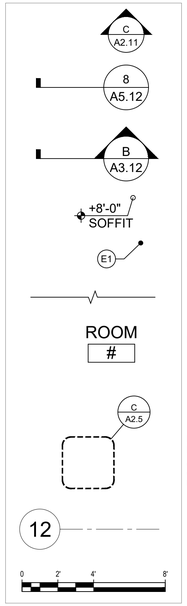

NEVADA JOINT UNION HIGH SCHOOL DISTRICT
NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

GENERAL LEGEND

ELEVATION REFERENCE
(TOP CHARACTER REFERS TO ITEM ON SHEET; BOTTOM CHARACTER REFERS TO SHEET NUMBER)

DETAIL REFERENCE
(TOP CHARACTER REFERS TO ITEM ON SHEET; BOTTOM CHARACTER REFERS TO SHEET NUMBER)

SECTION REFERENCE
(TOP CHARACTER REFERS TO ITEM ON SHEET; BOTTOM CHARACTER REFERS TO SHEET NUMBER)

ELEVATION CALLOUT

KEYNOTE CALLOUT
(SEE KEYNOTES COLUMN ON EACH SHEET)

BREAK LINE

ROOM NAME AND/OR NUMBER

ENLARGED PLAN,SECTION OR ELEVATION REFERENCE BUBBLE
(TOP CHARACTER REFERS TO ITEM ON SHEET; BOTTOM CHARACTER REFERS TO SHEET NUMBER)

STRUCTURAL GRID

GRAPHIC SCALE

STANDARD ABBREVIATIONS

&	AND
#	NUMBER
%	PERCENT
Ø	DIAMETER
ACC.	ACCESSORY
A.D.A.	AMERICANS with DISABILITIES ACT
A.F.F.	ABOVE FINISH FLOOR
ALT.	ALTERNATE
A.P.N.	ASSESSOR'S PARCEL NUMBER
A.T.	ACOUSTICAL TILE
BD.	BOARD
BLDG.	BUILDING
BLKG.	BLOCKING
B.O.C.	BACK OF CURB
CALCS.	CALCULATIONS
C.B.C.	CALIFORNIA BUILDING CODE
CL or ℄	CENTERLINE
CLG.	CEILING
CLR.	CLEAR
CONT.	CONTINUOUS
C.T.	CERAMIC TILE
CTR.	COUNTER
DBL.	DOUBLE
DECON.	DECONSTRUCTION
DEMO.	DEMOLITION
DEPT.	DEPARTMENT
DET.	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
DWG.	DRAWING(S)
E.	EAST
(E)	EXISTING
EA.	EACH
ELEC.	ELECTRIC
EQ.	EQUAL
EQUIP.	EQUIPMENT
E.W.	EACH WAY
EXT.	EXTERIOR
F.A.	FIRE ALARM
F.D.	FLOOR DRAIN or FIRE DAMPER
F.E.	FIRE EXTINGUISHER
F.F.	FINISH FLOOR
FIN.	FINISH
FL.	FLOOR
F.O.F.	FACE OF FINISH
F.O.S.	FACE OF STUD
FRP	FIBERGLASS REINF. PLASTIC
FT.	FOOT or FEET
GA.	GAUGE
G.C.	GENERAL CONTRACTOR
GEN.	GENERAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GR.	GRADE
GYP.BD.	GYPSUM BOARD
H.B.	HOSE BIB
HDWD.	HARDWOOD
HDW.	HARDWARE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HT.	HEIGHT
I.D.	INSIDE DIAMETER
I.E.	FOR EXAMPLE, SUCH AS
INSUL.	INSULATION
INT.	INTERIOR or INTEGRAL
L.	LONG or LENGTH
MAX.	MAXIMUM
MECH.	MECHANICAL
M.E.P.	MECHANICAL, ELECTRICAL, PLUMBING
MFR.	MANUFACTURE or MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.R.	MOISTURE RESISTANT

N.	NORTH
(N)	NEW
N.I.C.	NOT IN CONTRACT (NO WORK)
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OPP.	OPPOSITE
O.S.B.	ORIENTED STRAND BOARD
(P)	PROPOSED
ℙ or PL	PROPERTY LINE
PLAM.	PLASTIC LAMINATE
PLYWD.	PLYWOOD
PNL.	PANEL
P.O.T.	PATH OF TRAVEL
PT.	PAINT
P.T.D.	PAPER TOWEL DISPENSER
PVC	POLYVINYL CHLORIDE
P.U.E.	PUBLIC UTILITY EASEMENT
R.	RADIUS
R.B.	RUBBER BASE
R.D.	ROOF DRAIN
REF.	REFERENCE
REINF.	REINFORCE
REQ.	REQUIRED or REQUIREMENT
RES.	RESILIENT
RM.	ROOM
R.O.	ROUGH OPENING
R.R.	REMOVE & RELOCATE
S.	SOUTH
S.C.	SOLID CORE
S.C.D.	SEAT COVER DISPENSER
SCHED.	SCHEDULE
S.D.	SOAP DISPENSER
SECT.	SECTION
S.E.D.	SEE ELECTRICAL DRAWINGS
S.F.	SQUARE FEET or SQUARE FOOT
SHT.	SHEET
SIM.	SIMILAR
S.M.D.	SEE MECHANICAL DRAWINGS
SPEC.	SPECIFICATIONS
SQ.FT.	SQUARE FEET or SQUARE FOOT
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL or STRUCTURE
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
T&B	TOP & BOTTOM
T.B.D.	TO BE DETERMINED
TEMP.	TEMPORARY
T&G	TOUNGE & GROOVE
THK.	THICK
TMP.	TEMPERED
T.O.	TOP OF
T.P.D.	TOILET PAPER DISPENSER
TYP.	TYPICAL
U.C.	UNDER COUNTER
U.L.	UNDERWRITERS LABORATORIES
UNF.	UNFINISHED
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
VEST.	VESTIBULE
V.I.F.	VERIFY IN FIELD
V.C.T.	VINYL COMPOSITE TILE
W.	WEST
W.C.	WATER CLOSET
WD.	WOOD
WIND.	WINDOW
W.R.	WATER RESISTANT
WSCT.	WAINSCOT
WT.	WEIGHT
w/	WITH
w/o	WITHOUT

PROJECT TEAM

OWNER
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DIRECTOR OF FACILITIES AND CONSTRUCTION
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DERIVI CASTELLANOS ARCHITECTS, INC.
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E-MAIL: art@amdfoodservicedesign.com

VICINITY MAP

NOT TO SCALE

PROJECT SITE

FLOOD HAZARD MAP

PROJECT SITE

NOT TO SCALE

NOTE: BASED ON LOCATION AS SHOWN ON FEMA MAP, THE PROJECT IS LOCATED IN ZONE X.

GENERAL NOTES

1. DO NOT SCALE THE DRAWINGS. EVERY ATTEMPT HAS BEEN MADE TO SHOW ITEMS TO SCALE, BUT NO GUARANTEE IS IMPLIED. ALWAYS INFORM THE ARCHITECT OF MISSING, INCOMPLETE, OR IMPROPER DIMENSIONS ON THE PLANS, OR WHEN EXISTING CONDITIONS DO NOT MATCH WHAT IS SHOWN ON THE PLANS. VERIFY CRITICAL DIMENSIONS.
2. DIMENSIONS TO EXISTING CONSTRUCTION ARE GIVEN TO FACE OF FINISH, UNLESS INDICATED OTHERWISE.
3. SPECIFICATIONS ARE NOTED THROUGHOUT THE PLANS. CONTACT ARCHITECT FOR CLARIFICATIONS.
4. IF PROVIDED, SEE ELECTRICAL AND MECHANICAL DRAWINGS AND FOR RELATED WORK AND EQUIPMENT. WHERE ELECTRICAL ITEMS ARE SHOWN, AND NO DIMENSIONS OR OTHER FORMS OF LOCATIONAL INFORMATION ARE PROVIDED, THE ARCHITECTURAL DRAWINGS SHALL GOVERN WITH RESPECT TO LOCATION.
5. IF INDICATED, PROVIDE ALTERNATE BIDS AS DESCRIBED IN THE PLANS AND IN BID INSTRUCTIONS.
6. SINCE THE WORK INCLUDES ALTERATIONS OF EXISTING FACILITIES, EXAMINATION OF THE EXISTING CONSTRUCTION SHALL BE MADE BY THE GENERAL CONTRACTOR AS IT RELATES TO THE WORK. THE GENERAL CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND DIMENSIONS AS REQUIRED. NO ALLOWANCE SHALL BE ALLOWED FOR ANY EXPENSE INCURRED DUE TO FAILURE OR NEGLECT TO EXAMINE AND VERIFY EXISTING CONDITIONS. ANY CONFLICTS, OMISSIONS, ETC. SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BID SUBMISSION.
7. THE PURPOSE OF THESE DOCUMENTS IS TO SHOW THE GENERAL ARRANGEMENT AND EXTENT OF NEW WORK, INCLUDING ADDITIONS, ALTERATIONS AND INTERFACING. ASSUMPTIONS HAVE BEEN MADE REGARDING ARCHITECTURAL, STRUCTURAL AND SYSTEM FEATURES OF EXPOSED AND CONCEALED EXISTING CONSTRUCTION. WORK WHICH IS OBVIOUSLY REQUIRED TO BE PERFORMED TO PROVIDE A COMPLETE AND OPERABLE FINISHED PRODUCT WITHIN THE SCOPE OF THIS CONTRACT, BUT WHICH IS NOT SPECIFICALLY INCLUDED IN THESE DOCUMENTS, SHALL BE PERFORMED BY THE GENERAL CONTRACTOR. ALL ITEMS ARE EXISTING UNLESS IDENTIFIED AS NEW (N).
8. THERE WILL BE NO SUBSTITUTION FOR SPECIFIED ITEMS WITHOUT PRIOR WRITTEN APPROVAL, UNLESS OTHERWISE NOTED IN THESE PLANS. REQUESTS FOR SUBSTITUTIONS SHALL BE MADE IN WRITING TO THE ARCHITECT AND APPROVED BY THE ARCHITECT BEFORE ORDERING OR INSTALLING THE SUBSTITUTED ITEM(S).
9. REMOVE PORTIONS OF EXISTING CONSTRUCTION AS NECESSARY TO ACCOMMODATE NEW CONSTRUCTION AND REPLACE, PATCH OR REPAIR AS NEEDED. PROTECT AREA FROM DAMAGE WHICH MAY OCCUR FROM DEMOLITION, DUST, WATER, ETC. PROVIDE AND MAINTAIN TEMPORARY BARRICADES, CLOSURE WALLS, ETC. AS REQUIRED DURING THE PERIOD OF CONSTRUCTION.
10. DAMAGE TO EXISTING STRUCTURES, FINISH, AND EQUIPMENT SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ARCHITECT, AS APPROVED BY DSA AND AT THE EXPENSE OF THE GENERAL CONTRACTOR.
11. THE FINAL LOCATION OF ALL ELECTRICAL AND SIGNAL EQUIPMENT, PANEL BOARDS, FIXTURES, OUTLETS, ETC. SHALL BE APPROVED BY OWNER PRIOR TO INSTALLATION.
12. DIMENSIONS NOTED "CLEAR" OR "CLR." MUST BE PRECISELY MAINTAINED. DO NOT SCALE DRAWINGS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION PRIOR TO DEMOLITION, FABRICATION OR CONSTRUCTION. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT, OR UNLESS NOTED OTHERWISE (I.E. "+/-" ON PLANS).
13. DIMENSIONS NOTED "V.I.F." OR "VERIFY" SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF FABRICATION OR CONSTRUCTION. VERIFY ALL ROUGH OPENING DIMENSIONS, FOR FABRICATED ITEMS, WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.
14. EACH FLOOR LEVEL IS ESTABLISHED AT +0.00' AND SHALL BE USED AS A REFERENCE FOR THAT LEVEL'S ELEVATIONS.
15. PROVIDE REQUIRED BLOCKING AND BRACING FOR ALL WALL MOUNTED FIXTURES, ACCESSORIES AND EQUIPMENT. PATCH & REPAIR (E) WALL TO PREVIOUS CONDITION WHERE HOLES ARE CUT FOR NEW BLOCKING OR BRACING.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL LEFTOVER MATERIALS, DEBRIS, TOOLS AND EQUIPMENT INVOLVED IN HIS OPERATIONS AT THE CONCLUSION OF THE WORK. LEAVE ALL AREAS CLEAN AND IN PERFECT CONDITION.
17. CONTRACTOR SHALL REPAIR OR REPLACE ANY FENCE, SIDEWALK, PAVING, LANDSCAPING, ELEVATOR, FLOORING OR ANY OTHER BUILDING MATERIAL OR SYSTEM DAMAGED AS A RESULT OF LABOR, MATERIAL AND EQUIPMENT DELIVERY AND HANDLING.
18. THE ARCHITECT AND THE ARCHITECT'S CONSULTANTS SHALL HAVE NO RESPONSIBILITY FOR THE DISCOVERY, PRESENCE, HANDLING, REMOVAL OR DISPOSAL OF, OR EXPOSURE OF PERSONS TO ASBESTOS, HAZARDOUS OR TOXIC SUBSTANCES IN ANY FORM AT THE PROJECT SITE. PROFESSIONAL SERVICES RELATED OR IN ANY WAY CONNECTED WITH THE INVESTIGATION, DETECTION, ABATEMENT, REPLACEMENT, USE, SPECIFICATION, OR REMOVAL OF PRODUCTS, MATERIALS OR PROCESSES CONTAINING ASBESTOS, HAZARDOUS OR TOXIC MATERIALS ARE BEYOND THE SCOPE OF THIS CONTRACT.
19. THE INTENT OF THESE DRAWINGS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION SHALL BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY EXISTING CONDITIONS, SUCH AS DETERIORATION OR NONCOMPLYING CONSTRUCTION, BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS, WHEREIN THE FINISHED WORK SHALL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY AND WAIT FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
20. CONTRACTOR TO PROVIDE TEMPORARY BARRIERS AROUND CONSTRUCTION AREAS TO PROTECT PEDESTRIANS ON SITE. ALL EXITS AND EXIT PATHS, FIRE LANES AND ACCESSIBLE PARKING STALLS SHALL REMAIN CLEAR AND UNOBSTRUCTED, FREE OF DEBRIS AND CONSTRUCTION MATERIAL.

PROJECT INFORMATION

PROJECT DESCRIPTION

PROJECT IS DESCRIBED AS THE CONVERSION OF AN EXISTING (±) 2,300 SF DRAFTING CLASSROOM IN AN EXISTING CONCRETE TILT - UP 1966 STRUCTURE INTO A CULINARY ARTS CAREER TECHNICAL EDUCATION (CTE) CLASSROOM AS SHOWN ON THESE DOCUMENT.

CONVERSION WILL PROVIDE A FULL-COOKING KITCHEN, ONE TEACHER'S COOKING STATION, SEVEN STUDENT COOKING STATIONS, SCULLERY, DRY STORAGE, WALK-IN REFRIGERATOR AND IS INCLUSIVE OF PLUMBING, MECHANICAL, ELECTRICAL AND COMMERCIAL - GRADE KITCHEN EQUIPMENT.
THE CULINARY ARTS AREA WILL HAVE AUTOMATIC FIRE SPRINKLER SYSTEM.

NOTE: DEMOLITION OPERATIONS MUST COMPLY WITH DISTRICT'S ASBESTOS REPORT.

APPLICABLE CODES

2016 CALIFORNIA ADMINISTRATIVE CODE - TITLE 24, Part 1
2016 CALIFORNIA BUILDING CODE - TITLE 24, Part 2
2016 CALIFORNIA ELECTRICAL CODE - TITLE 24, Part 3
2016 CALIFORNIA MECHANICAL CODE - TITLE 24, Part 4
2016 CALIFORNIA PLUMBING CODE - TITLE 24, Part 5
2016 CALIFORNIA ENERGY CODE - TITLE 24, Part 6
2016 CALIFORNIA FIRE CODE - Part 9
2016 CALIFORNIA GREEN BUILDING STANDARDS CODE - Part 11
2016 CALIFORNIA REFEFENCED STANDARDS CODE - Part 12

NFPA 72 NATIONAL FIRE ALARM CODE & CA AMENDMENTS 2016 EDITION RULES AND REGULATIONS OF THE LOCAL UTILITY COMPANY

A COPY OF PARTS 1 TO 5 OF THE TITLE 24 FOR ALL APPLICABLE PARTS REFERENCED BY THE DRAWINGS AND SPECIFICATIONS SHALL BE KEPT AND AVAILABLE IN THE FIELD DURING CONSTRUCTION.

LOCAL FIRE JURISDICTION

NEVADA COUNTY CONSOLIDATED FIRE DISTRICT

DSA INFORMATION

1. AS A FACILITY WHICH COMES UNDER THE APPROVAL OF THE DIVISION OF THE STATE ARCHITECT (DSA), THIS PROJECT IS SUBJECT TO DRAWING AND SITE REVIEW BY A REPRESENTATIVE OF DSA.
2. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENT, APPROVED BY THE DIVISION OF THE STATE ARCHITECT. SECTION 4-338
3. THE SCHOOL DISTRICT SHALL NOTIFY DSA OF THE START-UP OF CONSTRUCTION. SECTION 4-331
4. A PROJECT INSPECTOR, EMPLOYED BY THE DISTRICT AND APPROVED BY DSA, SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. SECTIONS 4-333(b) AND 4-342 PROJECT INSPECTOR SHALL BE CLASS 3 MINIMUM.
5. ADMINISTRATION OF CONSTRUCTION PER PART 1, TITLE 24 CCR

    TESTS AND TESTING LABORATORY PER SECTION 4-335
    VERIFIED REPORTS PER SECTION 4-336
    DUTIES OF ARCHITECT PER SECTION 4-333(a) & 4-341
    DUTIES OF CONTRACTOR PER SECTION 4-343
    SUPERVISION BY DSA PER SECTION 4-334

6. COMPLIANCE WITH CFC CHAPTER 33 - FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION
7. SHOULD ANY EXISTING CONDITION SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY DSA-APPROVED DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24 CALIFORNIA CODE OF REGULATIONS, A CONSTRUCTION CHANGE DOCUMENT, DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK.

A PROJECT MANUAL IS AN INTEGRAL PART OF THE PROJECT DOCUMENTS

THE PLUMBING, MECHANICAL, ELECTRICAL & FOOD SERVICE DRAWINGS AND SPECIFICATIONS FOR THE ITEMS LISTED IN THE SHEET INDEX HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS WHO ARE LICENSED TO PREPARE SUCH DRAWINGS IN THIS STATE. THESE DOCUMENTS HAVE BEEN EXAMINED BY ME FOR DESIGN INTENT AND APPEAR TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24 , CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS.

THE ITEMS LISTED ABOVE HAVE BEEN COORDINATED WITH MY PLANS AND SPECIFICATIONS AND ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT FOR WHICH I AM THE INDIVIDUAL DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE.

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

STRUCTURAL CALCULATIONS BY: .... DC URFER & ASSOCIATES, INC
P/M/E DWG./SPEC./CALCULATIONS BY: .... LP ENGINEERS
FOOD SERVICES DWGS/SPECS BY: .... AMD FOOD SERVICES

CRAIG A. SCOTT, ARCHITECT
LICENSE #: C-14508

12-20-2019
DATE
RENEWAL DATE: 02/28/2021

SHEET INDEX

	SHEET NO.	SHEET TITLE
GENERAL		
1	G0.01	COVER SHEET, SHEET INDEX, PROJECT DATA, NOTES, ABBREVIATIONS
ARCHITECTURAL		
2	A1.01	OVERALL SITE PLAN
3	A1.02	FIRE AUTHORITY SITE PLAN
4	A1.03	ENLARGED SITE PLAN
5	A1.11	EXISTING/ DEMOLITION FLOOR PLAN
6	A1.12	PROPOSED FLOOR PLAN
7	A1.51	NEW ROOF PLAN
8	A2.10	EXISTING/ DEMO EXTERIOR ELEVATION
9	A2.20	NEW EXTERIOR ELEVATIONS
10	A3.10	INTERIOR SECTION ELEVATIONS
11	A3.20	BUILDING SECTION
12	A4.10	REFLECTED CEILING PLAN
13	A4.20	ROOF BLOCKING PLAN
14	A5.10	PARTITION SCHEDULE
15	A5.20	DETAILS
16	A5.30	DETAILS
17	A5.40	LIGHT GAUGE METAL FRAMING DETAILS
18	A5.41	CONCRETE NOTES
19	A5.50	DETAILS
20	A5.60	DETAILS
21	A6.10	DOOR & FINISH SCHEDULE
FIRE PROTECTION		
22	FP0.1	LEGENDS NOTES AND VICINITY MAP
23	FP1.1	FIRE SPRINKLER SITE PLAN
24	FP2.1	PIPING AND REFLECTED CEILING PLANS
25	FP3.1	SEISMIC PLAN
26	FP3.2	SEISMIC PLAN
27	FP4.1	FIRE SPRINKLER SECTIONS
28	FP5.1	FIRE SPRINKLER DETAILS
29	FP5.2	FIRE SPRINKLER DETAILS
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30	P0.1	PLUMBING NOTES, LEGEND, & SPECIFICATIONS
31	P0.2	PLUMBING SCHEDULES AND DETAILS
32	P0.3	PLUMBING DETAILS
33	P2.1	PLUMBING FLOOR PLAN - WATER AND GAS
34	P2.2	PLUMBING FLOOR PLAN - WASTE AND VENT
35	P3.1	PLUMBING ROOF PLAN
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37	M0.2	MECHANICAL DETAILS
38	M0.3	MECHANICAL DETAILS
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40	M3.1	MECHANICAL ROOF PLAN
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43	E0.2	ELECTRICAL SYMBOL LEGENDS
44	E1.0	ELECTRICAL SITE PLAN
45	E1.1	LIGHTING PLAN
46	E1.2	ELECTRICAL PLAN
47	E1.3	ELECTRICAL ROOF PLAN
48	E2.1	ONE LINE DIAGRAM
49	E3.1	ELECTRICAL SCHEDULE
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51	E4.2	ELECTRICAL DETAILS
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53	T24.2	TITLE 24 CALCULATIONS
54	T24.3	TITLE 24 CALCULATIONS
55	T24.4	TITLE 24 CALCULATIONS
56	T24.5	TITLE 24 CALCULATIONS
57	T24.6	TITLE 24 CALCULATIONS
58	T24.7	TITLE 24 CALCULATIONS
59	T24.8	TITLE 24 CALCULATIONS
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64	FA4.2	FIRE ALARM DETAILS
65	FA4.3	FIRE ALARM DETAILS AND ANCHORAGE NOTES
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74	FS5.2	FOODSERVICE EQUIPMENT HOOD DETAILS
75	FS5.3	FOODSERVICE EQUIPMENT FIRE SYSTEM DETAILS
76	FS5.4	FOODSERVICE EQUIPMENT FIRE SYSTEM DETAILS
77	FS5.5	FOODSERVICE EQUIPMENT FIRE SYSTEM SCHEDULE
78	FS5.6	FOODSERVICE EQUIPMENT EXHAUST HOOD ENERGY MANAGEMENT SYSTEM
79	FS5.7	FOODSERVICE EQUIPMENT EXHAUST HOOD ENERGY MANAGEMENT SYSTEM
80	FS6.1	FOODSERVICE EQUIPMENT WALK-IN REFRIGERATOR/FREEZER DETAILS
81	FS6.2	FOODSERVICE EQUIPMENT WALK-IN REFRIGERATOR/FREEZER DETAILS
82	FS7.1	FOODSERVICE EQUIPMENT REFRIGERATION DETAILS
83	FS7.2	FOODSERVICE EQUIPMENT REFRIGERATION DETAILS
84	FS8.1	FOODSERVICE EQUIPMENT ANCHORAGE DETAILS
85	FS8.2	FOODSERVICE EQUIPMENT ANCHORAGE DETAILS
86	FS8.3	FOODSERVICE EQUIPMENT ANCHORAGE DETAILS
87	FS9.1	FOODSERVICE EQUIPMENT ELEVATIONS
FOR REFERENCE ONLY DRAWINGS		
88	RF0.1	(E) FOUNDATION/ ROOF FRAMING 1996 EDITION #02-28169
89	RF0.2	EXISTING FLOOR PLAN

DEFERRED SUBMITTALS

1. THERE ARE NO DEFERRED SUBMITTALS FOR THIS PROJECT.

DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117832 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/21/20

DERIVI
CASTELLANOS
ARCHITECTS

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www.dcaaia.com

Professional Seals

CRAIG ALLAN SCOTT
C-14508
FEB 28, 2021
RENEWAL DATE

NEVADA JOINT UNION
HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
COVER SHEET, SHEET INDEX, PROJECT DATA, NOTES, ABBREVIATIONS
SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: BC
Checked By: CAS

JOB NO. 19.010
DATE 2019-12-20
SHEET NUMBER **G0.01**
1 of 89

Printed Scale = 1:1
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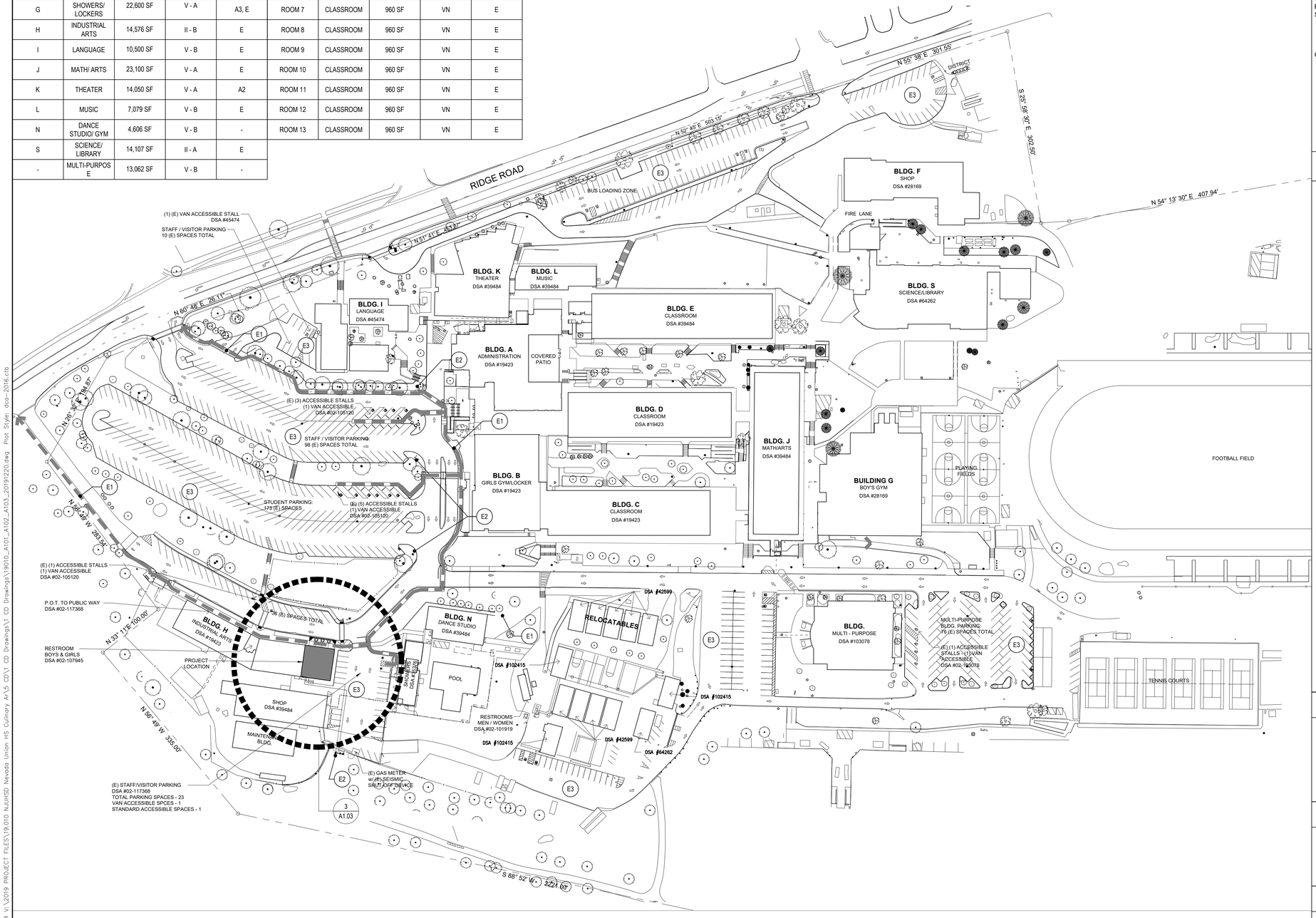
BUILDING SUMMARY

BUILDING ID.	BLDG. DESCRIPTION	SQ.FT.	CONST. TYPE	OCCUPANCY
A	ADMIN.	32,189 SF	V - B	F1, A2, S1
B	GIRLS' GYM/ LOCKER ROOM	16,346 SF	V - A	A3, E
C	CLASSROOM	16,626 SF	V - B	E
D	CLASSROOM	17,624 SF	V - B	E
E	CLASSROOM	20,406 SF	V - B	E
F	SHOP BLDG.	10,028 SF	V - B	V - B
G	SHOWERS/ LOCKERS	22,600 SF	V - A	A3, E
H	INDUSTRIAL ARTS	14,576 SF	II - B	E
I	LANGUAGE	10,500 SF	V - B	E
J	MATH/ ARTS	23,100 SF	V - A	E
K	THEATER	14,050 SF	V - A	A2
L	MUSIC	7,079 SF	V - B	E
N	DANCE STUDIO/ GYM	4,606 SF	V - B	-
S	SCIENCE/ LIBRARY	14,107 SF	II - A	E
-	MULTI-PURPOSE	13,062 SF	V - B	-

RELOCATABLE BUILDINGS

BLDG. ID	BLDG. DESCRIPTION	SQ.FT.	CONST. TYPE	OCCUPANCY
ROOM 1	CLASSROOM	960 SF	VN	E
ROOM 2	CLASSROOM	960 SF	VN	E
ROOM 3	CLASSROOM	960 SF	VN	E
ROOM 4	CLASSROOM	960 SF	VN	E
ROOM 5	CLASSROOM	960 SF	VN	E
ROOM 6	CLASSROOM	960 SF	VN	E
ROOM 7	CLASSROOM	960 SF	VN	E
ROOM 8	CLASSROOM	960 SF	VN	E
ROOM 9	CLASSROOM	960 SF	VN	E
ROOM 10	CLASSROOM	960 SF	VN	E
ROOM 11	CLASSROOM	960 SF	VN	E
ROOM 12	CLASSROOM	960 SF	VN	E
ROOM 13	CLASSROOM	960 SF	VN	E



1 OVERALL SITE PLAN

SCALE: 1" = 80'-0"

CODE ANALYSIS

CULINARY ARTS CLASSROOM MODERNIZATION

EXISTING BUILDING DATA:

ORIGINAL CONSTRUCTION: DSA #19423, 1960. 12,288 SF CONCRETE TILT-UP, NON SPRINKLERED - AGRICULTURE SHOP

CLASSROOM ADDITION:DSA #28169, 1966. 2,288 SF CONCRETE TILT-UP NON-SPRINKLERED WITH 1 - HR OCCUPANCY SEPARATION.

NOT LISTED BUT BY OBSERVATION: TYPE II / E OCCUPANCY

PROPOSED CULINARY CTE MODERNIZATION:

CONSTRUCTION TYPE: EXISTING TYPE II - B
OCCUPANCY: E (PER IR A-26, rev. 05/30/2019)
FIRE SPRINKLER: YES - FOR MODERNIZATION AREA ONLY
SEPARATION: 2 - HR FIRE BARRIER SEPARATION FROM REST OF BUILDING.
1 - HR FIRE BARRIER INCIDENTAL SEPARATIONS WITH 45 MIN DOORS IN CULINARY.
OCCUPANT LOAD: 50 SF / STUDENT (PER IR A-26)
LECTURE = ... 27 STUDENTS
DEMO KITCHEN = ... 1
STUDENT KITCHEN = ... 6
DRY STORAGE = ... 1
CUSTODIAL = ... 1
COLD STORAGE = ... 1
STORE = ... 1

PATH OF TRAVEL

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT: THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR THE PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

SEE ALSO SHEET A1.02 FOR FIRE DEPARTMENT ACCESS.

ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A BARRIER FREE ACCESS ROUTE WITHOUT ANY ABRUPT CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAX SLOPE, OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" MAX, AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM AND SLIP RESISTANT. CROSS SLOPES DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5%, UNLESS OTHERWISE INDICATED. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM, AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTING FROM WALL AND ABOVE 27" AND LESS THAN 80". ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

GENERAL NOTES

1. THIS PLAN IS TO SHOW OVERALL SITE PLAN AND CAMPUS BUILDING DATA INCLUDING DSA NUMBER.
2. KEYNOTES ARE UNIQUE TO EACH SHEET.
3. SQUARE FOOTAGE OF BUILDINGS WAS COMPILED FROM (E) RESOURCES AND HAS NOT BEEN VERIFIED FOR ACCURACY.

KEYNOTES

"E" EXISTING-FOR REFERENCE TO DEMOLITION ONLY

E1 - (E) PATH OF TRAVEL, TYP.
E2 - (E) FIRE HYDRANT
E3 - (E) PARKING LOT

LEGEND

PROPERTY LINE

FIRE HYDRANT

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REGISTERED ARCHITECT CRAIG ALLAN SCOTT STATE OF CALIFORNIA RENEWAL 08/31/2021

NEVADA JOINT UNION HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
OVERALL SITE PLAN

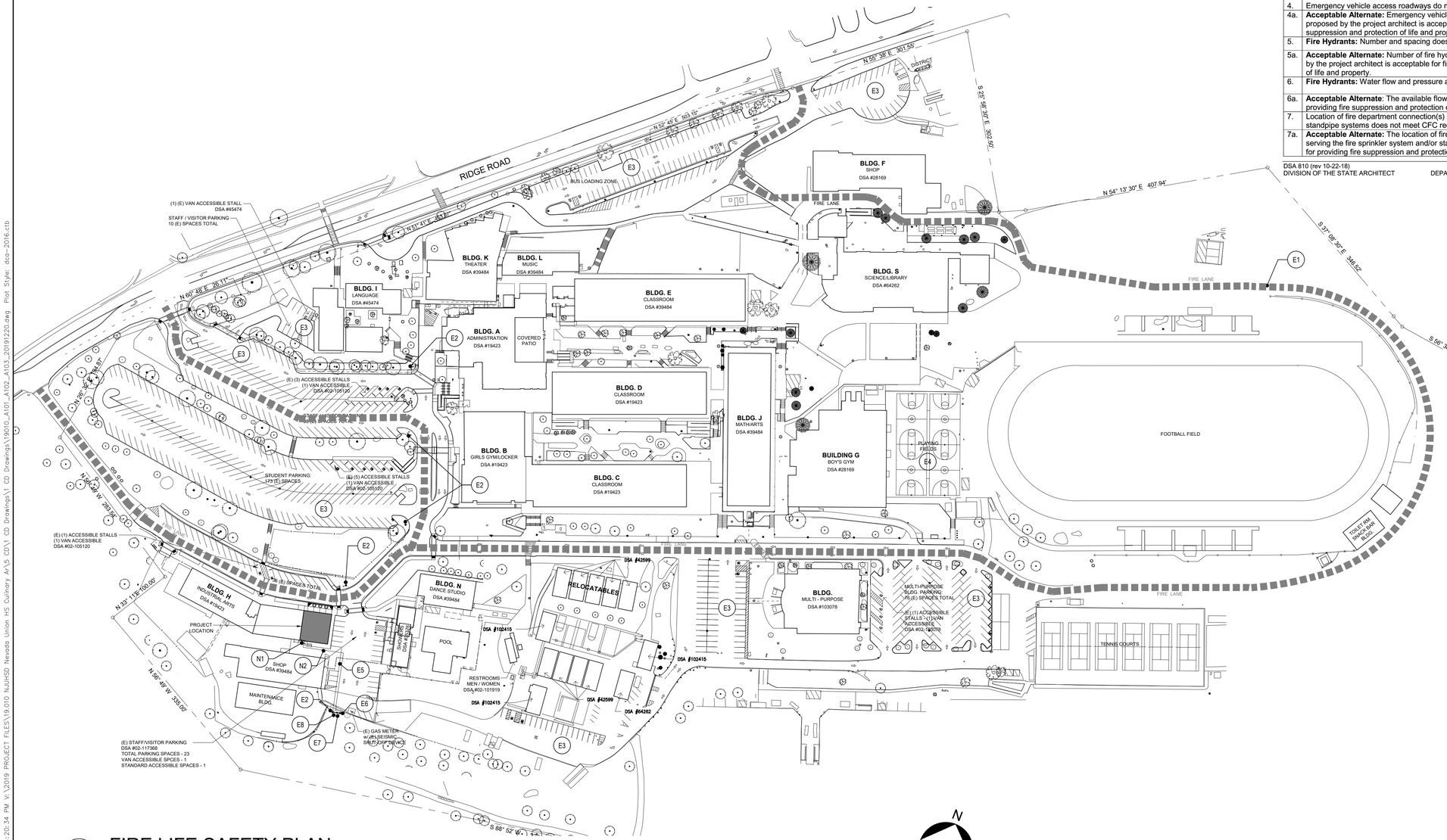
SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: JWE
Checked By: CAS

JOB NO. 19.010
DATE 2019-12-20
SHEET NUMBER **A1.01**
2 of 89



1 FIRE LIFE SAFETY PLAN

SCALE: 1" = 90'-0"

DSA 810

FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

To facilitate the Division of the State Architect's (DSA) fire and life safety plan review of project site conditions, DSA requires the design professional to provide the following information at time of project submittal for projects consisting of construction of a new campus, construction of new building(s), additions to existing buildings, and for site alternate design means for fire department emergency vehicle access, and fire suppression water supply.

Information associated with compliance items 1–3 below is to be provided for all project types indicated above. Information associated with items 4–7 is to be completed when an alternate means is utilized. Acknowledgement by the school district and signature from the local fire authority (LFA) is only required when an alternate design means is being requested.

Page 1 of the completed form must be imaged onto the fire access site plan. When an alternate design/means is proposed, completed pages 1 *and 2* are to be imaged on the fire access site plan.

For additional information refer to the instructions at the end of this form and DSA Policy 09-01.

PROJECT INFORMATION	
School District/Owner:	Nevada Joint Union High School District
Project Name/School:	Nevada Union High School - Culinary Arts Classroom Modernization
Project Address:	11761 Ridge Road, Grass Valley, CA 95945

FIRE & LIFE SAFETY INFOMATION					
1.	Has a fire hydrant flow test been performed within the past 12 months? *(If yes, provide a copy of the test data.)*	Yes ☒		No ☐	
2.	Was the fire hydrant water flow test performed as part of this LFA review?	Yes ☒		No ☐	
3.	Is the project located within a designated fire hazard severity zone as established by Cal-Fire? *(If yes, indicate fire hazard zone classification below)*	Yes ☒		No ☐	
	Refer to the following for fire hazard zone locations: www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps	Moderate ☐	High ☐	Very High ☒	
	Wildland Interface Area (WIFA) *(If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)*			WIFA ☒	

CONDITION MEANS AND METHODS RESOLUTION		ALTERNATE ACCEPTED			
		Yes	No	N/A	N/R
4.	Emergency vehicle access roadways do not meet CFC requirements.			X	
4a.	**Acceptable Alternate:** Emergency vehicle and personnel access as proposed by the project architect is acceptable for providing fire suppression and protection of life and property.				
5.	**Fire Hydrants:** Number and spacing does not meet CFC requirements.			X	
5a.	**Acceptable Alternate:** Number of fire hydrants and spacing as proposed by the project architect is acceptable for fire suppression and protection of life and property.				
6.	**Fire Hydrants:** Water flow and pressure are less than CFC minimum.			X	
6a.	**Acceptable Alternate**: The available flow and pressure is acceptable for providing fire suppression and protection of life and property.				
7.	Location of fire department connection(s) serving fire sprinkler systems or standpipe systems does not meet CFC requirements.			X	
7a.	**Acceptable Alternate:** The location of fire department connection serving the fire sprinkler system and/or standpipe system is acceptable for providing fire suppression and protection of life and property.				

GENERAL NOTES

1. THIS PLAN IS TO SHOW (E) FIRE LANE ON SITE AND TO SHOW AN APPROVAL FROM LOCAL FIRE AUTHORITY.
2. KEYNOTES ARE UNIQUE TO EACH SHEET

KEYNOTES

"E" EXISTING - FOR REFERENCE TO EXISTING ITEMS

E1 - (E) FIRE ACCESS LANE
E2 - (E) FIRE HYDRANT
E3 - (E) AC PAVED PARKING AREA
E4 - (E) AC PAVED AREA
E5 - (E) 8" UNDERGROUND FIRE WATER LINE
E6 - (E) FIRE DEPARTMENT CONNECTION
E7 - (E) POST INDICATOR VALVE
E8 - (E) BACKFLOW PREVENTER

N1 - (N) FIRE SPRINKLER SYSTEM RISER
N2 - (N) 6" UNDERGROUND FIRE WATER LINE

LEGEND

PROPERTY LINE

20'-0" WIDE MINIMUN FIRE ACCESS LANE

FIRE HYDRANT

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NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:

FIRE LIFE SAFETY PLAN

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
3		
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Drawn By: JWE

Checked By: CAS

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER **A1.02**

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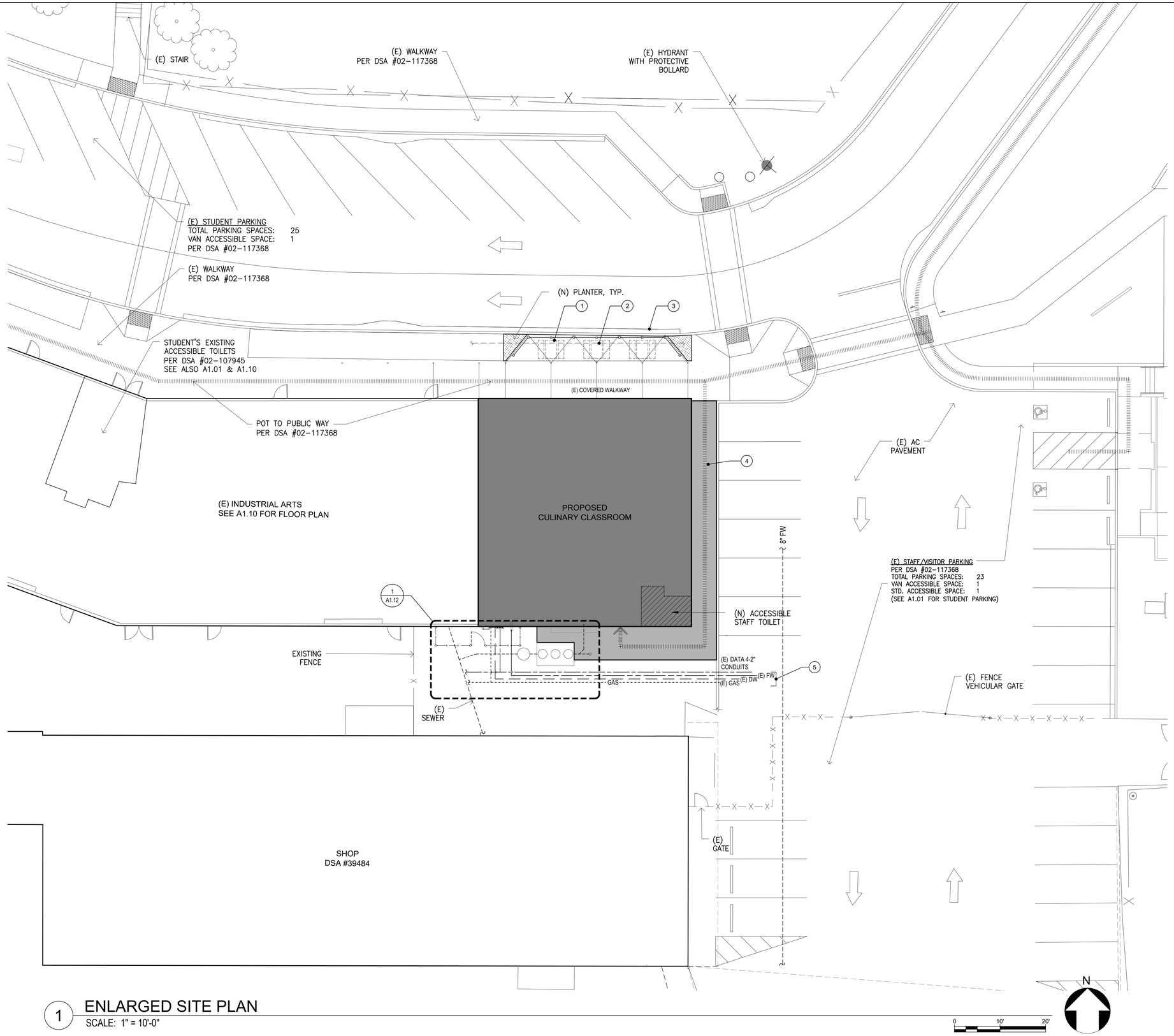

KEYNOTES

1. TABLE & BENCH ANCHORED IN PLACE. TABLE & BENCH (x3) BY OWNER.
2. EXTEND (E) IRRIGATION LINE FOR FUTURE USE.
3. (E) CURB & GUTTER PER #02-117368.
4. (E) WALKWAY & CURB PER #02-117368.
5. (E) UNDERGROUND UTILITIES - FIRE WATER, DOMESTIC WATER, GAS - INSTALLED PER #02-117368.

LEGEND

PATH OF TRAVEL

1 ENLARGED SITE PLAN
SCALE: 1" = 10'-0"

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
ENLARGED SITE PLAN

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
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Drawn By: JWE

Checked By: CAS

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER **A1.03**

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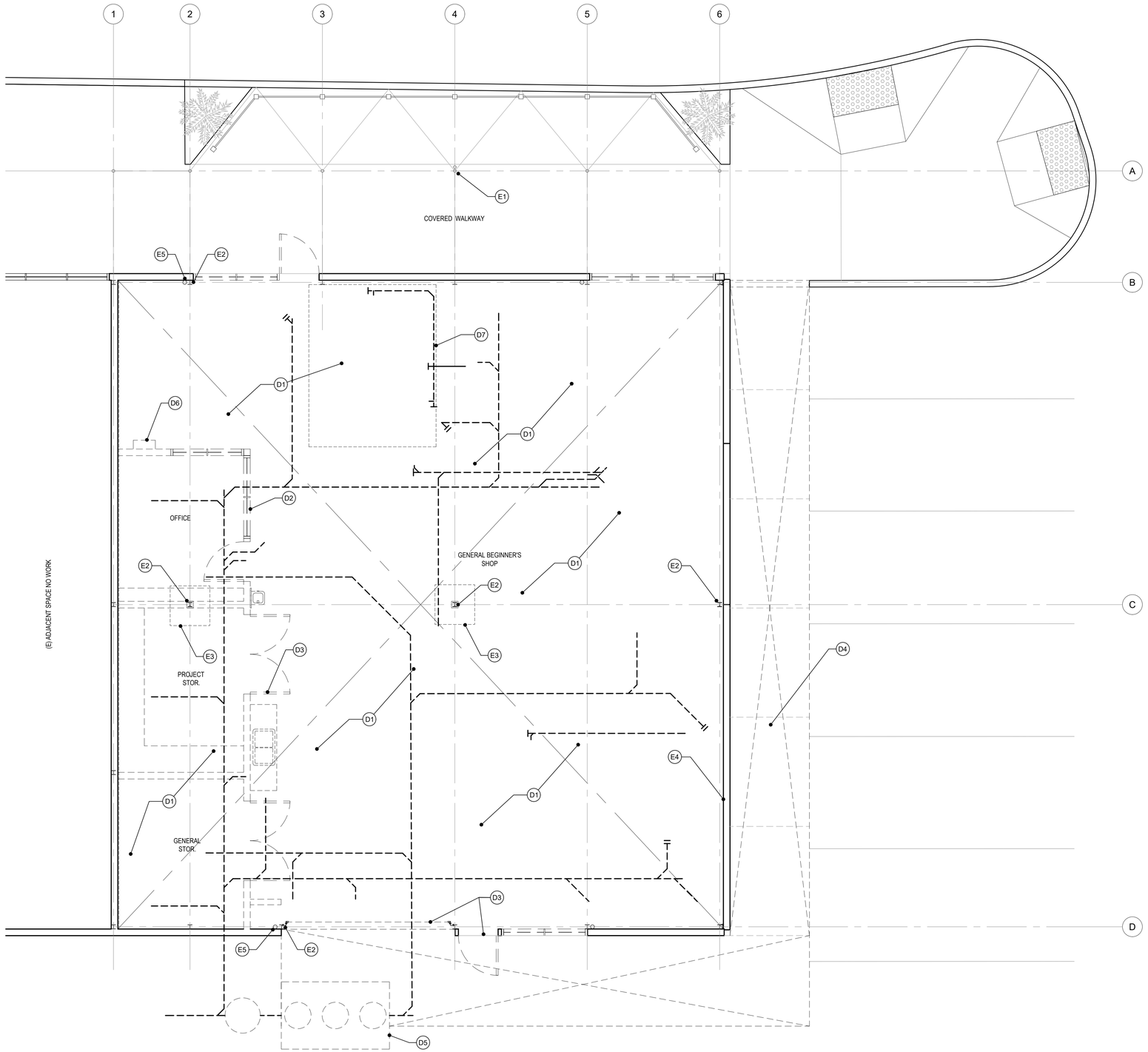

1 EXTG. / DEMOLITION PLAN

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

0 2' 4' 8'

N

KEYNOTES

GENERAL:

THE PROJECT SCOPE INCLUDES A FULL GUT AND MODERNIZATION OF THE EXISTING SPACE TO CONVERT IT INTO A CULINARY ARTS CLASSROOM. ALL EXISTING STRUCTURAL SYSTEM IS TO REMAIN INTACT.

D1 SAWCUT AS NEEDED/SHOWN TO REMOVE (E) CONCRETE SLAB, WALLS (NON-BEARING), FLOOR DRAINS, FLOOR SINKS AND ALL UNDERSLAB PLUMBING UP TO POINT OF CONNECTION. SEE ALSO PLUMBING DRWGS.
* ALL (E) PERIMETER FOOTING AND COLUMN PADS ARE TO BE RETAINED.

* CONTRACTOR'S OPTION TO REMOVE (E) CONC SLAB AS NECESSARY TO INSTALL ALL NEW UNDERSLAB PLUMBING OR REMOVE/REPLACE ENTIRE SLAB.

D2 REMOVE ALL EXISTING WALLS, GYP BOARD CEILING TO EXPOSED FRAMING.

D3 REMOVE ALL DOOR ASSEMBLIES, WINDOW SYSTEM AND OVERHEAD COILING DOORS

D4 REMOVE (E) AC PARKING FOR NEW CONCRETE SIDEWALK.

D5 REMOVE (E) AC PAVEMENT FOR NEW GREASE TRAP SEE PLUMBING & FOOD SERVICES DRWGS.

D6 REMOVE (E) POWER PANEL.
SEE ELECTRICAL DRAWINGS

D7 AREA OF (N) DEPRESSED SLAB

E1 (E) COVERED WALKWAY COLUMNS TO REMAIN.

E2 (E) WF COLUMNS TO REMAIN.

E3 (E) 3'-0" x 3'-0" x 20" D COLUMN FOOTING TO REMAIN.

E4 (E) 6" PRECAST CONCRETE PANELS TO REMAIN.

E5 (E) RWL TO REMAIN.

LEGEND

(E) WORK TO BE REMOVED.

EXTENT OF NEW UNDERSLAB PLUMBING SHOWN FOR REFERENCE / DEMO SCOPE. SEE ALSO PLUMBING PLAN DWG. 1/ P2.2

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C-14509
FEB 28, 2021
RENEWAL DATE
STATE OF CALIFORNIA

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NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
EXISTING/ DEMOLITION FLOOR PLAN

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
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4		
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Drawn By: JWE

Checked By: CAS

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER **A1.11**

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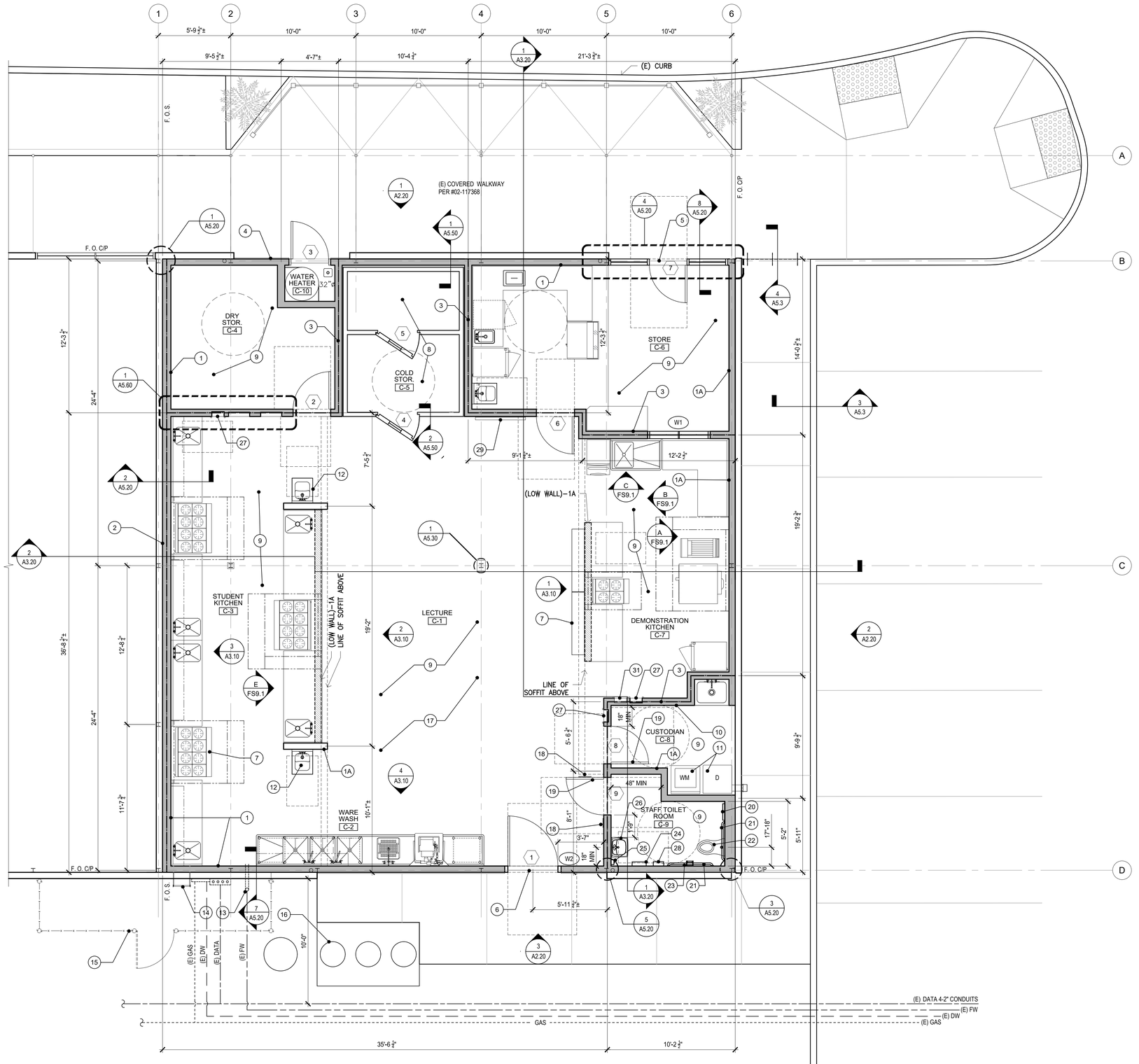

1 PROPOSED PLAN

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

N

0 2' 4' 8'

KEYNOTES

1 (N) 4" STEEL STUDS @ 16" O.C. WITH 5/8" GYP BOARD EACH OR ONE SIDE. TAPED, TEXTURED AND PAINTED WHERE EXPOSED - SEE A5.10

1A (N) 6"x 16 GA STEEL STUDS @ 16" O.C. w/ 5/8" GYP BOARD EACH OR ONE SIDE. TAPED, TEXTURED AND PAINTED WHERE EXPOSED - SEE A5.10

2 (N) 2-HOUR FIRE BARRIER ASSEMBLY - SEE A5.10

3 (N) 1-HOUR FIRE BARRIER WALL - SEE A5.10

4 INFILL (E) EXTERIOR OPENING W/ 4" STEEL STUDS @ 16" O.C., 6" HIGH CONCRETE CURB, 1/2" PLY SHEATHING W/ 8d @ 6" EDGES AND 8d @ 12" FIELD. BLOCK ALL EDGES. THREE COAT CEMENT PLASTER EXTERIOR AND 5/8" GYP BOARD INTERIOR. 07 21 00 - INSTALL R-19 INSULATION. SEE W4/ A5.10 - 1 HOUR RATED EXTERIOR INFILL WALL

5 08 41 10 - INSTALL (N) ALUMINUM STOREFRONT ENTRY ASSEMBLY W/ INSULATED GLASS - SEE A6.10

6 08 11 00 - INSTALL (N) HM DOOR AND FRAME - SEE A6.10

7 INSTALL (N) FOOD SERVICES EQUIPMENT. SEE FOOD SERVICES DWGS

8 INSTALL (N) WALK-IN FREEZER/REFRIGERATOR UNIT. SEE FOOD SERVICES DWGS

9 09 96 56 - GRIND CONCRETE SLAB SMOOTH. INSTALL EPOXY FLOOR COATING SYSTEM WITH 6" INTEGRAL COVED BASE. COLOR SELECTED FROM STANDARD PALLET

10 09 64 00 - INSTALL FRP WALL PANELS - SEE A6.10 COLOR SELECTED FROM STANDARD PALLET.

