CALIFORNIA CODE OF REGULATIONS, SERVING UTILITY COMPANIES AND OTHER APPLICABLE STATE ORDINANCES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED AS TO PERMIT WORK NOT CONFORMING TO THESE CODES. WHERE WORK OF A HIGHER DEGREE IS INDICATED IN THE PLANS OR SPECIFICATIONS THIS REQUIREMENT SHALL GOVERN.
4. ALARM INDICATING DEVICES OF A FIRE ALARM SYSTEM INTENDED TO ALERT ALL OCCUPANTS SHALL BE SO LOCATED AND UNOBSTRUCTED AS TO CAUSE A LEVEL OF AUDIBILITY OF NOT LESS THAN 15 DB ABOVE AMBIENT NOISE LEVELS MEASURED FOUR FEET ABOVE THE FLOOR INSIDE BUILDING. AMBIENT NOISE LEVELS SHALL BE CONSTRUED TO MEAN THAT WHICH CAN NORMALLY BE EXPECTED TO EXIST WHEN THE FACILITY, BUILDING, ROOM OR AREA IS FUNCTIONING UNDER NORMAL OPERATIVE OR WORKING CONDITIONS.
5. UPON COMPLETION OF THE INSTALLATION OF THE FIRE PROTECTIVE SIGNALING EQUIPMENT, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE ENFORCING FIRE AGENCY PER CHAPTER 7, NFPA 72, AND A CERTIFICATE OF COMPLETION SHALL BE PROVIDED TO THE OWNER PER CHAPTER 1, NFPA 72 AND THE CALIFORNIA FIRE CODE, SECTION 1007.3.4.
6. AUDIBLE DEVICES ARE EXISTING SHALL HAVE TEMPORAL CODE 3 SOUND PATTERN.
7. ALL AUDIBLE AND VISUAL DEVICES SHALL BE SYNCHRONIZED.
8. ALL FIRE PROTECTION SIGNALING COMPONENTS SHALL BE ONLY THOSE APPROVED AND LISTED IN THE STATE FIRE MARSHAL'S LISTING SERVICE. AN ITEMIZED MATERIALS LIST SHOWING MAKE, MODEL NUMBER AND ITS CORRESPONDING STATE FIRE MARSHAL'S LISTING NUMBER SHALL BE FURNISHED TO THE PROJECT INSPECTOR. UPON COMPLETION OF THE INSTALLATION OF THE FIRE PROTECTIVE SIGNALING EQUIPMENT, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE LOCAL FIRE AUTHORITY WITH I.O.R. INSTALLATION REQUIREMENTS SHALL BE PER NFPA 72, CALIFORNIA BUILDING CODE, AND CALIFORNIA FIRE CODE.
9. THE FIRE ALARM SYSTEM SHALL TRANSMIT THE ALARM, SUPERVISORY, AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX (CENTRAL STATION) OR UUJS (REMOTE AND PROPRIETARY) BY UNDERWRITERS LABORATORY (UL) OR SHALL COMPLY WITH THE REQUIREMENTS OF STANDARD FM 3011.
10. TEST, INSPECTION, AND MAINTENANCE SHALL COMPLY WITH NFPA 72, CHAPTER 14.
11. ALL EXTERIOR CONNECTIONS, DEVICES, SYSTEMS, ETC. SHALL BE WEATHERPROOF.
12. ALL FIRE ALARM PATHWAYS SHALL COMPLY WITH CEC AND NFPA 72 12.4 AND 24.3.5 LEVEL 0.
13. ALL PENETRATIONS OF FIRE OR SMOKE RATED ASSEMBLIES SHALL BE SEALED WITH UL APPROVED SYSTEM COMPLYING WITH CEC 300.21 TO PREVENT SPREAD OF FIRE AND SMOKE.
14. AN ORIGINAL, APPROVED SET OF PLANS SHALL BE ON SITE DURING ANY FIRE DEPARTMENT INSPECTIONS.
15. PROVIDE FIRE ALARM RECORD OF COMPLETION TO AUTHORITY HAVING JURISDICTION AT FINAL ACCEPTANCE TESTING.
16. PROVIDE AND INSTALL DUCT SMOKE DETECTORS, FIRE ALARM RELAY MODULES, WIRING INTERFACE, AND ALL ACCESSORIES FOR THE HVAC AND FDS SHUT-DOWN SYSTEM PER MECHANICAL DIAGRAM ON SHEET M-15

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

FIRE ALARM DEVICE MOUNTING HEIGHTS DETAIL



FIRE ALARM SYMBOL LIST

SYMBOL	DEVICE TYPE
	FIRE ALARM CONTROL PANEL (FACP)
ANN	REMOTE ANNUNCIATOR
SD	SMOKE DETECTOR - SPOT TYPE DETECTOR BASE
CO	SMOKE AND C.O. DETECTOR DETECTOR BASE
DH	SMOKE DET. DUCT DETECTOR HOUSING REMOTE TEST STATION
	MANUAL PULL STATION
MM	MONITOR MODULE
FS	FIRE SPRINKLER FLOW SWITCH
TS	FIRE SPRINKLER TAMPER SWITCH
	MULTI-CANDELA SPEAKER/STROBE - WALL MOUNTED
	MULTI-CANDELA STROBE - WALL MOUNTED
CS	MULTI-CANDELA SPEAKER/STROBE - CEILING MOUNTED
EOL	END OF LINE RESISTOR 3.9KΩ
RM	RELAY MODULE

NOTES:
1. PROVIDE 24"x24" ACCESS PANEL(S) BENEATH ALL FIRE ALARM DEVICES IN ATTICS ABOVE HARD CEILING.
2. PROVIDE DUCT DETECTORS AT ALL HVAC UNITS FOR UNIT SHUT DOWN. DETECTOR TO BE TIED INTO THE THE FIRE ALARM SYSTEM.

FIRE ALARM PLAN SUBMITTAL NOTE

THE FIRE ALARM PLANS ARE FOR BIDDING PURPOSES ONLY. THE FIRE ALARM CONTRACTOR SHALL SUBMIT THEIR SET OF FIRE ALARM PLANS TO THE LOCAL FIRE MARSHAL WITH FULL VOLTAGE DROP AND BATTERY CALCULATIONS CSFM LISTING AND DATA SHEETS AS REQUIRED TO OBTAIN APPROVAL WHERE THE PROJECT IS BEING CONSTRUCTED FOR THEIR REVIEW AND APPROVAL. ANY ADJUSTMENTS NEEDED SHALL TO BE MADE ACCORDINGLY. AFTER APPROVAL A SEPARATE PERMIT FOR THE FIRE ALARM SYSTEM SHALL BE ISSUED. THE FIRE ALARM SYSTEM PERMIT SHALL NOT RIDE ON THE BUILDING PERMIT.

FIRE ALARM OPERATION MATRIX

INPUT	MANUAL PULL STATION	POWER FAILURE	AREA SMOKE DETECTORS	DUCT SMOKE DETECTORS	SPRINKLER FLOW SWITCH	SPRINKLER TAMPER SWITCH	LOBBY SMOKE DETECTORS
ANNUNCIATE ALARM AT FACP	●		●		●		
ANNUNCIATE TROUBLE AT FACP	●	●	●	●	●	●	
ANNUNCIATE SUPERVISORY AT FACP		●		●		●	
ANNUNCIATE WATER FLOW AT FACP					●		
TRANSMIT SIGNAL TO CENTRAL STATION	●	●	●	●	●	●	
ACTIVATE NOTIFICATION APPLIANCES	●		●		●		
CLOSE FIRE / SMOKE DAMPERS			●	●			
SHUT DOWN HVAC			●	●			
PRIMARY ELEVATOR RECALL							●
SECONDARY ELEVATOR RECALL							●

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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AHJ #: 21-1137 21-105379

PROJECT:

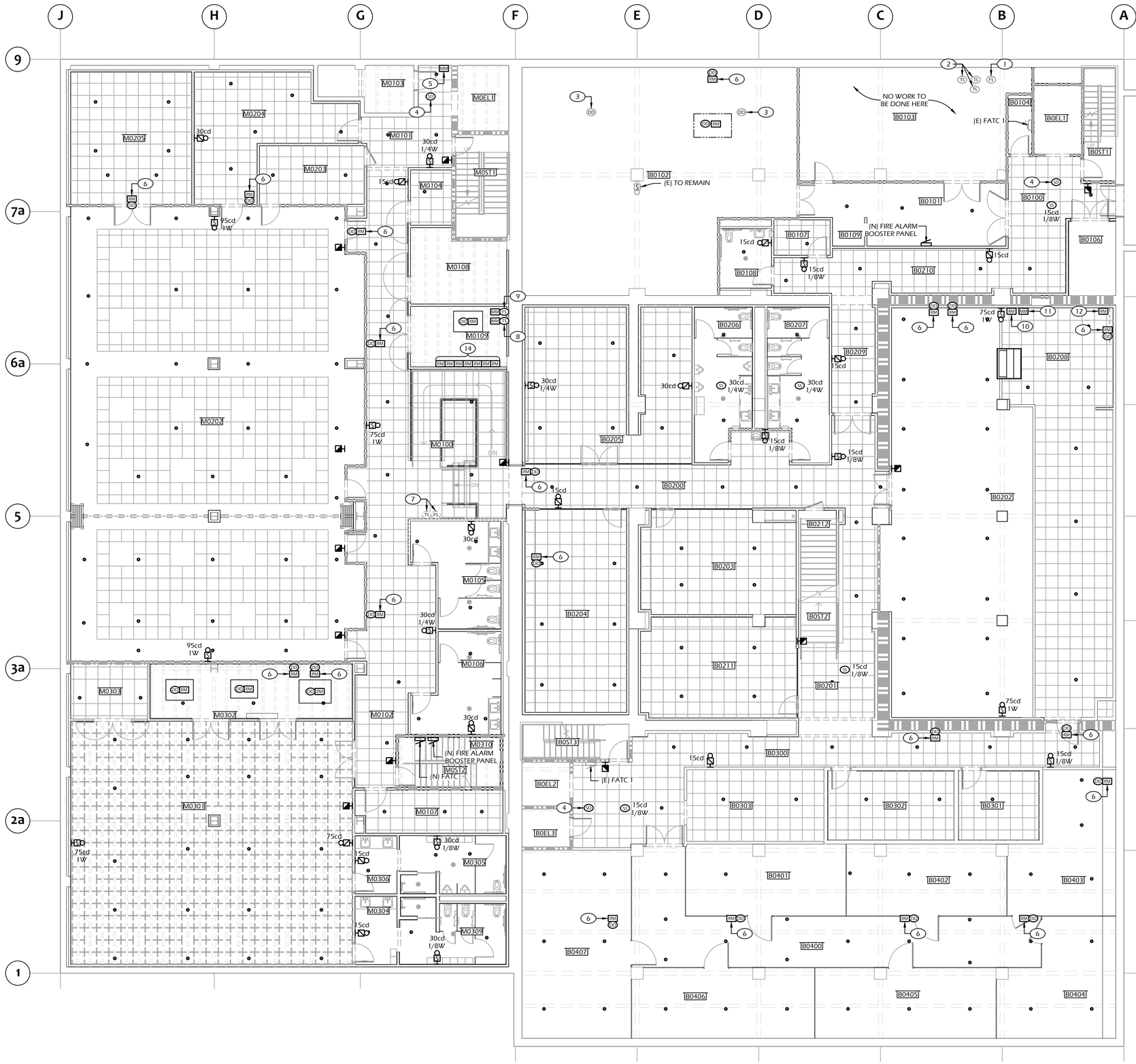
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

BASEMENT FIRE ALARM NOTES

SHEET NUMBER:

E4.01



ROOM SCHEDULE

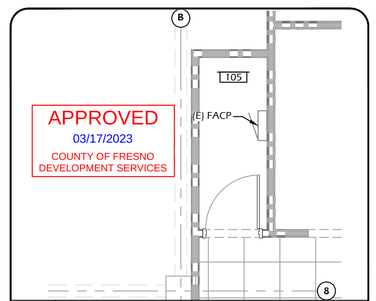
MERCER BUILDING		BRIX BUILDING	
###	ROOM NAME	###	ROOM NAME
M0EL1	ELEVATOR	B0101	VESTIBULE
M0ST1	STAIRS	B0102	CHILLER ROOM
M0ST2	STAIRS	B0103	BOILER ROOM
M0100	LOBBY	B0104	ELECTRICAL ROOM
M0101	HALLWAY	B0105	STORAGE
M0102	HALLWAY	B0106	ELECTRICAL ROOM
M0103	EQUIPMENT ROOM	B0107	HOUSEKEEPING
M0104	STORAGE	B0108	RESTROOM
M0105	WOMEN'S RESTROOM	B0109	JANITOR
M0106	MEN'S RESTROOM	B0200	HALLWAY
M0107	STORAGE	B0201	HALLWAY
M0108	NETWORK ROOM	B0202	BREAK ROOM
M0109	MECHANICAL ROOM	B0203	CONFERENCE ROOM
M0202	MEETING ROOM	B0204	CONFERENCE ROOM
M0203	BREAKOUT ROOM	B0205	OPEN OFFICE
M0204	PREPARED FOOD HOLD	B0206	MEN'S RESTROOM
M0205	STORAGE	B0207	WOMEN'S RESTROOM
M0301	ACTIVITY ROOM	B0208	PREP KITCHEN
M0302	MECHANICAL ROOM	B0209	HALLWAY
M0303	STORAGE	B0210	HALLWAY
M0304	WOMEN'S VESTIBULE	B0211	CONFERENCE ROOM
M0305	MEN'S BATHROOM	B0212	STORAGE ROOM
M0306	MEN'S VESTIBULE	B0300	HALLWAY
M0309	WOMEN'S BATHROOM	B0301	MEDIA ROOM
M0310	STORAGE ROOM	B0302	MEDIA ROOM
BRIX BUILDING		B0303	PREP ROOM
B0EL1	ELEVATOR	B0400	OPEN SPACE
B0EL2	ELEVATOR	B0401	CAGED STORAGE
B0EL3	ELEVATOR	B0402	CAGED STORAGE
B0ST1	STAIRS	B0403	CAGED STORAGE
B0ST2	STAIRS	B0404	CAGED STORAGE
B0ST3	STAIRS	B0405	CAGED STORAGE
B0100	VESTIBULE	B0406	CAGED STORAGE
		B0407	CAGED STORAGE

SHEET NOTES (#)

1. EXISTING FIRE ALARM FLOW SWITCH TO REMAIN FUNCTIONAL.
2. EXISTING FIRE ALARM TAMPER SWITCH TO REMAIN FUNCTIONAL.
3. EXISTING FIRE ALARM DUCT DETECTORS TO REMAIN FUNCTIONAL.
4. PROGRAM THE EXISTING FACP TO RECALL ELEVATOR TO THE GROUND FLOOR WHEN THE DETECTOR SENDS ALARM SIGNAL.
5. PROVIDE AND INSTALL A NEW FIRE ALARM MONITOR MODULE TO THE NEW HYDRA-O-MATIC PUMP ALARM SYSTEM AND CONNECT TO THE BUILDING FIRE ALARM SYSTEM.
6. CONNECT TO FIRE SMOKE DAMPER TO CLOSE WHEN SMOKE IS DETECTED. COORDINATE WITH THE ELECTRICAL AND MECHANICAL CONTRACTOR.
7. DISCONNECT AND REMOVE EXISTING FIRE SPRINKLER FLOW SWITCH AND FIRE SPRINKLER TAMPER SWITCH SINCE FIRE SPRINKLER RISER IS BEING RELOCATED TO ROOM M0109.
8. PROVIDE AND INSTALL SIGNALING LINE CIRCUIT CABLE FROM THE MONITOR MODULE TO THE TAMPER SWITCH ON THE DETECTOR CHECK VALVE OF THE FIRE SPRINKLER.
9. PROVIDE AND INSTALL SIGNALING LINE CIRCUIT CABLE FROM THE MONITOR MODULE TO THE FLOW SWITCH TO MONITOR FIRE SPRINKLER WATER FLOW.
10. PROVIDE AND INSTALL (2) #12 CONDUCTORS TO THE RELAY CONTACTOR. SO, THE FIRE ALARM RELAY DISCONNECTS THE RANGE/COOKTOP DURING A HOOD FIRE. COORDINATE FIRE ALARM RELAY MODULE CONTACTS RATING.
11. PROVIDE AND INSTALL (4) #12 CONDUCTORS TO THE ANSUL PANEL AND MAKE ALL CONNECTIONS TO THE INTERFACE TO THE FIRE ALARM SYSTEM FOR MONITORING.
12. PROVIDE AND INSTALL (2) #12 CONDUCTORS TO THE HIGH SPEED RELAYS.
13. NOT USED.
14. MAKE CONNECTIONS TO THE FAN COILS RELAYS FOR UNIT SHUT OFF. COORDINATE FIRE ALARM RELAY MODULE CONTACTS RATING.

GENERAL NOTES (#)

1. DISCONNECT AND REMOVE ALL EXISTING FIRE ALARM DEVICES WITHIN THIS AREA OF WORK, UNLESS OTHERWISE NOTED. ADD FIRE ALARM DEVICES AS INDICATED.



APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

2 - EXISTING FACP IN EXISTING ROOM 105 GROUND LEVEL - BRIX BUILDING
SCALE: 1/4" = 1' - 0"

1 - BASEMENT FIRE ALARM PLAN
SCALE: 1/8" = 1' - 0"

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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CONSULTANT STAMP

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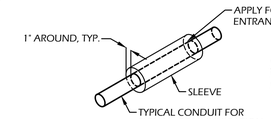
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

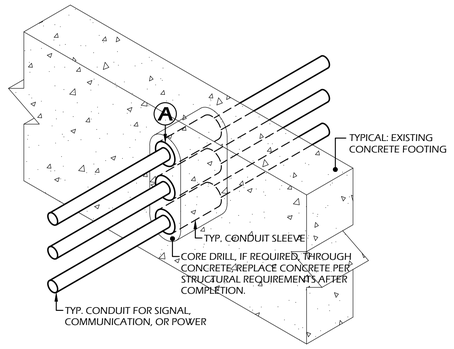
SHEET TITLE:
BASEMENT FIRE ALARM PLAN

SHEET NUMBER
E4.02



NOTE:
FOAM SHALL BE FORNO PRODUCTS, INC. P1000 OR EQUAL.

A FOAM SEAL AROUND CONDUIT



NOTE:
PRIOR TO CORE DRILLING CONCRETE OBTAIN APPROVAL IN WRITING FROM STRUCTURAL ENGINEER FOR THE PROPOSED NUMBER AND LOCATION OF CORES DRILLED.

2 / - **TYPICAL CONDUIT THROUGH CONCRETE**

NOT TO SCALE GB30-02-10

GENERAL NOTES ◊

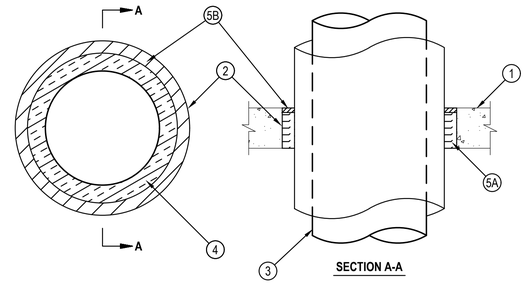
1. WHERE PROVIDED, THROUGH-PENETRATION FIRESTOP SYSTEM AND MEMBRANE PENETRATION DETAILS ARE FOR REFERENCE ONLY. THROUGH-PENETRATIONS AND MEMBRANE PENETRATIONS SHALL BE PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM OR MEMBRANE PENETRATION FIRESTOP SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH OF WATER OR AS OTHERWISE PERMITTED BY CBC SECTION 714. LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS AND MEMBRANE PENETRATIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTALLATION DETAILS LISTED SYSTEMS.

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

System No. C-AJ-5091

CAJ 5091

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Ratings — 0 and 1 Hr (See Items 2 and 4)	FT Ratings — 0 and 1 Hr (See Items 2 and 4)
L Rating At Ambient — 4 CFM/sq ft	FH Rating — 2 Hr
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Ratings — 0 and 1 Hr (See Items 2 and 4)
	L Rating At Ambient —4 CFM/sq ft
	L Rating At 400 F —Less Than 1 CFM/sq ft



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 29 in. (737 mm).
   See Concrete Blocks (CAZT) category in the Fire Resistance directory for names of manufacturers.
2. Metallic Sleeve — (Optional) — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. (76 mm) above floor or beyond both surfaces of wall. If the steel sleeve extends beyond the top surface of the floor or both surfaces of the wall, the T Rating of the firestop system is 0 hr.

2A. Sheet Metal Sleeve — (Optional) - Max 6 in. (152 mm) diam, min 26 ga galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. (25 mm) above the top surface of the floor.

2B. Sheet Metal Sleeve — (Optional) - Max 12 in. (305 mm) diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. (25 mm) above the top surface of the floor.

HILTI Hilti Firestop Systems

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Page: 1 of 2

System No. C-AJ-5091

CAJ 5091

3. Through Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:
   A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe.
   C. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
   D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
4. Pipe Covering — Min 1/2 in. (13 mm) to max 2 in. (51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all-service jacket. Longitudinal joints sealed with metal fasteners or factory-applied, self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the edge of the periphery of the opening shall be min 1/2 in. (13 mm) to max 12 in. (305 mm). When thickness of pipe covering is less than 2 in. (51 mm), the T Rating for the firestop system is 0 hr.
   See Pipe Equipment Covering — Materials — (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

4A. Pipe Covering — (Not Shown) — As an alternate to Item 4, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf or 224 kg/m³) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. The annular space shall be min 1/2 in. (13 mm) to max 12 in. (305 mm).