11 INSTALL (N) WASHER AND DRYER UNITS. VENT DRYER TO EXTERIOR - SEE PLUMBING/MECHANICAL DWGS

12 INSTALL (N) PLUMBING FIXTURES - SEE 2/ A3.10 FOR CLEARANCE DIMENSIONS - SEE PLUMBING DWGS

13 INSTALL (N) 3" Ø FIRE RISER - SEE AFSS DWGS

14 INSTALL (N) ROOF ACCESS LADDER. SEE PARTIAL SECTION DWG 3/ A3.20 AND PLAN DETAIL 2/ A5.30

15 INSTALL (N) 7'-0" HIGH CHAINLINK SECURITY FENCE WITH MANGATE - SEE DETAIL 6 & 7/ A5.60

16 (N) GREASE TRAP - SEE FOOD SERVICES/PLUMBING DWGS

17 (N) 4" THICK REINF CONC SLAB

18 (N) RESTROOM DOOR SIGNAGE SYMBOL - SEE 1/ A5.10

19 (N) SOLID CORE WOOD DOOR - SEE A6.10

20 (N) TOILET SEAT COVER DISPENSER. OFCI

21 (N) GRAB BARS. CFCI

22 (N) WALL HUNG WATER CLOSET - SEE 4/ A3.10

23 (N) TOILET PAPER DISPENSER. OFCI

24 (N) PAPER TOWEL DISPENSER. OFCI

25 (N) SOAP DISPENSER. OFCI

26 (N) LAVATORY SEE 4/ A3.10

27 (N) MULTI-PURPOSE DRY CHEMICAL TYPE: UL-RATED 2A FIRE EXTINGUISHER @ RECESSED RATED CABINET. SEE ALSO 2/ A5.60 AND SPECIFICATIONS.

28 (N) SURFACED-MOUNTED SANITARY NAPKIN DISPOSAL. OFCI

29 (N) 4'-0"x4'-0" WHITE BOARD w/ TRAY PEN. SEE 8/ A5.40 FOR BACKING PLATE. ATTACH w/ #14 SMS, T & B, @ 16" O.C.

30 NOT USED

31 WET CHEMICAL TYPE: UL-RATED 2A :K FIRE EXTINGUISHER @ RECESSED RATED CABINET. SEE ALSO 2/ A5.60 AND SPECIFICATIONS.

LEGEND

1-HR FIRE BARRIER

2-HR FIRE BARRIER

OFCI = OWNER FURNISHED - CONTRACTOR INSTALLED

CFCI = CONTRACTOR FURNISHED - CONTRACTOR INSTALLED

F.O.S. FACE OF STUD

F.O.CP FACE OF CONC. PANEL

A FS9.1 SEE FOOD SERVICES

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
PROPOSED FLOOR PLAN

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
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Drawn By: JWE

Checked By: CAS

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SHEET NUMBER **A1.12**

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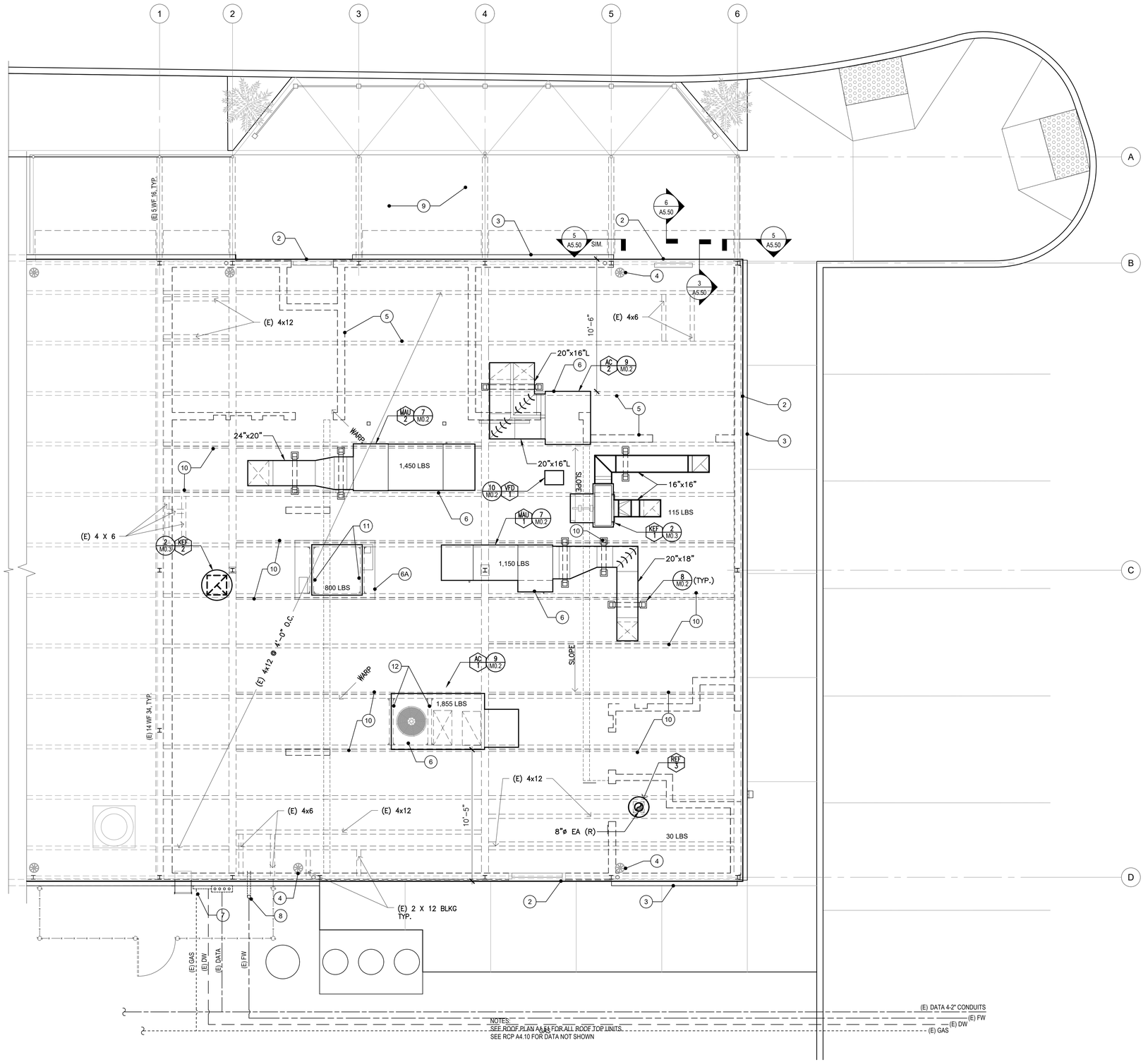

NOTES:
SEE ROOF PLAN A4.55 FOR ALL ROOF TOP UNITS.
SEE RCP A4.10 FOR DATA NOT SHOWN

1 New Roof Plan
SCALE: 1/4" = 1'-0"

0 2' 4' 8'

KEYNOTES

1 (E) SINGLE-PLY ROOFING OVER 1" RIGID INSULATION - PROTECT. LESS THAN 5% OF ENTIRE ROOF TO BE PATCHED OR REPLACED

2 (E) SM COPING/FASCIA - PAINT.

3 (E) SM CAP OVER PRECAST CONCRETE PANELS - PAINT.

4 (E) ROOF DRAIN AND COVER - PROTECT IN PLACE

5 (E) ROOF FRAMING & (N) WALLS SHOWN DASHED.

6 (N) ROOF TOP MECHANICAL EQUIPMENT SEE MECHANICAL DRAWINGS.

6A CRS-4 REFRIGERATION RACK ON ROOF PLATFORM. SEE E/ FS7.1

7 (N) ROOF ACCESS LADDER SEE DETAIL 2/ A5.30

8 (N) FIRE SPRINKLER RISER SEE FIRE SPRINKLER DRAWINGS

9 (E) WALKWAY ROOF FRAMING AND METAL ROOFING.

10 (N) 2x10 (KILN DRIED) DF#1 ATTACHED TO (E) 4x12 w/ 1/4x6" SDS @ 12" O.C. STAGGERED. SEE STRUCTURAL CALCS.

11 (N) 4x6 (KILN DRIED) w/ HU46 @ EACH END

12 (N) 4x8 (KILN DRIED) w/ HU48 @ EACH END

GENERAL NOTES

SEE ROOF FRAMING A4.20 FOR ALL NEW SUPPORT.
SEE REFLECTED CEILING PLAN A4.10 FOR DATA NOT SHOWN.

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
NEW ROOF PLAN

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: JWE

Checked By: CAS

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER **A1.51**

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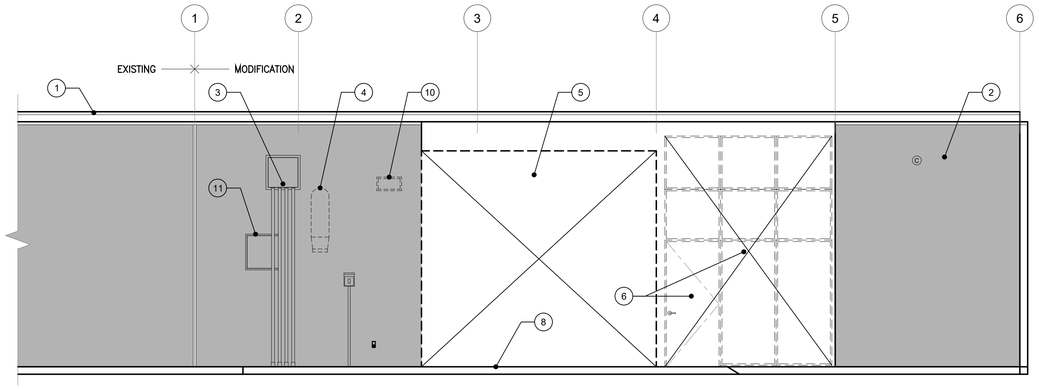
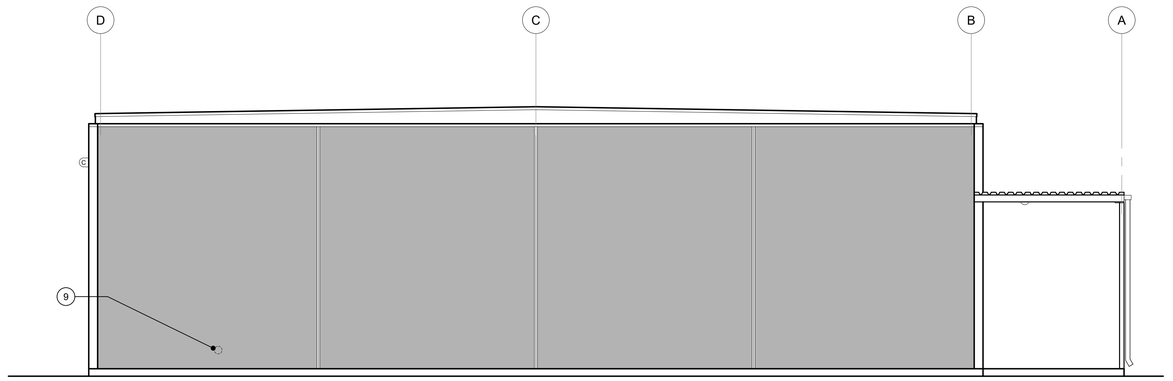


3 South Elevation - Demo

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

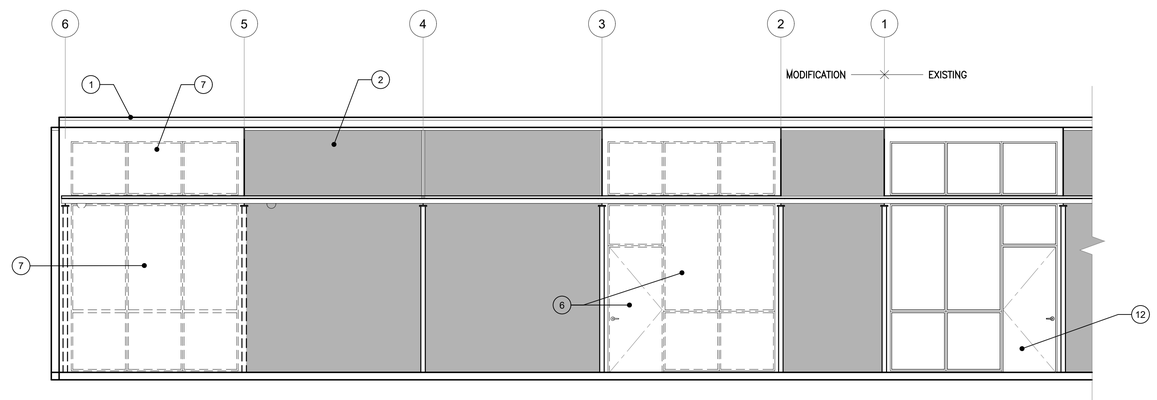
0 2' 4' 8'



2 East Elevation - Demo

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

0 2' 4' 8'



1 North Elevation - Demo

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

0 2' 4' 8'

KEYNOTES

1 (E) GM COPING/CORNICE TO REMAIN - PROTECT

2 (E) PRECAST CONCRETE PANELS - POWER WASH

3 (E) DATA CABLES - PROTECT

4 REMOVE (E) VENT DUCT FOR NEW FIRE RISER PENETRATION

5 REMOVE (E) ROLL-UP DOOR ASSEMBLY

6 REMOVE (E) WALL, DOOR & WINDOW ASSEMBLY

7 REMOVE (E) WINDOW ASSEMBLY

8 REMOVE (E) SIDEWALK FOR NEW ACCESSIBLE WALKWAY - SEE A1.03

9 DRILL OPENING IN (E) CONC PANEL FOR (N) DRYER VENT - SEE DETAIL 5/ A5.60

10 REMOVE (E) SCONCE LIGHTING - SEE ELECT DWG

11 (E) COVER - PROTECT

12 (E) DOOR & WINDOW ASSEMBLY TO REMAIN

LEGEND

- - - - - (E) TO BE REMOVED

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CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
EXISTING/DEMO EXTERIOR ELEVATIONS

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
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DATE 2019-12-20

SHEET NUMBER **A2.10**

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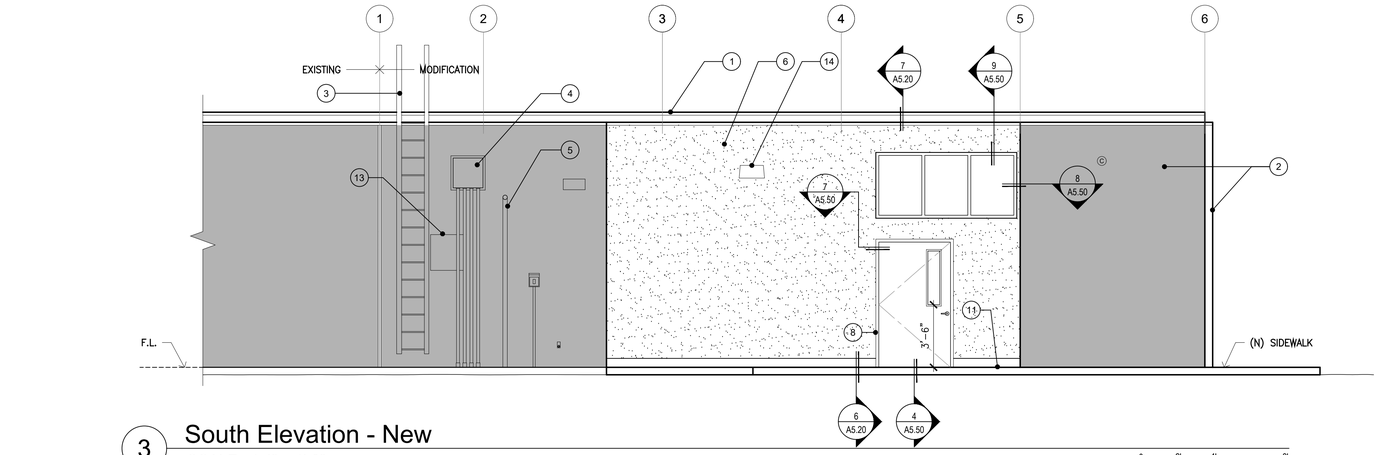
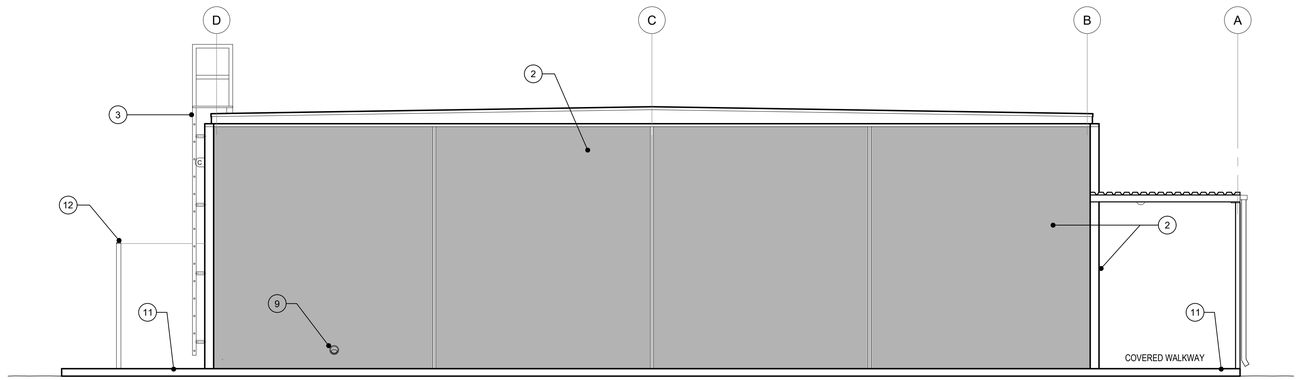


3 South Elevation - New

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

0 2' 4' 8'



2 East Elevation - New

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

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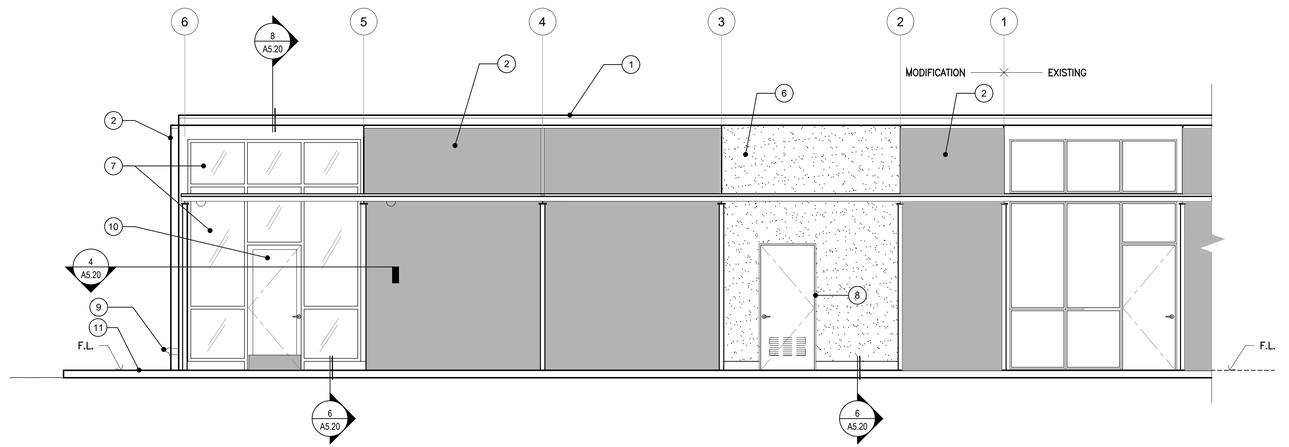

1 North Elevation - New

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

0 2' 4' 8'

KEYNOTES

1 (E) GM COPING / CORNICE - PAINT

2 (E) PRECAST CONCRETE PANELS - POWERWASH

3 INSTALL NEW ROOF ACCESS LADDER - PAINT
SEE DETAIL DWG 2 / A5.30

4 (E) DATA CABLES - PROTECT

5 NEW FIRE SPRINKLER RISER - SEE FIRE FP DWGS.

6 09 24 00 - INSTALL NEW 3-COAT CEMENT PLASTER FINISH OVER ¾" PLYWOOD.

7 08 41 10 - INSTALL NEW STOREFRONT WINDOW ASSEMBLY.

8 08 11 10 - INSTALL NEW METAL DOOR AND FRAME SEE DETAIL 7/ A5.50

9 INSTALL NEW DRYER VENT.
SEE DETAIL 5/ A5.60

10 08 41 10 - INSTALL NEW STOREFRONT ENTRY ASSEMBLY

11 03 33 00 - INSTALL NEW WALKWAY
SEE DETAIL 4/ A5.50

12 INSTALL NEW 7'-0" HIGH CHAINLINK FENCE WITH MANGATE.
SEE DETAIL 6, 7/ A5.60

13 (E) COVER - PROTECT

14 (N) LIGHT FIXTURE
SEE ELECTRICAL DWG.

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
NEW EXTERIOR ELEVATIONS CULINARY ARTS ROOM
SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
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4		
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Drawn By: JWE

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DATE 2019-12-20

SHEET NUMBER **A2.20**

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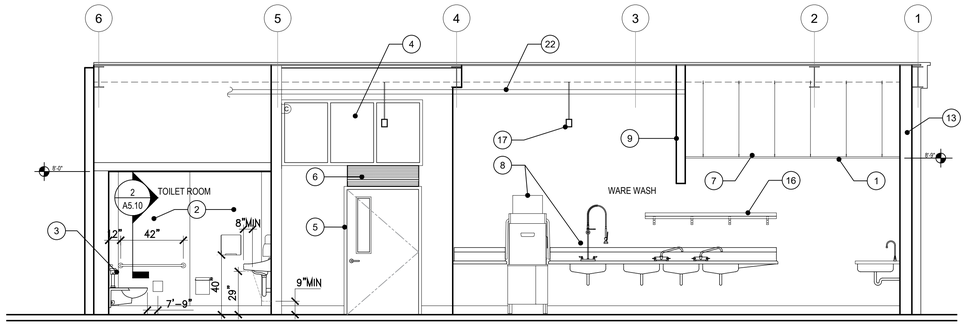
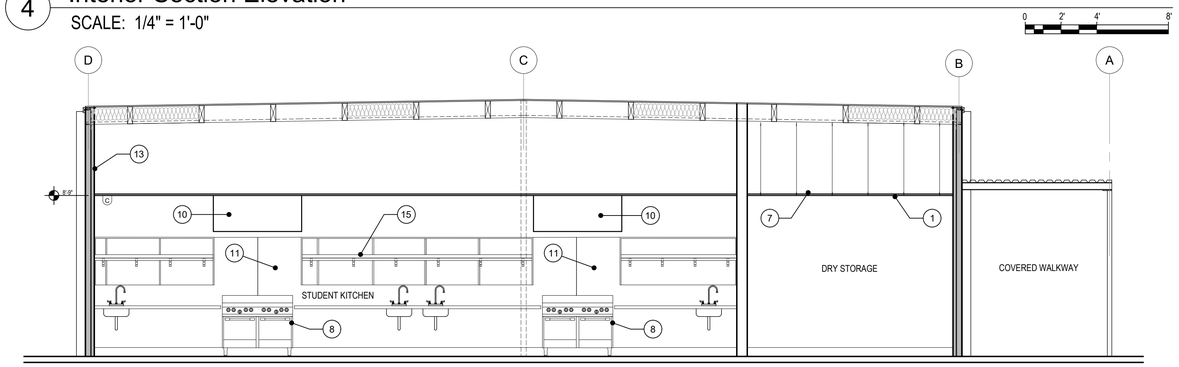


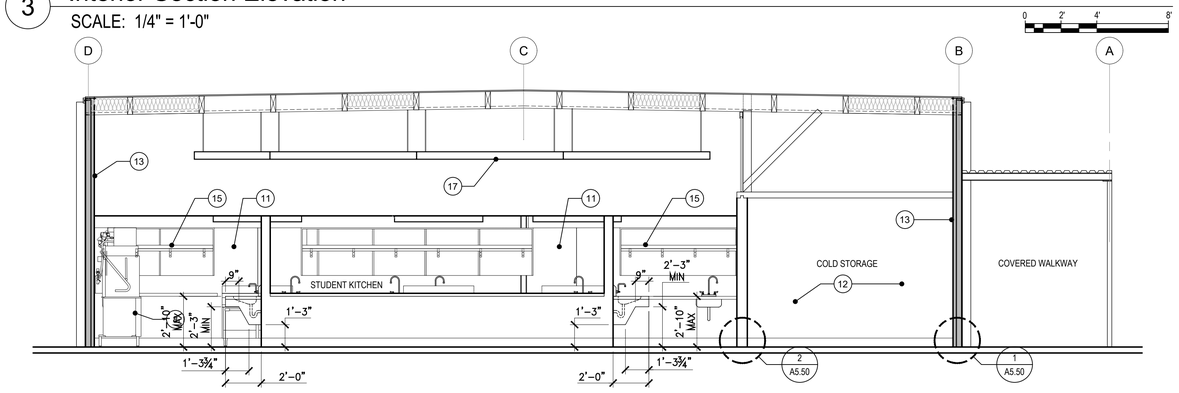
4 Interior Section Elevation

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



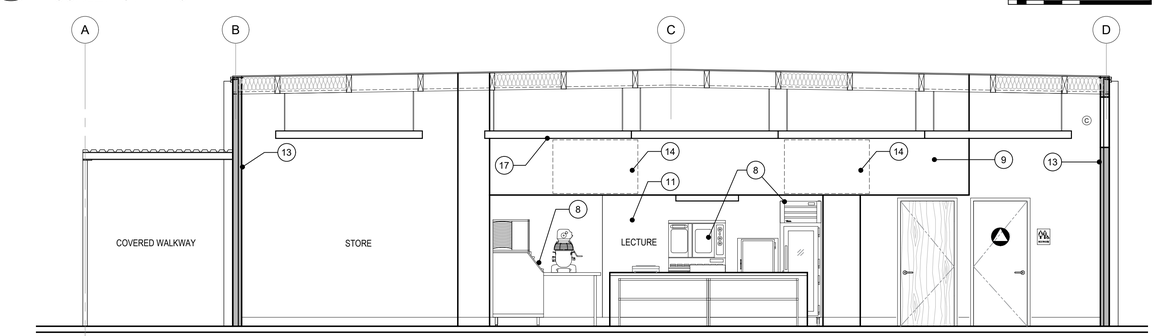
3 Interior Section Elevation

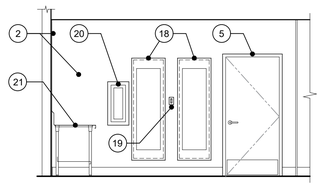
SCALE: 1/4" = 1'-0"



2 Interior Section Elevation

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





5 Partial North Elevation

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

1 Interior Section Elevation

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

KEYNOTES

1 09 29 00 - TEXTURED, PAINTED GYPBD CEILING ON 05 40 00 STEEL CJ'S.

2 06 64 00 - INSTALL FRP PANELS OVER GYPBD SHEATHING.

3 22 40 00 - INSTALL NEW PLUMBING FIXTURE. SEE PLUMBING DWGS

4 08 41 10 - INSTALL STOREFRONT WINDOW ASSEMBLY.

5 08 11 10 - INSTALL METAL DOOR AND FRAME. SEE DOOR SCHEDULE

6 11 40 00 - INSTALL AIR CURTAIN. SEE FOODSERVICES DWGS.

7 09 51 20 - INSTALL SUSPENDED ACOUSTICAL TILE CEILING. - SEE DETAILS 5, 6, & 7/ A5.30

8 11 40 00 - FOOD SERVICES EQUIPMENT. SEE FOODSERVICES DWGS.

9 STEEL FRAMED, TEXTURED, PAINTED GYP.BD. SOFFIT.

10 11 40 00 - EXHAUST HOOD SEE FOODSERVICES DWGS.

11 11 40 00 - STAINLESS STEEL FLUTED/PLAIN WALL PANELS. - SEE FOODSERVICES DWGS.

12 11 40 00 - WALK-IN REFRIGERATOR. SEE FOODSERVICES DWGS.

13 07 21 00 - INSTALL R-30 THERMAL INSULATION w/ SHEET VINYL SUPPORTS.

14 INSTALL TV MONITORS. - SEE DETAIL 4/ A5.60

15 WALL MOUNTED CABINET. SEE FOODSERVICES DWGS.

16 WALL MOUNTED SHELF. - SEE FOODSERVICES DWGS.

17 (N) SUSPENDED BIDIRECTIONAL LIGHTING FIXTURES. SEE ELECTRICAL DWGS.

18 (N) RECESSED ELECTRICAL PANEL. SEE ELECTRICAL DWGS.

19 (N) LIGHT SWITCH. - SEE ELECTRICAL DWGS.

20 (N) RECESSED FIRE EXTINGUISHER CABINET. SEE FIRE PROTECTION DWGS.

21 (N) S/S WORK COUNTER. - SEE FOODSERVICES DWGS.

22 (N) FIRE SPRINKLER SUPPLY LINE. SEE FIRE PROTECTION PLANS.

NOTE: FOR TOILET ACCESSORIES SEE 1/ A3.20

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
INTERIOR SECTION ELEVATIONS

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
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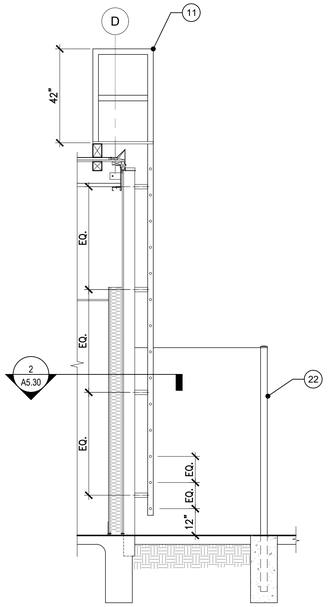
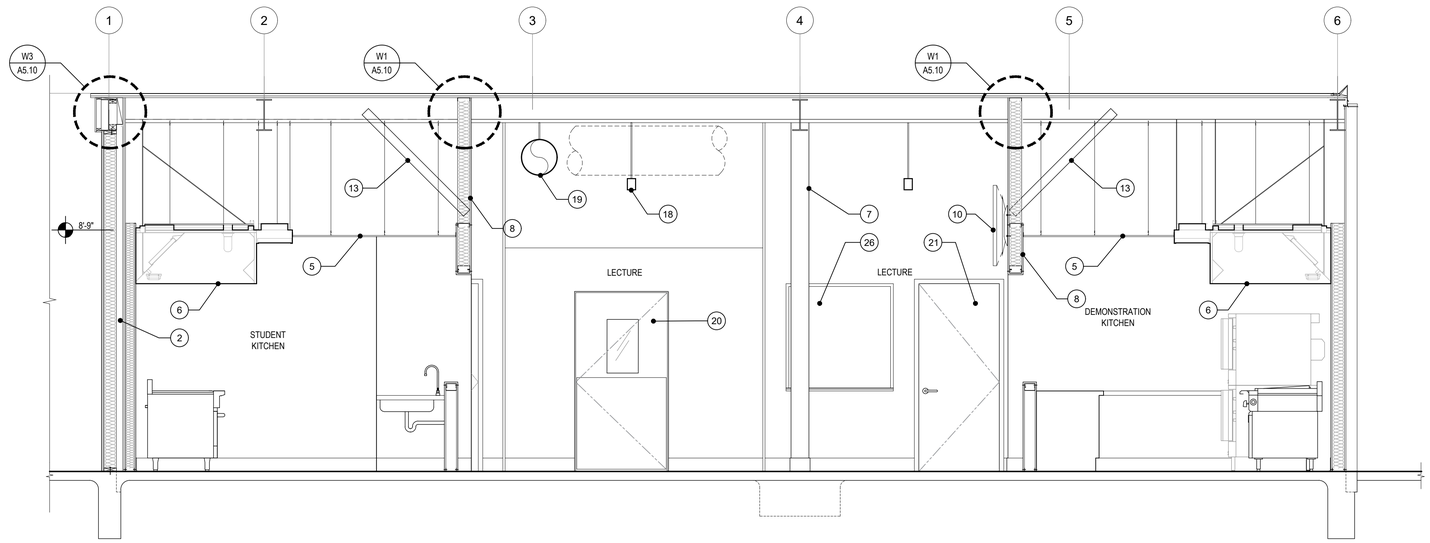
SHEET NUMBER **A3.10**

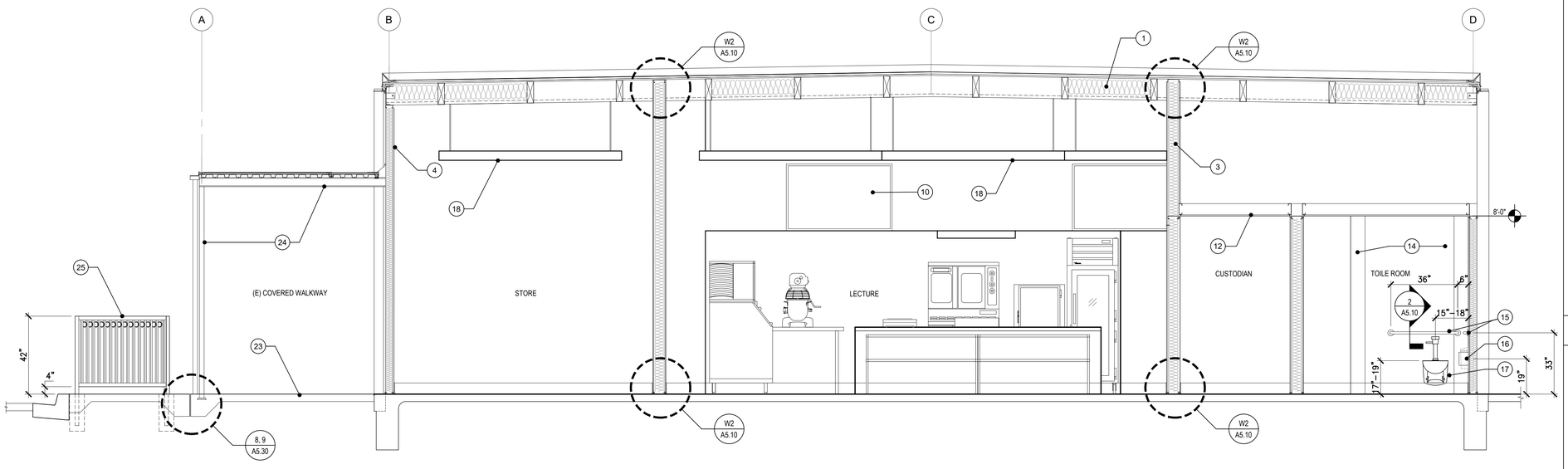
10 of 89



3 Roof Access Ladder
SCALE: 3/8" = 1'-0"



2 Building Section
SCALE: 3/8" = 1'-0"



1 Building Section
SCALE: 3/8" = 1'-0"

KEYNOTES

1 INSTALL (N) R-30 THERMAL INSULATION w/ WIRE SUPPORTS AND VINYL COVER SHEET BETWEEN (E) 4x12 ROOF JOISTS @ 4'-0" O.C.

2 09 21 16.23 - INSTALL (N) 2-HOUR FIRE BARRIER WALL - SEE W3/ A5.10

3 INSTALL (N) 1-HOUR FIRE BARRIER WALL - SEE W2/ A5.10

4 INSTALL (N) NON-RATED WALL - SEE W1/ A5.10

5 09 51 20 - INSTALL (N) SUSPENDED ACOUSTIC TILE CEILING SYSTEM - SEE DETAILS AND SPECIFICATIONS

6 INSTALL (N) EXHAUST HOOD - SEE FOOD SERVICES DWGS

7 INSTALL (N) FURRING AT (E) WF COLUMN - SEE 1/ A5.30

8 INSTALL (N) FRAMED SOFFIT AND BRACES - SEE WALL SCHEDULE AND LITE GAGE STD DETAILS

9 INSTALL (N) FOOD SERVICES EQUIPMENT, FIXTURES AND WAINSCOT PANELS - SEE FOOD SERVICES DWGS

10 INSTALL (N) TV MONITORS - SEE 4/ A5.60

11 INSTALL (N) ROOF ACCESS LADDER - SEE 2/ A5.30

12 TEXTURED, PAINTED GYP BOARD CEILING - SEE LITE GAGE STD DETAILS A5.40

13 4" STEEL STUD BRACES @ 4'-0" O.C. - SEE 16/ A5.40

14 (N) FRP PANEL - SEE SPECIFICATIONS

15 (N) GRAB BARS w/ 16 GA CONT. STRAP. CFCI

16 (N) TOILET PAPER DISPENSER. OFCI

17 (N) WALL HUNG WATER CLOSET - SEE PLUMBING DWGS

18 (N) SUSPENDED BIDIRECTIONAL LIGHTING FIXTURES - SEE ELECTRICAL DWGS

19 (N) HVAC ROUND DUCT - SEE MECHANICAL DWGS

20 (N) REFRIGERATOR COLD STORAGE DOOR - SEE A6.10

21 (N) HM DOOR - SEE A6.10

22 INSTALL (N) 7'-0" HIGH CHAIN LINK FENCE w/ MANGATE - SEE 6 & 7/ A5.60

23 (E) WALKWAY SLAB PER #02-117368

24 (E) COVERED WALKWAY STRUCTURE PER #28169

25 DECORATIVE METAL FENCE - SEE SPEC. 32 31 20

26 (N) 4'-0"x4'-0" WHITE BOARD w/ TRAY. OFCI

LEGEND

OFCI = OWNER FURNISHED - CONTRACTOR INSTALLED

CFCI = CONTRACTOR FURNISHED - CONTRACTOR INSTALLED

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11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
BUILDING SECTION

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
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SHEET NUMBER **A3.20**

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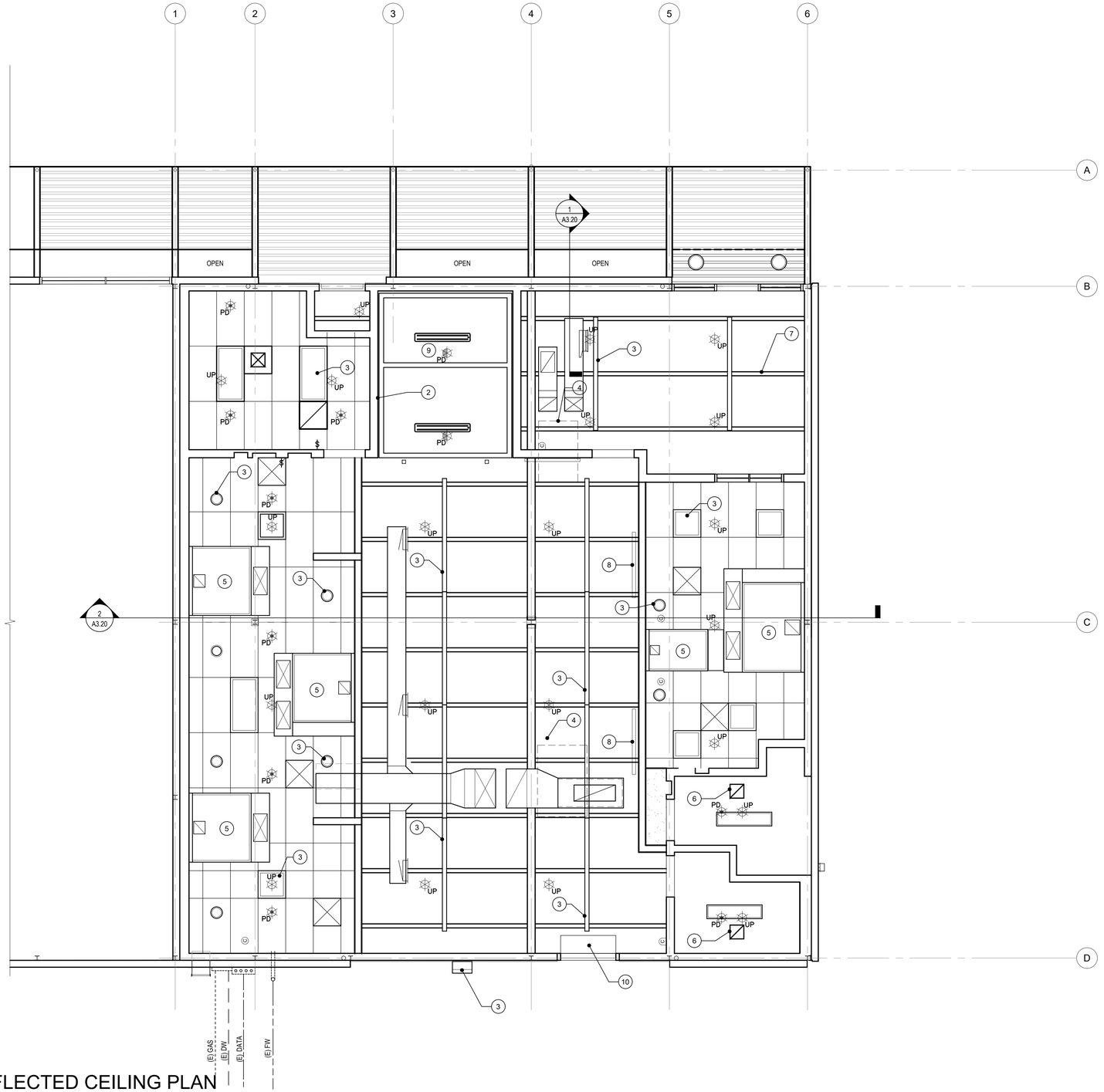

1 REFLECTED CEILING PLAN

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

0 2' 4' 8'

N

KEYNOTES

D1 REMOVE (E) SUSPENDED LIGHT FIXTURE ASSEMBLY AND RETURN TO OWNER.
SEE ELECTRICAL DRAWINGS.

D2 REMOVE (E) POWER DROPS
SEE ELECTRICAL DRAWINGS.

D3 REMOVE (E) SUSPENDED ACOUSTICAL TILE CEILING SYSTEM AND BATT INSULATIONS.

D4 REMOVE (E) GYP BOARD CEILINGS/FRAMING/LIGHT FIXTURE IN THEIR ENTRY.
SEE ELECTRICAL DRAWINGS.

D5 REMOVE ALL (E) MECHANICAL DUCTS, SUPPORTS, ETC.
SEE MECHANICAL DRAWINGS.

1 09 51 20 INSTALL NEW SUSPENDED ACOUSTICAL TILE CEILING.

2 09 29 00 INSTALL NEW 5/8" GYP'D CEILING, TAPED, TEXTURED AND PAINTED STEEL JOIST.

3 NEW LIGHT FIXTURE.
SEE ELECTRICAL DRAWINGS.

4 NEW SUPPLY AND RETURN REGISTERS.
SEE MECHANICAL DRAWINGS.

5 NEW EXHAUST HOODS.
SEE FOOD SERVICE DRAWINGS

6 NEW EXHAUST FAN
SEE MECHANICAL DRAWINGS

7 (E) 4 x 12 ROOF JOIST WITH R-30 THERMAL INSULATION AND VINYL SHEET SUPPORTS. ALL EXISTING EXPOSED FRAMING TO BE PAINTED.

8 NEW WALL MOUNTED TV MONITOR.
SEE DETAIL 4/ A5.60

9 CUSTOM REFRIGERATOR & FREEZER CEILINGS.
SEE FOOD SERVICES DRAWINGS.

10 NEW AIR CURTAIN. SEE FOOD SERVICES DWG.

LEGEND

- (N) SUSPENDED BI-DIRECTIONAL LINEAR LIGHTING FIXTURE
- (N) 2 X 4 RECESSED LIGHTING FIXTURE
- (N) 2 X 2 RECESSED LIGHTING FIXTURE
- (N) 1 X 4 LOW PROFILE LIGHTING FIXTURE
- (N) DOWNLIGHT FIXTURE.
- (N) CEILING MOUNTED LIGHTING FIXTURE
- (N) WALL MOUNTED SCONCE LIGHTING FIXTURE
- (N) LIGHTING FIXTURE
- (N) HVAC AIR SUPPLY REGISTER
- (N) HVAC AIR RETURN REGISTER
- UP (N) UPRIGHT FIRE SPRINKLER
- PD (N) PENDENT FIRE SPRINKLER
- $ (N) LIGHT SWITCH

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GRASS VALLEY, CA 95945

SHEET TITLE:
REFLECTED CEILING PLAN

SCALE: AS SHOWN

REVISIONS

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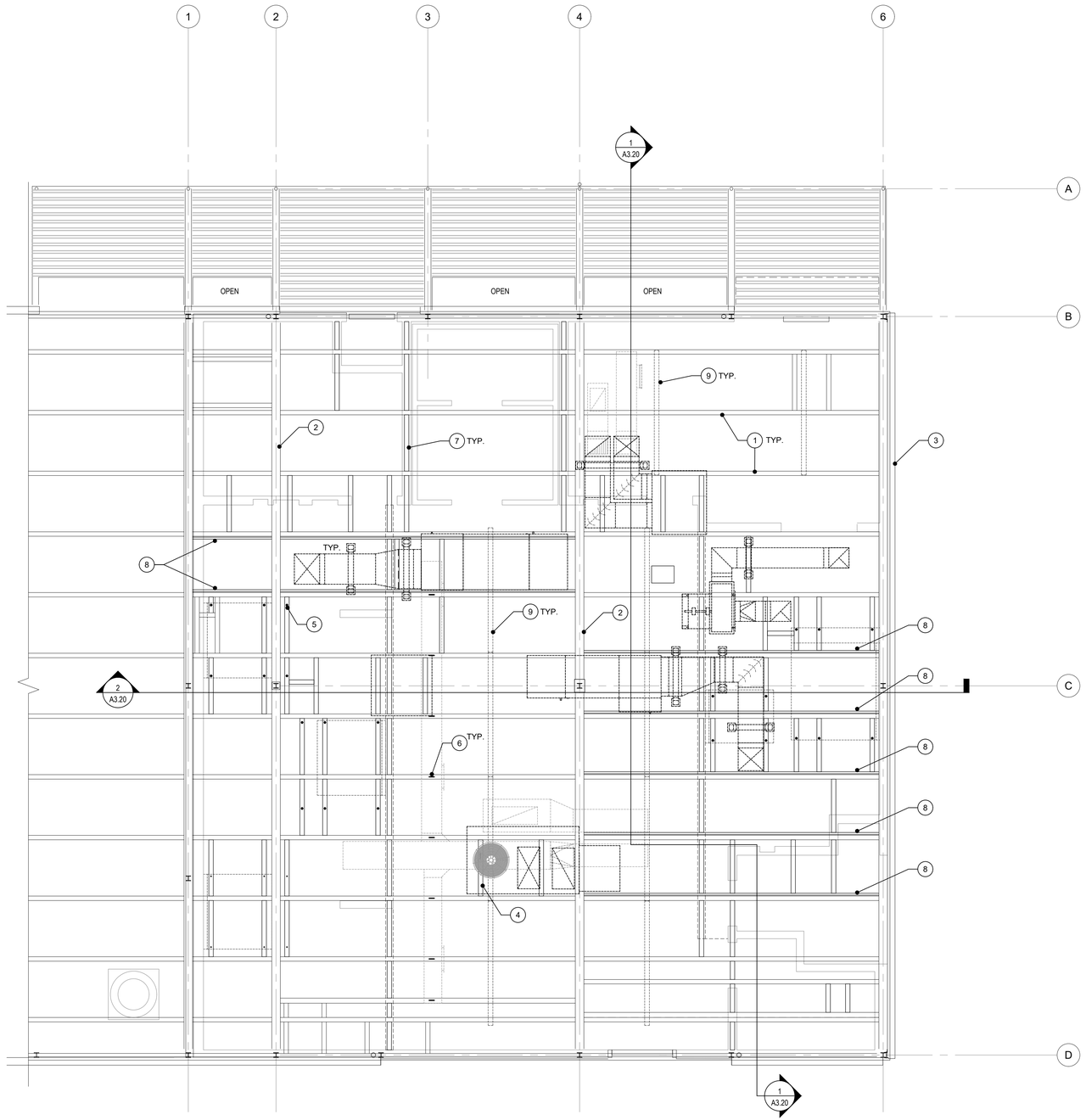

1 ROOF BLOCKING PLAN

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

0 2' 4' 8'

N

SHEET NOTES

1. SEE ROOF PLAN A1.51 FOR ALL ROOF TOP UNITS
2. SEE RCP A4.10 FOR DATA NOT SHOWN

KEYNOTES

1 (E) 4x12 ROOF JOISTS @ 4'-0" O.C.

2 (E) WF ROOF BEAM.

3 (E) PRECAST CONC. PANEL.

4 (N) 4x4 BLKGS. WITH U44 HANGERS AT EA. END, SEE MECHANICAL & ELECTRICAL, TYP.

5 (N) EXHAUST HOOD ROD HANGERS. SEE FOOD SERVICES DDRAWING FS8.3

6 (N) THREADED ROD SPIRAL DUCT HANGERS. SEE MECHANICAL DETAIL 5/ M0.2

7 (N) SLIP TRACK ATTACHED TO BLOCKING. SEE PARTITION SCHEDULE & DETAIL 17/ A5.40

8 (N) 2x10 DF#1 ATTACHED TO (E) 4x12 w/ 1/4x6" SDS @ 12" O.C. STAGGERED. - SEE STRUCTURAL CALCS. SEE DETAIL 10/ A5.30 FOR END CONNECTION DETAIL

9 (N) LIGHT SEE ELECTRICAL DRAWINGS

LEGEND

- EXHAUST FAN HANGER ROD
- 4x BLOCK FOR ATTACHMENT
- ITEM BELOW CEILING SHOWN FOR REFERENCE

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CRAIG ALLAN SCOTT
C-14508
FEB 28, 2021
RENEWAL DATE
STATE OF CALIFORNIA

NEVADA JOINT UNION HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
ROOF BLOCKING PLAN

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
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4		
5		

Drawn By: JWE

Checked By: CAS

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER **A4.20**

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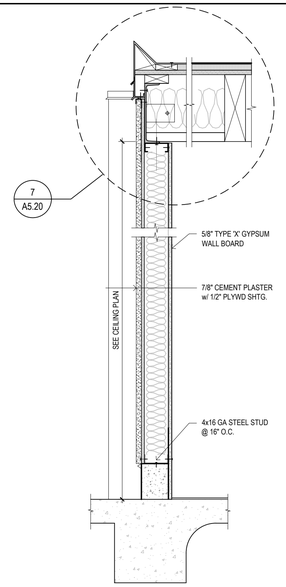
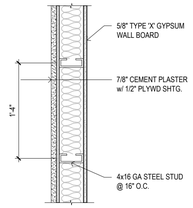
Printed Scale = 1:1
12/20/2019 1:32:16 PM V:\2019 PROJECT FILES\19.010 NJUHSD Nevada Union HS Culinary Ar\5 CD\1 CD Drawings\1 CD Drawings\19010_A420_Roof_Blocking Plan_20191220.dwg Plot Style: dca-2016.ctb

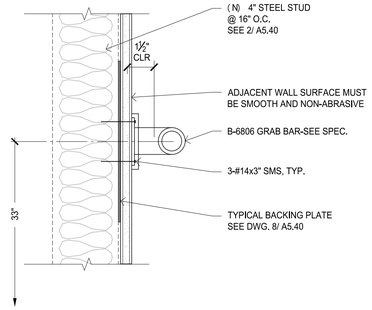


SCALE: 1" = 1'-0"

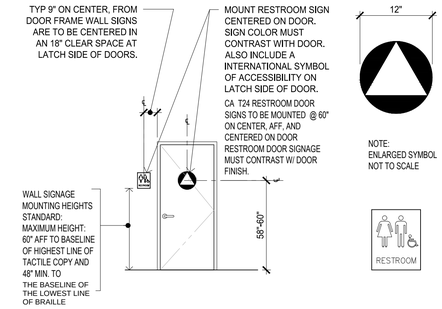
W4 1-HR RATED EXTERIOR INFILL WALL

WALL TYPE W4:
4"x16 GA STEEL STUDS @ 16" O.C. WITH 1/2" PLYWD AND 7/8" CEMENT PLASTER (MEASURED FROM FACE OF PLYWOOD) ON EXTERIOR AND 5/8" TYPE 'X' GYPSUM BOARD ON INTERIOR.
ATTACHED TO STUDS WITH 1" LONG DRYWALL SCREWS @ 12" O.C.
*REF. CBC TABLE 721.1 (2) ITEM 15-1.4

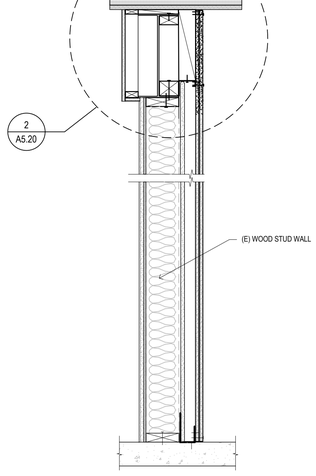


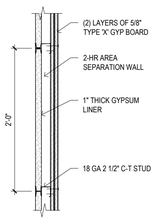


GRAB BAR ANCHORAGE | 3" = 1'-0" | 2



RESTROOM DOOR SYMBOL | 1/4" = 1'-0" | 1

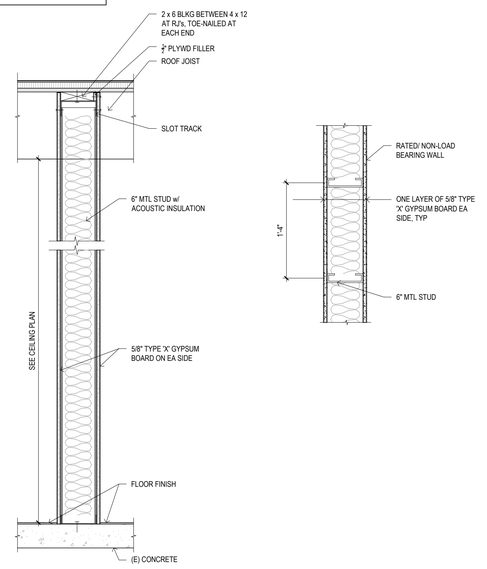




SCALE: 1" = 1'-0"

W3 2-HR RATED NON-LOAD BEARING WALL ASSEMBLY (ClarkDietrich Design Wall Assembly) COMPLIES WITH PEI EVALUATION SERVICE ITEM AER-12061

C-T SHAPED: SLOTTED WEB STUDS, 1 ½" WIDE X 2 1/2" DEEP, FABRICATED FROM 18 GA GALV CUT TO LENGTH ½" LESS THAN THE OPENING'S HEIGHT AND SPACED 24" MAX O.C. AND BETWEEN 1" THK GYPSUM SHAFTLINER PANELS.
SHAFTLINER: 1" THK GEORGIA-PACIFIC GYPSUM LLC SHAFTLINER TYPE "X"*, GEORGIA-PACIFIC GYPSUM LLC DENSGLASS ULTRA SHAFTLINER TYPE "X"*, GOLD BOND SHAFT LINER, JAMES HARDIE GYPSUM HARDIROCK TYPE "X" SHAFTLINER*, CONTINENTAL BUILDING PRODUCTS FIRECHECK SHAFTLINER* OR USG SHAFT LINER, SUPPLIED IN 24" WIDTHS. THESE PANELS ARE INSERTED AGAINST THE LONG LEG OF THE "J" RUNNERS AND INTO THE 1" DEEP RECESS OF THE STUDS.
GYPSUM BOARD: ½" THK GEORGIA-PACIFIC GYPSUM LLC FIREGUIARD C, GEORGIA-PACIFIC GYPSUM LLC DENSARMOR PLUS FIREGUARD C*, GOLD BOND FIRESHIELD WALL BOARD G, JAMES HARDIE GYPSUM SUREFIRE X HARDIROCK, CONTINENTAL BUILDING PRODUCTS FIRECHECK TYPE C, USG FIRECODE C SHEETROCK OR 5/8" TYPE "X" GYPSUM APPLIED IN 2 LAYERS ON THE ROOM SIDE. BASE LAYER APPLIED HORIZONTALLY WITH 1" DRYWALL SCREWS @ 24" O.C.. FACE LAYER APPLIED VERTICALLY WITH 1 5/8" SCREWS @ 12" O.C. . OUTER LAYER JOINTS FINISHED WITH PAPER TAPE AND JOINT COMPOUND.