5. Firestop System — The firestop system shall consist of the following:
   A. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

HILTI Hilti Firestop Systems

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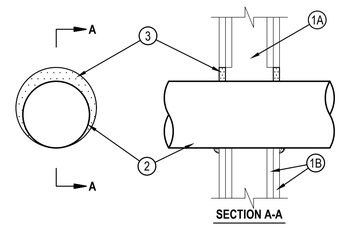
Page: 2 of 2

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

System No. W-L-1054

WL 1054

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings —1 and 2 Hr (See Items 1 and 3)	F Ratings — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating at Ambient — Less Than 1 CFM/sq ft	FH Ratings —1 and 2 Hr (See Items 1 and 3)
L Rating at 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	L Rating at Ambient — Less Than 1 CFM/sq ft
	L Rating at 400 F — Less Than 1 CFM/sq ft



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.

The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly.

HILTI Hilti Firestop Systems

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Page: 1 of 2

System No. W-L-1054

WL 1054

2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
   C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) . diam steel conduit.
   D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

HILTI Hilti Firestop Systems

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Page: 2 of 2

1 / - **WALL PENETRATION DETAIL**

NOT TO SCALE

THE COUNTY OF FRESNO 1856

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

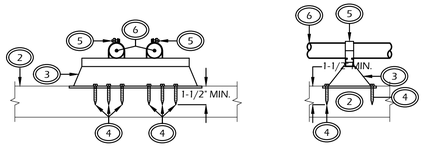
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TYPICAL ELECTRICAL DETAILS

SHEET NUMBER

E5.01

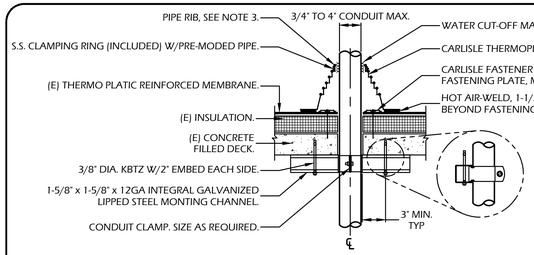


DETAIL NOTES: (#)

1. NOT USED
2. EXISTING ROOF CONCRETE DECK
3. PROVIDE AND INSTALL CADDY PSF16D FIXED STRUT SUPPORT.
4. PROVIDE AND INSTALL TWELVE 1/4" FASTENERS WITH MINIMUM 1-1/2" PENETRATION INTO BUILDING STRUCTURE. FASTENERS SHALL BE SIMPSON TITEN SCREWS. APPLY MASTIC BEFORE AND AFTER INSTALLING FASTENERS FOR A WATER TIGHT SEAL.
5. FASTEN CONDUIT TO FIXED STRUT SUPPORT WITH UNISTRUT PIPE CLAMP.
6. CONDUIT

5 - **ROOF CONDUIT SUPPORT DETAIL**

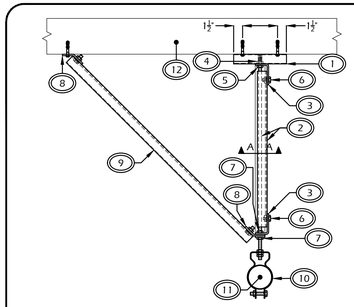
NOT TO SCALE



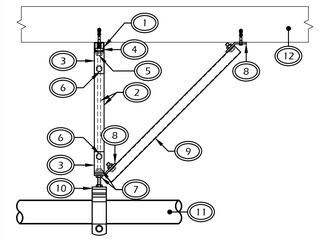
NOTES:
1. REMOVE ALL (E) LEAD AND FLASHING MATERIALS BEFORE INSTALL PRE-MOLDED PIPE FLASHING.
2. TEMPERATURE OF THE PIPE PENETRATION MUST NOT EXCEED 140° F WHEN USING PVC AND 160° F WHEN USING TPO FLASHING.
3. PIPE SEAL MUST HAVE RIB INTACT AT TOP EDGE, REGARDLESS OF PIPE DIAMETER.
4. INSTALL A MIN. OF (4) FASTENERS AND PLATES AROUND THE PIPE, EQUALLY SPACED. IF FASTENERS AND PLATES CANNOT BE INSTALLED AS SHOWN, THEY MAY ALSO BE POSITIONED OUTSIDE THE PIPE MAX. 12" O.C. AND FLASHED W/ THEMOPLASTIC REINFORCED MEMBRANE/CUT-EDGE SEALANT.
5. FASTENERS AND PLATES ARE NOT REQUIRED ON ADHERED SYSTEMS UNLESS PIPE DIAMETER EXCEEDS 18".
6. ON MECHANICALLY FASTENED SYSTEMS, HP-X FASTENERS AND PIRANHA PLATES OR HP-XTRA FASTENERS AND PIRANHA XTRA PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS, ON CONCRETE DECKS, CD-10 OR HD 14-10 FASTENERS ARE USED W/ PIRANHA PLATES.
7. MANUFACTURER SPECIFIED PRODUCTS ARE USED FOR THIS DETAIL TO ACHIEVE/MAINTAIN ROOFING WARRANTY. DO NOT DEVIATE FROM SPECIFIED PRODUCTS.

4 - **CONDUIT ROOF PENETRATIONS - FOR TPO ROOFS**

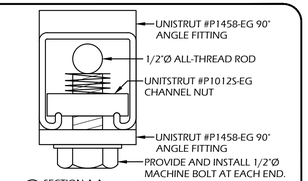
NOT TO SCALE



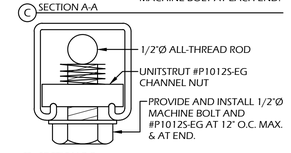
A LATERAL ELEVATION



B LONGITUDINAL ELEVATION



C SECTION A-A



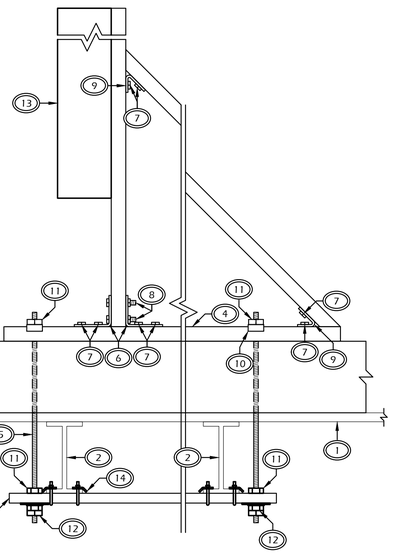
D SECTION B-B

DETAIL NOTES (#)

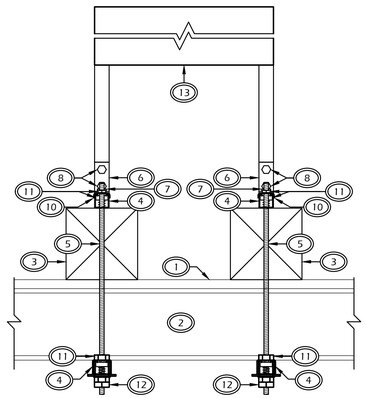
1. PROVIDE AND INSTALL 9" LONG UNISTRUT #P1000T-HG WITH TWO 3/8"Ø HILTI KWIK-BOLT TZ WITH 1-1/2" EMBEDMENT AND TWO WASHERS.
2. PROVIDE AND INSTALL 1/2" ELECTRO-GALVANIZED ALL-THREAD ROD WITH UNISTRUT #P1000T-HG STIFFENER.
3. PROVIDE AND INSTALL UNISTRUT #P1458-EG 90° ANGLE FITTING.
4. FASTEN ALL-THREAD ROD TO CHANNEL WITH UNISTRUT #P1012S-EG CHANNEL NUT.
5. FASTEN 90° ANGLE FITTING TO ALL-THREAD ROD AND HORIZONTAL CHANNEL WITH NUT BELOW 90° ANGLE BRACKET. TIGHTEN NUT SO THAT CHANNEL NUT, HORIZONTAL CHANNEL, ALL-THREAD ROD, 90° ANGLE BRACKET, AND NUT ASSEMBLY ARE SECURELY FASTENED TOGETHER.
6. FASTEN STIFFENER TO 90° ANGLE BRACKET WITH 1/2" STAINLESS STEEL BOLT AND UNISTRUT #1012S-EG CHANNEL NUT.
7. PROVIDE AND INSTALL STAINLESS STEEL NUT ON ALL-THREAD ROD ON TOP AND BOTTOM OF ANGLE FITTINGS. TIGHTEN NUTS.
8. PROVIDE AND INSTALL UNISTRUT #P1546-EG 45° ANGLE FITTING. FASTEN TO DIAGONAL BRACE WITH 1/2"x2" STAINLESS STEEL BOLT AND NUT. FASTEN TO STRUCTURE WITH TWO 3/8"Ø, STAINLESS STEEL HILTI KWIK-BOLT TZ, WITH 1-1/2" EMBEDMENT, AND TWO WASHERS.
9. PROVIDE AND INSTALL UNISTRUT #P1000T-HG DIAGONAL BRACES IN LATERAL AND LONGITUDINAL DIRECTIONS.
10. PROVIDE AND INSTALL GALVANIZED COMPRESSION TYPE PIPE CLAMP.
11. CONDUIT
12. CONCRETE BUILDING STRUCTURE, BY OTHERS

1 - **CONDUIT SUPPORT DETAIL**

NOT TO SCALE



A SIDE ELEVATION



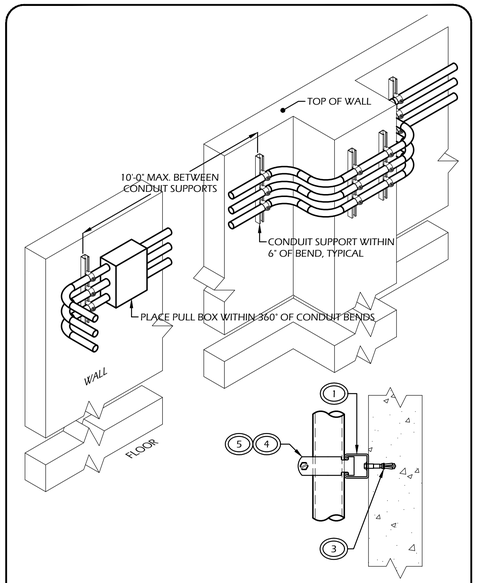
B FRONT ELEVATION

DETAIL NOTES (#)

1. EXISTING ROOF.
2. EXISTING BUILDING STRUCTURE.
3. PROVIDE AND INSTALL 8"x8" PRESSURE TREATED REDWOOD SLEEPER ON ROOF. CLEAN ROOF PRIOR TO INSTALLATION. PROVIDE AND INSTALL COLD SET MASTIC BETWEEN THE SLEEPER AND ROOF AND BETWEEN THE SLEEPER AND UNISTRUT CHANNEL.
4. PROVIDE AND INSTALL UNISTRUT P1000HS-HG CHANNEL.
5. PROVIDE AND INSTALL 1/2" DIAMETER ALL-THREAD ROD, TYPICAL OF 4.
6. PROVIDE AND INSTALL UNISTRUT P1325-EG 90 ANGLE FITTING.
7. PROVIDE AND INSTALL 1/2-INCH BOLT AND UNISTRUT P1010-EG CHANNEL NUT.
8. PROVIDE AND INSTALL 1/2-INCH BOLT AND NUT.
9. PROVIDE AND INSTALL UNISTRUT P1186-EG 45 ANGLE FITTING.
10. BEND 5-1/2" LONG, 12 GAUGE STEEL PLATE TO WRAP AROUND UNISTRUT CHANNEL AT LEAST 1/2" DOWN SIDE OF CHANNEL. DRILL HOLES FOR THE ALL-THREAD ROD.
11. PROVIDE AND INSTALL 1/2" DOUBLE NUT AND UNISTRUT P1010-EG CHANNEL NUT.
12. PROVIDE AND INSTALL 1/2" DOUBLE NUT.
13. FASTEN PANEL TO UNISTRUT CHANNEL WITH UNISTRUT ELECTROGALVANIZED CHANNEL STUD AND NUTS AT EACH PANEL MOUNTING HOLE. REFER TO PANEL MANUFACTURER'S DRAWINGS AND SPECIFICATIONS FOR QUANTITY AND SIZE OF MOUNTING HOLES.
14. PROVIDE AND INSTALL UNISTRUT #P2785-EG BEAM CLAMP ON EACH SIDE OF EACH BEAM.

6 - **PANEL MOUNTING ON ROOF DETAIL**

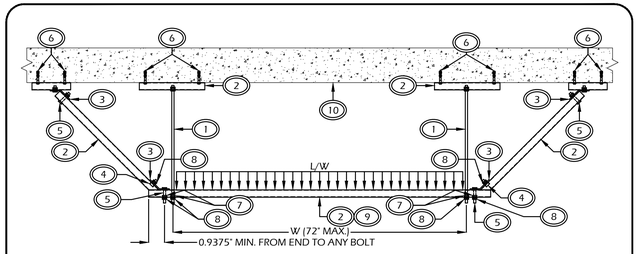
NOT TO SCALE



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 TZ EXPANSION ANCHORS. EACH SUPPORT SHALL BE FASTENED IN PLACE WITH A MINIMUM OF TWO BOLTS. TORQUE PER ICC-ES ESR-1917. 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.

3 - **TYPICAL CONDUIT MOUNTING AT CONCRETE OR CMU WALL OR HORIZONTAL MOUNTING**

NOT TO SCALE



DETAIL NOTES (#)

1. PROVIDE AND INSTALL 3/8" DIAMETER, ELECTRO-GALVANIZED ALL-THREAD ROD EVERY 10'-0", FASTEN TO EACH P1000HS-EG WITH CHANNEL NUT AND TWO NUTS.
2. PROVIDE AND INSTALL UNISTRUT #P1000HS-HG EVERY 10'-0".
3. PROVIDE AND INSTALL UNISTRUT #P1546-HG EVERY 10'-0", FASTEN TO P1000HS-EG WITH CHANNEL NUT AND TWO STAINLESS STEEL NUTS.
4. PROVIDE AND INSTALL UNISTRUT #P2381-3-EG EVERY 10'-0".
5. PROVIDE AND INSTALL 1/2" DIAMETER, HIGH STRENGTH, STAINLESS STEEL BOLT EVERY 10'-0".
6. PROVIDE AND INSTALL HILTI 1/2" DIAMETER, STAINLESS STEEL KWIK-BOLT TZ WITH MINIMUM OF 2" EMBEDMENT EVERY 10'-0".
7. PROVIDE AND INSTALL SINGLE, STAINLESS STEEL NUT EVERY 10'-0".
8. PROVIDE AND INSTALL DOUBLE, STAINLESS STEEL NUT EVERY 10'-0".
9. BRACE IN THE LONGITUDINAL DIRECTION EVERY 20'-0".
10. EXISTING CONCRETE

W (FT)	L/W (LBS/FT)
2	760.5000
3	339.0000
4	191.2500
5	122.4000
6	84.0000
7	61.7143
8	47.2500
9	38.0000
10	30.6000
12	21.0000
14	15.4286
16	11.8125
18	9.5000
20	7.6500

GENERAL NOTES (#)

1. MAXIMUM QUANTITY OF CONDUITS SHALL BE SUCH THAT EACH CONDUIT CAN BE FASTENED TO THE TRAPEZE USING UNISTRUT PIPE CLAMPS AND THAT THE WEIGHT OF THE CONDUITS SUPPORTED (CONDUIT AND CONDUCTORS WEIGHT PER FOOT MULTIPLIED BY HALF OF THE FEET TO THE NEXT SUPPORT IN BOTH DIRECTIONS) DOES NOT EXCEED THE LISTED L/W FOR THE TRAPEZE WIDTH IN THE TABLE.

2 - **TRAPEZE CONDUIT SUPPORT DETAIL**

NOT TO SCALE

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REGISTERED PROFESSIONAL ENGINEER JOHN BORRELLI No. E-14190 Exp. 6/30/23 ELECTRICAL CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

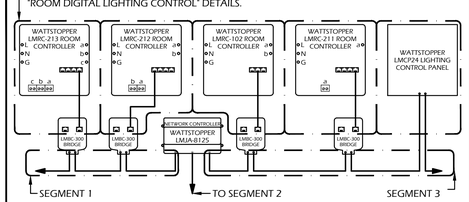
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TYPICAL ELECTRICAL DETAILS

SHEET NUMBER

E5.02

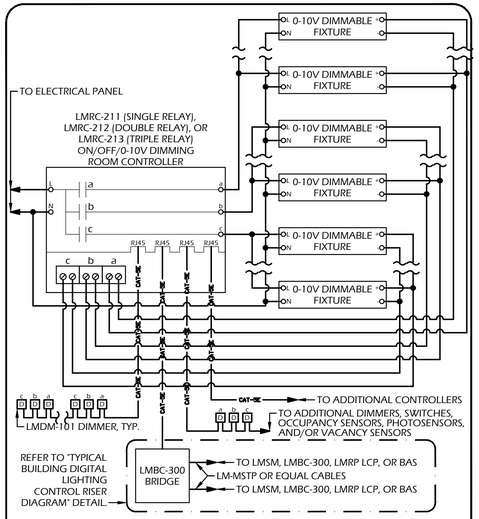


NOTES:
1. SEGMENT WIRING IS 4 WIRE RS-485 CABLES, WATTSTOPPER #LM-MSTP OR EQUAL. MAXIMUM LENGTH IS 4000 FEET.
2. ROOM NETWORK WIRING IS CAT-5E CABLES WITH RJ-45 CONNECTORS.
3. PROGRAM NETWORK CONTROLLER(S) AND CONTROLLERS PER TITLE 24 REQUIREMENTS.
4. ALL CATALOG NUMBERS ARE FOR WATTSTOPPER PRODUCTS, U.O.N.
5. PROVIDE ALL PROGRAMMING FOR A COMPLETE AND FUNCTIONAL SYSTEM.
6. COORDINATE WITH THE EMS CONTRACTOR FOR REQUIRED INTERFACE TO EMS SYSTEM.
7. PROVIDE INTERNET PROTOCOL CONNECTION FROM NETWORK CONTROLLER TO THE LOCAL AREA NETWORK.

10 -

TYPICAL BUILDING DIGITAL LIGHTING CONTROL RISER DIAGRAM

NOT TO SCALE

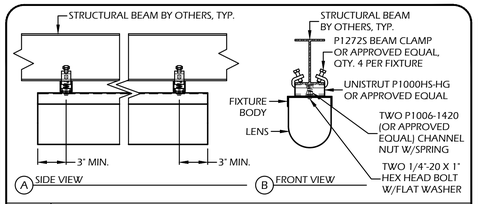


NOTES:
1. ALL CATALOG NUMBERS ARE FOR WATTSTOPPER PRODUCTS, U.O.N.
2. ALL CONDUCTORS ARE #12 AWG, U.O.N.
3. CABLES BETWEEN DIMMERS AND BETWEEN DIMMER AND CONTROLLER ARE CAT-5E WITH RJ-45 CONNECTORS.
4. PROVIDE ALL PROGRAMMING FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

11 -

TYPICAL 0-10VDC LOCAL ROOM DIGITAL DIMMING CONTROL

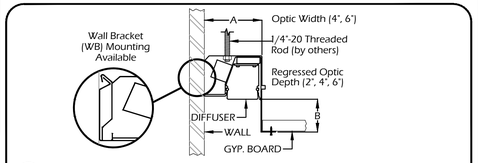
NOT TO SCALE



7 -

TYPICAL BEAM MOUNTED DETAIL FOR SURFACE MOUNTED FIXTURE

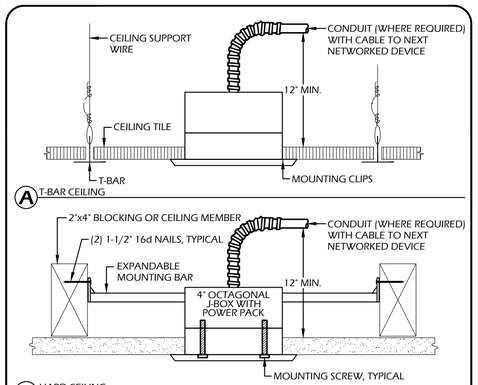
NOT TO SCALE



8 -

COVE LIGHTING DETAILS

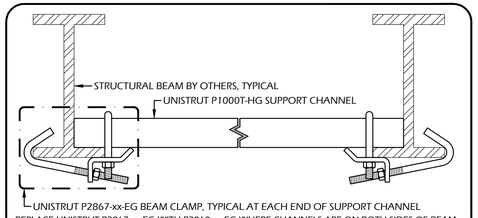
NOT TO SCALE



9 -

INTERIOR LIGHTING OCCUPANCY SENSOR MOUNTING NON-RESIDENTIAL APPLICATIONS

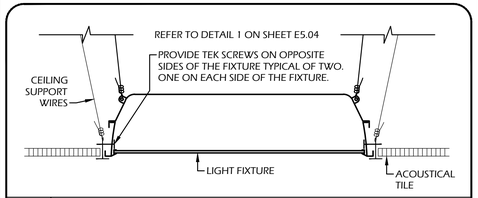
NOT TO SCALE GB9-1-02-Wood



5 -

TYPICAL T-BAR LIGHT FIXTURE MOUNTING DETAIL

NOT TO SCALE

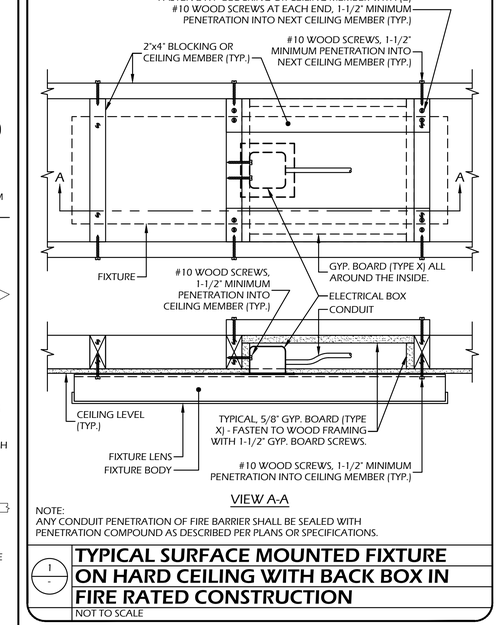


6 -

LIGHT FIXTURE IN T-BAR CEILING

NOT TO SCALE GB1-01-01

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES



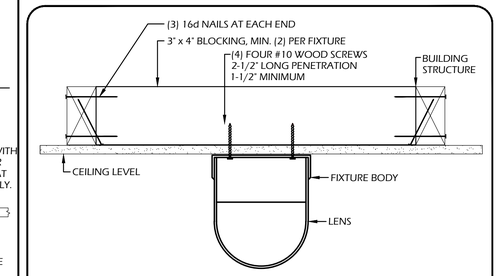
VIEW A-A

NOTE:
ANY CONDUIT PENETRATION OF FIRE BARRIER SHALL BE SEALED WITH PENETRATION COMPOUND AS DESCRIBED PER PLANS OR SPECIFICATIONS.