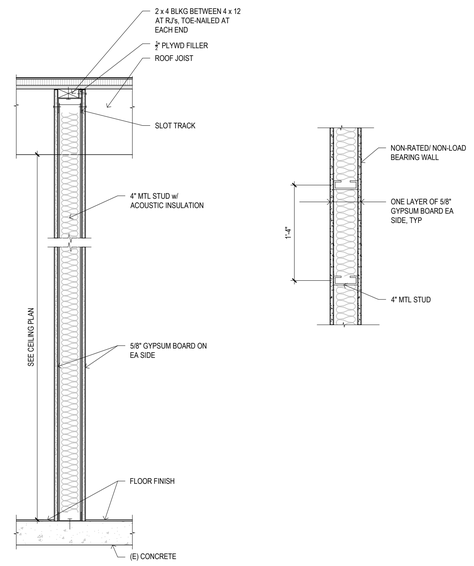


SCALE: 1" = 1'-0"

W2 1-HR RATED NON-LOAD BEARING/ LOAD BEARING PARTITION

PARTITION TYPE W2: ONE LAYER OF TYPE 'X' GYPSUM BOARD APPLIED AT RIGHT ANGLE OR PARALLEL TO EACH SIDE w/ 6" MTL STUDS. ATTACH w/ #6 DRYWALL SCREW, 1" LONG @ 8" O.C. AND R-19 MINERAL FIBER INSULATION. STAGGER ALL VERTICAL AND HORIZONTAL JOINTS 24" OC MIN EA SIDE AND OPPOSITE SIDES. APPLY JOINT TREATMENT AT ALL LOCATIONS. ALL PENETRATION THROUGH OR INTO PARTITION MUST BE CAULKED.

*REF. CBC TABLE 721.1 (2) ITEM 13-1.1



SCALE: 1" = 1'-0"

W1 NON-LOAD BEARING/ LOAD BEARING PARTITION

PARTITION TYPE W1: ONE LAYER OF GYPSUM BOARD APPLIED AT RIGHT ANGLE OR PARALLEL TO EACH SIDE w/ 4" MTL STUDS. ATTACH w/ #6 DRYWALL SCREW @ 8" O.C. AND R-19 MINERAL FIBER INSULATION. STAGGER ALL VERTICAL AND HORIZONTAL JOINTS 24" OC MIN EA SIDE AND OPPOSITE SIDES. APPLY JOINT TREATMENT AT ALL LOCATIONS. ALL PENETRATION THROUGH OR INTO PARTITION MUST BE CAULKED.

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SHEET TITLE:
PARTITION SCHEDULE

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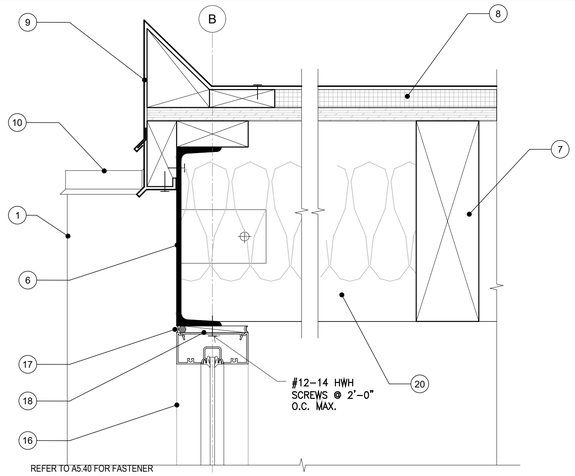
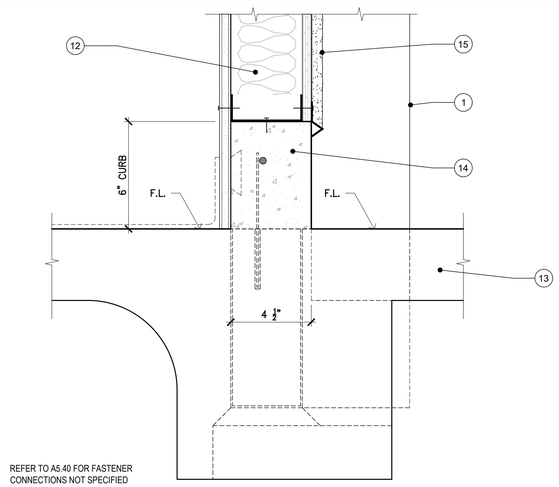


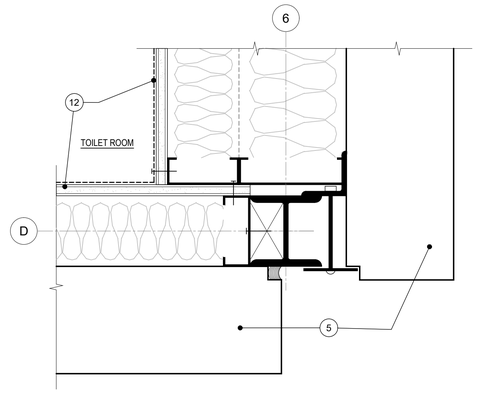
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

HEAD DETAIL @ STOREFRONT ASSEMBLY | 3" = 1'-0" | 8



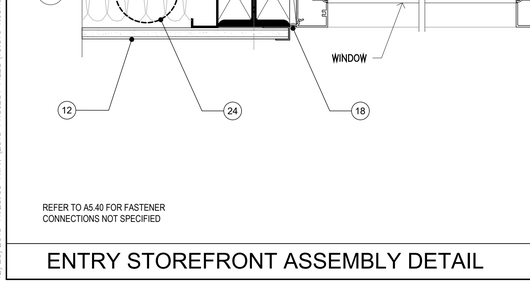
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

CURB DETAIL (SECTION VIEW) | 3" = 1'-0" | 6



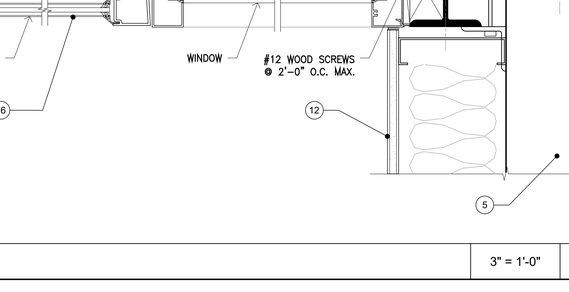
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

SOUTHWEST CORNER | 3" = 1'-0" | 3



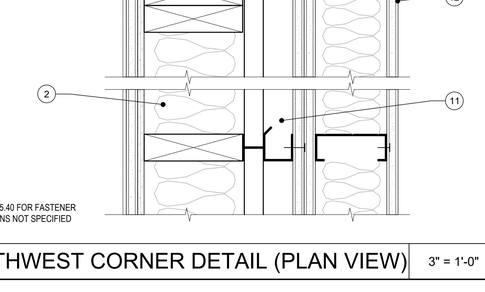
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

HEAD DETAIL @ WALL INFILL | 3" = 1'-0" | 7



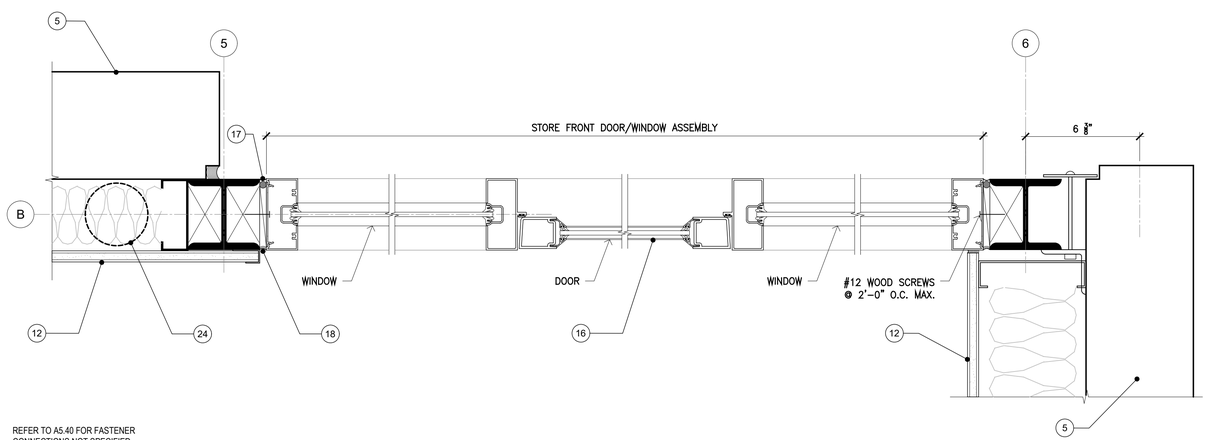
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

SOUTHWEST GRID 'D' & '5' | 3" = 1'-0" | 5



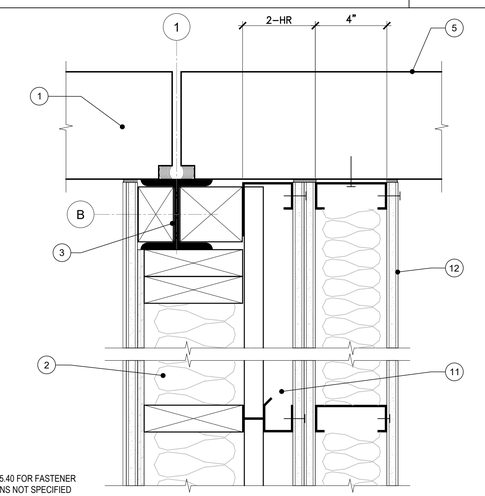
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

TOP OF WALL SECTION DETAIL | 3" = 1'-0" | 2



REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

ENTRY STOREFRONT ASSEMBLY DETAIL | 3" = 1'-0" | 4



REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

NORTHWEST CORNER DETAIL (PLAN VIEW) | 3" = 1'-0" | 1

KEYNOTES

1. (E) CONC. PRECAST PANELS.
2. (E) COMMON WALL - 2 x 6 STUDS @ 16" O.C. WITH 1/2" PLWD SHT'G AND 5/8' GYPB'D.
3. (E) STRUCT. WF COLUMN WITH 4 x BLKGS TO REMAIN.
4. (E) STRUCT. WF BEAM WITH BLKGS TO REMAIN.
5. (E) STRUCT. WF COLUMN WITH PRECAST PANEL ATTACHMENTS TO REMAIN.
6. (E) STRUCT. BEAM WITH BLKGS TO REMAIN.
7. (E) 4 x 12 @ 4' 0" O.C. WITH 2 x 12'S AT ENDS.
8. (E) SINGLE PLY ROOFING O/1" RIGID INSULATION TO REMAIN, PATCH AS NECESSARY FOR NEW WORK.
9. (E) G.I. COPING AND FACIA PAINT.
10. (E) PRECAST PANEL WITH CONT. G.I. COVER
11. 2 - HOUR FIRE BARRIER WALL - SEE WALL SCHEDULE.
12. 4" x 16 GA STEEL STUD @ 16" O.C. WITH 5/8" GYPB'D SHT'G OR 6" STEEL STUD SIMILAR - SEE WALL SCHEDULE.
13. 4" THK REINFORCED CONC. SIDEWALK WITH 3/8" EX. SEE DETAIL.
14. 6" H x 4 ½" W CONC. CURB WITH #4 HORIZ. BAR AND #4 DOWELS @ 18" O.C. AND 8" FROM ENDS.
15. 3 - COAT CEMENT PLASTER FINISH - SEE SPECIFICATION - OVER ½" PLWD SHTG.
16. ALUM STOREFRONT ENTRY ASSEMBLY WITH 1" INSULATED GLAZING SEE - SCHEDULE AND SPECIFICATION.
17. BACKER ROD AND SEALANT, TYP.
18. ¼" SHIM, TYP.
19. R-13 THERMAL INSULATION SEE SPECIFICATION.
20. R-30 ROOF INSULATION WITH VINYL SHEET SUPPORTS BETWEEN R.J's.
21. 2 ½" x 1 ½" 16 GA STEEL STUD WITH 5/8" GYPB'D SHT'G - SEE WALL SCHEDULE.
22. (E) 3 x 12 SOLID BLKG.
23. FIRE CAULK
24. (E) 3 ½" O.D. RWL - VERIFY LOCATION IN FIELD.

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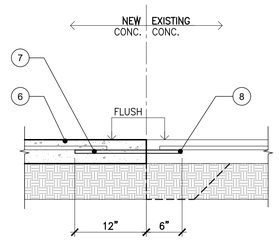
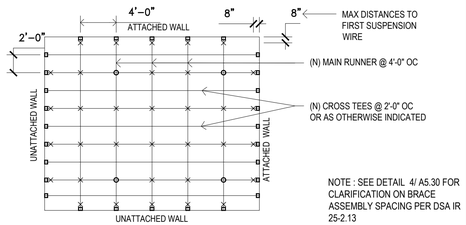
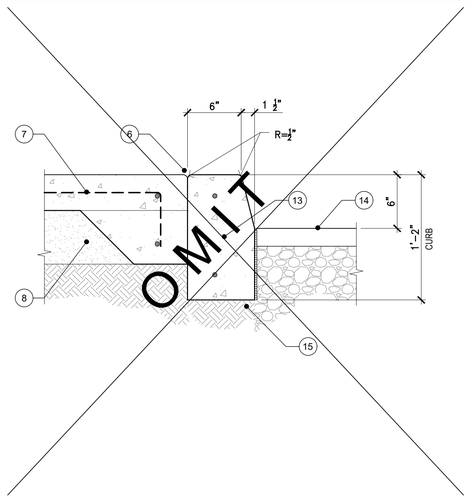


NEW TO EXISTING CONC. SLAB DOWEL DETAIL | 1" = 1'-0" | 8



DIAGRAMATIC FRAMING PLAN - ACOUSTICAL CEILING | 1/8" = 1'-0" | 5



CURB DETAIL | 1 1/2" = 1'-0" | 3

KEYNOTES

1 7" x 3" x ¼" x 3" LEG STEEL ANGLE O.C. AS SHOWN WELDED TO VERTICAL RAILS, ANCHOR TO WALLS WITH SIMPSON ⅜" Ø TITEN H.D. SCREW ANCHORS, MIN. EMBED 2 ½"

2 1" Ø ROUND RUNGS WELDED TO VERTICAL RAILS.

3 2 ½" x ¾" FLAT BAR, VERTICAL RAILS.

4 4" STEEL STUDS @ 16" O.C. WITH ⅝" GYP BOARD SHEATHING.

5 (E) 6" PRECAST CONCRETE PANEL.

6 4" CONCRETE WITH #4 REBAR @ 18" O.C. E.W.

7 #4 REBAR DOWELS @ 16" O.C.-18" LONG W/ 5" MIN. EMBED INTO (E) CONC.

8 EPOXY (N) DOWELS TO (E) CONCRETE W/ HILTI HY150 EPOXY, SIMPSON EPOXY TIE OR RAWL FAST FOIL INJECTION GEL EPOXY PER MANUF. SPECS. & PROCEDURES.

9 2 ½" x 1 ½" 16 GA STEEL STUD WITH 5/8" GYPB'D SHT'G - SEE WALL SCHEDULE.

10 (E) STRUCT. WF COLUMN WITH 4 x BLKGS TO REMAIN.

11 (E) 2 ½" Ø STANDARD PIPE C/W SUPPORTS, AS OCCURS.

12 (E) C/W EDGE FOOTING.

13 DRILL, EPOXY DOWEL PER DWG. 4/A5.30

14 4" THK. COLORED CONC. SLAB WITH #4 REBARS @ 18" O.C.

15 HSSx3 BOLLARD w/ CAP PL 1/4

16 FREEZER WALL, SEE SHT A1.12

17 HSS 3 1/2x3 1/2x$\frac{5}{16}$ SLEEVE w/ END PL 1/4 MIN 12" DEEP INTO 24" SQ FT w/ (2) #4 @ BOTTOM

SISTERED 2x10 END CONNECTION DETAIL | 1 1/2" = 1'-0" | 10

PERIMETER DETAIL SUSPENDED ACOUSTICAL TILE CEILING | 3" = 1'-0" | 7

SUSPENDED ACOUSTIC CEILING GRID DETAIL | 1/8" = 1'-0" | 4

ROOF ACCESS LADDER DETAIL | 1 1/2" = 1'-0" | 2

NEW SLAB TO EXISTING SLAB DETAIL | 1 1/2" = 1'-0" | 9

CONNECTION TO STRUCTURE ABOVE- SUSPENDED ACOUSTIC CEILING | 1/8" = 1'-0" | 6

GENERAL NOTES FOR SUSPENDED CEILING SYSTEMS (FOR SEISMIC CATEGORY D+) :

1. INSTALL PER ASTM C636, 'CISCA' GUIDLINES, AND ASCE 7 SECTION 13.5.6.2.2.
2. FOR SEISMIC CATEGORY D,E,F, PROVIDE SPECIAL INSPECTION ON SUSPENDED CEILING SYSTEM AND ANCHORAGE, PER 2013 CBC 1705.3(4.3) AND DSA IR25-2.13.
3. ALTERNATIVE DESIGN ALLOWED PER IBC/CBC 104.11
4. CEILING AREAS GREATER THAN 2,500 S.F. REQUIRE SEPARATION JOINTS. RECOMMEND ARMSTRONG SEISMIC JOINT CLIPS (SJMR, SJCG, SCJSI AS APPROPRIATE).
5. ICC REPORT ESR-1308 FOR SEISMIC CATEGORY 'D-F' ALLOWS FOR ONE OF THE FOLLOWING SUSPENDED CEILING SYSTEMS BY ARMSTRONG SEISMIC Rx:
   a) PRELUDE XL 15/16"
   b) SUPRAFINE XL 9/16"
   c) SILHOUETTE XL 9/16"
   (ALL HEAVY DUTY.) SEE DETAILS FOR CONNECTIONS.
   (OR USG CEILING SYSTEMS (DONN BRAND) WITH ACM7 CLIP.)
6. LIGHT FIXTURES AND MECHANICAL GRILLES SHALL BE ATTACHED TO SUPPORT STRUCTURE ABOVE, INDEPENDENT OF CEILING GRID.
7. WIRES SHALL BE CLASS I ZINC CONFORMING TO ASTM A-641.
8. SUSPENSION SYSTEM SHALL COMPLY W/ ASTM E580-SEC.5.2
9. PENETRATIONS THROUGH CEILING TILES FOR SPRINKLER HEADS, TV MOUNTS, PROJECTOR MOUNTS AND SIMILAR DEVICES THAT ARE NOT POSITIVELY ATTACHED TO THE GRID SHALL HAVE A 2" OVERSIZE HOLE.

SUSPENDED ACOUSTIC CEILING GRID DETAIL | 1/8" = 1'-0" | 4

REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

FURRED COL. IN LECTURE ROOM | 3" = 1'-0" | 1

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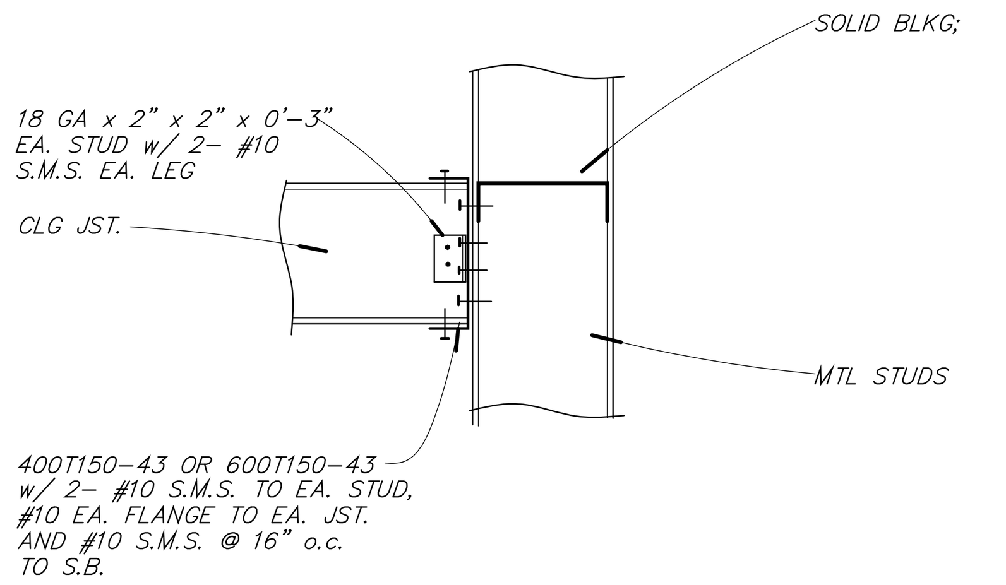
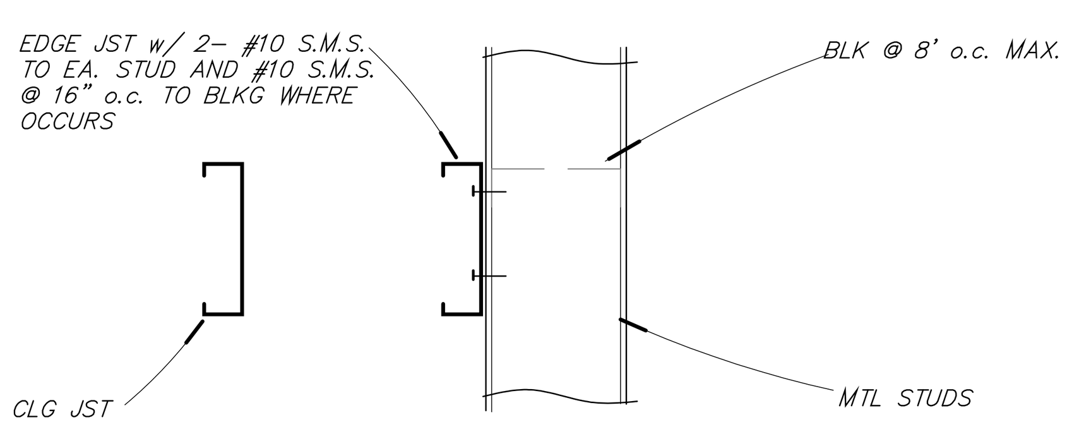
STEEL CEILING JOIST NOTES:

1. ALL JOISTS AND TRACKS SHALL BE FORMED FROM COLD FORMED STEEL ASTM A653 OR A1003, WITH A MIN. YIELD POINT OF 33,000 PSI FOR MATERIAL 18 GAUGE AND THINNER AND 50,000 PSI FOR MATERIAL 16 GAUGE AND THICKER.
2. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY TO SQUARELY FIT AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE HELD FIRMLY IN POSITION UNTIL PROPERLY FASTENED.
3. JOISTS AND TRACKS SHALL BE ATTACHED BY WELDING AND SELF DRILLING SCREWS AS NOTED ON THE DRAWINGS.
4. DO NOT SPLICE JSTS BETWEEN SUPPORTS.
5. PROVIDE STEEL CEILING JOISTS PER SCHEDULE 12/S1.2 MAX. JST. SPACING IS 16" o.c. U.N.; SEE ARCH. DRAWINGS FOR LOCATION.
6. FOR TYPICAL CEILING JOIST DETAILS SEE SHEET S1.2
7. USE JOISTS WITH SOLID WEBS.

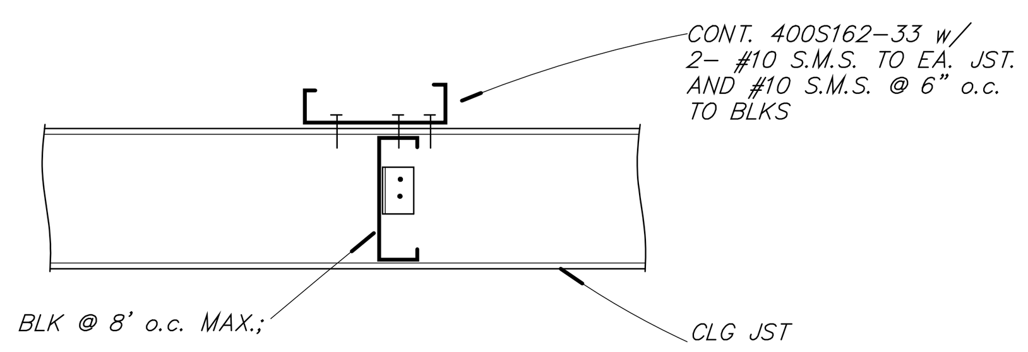
STEEL CEILING JST. NOTES — 13/A5.40



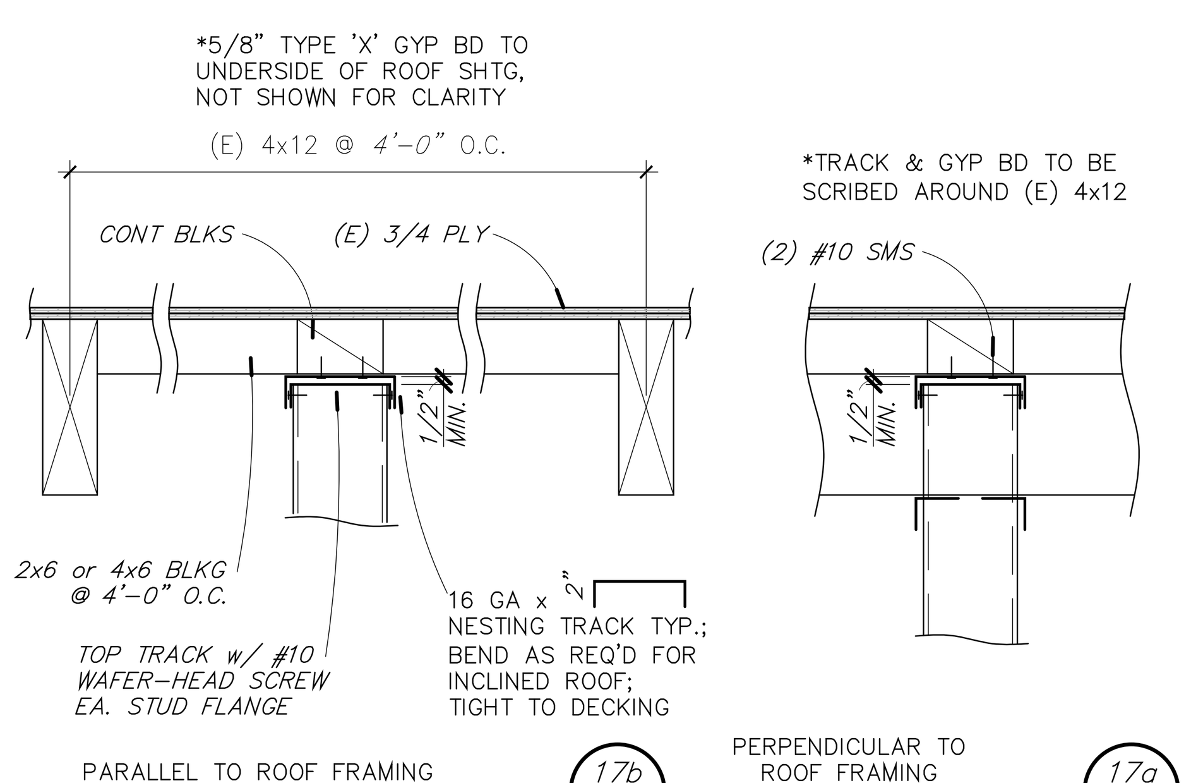
CEILING JOIST PERP. TO FULL-HT WALL — 14/A5.40



CEILING JOIST PARALLEL TO FULL-HT WALL — 15/A5.40



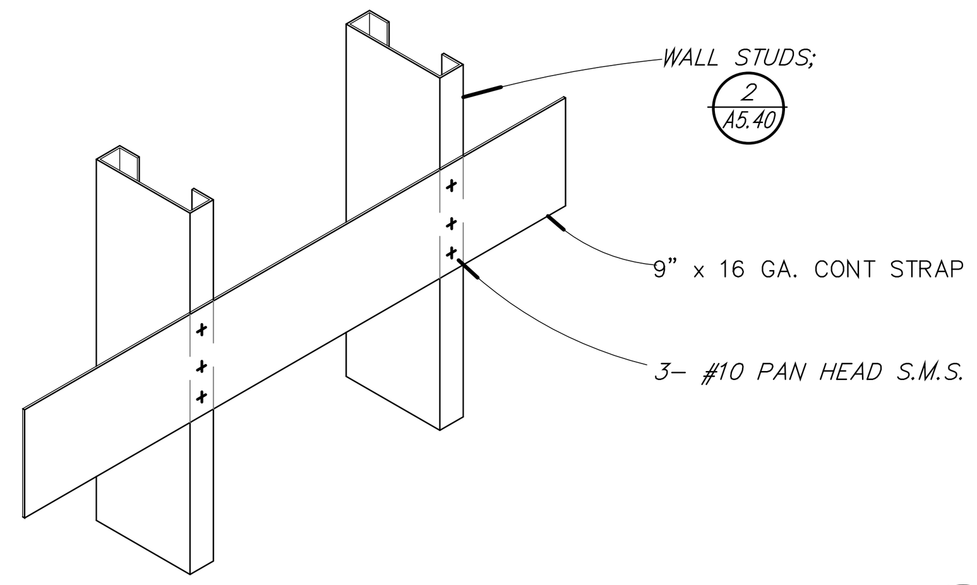
CEILING JOIST BRACING — 16/A5.40



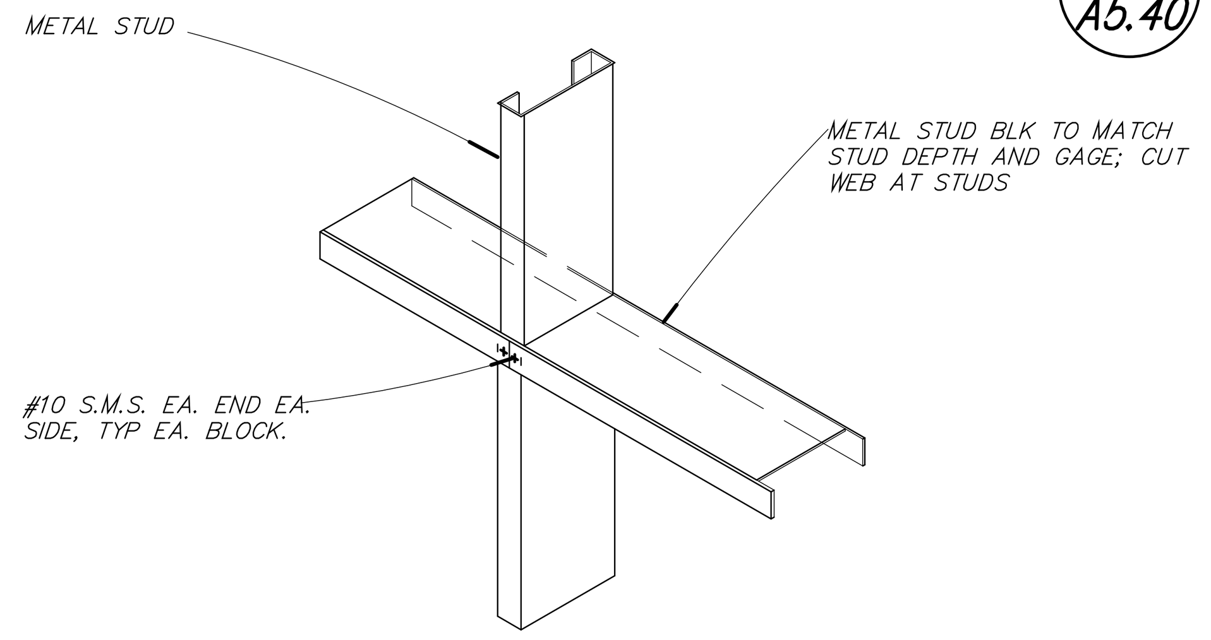
*NON-RATED NON-BRG WALLS SIMILAR - BLOCKING MAY BE FLUSH w/ BOTTOM OF (E) 4x12 ROOF JOISTS

*ROOF INSULATION, WIRE SUPPORTS, AND VINYL SHEETING NOT SHOWN FOR CLARITY

TOP TRACK AT NON-BRG RATED PARTITIONS — 17/A5.40

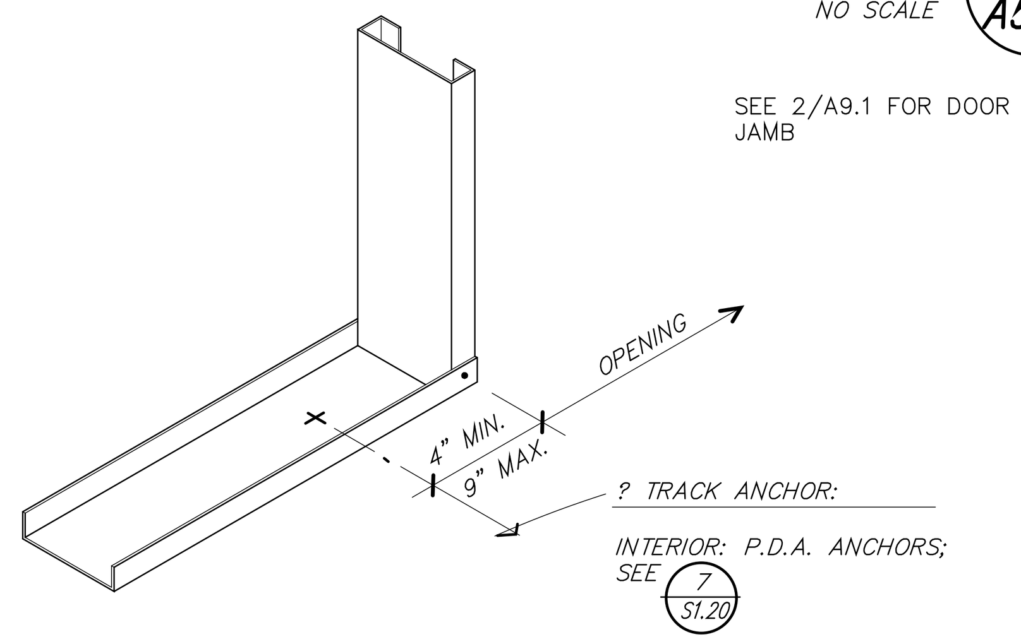


TYPICAL BACKING PLATE — 8/A5.40

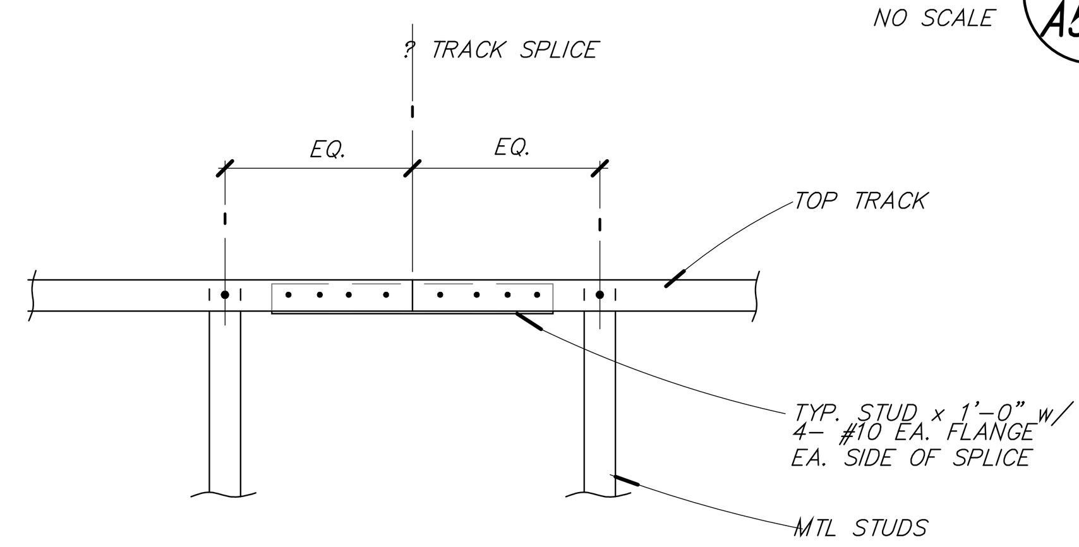


1. WHERE FULL HEIGHT SHEATHING OCCURS ON BOTH SIDES OF METAL STUD FRAMING, THE BRIDGING MAY BE OMITTED U.N.

TYPICAL WALL BRIDGING — 9/A5.40
NO SCALE



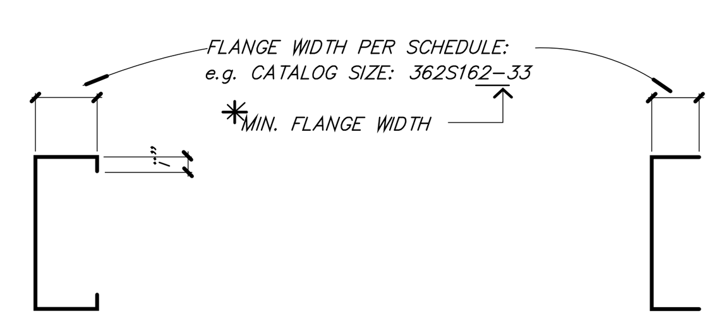
TYP BOTT. TRACK @ JAMB — 10/A5.40
NO SCALE



TYP. TOP TRACK SPLICE — 11/A5.40
NO SCALE

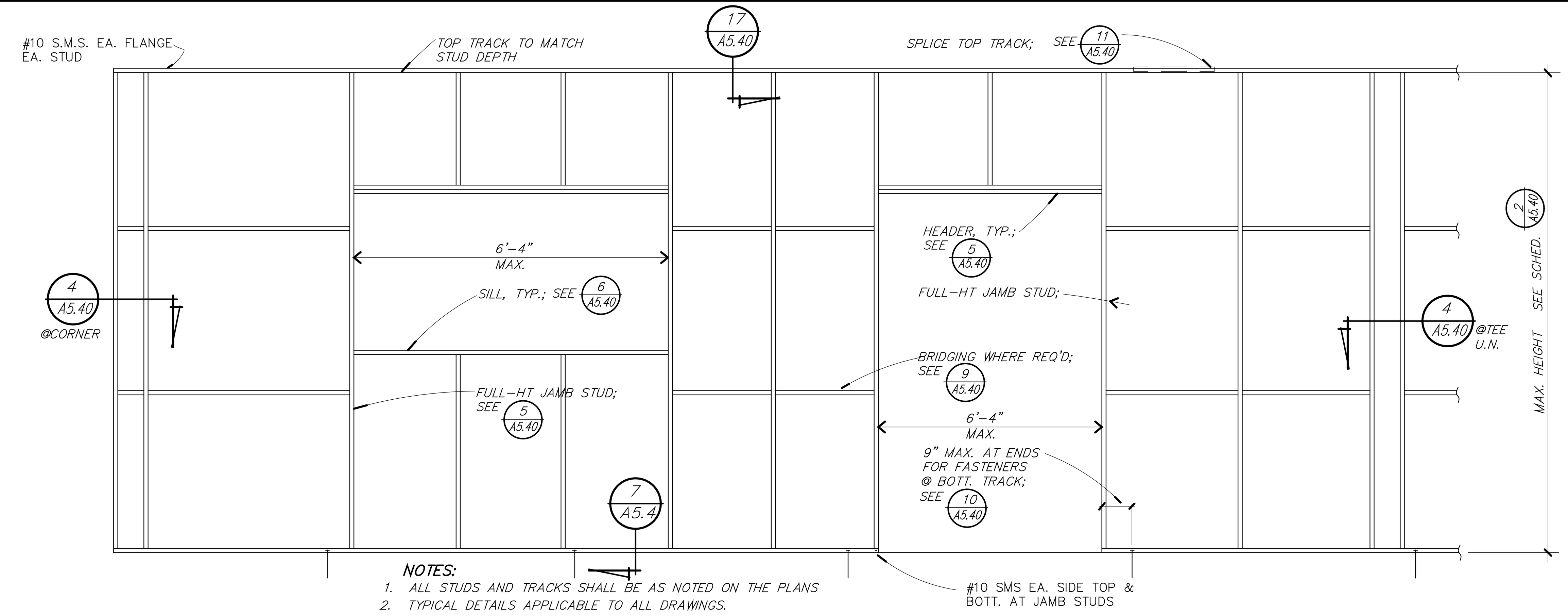
METAL CEILING JST. SCHEDULE REFERENCE STEEL STUD MANUFACTURER'S ASSOCIATION (ICC ESR 3064P)							
NOMINAL SIZE	CATALOG SIZE	MINIMUM PROPERTIES			SPACING (IN)	MAX. SPAN (IN FEET) UNSUPPORTED	MAX. SPAN (IN FEET) LATERALLY SUPPORTED @ MIDSPAN (2)
		I xx (in⁴)	S xx (in³)	Ma (in-k)			
CEILING JOISTS (1)							
4" x 20 GA.	400S162-33	0.69	0.30	5.91	16	10'-2"	13'-9"
6" x 18 GA.	600S162-43	2.32	0.77	14.46	16	12'-5"	17'-11"

*MIN. FLANGE WIDTH, TYP.



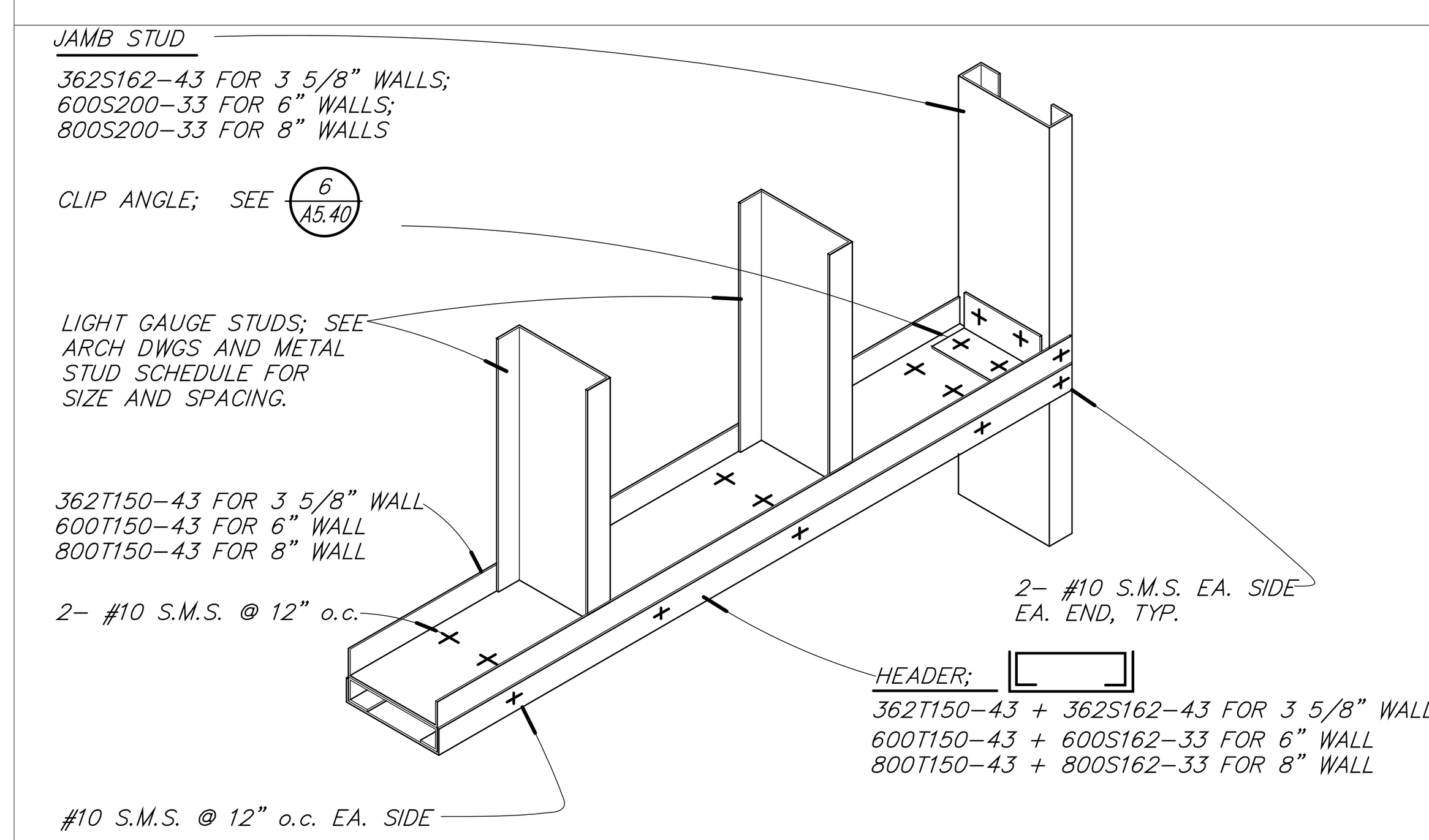
NOTES:
1. BASED ON 13 p.s.f. DEAD LOAD AND L/240 DEFLECTION.
2. SEE 16/S1.2 FOR MID-SPAN LATERAL SUPPORT DETAIL

STEEL CEILING JST. SCHED. — 12/A5.40

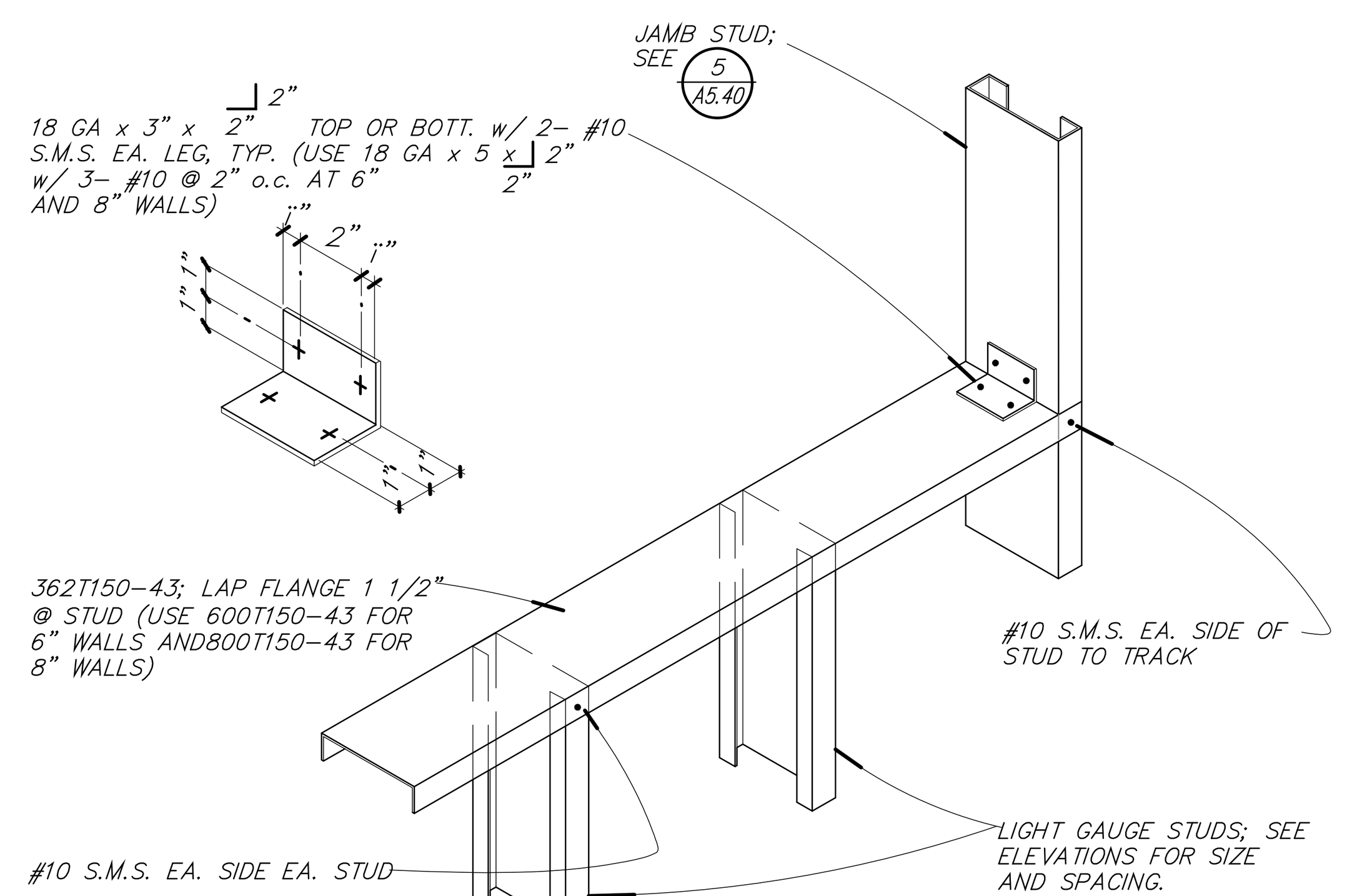


NOTES:
1. ALL STUDS AND TRACKS SHALL BE AS NOTED ON THE PLANS
2. TYPICAL DETAILS APPLICABLE TO ALL DRAWINGS.

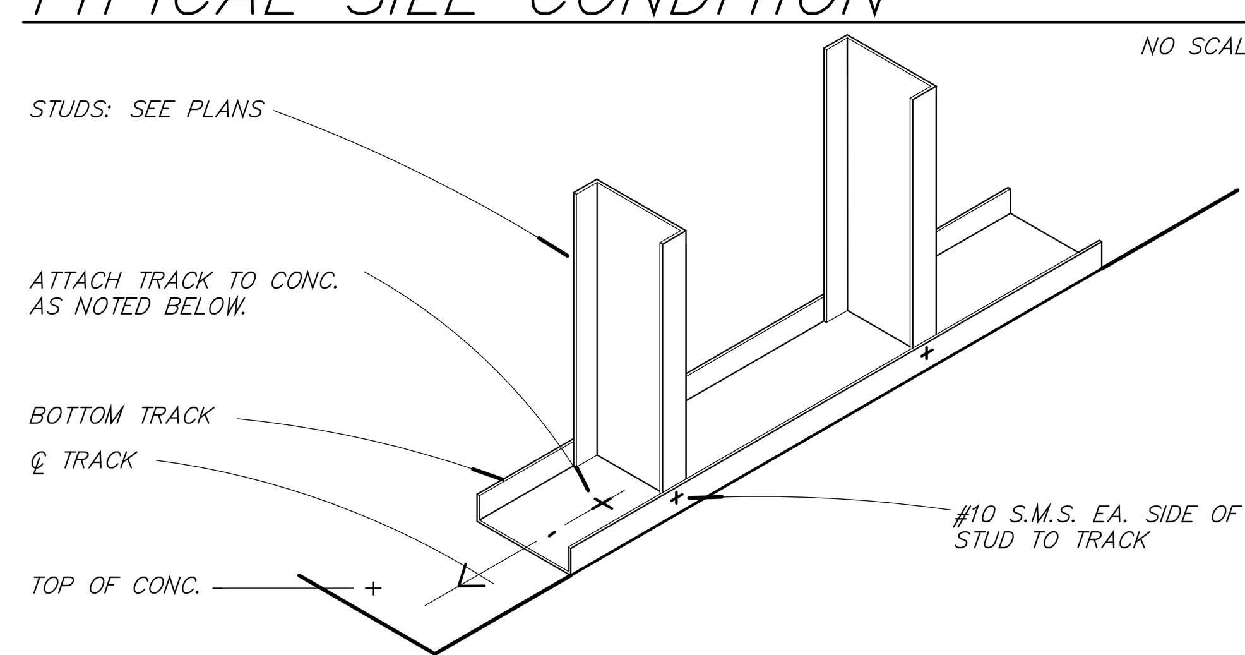
TYPICAL STUD WALL ELEVATION — 1/A5.40
NO SCALE



TYPICAL HEADER CONDITION @ INTERIOR WALLS, U.N. — 5/A5.40
NO SCALE



TYPICAL SILL CONDITION — 6/A5.40
NO SCALE

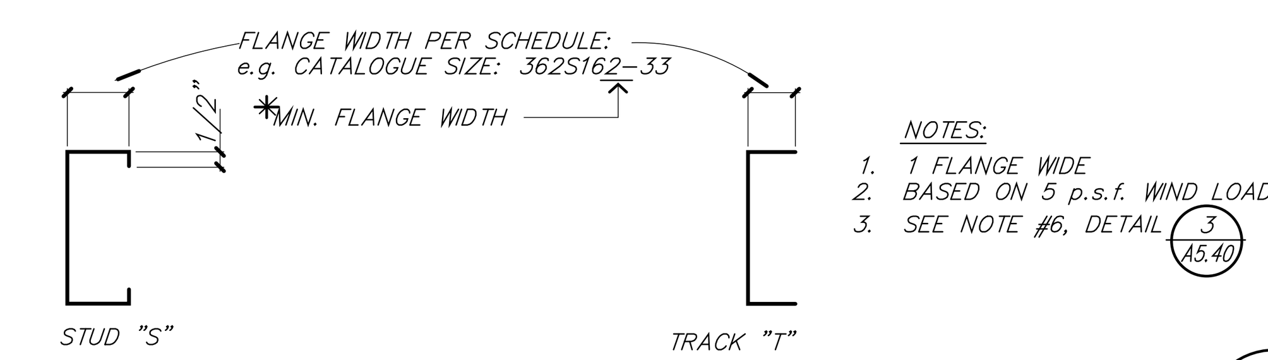


NOTES:
1. INTERIOR TRACK ANCHORS: 0.157" Ø HILTI "X-U" POWDER FASTENERS @ 2'-0" o.c. WITH 1" EMBEDMENT AND 3" MIN EDGE DISTANCE (NOTE: DO NOT USE HILTI "X-U" FASTENERS AT CURBS).
2. SEE DETAIL 8/A9.1 FOR BOTTOM TRACK ANCHORAGE AT CONCRETE CURBS.

TYPICAL WALL BOTTOM TRACK — 7/A5.40
NO SCALE

METAL STUD SCHEDULE (1) REFERENCE STEEL STUD MANUFACTURER'S ASSOCIATION (ICC-ESR 3064P)						
NOMINAL SIZE	CATALOG SIZE	MINIMUM PROPERTIES			SPACING (IN)	MAX. HEIGHT (IN FEET) FOR △= L/240 (3)
		I xx (in⁴)	S xx (in³)	Ma (in-k)		
INTERIOR STUDS (2)						
4 x 18 GA	362S162-43	0.710	0.372	7.34	16" o.c.	18'-7"
4 x 18 GA	600S162-33	1.793	0.577	9.47	16" o.c.	26'-0"
INTERIOR TRACKS						
4 x 18 GA	362T150-43	0.574	0.255	5.04	TOP TRACK BOTTOM TRACK	
6 x 18 GA	600T150-43	1.890	0.474	9.36		

*MIN. FLANGE WIDTH, TYP.