1 -

TYPICAL SURFACE MOUNTED FIXTURE ON HARD CEILING WITH BACK BOX IN FIRE RATED CONSTRUCTION

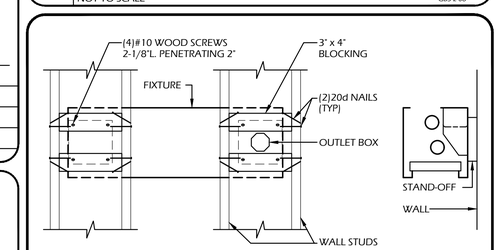
NOT TO SCALE



2 -

TYPICAL SURFACE MOUNTED FIXTURE ON HARD CEILING

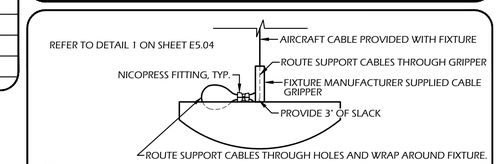
NOT TO SCALE GB3-2-08



3 -

WALL MOUNTED LIGHT FIXTURE

NOT TO SCALE GB4-1-02



4 -

TYPICAL PENDANT LIGHT FIXTURE MOUNTING DETAIL

NOT TO SCALE

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
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559-868-6804
info@muratoreassociates.com

CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER TIMOTHY BORRELLI No. E-14200 EXP. 6/30/23 ELECTRICAL CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:

BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:

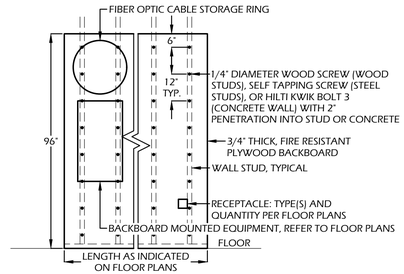
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:

TYPICAL ELECTRICAL DETAILS

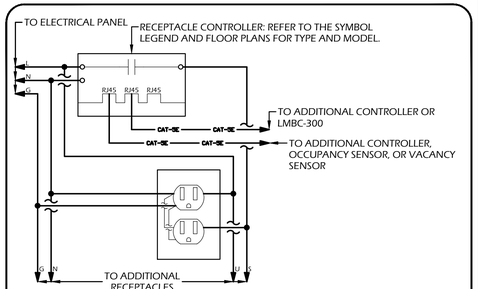
SHEET NUMBER

E5.03



4 - **SCTB MOUNTING DETAIL**

NOT TO SCALE GB23-01-06

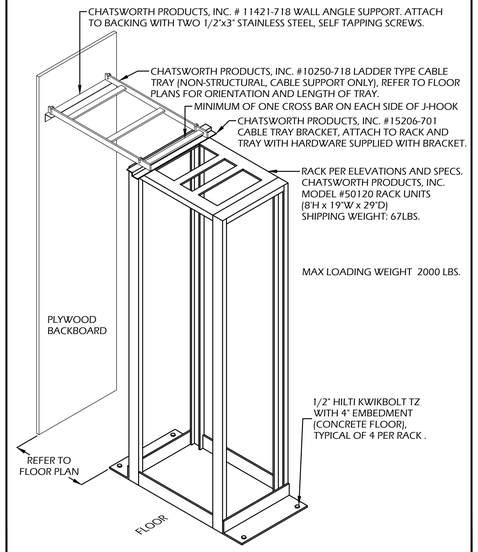


NOTES:
1. ALL CATALOG NUMBERS ARE FOR WATTSTOPPER PRODUCTS, U.O.N.
2. ALL CONDUCTORS ARE #12 AWG, U.O.N.
3. CABLES BETWEEN CONTROLLERS, BRIDGE, OCCUPANCY SENSORS, AND VACANCY SENSORS ARE CAT-5E WITH RJ-45 CONNECTORS.
4. PROGRAM RECEPTACLE CONTROLLER TO TURN OFF SWITCHED RECEPTACLES ONLY WHEN SENSORS DEDECT THE ROOM IS EMPTY. RECEPTACLES SHALL NOT BE SWITCHED BY LIGHT SWITCHES OR DIMMERS. RECEPTACLES SHALL BE SWITCHED OFF 1 MINUTE AFTER LIGHTS.
5. ROOMS REQUIRING SWITCH RECEPTACLES ARE OFFICES, LOBBIES, CONFERENCE ROOMS, KITCHENS, AND COPY ROOMS. RECEPTACLES SUPPLYING EQUIPMENT TO REMAIN ON WHEN ROOM IS VACANT, SUCH AS REFRIGERATORS, NETWORK PRINTERS, NETWORK EQUIPMENT, ETC., ARE EXEMPT.

5 - **TYPICAL SWITCHED RECEPTACLE CONTROL**

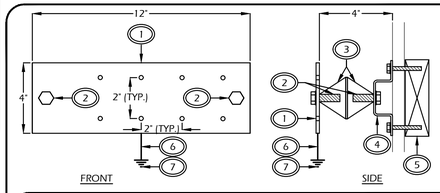
NOT TO SCALE

NOTES:
1. PROVIDE GROUNDING OF LAN EQUIPMENT RACKS WITH ONE #8 AWG, COPPER GROUND CONDUCTOR IN METAL CONDUIT. RUN GROUND CONDUCTOR FROM LAN RACKS TO NEAREST CONTINUOUS COLD WATER PIPE OR EXISTING GROUND, U.O.N. GROUND RESISTANCE SHALL BE 25 OHMS OR LESS AND SHALL BE VERIFIED BY GROUND RESISTANCE TEST.
2. PROVIDE AND INSTALL 2 VERTICAL CABLE MANAGERS PER RACK.



2 - **IDF/MDF RACK DETAIL**

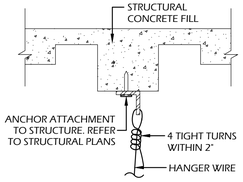
NOT TO SCALE



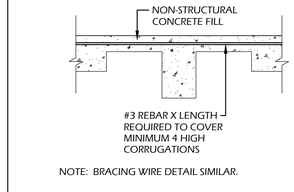
DETAIL NOTES (#)
1. 1/4" THICK SOLID COPPER GROUND BAR WITH 1/16" DIAMETER HOLES AS INDICATED.
2. 1/2" DIAMETER BOLTS
3. INSULATORS
4. STAND-OFF BRACKET WITH (2) 1/4"x2" SELF TAPPING BOLTS TO BLOCKING (2 PER BAR)
5. HORIZONTAL BLOCKING
6. #6 AWG, COPPER GROUND WIRE
7. BUILDING METAL, COLD WATER PIPE, UFER GROUND, OR GROUNDING ELECTRODE

3 - **GROUND BAR BUS DETAIL AT ALL IDF AND MDF RACKS/CABINETS**

NOT TO SCALE

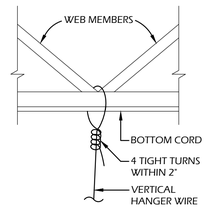


AT DECK WITH CONCRETE FILL

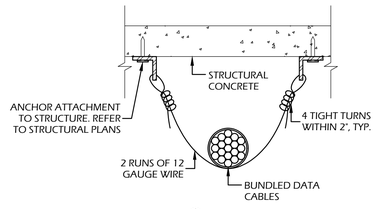


NOTE: BRACING WIRE DETAIL SIMILAR.

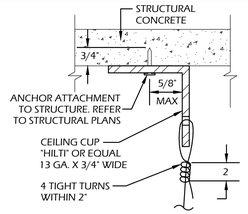
AT DECK WITH INSULATING FILL



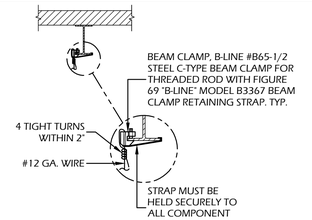
AT WEB OPEN STEEL JOIST

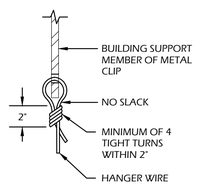


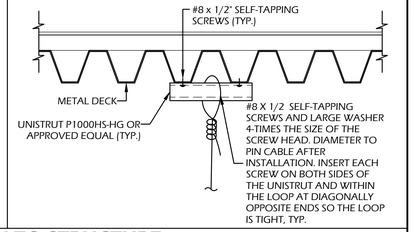
DETAIL (B) WIRE ATTACHMENT TO CAST-IN-PLACE CONCRETE



DETAIL (A) VERTICAL HANGER WIRE ATTACHMENT







1 - **HANGER WIRE CONNECTION TO STRUCTURE**

NOT TO SCALE GB200-01-01

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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BAI# 21102

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
TYPICAL ELECTRICAL DETAILS

SHEET NUMBER
E5.04

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Fresno county Dept. of Public health Basement Renovation	Report Page:	Page 3 of 4
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	4/7/2021

01	02		03	04	05	
Electrical Service Designation/ Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method		Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
					Pass	Fail
(N) PANEL 'BM1'	☑ Voltage drop < 5%	☐ Permitted by CA Elec Code (Exception to §130.5(c))*	Contractor Responsible		☐	☐
(N) PANEL 'BR1'	☑ Voltage drop < 5%	☐ Permitted by CA Elec Code (Exception to §130.5(c))*	Contractor Responsible		☐	☐

**NOTES If "Permitted by CA Elec Code*" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*

[1] *FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".*

I. CIRCUIT CONTROLS FOR 120-VOLT RECEPTACLES AND CONTROLLED RECEPTACLES
This Section Does Not Apply

J. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
◉	○	NRCI-ELC-01-E - Must be submitted for all buildings.	☐	☐

K. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
There are no Certificates of Acceptance applicable to electrical power distribution requirements.

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Fresno county Dept. of Public health Basement Renovation	Report Page:	Page 4 of 4
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	4/7/2021

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	John Borrelli, P.E.	Documentation Author Signature:	
Company:	Borrelli and Associates, Inc.	Signature Date:	08/22/22
Address:	2032 N. Gateway Boulevard	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Fresno, CA 93727	Phone:	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	John Borrelli, P.E.	Responsible Designer Signature:	
Company :	Borrelli and Associates, Inc.	Date Signed:	08/22/22
Address:	2032 N. Gateway Boulevard	License:	E16390
City/State/Zip:	Fresno, CA 93727	Phone:	559-233-4138

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Fresno county Dept. of Public health Basement Renovation	Report Page:	Page 1 of 4
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	4/7/2021

This document is used to demonstrate compliance with mandatory requirements in §130.5 for electrical systems in newly constructed nonresidential, high-rise residential and hotel/motel occupancies. Additions and alterations to electrical service systems in these occupancies will also use this document to demonstrate compliance per §141.0(a) or §141.0(b)2P for alterations.