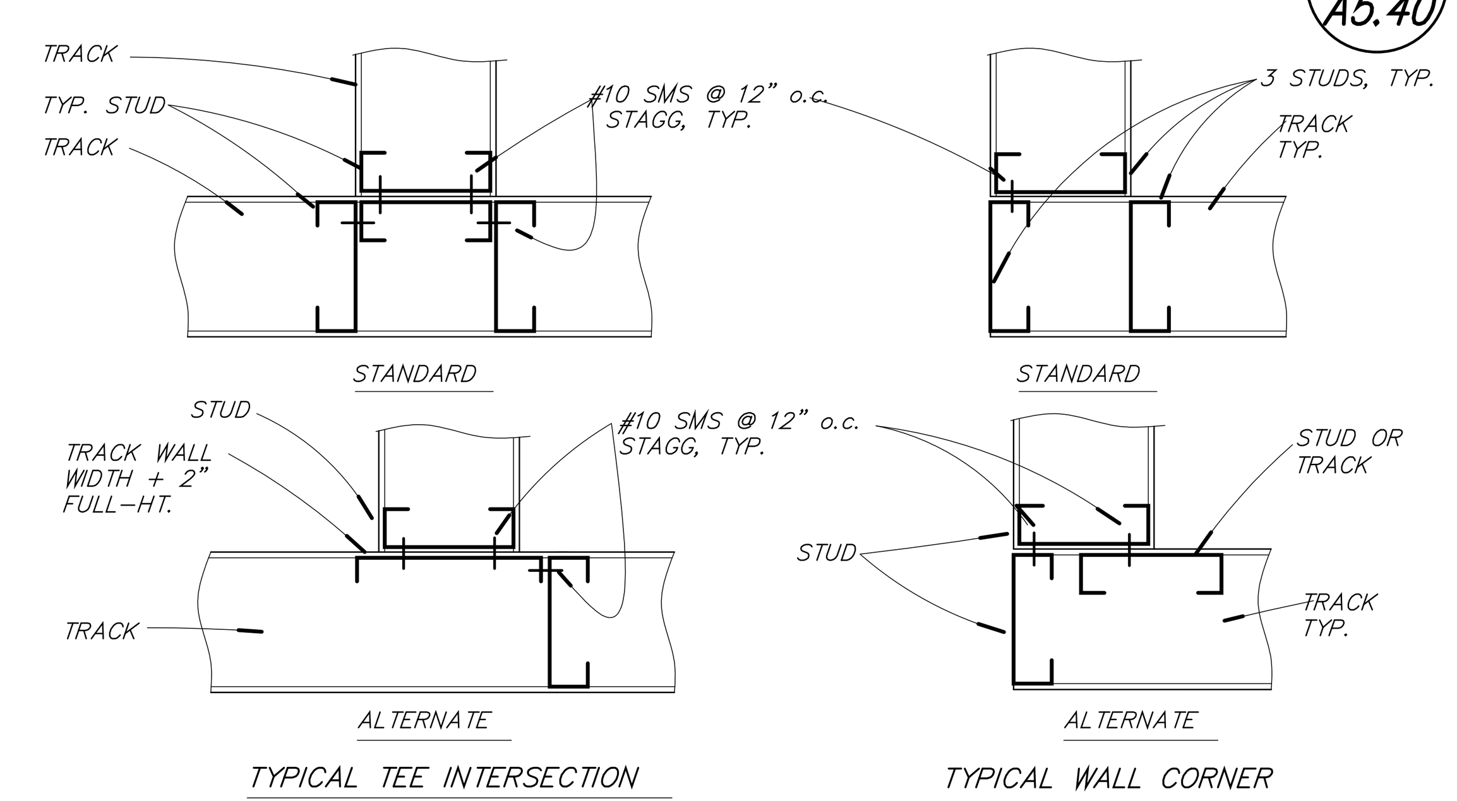


NOTES:
1. 1 FLANGE WIDE
2. BASED ON 5 p.s.f. WIND LOAD.
3. SEE NOTE #6, DETAIL 3/A5.40

STEEL STUD SCHEDULE — 2/A5.40

STEEL STUD NOTES:
1. ALL STUDS AND TRACKS SHALL BE FORMED FROM STD. COMMERCIAL STEEL ASTM A653 OR A1003 WITH A MIN. YIELD POINT OF 33,000 PSI FOR MATERIAL 18 GAUGE AND THINNER AND 50,000 PSI FOR MATERIAL 16 GUAGE AND THICKER.
2. ALL FRAMING COMPONENTS SHALL BE CUT SQUARLEY OR ON AN ANGLE (SUCH AS BRACING) TO SQUARELY FIT AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE HELD FIRMLY IN POSITION UNTIL PROPERLY FASTENED.
3. STUDS AND TRACKS SHALL BE ATTACHED WITH SELF DRILLING SCREWS AS NOTED ON THE DRAWINGS.
4. SPLICES SHALL BE USED AT ALL JOINTS IN TOP TRACK SEE 11/S1.2. SPLICES IN STUDS OR BRACES SHALL NOT BE PERMITTED.
5. PROVIDE STEEL STUDS AND TRACKS PER SCHEDULE 2/S1.2; MAX. STUD SPACING IS 16" o.c. U.N.
6. PROVIDE BRIDGING OF WALL STUDS AT 4'-0" o.c. MAXIMUM PER DETAIL 9/S1.2 THIS SHEET WHERE SHEATHING IS NOT PRESENT ON BOTH SIDES OF STUD.
7. WHERE NECESSARY, STEEL STUDS SHALL BE COORDINATED WITH GLAZING MANUF., MECHANICAL, ELECTRICAL AND ALL OTHER TRADES.
8. PROVIDE ANCHOR BOLTS / TAPCON SCREWS 4" MIN., 9" MAX. EA. SIDE OF BOTT. TRACK SPLICE.

STEEL STUD NOTES — 3/A5.40



NOTE: SEE PLANS AND ELEVATIONS FOR STUD AND TRACK SIZES

TYP. INTERSECTIONS & CORNERS — 4/A5.40
NO SCALE

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NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
LIGHT GAUGE METAL FRAMING DETAILS

SCALE: AS SHOWN

REVISIONS		
No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: JWE
Checked By: CAS

JOB NO. 19.010
DATE 2019-12-20
SHEET NUMBER **A5.40**
17 of 89

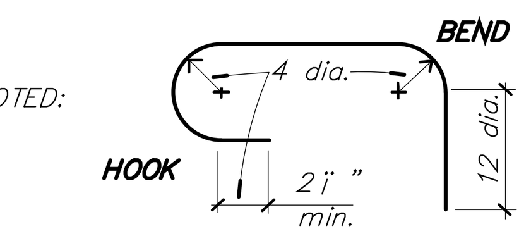
CONCRETE:
CONCRETE SHALL BE PROPORTIONED TO GIVE A 28 DAY COMPRESSIVE STRENGTH OF AT LEAST 3000 PSI FOR SLABS AND FOUNDATIONS. THE SLUMP SHALL BE THE MINIMUM CONSISTENT WITH THE CONDITION OF PLACING BUT IN GENERAL SHALL NOT EXCEED 4 INCHES. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH CHAPTER 19A OF THE CALIFORNIA BUILDING CODE, 2016 EDITION (TITLE 24).

REINFORCING BARS:
REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM STANDARD SPECIFICATION A615, GRADE 40 FOR #4 BARS AND SMALLER AND GRADE 60 FOR #5 BARS AND LARGER. REINFORCING SHALL BE PLACED IN LENGTHS AS LONG AS POSSIBLE. BARS SHALL LAP 60 DIAMETERS IN CONCRETE AND 48 DIAMETERS IN MASONRY AT SPLICES UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS, USING THE DIAMETER OF THE LARGER BAR IN CASE OF DIFFERENCE IN SIZE. SPLICES SHALL BE STAGGERED AND BARS MAY BE WIRED TOGETHER AT SPLICES. BEND STEEL AROUND CORNERS 12" MINIMUM. ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CHAPTER 19A OF THE CALIFORNIA BUILDING CODE, 2016 EDITION (TITLE 24).

BAR COVERAGE (FACE OF BAR TO FACE OF CONCRETE) SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE.

Concrete slab on grade	1" min.
Concrete surface against earth	3" min.
When poured against forms exposed to weather or earth	2" min.
All others	See details

BARS SHALL HAVE BENDS AND HOOKS AS FOLLOWS EXCEPT AS OTHERWISE SHOWN OR NOTED:



LIGHT GAGE STEEL STUDS:
LIGHT GAGE STEEL STUDS, JOISTS AND ACCESSORIES SHALL CONFORM TO AISI S200-12, NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS AND AISI S100-12 NORTH AMERICAN SPECIFICATIONS OF COLD-FORMED STEEL STRUCTURAL MEMBERS. MEMBER SIZES SHALL BE OF A DEPTH AS NOTED ON THE DRAWINGS AND OF A GAGE NECESSARY TO RESIST 25 PSF WIND LOADS FOR EXTERIOR WALLS AND 5 PSF FOR INTERIOR WALLS WITH A MAXIMUM DEFLECTION OF L/240. DO NOT USE LESS THAN 20 GAGE MEMBERS FOR INTERIOR WALLS AND 18 GAGE MEMBERS FOR EXTERIOR WALLS. FOR TYPICAL GAGE STEEL FRAMING SEE SHEET A5.40.

STRUCTURAL AND MISCELLANEOUS STEEL:
STRUCTURAL AND MISCELLANEOUS STEEL SHAPES AND PLATES SHALL CONFORM TO ASTM A-36. STRUCTURAL STEEL TUBES SHALL CONFORM TO ASTM A500, GRADE B. STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53, GRADE B. FABRICATION, ERECTION, WELDING AND PAINTING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS. ALL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.

WEDGE ANCHORS (IN CONCRETE):
ALL CONCRETE ANCHOR BOLTS OF THE EXPANSION TYPE (LOADED IN EITHER PULLOUT OR SHEAR), SHALL BE PROOF TESTED IN TENSION TO TWICE THE ALLOWABLE TENSION LOAD. WEDGE ANCHORS TO BE HILTI KWIK-BOLT TZ PER ICBO REPORT NO. ESR-1917 RE-ISSUED 05/2019 OR EQUAL.

Minimum Proof Load Tests Values and Embedments

Size	Direct Pull-Out Tension	Torque Wrench-Torque	Embedments
3/8" dia.	1800#	25 ft-#	2"
1/2" dia.	3800#	40 ft-#	3"
5/8"dia.	5300#	60 ft-#	4"

SPECIAL INSPECTIONS:
THE FOLLOWING SPECIAL INSPECTIONS, AS REQUIRED BY SECTION 1705A OF THE CALIFORNIA BUILDING CODE, 2016 EDITION, SHALL BE PROVIDED DURING CONSTRUCTION ON THE FOLLOWING TYPES OF WORK. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR SUCH TESTS, INSPECTIONS AND APPROVALS WITH AN INDEPENDENT TESTING LABORATORY OR ENTITY ACCEPTABLE TO THE OWNER. THE OWNER SHALL BEAR COSTS OF THE TEST AND/OR INSPECTIONS.

A. Concrete, per Section 1705A.3 and Table 1705A.3;
B. Reinforcing Steel, per Section 1705A.3 and Table 1705A.3;
C. Postinstalled anchors, per Section 1705A.3 and Table 1705A.3

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CRAIG ALLAN SCOTT
C-14508
FEB 28, 2021
RENEWAL DATE
STATE OF CALIFORNIA

NEVADA JOINT UNION HIGH SCHOOL DISTRICT
NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
CONCRETE NOTES
SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
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Drawn By: JWE
Checked By: CAS

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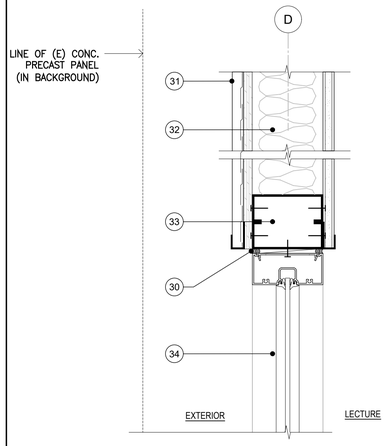
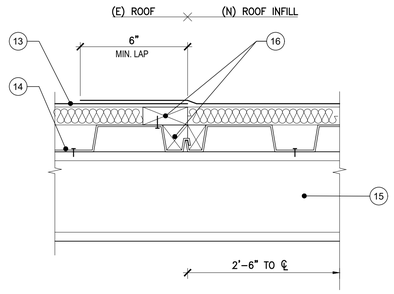
SHEET NUMBER **A5.41**
18 of 89



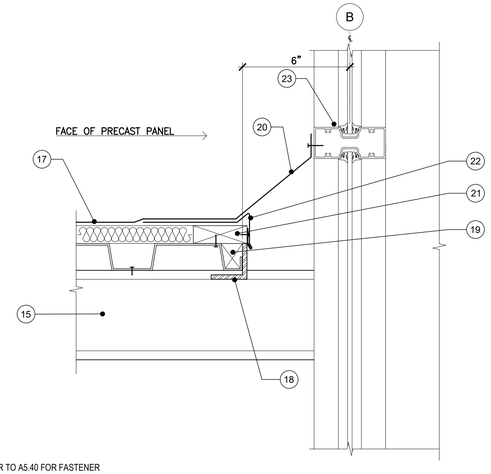
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

SECT. ON EXT. WDW. (W2) @ GRID 'D' | 3" = 1'-0" | 9



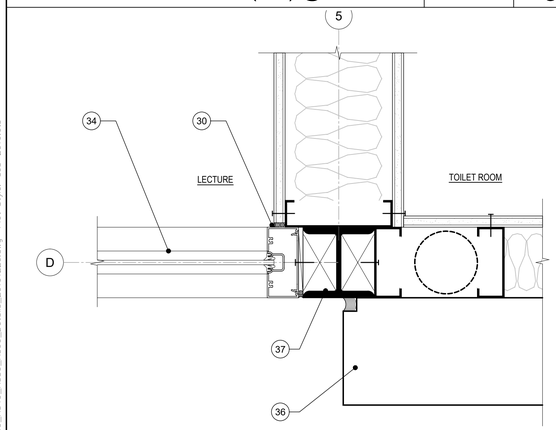
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

(E) C / W ROOF EXTENSION | 3" = 1'-0" | 6



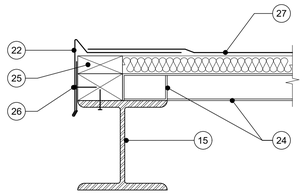
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

ROOF INFILL @ BUILDING | 3" = 1'-0" | 3



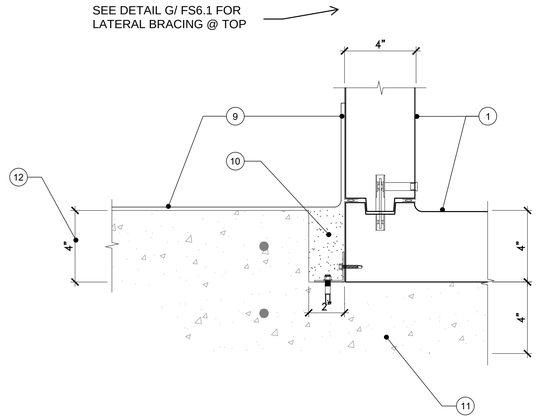
REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

PLAN ON EXT. WDW. @ GRID '5' & 'D' | 3" = 1'-0" | 8

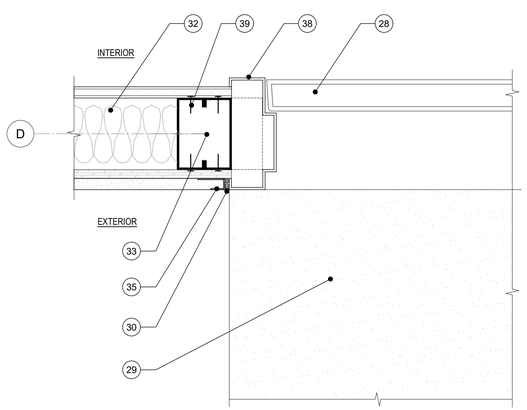


REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

ROOF INFILL - EAVE DETAILS | 3" = 1'-0" | 5

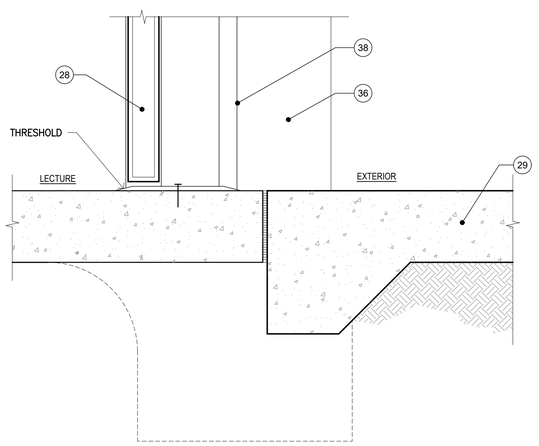


WALL PANEL @ RECESSED FLOOR SLAB | 3" = 1'-0" | 2

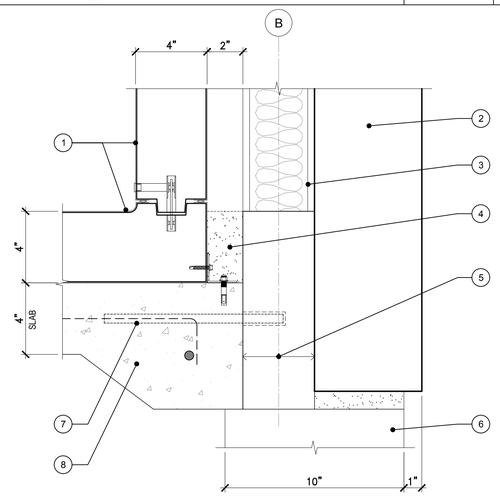


REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

EXT. METAL DOOR (HM-1) @ GRID 'D' | 3" = 1'-0" | 7



SECT. @ (N) SIDEWALK SLAB/EXT. METAL DOOR (HM-1) | 3" = 1'-0" | 4



WALL PANELS @ (E) EXTERIOR WALL | 3" = 1'-0" | 1

KEYNOTES

1 WALK-IN REFRIGERATOR WALL & FLOOR PANELS. SEE FOOD SERVICES DWG.

2 (E) PRECAST CONC. PANEL

3 (E) WF COL. BEYOND @ GRID #3.

4 GROUT INFILL BY GC, SEE FS DWG.

5 SAW-CUT, RETAIN (E) SLAB.

6 CONT. PERIMETER FOOTING.

7 #4 DOWELS @ 18" O.C.

8 (N) 4" THK REINF. DEPRESSED SLAB @ WALK-IN REFRIGERATOR.

9 EPOXY FLOORING WITH TROWELLED COVED BASE

10 2" GROUT INFILL AFTER PANEL INSTALLATION.

11 (N) 4" THK REINF. DEPRESSED FLOOR SLAB.

12 4" THK REINF. REPLACEMENT SLAB, SEE DEMO PLAN.

13 (E) SINGLE - PLY ROOF OVER 1" RIGID INSULATION.

14 (E) 1 1/2" STEEL DECK.

15 (E) 5 WF 16 ROOF FRAMING - PAINT.

16 (E) WOOD BLKS TO REMAIN.

17 ALL NEW ROOF INFILL TO MATCH (E) INSULATION ANGLE

18 2 x 2 x 1/4" CLOSURE

19 CONT. WOOD BLK.

20 14 GA. G.I. FLASHING.

21 CONT. CLEAT NAILED TO WOOD BLKG'S.

22 PAINTED GRAVEL STOP.

23 ALUM. STOREFRONT ENTRY ASSEMBLY.

24 1 1/2" METAL ROOF DECK WITH METAL CLOSURE PANELS & 1" RIGID INSULATION. METAL DECK TO MATCH (E) ON SITE.

25 CONT. WOOD BLKG.

26 CONT. G.I. CLEATS NAILED TO 2 x 3 BLKS.

27 SINGLE - PLY ROOFING TO MATCH (E) ON ROOF.

28 (N) DOOR HM ENTRY ASSEMBLY SEE DOOR SCHEDULE

29 4" THK. REINFORCED CONCRETE SIDEWALK.

30 BACKER ROD AND SEALANT, TYP.

31 3 - COAT CEMENT PLASTER FINISH.

32 R - 13 THERMAL INSULATION.

33 (N) WALL - 2 x 6 STUD @ 16" O.C. WITH PLYWD. SHTG. / CEMENT PLASTER AND 5/8" GYP. BD.

34 EXTERIOR WINDOW ASSEMBLY. SEE WINDOW SCHEDULE

35 (N) 1/4" SHIM, TYP.

36 (E) CONC. PRECAST PANEL.

37 (E) MAIN EXPOSED STEEL COLUMN.

38 (N) HM DOOR FRAME, SEE DOOR SCHEDULE.

39 2 - #10 SMS EACH SIDE.

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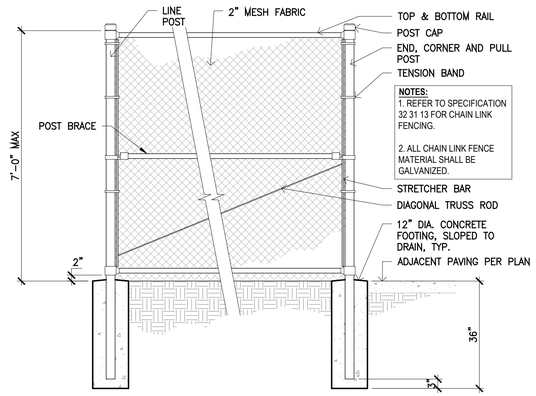
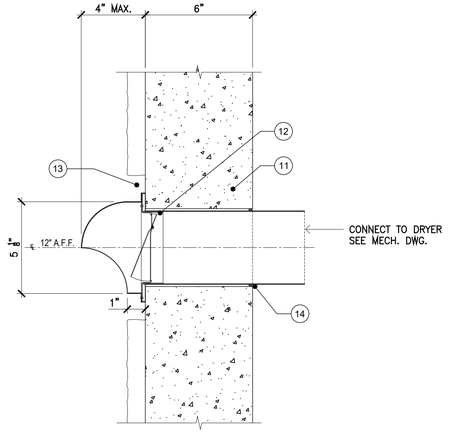
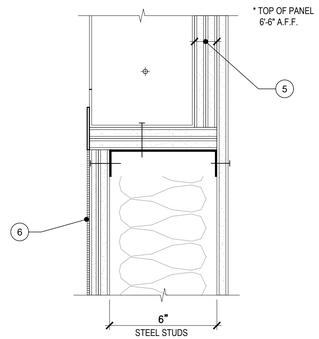


TYPICAL CHAIN LINK FENCE (7'-0" HIGH) | 1/2" = 1'-0" | 7



DRYER VENT DETAIL | 3" = 1'-0" | 5



REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

DETAIL @ SILL, HEAD & JAMB SIM. E/PANEL IN 1-HR WALL | 3" = 1'-0" | 3

KEYNOTES

1 4" FURRED WALL - SEE WALL SCHEDULE.

2 HM DOOR/FRAME ASSEMBLY. SEE WALL SCHEDULE

3 1-HOUR FIRE BARRIER WALL. SEE WALL SCHEDULE

4 ADDITIONAL 1/2" GYPB'D ON STUDENT KITCHEN SIDE TO ACCOMMODATE FLUSH-MOUNTED E/PANELS.

5 FLUSH MOUNTED ELECTRICAL PANELS WITH 2-LAYERS OF LAMINATED 5/8" TYPE "X" GYP'BD SURROUND, SIMILAR TO UL #U150. SEE ALSO 1/ E4.1 FOR PANEL MOUNTING.

6 FRP WAINSCOT-SEE INTERIOR ELEVATION AND SPECIFICATION 06 64 00.

7 6"x16 GA BACKING PLATE PER 8/A5.4 FOR E/BOX MOUNTING. UL LISTED METALLIC OR NON-METALLIC OUTLET BOX-SEE ELECT. FIRE STOP PUTTY AT POWER CABLE.

8 LARSEN'S SEMI-RECESSED FIRE-BLANKET CABINETS, FS-B2409-R7 OR EQUAL ATTACHEMENT PER MANUFACTURER'S RECOMMENDATION. PROVIDE TYPE "K" IN KITCHENS AND 2A-10BC IN LECTURE AREA.

9 6" STUDS @ 16" O.C. FRAMED SOFFIT WALL-SEE A5.4

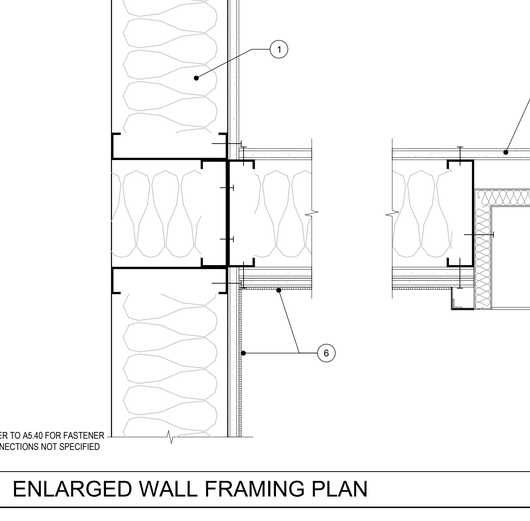
10 12 GA TV MONITOR MOUNT-ATTACH TO STUDS OR BACKING PLATE WITH 2-1/4" Ø TEX SCREWS-4 TOTAL.

11 (E) 6" CONC. TILT-UP PANEL.

12 4" Ø ALUMINUM DRYER VENT, SEIHO MODEL #SFB-P/SFB-PH WITH DAMPER OR EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTION. X-RAY AND CODE DRILL (E) CONC. PANEL TO AVOID REINFORCEMENT.

13 REMOVE (E) "PEBBLE-FINISH" TO FACILITATE VENT INSTALLATION.

14 PERIMETER SEALANT AND CAULK.



NOTE: SEE DETAIL 7/A5.60 FOR DATA THAT NOT SHOWN HERE

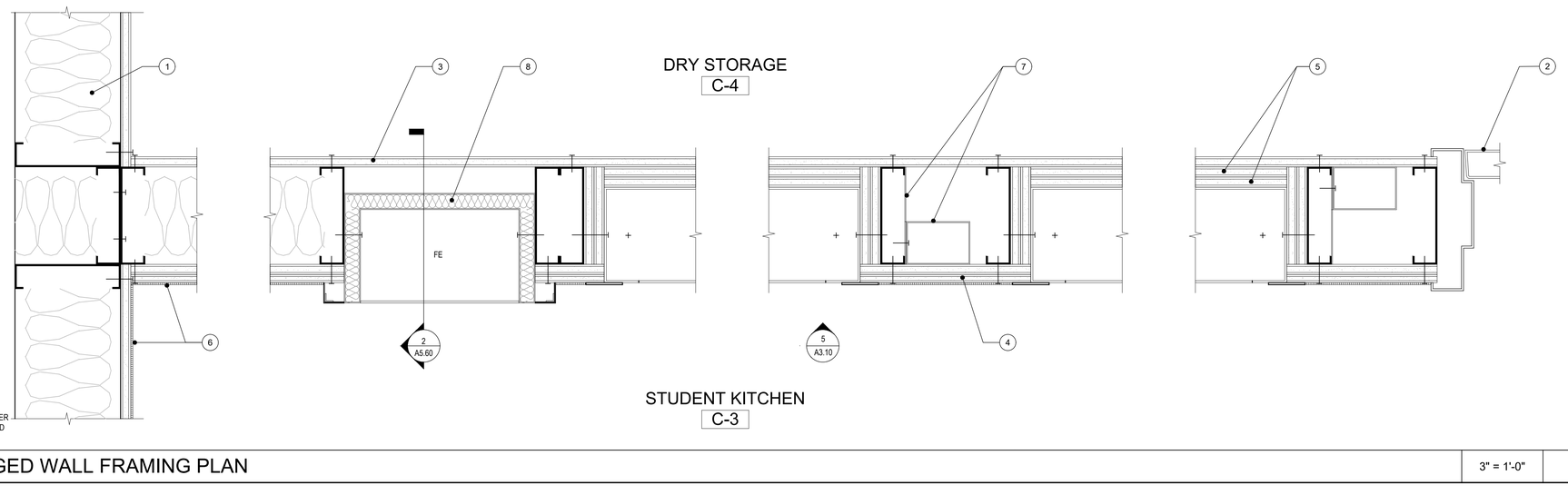
CHAIN LINK FENCE GATE DETAIL | 1/2" = 1'-0" | 6

NOTE:
WHERE REQUIRED, PROVIDE 6 x 16 GA BACKING PLATE, PER 8/A5.4 FOR MONITOR MOUNT.

TV MOUNT BRACKET | 1" = 1'-0" | 4

REFER TO A5.40 FOR FASTENER CONNECTIONS NOT SPECIFIED

SEMI - RECESSED FE CABINET | 1 1/2" = 1'-0" | 2



ENLARGED WALL FRAMING PLAN | 3" = 1'-0" | 1

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Professional Seals

LICENSED ARCHITECT
CRAIG ALLAN SCOTT
C-14508
FEB 28, 2021
RENEWAL DATE
STATE OF CALIFORNIA

NEVADA JOINT UNION HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
DETAILS

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: JWE

Checked By: CAS

JOB NO. 19.010

DATE 2019-12-20

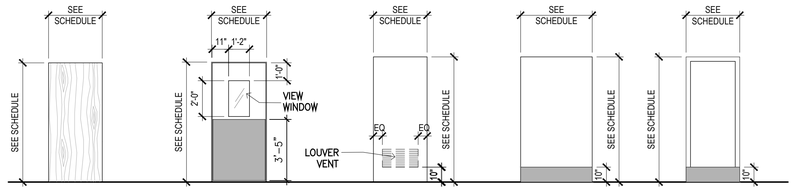
SHEET NUMBER **A5.60**

20 of 89

DOOR SCHEDULE

DOOR NUMBER	LOCATION	SIZE				RATING	DOOR		FRAME		GLAZING		DETAILS			HARDWARE SCHEDULE						REMARKS
		LEAF	WIDTH	HEIGHT	THICKNESS		TYPE	FINISH	TYPE	FINISH	Y/N	S/D	HEAD/ JAMB	THRESHOLD/ SILL	SIGNAGE	A	B	C	D	E	F	
1	LECTURE C1	1	4'–0"	7'–0"	1 3/4"	N/A	D	PT	HM1	PT	N					1	1	1	1	1	1, 2, 4	
2	DRY STORAGE C4	1	3'–0"	7'–0"	1 3/4"	45 MIN.	D	PT	HM2	PT	N					3	1	1	1	–	1, 3, 5	
3	WATER HEATER CLOSET C10	1	3'–0"	7'–0"	1 3/4"	N/A	C	PT	HM1	PT	N					3	1	–	2	1	2	
4	COLD STORAGE C5	1	3'–6"	6'–8"	–	N/A	B	N/A	HM2	PT	Y					–	–	–	–	–	–	REFRIGERATOR DOOR w/ VISION PANEL – BY FOOD SERVICE
5	COLD STORAGE C5	1	3'–6"	6'–8"	–	N/A	B	N/A	HM2	PT	Y					–	–	–	–	–	–	REFRIGERATOR DOOR w/ VISION PANEL – BY FOOD SERVICE
6	STORE C6	1	3'–0"	7'–0"	1 3/4"	45 MIN.	D	PT	HM2	PT	N					3	1	1	1	–	1, 3, 5	
7	STORE C6	1	3'–0"	7'–0"	1 3/4"	N/A	E	PT	HM1	PT	Y					1	*	*	–	1	*	* BY STOREFRONT MANUFACTURER
8	CUSTODIAN C8	1	3'–0"	7'–0"	1 3/4"	45 MIN.	A	PT	HM2	PT	N					3	1	1	1	–	1, 3, 5	
9	TOILET ROOM C9	1	3'–0"	7'–0"	1 3/4"	45 MIN.	A	PT	HM2	PT	N					2	1	1	1	–	1, 3, 5	

DOOR TYPES



A — INTERIOR SOLID CORE WOOD DOOR, RATED WHERE INDICATED

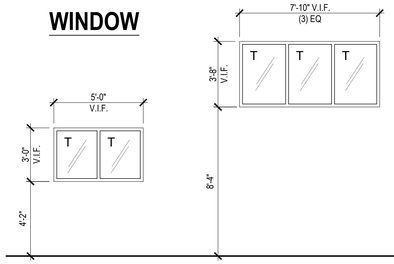
B — REFRIGERATOR (COLD STORAGE) DOOR w/ VISION PANEL

C — EXTERIOR MTL DOOR

D — EXTERIOR MTL DOOR

E — STOREFRONT DOOR

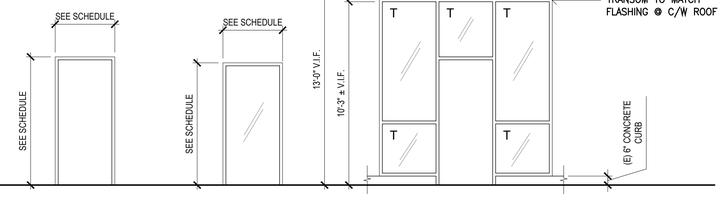
WINDOW



W1
DOUBLE FIXED INTERIOR WINDOW @ STORE C6, UL 9 - 45 MINUTE FRR TEMPERED GLASS

W2
TRIPLE FIXED EXTERIOR WINDOW @ LECTURE/DINING C1 w/ UL 9 - 45 MINUTE FRR TEMPERED GLASS

DOOR FRAMES



HM-1
EXTERIOR HOLLOW METAL FRAME

HM-2
INTERIOR HOLLOW METAL FRAME RATED WHERE INDICATED

SF-1
STOREFRONT WINDOWS INSULATED GLAZING w/ UL 9 - 45 MINUTE TEMPERED GLASS

DOOR & LITE SCHEDULE ABBREVIATIONS

ALUM	ALUMINUM
ANOD	ANODIZED
D	DBL GLAZED
FF	FACTORY FINISH
GL	GLASS DOOR
HC	HOLLOW CORE
HM	HOLLOW METAL
HR(S)	HOUR(S)
KD	KNOCK-DOWN
MIN	MINUTES
MTL	METAL
N/A	NOT APPLICABLE
N	NO
PLAM	PLASTIC LAMINATE
PG	PAINT GRADE
PT	PAINT, SEMI-GLOSS ENAMEL
RTG	RATING
SC	SOLID CORE
SM	SOLID METAL
SS	STAINLESS STEEL
S	SINGLE GLAZED
ST	STAIN, WITH CLEAR SATIN FINISH
T	TEMPERED
WD	WOOD
Y	YES

DOOR HARDWARE TYPES

The Hardware Schedule on the drawings is coded according to the number prefix for each item listed under the following headings:

A. Locks/Latchsets (All knobs are lever-type: Schlage, Rhodes design)
#1 SCHLAGE, Multi-Technology Reader: MTK15
#2 SCHLAGE, Faculty Restroom Lock: ND85PD
#3 SCHLAGE, Storeroom Lock: ND80PD

B. Hinges
#1 HAGER, BB1191 4.5 x 4.5 26D NRP Stainless

C. Closers
#1 LCN, 4111-689 X SNB

D. Stops
#1 TRIMCO, # 1270 WV-626
#2 ROCKWOOD, #461L KICK DOWN DOOR STOP

E. Thresholds
#1 PEMKO, 2005AV

F. Miscellaneous
#1 TRIMCO, Kick Plate, K0050 10 x 2" LDW 630
#2 PEMKO, Weather-strip, 319
#3 PEMKO, Smoke Seal, HSS2000 xS88
#4 PEMKO, Door Sweep, 315CN
#5 GLYNN-JOHNSO, Mute GJ-64

DOOR SCHEDULE NOTES

1. OPERABLE HARDWARE MUST BE INSTALLED NO HIGHER THAN 44" A.F.F., NOR LOWER THAN 34" A. F. F.
2. HARDWARE MUST BE OPERABLE WITH ONE HAND, NOT REQUIRING TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 LBS MAXIMUM.
3. SWINGING DOOR AND GATE SURFACES WITHIN 10 INCHES OF THE FINISHED FLOOR OR GROUND MEASURED VERTICALLY SHALL HAVE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR OR GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS IN THESE SURFACES SHALL BE WITHIN 1/16 INCH OF THE SAME PLANE AS THE OTHER AND BE FREE OF SHARP OR ABRASIVE EDGES. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CAPPED.
4. CLOSERS MUST BE ADJUSTED SO THAT, FROM AN OPEN POSITION OF 90° DOOR WILL TAKE 5 SECONDS MINIMUM TO TRAVEL TO 12° FROM LATCH.
5. THRESHOLD HEIGHT MUST NOT EXCEED 1/2". WHERE THRESHOLD HEIGHT EXCEEDS 1/4", EDGE MUST BE BEVELED WITH A SLOPE NOT STEEPER THAN 1:2.
6. EXIT DOORS SHALL BE OPEN-ABLE FROM THE INSIDE WITHOUT USING A KEY, SPECIAL KNOWLEDGE OR EFFORT.

ROOM FINISH KEY/MATERIALS

	FLOORING
EFC	09 96 56 – EPOXY FLOOR COVERING COLOR: SELECTED FROM STANDARD PALETTE
	BASE
EFC	09 96 56 – EPOXY FLOOR COVERING – 6" COVED BASE COLOR: SELECTED FROM STANDARD PALETTE

	PAINT - *ALL PAINTED SURFACES TO BE WASHABLE*
P1	09 91 00 – WALL PAINT, BASE COLOR, EGG SHELL. COLOR: SELECTED FROM STANDARD PALETTE
P2	09 91 00 – WALL PAINT, ACCENT COLOR, EGG SHEEL COLOR: SELECTED FROM STANDARD PALETTE
P3	DOORS, HM FRAMES ACCENT COLOR, SEMI-GLOSS. COLOR: SELECTED FROM STANDARD PALETTE
	CEILING
CL 1	GYP. BOARD – TAPED, TEXTURED AND PAINTED 09 91 00–WALL PAINT–WASHABLE WALL
CL 2	SUSPENDED ACOUSTIC TILES
	WALLS
W1	STAINLESS STEEL WAINSCOT
W2	FIBERGLASS REINFORCED PANEL
W3	GYP. BOARD – TAPED, TEXTURED & PAINTED

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL / WAINSCOT				CEILING	CEILING HEIGHT	NOTES
				NORTH	EAST	SOUTH	WEST			
C1	LECTURE	EFC	EFC	W3	W3/W1	–	W3/W1	OPEN	–	
C2	WARE WASH	EFC	EFC	–	–	W3/W1	–	OPEN	–	
C3	STUDENT KITCHEN	EFC	EFC	W3/W1	W1	W3/W1	W3/W1	–	8'–9"	
C4	DRY STORAGE	EFC	EFC	W3	W3	W3	W3	CL 2	9'–0"	
C5	COLD STORAGE	–	–	–	–	–	–	–	–	SEE FOOD SERVICES DRAWING
C6	STORE	EFC	EFC	W3	W3	W3	W3/W1	CL 2	–	
C7	DEMONSTRATION KITCHEN	EFC	EFC	W3/W1	W3/W1	W3/W1	W3/W1	OPEN	8'–9"	
C8	CUSTODIAN	EFC	EFC	W2	W2	W2	W2	CL 1	8'–0"	
C9	TOILET ROOM	EFC	EFC	W2	W2	W2	W2	CL 1	8'–0"	

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DATE: 01/21/20

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LICENSED ARCHITECT
CRAIG ALLAN SCOTT
C-14508
FEB 28, 2021
RENEWAL DATE
STATE OF CALIFORNIA

NEVADA JOINT UNION HIGH SCHOOL DISTRICT
NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
DOOR & FINISH SCHEDULE
SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: DK
Checked By: CAS

JOB NO. 19.010
DATE 2019-12-20
SHEET NUMBER **A6.10**
21 of 89

Printed Scale = 1:1
12/20/2019 11:52:15 AM V:\2019 PROJECT FILES\19.010 NJUHSD Nevada Union HS Culinary Arts\5 CD\1 CD Drawings\19010_A610_Door & Finish Schedule_20191220.dwg Plot Style: dca-2016.ctb

FIRE SPRINKLER MATERIAL SCHEDULE

SPECIFICATION SECTION	DESCRIPTION	MODEL NO.	CSFM LISTING	MANUFACTURER
210500				
2.2	BURIED PIPE			
	IN-BUILDING RISER	SERIES IBR	N/A	AMES
2.3	ABOVE GROUND PIPING			
	PIPE:			
	2½"-6" SCHED. 10	N/A	N/A	WHEATLAND
	1" – 2" SCHED. 40	N/A	N/A	WHEATLAND
	FITTINGS:			
	CAST IRON THREADED	N/A	N/A	ANVIL
	GROOVED	DN	N/A	VICTAULIC
2.4	PIPE HANGERS AND SUPPORTS			TOLCO
	----	----	----	
210523				
2.3	BUTTERFLY VALVES			
	GROOVED BUTTERFLY VALVE WITH SUPERVISORY TAMPER SWITCH	G300	7770-1440:0101	KENNEDY
2.4	CHECK VALVES			
	4" GROOVED CHECK VALVE	M-2	N/A	VIKING
2.6	GLOBE OR ANGLE VALVES			
	GLOBE VALVE	125SUL	N/A	UNITED BRASS
	ANGLE VALVE	126SUL	N/A	UNITED BRASS
211300				
1.6	STRUCTURAL DESIGN AND SEISMIC REQUIREMENTS			
	IN-LINE SWAY BRACE ATTACHMENT	FIG. 4LA	N/A	TOLCO
	UNIVERSAL SWIVEL SWAY BRACE	FIG. 980	N/A	TOLCO
	SWAY BRACE ATTACHMENT	FIG. 1001	N/A	TOLCO
	SURGE RESTRAINER	FIG. 25	N/A	TOLCO
2.2	SPRINKLERS			
	MICROFAST QR SSU	VK300	N/A	VIKING
	MICROFAST QR SSP	VK302	N/A	VIKING
2.3	PIPING SPECIALTIES			
	10" ELECTRIC BELL	PBA-AC	7135-0328:0119	POTTER
	FLOW SWITCH	VSR-F	7770-0328:0001	POTTER
	CONTROL VALVE SUPERVISORY SWITCH	PCVS-2	7770-0328:0010	POTTER
	SPECIALTY VALVES			
	----	----	----	----

INTEGRATED FIRE SYSTEMS, INC.
MONITORING • TESTING • INSPECTIONS
269 TECHNOLOGY WAY #5, ROCKLIN, CA 95765
530-637-5322 • 530-637-5299
LICENSE # 908904 C7, C10, C16

8-30-19
Nevada Union
High School
11761 Ridge Rd,
Grass Valley, CA

To whom it may concern,
Integrated Fire Systems conducted a flow test on a fire hydrant near the proposed construction area. The flow test was conducted using a 2" pilotless nozzle and a hose monster. An adjacent hydrant was used to get a residual pressure reading while flowing.

Hydrant flowing water = 1023 GPM
Hydrant residual while flowing = 81 psi
Static 145 psi

Please feel free to contact me if you have any questions

Steve Toms
530-305-1217

OVERHEAD FIRE SPRINKLER SYSTEM NOTES

1. NFPA 13 (2016) SEC. 10.10.2.1 UNDERGROUND MAINS AND LEAD-IN CONNECTIONS TO SYSTEM RISERS SHALL BE COMPLETELY FLUSHED BEFORE CONNECTION IS MADE TO THE OVERHEAD FIRE SPRINKLER PIPING SYSTEM. (WITNESSED BY THE INSPECTOR OF RECORD)
2. NFPA 13 (2016) SEC. 9.3.4.2 CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING EXTENDING THROUGH WALLS, FLOORS, PLATFORMS AND FOUNDATIONS INCLUDING DRAINS SUCH THAT THE DIAMETER OF THE HOLES IS 2 INCHES LARGER THAN THE PIPE FOR 1 INCH TO 3 ½ INCH NOMINAL AND 4 INCHES LARGER THAN THE PIPE FOR PIPE 4 INCH NOMINAL AND LARGER.
3. NFPA 13 (2016) SEC. 25.2.1 ALL INTERIOR PIPING AND APPURTENANCES SUBJECTED TO SYSTEM WORKING PRESSURE SHALL BE HYDROSTATICALLY TESTED AT 200 PSI AND SHALL MAINTAIN THAT PRESSURE WITHOUT LOSS FOR 2 HOURS. (WITNESSED BY THE DSA PROJECT INSPECTOR)
4. NFPA 13 (2016) SEC. 6.2.9.5 PROVIDE SPARE SPRINKLER HEAD CABINET, WRENCH, AND NO FEWER THAN A TOTAL OF 6 SPARE SPRINKLER HEADS MATCHING THE TYPES AND TEMPERATURE RATINGS IN EACH PROTECTED BUILDING FOR SYSTEMS WITH LESS THAN 300 SPRINKLERS AND 12 SPARE SPRINKLERS FOR SYSTEMS WITH 300-1000 SPRINKLERS.
5. NFPA 13 (2016) SEC. 9.3.6 PROVIDE RESTRAINT OF BRANCH LINES BY USING ONE OF THE FOLLOWING:
   A. A LISTED SWAY BRACE ASSEMBLY
   B. A WRAPAROUND U-HOOK SATISFYING THE REQUIREMENTS OF 9.3.5.5.11.
   C. NO. 12, 440-LB WIRE INSTALLED AT LEAST 45 DEGREES FROM THE VERTICAL PANE AND ANCHORED ON BOTH SIDE OF THE PIPE.
   D. A HANGER NO LESS THAN 45 DEGREES FROM VERTICAL INSTALLED WITHIN 6 INCHES OF THE VERTICAL HANGER ARRANGED FOR RESTRAINT AGAINST UPWARD MOVEMENT, PROVIDED IT IS UTILIZED SUCH THAT L/R DOES NOT EXCEED 400, WHERE THE ROD SHALL EXTEND TO THE PIPE OR HAVE A SURGE CLIP INSTALLED.
6. NFPA 72 (2016) SEC. 17.12 SPRINKLER FLOW SWITCHES SHALL BE TESTED BY IOR TO CONFIRM THAT WHEN THE INSPECTORS' TEST VALVE IS ACTIVATED AND ALARM WILL SOUND IN NO LESS THAN 20 SECONDS AND NOT MORE THAN 90 SECONDS.
7. CBC (2016) SEC. 903.4.1 MAIN FIRE ALARM PANEL MONITORING AND WATER FLOW ALARM AND TROUBLE SIGNALS SHALL BE DISTINCTLY DIFFERENT AND SHALL BE AUTOMATICALLY TRANSMITTED TO AN APPROVED CENTRAL STATION MONITORING COMPANY.
8. NFPA 13 (2016) SEC. 6.8.2.1 THE ALARM APPARATUS FOR A WET PIPE SYSTEM SHALL CONSIST OF A LISTED ALARM CHECK VALVE OR OTHER LISTED WATERFLOW DETECTION ALARM DEVICE WITH THE NECESSARY ATTACHMENTS REQUIRED TO GIVE AN ALARM.
9. NFPA 13 (2016) SEC. 25.5 HYDRAULIC CALCULATION DESIGN DATA PLACARD IS TO BE ATTACHED TO THE FIRE SPRINKLER SYSTEM RISER.
10. NFPA 13 (2016) SEC. 25.1 THE FIRE SPRINKLER CONTRACTOR (C-16) SHALL COMPLETE AND SIGN THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR THE OVERHEAD FIRE SPRINKLER SYSTEM USING THE FORM IN FIGURE 24.1. THIS FORM SHALL BE GIVEN TO THE DSA PROJECT INSPECTOR WHO WILL TURN IT IN FOR DSA RECORDS.
11. NFPA 13 (2016) SEC. 25.2.3.4 THE MAIN DRAIN VALVE SHALL BE OPENED AND REMAIN OPEN UNTIL THE SYSTEM PRESSURE STABILIZES. THE STATIC AND RESIDUAL PRESSURES SHALL BE RECORDED ON THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE. THE TEST IS TO BE WITNESSED BY THE INSPECTOR OF RECORD – IOR.
12. NFPA 13 (2016) SEC. 9.2.3.7 SPRIGS 4FT OR LONGER SHALL BE RESTRAINED AGAINST LATERAL MOVEMENT TO PREVENT DAMAGE TO PIPING.
13. TITLE 19 ARTICLE 906(A) A LABEL OF THE SELF-ADHESIVE TYPE SHALL BE PLACED ON THE RISER FOR FIRE SPRINKLER SYSTEM WITH THE DATE OF SERVICE AND/OR DATE INSTALLATION WAS PERFORMED AND LICENSE NUMBER OF PERSON PERFORMING SERVICE WORK.
14. GENERAL INFORMATION PLACARD SHALL BE ATTACHED TO EACH RISER PER NFPA 13 25.6.

GENERAL NOTES

1. THE SYSTEM DESIGN AND INSTALLATION SHALL COMPLY WITH NFPA 13, 2016 EDITION AND THE DSA REQUIREMENTS.
2. SYSTEM HYDRAULIC DESIGN IS FOR: SEE FIRE SPRINKLER PIPING PLANS FOR DESIGN REQUIREMENTS FOR EACH BUILDING.
3. CITY WATER SUPPLY INFORMATION:
   STATIC: 145 PSI
   RESIDUAL: 81 PSI
   FLOW: 1023 GPM
4. ALL PIPE 2" AND SMALLER SHALL BE SCHEDULE 40, BLACK STEEL ANSI/ASTM A135.
5. ALL GROOVED AND WELDED PIPE 2-1/2" – 6" SHALL BE SCHEDULE 10, BLACK STEEL ANSI/ASTM A795.
6. THREADED FITTINGS SHALL BE CLASS 125 THREADED CAST IRON ANSI B16.4.
7. ALL THREADED PIPE AND FITTINGS SHALL HAVE THREADS CUT TO ANSI/ASME STANDARD B1.20.1.
8. ALL PIPE WELDING SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF AWS D10.9 (STANDARD FOR BUILDING SERVICE PIPING), LEVEL AR-3.
9. ALL PIPE SHALL BE EARTHQUAKE BRACED AS OUTLINED IN NFPA 13, 2016 EDITION, SECTION 9.3.
10. ALL HANGER COMPONENTS AND INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 13, 2016 EDITION, SECTION 9.1 AND 9.2.
11. ELECTRICAL WIRING AND ANY PAINTING OF THE PIPE THAT MAY BE REQUIRED SHALL BE BY OTHERS.
12. ALL NEW PIPING IS TO BE HYDROSTATICALLY TESTED TO CODE FOR A PERIOD NOT LESS THAN TWO HOURS.
13. FLOW AND TAMPER SWITCHES ARE TO BE CONNECTED TO FIRE ALARM PANEL.
14. ALL ELECTRICAL WIRING TO BE PROVIDED "BY ELECTRICAL CONTRACTOR."
15. FIRE SPRINKLER SUPPLY AND STUB OUT SHALL BE INSTALLED AND TESTED PER NFPA 24.
16. MAIN FIRE PANEL, VALVE MONITORING, WATER FLOW ALARM AND TROUBLE SIGNALS SHALL BE DISTINCTLY DIFFERENT AND SHALL BE AUTOMATICALLY TRANSMITTED TO AN APPROVED CENTRAL STATION MONITORING COMPANY.

ANY SUBSTITUTION OF "FLEXIBLE" TYPE PIPING IN LIEU OF "RIGID" PIPE OR ANY CHANGES TO SIZE, MANUFACTURER OR LENGTHS OF "FLEXIBLE" TYPE PIPING REQUIRE RESUBMITTAL OF PIPING PLANS, PRODUCT DATA SHEETS AND HYDRAULIC CALCULATIONS TO DSA FOR REVIEW AND APPROVAL.

FIRE PROTECTION NOTES

1. ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS AMENDED AND ADOPTED BY THE INSPECTION AUTHORITY. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THIS PROJECT.
   A. CALIFORNIA FIRE CODE, 2016
   B. NFPA-13, 2016.
   C. NFPA-24, 2016
   D. GRASS VALLEY FIRE DEPARTMENT.
   E. CALIFORNIA BUILDING CODE – 2016
   F. CALIFORNIA MECHANICAL CODE – 2016
   G. CALIFORNIA PLUMBING CODE – 2016
   H. CALIFORNIA ELECTRICAL CODE – 2016
   I. STATE OF CALIFORNIA ENERGY CONSERVATION REGULATIONS, TITLE 24 – 2016
   J. NATIONAL FIRE PROTECTION ASSOCIATION
   K. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
2. SEISMIC RESTRAINT: HANGERS AND BRACING ARE REQUIRED TO COMPLY WITH 2016 CBC SECTION 1616A.1.26 ASCE 7, SECTION 13.6.8.3
3. THE CONTRACTOR SHALL SURVEY EXISTING FIELD CONDITIONS PRIOR TO BIDDING.
4. ANY DAMAGE TO NEW BUILDING ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL SYSTEMS THAT OCCURS DURING THE WORK SHALL BE RESTORED TO THE ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. IF LANDSCAPED AREAS INCLUDING NATURAL SPACES MUST BE USED FOR BUILDING ACCESS, THE LANDSCAPING SHALL BE RETURNED TO ITS ORIGINAL CONDITION. THE CONTRACTOR SHALL INCLUDE COSTS IN THE BID FOR THIS WORK IF THIS APPROACH IS USED. THE OWNER WILL NOT PAY ANY ADDITIONAL COSTS TO COVER DAMAGE TO THE BUILDING SYSTEMS, LANDSCAPING OR DRIVE AREAS.
5. COORDINATE THE FOLLOWING WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND ELEMENTS AS INSTALLED, INCLUDING EXISTING BUILDING SYSTEMS:
   A. EXACT LOCATION OF ALL EQUIPMENT.
   B. ALL PENETRATIONS THRU ROOF, WALLS AND FLOORS.
   C. EXACT SIZE AND ROUTING OF PIPING.
6. DRAWINGS INDICATE DIAGRAMMATICALLY THE ARRANGEMENT OF PRINCIPAL APPARATUS, PIPING, AND OTHER MATERIAL. FOLLOW DRAWING AS CLOSELY AS POSSIBLE, IN ORDER TO ACHIEVE A NEAT ARRANGEMENT OF PIPING AND EQUIPMENT WHILE STILL OVERCOMING OBSTRUCTIONS.
7. INSTALLATION OF THE SPRINKLER SYSTEM SHALL NOT BE STARTED UNTIL COMPLETE PLANS AND SPECIFICATIONS, INCLUDING WATER SUPPLY INFORMATION, HAVE BEEN APPROVED BY THE LOCAL FIRE MARSHAL AND LP CONSULTING ENGINEERS, INC., AT VARIOUS STAGES AND UPON COMPLETION, THE SYSTEM MUST BE TESTED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION (IOR).
8. ALL EXISTING FIRE PROTECTION SYSTEMS SHALL REMAIN IN OPERATION DURING ALL PHASES OF CONSTRUCTION. NO SYSTEMS ARE TO BE SHUTDOWN WITHOUT AUTHORIZATION FROM THE OWNER AND LOCAL FIRE DISTRICT.
9. THE LOCATION OF FIRE SPRINKLER HEADS SHALL BE COORDINATED WITH THE NEW CEILING LAYOUTS AND ALL OTHER TRADES FOR COMPLETE FIRE PROTECTION COVERAGE OF ALL AREAS. PROVIDE DETAILED PLANS FOR APPROVAL PRIOR TO INSTALLATION.
10. HEADS SHALL BE SYMMETRICALLY LOCATED IN CENTER OF CEILING PANELS. COORDINATE LAYOUT WITH CEILING OR SOFFIT LIGHT FIXTURES, AND HVAC DIFFUSERS, RETURNS, ETC. PROVIDE PENDENT AND/OR UPRIGHT TYPE SPRINKLER HEAD WHERE REQUIRED.
11. WORKMANSHIP:
    ALL WORK SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER ACCORDING TO THE BEST TRADE PRACTICE BY THOSE SKILLED IN THE PARTICULAR TRADE. PIPES, EQUIPMENT, ETC., TO BE INSTALLED LEVEL, SQUARE OR CENTERED, ETC., TO GIVE A NEAT AND PLEASING APPEARANCE. ALL EQUIPMENT IS TO BE INSTALLED STRICTLY PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL WORK WITH OTHER TRADES.
12. THE ANNULAR SPACE BETWEEN PIPE SLEEVES AND THE PIPE THROUGH ALL RATED WALLS AND FLOORS SHALL BE FIRE STOPPED. FIRE STOPPING OF ALL PIPE PENETRATIONS SHALL COMPLY WITH U.L. REQUIREMENTS. MANUFACTURER PRE APPROVED UL PENETRATION FOR PIPE MATERIAL AND SURFACE PENETRATED SHALL BE USED. PENETRATIONS SHALL BE 3M, PROSET, OR APPROVED EQUAL. SUBMIT SHOP DRAWINGS.
13. BY OTHERS:
    D. ELECTRICAL CONTRACTOR: ALL POWER AND ALARM WIRING, CONDUITS, DISCONNECTS, AND FINAL CONNECTIONS. NO FIELD SUPPLIED ELECTRICAL DEVICE SHALL BE MOUNTED ON PIPING AND NO RIGID ELECTRICAL CONNECTIONS SHALL BE MADE.
    E. GENERAL CONTRACTOR: CUTTING, FRAMING, PATCHING, FURRING, AND PAINTING.
14. ELECTRICAL VOLTAGE:
    AIR CONDITIONING CONTRACTOR SHALL CONFIRM ALL SYSTEM VOLTAGES BEFORE BIDDING AND ORDERING EQUIPMENT.
15. WARRANTY:
    ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE GUARANTEED FREE FROM ALL FIRE PROTECTION, ELECTRICAL AND WORKMANSHIP DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE PREMISES CAUSED BY LEAKS AND/OR BREAKS IN PIPES AND FIXTURES INSTALLED UNDER THIS CONTRACT.
16. IT IS THE INTENTION OF THE PLANS AND SPECIFICATIONS TO COVER ALL THINGS REQUIRED TO PROVIDE COMPLETE AND OPERATIVE SYSTEMS. THE CONTRACTOR IS TO FURNISH ALL LABOR, MATERIALS, TRANSPORTATION, EQUIPMENT, MISCELLANEOUS SERVICES, ETC., REQUIRED TO ACCOMPLISH THIS RESULT. ANYTHING WHICH MAY BE REASONABLY CONSTRUED AS A NECESSARY PART OF THE INSTALLATION IS TO BE INCLUDED, WHETHER SPECIFICALLY SHOWN OR MENTIONED. THE ENGINEER WILL GIVE ANY INTERPRETATIONS NECESSARY FOR THE CONTRACTOR TO PROPERLY ESTIMATE THE JOB.
17. FIRE SPRINKLER CONTRACTOR IS RESPONSIBLE FOR FABRICATION AND INSTALLATION DRAWINGS. AUTOCAD FILES WILL NOT BE PROVIDED.

BUILDING DATA

PROJECT DESCRIPTION: INSTALL NEW WET PIPE FIRE SPRINKLER SYSTEM

OWNER: NEVADA JOINT UNION HIGH SCHOOL DISTRICT
11645 RIDGE ROAD
GRASS VALLEY, CA 95945

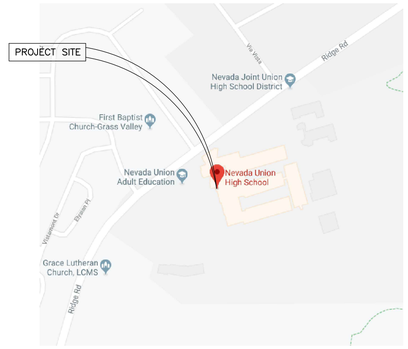
CODE ANALYSIS

PROJECT SUMMARY:

TOTAL GROSS BUILDING AREA: 2,288 SF
BUILDING HEIGHT: 15 FT. ±

CONSTRUCTION TYPE: II-B
OCCUPANCY TYPE: E

VICINITY MAP



FIRE PROTECTION SHEET INDEX

SHEET NO.	SHEET TITLE
FP0.1	LEGENDS NOTES AND VICINITY MAP
FP1.1	FIRE SPRINKLER SITE PLAN
FP2.1	PIPING AND REFLECTED CEILING PLANS
FP3.1	SEISMIC PLAN
FP3.2	SEISMIC PLAN
FP4.1	FIRE SPRINKLER SECTIONS
FP5.1	FIRE SPRINKLER DETAILS
FP5.2	FIRE SPRINKLER DETAILS

FIRE SPRINKLER LEGEND

SYMBOL	DESCRIPTION
1 / FP1.1	DETAIL DESIGNATION / DETAIL NUMBER / SHEET NO. WHERE SHOWN
(·)	HYDRAULIC CALCULATION REFERENCE NODE
SB1 OR SB3	LONGITUDINAL SEISMIC BRACE
SB2 OR SB4	LATERAL SEISMIC BRACE
	FOUR WAY BRACE
	FIRE SPRINKLER SYSTEM RISER
	GROOVED COUPLING
	BRANCH LINE HANGER
	MAIN LINE HANGER
	HANGER WITH SURGE RESTRAINER
	END OF LINE RESTRAINT
	CHANGE IN ELEVATION
	CAP
BOR	BASE OF RISER
TOR	TOP OF RISER

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REGISTERED PROFESSIONAL ENGINEER
VINCENT POURVAKIL
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

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NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
LEGENDS NOTES AND VICINITY MAP

SCALE:

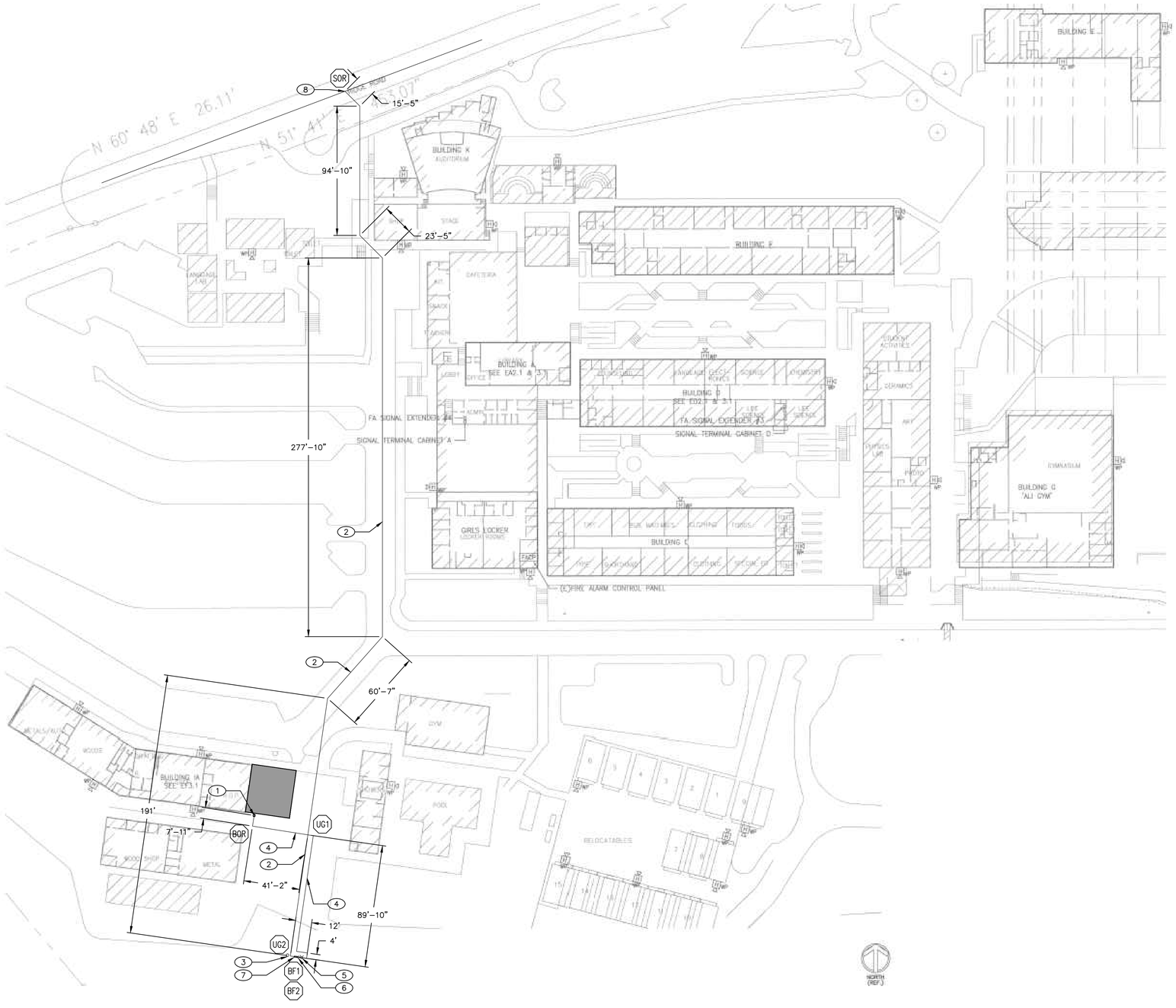
REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.010
DATE 2019-12-20
SHEET NUMBER FP0.1



FIRE SPRINKLER SITE PLAN

SCALE : 1" = 40'–0"

1

KEY NOTES

1. NEW FIRE SPRINKLER SYSTEM RISER
2. EXISTING 8" C900 UNDERGROUND FIRE WATER LINE
3. EXISTING FIRE HYDRANT
4. EXISTING 6" C900 UNDERGROUND FIRE WATER LINE
5. EXISTING FIRE DEPARTMENT CONNECTION
6. EXISTING POST INDICATOR VALVE
7. EXISTING AMES 1000SS BACKFLOW PREVENTER
8. EXISTING 8" CITY WATER MAIN

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GRASS VALLEY, CA 95945

SHEET TITLE:
FIRE SPRINKLER SITE PLAN

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.010

DATE 2019–12–20

SHEET NUMBER FP1.1

23 of 89

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Roseville, CA 95678
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Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER
SEAN POURYAZDI
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

Sprinkler Head Schedule

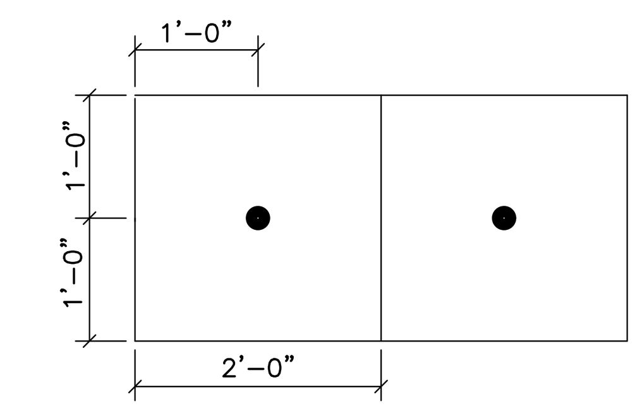
Symbol	Count	Thread	K-Factor	Description	Note
◉	12	1/2"	5.6	VK302 1/2 QR 155 CE PD	on Drop
○	27	1/2"	5.6	VK300 1/2 QR 200 B UP	on Sprig
◐	2	1"	5.6	VK172 1/2 Q-3.00 155 WP PD	on Drop
41 = Total Number of Heads This Floor					

GENERAL NOTES

1. ITEMS SHOWN ON THIS PLAN DESCRIBE GENERAL LAYOUT REQUIREMENTS, AND ARE NOT INTENDED TO SHOW A COMPLETE LAYOUT OF REQUIRED FIRE PROTECTION SYSTEM PIPING AND COMPONENTS. REFER TO ARCHITECTURAL, MECHANICAL AND PLUMBING SHEETS, FIRE PROTECTION SPECIFICATIONS, AS WELL AS OTHER PORTIONS OF THE CONTRACT DOCUMENTS FOR ADDITIONAL COORDINATION REQUIREMENTS.
2. THE LAYOUT REQUIREMENTS DESCRIBED IN THESE PLANS SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE BUT SHALL NOT SUPERSEDED CODE CONSTRAINTS AND/OR REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION (AHJ'S). WHERE CODE OR AHJ REQUIREMENTS SUPERSEDE ITEMS SHOWN ON THIS PLAN, CONTRACTOR SHALL INCLUDE ALL ASSOCIATED PROVISIONS IN THE BID, AND SHALL MAKE THEM AT NO ADDITIONAL COST TO OWNER. PROPOSED DEVIATIONS FROM THIS PLAN SHALL BE SUBJECT TO ARCHITECT'S AND ENGINEER'S REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION.
3. ALL AREAS OF THE BUILDING SHALL BE FULLY SPRINKLERED IN ACCORDANCE WITH SPECIFICATIONS AND CODE REQUIREMENTS.
4. WHERE PLAN INDICATES EXPOSED FIRE SPRINKLER PIPING DIRECTION OF LAYOUT, ASSOCIATED CONNECTED FIRE SPRINKLER PIPING RUNNING IN PERPENDICULAR DIRECTIONS SHALL BE INSTALLED ONLY IN CONCEALED LOCATIONS UNLESS INDICATED OTHERWISE.
5. SEE STRUCTURAL PLANS FOR EXACT LOCATIONS AND CHARACTERISTICS OF ALL STRUCTURAL MEMBERS.
6. ALL ADDITIONAL WOOD MEMBERS REQUIRED FOR HANGING/BRACING PURPOSES ARE TO BE INSTALLED BY THE STRUCTURAL FRAMERS.
7. EXPOSED FIRE SPRINKLER SYSTEM PIPING SHALL BE RUN STRAIGHT AND TIGHT TO UNDERSIDE OF STRUCTURAL MEMBERS, AND SHALL NOT OFFSET VERTICALLY TO DROP BELOW BEAMS.
8. CONTRACTOR IS TO PREPARE SHOP DRAWINGS AND FABRICATION DRAWINGS. ALL PLANS, INCLUDING HYDRAULIC CALCULATIONS AND SEISMIC BRACE CALCULATIONS ARE TO BE SUBMITTED TO LP CONSULTING ENGINEERS, INC. FOR REVIEW PRIOR TO FABRICATION OR INSTALLATION OF FIRE SPRINKLER SYSTEM.

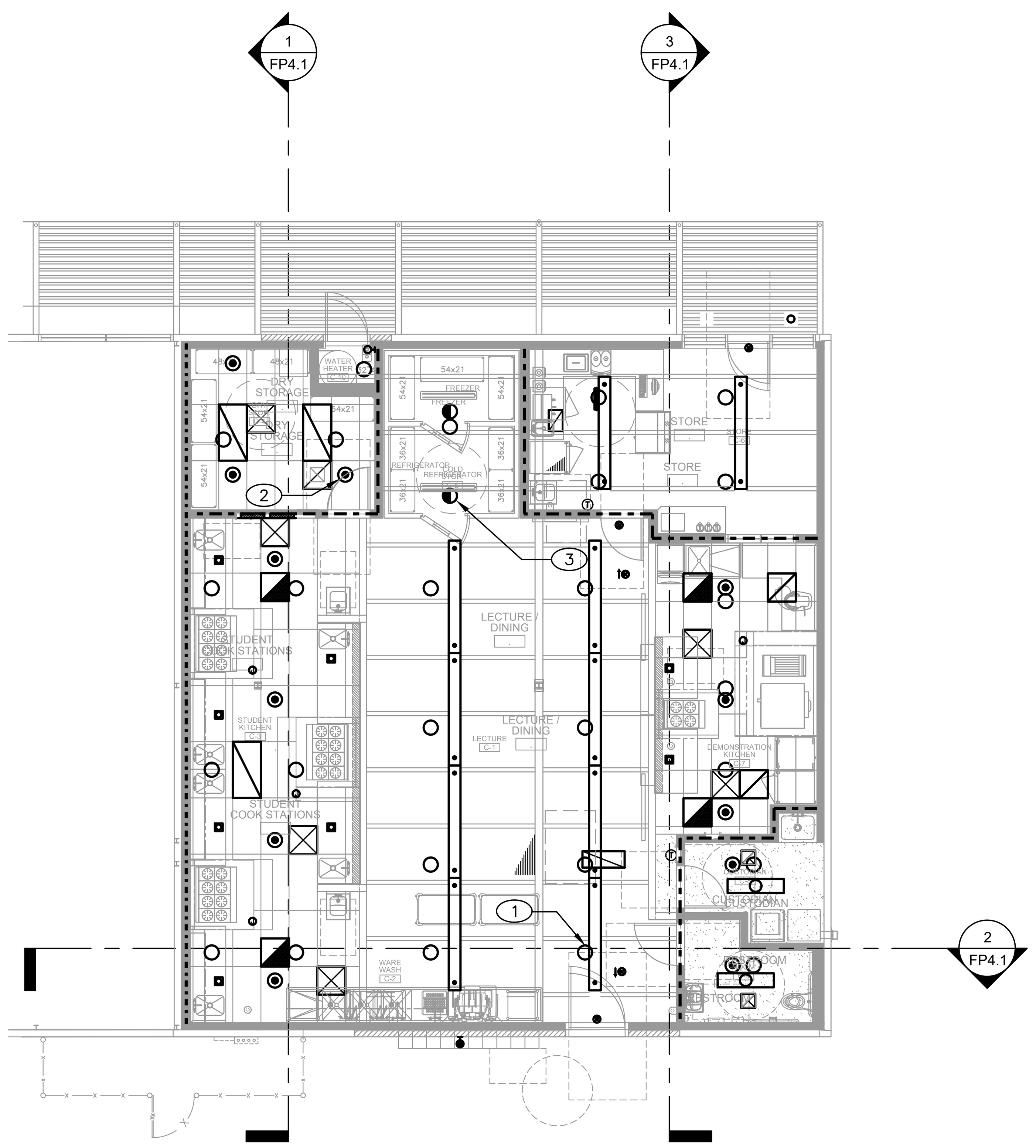
KEY NOTES

1. VK300 STANDARD SPRAY UPRIGHT FIRE SPRINKLER
2. VK302 STANDARD SPRAY PENDENT FIRE SPRINKLER
3. VK172 STANDARD SPRAY DRY PENDENT FIRE SPRINKLER
4. FIRE SPRINKLER SYSTEM RISER
5. SCH. 10 FIRE SPRINKLER MAIN SUPPLY LINE
6. 10" ALARM BELL
7. INSPECTOR'S TEST LOCATION PER DETAIL 7/FP5.2
8. PENDENT FIRE SPRINKLERS ARE TO BE LOCATED IN THE CENTERLINE OF CEILING TILE IN THE 2'-0" DIMENSION AND AT 12" INCREMENTS IN THE 2'-0" DIMENSION.



GENERAL NOTES

1. ALL ADDITIONAL WOOD MEMBERS REQUIRED FOR HANGING/BRACING PURPOSES ARE TO BE INSTALLED BY THE STRUCTURAL FRAMERS.
2. PER 2016 NFPA 13 SECTION 8.15.7.2, SPRINKLERS SHALL BE PERMITTED TO BE OMITTED WHERE THE EXTERIOR PROJECTIONS ARE CONSTRUCTED WITH MATERIALS THAT ARE NONCOMBUSTIBLE, LIMITED-COMBUSTIBLE, OR FIRE RETARDANT-TREATED WOOD AS DEFINED IN NFPA 703.



LEGEND

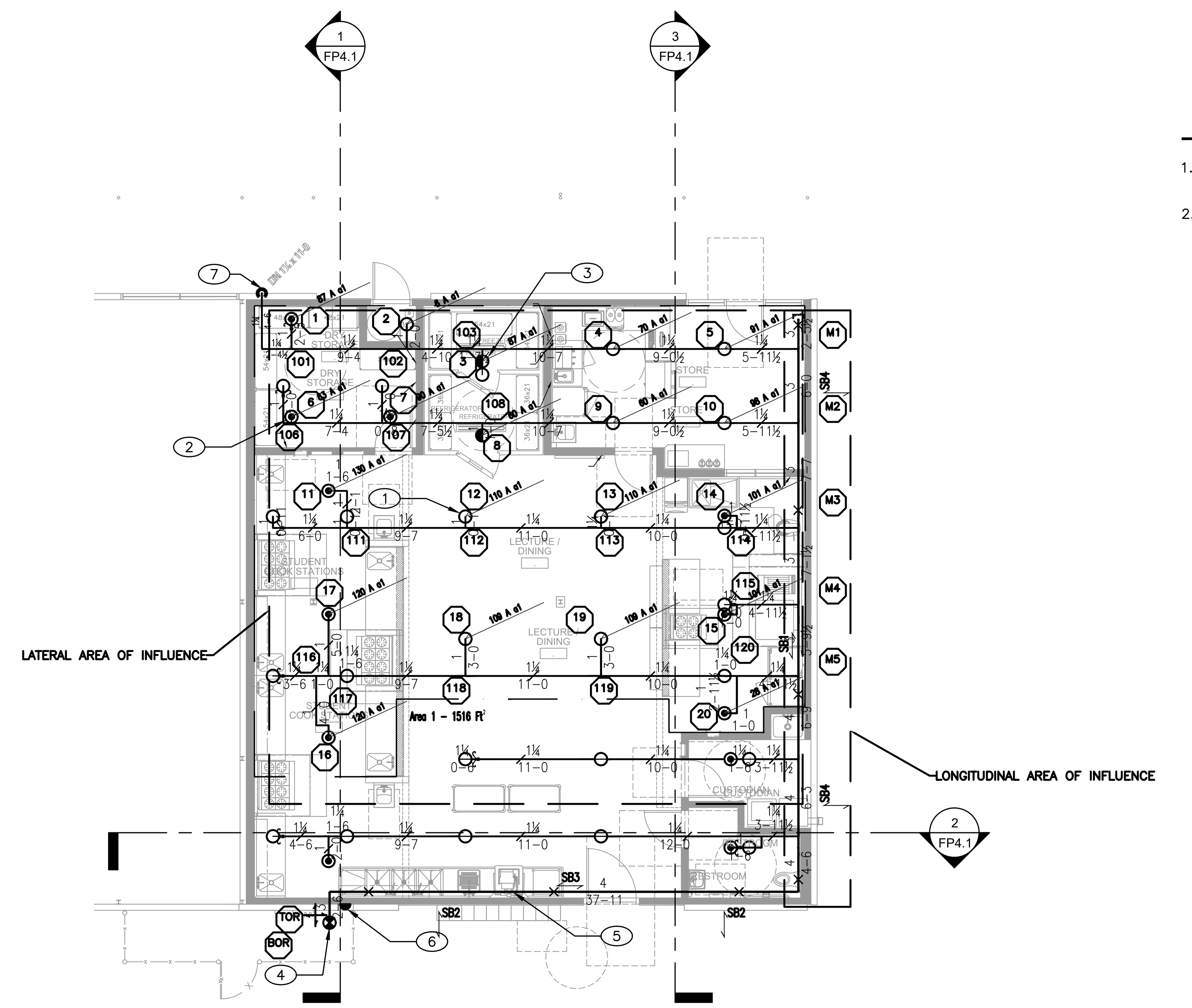
- 1-HR FIRE BARRIER
- 2-HR FIRE BARRIER

FIRE SPRINKLER REFLECTED CEILING PLAN

2

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

PLAN NORTH



FIRE SPRINKLER PIPING PLAN

1

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

PLAN NORTH

HYDRAULIC CALCULATION

DESIGN INFORMATION	
CALCULATION AREA#	1
SPRINKLER HEAD TYPE	UPRIGHT
K-FACTOR	5.6
SYSTEM TYPE (WET/DRY)	WET
HAZARD CLASSIFICATION	OH2
DENSITY (GPM/S.F.)	0.20
AREA PER HEAD (MAX.)	130
AREA OF OPERATION (S.F.)	1516 (LARGEST OPEN AREA)
WATER SUPPLY	
STATIC (PSI)	145.00
RESIDUAL (PSI)	81.00
FLOW (GPM)	1023
FIRE PUMP (GPM @ PSI)	
SYSTEM DEMAND @ SOURCE	
PRESSURE REQUIRED (PSI)	83.88
FLOW REQUIRED (GPM)	805.7
PRESSURE AVAILABLE (PSI)	103.85
SAFETY MARGIN (%)	19.23%
HOSE STREAM ALLOWANCE (GPM)	
INSIDE 250 OUTSIDE N/A	250
SYSTEM DEMAND @ BASE OF RISER	
PRESSURE REQUIRED (PSI)	72.96
FLOW REQUIRED (GPM)	805.7

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NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
PIPING AND REFLECTED CEILING PLANS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER FP2.1

TOLBrace™ Seismic Bracing Calculations

Project Address: Nevada Union High School
11645 Ridge Road
Grass Valley, CA
Job # 19-2078

Contractor: LP Consulting Engineers
Address: 1209 Pleasant Grove Blvd
Roseville, CA 95678
Phone:
License:

Calculations based on 2016 NFPA Pamphlet #13

Brace Information

Maximum Brace Length	7' 0" (2.134 m)
Diameter of Brace	1" Sch.40
Type of Brace	Sch. 10
Angle of Brace	60° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1604 lbs (728 kg)
Other Requirements - FM Approved Loads	

Fastener Information

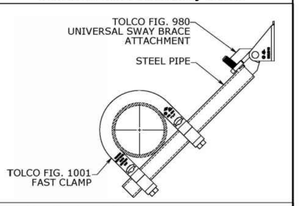
Orientation to Connecting Surface	NFPA Type F
Fastener	
Type	Through-Bolt
Diameter	5/8in. (16 mm)
Length	5-1/2in. (140 mm)
Maximum Load	1552 lbs (704 kg)
Prying Factor	N/A

TOLCO™ Brace Components

TOLCO™ Component	Listed Load	Adjusted Load
Fig. 1001 Clamp	1470 lbs (667 kg)	1470 lbs (667 kg)
Fig.980 Universal Swivel	2310 lbs (1048 kg)	2310 lbs (1048 kg)
See Fastener Information		

*Calculation Based on CONCENTRIC Loading
*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

Seismic Brace Assembly Detail



Brace Identification on Plans SB2
Brace Type Lateral [X] Longitudinal [ ] 4-Way [ ]

Sprinkler System Load Calculation (Fpw = CpWp)

Cp = 0.4166

Diameter	Type	Length	Total Length	Weight Per Unit Length	Total Weight
4" (100 mm)	Sch. 10	40 ft (12.2 m)	40 ft (12.2 m)	11.78 lb/ft (17.53 kg/m)	471 lbs (214 kg)
1.25" (32 mm)	Sch. 40	176 ft (53.6 m)	176 ft (53.6 m)	2.93 lb/ft (4.36 kg/m)	516 lbs (234 kg)
1" (25 mm)	Sch. 40	32 ft (9.8 m)	32 ft (9.8 m)	2.05 lb/ft (3.05 kg/m)	66 lbs (30 kg)

Subtotal Weight	1053 lbs (478 kg)
Wp (incl. 15%)	1211 lbs (549 kg)
Total (Fpw)	504 lbs (229 kg)
Maximum Fpw per 9.3.5.5.2 (if applicable)	769 lb (348 kg)

Main Size 4" | Type/Sch. Sch. 10 | Spacing (ft) 40

(TOLBrace™ Version 8) Use of TOLBrace™ is subject to terms and conditions per the end user license agreement

TOLBrace™ Seismic Bracing Calculations

Project Address: Nevada Union High School
11645 Ridge Road
Grass Valley, CA
Job # 19-2078

Contractor: LP Consulting Engineers
Address: 1209 Pleasant Grove Blvd
Roseville, CA 95678
Phone:
License:

Calculations based on 2016 NFPA Pamphlet #13

Brace Information

Maximum Brace Length	7' 0" (2.134 m)
Diameter of Brace	1" Sch.40
Type of Brace	Sch. 10
Angle of Brace	60° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1604 lbs (728 kg)
Other Requirements - FM Approved Loads	

Fastener Information

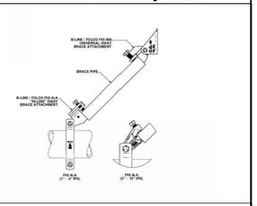
Orientation to Connecting Surface	NFPA Type F
Fastener	
Type	Through-Bolt
Diameter	5/8in. (16 mm)
Length	5-1/2in. (140 mm)
Maximum Load	1552 lbs (704 kg)
Prying Factor	N/A

TOLCO™ Brace Components

TOLCO™ Component	Listed Load	Adjusted Load
Fig. 4LA Clamp	1190 lbs (540 kg)	1190 lbs (540 kg)
Fig.980 Universal Swivel	2310 lbs (1048 kg)	2310 lbs (1048 kg)
See Fastener Information		

*Calculation Based on CONCENTRIC Loading
*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

Seismic Brace Assembly Detail



Brace Identification on Plans SB1
Brace Type Lateral [ ] Longitudinal [X] 4-Way [ ]

Sprinkler System Load Calculation (Fpw = CpWp)

Cp = 0.4166

Diameter	Type	Length	Total Length	Weight Per Unit Length	Total Weight
4" (100 mm)	Sch. 10	80 ft (24.4 m)	80 ft (24.4 m)	11.78 lb/ft (17.53 kg/m)	942 lbs (427 kg)

Subtotal Weight	942 lbs (427 kg)
Wp (incl. 15%)	1083 lbs (491 kg)
Total (Fpw)	451 lbs (205 kg)
Maximum Fpw per 9.3.5.5.2 (if applicable)	N/A

Main Size 4" | Type/Sch. Sch. 10 | Spacing (ft) 80

(TOLBrace™ Version 8) Use of TOLBrace™ is subject to terms and conditions per the end user license agreement

TOLBrace™ Seismic Calculation

Nevada Union High School Job # 19-2078
11645 Ridge Road

Brace Identification	SB2
Brace Type (Per NFPA#13)	NFPA Type F
Braced Pipe (ft)	4" Sch.10 Steel Pipe
Spacing of Brace	40' 0" (12.19 m)
Orientation of Brace	Lateral
Bracing Material	1" Sch.40
Maximum Brace Length	7' 0" (2.13 m)
Slenderness Ratio used for Load Calculation	200
True Angle of Brace for Calculation	60°
Type of Fastener	5/8 x 5-1/2 (16 x 140 mm) Through-Bolt
Length of Fastener	5-1/2in. (140 mm)

Summary of Pipe within Zone of Influence

4" Sch.10 Steel Pipe (101.6 mm)	40 ft (12.2 m)
1.25" Sch.40 Steel Pipe (31.75 mm)	176 ft (53.6 m)
1" Sch.40 Steel Pipe (25.4 mm)	32 ft (9.8 m)

G-Factor Used	0.4166
Allowance for Heads and Fittings	15%
Conclusions	
Total Adjusted Load of Pipe in Zone of Influence	504 lbs (229 kg)
Material Capacity	1604 lbs (728 kg)
Fastener Capacity	1552 lbs (704 kg)
Fig. 1001 Clamp	1470 lbs (667 kg)
Fig.980 Universal Swivel	2310 lbs (1048 kg)
Structural Member	Wood Rafter

Calculations prepared by Ken Thomas

* The description of the Structural Member is for informational purposes only.
TOLBrace™ software calculates the brace assembly only, not the structure it is attached to.
Calculated with TOLBrace™ 8
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TOLBrace™ Seismic Calculation

Nevada Union High School Job # 19-2078
11645 Ridge Road

Brace Identification	SB1
Brace Type (Per NFPA#13)	NFPA Type F
Braced Pipe (ft)	4" Sch.10 Steel Pipe
Spacing of Brace	80' 0" (24.38 m)
Orientation of Brace	Longitudinal
Bracing Material	1" Sch.40
Maximum Brace Length	7' 0" (2.13 m)
Slenderness Ratio used for Load Calculation	200
True Angle of Brace for Calculation	60°
Type of Fastener	5/8 x 5-1/2 (16 x 140 mm) Through-Bolt
Length of Fastener	5-1/2in. (140 mm)

Summary of Pipe within Zone of Influence

4" Sch.10 Steel Pipe (101.6 mm)	80 ft (24.4 m)

G-Factor Used	0.4166
Allowance for Heads and Fittings	15%
Conclusions	
Total Adjusted Load of Pipe in Zone of Influence	451 lbs (205 kg)
Material Capacity	1604 lbs (728 kg)
Fastener Capacity	1552 lbs (704 kg)
Fig. 4LA Clamp	1190 lbs (540 kg)
Fig.980 Universal Swivel	2310 lbs (1048 kg)
Structural Member	Wood Rafter

Calculations prepared by Ken Thomas

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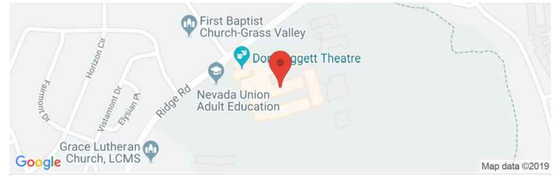
7/9/2019 U.S. Seismic Design Maps

OSHPD

11761 Ridge Rd, Nevada City, CA 95959, USA

Latitude, Longitude: 39.2400021, -121.05491970000003



Date	7/9/2019, 4:18:32 PM
Design Code Reference Document	IBC-2015
Risk Category	III
Site Class	D - Stiff Soil

Type	Value	Description
S_S	0.6	MCE_R ground motion. (for 0.2 second period)
S_1	0.241	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.792	Site-modified spectral acceleration value
S_{M1}	0.462	Site-modified spectral acceleration value
S_{DS}	0.528	Numeric seismic design value at 0.2 second SA
S_{D1}	0.308	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	D	Seismic design category
F_a	1.32	Site amplification factor at 0.2 second
F_v	1.918	Site amplification factor at 1.0 second
PGA	0.227	MCE_G peak ground acceleration
F_{PGA}	1.347	Site amplification factor at PGA
PGA_M	0.305	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.6	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.592	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.241	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.227	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	1.012	Mapped value of the risk coefficient at short periods
C_{R1}	1.063	Mapped value of the risk coefficient at a period of 1 s

https://seismicmaps.org 1/2

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GRASS VALLEY, CA 95945

SHEET TITLE:
SEISMIC PLAN

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER FP3.1

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Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER
SEAN POURYAZDI
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

TOLBrace™ Seismic Bracing Calculations

Project Address: Nevada Union High School
11645 Ridge Road
Grass Valley, CA
Job # 19-2078

Contractor: LP Consulting Engineers
Address: 1209 Pleasant Grove Blvd
Roseville, CA 95678
Phone:
License:

Calculations based on 2016 NFPA Pamphlet #13

Brace Information

Maximum Brace Length	7' 0" (2.134 m)
Diameter of Brace	1" Sch.40
Type of Brace	Sch. 10
Angle of Brace	60° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1604 lbs (728 kg)
Other Requirements - FM Approved Loads	

Fastener Information

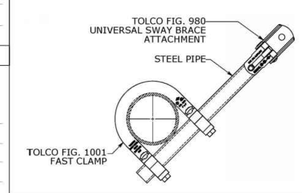
Orientation to Connecting Surface	NFPA Type I
Fastener	
Type	Through-Bolt
Diameter	5/8in. (16 mm)
Length	5-1/2in. (140 mm)
Maximum Load	1180 lbs (535 kg)
Prying Factor	N/A

TOLCO™ Brace Components

TOLCO™ Component	Listed Load	Adjusted Load
Fig. 1001 Clamp	1470 lbs (667 kg)	1470 lbs (667 kg)
Fig.980 Universal Swivel	2310 lbs (1048 kg)	2310 lbs (1048 kg)
See Fastener Information		

*Calculation Based on CONCENTRIC Loading
*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

Seismic Brace Assembly Detail



Brace Identification on Plans SB4
Brace Type Lateral [X] Longitudinal [ ] 4-Way [ ]

Sprinkler System Load Calculation (Fpw = CpWp)

Cp = 0.4166

Diameter	Type	Length	Total Length	Weight Per Unit Length	Total Weight
4" (100 mm)	Sch. 10	40 ft (12.2 m)	40 ft (12.2 m)	11.78 lb/ft (17.53 kg/m)	471 lbs (214 kg)
1.25" (32 mm)	Sch. 40	176 ft (53.6 m)	176 ft (53.6 m)	2.93 lb/ft (4.36 kg/m)	516 lbs (234 kg)
1" (25 mm)	Sch. 40	32 ft (9.8 m)	32 ft (9.8 m)	2.05 lb/ft (3.05 kg/m)	66 lbs (30 kg)

Subtotal Weight	1053 lbs (478 kg)
Wp (incl. 15%)	1211 lbs (549 kg)
Total (Fpw)	504 lbs (229 kg)
Maximum Fpw per 9.3.5.5.2 (if applicable)	769 lb (348 kg)

Main Size	Type/Sch.	Spacing (ft)
4"	Sch. 10	40

(TOLBrace™ Version 8)

TOLBrace™ Seismic Bracing Calculations

Project Address: Nevada Union High School
11645 Ridge Road
Grass Valley, CA
Job # 19-2078

Contractor: LP Consulting Engineers
Address: 1209 Pleasant Grove Blvd
Roseville, CA 95678
Phone:
License:

Calculations based on 2016 NFPA Pamphlet #13

Brace Information

Maximum Brace Length	7' 0" (2.134 m)
Diameter of Brace	1" Sch.40
Type of Brace	Sch. 10
Angle of Brace	60° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1604 lbs (728 kg)
Other Requirements - FM Approved Loads	

Fastener Information

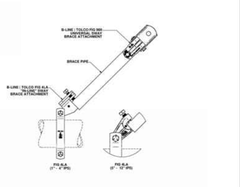
Orientation to Connecting Surface	NFPA Type I
Fastener	
Type	Through-Bolt
Diameter	5/8in. (16 mm)
Length	5-1/2in. (140 mm)
Maximum Load	1180 lbs (535 kg)
Prying Factor	N/A

TOLCO™ Brace Components

TOLCO™ Component	Listed Load	Adjusted Load
Fig. 4LA Clamp	1190 lbs (540 kg)	1190 lbs (540 kg)
Fig.980 Universal Swivel	2310 lbs (1048 kg)	2310 lbs (1048 kg)
See Fastener Information		

*Calculation Based on CONCENTRIC Loading
*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

Seismic Brace Assembly Detail



Brace Identification on Plans SB3
Brace Type Lateral [ ] Longitudinal [X] 4-Way [ ]

Sprinkler System Load Calculation (Fpw = CpWp)

Cp = 0.4166

Diameter	Type	Length	Total Length	Weight Per Unit Length	Total Weight
4" (100 mm)	Sch. 10	80 ft (24.4 m)	80 ft (24.4 m)	11.78 lb/ft (17.53 kg/m)	942 lbs (427 kg)

Subtotal Weight	942 lbs (427 kg)
Wp (incl. 15%)	1083 lbs (491 kg)
Total (Fpw)	451 lbs (205 kg)
Maximum Fpw per 9.3.5.5.2 (if applicable)	N/A

Main Size	Type/Sch.	Spacing (ft)
4"	Sch. 10	80

(TOLBrace™ Version 8)

TOLBrace™ Seismic Calculation

Nevada Union High School Job # 19-2078
11645 Ridge Road

Brace Identification	SB4
Brace Type (Per NFPA#13)	NFPA Type I
Braced Pipe (ft)	4" Sch.10 Steel Pipe
Spacing of Brace	40' 0" (12.19 m)
Orientation of Brace	Lateral
Bracing Material	1" Sch.40
Maximum Brace Length	7' 0" (2.13 m)
Slenderness Ratio used for Load Calculation	200
True Angle of Brace for Calculation	60°
Type of Fastener	5/8 x 5-1/2 (16 x 140 mm) Through-Bolt
Length of Fastener	5-1/2in. (140 mm)

Summary of Pipe within Zone of Influence

4" Sch.10 Steel Pipe (101.6 mm)	40 ft (12.2 m)
1.25" Sch.40 Steel Pipe (31.75 mm)	176 ft (53.6 m)
1" Sch.40 Steel Pipe (25.4 mm)	32 ft (9.8 m)

G-Factor Used	0.4166
Allowance for Heads and Fittings	15%
Conclusions	
Total Adjusted Load of Pipe in Zone of Influence	504 lbs (229 kg)
Material Capacity	1604 lbs (728 kg)
Fastener Capacity	1180 lbs (535 kg)
Fig. 1001 Clamp	1470 lbs (667 kg)
Fig.980 Universal Swivel	2310 lbs (1048 kg)
Structural Member	Wood Rafter

Calculations prepared by Ken Thomas

* The description of the Structural Member is for informational purposes only.
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TOLBrace™ Seismic Calculation

Nevada Union High School Job # 19-2078
11645 Ridge Road

Brace Identification	SB3
Brace Type (Per NFPA#13)	NFPA Type I
Braced Pipe (ft)	4" Sch.10 Steel Pipe
Spacing of Brace	80' 0" (24.38 m)
Orientation of Brace	Longitudinal
Bracing Material	1" Sch.40
Maximum Brace Length	7' 0" (2.13 m)
Slenderness Ratio used for Load Calculation	200
True Angle of Brace for Calculation	60°
Type of Fastener	5/8 x 5-1/2 (16 x 140 mm) Through-Bolt
Length of Fastener	5-1/2in. (140 mm)

Summary of Pipe within Zone of Influence

4" Sch.10 Steel Pipe (101.6 mm)	80 ft (24.4 m)

G-Factor Used	0.4166
Allowance for Heads and Fittings	15%
Conclusions	
Total Adjusted Load of Pipe in Zone of Influence	451 lbs (205 kg)
Material Capacity	1604 lbs (728 kg)
Fastener Capacity	1180 lbs (535 kg)
Fig. 4LA Clamp	1190 lbs (540 kg)
Fig.980 Universal Swivel	2310 lbs (1048 kg)
Structural Member	Wood Rafter

Calculations prepared by Ken Thomas

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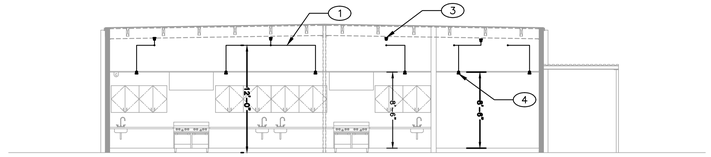
STATE OF CALIFORNIA

KEY NOTES

1. SCH. 40 FIRE SPRINKLER BRANCH LINE (TYP.)
2. SCH. 10 FIRE SPRINKLER MAIN SUPPLY LINE (TYP.)
3. VK300 STANDARD SPRAY UPRIGHT FIRE SPRINKLER (TYP.)
4. VK302 STANDARD SPRAY PENDENT FIRE SPRINKLER (TYP.)

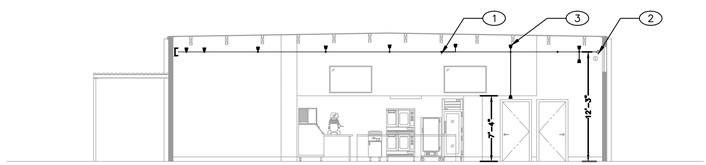


FIRE SPRINKLER SECTION PLAN 1

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

FIRE SPRINKLER SECTION PLAN 2

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



FIRE SPRINKLER SECTION PLAN 3

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

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SHEET TITLE:
FIRE SPRINKLER SECTIONS

SCALE:

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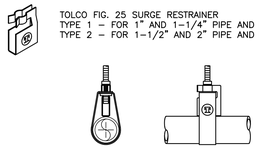
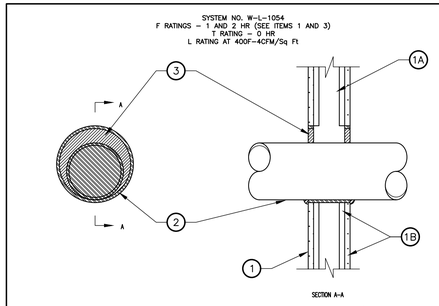


SURGE RESTRAINER FOR STEEL PIPE | NTS | 10



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. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2–1/2 IN. WIDE AND SPACED MAX 24 IN. 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. WIDER AND 4 TO 6 IN. HIGHER THAN THE DIAM OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 TO 3 IN. CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.
   B. GYPSUM BOARD* — 5/8 IN. THICK, 4 FT 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. FOR STEEL STUD WALLS. MAX DIAM OF OPENING IS 14–1/2 IN. FOR WOOD STUD WALLS. THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.
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. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PIPE, CONDUIT OR TUBING MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45 DEGREES FROM PERPENDICULAR. 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 DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE — NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. CONDUIT — NOM 4 IN DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. DIAM STEEL CONDUIT.
   D. COPPER TUBING — NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   E. COPPER PIPE — NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 5/8 IN. 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. 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
*BEARING THE UL CLASSIFICATION MARK

FIRE STOP DETAIL FOR RATED WALLS | NTS | 11

HANGER RODS TO BE INSTALLED TIGHT TO PIPE TO PREVENT UPWARD MOVEMENT

MAXIMUM DISTANCE BETWEEN HANGERS

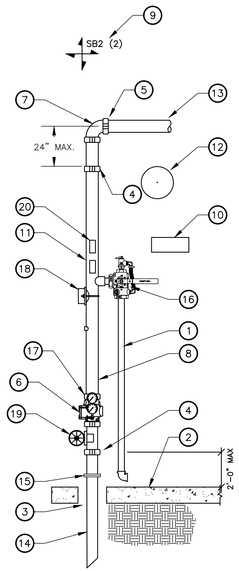
NOMINAL PIPE SIZE (in.)	3/4"	1"	1–1/4"	1–1/2"	2"	2–1/2"	3"	3–1/2"	4"	5"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL	N/A	12–0	12–0	15–0	15–0	15–0	15–0	15–0	15–0	15–0	15–0	15–0
THREADED LIGHTWALL STEEL PIPE	N/A	12–0	12–0	12–0	12–0	12–0	12–0	N/A	N/A	N/A	N/A	N/A

HANGER ROD SIZES

NOMINAL PIPE SIZE (in.)	3/4"	1"	1–1/4"	1–1/2"	2"	2–1/2"	3"	3–1/2"	4"	5"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL	N/A	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	1/2"	1/2"	1/2"
THREADED LIGHTWALL STEEL PIPE	N/A	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	N/A	N/A	N/A

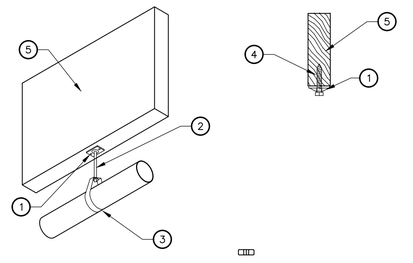
HANGER CHART | NTS | 12

1. 2" MAIN DRAIN
2. FINISHED FLOOR
3. 2" ANNULAR CLEARANCE
4. FLEXIBLE COUPLING (INSTALLED WITHIN 24 INCHES OF TOP OF RISER PER NFPA 13 (2016) SEC. 9.3.2.3.1
5. GROOVED COUPLING (ZERO–FLEX, UNO)
6. RISER CHECK VALVE
7. GROOVED 90° ELL
8. 3" SCH.10 BLK STEEL PIPE
9. 4–WAY SEISMIC BRACE
10. SPARE HEAD BOX
11. HYDRAULIC CALC PLATE
12. 10" ELECTRIC BELL – MOUNTED ON EXTERIOR WALL
13. SUPPLY TO OVERHEAD FIRE SPRINKLER SYSTEM
14. FROM UNDERGROUND FIRE LINE
15. FLANGE 6" ABOVE FINISHED FLOOR
16. AGF TEST AND DRAIN – INSPECTORS' TEST AND DRAIN ASSEMBLY
17. 300# GAUGE
18. FLOW SWITCH
19. BUTTERFLY VALVE WITH TAMPER SWITCH (SUPERVISED CONTROL VALVE)
20. GENERAL INFORMATION SIGN PER NFPA 13 (2016) SEC. 25.6



FIRE SPRINKLER RISER DETAIL | NTS | 8

1. TOLCO FIG. 78 ALL STEEL CEILING PLATE
2. TOLCO FIG. 99 3/8" ALL THREADED ROD
3. TOLCO FIG. 200 ADJUSTABLE RING HANGER
4. FASTENER PER UL LISTED FASTENER TABLE.
5. WOOD JOIST

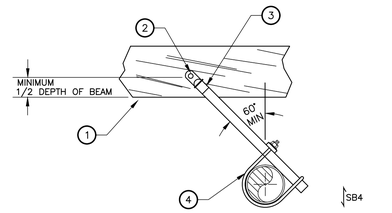


UL LISTED FASTENER TABLE			
PIPE SIZE	QTY	FASTENER TYPE	MATERIAL
1/2" – 2"	2	#14 X 1 1/4" A–POINT HEX–WASHER–HEAD SHEET METAL SCREW	WOOD
2 1/2" – 4"	2	1/4" X 1 1/2" WOOD SCREWS*	WOOD
1/2" – 2"	2	1/4" X 1" TEK SCREWS	METAL (18 GAUGE)
1/2" – 2"	2	#14 X 1 1/4" A–POINT HEX–WASHER–HEAD SHEET METAL SCREW	WOOD
1/2" – 2"	2	#14 X 2" A–POINT HEX–WASHER–HEAD SHEET METAL SCREW	WOOD THRU 5/8" GYP BOARD

* NO PRE–DRILLING

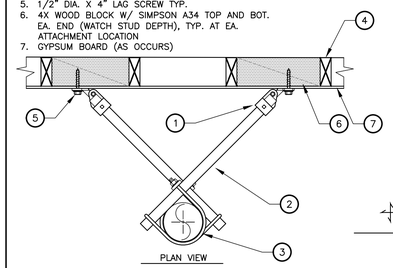
CEILING PLATE- FOR BRANCH LINE | NTS | 9

1. 2x FRAMING
2. 1/2" THROUGH BOLT
3. TOLCO FIG. 980 UNIVERSAL SWAY BRACE ATTACHMENT
4. TOLCO FIG. 1001 BRACE CLAMP



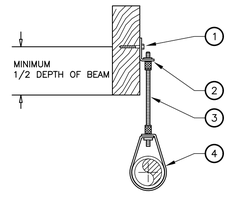
LATERAL EARTHQUAKE BRACE | NTS | 4

1. TOLCO FIG. 980 UNIVERSAL SWAY BRACE ATTACHMENT
2. BRACE PIPE – 1" SCH. 40 – 7'–0" MAX
3. TOLCO FIG. 1001 BRACE CLAMP
4. 2X WOOD STUDS
5. 1/2" DIA. X 4" LAG SCREW TYP.
6. 4X WOOD BLOCK W/ SIMPSON A34 TOP AND BOT. EA. END (MATCH STUD DEPTH), TYP. AT EA. ATTACHMENT LOCATION
7. GYPSUM BOARD (AS OCCURS)



4-WAY DETAIL NON-THREADED BRACE PIPE | NTS | 5

1. TOLCO HEX WASHER HEAD SHEET METAL SCREW (SEE HANGER AND FASTENER CHART FOR SIZES)
2. TOLCO FIG. 58 THREADED SIDE BEAM BRACKET
3. TOLCO FIG. 99 3/8" ALL THREAD ROD
4. TOLCO FIG. 200 ADJUSTABLE BAND HANGER



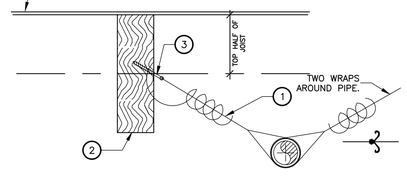
HANGER DETAIL | NTS | 6

1. RESTRAINT WIRE (4 TIGHT TURNS MIN)
2. WOOD JOIST OR RAFTER
3. 1/4" DIAMETER SCREW EYE WITH FULL THREAD EMBEDMENT (1 1/4" MIN)
4. WOOD DECK
5. SPACING USED FOR BRANCH LINE RESTRAINTS

NFPA 13 (2016) Table 9.3.6.4(a) Maximum spacing (ft) of STEEL Branch Line Restraints

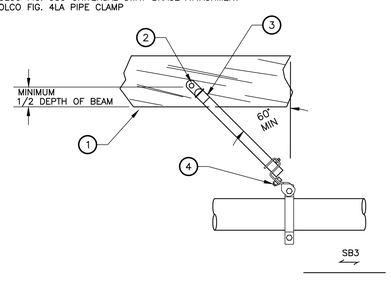
Pipe (in.)	Seismic Coefficient (C_p) $C_p \leq 0.50$	$0.5 < C_p \leq 0.71$	$C_p > 0.71$
1	43	36	26
1 1/4	46	39	27
1 1/2	49	41	29
2	53	45	31

NOTE: SEISMIC COEFFICIENT IS 0.42



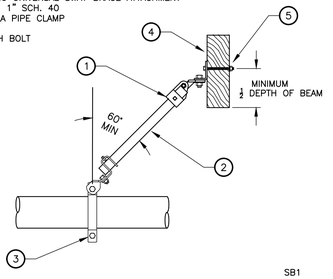
WIRE RESTRAINT DETAIL | NTS | 7

1. 2x FRAMING
2. 1/2" THROUGH BOLT
3. TOLCO FIG. 980 UNIVERSAL SWAY BRACE ATTACHMENT
4. TOLCO FIG. 4LA PIPE CLAMP



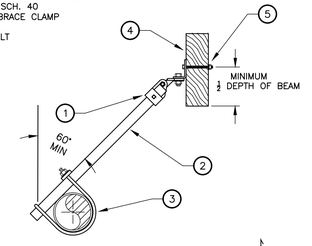
LONGITUDINAL EARTHQUAKE BRACE | NTS | 3

1. TOLCO FIG. 980 UNIVERSAL SWAY BRACE ATTACHMENT
2. BRACE PIPE – 1" SCH. 40
3. TOLCO FIG. 1001 BRACE CLAMP
4. 2X FRAMING
5. 1/2" THROUGH BOLT



LONGITUDINAL EARTHQUAKE BRACE TYPE F | NTS | 1

1. TOLCO FIG. 980 UNIVERSAL SWAY BRACE ATTACHMENT
2. BRACE PIPE – 1" SCH. 40
3. TOLCO FIG. 1001 BRACE CLAMP
4. 2X FRAMING
5. 1/2" THROUGH BOLT



LATERAL EARTHQUAKE BRACE | NTS | 2

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FIRE SPRINKLER DETAILS

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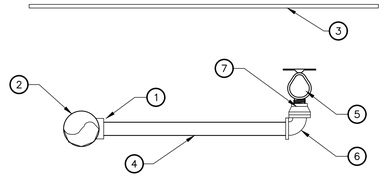
Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER SEAN POURVAHABI M 32311 RENEWAL 6-30-21 MECHANICAL STATE OF CALIFORNIA

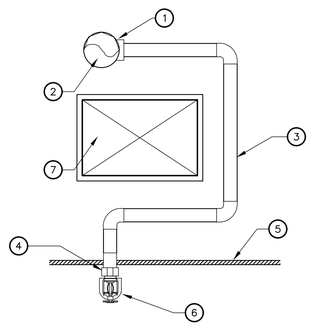
1. BRANCH LINE CONNECTION
2. OVERHEAD MAIN PIPING
3. ROOF DECK
4. SCH.40 (TYP.)
5. 1/2" 200° 5.6K BRASS UPRIGHT.
6. D.I. 1"x1" ELBOW
7. D.I. 1"x1/2" REDUCER



NOTE: UNSUPPORTED LENGTHS OF BRANCH LINES TO SATISFY NFPA13 SECTION 9.2.3.4 THE UNSUPPORTED HORIZONTAL LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT BE GREATER THAN 36 IN. FOR 1 IN. PIPE, 48 IN. FOR 1 1/4" PIPE, AND 60 IN. FOR 1 1/2 IN. OR LARGER PIPE.

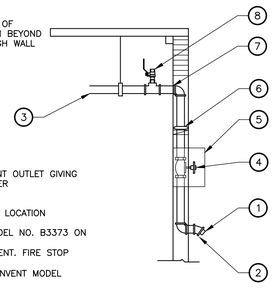
ABOVE, BETWEEN, BELOW BRANCH DETAIL | NTS | 5

1. THREADED WELD
2. BRANCH LINE PIPING
3. SCH. 40 (typ.)
4. 1x¾" REDUCER
5. CEILING
6. ½" PENDENT
7. MECHANICAL DUCT



FIRE SPRINKLER COORDINATION DETAIL | NTS | 6

NOTE: NOT LESS THAN 4FT. (1.2M) OF EXPOSED TEST PIPE IN WARM ROOM BEYOND VALVE WHEN PIPE EXTENDS THROUGH WALL TO OUTSIDE.



1. SMOOTH BORE CORROSION RESISTANT OUTLET GIVING FLOW EQUIVALENT TO ONE SPRINKLER
2. 45° GALVANIZED ELBOW
3. FROM END OF BRANCH LINE
4. TEST VALVE IN READILY ACCESSIBLE LOCATION
5. VALVE BOX
6. TOLCO STANDARD RISER CLAMP MODEL NO. B3373 ON 2x WOOD BLOCK
7. 1" CLEARANCE FOR SEISMIC MOVEMENT. FIRE STOP AS-NEEDED.
8. MANUAL AIR VENTING VALVE (PURGENVENT MODEL 7910MAV)

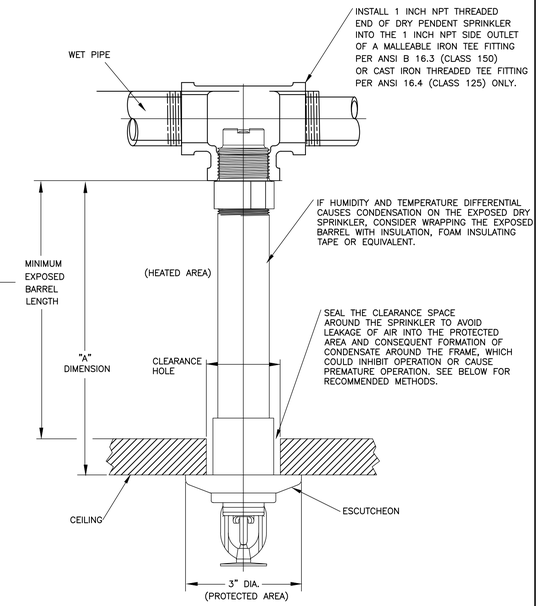
INSPECTORS' TEST CONNECTION | NTS | 7

EXPOSED MINIMUM BARREL LENGTH BASED ON AMBIENT TEMPERATURE
IN THE PROTECTED AREA
(STANDARD DRY PENDENT SPRINKLER SHOWN)

AMBIENT TEMPERATURE OF PROTECTED AREA* AT THE DISCHARGE END OF THE SPRINKLER	EXPOSED BARREL AMBIENT TEMPERATURE		
	40°F/4°C	50°F/10°C	60°F/16°C
	EXPOSED MINIMUM BARREL LENGTH** (FACE OF TEE TO TOP OF CEILING)		
	IN. (MM)	IN. (MM)	IN. (MM)
40°F (4°C)	0	0	0
30°F (−1°C)	0	0	0
20°F (−7°C)	4 (101)	0	0
10°F (−12°C)	8 (203)	1 (25.1)	0
0°F (−18°C)	12 (305)	3 (75)	0
−10°F (−23°C)	14 (356)	4 (101)	1 (25.1)
−20°F (−29°C)	14 (356)	6 (152)	3 (75)
−30°F (−34°C)	16 (406)	8 (203)	4 (101)
−40°F (−40°C)	18 (457)	8 (203)	4 (101)
−50°F (−46°C)	20 (508)	10 (254)	6 (152)
−60°F (−51°C)	20 (508)	10 (254)	6 (152)

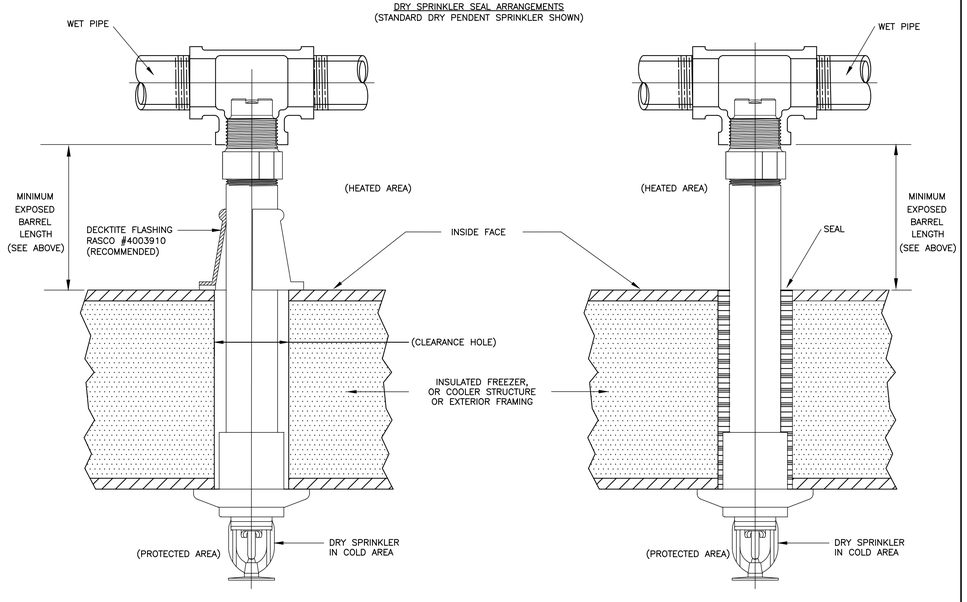
* THE PROTECTED AREA REFERS TO THE AREA BELOW THE CEILING. THE AMBIENT TEMPERATURE IS THE TEMPERATURE AT THE DISCHARGE END OF THE SPRINKLER.
FOR PROTECTED AREA TEMPERATURES THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.