A. GENERAL INFORMATION
01 Project Location (city)	Fresno,CA	02 Occupancy Types Within Project:				
☐ Office	☐ Retail	☐ Warehouse	☐ Hotel/ Motel	☐ School	☐ Support Areas	
☐ Parking Garage	☐ High-Rise Residential	☐ Relocatable	☐ Healthcare Facilities	☐ Other (Write In):	non-residential	

B. PROJECT SCOPE
Table Instructions: Include any electrical service systems that are within the scope of the permit application.

01	02	03	04	05	06
Electrical Service Designation/ Description	Scope of Work[1]	Rating (kVA)	Utility Provided Metering System Exception to §130.5(a)[2]	System subject to CA Elec Code Article 517 Exception to §130.5(a)&(b)	Demand Response Controls
(N) PANEL 'BR1'	Add/Alt to feeders and branch circuits only		☐	☐	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections §120.2, §130.1 and §130.3 and compliance documents NRCC-MCH, NRCC-LTI and NRCC-LTS will indicate when demand response controls are required.
(N) PANEL 'BL1'	Add/Alt to feeders and branch circuits only		☐	☐	
(N) PANEL 'BM1'	Add/Alt to feeders and branch circuits only		☐	☐	
			Add Row	Remove Last	

[1] *FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c), no other requirements from 130.5 are required.*

[2] *Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.*

C. COMPLIANCE RESULTS
Table Instructions: If this table says "DOES NOT COMPLY" refer to Table D. for guidance and review the Table that indicates "No".

Table Continued

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Fresno county Dept. of Public health Basement Renovation	Report Page:	Page 2 of 4
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	4/7/2021

01		02		03		04	05
Service Electrical Metering §130.5(a)	AND	Separation for Monitoring §130.5(b)	AND	Voltage Drop §130.5(c)	AND	Controlled Receptacles §130.5(d)	**Compliance Results**
(See Table F)		(See Table G)		(See Table H)		(See Table I)	
	AND		AND	Yes	AND		**COMPLIES with Exceptional Conditions**

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

Table H. indicates voltage drop calculations will be provided by the contractor.

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

F. SERVICE ELECTRICAL METERING
This Section Does Not Apply

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING
This Section Does Not Apply

H. VOLTAGE DROP
Table Instructions: Please complete this table for entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with §130.5(c). For alterations, only the altered circuits must demonstrate compliance per §141.0(b)2Fiii.

01	02		03	04	05	
Electrical Service Designation/ Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method		Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
					Pass	Fail
(N) PANEL 'BL1'	☑ Voltage drop < 5%	☐ Permitted by CA Elec Code (Exception to §130.5(c))*	Contractor Responsible		☐	☐

Table Continued

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

MURATORE ASSOCIATES
1222 N SHAW AVE. FRESNO, CA 93711
559-369-6804
info@muratoreassociates.com

CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER JOHN BORRELLI No. E16390 EXP. 6/30/23 ELECTRICAL CALIFORNIA

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Consulting Electrical Engineers
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Phone: 559-233-4138, Fax: 559-233-4354
Website: http://www.borrelliengineering.com/
E-Mail: ca-bai@borrelliengineering.com
BA# 21102

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
BRIX BUILDING BASEMENT POWER TITLE-24 FORMS

SHEET NUMBER
E6.01

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Fresno county Dept. of Public health Basement Renovation	Report Page:	Page 3 of 4
Project Address: Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	4/7/2021

01	02		03	04	05	
Electrical Service Designation/ Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method		Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
					Pass	Fail
(N) PANEL 'BM2'	☑ Voltage drop < 5%	☐ Permitted by CA Elec Code (Exception to §130.5(c))*	Contractor Responsible		☐	☐
(N) PANEL 'BR2'	☑ Voltage drop < 5%	☐ Permitted by CA Elec Code (Exception to §130.5(c))*	Contractor Responsible		☐	☐

**NOTES If "Permitted by CA Elec Code*" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*

[1] *FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".*

I. CIRCUIT CONTROLS FOR 120-VOLT RECEPTACLES AND CONTROLLED RECEPTACLES
This Section Does Not Apply

J. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
◉	○	NRCI-ELC-01-E - Must be submitted for all buildings.	☐	☐

K. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
There are no Certificates of Acceptance applicable to electrical power distribution requirements.

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Fresno county Dept. of Public health Basement Renovation	Report Page:	Page 4 of 4
Project Address: Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	4/7/2021

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	John Borrelli, P.E.	Documentation Author Signature:	
Company:	Borrelli and Associates, Inc.	Signature Date:	08/22/22
Address:	2032 N. Gateway Boulevard	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Fresno, CA 93727	Phone:	

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	John Borrelli, P.E.	Responsible Designer Signature:	
Company :	Borrelli and Associates, Inc.	Date Signed:	08/22/22
Address:	2032 N. Gateway Boulevard	License:	E16390
City/State/Zip:	Fresno, CA 93727	Phone:	559-233-4138

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
This document is used to demonstrate compliance with mandatory requirements in §130.5 for electrical systems in newly constructed nonresidential, high-rise residential and hotel/motel occupancies. Additions and alterations to electrical service systems in these occupancies will also use this document to demonstrate compliance per §141.0(a) or §141.0(b)2P for alterations.		
Project Name: Fresno county Dept. of Public health Basement Renovation	Report Page:	Page 1 of 4
Project Address: Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	4/7/2021

A. GENERAL INFORMATION
01 Project Location (city)	Fresno,CA	02 Occupancy Types Within Project:				
☐ Office	☐ Retail	☐ Warehouse	☐ Hotel/ Motel	☐ School	☐ Support Areas	
☐ Parking Garage	☐ High-Rise Residential	☐ Relocatable	☐ Healthcare Facilities	☐ Other (Write In):	non-residential	

B. PROJECT SCOPE
Table Instructions: Include any electrical service systems that are within the scope of the permit application.

01	02	03	04	05	06
Electrical Service Designation/ Description	Scope of Work[1]	Rating (kVA)	Utility Provided Metering System Exception to §130.5(a)[2]	System subject to CA Elec Code Article 517 Exception to §130.5(a)&(b)	Demand Response Controls
(N) PANEL 'BR2'	Add/Alt to feeders and branch circuits only		☐	☐	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections §120.2, §130.1 and §130.3 and compliance documents NRCC-MCH, NRCC-LTI and NRCC-LTS will indicate when demand response controls are required.
(N) PANEL 'BL2'	Add/Alt to feeders and branch circuits only		☐	☐	
(N) PANEL 'BM2'	Add/Alt to feeders and branch circuits only		☐	☐	

Add Row | Remove Last

[1] *FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c), no other requirements from 130.5 are required.*
[2] *Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.*

C. COMPLIANCE RESULTS
Table Instructions: If this table says "DOES NOT COMPLY" refer to Table D. for guidance and review the Table that indicates "No".
Table Continued

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: Fresno county Dept. of Public health Basement Renovation	Report Page:	Page 2 of 4
Project Address: Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	4/7/2021

01		02		03		04	05
Service Electrical Metering §130.5(a)	AND	Separation for Monitoring §130.5(b)	AND	Voltage Drop §130.5(c)	AND	Controlled Receptacles §130.5(d)	**Compliance Results**
(See Table F)		(See Table G)		(See Table H)		(See Table I)	
	AND		AND	Yes	AND		**COMPLIES with Exceptional Conditions**

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

Table H. indicates voltage drop calculations will be provided by the contractor.

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

F. SERVICE ELECTRICAL METERING
This Section Does Not Apply

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING
This Section Does Not Apply

H. VOLTAGE DROP
Table Instructions: Please complete this table for entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with §130.5(c). For alterations, only the altered circuits must demonstrate compliance per §141.0(b)2P.

01	02		03	04	05	
Electrical Service Designation/ Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method		Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
					Pass	Fail
(N) PANEL 'BL2'	☑ Voltage drop < 5%	☐ Permitted by CA Elec Code (Exception to §130.5(c))*	Contractor Responsible		☐	☐

Table Continued

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER JOHN BORRELLI No. E 16390 EXP. 6/30/23 ELECTRICAL CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
MERCER BUILDING BASEMENT POWER TITLE-24 FORMS

SHEET NUMBER:
E6.02

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 3 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector	
									Pass	Fail
P3	9,000 Lumens, Pendent LED Fixture	☐	☐	81.6	Mfr. Spec[2]	1	☐	81.6	☐	☐
P4	12,000 Lumens, Pendent LED Fixture	☐	☐	108.8	Mfr. Spec[2]	1	☐	108.8	☐	☐
P5	15,000 Lumens, Pendent LED Fixture	☐	☐	136	Mfr. Spec[2]	6	☐	816	☐	☐
P6	3,677 Lumens LED Fixture	☐	☐	31	Mfr. Spec[2]	5	☐	155	☐	☐
K1	6,231 Lumens, Pendent LED Fixture	☐	☐	48	Mfr. Spec[2]	1	☐	48	☐	☐
K2	2,000 Lumens, Pendent LED Fixture	☐	☐	19.5	Mfr. Spec[2]	9	☐	175.5	☐	☐
R	3,677 Lumens LED Fixture	☐	☐	31	Mfr. Spec[2]	7	☐	217	☐	☐
W	2,600 Lumens LED Fixture	☐	☐	20.1	Mfr. Spec[2]	3	☐	60.3	☐	☐
C4	1,309 Lumens, Cove LED Fixture	☐	☐	14.4	Mfr. Spec[2]	8	☐	115.2	☐	☐
H	3,000 Lumens, 1x4 LED Fixture	☐	☐	22.8	Mfr. Spec[2]	55	☐	1,254	☐	☐
							Total Designed Watts CONDITIONED SPACES:	**6,076.4**		
							Reset	Add Row	Remove Last	

Designed Wattage: Unconditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector	
									Pass	Fail
A3	3,800 Lumens, 2x4 LED Fixture	☐	☐	27	Mfr. Spec[2]	0	☐	0	☐	☐
R	3,677 Lumens LED Fixture	☐	☐	31	Mfr. Spec[2]	1	☐	31	☐	☐
W	2,600 Lumens LED Fixture	☐	☐	20.1	Mfr. Spec[2]	9	☐	180.9	☐	☐
H	3,000 Lumens, LED Fixture	☐	☐	22.8	Mfr. Spec[2]	7	☐	159.6	☐	☐
							Total Designed Watts UNCONDITIONED SPACES:	**371.5**		
							Reset	Add Row	Remove Last	

[1] FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.
[2] Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 4 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