** THE MIN. REQUIRED BARREL LENGTH IS NOT THE SAME AS THE 'A' DIMENSION.
NOTE: EXPOSED MINIMUM BARREL LENGTHS ARE INCLUSIVE UP TO 30MPH WIND VELOCITIES IN THE PROTECTED AREA.



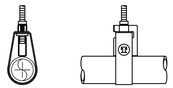
*RECOMMENDED EXPOSED MINIMUM BARREL LENGTHS ALSO APPLY TO HORIZONTAL SIDEWALL DRY SPRINKLERS

DRY SPRINKLER SEAL ARRANGEMENTS
(STANDARD DRY PENDENT SPRINKLER SHOWN)



IN-FREEZER DRY SPRINKLER ASSEMBLY DETAIL | NTS | 4

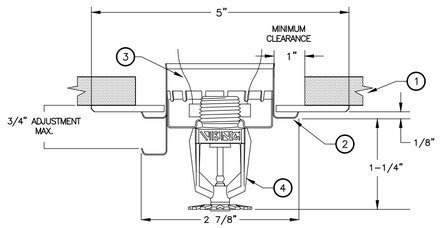
TOLCO FIG. 25 SURGE RESTRAINER
TYPE 1 – FOR 1" AND 1-1/4" PIPE AND HANGER
TYPE 2 – FOR 1-1/2" AND 2" PIPE AND HANGER



UNDERWRITERS' LABORATORIES LISTED ONLY WHEN USED WITH TOLCO BAND HANGERS FIG. 2, 2NFPA AND 200.

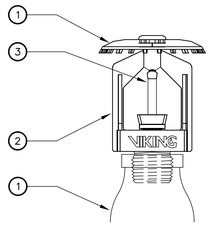
SURGE RESTRAINER FOR STEEL OR CPVC PLASTIC PIPE | NTS | 1

1. CEILING
2. EXPANSION PLATE
3. 1"x1/2" REDUCER
4. RECESSED HEAD AND ESCUTCHEON



PENDENT SPRINKLER THROUGH CEILING | NTS | 2

1. 1"x1/2" REDUCER
2. FRAME
3. BULB
4. DEFLECTOR



UPRIGHT SPRINKLER | NTS | 3

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Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER SEAN POURYAZDI M 32311 REN. 6-30-21 MECHANICAL STATE OF CALIFORNIA

WHA SIZING

FIXTURE TYPE	FIXTURE UNITS (PER FIXTURE)
WATER CLOSET	8
URINAL	4
LAVATORY	2

PDI SIZE	FIXTURE UNITS (PER ARRESTOR)
A	1–11
B	12–32
C	33–60
D	61–113
E	114–154
F	155–330

NOTES:
1. PROVIDE WATER HAMMER ARRESTORS AS REQUIRED IN SPECIFICATIONS.
2. WATER HAMMER ARRESTOR SIZING SHALL BE THE MORE STRINGENT OF THE TABLE ABOVE AND CURRENT PDI (PLUMBING & DRAINAGE INSTITUTE) REQUIREMENTS.
3. LOCATE WATER HAMMER ARRESTORS AS CLOSE TO BRANCH PIPING AS POSSIBLE.

NATURAL GAS SIZING TABLE

BASED ON 2016 CPC EQUATION 1216.3(1) LOW PRESSURE (SCHEDULE 40 METALLIC)
PIPE LENGTH (FT)= 150
MAXIMUM LOAD (MBH)= 1797

PIPE SIZE	PIPE ID	MAX. MBH
1/2	0.622	40
3/4	0.824	83
1	1.049	157
1-1/4	1.38	324
1-1/2	1.61	485
2	2.067	935
2-1/2	2.469	1491
3	3.068	2638
4	4.026	5383

GAS EQUIPMENT CAPACITIES	
EQUIPMENT	GAS LOAD (MBH)
AC-1	80
AC-2	60
MAU-1	182
MAU-2	204
WH-1	150
EQUIP. 6 OVEN	120
EQUIP. 7 RANGE	49
EQUIP. 13 RANGE	136
EQUIP. 23 RANGE	272
EQUIP. 23 RANGE	272
EQUIP. 23 RANGE	272
TOTAL	1797

NATURAL GAS SIZING TABLE

BASED ON 2016 CPC EQUATION 1216.3(2) HIGH PRESSURE (SCHEDULE 40 METALLIC)
INLET PRESS (PSIA)= 10
PRESSURE DROP (PSIA)= 3.5
PIPE LENGTH (FT)= 250
MAXIMUM LOAD (MBH)= 1,797

PIPE SIZE	PIPE ID	MAX. MBH
1/2	0.622	665
3/4	0.824	1,392
1	1.049	2,623

GAS EQUIPMENT CAPACITIES	
EQUIPMENT	GAS LOAD (MBH)
GPR-1	1,797
TOTAL	1,797

WATER AND WASTE MAINS CALCULATIONS

JOB NAME: Nevada HS Culinary DATE 10/24/19

USE	FIXTURE TYPE	NO.	WASTE FU	WASTE TOTAL	WATER BOTH	WATER CW FU	WATER HW FU	WATER TOTAL
	CLOTHES WASHER	1	3	3	4	3.0	3.0	4
	HOSE BIBB (FIRST)	1	0	0	2.5	2.5		2.5
	HOSE BIBB (ADDITIONAL)	2	0	0	1	1.0		2
	DISHWASHER (DOMESTIC)	1	2	2	1.5	1.1	1.1	1.5
	LAVATORY (SINGLE)	1	1	1	1	0.8	0.8	1
U	SERVICE SINK	1	3	3	3	2.3	2.3	3
	FLOOR DRAIN	3	2	6	0			0
	FLOOR SINK RECEPTOR	11	3	33	0			0
U	SINK, 2" TRAP	11	4	44	2	1.5	1.5	22
U	WATER CLOSET, FLUSH VALVE	1	4	4	5	5.0		5
	3-COMPARTMENT SINK	1	4	4	2	1.5	1.5	2
	TOTAL FIXTURE UNITS			100.0			25.1	43.0

EQUIVALENT COLD WATER FLOW RATE (GPM):	48
ADDITIONAL WATER DEMAND LOAD (GPM)	1
AVAILABLE STATIC PRESSURE IN WATER MAIN (PSI)	60
MINIMUM REQUIRED FIXTURE PRESSURE (PSI):	25
ELEVATION RISE (FT):	5
METER LOSS (PSI):	0.0
BACKFLOW PREVENTER LOSS (PSI):	0.0
ADDITIONAL LOSSES (PSI):	0
EQUIVALENT PIPE LENGTH FROM METER TO MOST REMOTE FIXTURE (FT):	750
FRICTION LOSS PRESSURE AVAILABLE (PSI):	32.83
MAXIMUM ALLOWABLE FRICTION LOSS (PSI/100 FT):	4.38
WATER FLOW VELOCITY (FPS):	5.10
CALCULATED FRICTION HEAD LOSS (PSI/100 FT):	2.67
MINIMUM REQUIRED 'WATER' PIPE SIZE (INCHES):	2
MINIMUM REQUIRED 'WASTE' PIPE SIZE (INCHES):	4
(CALCULATIONS PER THE UPC/CPC)	

WATER PIPE SIZING CHART

PIPE SIZES CALCULATED BASED ON UPC/CPC APPENDIX A

SIZE: TYPE L COPPER		COLD WATER				HOT WATER		
NOMINAL DIAMETER	INTERNAL DIAMETER	GPM	FPS	FIXTURE UNITS TANK	FIXTURE UNITS VALVE	GPM	FPS	FIXTURE UNITS
1/2"	0.545	2.1	3.0	**1**	**0**	2.1	3.0	**1**
3/4"	0.785	5.6	3.7	**7**	**0**	5.6	3.7	**7**
1"	1.025	11.3	4.4	**15**	**0**	11.3	4.4	**15**
1-1/4"	1.265	19.7	5.0	**30**	**0**	19.6	5.0	**30**
1-1/2"	1.505	31.1	5.6	**56**	**14**	27.7	5.0	**49**
2"	1.985	64.3	6.7	**195**	**88**	48.2	5.0	**119**
2-1/2"	2.465	113.7	7.6	**450**	**322**	74.4	5.0	**245**
3"	2.945	169.9	8.0	**748**	**700**	106.2	5.0	**411**

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND 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.1.18 THROUGH 1616A.1.26 AND ASCE 7–10 CHAPTER 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 MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT 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 HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, 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 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENT TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE–APPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

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

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

MP ☐ MD ☐ PP ☒ E ☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE–APPROVAL (OPM#) #0043–13.

MP ☐ MD ☐ PP ☐ OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSPHD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL _____ AND CONNECTION LEVEL _____ FOR THE PROJECT AND CONDITIONS.

PLUMBING SHEET INDEX

SHEET NO.	SHEET TITLE
P0.1	PLUMBING NOTES, LEGEND AND SPECIFICATIONS
P0.2	PLUMBING SCHEDULES AND DETAILS
P0.3	PLUMBING DETAILS
P2.1	PLUMBING FLOOR PLAN– WATER AND GAS
P2.2	PLUMBING FLOOR PLAN– WASTE AND VENT
P3.1	PLUMBING ROOF PLAN

PLUMBING LEGEND

SYMBOL	ITEM	ABBR.
WC 1	FIXTURE DESIGNATION / UNIT ABBREVIATION / NUMBER	
P-1 1	DETAIL DESIGNATION / DETAIL NUMBER / SHEET NO. WHERE SHOWN	
-CW-	DOMESTIC COLD WATER	CW
-HW-	DOMESTIC HOT WATER	HW
	DOMESTIC HOT WATER SUPPLY	HWS
	DOMESTIC HOT WATER RETURN	HWR
-V-	VENT	V
G	GAS	G
MG	MEDIUM PRESSURE GAS	MG
LPG	LIQUID PROPANE GAS	LPG
S	SEWER	S
GW	GREASE WASTE	GW
OS	OIL/SAND WASTE	OS
AW	ACID WASTE	AW
SD	STORM DRAIN	SD
RD	ROOF DRAIN	RD
OD	OVERFLOW DRAIN	OD
C	CONDENSATE DRAIN	C
D	SECONDARY DRAIN	D
T&P	TEMPERATURE & PRESSURE RELIEF	T&P
FS	FIRE SPRINKLER	FS
	PIPE CAP	
	PIPE RISER/DROP	(R)/(D)
	SHUT–OFF VALVE IN BOX	SOV
FCO	FLOOR CLEANOUT	FCO
COTG	CLEANOUT TO GRADE	COTG
	WALL CLEANOUT	WCO
	CLEANOUT	CO
	HOSE BIBB	HB
	OVERFLOW DRAIN OUTLET	
	BALL VALVE	BV
	GATE VALVE	GV
	CHECK VALVE	CHK.V
	MIXING VALVE	TMV
	SHUT–OFF COCK	SOC
	CIRCULATION PUMP	CP
	BALANCING VALVE	BLV
	TRAP PRIMER	TP
	TYPICAL	(TYP)
	VENT THRU ROOF	VTR
	UNDERGROUND	UG
	UNDER FLOOR	UF
	ABOVE CEILING	AB.C.
	TO ABOVE/BELOW	TA/TB
	FROM ABOVE/BELOW	FA/FB
	CONTINUATION	CONT.
	NEW	(N)
	EXISTING	(E)
	POINT OF DIS/CONNECTION	POD/POC

GREASE INTERCEPTOR SIZING

FIXTURE	QTY	FU	TOTAL
FD	3	2	6
JS	1	3	3
FS	1	3	3
DW	–	3	–
SINK	–	3	–
KS	–	2	–
HS	–	1	–
3 COMP	1	4	4
TOTAL			16

DRAINAGE FIXTURE UNITS	INTERCEPTOR VOLUME (GAL)
16	750
AS PER 2016 CALIFORNIA PLUMBING CODE TABLE 1014.3.6	

DRAINAGE FIXTURE UNITS	INTERCEPTOR VOLUME (GAL)
8	500
21	750
35	1000
90	1250
172	1500
216	2000
307	2500
342	3000
AS PER 2016 CALIFORNIA PLUMBING CODE TABLE 1014.3.6	

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HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
PLUMBING NOTES, LEGEND, & SPECIFICATIONS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: DP

Checked By: RE

JOB NO. 19.010

DATE 2019–12–20

SHEET NUMBER P0.1

30 of 89

CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
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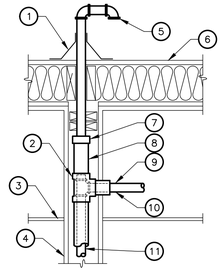
p 916-771-0778
www.lpengineers.com
Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER
SEAN POURVAZIR
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

1. FLASHING, SEE ARCH. PLANS AND DETAILS
2. GAS PIPE TEE WITH TOP CAPPED
3. CEILING
4. PARTITION WALL
5. 1–1/2" VENT
6. ROOF
7. CAP AND SEAL OFF AIRTIGHT
8. PIPE ENCLOSURE
9. GAS PIPE ABOVE CEILING
10. SEAL AIRTIGHT
11. GAS PIPE DROP



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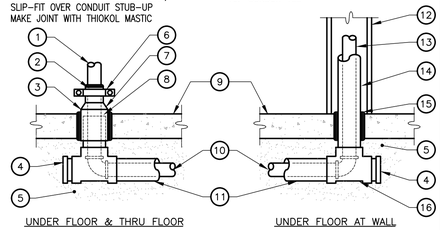
VENTED GAS PIPING THRU ROOF

NTS | 1

1. GAS RISER
2. SEAL WATER & GAS TIGHT WITH THIOKOL MASTIC BEFORE CLAMPING
3. SLEEVE CONDUIT THRU FLOOR & SEAL WATERTIGHT
4. CAP AIRTIGHT
5. SAND BEDDING
6. U–BOLT PIPE CLAMP & SADDLE
7. 18 GA. GALV. METAL TRANSITION CAP, SLIP–FIT OVER CONDUIT STUB–UP
8. MAKE JOINT WITH THIOKOL MASTIC
9. FINISHED FLOOR
10. GAS LINE
11. CONDUIT BELOW GRADE
12. PARTITION WALL
13. GAS RISER
14. CONDUIT VENT RISER
15. SLEEVE CONDUIT THRU FLOOR & SEAL WATERTIGHT ALL AROUND
16. CONDUIT TEE



UNDER FLOOR & THRU FLOOR

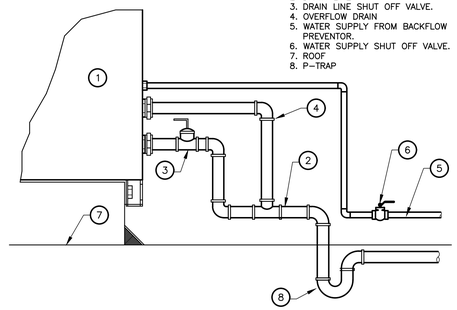
UNDER FLOOR AT WALL

PFUEQ10B

UNDERFLOOR GAS PIPING DETAIL

NTS | 2

1. MAKE–UP AIR UNIT.
2. DRAIN LINE
3. DRAIN LINE SHUT OFF VALVE.
4. OVERFLOW DRAIN
5. WATER SUPPLY FROM BACKFLOW PREVENTOR.
6. WATER SUPPLY SHUT OFF VALVE.
7. ROOF
8. P–TRAP



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MAKE-UP AIR UNIT (MAU-1) WATER SERVICE AND DRAIN CONNECTION

NTS | 3

KITCHEN EQUIPMENT SCHEDULE

EQUIP. NO.	DESCRIPTION	S or W	IND. WASTE	V	CW	HW	GAS (MBH)
2	MOP SINK	2"	---	1–1/2"	3/4"	3/4"	---
6	OVEN	---	---	---	---	---	120
7	RANGE	---	---	---	---	---	49
11	PREP SINK	---	2"	---	3/4"	3/4"	---
13	RANGE	---	---	---	---	---	136
16	HAND SINK	1–1/2"	---	---	3/4"	3/4"	---
19	PREP SINK	---	2"	---	3/4"	3/4"	---
21	PREP SINK	---	2"	---	3/4"	3/4"	---
21.1	PREP SINK (ADA)	---	2"	---	3/4"	3/4"	---
23	RANGE	---	---	---	---	---	272
26	WAREWASHER	---	2"	---	3/4"	3/4"	---
29	THREE–COMP SINK	---	2"	---	3/4"	3/4"	---
35	HAND SINK	1–1/2"	---	---	3/4"	3/4"	---
37	SINK	---	1–1/2"	---	3/4"	3/4"	---
38	COFFEE MAKER	---	3/4"	---	1/2"	---	---
41	ICE BIN	---	1"	---	---	---	---
42	ESPRESSO MACH	---	3/4"	---	1/2"	---	---
46	ICE MAKER	---	3/4"	---	1/2"	---	---

NOTES:
1. COORDINATE CLOSELY WITH KITCHEN EQUIPMENT COMPANY FOR EQUIPMENT LOCATIONS, CONNECTION SIZES AND REQUIREMENTS.
2. SEE KITCHEN EQUIPMENT PLANS FOR EQUIPMENT SCHEDULE AND REQUIREMENTS.
3. PROVIDE INDIVIDUAL SHUT–OFF VALVES AT ALL CW, HW & GAS CONNECTIONS.
4. PROVIDE QUICK DISCONNECT WITH CABLE RESTRAINT FOR ALL GAS EQUIPMENT CONNECTIONS.
5. COORDINATE WITH KITCHEN EQUIPMENT PLUMBING PLAN FOR PLUMBING ROUGH–IN DIMENSIONS.

GAS PRESSURE REGULATOR SCHEDULE

GPR #	V	DESCRIPTION
1	1"	AMERICAN METER MODEL 1843B, GAS PRESSURE REGULATOR WITH 3" GAS OUTLET, OVERPRESSURE SHUT–OFF, FULL CAPACITY INTERNAL RELIEF, INLET PRESSURE OF 10 PSIG, OUTLET PRESSURE 11" W.C. 3/8" ORIFICE WITH A MAXIMUM CAPACITY OF 2900 SCFH.

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	S or W	V	CW	HW	DESCRIPTION
WC 1	WATER CLOSET CBC ACCESS	4"	2"	1–1/2"	---	AMERICAN STANDARD MODEL 3043.001, "MADERA" ADA COMPLIANT WALL MOUNTED VITREOUS CHINA ELONGATED BOWL, 1.28 GPF WITH SLOAN ROYAL MODEL 111–1.28 MANUAL FLUSH VALVE, PROVIDE OLSONITE 10SSCT OPEN FRONT SEAT WITH SELF–SUSTAINING CHECK HINGE, PROVIDE JR SMITH WATER CLOSET SUPPORT MODEL 0240 OR EQUAL. INSTALL PER CBC ACCESS REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
L 1	LAVATORY CBC ACCESS	2"	1–1/2"	1/2"	1/2"	AMERICAN STANDARD MODEL 0355.012, "LUCERNE" ADA COMPLIANT WALL HUNG 20"X18" VITREOUS CHINA LAVATORY, HOLES ON 4" CENTERS FOR CHICAGO MODEL 2200–4E2805ABCP LEVER HANDLE MIXING FAUCET WITH 0.5 GPM AERATOR, PROVIDE SUPPLIES, STOPS AND 17 GAGE CHROME PLATED BRASS P–TRAP, WRAP SUPPLIES, STOPS AND P–TRAP PER CBC ACCESS REQUIREMENTS. INSTALL PER CBC ACCESS REQUIREMENTS.
BFP 1	BACKFLOW PREVENTER	---	---	SEE PLANS	---	WILKINS MODEL 350XL, POINT OF USE LEAD–FREE DOUBLE CHECK BACKFLOW PREVENTER WITH INTEGRAL CHECK VALVES, TEST COCKS AND RELIEF VALVE.
WH 1	NATURAL GAS WATER HEATER	---	---	1–1/2"	1–1/2"	A.O. SMITH MODEL BTH–150, STORAGE TANK TYPE, 100 GALLON CAPACITY, 110 VAC POWER VENT ELECTRICAL CONNECTION, 198 GPH RECOVERY AT 90°F RISE, 150,000 BTUH INPUT. 98% THERMAL EFFICIENCY. MEETS OR EXCEEDS U.S. DOE, ASHRAE 90.1 AND SCAQMD RULE 1146.2 REQUIREMENTS. PROVIDE OPTIONAL POWER–DIRECT VENT AND CONCENTRIC VENT KIT TERMINATION, 3"ø PVC INTAKE AND EXHAUST PIPING. 120VAC/60HZ ELECTRICAL SERVICE, 2.2 F.L. AMPS BLOWER, 4.0 AMPS IGNITER. UL LISTED. PROVIDE CONDENSATE NEUTRALIZATION KIT 100112380.
ET 1	EXPANSION TANK	---	---	3/4"	---	BELL & GOSSETT MODEL PT–12, STEEL SHELL, BUTYL DIAPHRAGM TYPE EXPANSION TANK PRE–CHARGED TO 40 PSI WITH 4.4 GALLON TANK CAPACITY, 3.2 GALLON ACCEPTANCE CAPACITY.
CP 1	CIRCULATION PUMP	---	---	---	3/4"	BELL & GOSSETT MODEL NBF–9U/LW, IN–LINE WET ROTOR CIRCULATION PUMP WITH LEAD–FREE BRONZE BODY, UNION CONNECTION, 5 GPM FLOW AT 5FT TDH, 41 WATT, 0.40 F.L. AMP, 115V/1ø ELECTRICAL SERVICE. PUMP CONTROLLED BY BELL & GOSSETT MODEL AQS–3/4 AQUASTAT WITH 115/120 VAC, 1PH ELECTRICAL CONNECTION. AQUASTAT TO TURN ON AT 120°F AND TURN OFF AT 135°F.
HB 1	HOSE BIBB	---	---	3/4"	---	WOODFORD MODEL B79, RECESSED WALL HYDRANT WITH VACUUM BREAKER AND REMOVABLE LOOSE KEY HANDLE.
HB 2	HOSE BIBB	---	---	3/4"	---	WOODFORD MODEL SHR–MS, FREEZELESS ROOF HYDRANT WITH MOUNTING SYSTEM, VACUUM BREAKER, NO DRAIN REQUIRED.
FD 1	FLOOR DRAIN	2"	1–1/2"	TP	---	JR SMITH MODEL 2005Y, 5" DIAMETER ROUND NICKEL BRONZE TOP WITH 2" PIPE, FLANGE AND SEEPAGE PAN. PROVIDE TRAP PRIMER CONNECTION.
FS 1	FLOOR SINK	3"	2"	TP	---	ZURN MODEL Z1902, COATED CAST IRON, ACID RESISTANT PAINTED INTERIOR, 12" SQUARE TOP WITH 1/2 GRATE, 10" DEEP SUMP, DOUBLE DRAINAGE FLANGE BOTTOM CAULK OUTLET, & DOME STRAINER. PROVIDE TRAP PRIMER CONNECTION.
TP 1	TRAP PRIMER	---	---	1/2"	---	PRECISION PLUMBING PRODUCTS, INC. #PR–500 PRIME–RITE. PROVIDE 12"X12" WALL ACCESS PANEL PER SPECIFICATIONS, FINISH BY ARCHITECT.
GI 1	GREASE INTERCEPTOR	4'	2"	---	---	JENSEN MODEL JP1000EPE–G, 1000 GAL. GREASE INTERCEPTOR, H–20 TRAFFIC RATED WITH (3) 24"ø GAS TIGHT MANHOLE COVERS BROUGHT TO GRADE.
WHA 1	WATER HAMMER ARRESTOR	---	---	---	---	SIOUX CHIEF SERIES 650, TYPE 'L' COPPER TUBE PISTON TYPE WATER HAMMER ARRESTOR, SUITABLE FOR CONCEALED INSTALLATION, SIZE PER PDI REQUIREMENTS. ASSE 1010 LISTED. INSTALL PER MANUFACTURER RECOMMENDATIONS.
WB 1	WASHING MACHINE BOX	2"	2"	3/4"	3/4"	IPS CORPORATION MODEL W4700HA, RECESSED CENTER DRAIN PLASTIC WASHING MACHINE BOX WITH 1/4 TURN SHUT–OFF VALVES, WATER HAMMER ARRESTOR AND 1/2" SWEAT CONNECTION.
TMV 1	THERMOSTATIC MIXING VALVE	---	---	1/2"	1/2"	LEONARD MODEL 270–LF, POINT OF USE LEAD–FREE THERMOSTATIC MIXING VALVE, MINIMUM 0.25 GPM FLOW, 12 GPM FLOW AT 50 PSI PRESSURE LOSS, ASSE 1017 AND 1070 LISTED, CA AB–1953 COMPLIANT. SET OUTLET TEMPERATURE TO 110°F. PROVIDE 12"X12" WALL ACCESS PANEL PER SPECIFICATIONS, FINISH BY ARCHITECT.

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NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:

PLUMBING SCHEDULES AND DETAILS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: DP

Checked By: RE

CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
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p 916-771-0778
www.lpengineers.com
Job #: 19-2078

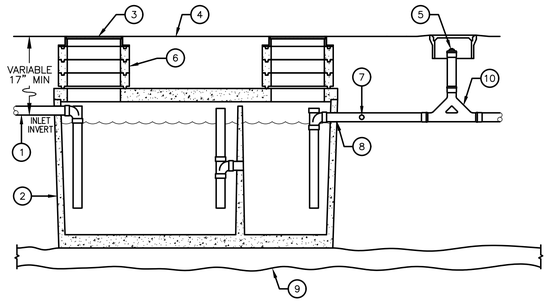
REGISTERED PROFESSIONAL ENGINEER
SEAN POURYAZDI
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER P0.2

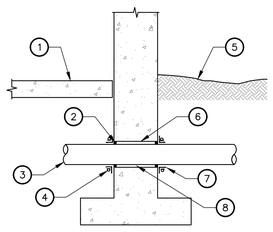
1. 4" GREASE WASTE INLET FROM BUILDING. SEE SHEET P2.2 FOR CONTINUATION
2. PROVIDE TRAFFIC-RATED REINFORCED. PRECAST CONCRETE INTERCEPTOR
3. PROVIDE TRAFFIC-RATED 24"ø CAST IRON, GAS- TIGHT MANHOLE COVERS
4. PAVEMENT OR GRADE
5. PROVIDE 4" CLEAN OUT (TYPICAL)
6. PROVIDE CONCRETE ADJUSTMENT RINGS TO SUITE DEPTH OF THE INTERCEPTOR
7. 2" VENT. SEE SHEET P2.2 FOR CONTINUATION
8. SEAL GREASE INTERCEPTOR PENETRATIONS WATERTIGHT
9. INSTALL INTERCEPTOR ON A BED OF UNDISTURBED EARTH OR 4"-6" OF COMPACTED SAND BACKFILL
10. TWO WAY COMBINATION



PSGREQ01A

GREASE INTERCEPTOR DETAIL — NTS — 7

1. SLAB
2. BEAD OF CAULKING ALL AROUND
3. PIPING
4. STAINLESS STEEL BAND
5. GRADE
6. SLEEVE WITH 3" CLEARANCE ALL AROUND PIPE
7. RETAINING RING
8. STYROFOAM PACKING



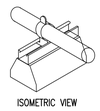
NOTES:
1. PIPE SHALL BE TREATED AS REQUIRED BY CODE FOR UNDERGROUND INSTALLATION
2. COORDINATE ALL SLEEVES THROUGH FOOTINGS WITH STRUCTURAL
3. IN LIEU OF CAULKING USE MECHANICAL LINK SEAL, ADJUST SLEEVE INSIDE DIAMETER AS NECESSARY

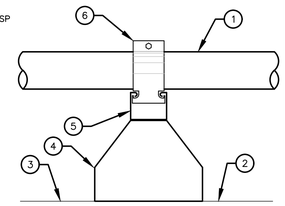
PPIDO02A

PIPE THROUGH FOOTING DETAIL — NTS — 11

1. PIPING ON ROOF.
2. PVC SINGLE PLY PROTECTION MATERIAL.
3. ROOFING MATERIAL.
4. 'B-LINE' 'DURA-BLOK' ROOTOP PIPE SUPPORT OR EQUAL. WOOD BLOCKING NOT ACCEPTABLE.
5. 'B-LINE' 14 GA. GALVANIZED SLOTTED 1" CHANNEL.
6. 'B-LINE' B2000 SERIES PIPE CLASP WITH THRU-BOLT.

NOTE:
1. PROVIDE PIPE SUPPORT AT MAXIMUM SPACING OF 8FT.


ISOMETRIC VIEW

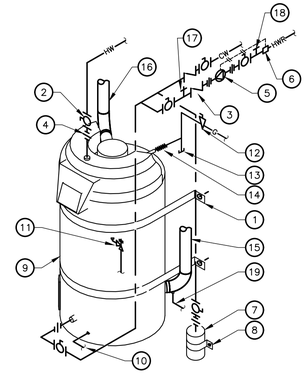


(GAS PIPING, NON SEISMIC)

PPISA01N

TYP. PIPE SUPPORT ON ROOF — NTS — 8

1. 2" WIDE 24 GA STEEL STRAP AROUND WATER HEATER. SECURE TO WALL STUDS OR BLOCKING WITH 3/8"ø LAG SCREWS WITH MIN. 2" PENETRATION (2 PER STRAP) (2 STRAPS PER WATER HEATER)
2. BALL VALVE, TYP
3. CHECK VALVE, TYP
4. UNION, TYP
5. CIRCULATION PUMP, SEE PLUMBING FIXTURE SCHEDULE
6. AQUASTAT, LOCATE MINIMUM 10 FT UPSTREAM OF CIRCULATION PUMP, SEE PLUMBING FIXTURE SCHEDULE
7. EXPANSION TANK, SEE PLUMBING FIXTURE SCHEDULE
8. 2" WIDE 24 GA STEEL STRAP AROUND EXPANSION TANK. SECURE TO STUDS OR BLOCKING WITH 3/8"ø LAG BOLTS WITH MIN. 2" PENETRATION
9. WATER HEATER, SEE PLUMBING FIXTURE SCHEDULE
10. DRAIN COCK, ROUTE FULL SIZE DRAIN TO FLOOR SINK WITH 1" AIR GAP, MIN. (TYP)
11. FULL SIZE TEMP. & PRESSURE RELIEF VALVE. ROUTE FULL SIZE DRAIN TO FLOOR SINK WITH 1" AIR GAP, MIN. (TYP)
12. GAS COCK (TYP)
13. 6" MINIMUM DIRT LEG (TYP)
14. S.S. FLEX CONNECTION (TYP)
15. 3" CPVC FLUE THROUGH ROOF PER MANUFACTURER'S REQUIREMENTS (TYP)
16. 3" CPVC AIR INTAKE THROUGH ROOF PER MANUFACTURER'S REQUIREMENTS (TYP)
17. HOSE BIBB FOR SYSTEM PRIMING.
18. MANUAL AIR VENT.
19. 3/4" CONDENSATE TO NEUTRALIZATION TANK, ROUTE TO FLOOR SINK WITH AIR GAP.

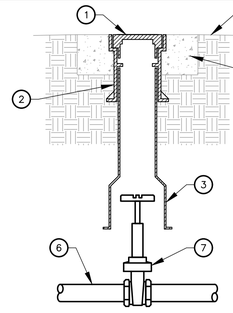


NOTE:
1. PROVIDE DIELECTRIC UNIONS AT ALL CONNECTIONS TO WATER HEATER.
2. BLOCKING SHALL BE MINIMUM 4x4 WITH SIMPSON HU44 HANGERS AT EACH END.
3. INSTALL STRAPS AT TOP 1/3 AND BOTTOM 1/3 OF WATER HEATER.
4. SEE PLANS FOR PIPE SIZES.
5. WATER HEATER TO SIT DIRECTLY ON SLAB

PHOEQ20B

GAS WATER HEATER DETAIL — NTS — 4

1. "WATER" PRECAST VALVE BOX COVER
2. PRECAST VALVE BOX
3. PRECAST VALVE BOX EXTENSION WHERE NEEDED
4. MIN. 18"X18"X4" THICK CONCRETE COLLAR (OMIT WHERE SURFACE CONCRETE OCCURS)
5. FINISHED GRADE
6. COLD WATER SUPPLY
7. GATE SHUT-OFF VALVE



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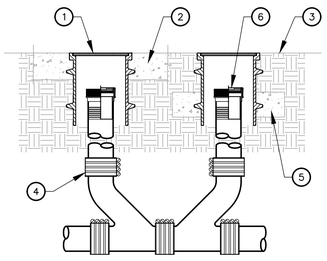
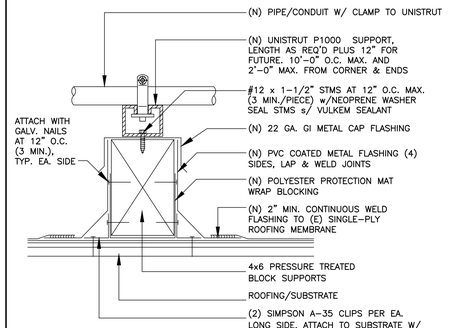
CW SHUT-OFF VALVE — NTS — 1

1. CAST IRON CLEANOUT IN DOUBLE FLANGED HOUSING WITH HEAVY DUTY CAST IRON COVER (TYP 2)
2. CONCRETE SURFACE, MIN. 4" THICK
3. FINISHED GRADE
4. NO-HUB COUPLING
5. MIN. 18"X18"X4" THICK CONCRETE COLLAR (OMIT WHERE SURFACE CONCRETE OCCURS)
6. CLEAN-OUT PLUG (TYP 2)



PPIEC03A

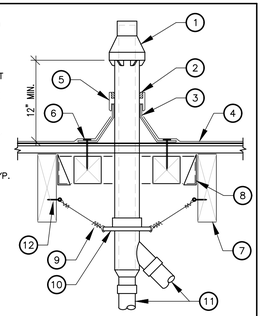
TWO-WAY CLEANOUT (COTG) — NTS — 2



(SUPPORTS AT 40'-0" O.C. MAX. AND WITHIN 2'-0" FROM ENDS)

ANCHORED PIPE SUPPORT ON ROOF — NTS — 12

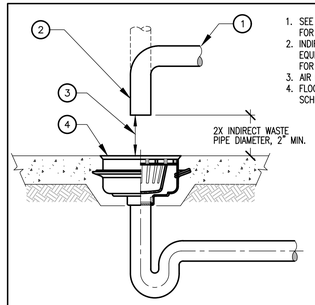
1. CONCENTRIC VENT KIT. PROVIDE ONE-PIECE EXTENSION AS REQUIRED TO ALLOW MINIMUM ROOF CLEARANCE. COORDINATE WITH MANUFACTURER'S REQUIREMENTS.
2. EPOXY SEALING COMPOUND
3. SEAMLESS LEAD FLASHING WITH 8" SKIRT
4. ROOFING, SEE ARCHITECTURAL PLANS
5. CAULK TYPE COUNTER FLASHING SLEEVE WITH VANDAL PROOF SCREWS AND WATERPROOFING COMPOUND
6. SECURE CONE FLASHING TO BLOCKING WITH (4) #12x2 WOOD SCREWS, EVENLY SPACED
7. ROOF JOISTS, SEE STRUCTURAL PLANS
8. 4x4 BLOCKING BETWEEN JOISTS WITH SIMPSON U44 HANGER AT EACH END, TYP.
9. 12 GA. WIRE BRACING, (4) TOTAL, (4) TIGHT TURNS WITHIN 1-1/2" AT EACH END, TYP
10. WALL GUIDE
11. 3" CPVC FLUE AND VENT PIPING, SEE PLANS FOR ROUTING
12. 1/4"ø EYE SCREW WITH 2-3/4" SHANK LENGTH, MIN 1-1/4" EMBEDMENT



PHOEQ21A

CONCENTRIC VENT THROUGH ROOF — NTS — 9

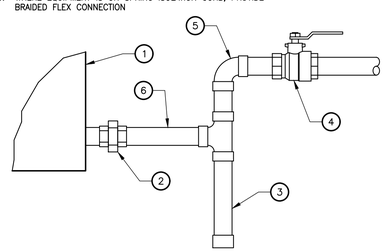
1. SEE PLUMBING FLOOR PLAN 04/P2-4.01 FOR PIPE ROUTING AND EQUIPMENT LAYOUT.
2. INDIRECT WASTE DRAIN PIPE. SEE KITCHEN EQUIPMENT SCHEDULE ON SHEET P2-0.01 FOR PIPE SIZE.
3. AIR GAP
4. FLOOR SINK. SEE PLUMBING FIXTURE SCHEDULE.



PPIEQ02A

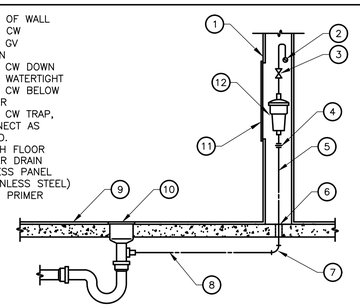
INDIRECT WASTE DETAIL — NTS — 5

1. MECHANICAL EQUIPMENT
2. RIGID CONNECTION WITH UNION
3. MIN. 4" DIRT LEG WITH REMOVABLE CAP
4. GAS SHUT-OFF VALVE
5. GAS PIPING ELBOW DOWN IN DIRECTION OF DIRT LEG
6. WHERE EQUIPMENT IS ON SPRING ISOLATION CURB, PROVIDE BRAIDED FLEX CONNECTION



GAS CONNECTION DETAIL — NTS — 3

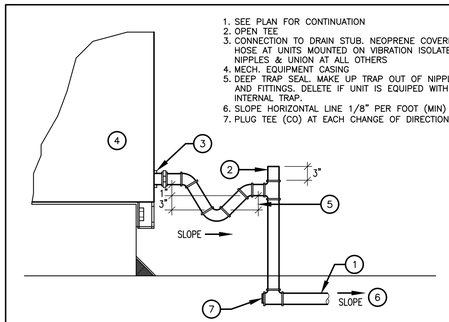
1. FACE OF WALL
2. 3/4" CW
3. 1/2" GV
4. UNION
5. 1/2" CW DOWN
6. SEAL WATERTIGHT
7. 1/2" CW BELOW FLOOR
8. 1/2" CW TRAP, CONNECT AS REQ'D.
9. FINISH FLOOR
10. FLOOR DRAIN
11. ACCESS PANEL (STAINLESS STEEL)
12. TRAP PRIMER



PPIEQ42A

TRAP PRIMER PIPING DETAIL — NTS — 10

1. SEE PLAN FOR CONTINUATION
2. OPEN TEE
3. CONNECTION TO DRAIN STUB. NEOPRENE COVERED HOSE AT UNITS MOUNTED ON VIBRATION ISOLATERS NIPPLES & UNION AT ALL OTHERS
4. MECH. EQUIPMENT CASING
5. DEEP TRAP SEAL. MAKE UP TRAP OUT OF NIPPLES AND FITTINGS. DELETE IF UNIT IS EQUIPED WITH AN INTERNAL TRAP.
6. SLOPE HORIZONTAL LINE 1/8" PER FOOT (MIN)
7. PLUG TEE (CO) AT EACH CHANGE OF DIRECTION.



PPICD01B

CONDENSATE CONNECTION — NTS — 6

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SHEET TITLE:
PLUMBING DETAILS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: DP

Checked By: RE

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER P0.3

32 of 89

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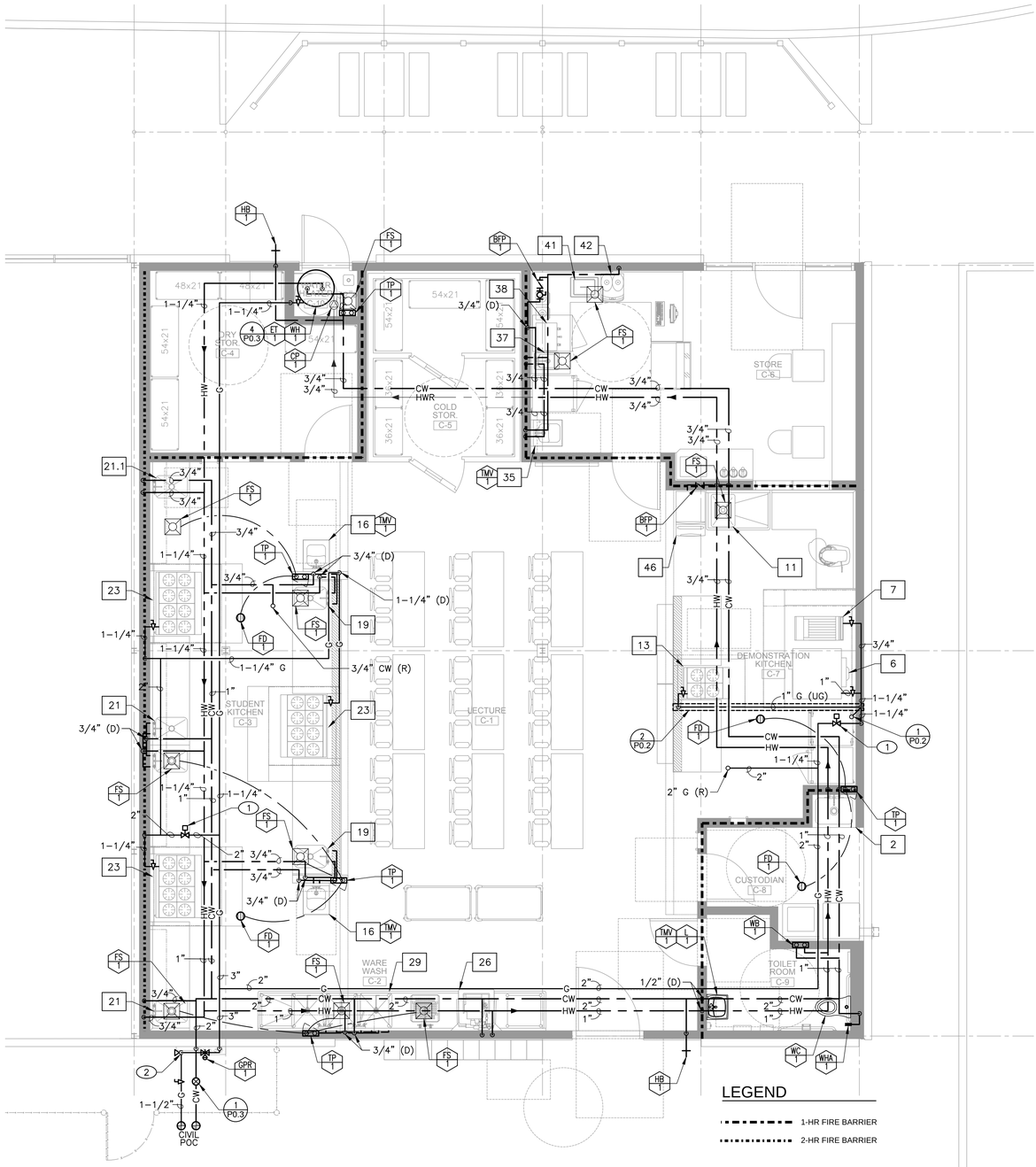

KEY NOTES

1. GAS SOLENOID SHUT–OFF VALVE CONNECTED TO HOOD FIRE SUPPRESSION SYSTEM. COORDINATE WITH KITCHEN EQUIPMENT PLANS.
2. PROVIDE GAS SHUT–OFF VALVE IN RISE.

LEGEND

- 1-HR FIRE BARRIER
- 2-HR FIRE BARRIER

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.
2. COORDINATE ALL KITCHEN EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS WITH KITCHEN EQUIPMENT PLANS.
3. ONLY ONE TENANT SHALL BE CONNECTED TO THE GRAVITY GREASE INTERCEPTOR.

WATER AND NATURAL GAS PLAN

1

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

PLAN NORTH

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SHEET TITLE:
PLUMBING FLOOR PLAN-
WATER AND GAS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
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4		
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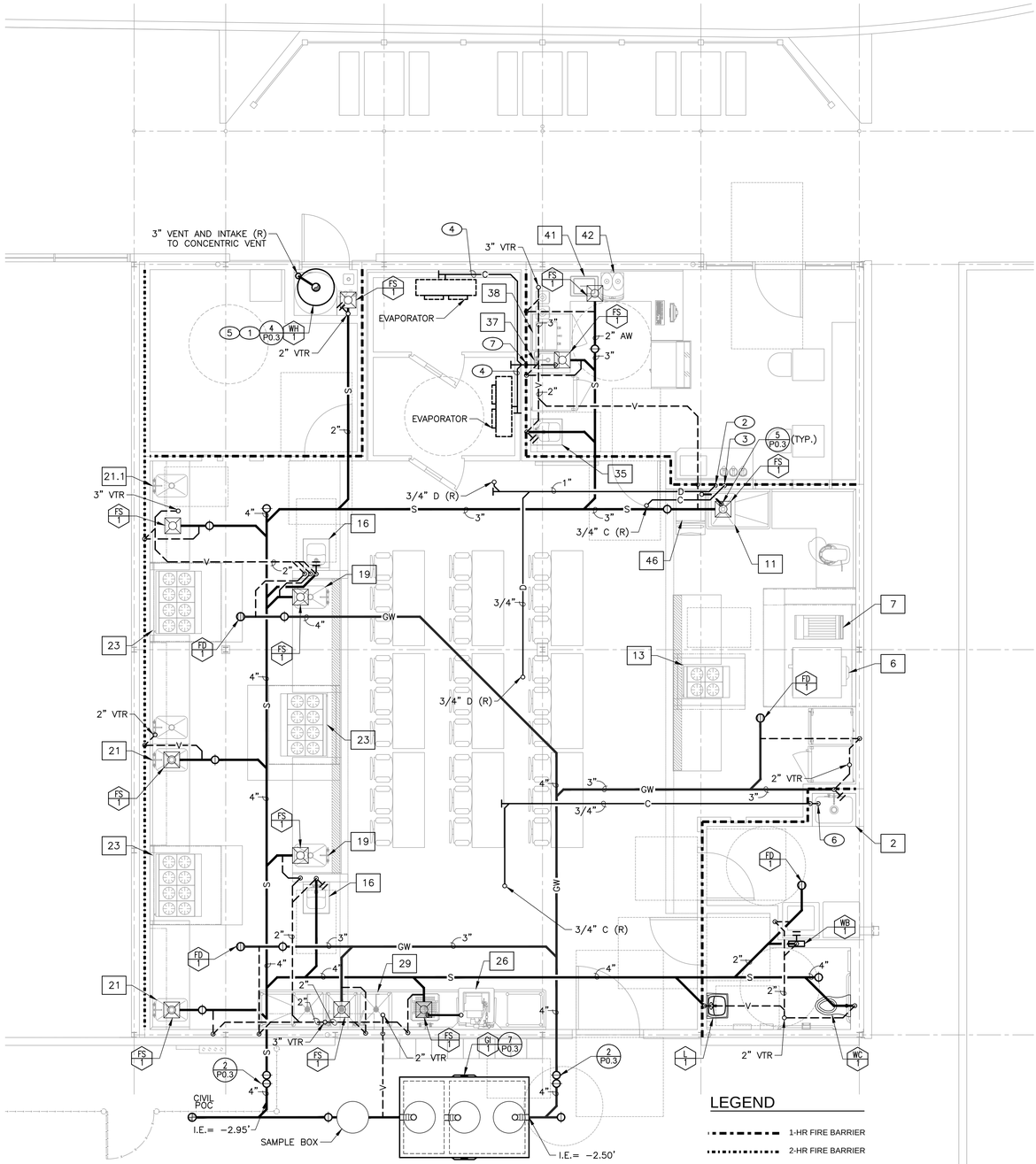
DATE 2019-12-20

SHEET NUMBER P2.1



KEY NOTES

1. WH–1 CONCENTRIC VENT THROUGH ROOF.
2. 1" D FROM MAU–1 & 2, DROP IN WALL AND ELBOW DOWN TO FLOOR SINK WITH 1" AIR GAP.
3. 3/4" C AC–2, DROP IN WALL AND ELBOW DOWN TO FLOOR SINK WITH 1" AIR GAP.
4. PROVIDE CONDENSATE LINE WITH HEAT TRACE W/ INSULATION.
5. CONDENSATE DRAIN FROM WH–1 THROUGH ACID NEUTRALIZER AND DISCHARGE AT FLOOR SINK WITH 1" AIR GAP.
6. 3/4" C, DROP IN WALL AND ELBOW DOWN TO SERVICE SINK WITH 1" AIR GAP.
7. 3/4" C, DROP IN WALL AND ELBOW DOWN TO FLOOR SINK WITH 1" AIR GAP.

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.
2. COORDINATE ALL KITCHEN EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS WITH KITCHEN EQUIPMENT PLANS.
3. ONLY ONE TENANT SHALL BE CONNECTED TO THE GRAVITY GREASE INTERCEPTOR.

WASTE AND VENT PLAN

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

1

PLAN NORTH

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SHEET TITLE:
PLUMBING FLOOR PLAN-
WASTE AND VENT

SCALE:

REVISIONS

No.	Issue Description	Date
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2		
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4		
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DATE 2019–12–20

SHEET NUMBER P2.2

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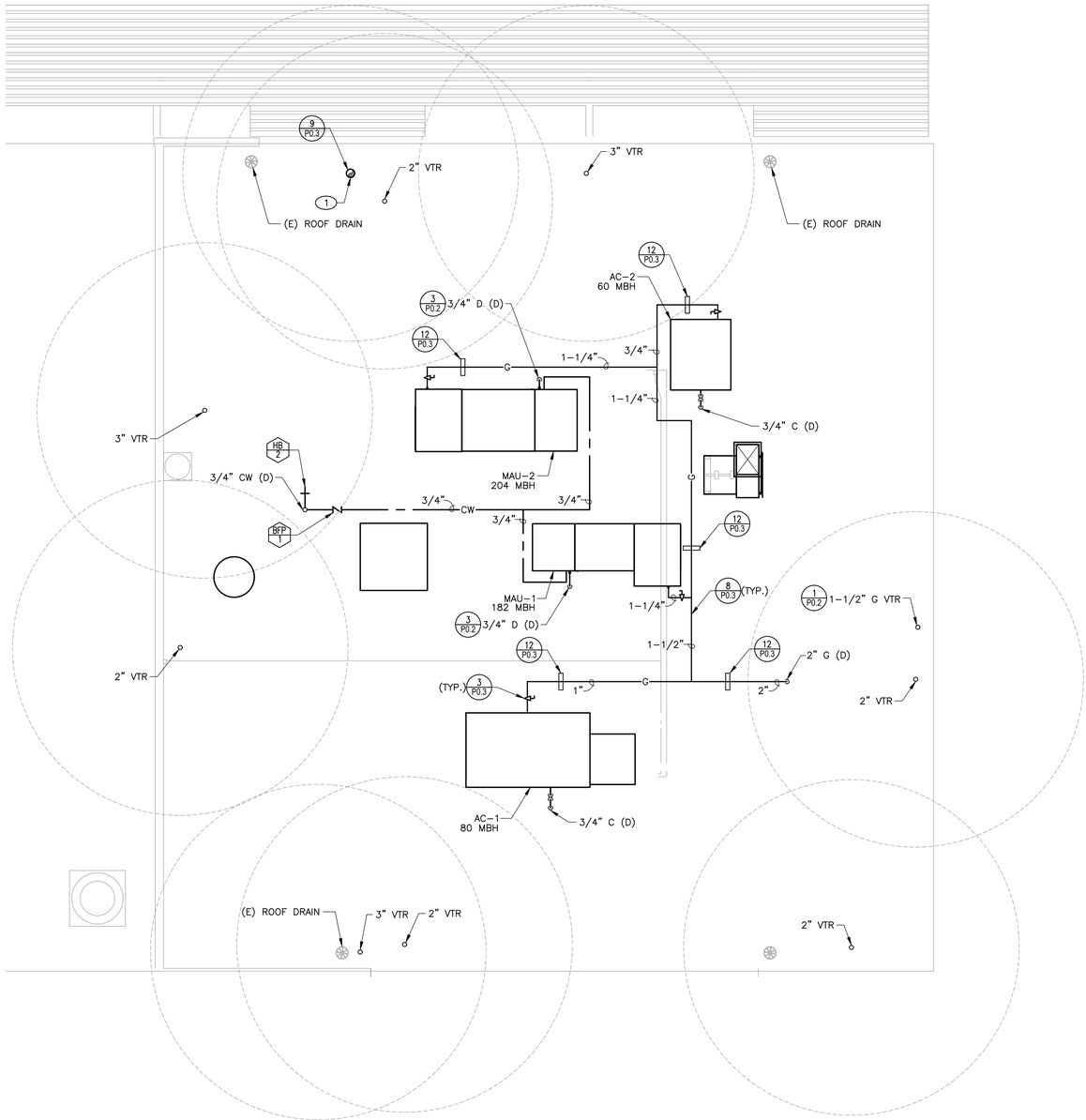
KEY NOTES

(1) CONCENTRIC VENT FROM WH-1.



PLUMBING ROOF PLAN

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

1

PLAN NORTH

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SHEET TITLE:
PLUMBING ROOF PLAN

SCALE:

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No.	Issue Description	Date
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2		
3		
4		
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DATE 2019-12-20

SHEET NUMBER P3.1

VFD SCHEDULE

NUMBER	VFD-1	
SYSTEM SERVED	KEF-1	
HP (MOTOR)	1	
FLA (MOTOR)	4.6	
VOLTAGE (MOTOR)	230 VAC	
HP (DRIVE)	1	
OUTPUT AMPS (DRIVE)	4.6	
VOLTAGE (DRIVE)	230 VAC	
ENCLOSURE RATING	UL TYPE 1	
HARMONIC MITIGATION	5% IMPEDANCE	
DISCONNECT	CIRCUIT BREAKER	
BYPASS	NO BYPASS	
VFD ISOLATION SWITCH	YES	
VFD MIN. SCCR	100KA	
MANUFACTURER	ABB	
MODEL	ACH550-PCR-04A6-2+B058	
SIZE (H"xW"xD")	34.1x17.8x13.5	
WEIGHT (POUNDS)	140	

NOTES:
1. AT MINIMUM, VFD SHALL INCLUDE 5% IMPEDANCE VIA 5% AC LINE REACTOR OR DUAL DC BUS CHOKES SIZED TO 5% EQUIVALENT IMPEDANCE. REACTOR OR CHOKES SHALL BE SWINGING DESIGN.
2. PROVIDE UL1449 TYPE 2 SURGE SUPPRESSION DEVICE.
3. VFD SHALL INCLUDE ALPHA-NUMERIC KEYPAD INTERFACE, WITH DISPLAY IN PLAIN ENGLISH. (DISPLAY REPLYING SOLELY ON CODES ARE NOT ACCEPTABLE).
4. PROVIDE INTERNAL EMI/RFI FILTER PER IEC 61800-3. VFD INPUT AMPS SHALL NOT EXCEED VFD OUTPUT AMPS.
5. VFD SHALL BE BTL LISTED FOR BACNET MS/TP, AND ALSO INCLUDE MODBUS AND N2.
6. VFD SHALL INCLUDE REAL TIME CLOCK WITH BATTERY BACKUP (INCLUDE 10 YEAR BATTERY).

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND 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.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 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 MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT 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 HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, 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 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENT TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

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

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

MP MD PP E — ☐ ☒ ☐ ☐ — OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#) #0043-13.