G. MODULAR LIGHTING SYSTEMS
This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)
*Table Instructions: Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-Off Controls §130.1(c)	Field Inspector	
		Pass	Fail
Required > 10,000 SF	See Area/Space Level Controls	☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector	
								Pass	Fail
B0ST1	Stairwell	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
B0ST2	Stairwell	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
B0ST3	Stairwell	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
B0100	Main Entry Lobby	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
B0101	Main Entry Lobby	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
B0104	Electrical, Mechanical, Telephone Rooms	Manual ON/ OFF	Exempt*	Exempt*	NA	NA	☐	☐	☐
B0105	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
B0106	Electrical, Mechanical, Telephone Rooms	Manual ON/ OFF	Dimmer	Exempt*	NA	NA	☐	☐	☐

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path.		
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 1 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

A. GENERAL INFORMATION

01	Project Location (city)	Fresno,CA	04	Total Conditioned Floor Area (ft²)	11,618.24
02	Climate Zone	13	05	Total Unconditioned Floor Area (ft²)	895.4
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	6

☐ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☐ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☐ Healthcare ☑ Other (write in): non-residential

B. PROJECT SCOPE
Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☑ New Lighting System	Area Category	11,618.24	Area Category	895.4
	Add Parking Garage-Complete Bldg Method		Remove Parking Garage	
☐ Altered Lighting System				
	Add Altered Lighting System		Remove Last Altered System	
Total Area of Work (ft²)	**11,618.24**		**895.4**	

C. COMPLIANCE RESULTS
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1.	Allowed Lighting Power per §140.6(b) (Watts)						Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Results
	01	02	03	04	05		06	07		08	09
	Complete Building §140.6(c)1	Area Category §140.6(c)2	Area Category Additional §140.6(c)2G (+)	Tailored §140.6(c)3 (+)	**Total Allowed** (Watts)		Total Designed (Watts)	Adjustments PAF Control Credits §140.6(a)2 (-)		**Total Adjusted** (Watts) *Includes Adjustments	**05 Must be ≥ 08** §140.6
	(See Table I)	(See Table I)	(See Table J)	(See Table K)			(See Table F)	(See Table P)			
Conditioned:		6,773.8			= **6,773.8**	≥	6,076.4		=	**6,076.4**	**COMPLIES**
Unconditioned:		377.96	18.8		= **396.76**	≥	371.5		=	**371.5**	**COMPLIES**

Table Continued

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 2 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

Controls Compliance (See Table H for Details)	**COMPLIES with Exceptional Conditions**
Rated Power Reduction Compliance (See Table Q for Details)	**Not Applicable**

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

Table H Indoor Lighting Controls Permit Applicant Notes:
B0104: EXCEPTION 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light. EXCEPTION 4 to Section 130.1(c)1: Electrical equipment rooms
B0106: EXCEPTION 4 to Section 130.1(c)1: Electrical equipment rooms
B0107: EXCEPTION 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light.
B0108: EXCEPTION 2 to Section 130.1(b): Restrooms
B0206: EXCEPTION 2 to Section 130.1(b): Restrooms
B0207: EXCEPTION 2 to Section 130.1(b): Restrooms
B0212: EXCEPTION 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light.

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

F. INDOOR LIGHTING FIXTURE SCHEDULE
Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector	
									Pass	Fail
A1	5,400 Lumens, 2X4 LED Fixture	☐	☐	39	Mfr. Spec[2]	9	☐	351	☐	☐
A2	4,800 Lumens, 2X4 LED Fixture	☐	☐	36	Mfr. Spec[2]	7	☐	252	☐	☐
A3	3,800 Lumens, 2x4 LED Fixture	☐	☐	27	Mfr. Spec[2]	24	☐	648	☐	☐
B1	3,000 Lumens,2X2 LED Fixture	☐	☐	25	Mfr. Spec[2]	62	☐	1,550	☐	☐
C2	1,000 Lumens, Recessed LED Fixture	☐	☐	9	Mfr. Spec[2]	12	☐	108	☐	☐
P1	3,000 Lumens, Pendent LED Fixture	☐	☐	27.2	Mfr. Spec[2]	1	☐	27.2	☐	☐
P2	6,000 Lumens, Pendent LED Fixture	☐	☐	54.4	Mfr. Spec[2]	2	☐	108.8	☐	☐

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MARADORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS

SHEET NUMBER
E6.03

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 7 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment: Area Category	PAF
B0100	Main Entry Lobby	0.85	273	232.05		
B0101	Main Entry Lobby	0.85	275	233.75		
B0109	All Other Space Types	0.4	39	15.6		
B0200	Corridor	0.6	552.2	331.32		
B0201	Corridor	0.6	321	192.6		
B0202	Dining - Family	0.5	2,235	1,117.5		
B0203	Convention, Conference, Multipurpose, and Meeting Center	0.85	428	363.8		
B0204	Convention, Conference, Multipurpose, and Meeting Center	0.85	539	458.15		
B0205	Office (open)	0.6	643	385.8		
B0206	Restroom	0.65	234	152.1		
B0207	Restroom	0.65	220	143		
B0208	Kitchen, Food Preparation	0.95	224	212.8		
B0209	Corridor	0.6	136	81.6		
B0210	Corridor	0.6	282	169.2		
B0211	Convention, Conference, Multipurpose, and Meeting Center	0.85	414	351.9		
B0300	Corridor	0.6	663	397.8		
B0301	Lounge	0.65	165.98	107.89		
B0302	Lounge	0.65	239.06	155.39		
B0303	Kitchen, Food Preparation	0.95	258	245.1		
B0400	All Other Space Types	0.4	660	264		
B0401	All Other Space Types	0.4	308	123.2		
B0402	All Other Space Types	0.4	303	121.2		
B0403	All Other Space Types	0.4	355	142		
B0404	All Other Space Types	0.4	327	130.8		
B0405	All Other Space Types	0.4	344	137.6		
B0406	All Other Space Types	0.4	344	137.6		
B0407	All Other Space Types	0.4	548	219.2		

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 8 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment: Area Category	PAF
B0ST2	Stairwell	0.5	154	77		
B0107	Electrical, Mechanical, Telephone Rooms	0.4	53	21.2		
B0108	Restroom	0.65	81	52.65		
	TOTAL:	**11,618.24**		**6,773.8**	See Tables J or P for detail	
				Reset	Add Row	Remove Last

Unconditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment: Area Category	PAF
B0ST1	Stairwell	0.5	97	48.5		
B0ST3	Stairwell	0.5	101	50.5		
B0104	Electrical, Mechanical, Telephone Rooms	0.4	36	14.4		
B0105	All Other Space Types	0.4	478	191.2		
B0106	Electrical, Mechanical, Telephone Rooms	0.4	94	37.6	☑	
B0212	All Other Space Types	0.4	89.4	35.76		
	TOTAL:	**895.4**		**377.96**	See Tables J or P for detail	
				Reset	Add Row	Remove Last

J. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

Table Instructions: Please complete the table for all areas indicated in Table I as using an additional allowance per the Area Category Method in Table 140.6-C.

Unconditioned Spaces

01	02	03	04	05	06	07	08	09	10
Area Description	Primary Function Area	Applicable Qualifying Lighting System from Table 140.6-C	Allowed Density (W/ft²) or (W/lf)	Ltg Area, Length or ATM/Mirror (ft², lf or #)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	Number of Luminaires	Total Design Watts

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 5 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

B0107	All Other Space Types	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA			
B0108	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA			
B0109	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0202	Dining - Family	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0203	Convention, Conference, Multipurpose, and Meeting Center	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0204	Convention, Conference, Multipurpose, and Meeting Center	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0205	Office (open)	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0206	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA			
B0207	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA			
B0208	Kitchen, Food Preparation	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0211	Convention, Conference, Multipurpose, and Meeting Center	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0212	All Other Space Types	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA			
B0301,B0302	Lounge	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0303	Kitchen, Food Preparation	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0400	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0401	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 6 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

B0402	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0403	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0404	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0405	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0406	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0407	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			
B0200, B0201, B0209, B0210, B0300	Corridor	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA			

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2

13
Plan Sheet Showing Daylit Zones:
N/A

B0104	*EXCEPTION 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light. EXCEPTION 4 to Section 130.1(c)1: Electrical equipment rooms*
B0106	*EXCEPTION 4 to Section 130.1(c)1: Electrical equipment rooms*
B0107	*EXCEPTION 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light.*
B0108	*EXCEPTION 2 to Section 130.1(b): Restrooms*
B0206	*EXCEPTION 2 to Section 130.1(b): Restrooms*
B0207	*EXCEPTION 2 to Section 130.1(b): Restrooms*
B0212	*EXCEPTION 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light.*

Reset | Add Row | Remove Last

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

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03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER JOHN BORRELLI No. E14190 Exp. 6/30/23 ELECTRICAL CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS

SHEET NUMBER
E6.04

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 11 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:	John Borrelli, P.E.	Documentation Author Signature:	
Company:	Borrelli and Associates, Inc.	Signature Date:	08/22/22
Address:	2032 N. Gateway Boulevard	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Fresno, CA 93727	Phone:	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	John Borrelli, P.E.	Responsible Designer Signature:	
Company :	Borrelli and Associates, Inc.	Date Signed:	08/22/22
Address:	2032 N. Gateway Boulevard	License:	E16390
City/State/Zip:	Fresno, CA 93727	Phone:	559-233-4138

Add Responsible Person | Remove Last

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 9 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

B0106	Electrical, Mechanical, Telephone Rooms	Detailed Task	0.2	94	18.8	W	20.1	2	40.2

Add Luminaire | Remove Last

Total Design Watts:	Calculated Allowance (Watts):	Total Additional Allowance for this area:	Add System
40.2	18.8	18.8	
	11		
Total Additional Allowance (Watts) UNCONDITIONED SPACES:		**18.8**	

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
This Section Does Not Apply

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS
This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
This Section Does Not Apply

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))
This Section Does Not Apply

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS
This Section Does Not Apply

R. 80% LIGHTING POWER FOR ALTERATIONS - CONTROLS EXCEPTIONS
This Section Does Not Apply

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: http://www.energy.ca.gov/title24/2019standards March 2021

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 10 of 11
Project Address: Brix Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
○	◉	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
○	◉	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
◉	○	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐
○	◉	NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factors (PAF).	☐	☐

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: http://www.energy.ca.gov/title24/2019standards March 2021

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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REGISTERED PROFESSIONAL ENGINEER JOHN BORRELLI No. E16390 Exp. 6/30/23 ELECTRICAL CALIFORNIA

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DATE: 11/11/2022
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BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
BRIX BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS

SHEET NUMBER
E6.05

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector	
									Pass	Fail
R	3,677 Lumens LED Fixture	☐	☐	31	Mfr. Spec[2]	14	☐	434	☐	☐
S	1,200 Lumens, Round LED Fixture	☐	☐	18	Mfr. Spec[2]	2	☐	36	☐	☐
W	2,600 Lumens, LED Fixture	☐	☐	20.1	Mfr. Spec[2]	15	☐	301.5	☐	☐
						Total Designed Watts CONDITIONED SPACES:		**5,739.5**		
							Reset	Add Row	Remove Last	