MP MD PP — ☐ ☐ ☐ — OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSPHD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL _____ AND CONNECTION LEVEL _____ FOR THE PROJECT AND CONDITIONS.

AIR CONDITIONER SCHEDULE

NUMBER		AC-1	AC-2	
TYPE		ROOFTOP	ROOFTOP	
NOMINAL TONS		6	2	
VOLTS/PHASE		208/3	208/1	
RLA/MCA		-/37.4	-/19.5	
MOP		50	30	
SEER/EER		15.5/13.1	16/12	
AFUE %		80	81	
B L O W E R	MAX CONTINUOUS BHP	1.0	1.0	
	DESIGN BHP	0.91	0.5	
	SUPPLY AIR CFM	2400	760	
	E.S.P. (IN. W.C.)	0.7	.5	
	MIN. OSA CFM	SEE SCHEDULE	SEE SCHEDULE	
	DRIVE	DIRECT	DIRECT	
C O O L	COOLING TYPE	DX	DX	
	TOTAL CAP. (MBH)	66.52	26.4	
	SENS. CAP. (MBH)	53.52	17.3	
	E.A. DB (°F)	80	80	
	E.A. WB (°F)	67	67	
	AMBIENT TEMP. (°F)	105	105	
H E A T	HEATING TYPE	GAS	GAS	
	INPUT (MBH)	80	48/60	
	OUTPUT (MBH)	64.8	49.0	
	FUEL	NG	NG	
POWER EXHAUST (HP)		0.5	-	
POWER EXHAUST (FLA)		2.3	-	
FILTER TYPE		MERV 8	MERV 8	
SERVICE		SEE PLAN	SEE PLAN	
NOTES		1,2,3,4,5,6	1,2,3,5	
OPERATING WEIGHT (LBS.)		1600	490	
MANUFACTURER		TRANE	TRANE	
MODEL		YHC074F3RLA	4YCZ6024A1060A	

NOTES:
1. PROVIDE FACTORY 14" HIGH ROOF CURB.
2. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH.
3. PROVIDE ANTI-RECYCLE TIMER, CRANKCASE HEATER, HINGED ACCESS DOORS AND COIL GUARDS.
4. PROVIDE MICROMETL MODULATING ECONOMIZER AND MODULATING CENTRIFUGAL POWERED EXHAUST WITH ADJUSTABLE DRY BULB CONTROL.
5. MOUNT UNIT PER DETAIL 9/M0.2.
6. POWERED EXHAUST REQUIRES SEPARATE POWER CONNECTION FOR 208V-230V-3 PHASE & 1.0 HP MOTOR.
7. SEE SHEET M5.1 FOR CONTROLS.

EXHAUST FAN SCHEDULE

NUMBER	KEF-1	KEF-2	IEF-1
TYPE	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL
MOUNTING	ROOF	ROOF	INLINE
HP / WATTS	0.97 / -	1.7 / -	- / 64.0
VOLTS / PHASE	230 / 3	230 / 1	115 / 1
CFM	2760	3600	200
E.S.P. (IN.WC.)	1.5	1.563	0.25
DRIVE	DIRECT	DIRECT	BELT
FAN RPM	1915	1725	2007
SONES/TIP SPD.(FPM)	21/-	26/-	2/-
UNIT ETL LISTING	UL/cUL 762 LISTED	UL/cUL 762 LISTED	NONE
SERVICE	SEE PLAN	SEE PLAN	SEE PLAN
NOTES	2,9	2,4,8,9	1, 5, 6, 7
CONTROL	SPEED CONTROLLER	SPEED CONTROLLER	INTEGRATED W/ LIGHTS
OPER. WT. (LBS.)	340	150	90
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK
MODEL	USF-320-BI	CUE-161-A	CSP-A250

NOTES:
1. PROVIDE FACTORY BACKDRAFT DAMPER.
2. PROVIDE FACTORY PREWIRED DISCONNECT SWITCH.
3. PROVIDE FACTORY PREWIRED FAN SPEED CONTROLLER.
4. PROVIDE ROOF CURBS FOR ROOF FANS.
5. PROVIDE IN-LINE EXHAUST FAN WITH SPRING HANGING ISOLATORS.
6. PROVIDE IN-LINE EXHAUST FAN WITH FLEXIBLE INLET AND OUTLET CONNECTIONS.
7. PROVIDE FACTORY INLET GUARD FOR IEF-1.
8. PROVIDE KEF-2 WITH KEYWAY GREASE TROUGH, CLEANOUT PORT AND VENTED CURB EXTENSION.
9. INTERLOCK KEF-1 WITH MAU-1 & KEF-2 WITH MAU-2. SEE FOOD SERVICE PLANS FOR DETAILS.
10. SEE SHEET M5.1 FOR CONTROLS. COORDINATE KITCHEN EXHAUST FAN CONTROLS WITH FOOD SERVICE PLANS.

AIR BALANCE SCHEDULE

EQUIPMENT	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	RETURN AIR (CFM)	EXHAUST AIR (CFM)
AC-1	2400	460	1940	-
AC-2	760	100	660	-
KEF-1	-	-	-	2760
KEF-2	-	-	-	3600
IEF-1	-	-	-	200
MAU-1	-	2826	-	-
MAU-2	-	3372	-	-
TOTAL PRESS.	198 CFM (POSITIVE)			

NOTES:
1. OUTSIDE AIRFLOW RATES FOR ROOFTOP UNITS PER TITLE 24 REQUIREMENTS.

AIR DISTRIBUTION SCHEDULE

SYMBOL	TYPE	DESCRIPTION
A	CEILING SUPPLY	MODULAR CORE DIFFUSER WITH FRAME FOR LAY-IN T-BAR MOUNTING TITUS MODEL MCD
B	CEILING RETURN	SINGLE DEFLECTION FIXED HORIZONTAL BLADE GRILLE WITH 1/2" BLADE SPACING, FRAME FOR LAY-IN T-BAR MOUNTING. TITUS MODEL 355RL.
C	SIDEWALL SUPPLY	DOUBLE DEFLECTION, FRONT HORIZONTAL BLADE REGISTER WITH 3/4" BLADE SPACING FLAME FOR SURFACE MOUNTING. TITUS MODEL 300RL
E	CEILING EXHAUST/ RETURN	EGGCRATE GRILLE WITH 1/2"x1/2"x1/2" GRID, FRAME FOR SURFACE MOUNTING, OBD. TITUS MODEL 50F.
F	DUCT MOUNT SUPPLY	DOUBLE DEFLECTION, INDIVIDUALLY ADJUSTABLE BLADES AND 3/4" SPACING FOR DUCT MOUNTING. TITUS MODEL S300FL.

NOTES:
1. REFER TO THE MECHANICAL PLANS FOR NECK SIZE, CFM, AIR DIFFUSION PATTERN, AND FIRE DAMPER (IF REQUIRED).

MAKE-UP AIR UNIT SCHEDULE

NUMBER		MAU-1	MAU-2
TYPE		ROOFTOP	ROOFTOP
DISCHARGE		VERTICAL	VERTICAL
VOLTS/PHASE		230/3	230/3
MCA		10.7	10.7
MOP		15	15
B L O W E R	MAX CONTINUOUS BHP	2.0	2.0
	DESIGN BHP	1.88	1.66
	SUPPLY AIR CFM	2826	3380
	E.S.P. (IN. W.C.)	0.6	0.6
	MIN. OSA CFM	2826	3380
	DRIVE	DIRECT	DIRECT
C O O L	COOLING TYPE	CELDEK EVAP	CELDEK EVAP
	LEAVING AIR DB (°F)	68.4	67.8
	LEAVING AIR WB (°F)	65	65
	E.A. DB (°F)	96	96
	E.A. WB (°F)	65	65
	AMBIENT TEMP. (°F)	95	95
H E A T	HEATING TYPE	GAS	GAS
	INPUT (MBH)	181.3	204
	OUTPUT (MBH)	145	163.4
	TURNDOWN	8 STAGE	8 STAGE
	FUEL	NATURAL GAS	NATURAL GAS
FILTER TYPE		MERV-8	MERV-8
SERVICE		KITCHEN	KITCHEN
NOTES		1-10	1-10
ACCESSORIES		SEE NOTES	SEE NOTES
UNIT ETL LISTING		UL/cUL 1995	UL/cUL 1995
OPERATING WEIGHT (LBS.)		1100	1365
MANUFACTURER		GREENHECK	GREENHECK
MODEL		IGX-110-H12-G	IGX-112-H22-G

NOTES:
1. MOUNT UNIT PER DETAIL 7/M0.2.
2. PROVIDE FACTORY ROOF CURB.
3. PROVIDE FACTORY ALUMINIZED HEAT EXCHANGER.
4. PROVIDE FACTORY DUCT SMOKE DETECTOR. INSTALL IN STRICT ACCORDANCE WITH THE 2016 CALIFORNIA MECHANICAL CODE, SECTION 608. COORDINATE WITH ELECTRICAL AND/OR FIRE ALARM SYSTEM CONTRACTOR.
5. PROVIDE LOUVERED INTAKE WITH ALUMINUM MESH FILTER AND INLET DAMPER.
6. PROVIDE DOUBLE WALL UNIT INSULATION.
7. PROVIDE 8 STAGE FURNACE CONTROL.
8. PROVIDE FACTORY KITCHEN CONTROL PANEL. INTERLOCK WITH HOOD, EXHAUST FAN AND MAKE-UP AIR UNIT PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE HOOD REQUIREMENTS WITH FOOD SERVICE PLANS.
9. PROVIDE EVAPORATOR COOLER AUTO-DRAIN. INSTALL PER MFG. REQUIREMENTS.
10. INTERLOCK MAKE-UP AIR UNIT WITH KITCHEN HOOD AND KITCHEN EXHAUST FAN AS SHOWN ON PLANS. COORDINATE WITH FOOD SERVICE PLANS FOR CONTROLS.

MECHANICAL SHEET INDEX

SHEET NO.	SHEET TITLE
M0.1	MECHANICAL SCHEDULES, LEGENDS, & NOTES
M0.2	MECHANICAL DETAILS
M0.3	MECHANICAL DETAILS
M2.1	MECHANICAL FLOOR PLAN
M3.1	MECHANICAL ROOF PLAN
M5.1	MECHANICAL CONTROLS

MECHANICAL LEGEND

SYMBOL	ITEM	ABBR.
	SUPPLY AIR	SA
	RETURN AIR	RA
	EXHAUST AIR	EA
	OUTSIDE AIR	OSA
	TRANSFER AIR	TA
1 M-2	DETAIL DESIGNATION DETAIL NUMBER SHEET NO. WHERE SHOWN	
AC-1	EQUIPMENT DESIGNATION UNIT ABBREVIATION NUMBER	
A 10x10-3 120 FD	GRILLE DESIGNATION NECK SIZE & BLOW (4 UON) FIRE DAMPER WHERE REQ'D CFM	
	ACOUSTIC LINED DUCT	L
	TURNING VANES	TV
	DUCT FLEXIBLE CONNECTION	
	DUCT RISER	
	DUCT DROP	
	RECTANGULAR TO ROUND FITTING	
	VOLUME CONTROL DAMPER	VD
FD	FIRE DAMPER W/ ACCESS	FD
FSD	FIRE SMOKE DAMPER W/ ACCESS	FSD
	OPPOSED BLADE DAMPER	OBD
	BACKDRAFT DAMPER	BDD
M	MOTORIZED DAMPER	
T	THERMOSTAT @ +48" AFF	T-STAT
S	SENSOR @ +48" AFF	
TC	TIMECLOCK @ +48" AFF	
TCP	TEMPERATURE CONTROL PANEL	TCP
SD	DUCT SMOKE DETECTOR	SD
	PIPE RISER/DROP	(R)/(D)
	ABOVE FINISHED FLOOR	AFF
	UNLESS OTHERWISE NOTED	UON
	TYPICAL	(TYP)
	BOTTOM OF DUCT	BOD
	TOP OF DUCT	TOD
	UNDERCUT DOOR 3/4"	UCD
	NEW	(N)
	EXISTING	(E)
P	POINT OF DIS/CONNECTION	POD/POC

OUTSIDE AIR SCHEDULE

AC UNIT	OSA CFM
AC-1	460
AC-2	100

* OSA TO BE PER TITLE 24 REQUIREMENTS.

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APP. 02-117832 INC:
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DATE: 01/21/20

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Stockton, CA 95219
(209) 462.2873
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CLASSROOM MODERNIZATION CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
MECHANICAL SCHEDULES, LEGENDS, & NOTES

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: JR

Checked By: RH

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER M0.1

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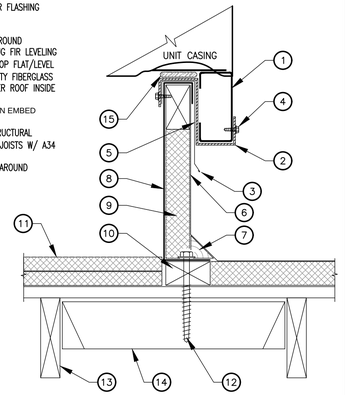
LP CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
Roseville, CA 95678
p 916-771-0778
www.lpengineers.com
Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER
SEAN POURVAREI
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

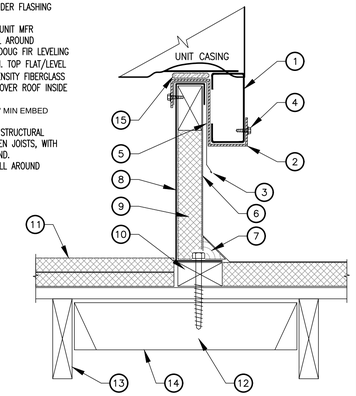
1. AC UNIT BASE RAIL
2. AC UNIT HOLD DOWN, 16 GA STEEL, 6" WIDE, TYP. 24" O.C. ON LONG SIDES AND 12" O.C. ON SHORT SIDES
3. 26 GA GALV. SM COUNTERFLASHING
4. SECURE HOLD DOWNS TO AC UNIT BASE RAIL WITH (4) #12 X 3/4" SM SCREWS, (2) PER SIDE, TYP.
5. NAIL FLASHING TO WOOD NAILER
6. ROOFING UP AND UNDER FLASHING
7. CANT STRIP
8. AC UNIT CURB
9. RIGID INSULATION ALL AROUND
10. PRESSURE TREATED DOUG FIR LEVELING BLOCK, MIN. 2" HIGH. TOP FLAT/LEVEL
11. 2" THICK X 3 LB DENSITY FIBERGLASS INSULATION BOARD COVER ROOF INSIDE CURB
12. (3) 3/8" LAG w/ 2 1/2" MIN EMBED EACH SIDE
13. ROOF FRAMING, SEE STRUCTURAL
14. 4X BLOCKING BETWEEN JOISTS W/ A34 HANGERS
15. NEOPRENE GASKET ALL AROUND



MEQSA06A

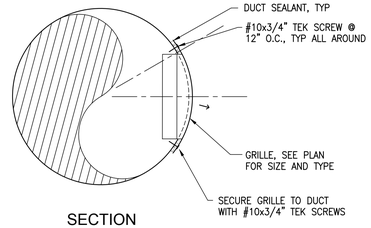
AC UNIT MOUNTING DETAIL | NTS | 9

1. MAU UNIT BASE RAIL
2. MAU UNIT HOLD DOWN, 16 GA STEEL, 6" WIDE, TYP. 24" O.C. ON LONG SIDES AND 12" O.C. ON SHORT SIDES
3. 26 GA GALV. SM COUNTERFLASHING
4. SECURE HOLD DOWNS TO AC UNIT BASE RAIL WITH (4) #12 X 3/4" SM SCREWS, TYP.
5. NAIL FLASHING TO WOOD NAILER
6. ROOFING UP AND UNDER FLASHING
7. CANT STRIP
8. MAU UNIT CURB BY UNIT MFR
9. RIGID INSULATION ALL AROUND
10. PRESSURE TREATED DOUG FIR LEVELING BLOCK, MIN. 2" HIGH. TOP FLAT/LEVEL
11. 2" THICK X 3 LB DENSITY FIBERGLASS INSULATION BOARD COVER ROOF INSIDE CURB
12. (3) 3/8" LAG w/ 2 1/2" MIN EMBED EACH SIDE
13. ROOF FRAMING, SEE STRUCTURAL
14. 4X BLOCKING BETWEEN JOISTS, WITH U44 HANGERS EA. END.
15. NEOPRENE GASKET ALL AROUND

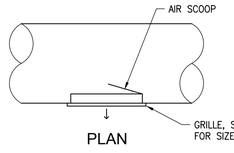


FILENAME

MAKE-UP AIR UNIT MOUNTING | NTS | 7



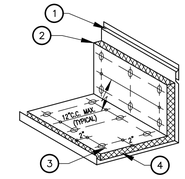
SECTION

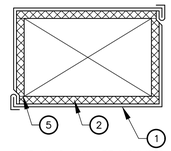


PLAN

ROUND DUCT WITH DIFFUSER | NTS | 4

1. GALVANIZED SHEET METAL DUCT.
2. 1" THICK ACOUSTIC DUCT LINER, LINER TO BE ADHERED TO DUCT. w/ 100% ADHESIVE (MIRACLE PF96)
3. NOT MORE THAN 2" FROM LEDGE OF DUCT LINER.
4. ALL ENDS OF LINER TO BE COATED WITH ADHESIVE. (MIRACLE PF96). ENDS OF LINER SHALL BE BUTTED FIRMLY TOGETHER.
5. TOP AND BOTTOM SECTIONS OF LINER SHALL OVERLAP THE SIDES.





METAL FASTENERS: OMARK INSUL-PINS. DURA DYNE FASTENERS OR GRIP NAILS,

GRIP NAILS SHALL BE INSULATED BY " GRIP NAIL AIR-HAMMER" OR BY AUTOMATIC FASTENER EQUIPMENT.

MDUSA02A

ACOUSTIC LINED DUCTS | NTS | 1

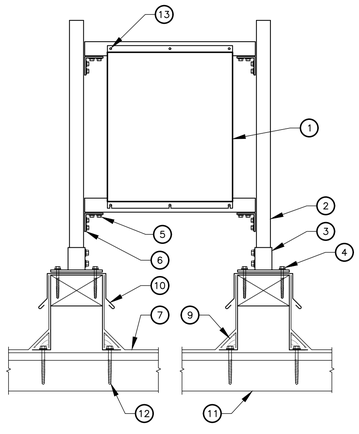
DIMENSION OF LONGEST SIDE, INCHES	SHEET METAL GAGE (ALL FOUR SIDES)	TRANSVERSE REINFORCING (1) MINIMUM REINFORCING ANGLE SIZE AND MAXIMUM LONGITUDINAL SPACING BETWEEN TRANSVERSE JOINTS &/OR INTERMEDIATE REINFORCING	AT JOINTS MIN. HT. IN.	DRIVE SLIP / PLAIN S SLIP	HEMMED S SLIP	ALTER'NT BAR SLIP	REINFORCED BAR SLIP
				RECOM-MENDED GAGE	RECOM-MENDED GAGE	RECOM-MENDED GAGE	RECOM-MENDED GAGE
UP THRU 12	26	NONE REQUIRED	1	26	26	24	24
13 – 18	24	NONE REQUIRED	1	24	24	24	24
19 – 30	24	1" x 1" x 1/8" @ 60 IN.	1		24	24	24
31 – 42	22	1" x 1" x 1/8" @ 60 IN.	1			22	22

(1) TRANSVERSE REINFORCING SIZE IS DETERMINED BY DIMENSION OF SIDE TO WHICH ANGLE IS APPLIED.

MDUSC01A

DUCT CONSTRUCTION STANDARDS | NTS | 2

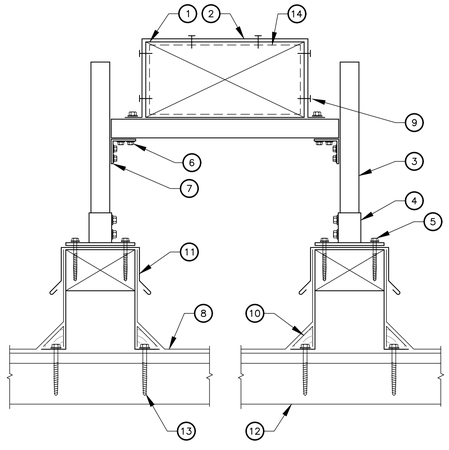
1. VFD, SEE SCHEDULE
2. (B-LINE) B22 CHANNEL, (TYP)
3. (B-LINE) B280FL CHANNEL POST BASE, (TYP)
4. 3/8"ø LAG BOLT WITH NEOPRENE WASHER, MIN. 2" INTO NAILER, (2) BOLTS PER POST AT OPPOSITE CORNERS, SILICONE SEAL PENETRATIONS WATERTIGHT
5. (4) 3/8"ø BOLT AND CHANNEL NUT PER ANGLE, (TYP)
6. (B-LINE) B115 FOUR HOLE ANGLE FITTING, (TYP)
7. ROOFING UP AND UNDER FLASHING
8. #12 SM SCREW AT 8" O.C., MIN. 2 PER SIDE.
9. CANT STRIP, TYP.
10. PREFAB. GALV. SHEET METAL EQUIP. CURB, 8" HIGH x 12" LONG WITH WOOD NAILER AND COUNTERFLASHING
11. 4X BLOCKING BETWEEN (E) JOISTS W/ U44 HANGERS AT EA. END
12. 3/8"ø LAG SCREW WITH MIN. 1-1/2" INTO BLOCKING, (2) PER LONG SIDE, TYP.
13. SECURE VFD TO CHANNEL WITH CHANNEL NUTS AND HEX BOLTS, SIZE AND SPACING PER VFD MANUFACTURER'S REQUIREMENTS, (TYP)



MDUSA05B

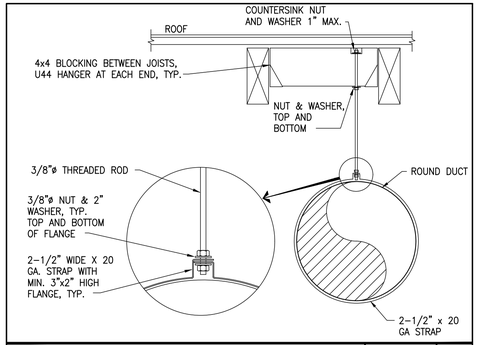
VFD MOUNTING ON ROOF | NTS | 10

1. RECTANGULAR OR ROUND DUCT. SEE PLAN FOR SIZE. (TYP)
2. 2" WIDE x 18 GA. SHEET METAL STRAP, FOLD OVER ENDS, SECURE TO CHANNEL W/ 3/8"ø BOLT AND CHANNEL NUT AT EACH END.
3. (B-LINE) B22 CHANNEL, (TYP)
4. (B-LINE) B280FL CHANNEL POST BASE, (TYP)
5. 3/8"ø LAG BOLT WITH NEOPRENE WASHER, MIN. 2" INTO NAILER, (2) BOLTS PER POST AT OPPOSITE CORNERS, SILICONE SEAL PENETRATIONS WATERTIGHT
6. (4) 3/8"ø BOLT AND CHANNEL NUT PER ANGLE, (TYP)
7. (B-LINE) B115 FOUR HOLE ANGLE FITTING, (TYP)
8. ROOFING UP AND UNDER FLASHING
9. #12 SM SCREW AT 8" O.C., MIN. 2 PER SIDE.
10. CANT STRIP, TYP.
11. PREFAB. GALV. SHEET METAL EQUIP. CURB, 8" HIGH x 12" LONG WITH WOOD NAILER AND COUNTERFLASHING
12. 4X BLOCKING BETWEEN (E) JOISTS W/ U44 HANGERS AT EA. END
13. 3/8"ø LAG SCREW WITH MIN. 1-1/2" INTO BLOCKING, (2) PER LONG SIDE, TYP.
14. INTERNALLY LINED DUCTWORK.



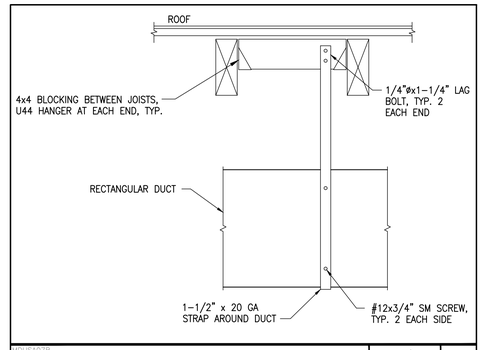
MDUSA05B

DUCT SUPPORT ON ROOF | NTS | 8



MDUSA07C

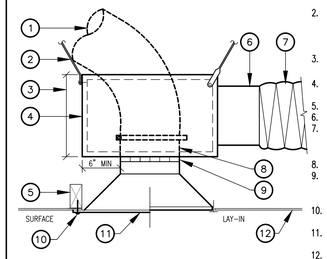
DUCT MOUNTING (ROUND) | NTS | 5



MDUSA07B

DUCT MOUNTING (RECTANGULAR) | NTS | 6

1. ℄ OF ELBOW RADIUS MINIMUM 150% OF DUCT DIAMETER.
2. SUPPORT W/(4) 1-1/2 x 24 GA SHEET METAL STRAPS. SECURE STRAPS TO PLENUM & STRUCTURE ABOVE.
3. (BRANCH SIZE + 2") X (NECK SIZE +2")
4. CUSHIONHEAD BOX WITH MINIMUM 1" ACOUSTIC LINING.
5. 2x WOOD BLOCKING OR NAILER.
6. METAL SLEEVE OR SPIN-IN FITTING.
7. INSULATED FLEXIBLE AIR DUCT, SEE MECHANICAL PLAN FOR SIZE. MAX LENGTH 5' PER CMC 603.5
8. TRANSITION (AS REQUIRED).
9. AIR CONTROL GRID SET AT 90° TO AIR STREAM OR PLANE OF ELBOW. (WHERE APPLICABLE)
10. REGISTER SCREW, SECURE PER DIFFUSER MNFG. REQUIREMENTS.
11. TYPICAL SQUARE NECK SUPPLY, RETURN OR EXHAUST AIR DIFFUSER.
12. FINISHED CEILING, SEE ARCH. DRAWINGS.



NOTES:
1. WHERE FULL 150% C RADIUS IS NOT POSSIBLE, THE CUSHIONHEAD IS REQ'D.
2. VERIFY CEILING TYPE, PROVIDE APPROPRIATE DIFFUSER FRAME & INSTALLATION.

MDUEQ01A

DIFFUSER/GRILLE INSTALLATION | NTS | 3

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NEVADA JOINT UNION HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
MECHANICAL DETAILS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: JR

Checked By: RH

JOB NO. 19.010

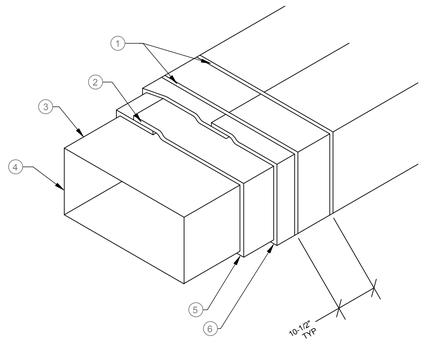
DATE 2019-12-20

SHEET NUMBER M0.2

37 of 89

LP CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
Roseville, CA 95678
p 916-771-0778
www.lpengineers.com
Job #: 19-2078

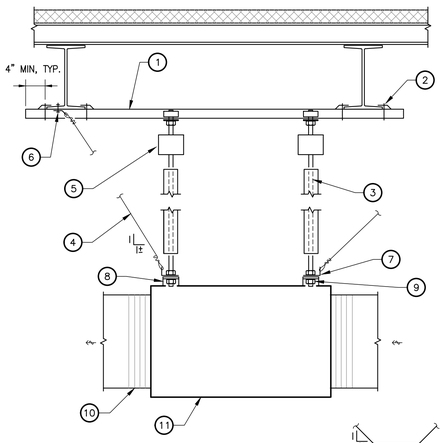
REGISTERED PROFESSIONAL ENGINEER
SEAN POURYAZDI
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA



1. STEEL BANDING 1/2" WIDE MIN. TYPICAL
2. 3" MIN. LONGITUDINAL OVERLAP
3. 3" MIN. PERIMETER OVERLAP
4. DUCTWORK
5. FIRST LAYER 3M FIRE BARRIER DUCT WRAP 20A.
6. SECOND LAYER 3M FIRE BARRIER DUCT WRAP 20A.

DUCT FIRE WRAP DETAIL | NTS | 7

1. 1-5/8" UNISTRUT CHANNEL
2. UNISTRUT P2785 BEAM CLAMP AND 3/8"ø U-BOLT, TYP. OF (2) EACH END OF CHANNEL
3. 3/8"ø THREADED ROD WITH UNISTRUT P1000T CHANNEL STIFFENER, TYP 4 AT EACH CORNER. PROVIDE CHANNEL WITH 3/8"ø BOLTS AT 10" MAX O.C.
4. 12 GA SLACK WIRE, TYP 4, (4) TIGHT TURNS WITH 1-1/2", TYP AT EACH END
5. MIN. 1" STATIC DEFLECTION VIBRATION ISOLATOR
6. 3"x2"x16 GA. ANGLE, SECURE TO BEAM WITH 1/2" BOLT AND NUT, TYP.
7. 3"x2"x2" WIDE x 16 GA. ANGLE, TYP.
8. HANGER BRACKET PROVIDED BY FAN MANUFACTURER
9. LOCKNUT, TYP
10. FLEXIBLE DUCT CONNECTOR, TYP
11. INLINE FAN, SEE SCHEDULE

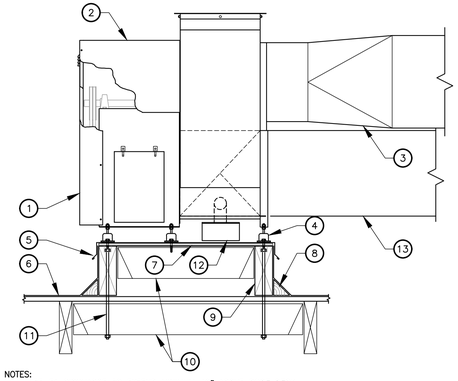


BRACING PLAN

MEXEQ05D

INLINE EXHAUST FAN MOUNTING | NTS | 5

1. UTILITY SET EXHAUST FAN, SEE SCHEDULE
2. WEATHERGUARD ENCLOSURE PROVIDED WITH FAN
3. RECTANGULAR TO ROUND DUCT TRANSITION
4. VIBRATION SPRING ISOLATOR PROVIDED WITH FAN, TYP. SILICONE SEAL ALL PENETRATIONS INTO CURB
5. 20 GA. GALV. SHEET METAL CURB CAP. LAP, FOLD & SOLDER ALL HORIZ. JOINTS
6. FINISHED ROOFING RUN UP AND UNDER CURB CAP
7. LEVEL 1-1/8" PLYWOOD PLATFORM
8. CANT STRIP ALL AROUND CURB
9. 4"X8" DOUGLAS FIR SUPPORT RAIL SHAPED FOR ROOF SLOPE, TYP.
10. 4X BLOCKING BETWEEN JOISTS WITH U44 HANGERS AT EACH END
11. 5/8"ø THREADED ROD WITH NUT & WASHER AT EACH END (2 EA. SIDE)
12. GREASE CUP BY MANUFACTURER.
13. DISCHARGE DUCT.



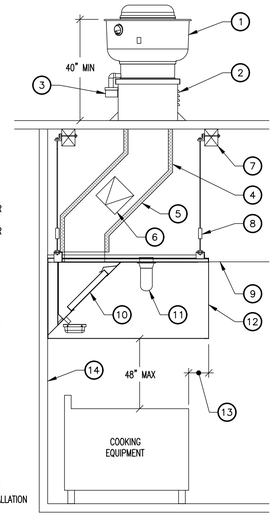
NOTES:
1. KEF-F1 DISCHARGE TO EXTEND MINIMUM 40" ABOVE ROOF DECK.

MDUSKA1C

KITCHEN EXHAUST FAN MOUNTING (KEF-1) | NTS | 3

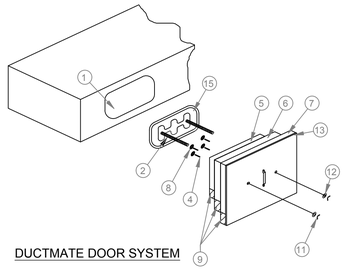
1. KITCHEN EXHAUST FAN, TERMINATE MIN. 10'-0" FROM ADJACENT BUILDING, PROPERTY LINE, AIR INTAKES AND 10'-0" ABOVE ADJOINING GRADE.
2. VENTED CURB EXTENSION
3. GREASE TRAP
4. GREASE DUCT UP TO EXHAUST FAN, SLOPE MIN. 1/4" PER LINEAR FOOT TO HOOD
5. 2-LAYERS OF GREASE DUCT FIREWRAP, U.L AND CSFM LISTED FOR GREASE DUCT ENCLOSURES, INSTALL PER MFGR'S RECOMMENDATIONS AND TESTED PER ASTM E-2336.
6. CLEANOUT DOOR IN DUCT SHALL BE SLIDING OR HINGED
7. REFER TO KITCHEN CONSULTANT FOR SUPPORT DETAILS.
8. REFER TO KITCHEN CONSULTANT FOR HOOD PLANS.
9. CEILING, SEE ARCHITECTURAL PLANS
10. GREASE FILTERS WITH DRAIN, REFER TO KITCHEN CONSULTANT PLANS.
11. HOOD LIGHTING, REFER TO KITCHEN CONSULTANT PLANS.
12. STAINLESS STEEL TYPE 1 HOOD, MAINTAIN MIN. 18" CLEARANCE FROM COMBUSTIBLES, MIN. 3" CLEARANCE FROM 1-HR FIRE PROTECTED COMBUSTIBLES
13. HOOD SHALL OVERHANG COOKING SURFACE MIN. 6" ON ALL OPEN SIDES
14. 22 GA. STAINLESS STEEL BACKSPLASH BEHIND COOKING APPLIANCES

KITCHEN HOODS SHALL BE INSTALLED IN ACCORDANCE WITH THE TERMS OF THEIR LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SHALL BE TESTED IN ACCORDANCE WITH UL710.

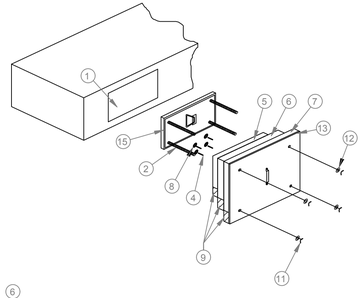


FILENAME

KITCHEN HOOD DETAIL | NTS | 1

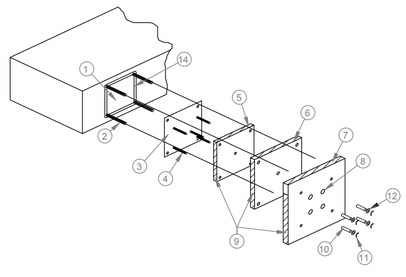


DUCTMATE DOOR SYSTEM



DUCTMATE ULTIMATE DOOR SYSTEM

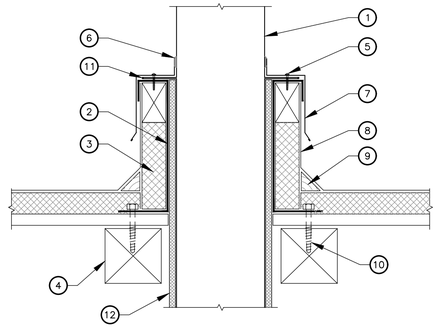
1. ACCESS DOOR OPENING.
2. ALL THREAD RODS.
3. ACCESS DOOR COVER PANEL 16 GAUGE (FIELD FAB. ONLY).
4. INSULATION PINS - WELDED TO COVER.
5. FIRST LAYER FIREWRAP.
6. SECOND LAYER FIREWRAP, 1" OVERLAP.
7. THIRD LAYER FIREWRAP, 1" OVERLAP.
8. SPEED CLIPS/WASHERS.
9. CUT EDGES SEALED WITH ALUMINUM FOIL TAPE.
10. SPOOL PIECES FOR THREAED RODS (OPTIONAL FIELD FAB. ONLY).
11. WING NUTS.
12. WASHERS.
13. INSULATION PLATE.
14. CERAMIC FIBER GASKET, 1/2" THICK.
15. PRE-FABRICATED ACCESS DOOR.



FIELD FABRICATED DOOR SYSTEM

GREASE DUCT ACCESS DOOR DETAIL | NTS | 6

1. TYPE 1 GREASE DUCT THRU ROOF, SEE PLAN FOR SIZE AND ROUTING
2. PREFABRICATED PITCHED ROOF CURB, "THYCURB" MODEL TC-3 WITH WOOD NAILER
3. RIGID INSULATION ALL AROUND
4. 4X4 BLOCKING ALL AROUND CURB, SECURE TO ROOF FRAMING WITH U44 HANGERS
5. #10 MIN. x 1" SM SCREW WITH NEOPRENE WASHER AT 6" O.C., EACH SIDE, SILICONE SEAL PENETRATION WATERTIGHT
6. SEALANT ALL AROUND
7. 20 GA GALV SM COUNTER FLASHING
8. ROOFING UP AND UNDER FLASHING
9. CANT STRIP
10. 3/8 " x 3" LAG SCREW AT 12" O.C., MIN. 2 PER SIDE
11. FLANGE WELDED TYPE 1 EXHAUST DUCTWORK
12. (2) LAYERS OF GREASE DUCT FIRE WRAP



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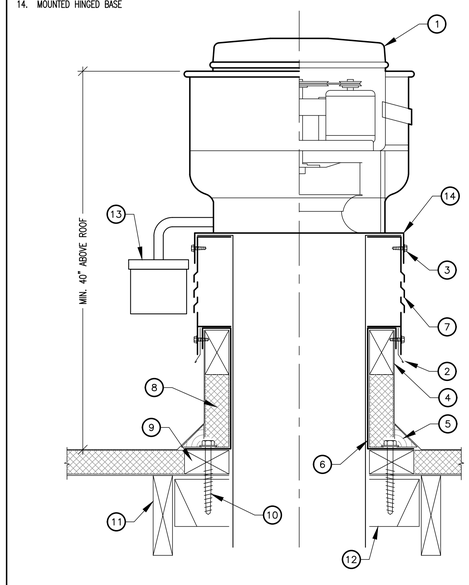
GREASE DUCT THRU ROOF DETAIL | NTS | 4

1. ROOF MOUNTED KITCHEN EXHAUST FAN
2. 26 GA GALV. SM COUNTERFLASHING
3. SECURE FAN TO CURB WITH #12 SM SCREWS, 4 PER SIDE.
4. ROOFING UP AND UNDER FLASHING
5. CANT STRIP
6. EXHAUST FAN CURB BY FAN MFR
7. VENTED CURB EXTENSION BY FAN MFR
8. RIGID INSULATION ALL AROUND
9. PRESSURE TREATED DOUG FIR LEVELING BLOCK, MIN. 2" HIGH. TOP FLAT/LEVEL
10. 1/2"ø LAG SCREW AT 24" O.C., MIN 2 SCREWS EACH SIDE AND 8" FROM END, TYP
11. ROOF FRAMING, SEE STRUCTURAL
12. 4X BLOCKING BETWEEN JOISTS WITH U44 HANGERS EA END
13. GREASE TROUGH BY FAN MFR
14. MOUNTED HINGED BASE



KTICHEN EXHAUST FAN MOUNTING | NTS | 2

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SHEET TITLE:
MECHANICAL DETAILS

SCALE:

REVISIONS

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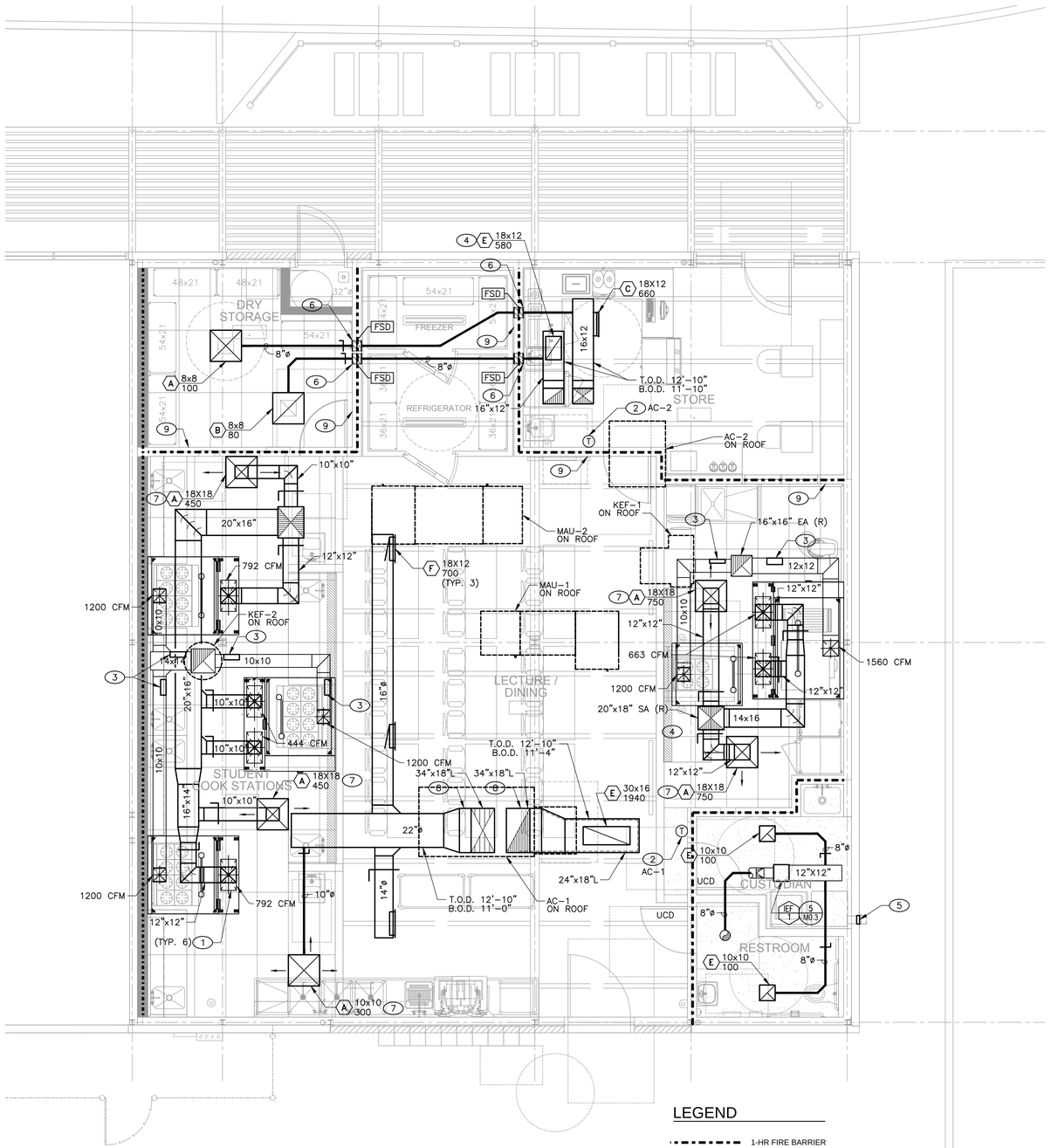

KEY NOTES

1. CONNECT DUCTWORK TO KITCHEN EQUIPMENT PER FOOD SERVICE REQUIREMENTS.
2. CONTROLS TO BE PELICAN WIRELESS T-STATS TIED INTO CAMPUS NETWORK.
3. UL FIRE RATED GREASE DUCT ACCESS DOOR FOR INSPECTION AND CLEANING, DUCTMATE ULTIMATE DOOR, OR EQUAL. INSTALL PER LISTING REQUIREMENTS.
4. PROVIDE RETURN GRILL ON TOP OF DUCT.
5. PROVIDE DRYER WALL VENT MODEL DWV4, COLOR BY ARCHITECT.
6. INSTALL 1.5 HOUR COMBINATION FIRE SMOKE DAMPER AT RATED WALL PENETRATION.
7. CONFIGURE DIFFUSER WITH THROW PATTERNS SHOWN ON PLAN.
8. 36"x18"L TO 24"x18"L LEADING EDGE TRANSITION FITTING.
9. 1 HR FIRE RATED WALL. SEE ARCHITECTURAL.

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

LEGEND

- 1-HR FIRE BARRIER
- 2-HR FIRE BARRIER

MECHANICAL FLOOR PLAN

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

1

PLAN NORTH

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MECHANICAL FLOOR PLAN

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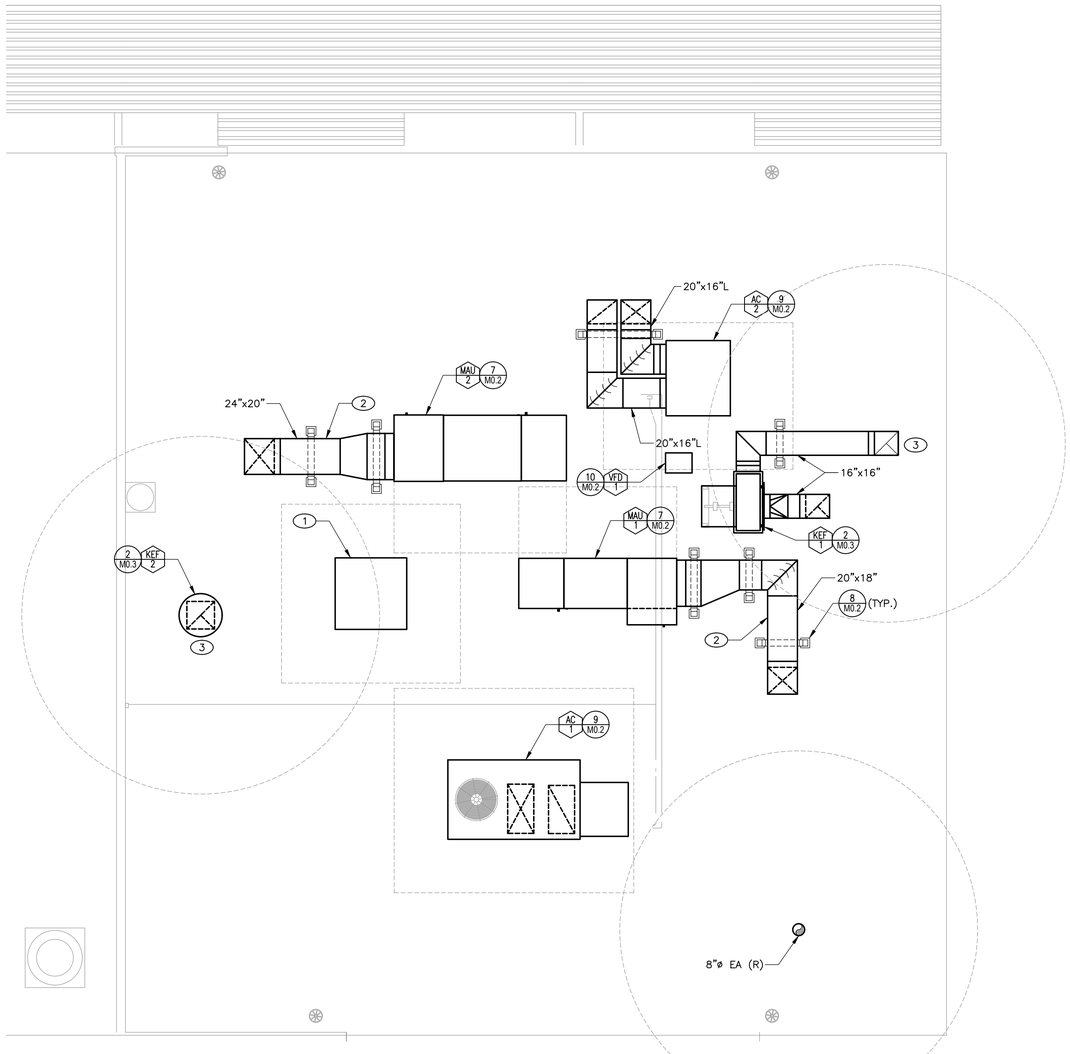

KEY NOTES

1. PROPOSED LOCATED OF "REFRIG-O-PAK" SYSTEM, PROVIDED BY KITCHEN CONSULTANT, REQUIRED TO BE MINIMUM 10 FEET FROM ROOF EDGE ON SERVICE SIDE. FINAL LOCATION TO BE DETERMINED BY OTHERS.
2. SUPPLY DUCTWORK TO BE EXTERNALLY WRAPPED/INSUALTED.
3. DISCHARGE TO BE A MINIMUM OF 40" ABOVE ROOF SURFACE.

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

MECHANICAL ROOF PLAN

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

1

PLAN NORTH

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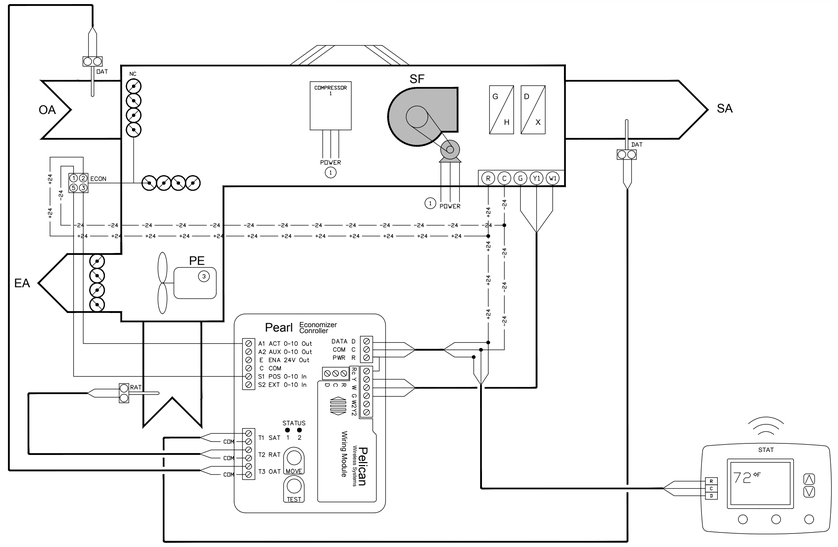
Sheet Notes

1. LINE VOLTAGE & CONDUIT BY DIVISION 16.
2. MOUNT PELICAN ECONOMIZER CONTROLLER IN UNIT
3. FACTORY CONTROLLED POWER EXHAUST.

Control Components

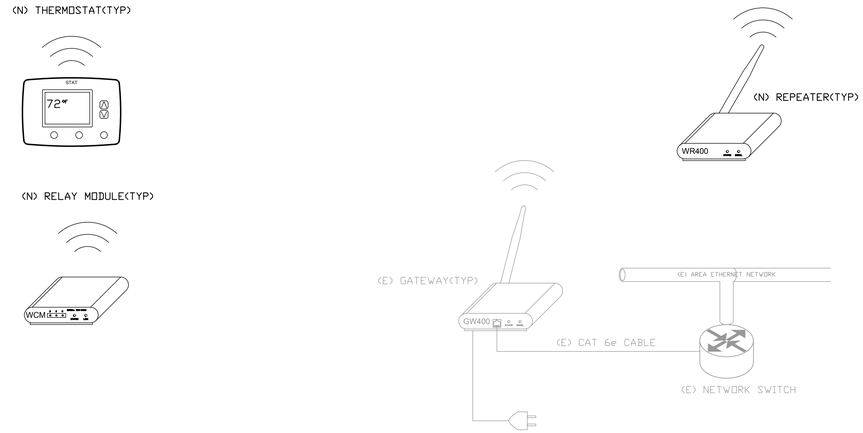
TAG	QTY	PART NUMBER	DESCRIPTION
STAT	1	PEL TS250	WIRELESS TEMPERATURE + CO2 THERMOSTAT
PEARL	1	PEL PEARL	PEARL ECONOMIZER MODULE
ECON	1	BELI LF24-SR	MODULATING ACTUATOR



AIR CONDITIONING UNIT WITH ECONOMIZER AND MODULATING POWER EXHAUST CONTROL DIAGRAM | NTS | 2

Control Components

TAG	QTY	PART NUMBER	DESCRIPTION
GATEWAY	X	PEL GW400	PELICAN WIRELESS GATEWAY
REPEATER	X	PEL WR400	PELICAN WIRELESS REPEATER



NOTE:
THE EXISTING CAMPUS BUILDING AUTOMATION SYSTEM PELICAN WIRELESS. COORDINATE NEW EQUIPMENT WITH EXISTING SYSTEM INCLUDING ALL MODULES AND ACCESSORIES.

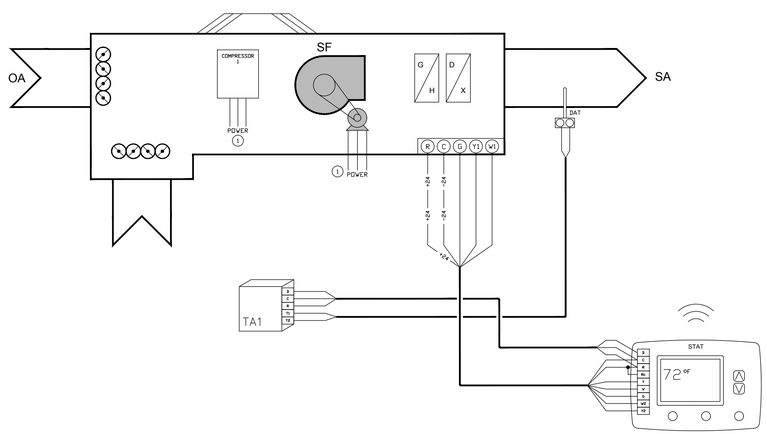
CONTROL SYSTEM LAN ARCHITECTURE DIAGRAM | NTS | 1

Sheet Notes

1. LINE VOLTAGE & CONDUIT BY DIVISION 16.

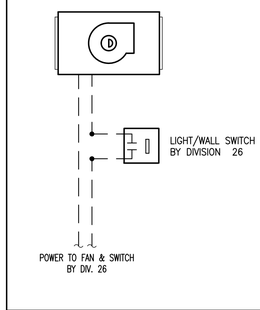
Control Components

TAG	QTY	PART NUMBER	DESCRIPTION
STAT	1	PEL TS250	WIRELESS TEMPERATURE + CO2 THERMOSTAT
DAT	1	ACI A/CP-D-8"-PB	REMOTE 8" TYPE 2 10K DUCT SENSOR
TA1	1	PEL TA1	TEMPERATURE AND ALARM SENSOR



AIR CONDITIONING UNIT WITH AIR COOLED CONDENSER CONTROL DIAGRAM | NTS | 4

CONTROL SCHEDULE	
CEF	SWITCH
IEF-1	LIGHTS



INLINE EXHAUST FAN CONTROL | NTS | 3

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ACCESSIBILITY NOTES

1. ACCESSIBLE REACH RANGES
   11B–308.1.1 REACH RANGES FOR ELECTRICAL SWITCHES
   CONTROLS AND SWITCHES INTENDED TO BE USED BY OCCUPANT OF A ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, SPPLISNCES OR COOLING, HEATING AND VENTILATING EUIPMENT, SHALL COMPLY WITH SECTION 11B–308 EXCEPT THE LOW REACH SHALL BE MEASUTRED TO THE BOTTOM OF THE OUTLET BOX AND THE HIGH REACH SHALL BE MEASURED TO THE TOP OF THE OUTLET BOX.

   11B–308.1.2 ELECTRICAL RECEPTACLE OUTLETS
   ELECTRICAL RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30A OR LESS AND COMMUNICATION SYSTEM RECEPTACLES SHALL COMPLY WITH SECTION 11B–308 EXCEPT THE LOW REACH SHALL BE MEASUTRED TO THE BOTTOM OF THE OUTLET BOX AND THE HIGH REACH SHALL BE MEASURED TO HE TOP OF THE OUTLET BOX.

   11B–308.2 FORWARD REACH
   11B–308.2.1 UNOBSTRUCTED
   WHERE A FORWARD REACH IS UNOBSTRUCTED, THE HIGH FORWARD REACH SHALL BE 48" MAX. AND THE LOW FORWARD REACH SHALL BE 15" MIN. ABOVE THE FINISH FLOOR OR GROUND.

   11B–308.2.2 OBSTRUCTED HIGH REACH
   WHERE A HIGH FORWARD REACH IS OVER AN OBSTRUCTION, THE CLEAR FLOOR SPACE SHALL EXTEND BENEATH THE ELEMENT FOR A DISTANCE NOT LESS THAN THE REQUIRED REACH DEPTH OVER THE OBSTRUCTION. THE HIGH FORWARD REACH SHALL BE 48" MAX. WHERE THE REACH DEPTH IS 20" MAX. WHERE THE REACH DEPTH EXCEEDS 20", THE HIGH FORWARD REACH SHALL BE 44" MAX. AND THE REACH DEPTH SHALL BE 25" MAXIMUM.