Designed Wattage: Unconditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector	
									Pass	Fail
A3	3,800 Lumens, 2x4 LED Fixture	☐	☐	27	Mfr. Spec[2]	2	☐	54	☐	☐
H	3,000 Lumens, 1x4 LED Fixture	☐	☐	22.8	Mfr. Spec[2]	2	☐	45.6	☐	☐
W	2,600 Lumens, LED Fixture	☐	☐	20.1	Mfr. Spec[2]	7	☐	140.7	☐	☐
						Total Designed Watts UNCONDITIONED SPACES:		**240.3**		
							Reset	Add Row	Remove Last	

[1] *FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*
[2] *Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

*Table Instructions: Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-Off Controls §130.1(c)	Field Inspector	
		Pass	Fail

Required > 10,000 SF | See Area/Space Level Controls | ☐ | ☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector	
								Pass	Fail
M0ST1	Stairwell	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0ST2	Stairwell	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0100	Main Entry Lobby	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0101	Corridor	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0102	Corridor	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0103	Electrical, Mechanical, Telephone Rooms	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0104	All Other Space Types	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA	☐	☐	☐
M0105	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA	☐	☐	☐
M0106	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA	☐	☐	☐
M0107	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0108	Electrical, Mechanical, Telephone Rooms	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0109	Electrical, Mechanical, Telephone Rooms	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0202	Convention, Conference, Multipurpose, and Meeting Center	Manual ON/ OFF	Dimmer	Auto Timeswitch	NA	NA	☐	☐	☐

A. GENERAL INFORMATION

01	Project Location (city)	Fresno,CA	04	Total Conditioned Floor Area (ft²)	9,543
02	Climate Zone	13	05	Total Unconditioned Floor Area (ft²)	571
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	3

☐ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☐ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☐ Healthcare ☑ Other (write in): non-residential

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☑ New Lighting System	Area Category	9,543	Area Category	571
	Add Parking Garage-Complete Bldg Method		Remove Parking Garage	
☐ Altered Lighting System				
	Add Altered Lighting System		Remove Last Altered System	
Total Area of Work (ft²)	**9,543**		**571**	

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1.	Allowed Lighting Power per §140.6(b) (Watts)						Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Results
	01	02	03	04	05		06	07		08	09
	Complete Building §140.6(c)1	Area Category §140.6(c)2	Area Category Additional §140.6(c)2G (+)	Tailored §140.6(c)3 (+)	**Total Allowed** (Watts)		Total Designed (Watts)	Adjustments PAF Control Credits §140.6(a)2 (-)		**Total Adjusted** (Watts) *Includes Adjustments	**05 Must be ≥ 08** §140.6
	(See Table I)	(See Table I)	(See Table J)	(See Table K)			(See Table F)	(See Table P)			
Conditioned:		6,450			= **6,450**	≥	5,739.5		=	**5,739.5**	**COMPLIES**
Unconditioned:		256.6			= **256.6**	≥	240.3		=	**240.3**	**COMPLIES**

Table Continued

Controls Compliance (See Table H for Details)	**COMPLIES with Exceptional Conditions**
Rated Power Reduction Compliance (See Table Q for Details)	**Not Applicable**

D. EXCEPTIONAL CONDITIONS

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

Table H Indoor Lighting Controls Permit Applicant Notes:
M0104: Exception 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light.
M0105: Exception 2 to Section 130.1(b): Restrooms.
M0106: Exception 2 to Section 130.1(b): Restrooms.
M0305: Exception 2 to Section 130.1(b): Restrooms.
M0309: Exception 2 to Section 130.1(b): Restrooms.
M0310: Exception 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light.

E. ADDITIONAL REMARKS

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

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector	
									Pass	Fail
A2	4,800 Lumens, 2X4 LED Fixture	☐	☐	36	Mfr. Spec[2]	32	☐	1,152	☐	☐
A3	3,800 Lumens, 2x4 LED Fixture	☐	☐	27	Mfr. Spec[2]	7	☐	189	☐	☐
B1	3,000 Lumens, 2X2 LED Fixture	☐	☐	25	Mfr. Spec[2]	29	☐	725	☐	☐
C1	1,000 Lumens, Recessed LED Fixture	☐	☐	9	Mfr. Spec[2]	30	☐	270	☐	☐
C3	1,676 Lumens, Cove LED Fixture	☐	☐	15.2	Mfr. Spec[2]	72	☐	1,094.4	☐	☐
C4	1,309 Lumens, Cove LED Fixture	☐	☐	14.4	Mfr. Spec[2]	10	☐	144	☐	☐
F	8,332 Lumens, 4X4 LED Fixture	☐	☐	55.8	Mfr. Spec[2]	24	☐	1,339.2	☐	☐
P2	6,000 Lumens, Pendent LED Fixture	☐	☐	54.4	Mfr. Spec[2]	1	☐	54.4	☐	☐

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER CARY BORRELLI No. E14290 EXP. 6/30/23 ELECTRICAL CALIFORNIA

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REVISION TABLE:

REV.	DESCRIPTION	DATE

DATE: 11/11/2022
SCALE: As indicated
JOB NUMBER:

ADDRESS:
BRIX & MERCER BLDGS
1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS

SHEET NUMBER
E6.06

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 7 of 10
Project Address: Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment	
					Area Category	PAF
M0ST1	Stairwell	0.5	147	73.5	☐	☐
M0ST2	Stairwell	0.5	135	67.5	☐	☐
M0103	Electrical, Mechanical, Telephone Rooms	0.4	104	41.6	☐	☐
M0303	All Other Space Types	0.4	113	45.2	☐	☐
M0310	All Other Space Types	0.4	72	28.8	☐	☐
		TOTAL:	**571**	**256.6**	See Tables J or P for detail	
				Reset	Add Row	Remove Last

J. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM
This Section Does Not Apply

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
This Section Does Not Apply

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS
This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
This Section Does Not Apply

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))
This Section Does Not Apply

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 8 of 10
Project Address: Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS
This Section Does Not Apply

R. 80% LIGHTING POWER FOR ALTERATIONS - CONTROLS EXCEPTIONS
This Section Does Not Apply

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
○	◉	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 5 of 10
Project Address: Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

M0203	Convention, Conference, Multipurpose, and Meeting Center	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0204	Lounge	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0205	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0301	Exercise Center, Gymnasium	Manual ON/ OFF	Dimmer	Auto Timeswitch	NA	NA	☐	☐	☐
M0302	Electrical, Mechanical, Telephone Rooms	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0303	All Other Space Types	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0304	Main Entry Lobby	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0305	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA	☐	☐	☐
M0306	Main Entry Lobby	Manual ON/ OFF	Dimmer	Occ. Sensor	NA	NA	☐	☐	☐
M0309	Restroom	Manual ON/ OFF	Exempt*	Occ. Sensor	NA	NA	☐	☐	☐
M0310	All Other Space Types	Manual ON/ OFF	Dimmer	Exempt*	NA	NA	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2

13

Plan Sheet Showing Daylit Zones:

M0104	*Exception 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light.*
M0105	*Exception 2 to Section 130.1(b): Restrooms.*
M0106	*Exception 2 to Section 130.1(b): Restrooms.*
M0305	*Exception 2 to Section 130.1(b): Restrooms.*
M0309	*Exception 2 to Section 130.1(b): Restrooms.*
M0310	*Exception 1 to Section 130.1(b): An area enclosed by ceiling height that has only one light.*

Reset | Add Row | Remove Last

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Fresno county Dept. of Public Health Basement Renovation	Report Page:	Page 6 of 10
Project Address: Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared:	12/20/2021

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment	
					Area Category	PAF
M0100	Main Entry Lobby	0.85	675	573.75	☐	☐
M0101	Corridor	0.6	373	223.8	☐	☐
M0102	Corridor	0.6	443	265.8	☐	☐
M0105	Restroom	0.65	213	138.45	☐	☐
M0106	Restroom	0.65	203	131.95	☐	☐
M0107	All Other Space Types	0.4	166	66.4	☐	☐
M0108	Electrical, Mechanical, Telephone Rooms	0.4	181	72.4	☐	☐
M0109	Electrical, Mechanical, Telephone Rooms	0.4	160	64	☐	☐
M0202	Convention, Conference, Multipurpose, and Meeting Center	0.85	3,458	2,939.3	☐	☐
M0203	Convention, Conference, Multipurpose, and Meeting Center	0.85	167	141.95	☐	☐
M0204	Lounge	0.65	381.2	247.78	☐	☐
M0205	All Other Space Types	0.4	431.8	172.72	☐	☐
M0301	Exercise Center, Gymnasium	0.5	1,843	921.5	☐	☐
M0302	Electrical, Mechanical, Telephone Rooms	0.4	299	119.6	☐	☐
M0304	Main Entry Lobby	0.85	76	64.6	☐	☐
M0305	Restroom	0.65	168	109.2	☐	☐
M0306	Main Entry Lobby	0.85	69	58.65	☐	☐
M0309	Restroom	0.65	175	113.75	☐	☐
M0104	All Other Space Types	0.4	61	24.4	☐	☐
		TOTAL:	**9,543**	**6,450**	See Tables J or P for detail	
				Reset	Add Row	Remove Last

Unconditioned Spaces

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

LICENSED ARCHITECT
JUSTIN DOUGLAS MURATORE
NO. C38020
RENEWAL: 8/23
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1221 FULTON ST
FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS

SHEET NUMBER
E6.07

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name:	Fresno county Dept. of Public Health Basement Renovation	Report Page: Page 9 of 10
Project Address:	Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared: 12/20/2021

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
○	◉	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
◉	○	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐
○	◉	NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factors (PAF).	☐	☐

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 03/21)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name:	Fresno county Dept. of Public Health Basement Renovation	Report Page: Page 10 of 10
Project Address:	Mercer Building 1221 Fulton St. Fresno, CA 93721	Date Prepared: 12/20/2021

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:	John Borrelli, P.E.	Documentation Author Signature:	
Company:	Borrelli and Associates, Inc.	Signature Date:	08/22/22
Address:	2032 N. Gateway Boulevard	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Fresno, CA 93727	Phone:	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	John Borrelli, P.E.	Responsible Designer Signature:	
Company :	Borrelli and Associates, Inc.	Date Signed:	08/22/22
Address:	2032 N. Gateway Boulevard	License:	E16390
City/State/Zip:	Fresno, CA 93727	Phone:	559-233-4138

Add Responsible Person | Remove Last

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: http://www.energy.ca.gov/title24/2019standards March 2021

APPROVED
03/17/2023
COUNTY OF FRESNO
DEVELOPMENT SERVICES

THE COUNTY OF FRESNO 1856

LICENSED ARCHITECT JUSTIN DOUGLAS MURATORE NO. C38020 RENEWAL: 8/23 STATE OF CALIFORNIA

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FRESNO, CA 93721

AHJ #: 21-1137 21-105379

PROJECT:
FRESNO COUNTY DEPT. OF PUBLIC HEALTH BASEMENT RENOVATION

SHEET TITLE:
MERCER BUILDING BASEMENT INTERIOR LIGHTING TITLE-24 FORMS

SHEET NUMBER
E6.08