   11B–308.3 SIDE REACH
   11B–308.3.1 UNOBSTRUCTED:
   WHERE A CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE SIDE REACH IS UNOBSTRUCTED, THE HIGH SIDE REACH SHALL BE 48" MAX. AND THE LOW SIDE REACH SHALL BE 15" MIN. ABOVE THE FINISH FLOOR OR GROUND.

   11B–308.3.2 OBSTRUCTED HIGH REACH:
   WHERE CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE HIGH SIDE REACH IS OVER AN OBSTRUCTION, THE HEIGHT OF THE OBSTRUCTION SHALL BE 34" MAX. AND THE DEPTH OF THE OBSTRUCTION SHALL BE 24" MAX. THE HIGH SIDE REACH SHALL BE 48" MAX. WHERE THE REACH DEPTH EXCEEDS 10 INCHES, THE HIGH SIDE REACH SHALL BE 46" MAX. FOR A REACH DEPTH OF 24"MAXIMUM.

2. WHERE ELECTRICAL EQUIPMENT AND DEVICES ARE INTENDED TO BE USED BY OCCUPANTS:
   A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH SECTION 11B–305 SHALL BE PROVIDED. OPERABLE PARTS SHALL BE PLACED WITHIN ONE OR MORE OF THE REACH RANGES SPECIFIED IN SECTION 11B–308.

   11B–309.4 – OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT
   GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE
   PARTS SHALL BE 5 POUNDS MAXIMUM.

OCCUPANCY & DAYLIGHT SENSOR NOTES

1. OCCUPANCY SENSORS AND DAYLIGHTING SENSORS SYSTEMS OPERATION:

   A. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORS IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE WITHIN THE RANGE OF COVERAGE(S) OF CONTROLLED AREAS PER THE MANUFACTURER'S RECOMMENDATIONS. ROOMS SHALL HAVE NINETY (90) TO ONE HUNDRED (100) PERCENT COVERAGE TO COMPLETELY COVER THE CONTROLLED AREA TO ACCOMMODATE ALL OCCUPANCY HABITS OF SINGLE OR MULTIPLE OCCUPANTS AT ANY LOCATION WITHIN THE ROOM(S). THE LOCATIONS AND QUANTITIES OF SENSORS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE ONLY THE ROOMS THAT ARE TO BE PROVIDED WITH SENSORS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS IF REQUIRED TO PROPERLY AND COMPLETELY COVER THE RESPECTIVE ROOM.

   B. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A PRE–INSTALLATION MEETING WITH MANUFACTURER'S FACTORY AUTHORIZED REPRESENTATIVE, AT THE OWNER'S FACILITY, TO VERIFY PLACEMENT OF SENSORS AND INSTALLATION CRITERIA.

   C. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL PROPER ADJUSTMENTS TO ASSURE OWNER'S SATISFACTION WITH THE OCCUPANCY SYSTEM. IF THE CONTRACTOR IS INCAPABLE TO MAKE ALL PROPER ADJUSTMENTS, THE CONTRACTOR SHALL PROVIDE THE FACTORY STARTUP IN THAT IT WILL BE THE MANUFACTURER'S RESPONSIBILITY TO VERIFY ALL PROPER ADJUSTMENTS AND TRAIN OWNER'S PERSONNEL TO ENSURE OWNER'S SATISFACTION WITH THE OCCUPANCY SYSTEM.

   D. PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE INSTALLATION SO AS TO ENSURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURAL COMPONENTS. THE CONTRACTOR SHALL ALSO PROVIDE, AT THE OWNER'S FACILITY, THE TRAINING NECESSARY TO FAMILIARIZE THE OWNER'S PERSONNEL WITH THE OPERATION, USE, ADJUSTMENT, AND PROBLEM SOLVING DIAGNOSIS OF THE OCCUPANCY SENSING DEVICES AND SYSTEMS.

2. OCCUPANCY SENSORS AND DAYLIGHITNG SENSORS COMMISSIONING:

   A. UPON COMPLETION OF THE INSTALLATION, CONTRACTOR SHALL PROVIDE A COMPLETE SYSTEM COMMISSIONED BY THE MANUFACTURER'S FACTORY AUTHORIZED TECHNICIAN WHO WILL VERIFY ALL ADJUSTMENTS AND SENSOR PLACEMENT TO ENSURE A TROUBLE–FREE OCCUPANCY–BASED LIGHTING CONTROL SYSTEM.

   B. UPON COMPLETION OF THE SYSTEM FINE TUNING, THE CONTRACTOR SHALL ARRANGE FOR THE FACTORY AUTHORIZED TECHNICIAN TO PROVIDE THE PROPER TRAINING TO THE OWNER'S PERSONNEL IN THE ADJUSTMENT AND MAINTENANCE OF THE SENSORS.

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND 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.1.18 THROUGH 1616A.1.26 AND ASCE 7–10 CHAPTER 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 MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT 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 HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, 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 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENT TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE–APPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

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

MP	MD	PP	E	
☐	☐	☐	☒	OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
☐	☐	☐	☒	OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE–APPROVAL (OPM#) #0043–13.
☐	☐	☐		OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSPHD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL _____ AND CONNECTION LEVEL _____ FOR THE PROJECT AND CONDITIONS.

GENERAL NOTES

ALL GENERAL NOTES SHOWN BELOW ARE NOT NECESSARILY USED ON PLANS IF NOT REQUIRED.

1. THESE GENERAL NOTES ARE INTENDED TO ASSIST THE CONTRACTOR IN THE EXECUTION OF THE ELECTRICAL WORK AND TO BE INCLUDED IN CONJUNCTION WITH THE CONTRACT DOCUMENT DRAWINGS AND SPECIFICATION REQUIREMENTS. SOME OF THE GENERAL NOTES ARE EXCERPTS FROM THE SPECIFICATION.
2. PROCURE PERMITS AND LICENSES REQUIRED. PAY ALL NECESSARY FEES AND ARRANGE FOR INSPECTIONS REQUIRED BY LOCAL CODES, ORDINANCES, AND UTILITY COMPANIES.
3. COORDINATE ALL ELECTRICAL SERVICES WITH THE RESPECTIVE UTILITY COMPANIES AND PROVIDE ALL TRENCHING, CONDUITS, WIRING, METER FACILITIES AND OUTLETS REQUIRED BY THEM.
4. WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY. DEFECTIVE EQUIPMENT OR EQUIPMENT DAMAGED IN THE COURSE OF INSTALLATION OR TEST SHALL BE REPLACED OR REPAIRED IN A MANNER MEETING WITH THE ACCEPTANCE OF THE ARCHITECT.
5. INSTALL ALL EQUIPMENT, CONDUITS, OUTLETS, AND FIXTURES IN STRICT ACCORDANCE WITH THE CURRENT EDITION OF ALL APPLICABLE CODES (CEC, STATE, COUNTY, AND CITY).
6. DO NOT SCALE PLANS FOR FIXTURES, DEVICES, OR APPLIANCE LOCATIONS. USE FIGURED DIMENSIONS IF GIVEN OR CHECK MECHANICAL AND ARCHITECTURAL PLANS. ALSO REFER TO ACTUAL ON–SITE CONDITIONS.
7. ALL MATERIAL AND EQUIPMENT IS TO BE LISTED AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND CEC 110.3.
8. ALL ELECTRICAL DEVICES , EQUIPMENT, FIXTURES, CONDUITS, AND WIRING SHOWN ON THESE PLANS ARE NEW, UNLESS OTHERWISE NOTED.
9. OUTLET BOXES INSTALLED IN FIRE WALLS SHALL BE ONE–PIECE STEEL AND INSTALLED IN SEPARATE (STAGGERED) STUD PENETRATIONS, MINIMUM 24 INCHES HORIZONTAL SEPARATION. FIRE WALLS SHALL BE MADE IN ACCORDANCE WITH CBC AND ELECTRICAL CODES.
10. THE FINAL LOCATION OF ALL OUTLETS SHALL BE VERIFIED WITH THE ARCHITECT AND/OR OWNER AT TIME OF CONSTRUCTION.
11. ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE WEATHER–PROTECTED.
12. CONTRACTOR SHALL VERIFY THAT ALL LIGHTING FIXTURES, CEILING TRIMS, AND FRAMES ARE COMPATIBLE WITH CEILING SYSTEM INSTALLED.
13. CONTRACTOR SHALL COORDINATE LIGHT FIXTURE LOCATIONS AND INSTALLATIONS WITH THE MECHANICAL CONTRACTOR. MAINTAIN REQUIRED CLEARANCES (MINIMUM 3 INCHES, PER CEC 410.116) BETWEEN THE LIGHT FIXTURES AND MECHANICAL DUCTS OR EQUIPMENT FOR PROPER OPERATION, INSTALLATION AND/OR REMOVAL OF FIXTURES.
14. BEFORE SUBMITTING FOR ARCHITECT'S REVIEW AND PLACING ORDER FOR THE LIGHT FIXTURES, THE CONTRACTOR SHALL VERIFY THE VOLTAGE OF ALL THE LIGHTING FIXTURES TO MATCH THE VOLTAGE OF THE SERVICE PANEL, WHETHER THE VOLTAGE FOR THE LIGHT FIXTURES ARE SHOWN ON THE PLAN OR NOT.
15. PLACEMENT AND CIRCUITING OF EXIT SIGNS AND EGRESS LIGHTING SHALL COMPLY WITH CBC REQUIREMENTS.
16. ALL CONDUIT SHALL BE ROUTED CONCEALED UNLESS NOTED ON PLAN OR ACCEPTED BY THE ARCHITECT.
17. PROVIDE ALL NECESSARY SLEEVES AND INSERTS FOR ALL WORK PASSING THROUGH OR ATTACHING TO WALLS, FLOORS, OR CEILINGS.
18. ALL WIRING SHALL BE INSTALLED IN RIGID METALLIC CONDUIT, UNLESS OTHERWISE NOTED. CONDUITS INSTALLED CONCEALED IN WALL AND CEILING MAY BE EMT WITH STEEL COMPRESSION TYPE FITTINGS. PVC WHERE INSTALLED UNDERGROUND AND/OR UNDER SLAB. ALL EXPOSED CONDUITS SHALL BE RIGID STEEL CONDUITS WITH THREADED TYPE FITTINGS. INSTALL ALL CONDUITS IN ACCORDANCE WITH CEC STANDARDS OF INSTALLATION.
19. ELECTRICAL NON–METALLIC TUBING (ENT) AND MC CABLE ARE NOT PERMITTED TO BE USED FOR THIS PROJECT, NO EXCEPTIONS.
20. WHERE EXISTING CONDUITS, CONCEALED OR EXPOSED, AND (WIREMOLD) SURFACE RACEWAY IS NOT IN PLACE AS SHOWN ON PLANS, PROVIDE NEW CONDUITS AND (WIREMOLD) SURFACE RACEWAY FOR THE NEW WORK. VERIFY EXISTING CONDITION ON SITE AND PROVIDE ALL NECESSARY NEW MATERIAL, APPARATUS, AND WORK THAT IS REQUIRED TO BE INCLUDED IN THE BID PACKAGE.
21. CONDUCTORS, #8 AND LARGER, SHALL BE STRANDED COPPER WITH THHN/THWN INSULATION, UNLESS OTHERWISE NOTED.
22. PROVIDE WORKING CLEARANCE PER CEC 110.26 FOR SERVICE PANEL, SUBPANELS, MOTOR DISCONNECT SWITCHES, CONTROL SECTIONS, HVAC EQUIPMENT, APPLIANCES, ETC.
23. PROVIDE A WARNING LABEL (SIGN) CLEARLY VISIBLE TO QUALIFIED PERSONS TO COMPLY WITH NEC AND CEC 110.16 OF POTENTIAL ELECTRIC ARC FLASH HAZARDS AT SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS AND MOTOR CONTROL CENTERS THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH THE MAXIMUM AVAILABLE FAULT CURRENT PER CEC SECTION 110.24(A).
24. BUILDING SERVICE AND SUBPANELS TO COMPLY WITH CEC 110.9 AND 110.10 INTERRUPTING RATING AND BRACING. PROVIDE A.I.C. CALCULATIONS FOR SUBPANELS IF INTERRUPTING RATING TO BE USED IS LOWER THAN MAIN SERVICE RATING.
25. ALL APPLIANCES SHALL COMPLY WITH CEC ARTICLE 422. APPLIANCE CONTROL AND PROTECTION PER CEC 422–III; BRANCH CIRCUITS PER 422–II.
26. BUILDING EXPANSION JOINTS MAY OR MAY NOT BE INDICATED ON THE ELECTRICAL DRAWINGS. VERIFY THE LOCATIONS OF ALL APPLICABLE BUILDING EXPANSION JOINTS WITH THE ARCHITECTURAL DRAWINGS. WIRING METHODS ACROSS EXPANSIONS JOINTS SHALL INCLUDE USE OF FLEXIBLE FITTINGS OR OTHER DEVICES AS APPROPRIATE TO EACH APPLICATION. IN NO CASE SHALL CONDUIT CROSS SUCH A JOINT IN BUILDING CONSTRUCTION WITHOUT USE OF THE APPROPRIATE WIRING METHODS.
27. CONTRACTOR SHALL SIZE ALL THE INTERIOR AND EXTERIOR BUILDING PULL BOXES AND UNDERGROUND PULL BOXES PER CEC 314.16 AND COMPLY WITH CEC 314.28 FOR INSTALLATION OF RACEWAYS AND WIRING AS REQUIRED BY CODE, UNLESS OTHERWISE NOTED.
28. WHERE ACCESSIBILITY IS NOT AVAILABLE TO ELECTRICAL OUTLETS, DEVICES AND/OR EQUIPMENT, COORDINATE WITH THE ARCHITECT FOR PROVISIONS TO PROVIDE ACCESSIBILITY TO THEM.
29. CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE MECHANICAL DRAWINGS AND PROVIDING ALL CONDUITS, CONTROL WIRING, AND POWER WIRING SHOWN ON THE MECHANICAL DRAWINGS THAT IS NOT SHOWN ON THE ELECTRICAL PLANS.
30. CONTRACTOR SHALL REFER TO THE MECHANICAL DRAWINGS AND COORDINATE FOR THE EQUIPMENT LOCATIONS. COORDINATE ROOF PENETRATION WITH THE MECHANICAL CONTRACTOR FOR MECHANICAL CONNECTIONS. ENTER ROOF MOUNTED UNITS THROUGH EQUIPMENT MOUNTING CURES WHERE POSSIBLE. VERIFY ON–SITE.
31. PROVIDE CONVENIENCE OUTLET WITHIN 25 FEET OF MECHANICAL EQUIPMENT PER U.M.C. WHERE LOCATED OUTSIDE, PROVIDE WEATHER PROOF AND GFCI CONVENIENCE OUTLET. SECURE ROOF MOUNTED OUTLET TO THE MECHANICAL EQUIPMENT. VERIFY LOCATION IN FIELD WITH THE MECHANICAL CONTRACTOR.
32. VERIFY SINGLE–POINT CONNECTIONS TO ROOF MOUNTED HVAC UNITS WITH MECHANICAL CONTRACTOR ON–SITE PRIOR TO ELECTRICAL ROUGH–IN. PROVIDE DUAL DISCONNECTS IF TWO–POINT CONNECTION IS REQUIRED, WHETHER SHOWN ON PLANS OR NOT.
33. SWITCH DEVICES CONTROLLING MECHANICAL EQUIPMENT SHALL BE OF SIZE AND TYPE REQUIRED AND SHALL BE SERVED WITH QUANTITY OF WIRES AS REQUIRED. REFER TO DIVISION 15 MECHANICAL PLANS AND SPECIFICATIONS.
34. COORDINATE THE HVAC EQUIPMENT FOR FUSES REQUIRED. WHERE FUSES ARE REQUIRED, VERIFY FUSE SIZE ON–SITE AND PROVIDE FOR HVAC EQUIPMENT PER UNIT NAMEPLATE SPECIFICATIONS.
35. MOTOR DISCONNECT SWITCHES SHALL COMPLY WITH CEC 430–IX AND 440–II.
36. MOTOR STARTERS FOR HVAC EQUIPMENT ARE PROVIDED BY MECHANICAL CONTRACTOR AND CONNECTED BY ELECTRICAL CONTRACTOR, UNLESS NOTED OTHERWISE.
37. ALL CONNECTIONS FROM THE DISCONNECT SWITCHES TO HVAC UNITS SHALL BE COPPER CONDUCTORS. MOTOR DISCONNECT SWITCHES SHALL COMPLY WITH CEC 430–VII, 430–VIII, AND 440–II.
38. CONTRACTOR VERIFY LOCATION AND HEIGHT OF ALL MECHANICAL OR FIXTURE EQUIPMENT OUTLETS WITH SUPPLIER PRIOR TO ANY ROUGH–IN WORK. PROVIDE ALL RUNS AND CONNECTIONS TO EQUIPMENT.
39. ALL TERMINATION PROVISIONS OF EQUIPMENT, INCLUDING CIRCUITS RATED 100 AMPERES OR LESS, SHALL BE RATED AT 60 DEGREE, CENTIGRADE PER CEC 110.14(c).
40. ALL LIGHT FIXTURES INSTALLED OVER FOOD HANDLING OR FOOD PREPARATION AREAS, OPEN FOOD STORAGE, AND UTENSIL WASHING AREAS SHALL BE OF SHATTERPROOF CONSTRUCTION OR SHALL BE PROTECTED WITH SHATTERPROOF SHIELDS AND SHALL BE READILY CLEANABLE.

GOVERNING CODES & APPLICABLE STANDARDS

TITLE 24 CODES:
1. 2016 CALIFORNIA BUILDING STANDARD ADMINISTRATIVE CODE (CAC), (PART 1, TITLE 24, CCR).
2. 2016 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1 AND 2 (PART 2, TITLE 24, CCR).
3. 2016 CALIFORNIA ELECTRICAL CODE, (PART 3, TITLE 24, CCR).
4. 2016 CALIFORNIA MECHANICAL CODE (CMC), (PART 4, TITLE 24, CCR).
5. 2016 CALIFORNIA PLUMBING CODE (CPC), (PART 5, TITLE 24, CCR).
6. 2016 CALIFORNIA ENERGY CODE, (PART 6, TITLE 24. CCR).
7. 2016 CALIFORNIA FIRE CODE (CFC), (PART 9, TITLE 24, CCR).
8. 2016 CALIFORNIA REFERENCE CODE, (PART 12, TITLE 24. CCR).

REFERENCE CODE SECTIONS FOR APPLICABLE STANDARDS:
1. 2016 CBC, CHAPTER 35.
2. 2016 CFC, CHAPTER 80.
3. 2016 NFPA 72, AS AMENDED.

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTIONS
A/AMP	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFC	ABOVE FINISHED CEILING
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY (SYMMETRICAL)
C	CONDUIT
CCT	CIRCUIT
CKT	CIRCUIT
DC	DIRECT CURRENT
(E)	EXISTING TO REMAIN
EC	EMPTY CONDUIT
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE METALLIC CONDUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND/G	GROUND
HP	HORSEPOWER
IG	ISOLATED GROUND
J–BOX	JUNCTION BOX
KVA	KILOVOLT–AMPS
KW	KILOWATTS
LTG	LIGHTING
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MTD	MOUNTED
(N)	NEW
N	NEUTRAL CONDUCTOR (GROUNDED CIRCUIT CONDUCTOR)
N.I.E.S.	NOT IN ELECTRICAL SCOPE OR SPECIFICATIONS
NL	NIGHT LIGHT
PH/P	PHASE OR POLE
PNL	PANELBOARD
PVC	POLYVINYL CHLORIDE CONDUIT (SCHEDULE 40)
(R)	RELOCATE/RELOCATED
RECEP	RECEPTACLE
RGSC	RIGID GALVANIZED STEEL CONDUIT
U	UNSWITCHED
UNO	UNLESS NOTED OTHERWISE
V	VOLTAGE OR VOLTS
W	WATTS
WP	WEATHERPROOF
WPU	WEATHERPROOF WHILE IN USE
(X)	REMOVE
XFMR	TRANSFORMER

ELECTRICAL SHEET INDEX

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E1.2	ELECTRICAL PLAN
E1.3	ELECTRICAL ROOF PLAN
E2.1	ONE LINE DIAGRAM
E3.1	ELECTRICAL SCHEDULES
E4.1	ELECTRICAL DETAILS
E4.2	ELECTRICAL DETAILS

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SHEET TITLE:
ELECTRICAL ABBREVIATIONS AND NOTES

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: ---

Checked By: ---

JOB NO. 19.010

SHEET NUMBER E0.1

DATE 2019–12–20

ELECTRICAL SYMBOL LEGEND

ALL SYMBOLS SHOWN IN THIS LEGEND ARE NOT NECESSARILY USED ON PLANS IF NOT REQUIRED.

SYMBOL	DESCRIPTION
	LIGHTING
	FLUORESCENT/LED LUMINAIRE – T–BAR LAY–IN
	FLUORESCENT/LED LUMINAIRE – RECESSED IN GYPBOARD
	FLUORESCENT/LED LUMINAIRE – SURFACE FLUORESCENT/LED LUMINAIRE – SUSPENDED
	FLUORESCENT/LED DIRECT/INDIRECT LUMINAIRE – T–BAR LAY–IN
	FLUORESCENT/LED DIRECT/INDIRECT LUMINAIRE – RECESSED IN GYPBOARD
	FLUORESCENT/LED STRIP LIGHT – SURFACE OR SUSPENDED
	DOWNLIGHT LUMINAIRE – RECESSED
	WALLWASH LUMINAIRE – RECESSED
	LUMINAIRE – SURFACE
	LUMINAIRE – WALL
	LUMINAIRE – PENDANT
	TRACK LIGHT – SUSPENDED OR SURFACE MOUNTED
	CONTINUOUS LINEAR LED TAPE OR LED COVE LIGHT
EM EM EM	HATCHED LUMINAIRE WITH "EM" ABBREVIATION INDICATES AN EMERGENCY LUMINAIRE WITH EMERGENCY POWER CONNECTION (UNSWITCHED).
	SINGLE FACE EXIT SIGN. SEE LIGHTING FIXTURE SCHEDULE FOR SPECIFICATION. DIRECTIONAL ARROW AS INDICATED ON PLANS. (CEILING OR WALL)
	DOUBLE FACE EXIT SIGN. SEE LIGHTING FIXTURE SCHEDULE FOR SPECIFICATION. DIRECTIONAL ARROW AS INDICATED ON PLANS. (CEILING OR WALL)
	COMBINATION EMERGENCY EXIT SIGN WITH DUAL HEAD LIGHTS WITH EMERGENCY BATTERY BACK–UP.
	BATTERY POWERED EMERGENCY EGRESS LUMINAIRE – SURFACE MOUNTED
	SPOT/FLOOD LUMIANIRE – CEILING
	SPOT/FLOOD LUMINAIRE – ABOVE GROUND
	EXTERIOR POLE FIXTURE – SINGLE HEAD
	EXTERIOR POLE FIXTURE – TWIN HEAD
	EXTERIOR PATHWAY POLE FIXTURE
	BOLLARD FIXTURE
	STEP LUMINAIRE
	LIGHTING CONTROLS (SEE ACCESSIBILITY NOTES)
$	SINGLE POLE TOGGLE SWITCH, 20A, 120–277V @ +46" TO TOP OF BOX, UNO.
$3	THREE WAY TOGGLE SWITCH 20A,120–277V @ +46" TO TOP OF BOX, UNO.
$a,b,c	SUBSCRIPTS "a,b,c" DESIGNATE THE QUANTITY OF SWITCHES AT EACH LOCATION (TYPICAL FOR ALL SWITCH TYPES).
$T	THERMAL OVERLOAD SWITCH
$M	MOTOR RATED SWITCH
$K	SINGLE POLE KEYED TOGGLE SWITCH 20A, 120–277 @ +46" TO TOP OF BOX, UNO.
	PUSH BUTTON
	WALL MOUNTED DECORA IN LIEU OF ROCKER SWITCH
	WALL MOUNTED DIMMER SWITCH
DM	WALL MOUNTED DIGITAL DIMMER CONTROL
OS	WALL SWITCH OCCUPANCY SENSOR
PIR	PIR WALL SWITCH OCCUPANCY SENSOR
DT	DUAL TECH WALL OCCUPANCY SENSOR
DC	DIGITAL WALL CONTROL (OVERRIDE SWITCH). RUN CABLING BACK TO LIGHTING CONTROL PANEL.
	CORNER MOUNT MOTION SENSOR. DUAL TECHNOLOGY, PIR OR ULTRASONIC
	CEILING MOTION SENSOR. DUAL TECHNOLOGY PIR & ULTRASONIC
	PIR DIGITAL CORNER SENSOR
	DUAL TECH DIGITAL CORNER SENSOR
	ULTRASONIC DIGITAL CEILING SENSOR
PC	PHOTO SENSOR
DS	SKYLIGHT PHOTOCONTROL SENSOR
DO	OPEN LOOP PHOTOCONTROL SENSOR
DC	CLOSED LOOP PHOTOCONTROL SENSOR
	CEILING EXHAUST FAN
	POWER (SEE ACCESSIBILITY NOTES)
	MAIN SWITCHBOARD OR DISTRIBUTION PANEL,AS NOTED
	RECESSED MOUNTED LIGHTING OR DISTRIBUTION PANEL
	SURFACE MOUNTED LIGHTING OR DISTRIBUTION PANEL
	RECESSED TERMINAL CABINET w/ ¾"C PLYWOOD BACKBOARD, DUPLEX RECEPTACLE & #6 CU GND, UON.
	SURFACE MOUNTED TERMINAL CABINET w/ ¾"C PLYWOOD BACKBOARD, DUPLEX RECEPTACLE & #6 CU GND, UON.
T	DISTRIBUTION TRANSFORMER, MOUNTING AND SIZE AS NOTED
	NON–FUSED DISCONNECT SWITCH
	ENCLOSED CIRCUIT BREAKER DISCONNECT SWITCH
F	FUSED DISCONNECT SWITCH; SIZE DISCONNECT AND FUSES PER UNIT LABEL
F	NON–FUSED / FUSED DISCONNECT; SEE DISCONNECT SWITCH SCHEDULE
	MOTOR STARTER/CONTROLLER
	COMBINATION CIRCUIT BREAKER DISCONNECT/MOTOR STARTER.
	COMBINATION FUSIBLE DISCONNECT/MOTOR CONTROLLER; PROVIDE FUSES PER MANUFACTURERE'S REQUIREMENTS. N.F. INDICATES NON–FUSED.
	MOTOR
	POWER CONNECTION
	DUPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO.
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP. +44" TO TOP FOR FORWARD REACH, AND +46" TO TOP FOR SIDE REACH, PER CBC 11B–308.
	ISOLATED GROUND DUPLEX RECEPTACLE, 20A, 120V @ +16" TO BOTTOM OF BOX, UNO.
	DEDICATED DUPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO.
	GFCI DUPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO.
	GFCI DUPLEX RECEPTACLE OUTLET ABOVE COUNTER TOP AND/OR SINK BACKSPLASH. +44" TO TOP FOR FORWARD REACH AND +46" TO TOP FOR SIDE REACH, PER CBC 11B–308.
	ISOLATED GROUND GFCI DUPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO.
	DEDICATED GFCI DUPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO
	FOURPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO.
	ISOLATED GROUNDED FOURPLEX RECEPTACLE 20A, 120V @ +16" TO BOTTOM OF BOX, UNO.
	DEDICATED FOURPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO.

SYMBOL	DESCRIPTION
	GFCI FOURPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO.
	GFCI FOURPLEX RECEPTACLE OUTLET MOUNTED ABOVE COUNTER TOP AND/OR SINK BACKSPLASH
	ISOLATED GROUND GFCI FOURPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO.
	DEDICATED GFCI FOURPLEX RECEPTACLE OUTLET 20A, 120V, @ +16" TO BOTTOM OF BOX, UNO
	CONTROLLED/UNCONTROLLED FOURPLEX RECEPTACLE
	SPECIAL RECEPTACLE OUTLET, SIZE AND NEMA CONFIGURATION AS NOTED, MOUNTED @ +16" TO BOTTOM OF BOX, UNO.
	FLOOR MOUNTED DUPLEX RECEPTACLE, 20A, 125V FLUSH IN FINISHED FLOOR
	FLOOR MOUNTED FOURPLEX RECEPTACLE, 20A, 125V FLUSH IN FINISHED FLOOR
	CEILING MOUNTED DUPLEX RECEPTACLE, 20A, 125V
	CEILING MOUNTED FOURPLEX RECEPTACLE, 20A, 125V
	JUNCTION BOX – SIZE AS REQUIRED BY CODE. (WALL MOUNTED AND REGULAR)
	JUNCTION BOX (FLOOR MOUNTED) – SIZE AS REQUIRED BY CODE.
	PLUGMOLD
	POWER POLE
	POWER AND TELEPHONE POKE THROUGH FOR PARTITION FURNITURE
	FLOOR MOUNTED COMBO DUPLEX RECEPTACLE / TELEPHONE/DATA
	FLOOR MOUNTED COMBO FOURPLEX RECEPTACLE / TELEPHONE/DATA
	TELECOM
1	TELEPHONE OUTLET, 4–11/16" SQ. x 2–1/8" DEEP BOX w/ SINGLE DEVICE RING & PLATE @ +16" TO BOTTOM OF BOX & ¾" CONDUIT STUB UP TO ACCESSIBLE CEILING SPACE, UNO
3	DATA OUTLET, 4–11/16" SQ. x 2–1/8" DEEP BOX w/ SINGLE DEVICE RING & PLATE @ +16" TO BOTTOM OF BOX & ¾" CONDUIT STUB UP TO ACCESSIBLE CEILING SPACE, UNO
1/3	TELE/DATA OUTLET, 4–11/16" SQ. x 2–1/8" DEEP BOX w/ SINGLE DEVICE RING & PLATE @ +16" TO BOTTOM OF BOX & (2) ¾" CONDUIT STUB UP TO ACCESSIBLE CLG SPACE, UNO
1/3A	TELE/DATA OUTLET, 4–11/16" SQ. x 2–1/8" DEEP BOX w/ SINGLE DEVICE RING & PLATE ABOVE COUNTER AND (2) ¾" CONDUIT STUB UP TO ACCESSIBLE CEILING SPACE, UNO
2	FLOOR MOUNTED DATA OUTLET, FLUSH IN FINISHED FLOOR – SIZE PER PLAN
1	FLOOR MOUNTED TELEPHONE OUTLET, FLUSH IN FINISHED FLOOR – SIZE PER PLAN
1/3	FLOOR MOUNTED TELEPHONE/DATA OUTLET, FLUSH IN FINISHED FLOOR – SIZE PER PLAN
2	CEILING MOUNTED DATA OUTLET, 4" SQ. BOX WITH SINGLE DEVICE RING & PLATE
	NUMBER BY DEVICE SYMBOL PARENTHESIS INDICATES NUMBER OF REQUIRED ACTIVE JACKS FOR VOICE/DATA OUTLETS, THE FIRST NUMBER REPRESENTS THE # OF VOICE PORTS AND THE SECOND NUMBER REPRESENTS THE # OF DATA PORTS.
WAP	WIRELESS ACCESS POINT
	TELEPHONE TERMINAL BACKBOARD
TV	COAXIAL CABLE OUTLET
	CLOCK
	INTERCOM SPEAKER AND CLOCK COMBINATION
S	CEILING MOUNTED SPEAKER
S	WALL MOUNTED SPEAKER
	SURVEILLANCE CAMERAS
	360 DEGREES CAMERA
	FIXED POSITION CAMERA
WP	WEATHERPROOF FIXED POSITION CAMERA
	ACCESS CONTROL
CR	CARD READER
EL	ELECTRONIC LOCK
	INTRUSION ALARM
KP	KEYPAD
	WALL/CEILING MOUNTED FIXED POSITION INTRUSION SENSOR
	CEILING MOUNTED 360 DEGREES INTRUSION SENSOR
	DOOR CONTACT
	GLASS BREAK
P	POPPIT
	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FAPS	FIRE ALARM POWER SUPPLY
ANNC	FIRE ALARM ANNUNCIATOR
	FIRE ALARM BELL
	HEAT DETECTOR
A	ABOVE CEILING HEAT DETECTOR
	SMOKE DETECTOR
	DUCT SMOKE DETECTOR
	MANUAL PULL STATION
	END OF LINE RESISTOR
TS	TAMPER SWITCH
FS	WATERFLOW SWITCH
MM	MONITOR MODULE
CM	CONTROL MODULE
PIV	POST INDICATOR VALVE
FSD	FIRE SMOKE DAMPNER
	HORN SPEAKER
X1–1 XXXcd	WALL MOUNTED SPEAKER STROBE (15cd, 30cd, 75cd, 110cd) "cd" IS CANDELA. X1–1 RESEMBLES THE NAC CIRCUIT AND QUANTITY ON THAT CIRCUIT.
X1–1 XXXcd C	CEILING MOUNTED SPEAKER STROBE (15cd, 30cd, 75cd, 110cd) "cd" IS CANDELA. X1–1 RESEMBLES THE NAC CIRCUIT AND QUANTITY ON THAT CIRCUIT.
X1–1 XXXcd	WALL MOUNTED STROBE (15cd, 30cd, 75cd, 110cd) "cd" IS CANDELA. X1–1 RESEMBLES THE NAC CIRCUIT AND QUANTITY ON THAT CIRCUIT.
X1–1 XXXcd C	CEILING MOUNTED STROBE (15cd, 30cd, 75cd, 110cd) "cd" IS CANDELA. X1–1 RESEMBLES THE NAC CIRCUIT AND QUANTITY ON THAT CIRCUIT.

SYMBOL	DESCRIPTION
	CIRCUITS
	ARROW
	STUB
	STUB AND ARROW
	CONTINUATION
	CONDUIT RISER – UP
	CONDUIT DROP – DOWN
	CONDUIT CONCEALED IN CEILING OR WALL.
	CONDUIT CONCEALED IN FLOOR OR UNDERGROUND
	EXISTING CONDUIT TO REMAIN.
	CONDUIT & CONDUCTORS FOR LOW VOLTAGE MOTION SENSORS
	EXISTING CONDUIT AND/OR CONDUCTORS TO BE REMOVED. UNDERGROUND CONDUIT MAY BE ABANDONED IN PLACE.
	HOMERUN TO PANELBOARD OR TERMINAL CABINET w/ CONDUCTORS AS NOTED
#	CIRCUIT CONDUTORS: LONG DASH INDICATES NEUTRAL CONDUCTOR; SHORT DASHES INDICATE PHASE CONDUCTORS; CURVED DASH INDICATES EQUIPMENT GROUNDING CONDUCTOR; ADDITIONAL CURVED DASH INDICATES ISOLATED GROUNDING CONDUCTOR. NUMBER BY DASHES INDICATE WIRE GAUGE OTHER THAN 12 AWG CU. NO DASHES INDICATE 2#12 CU, 1#12 CU GND, IN ½" CONDUIT. OTHERS AS NOTED ON PLAN.
	FLEXIBLE CONDUIT, 6'–0" LONG MAX. w/ #12 CU GROUND UON.
	TAGS AND LEADERS
	BRACKET
	LEADERS
X	KEY NOTE SHOWN ON SAME SHEET
X	LIGHT FIXTURE TAG
X	FEEDER DESIGNATION TAG
X	KITCHEN EQUIPMENT DESIGNATION TAG
x Ex.1	DETAIL DESIGNATION: TOP LETTER INDICATES DETAIL, BOTTOM LETTER/NUMBER INDICATES SHEET
REF x	MECHANICAL EQUIPMENT I.D. TAG – MP&S
	ONE LINE DIAGRAM
(N) PANEL "A" 100A	PANEL IDENTIFICATION
100A 3P	CIRCUIT BREAKER
100A 3P	FUSED SWITCH
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	GROUND
	UNDERGROUND TERMINATION SERVICE LUG
M	UTILITY METER
M	UTILITY METER WITH C.T. COMPARTMENT METER SOCKET
	TRANSFORMER WITH GROUND
	UFER GROUND
	BOND TO COLD WATER PIPE, GAS PIPE, BUILDING STEEL
	AUTOMATIC TRANSFER SWITCH
	NEUTRAL LINK
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION

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REGISTERED PROFESSIONAL ENGINEER
KENNETH R. RUBISKY
No. 11798
Exp. 9/30/20
ELECTRICAL
STATE OF CALIFORNIA

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DIV. OF THE STATE ARCHITECT
APP. 02-117832 INC:
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SS ☑ FLS ☑ ACS ☑
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GRASS VALLEY, CA 95945

SHEET TITLE:
ELECTRICAL SYMBOL LEGENDS

SCALE:

REVISIONS

No.	Issue Description	Date
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Drawn By: ---
Checked By: ---

JOB NO. 19.010
SHEET NUMBER E0.2
DATE 2019-12-20
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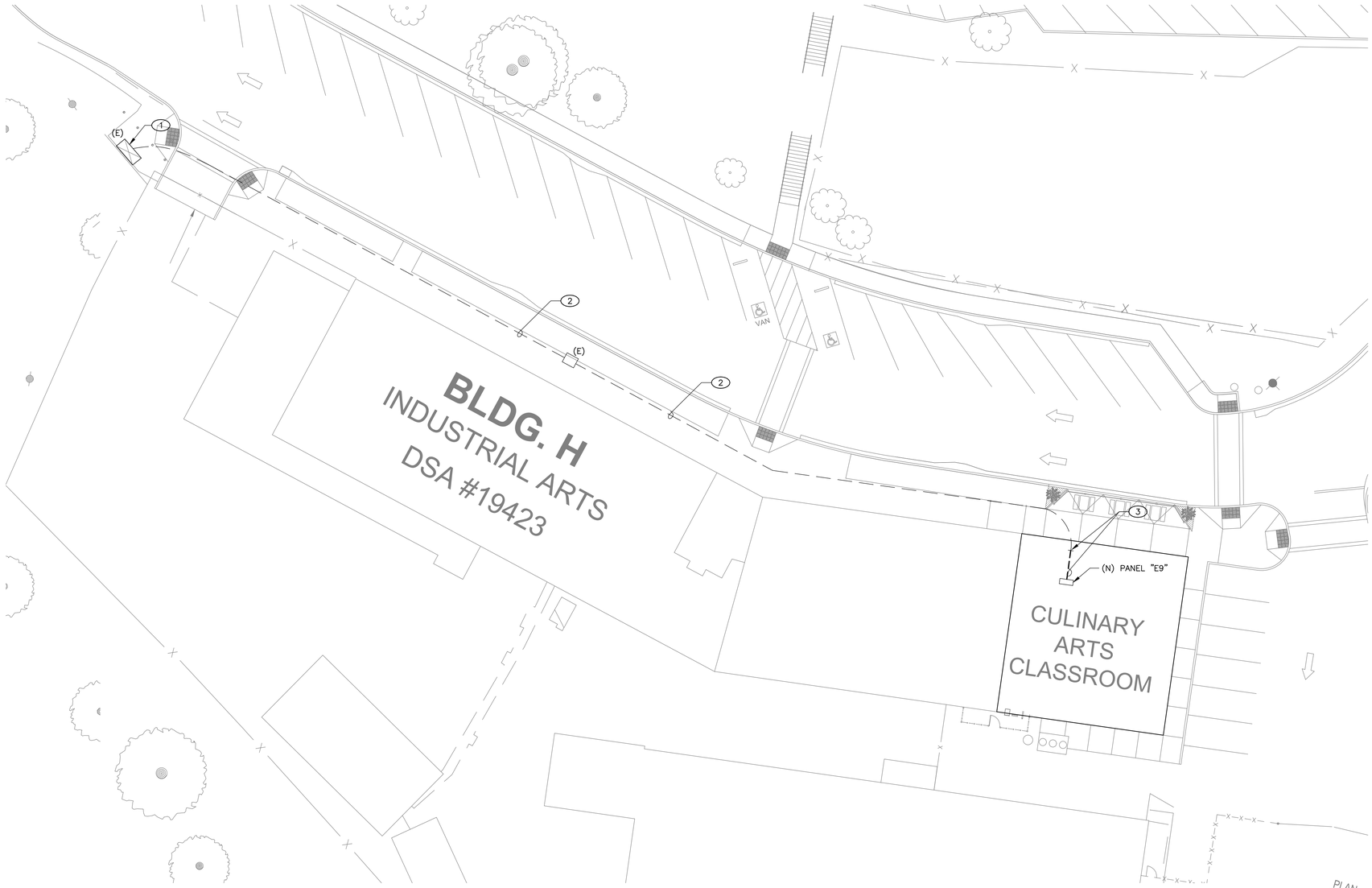


ELECTRICAL SITE PLAN

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

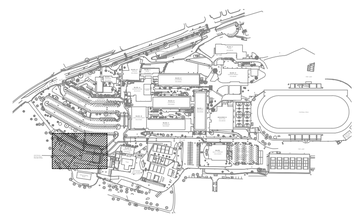
1

KEY NOTES

1. (E) MAIN SERVICE SWITCHBOARD. SEE ONE LINE DIAGRAM FOR MORE INFORMATION.
2. (E) 2 1/2" CONDUIT TO THE PANEL "E9"; THE (E) CONDUIT TO BE REMAIN. DISCONNECT AND PULL OUT ALL WIRES BACK TO SWITCHBOARD. USE (E) CONDUIT FOR NEW CONDUCTORS. SEE ONE LINE DIAGRAM FOR SIZE AND QUANTITIES OF NEW WORKS.
3. INTERCEPT (E) CONDUIT AND EXTEND TO THE (N) PANEL "E9" LOCATION, AS SHOWN ON SHEET E1.2. VERIFY EXACT ROUTING OF CONDUIT W/ SITE EXISTING CONDITIONS. SEE ONE LINE DIAGRAM FOR SIZE AND QUANTITIES.

GENERAL NOTES

1. ALL (E) EQUIPMENT, DEVICES, CONDUIT AND WIRING, ETC., WHERE SHOWN ON PLANS ARE BASED ON AVAILABLE (E) DOCUMENTS AND LIMITED SITE SURVEYS THEREFORE, ARE SHOWN FOR CLARITY AND SHALL BE REGARDED AS AN APPROXIMATION ONLY. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT. PRIOR TO SUBMITTING BID AND BEFORE START OF ANY ELECTRICAL WORK, CONTRACTOR SHALL VERIFY ON-SITE ALL (E) LOCATIONS AND CONDITIONS TO ASCERTAIN ALL WORK REQUIRED.
2. MAINTAIN CIRCUIT CONTINUITY FOR THOSE (E) ELECTRICAL CIRCUITS TO REMAIN.
3. WHERE (E) WIRING OR EQUIPMENT IS ABANDONED AS A RESULT OF THIS CONTRACT, IT SHALL BE REMOVED INSOFAR AS POSSIBLE. THIS INCLUDES BUT IS NOT LIMITED TO:
   a. REMOVE ALL WIRE AND CABLE.
   b. REMOVE ALL DEVICES AND EQUIPMENT.
   c. REMOVE ALL EXPOSED CONDUIT AND CONDUIT IN ACCESSIBLE CONCEALED AREA, AS FAR AS POSSIBLE.
   d. CUT OFF AND CAP ALL ABANDONED CONDUIT. STUBS SHALL NOT BE PROTRUDED ABOVE FLOOR AND/OR FINISHED WALLS AND CEILINGS.
   e. REPAIR ANY BUILDING SURFACE DAMAGED WHILE PERFORMING WORK ON THIS SCOPE OF WORK.
5. WHERE (E) CONDUITS, CONCEALED OR EXPOSED, AND (WIREMOLD) SURFACE RACEWAY IS NOT IN PLACE AS SHOWN ON PLANS, PROVIDE NEW CONDUITS AND (WIREMOLD) SURFACE RACEWAY FOR THE NEW WORK. VERIFY (E) CONDITION ON SITE AND PROVIDE ALL NECESSARY NEW MATERIAL, APPARATUS, AND WORK THAT ARE REQUIRED TO BE INCLUDED IN THE BID PACKAGE.



KEY PLAN

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SCALE:

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SHEET NUMBER E1.0

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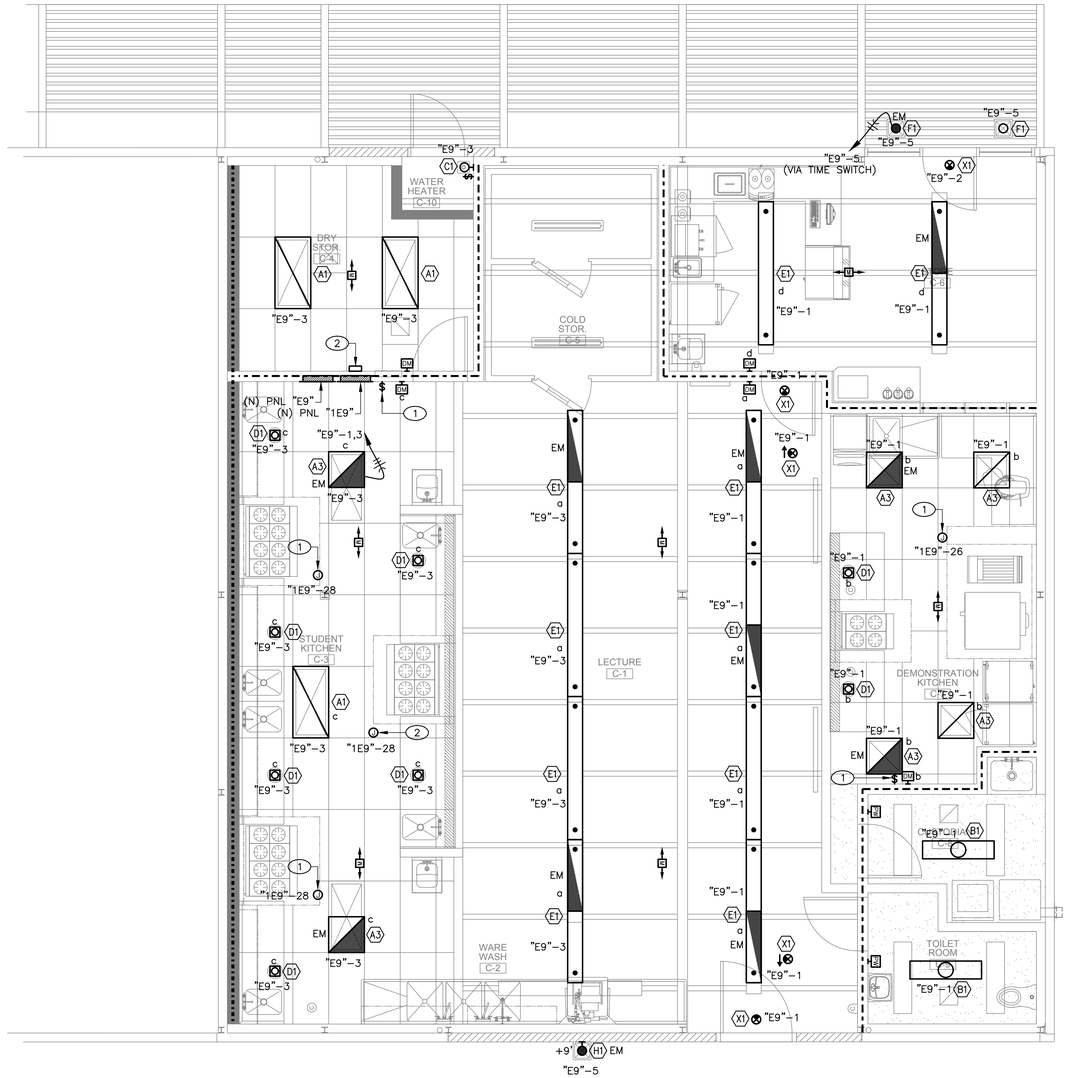

LEGEND

1-HR FIRE BARRIER

2-HR FIRE BARRIER

PLAN NORTH

LIGHTING PLAN

1

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

KEY NOTES

1. PROVIDE POWER CONNECTION AND CONTROLS FOR VAPOR–PROOF LIGHTS. FIXTURES AT EXHAUST HOOD, PROVIDED BY FOOD SERVICE CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR. FOR MORE INFORMATION SEE SHEET E1.2.
2. 365/7 OUTDOOR LIGHTING ASTRONOMICAL TIME SWITCH WITH HOLIDAY AND EVENT SCHEDULING AND LOCKABLE ENCLOSURE BASIS OF DESIGN IS "INTERMATIC ET2815C"

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY WORK. REPORT TO ENGINEERS ANY DISCREPANCIES.

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SHEET NUMBER E1.1

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KEY NOTES

1. PROVIDE CEILING MOUNTED CORD REEL RETRACTABLE; BASIS OF DESIGN IS LEGRAND–PASS AND SEYMOUR"CR CD 16 3 GFCI 50 F 20".
2. PROVIDE POWER CONNECTION FOR MONITORS AT 108". COORDINATE EXACT INSTALLATION HEIGHT AND LOCATION W/ ARCHITECT INTERIOR ELEVATION DRAWINGS.
3. DATA AND DATA/TEL; PROVIDE 3/4" CONDUIT TO IDF. ELECTRICAL CONTRACTOR SHALL INSTALL OWNER FURNISHED WIRES AND NETWORK COMPONENTS FOR A COMPLETE AND OPERABLE SYSTEM.
4. PROVIDE POWER CONNECTION FOR WATER HEATER AND CIRCULATION PUMP. SEE SHEET P0.1 FOR MORE INFORMATION.
5. PROVIDE A/V CONNECTIONS FOR THE MONITOR AT 108". SEE DETAIL 9/E4.1 FOR MORE INFORMATION. PROVIDE ALL REQUIRED WIRING AND COMPONENTS FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE EXACT INSTALLATION HEIGHT W/ ARCHITECT INTERIOR ELEVATION DRAWINGS.
6. TEACHING CAMERAS; CEILING MOUNTED. PROVIDE ALL WIRING AND INTERCONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM PER MANUFACTURER REQUIREMENTS. SEE DETAIL 9/E4.1 FOR MORE INFORMATION.

KEY NOTES

7. FUTURE TEACHING CAMERAS; CEILING/WALL MOUNTED. PROVIDE EMPTY BOX AND 3/4" CONDUIT BACK TO THE A/V RACK. SEE DETAIL 9/E4.1 FOR MORE INFORMATION.
8. PROVIDE 2–GANG BOX AND A 3/4" CONDUIT, W/ PULL ROPE, TO ACCESSIBLE CEILING SPACE FOR FUTURE USE.
9. AUDIO SPEAKERS; CONTRACTOR SHALL PROVIDE ALL REQUITED COMPONENTS AND WIRING BACK TO THE A/V RACK FOR A COMPLETE AND OPERATIONAL SYSTEM. SEE DETAIL 9/E4.1 FOR MORE INFORMATION.
10. WIRELESS MICROPHONE RECEIVER AND POWER CONNECTION; CONTRACTOR SHALL PROVIDE ALL REQUITED COMPONENTS AND WIRING FOR A COMPLETE AND OPERATIONAL SYSTEM. MOUNTED AT +96" AFF. SEE DETAIL 9/E4.1 FOR MORE INFORMATION.
11. SECURITY CAMERA; POE TYPE. CEILING/WALL MOUNTED. PROVIDE AND INSTALL BOXES AND 3/4" CONDUIT TO IDF. CONTRACTOR SHALL INSTALL OWNER FURNISHED CAMERAS, WIRES AND ALL REQUIRED COMPONENTS FOR A COMPLETE AND OPERATIONAL SYSTEM.

KEY NOTES

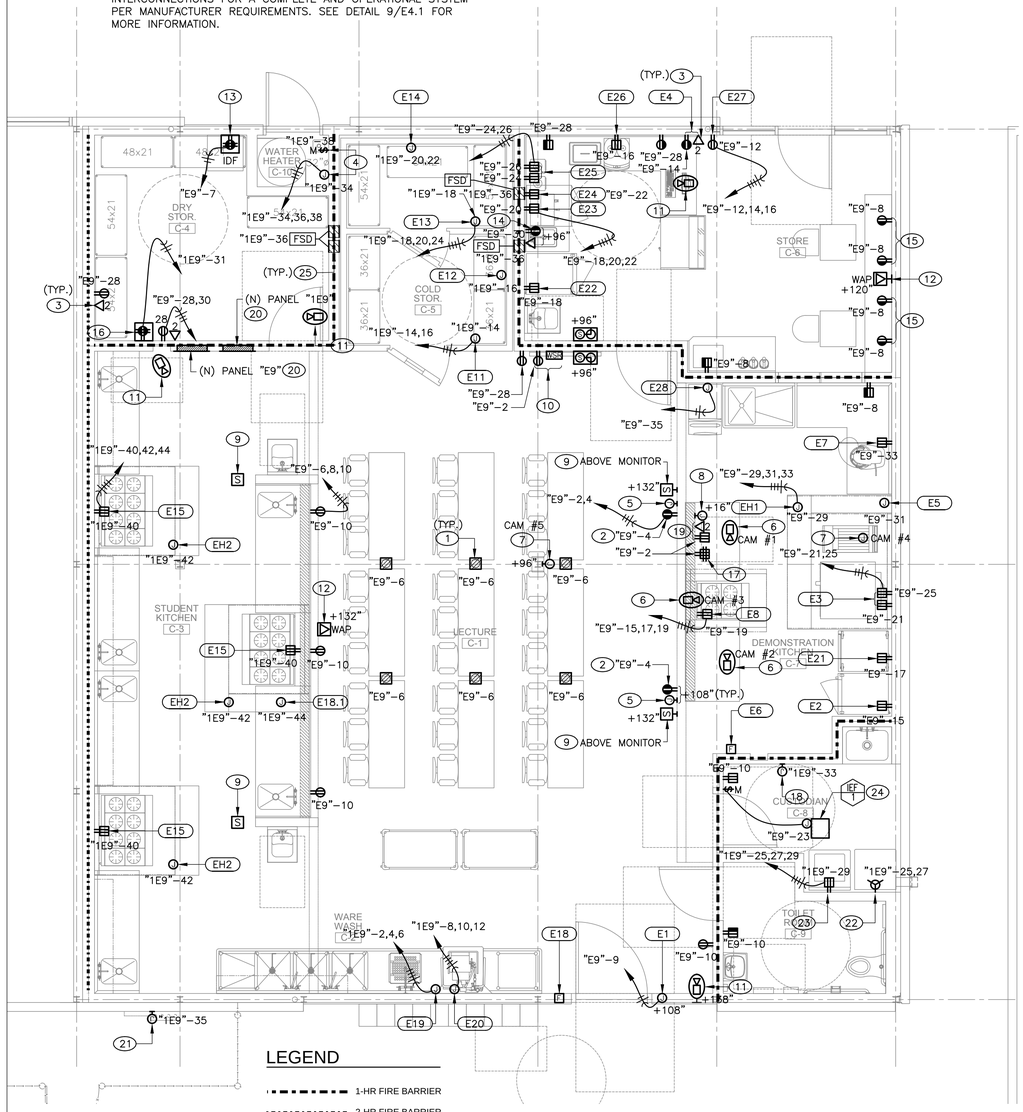
12. WIRELESS ACCESS POINT; PROVIDE 3/4" CONDUIT TO IDF RACK. CONTRACTOR SHALL INSTALL OWNER FURNISHED WIRES AND NETWORK COMPONENTS FOR A COMPLETE AND OPERABLE SYSTEM.
13. IDF RACK; CONTRACTOR SHALL INSTALL THE DISTRICT/OWNER FURNISHED IDF RACK, EQUIPMENTS, AND WIRING FOR A COMPLETE AND OPERATIONAL SYSTEM.
14. PROVIDE POWER CONNECTION AND DEDICATED RECEPTACLE AT +96" FOR THE MONITOR.
15. PROVIDE DUPLEX RECEPTACLE WITH TWO USB PORTS. BASIS OF DESIGN IS LEGRAND–PASS AND SEYMOUR "TR20USBACW".
16. AUDIO/VIDEO SYSTEM EQUIPMENT RACK. SEE DETAIL 9/E4.1 FOR MORE INFORMATION.
17. PROVIDE POWER RECEPTACLE IN ACCESSIBLE CEILING SPACE FOR AUDIO/VIDEO DEVICES. SEE DETAIL 9/E4.1 FOR MORE INFORMATION.

KEY NOTES

18. PROVIDE 120V/1ϕ DEDICATED CIRCUIT FOR FIRE ALARM EXPANDER PANEL. PAINT CIRCUIT BREAKER RED WITH LOCK–ON DEVICE.
19. AUDIO/VIDEO SYSTEM POWER AND DATA CONNECTION FOR TEACHER STATION.
20. FLUSH MOUNTED PANEL IN 1 HR FIRE RATED WELL. MAINTAIN THE ASSEMBLY FIRE RATING USING APPROVED MEAN AND METHOD. SEE 1/E4.1 FOR INSTALLATION DETAILS, AND 1/A5.60 FOR INSTALLATION IN FIRE RATED WALL.
21. PROVIDE 120 VOLT POWER CONNECTION FOR FIRE BELL . COORDINATE EXACT LOCATION AND INSTALLATION HEIGHT WITH FIRE PROTECTION CONTRACTOR.
22. ELECTRIC DRYER; 240V/1ϕ, 5KW. PROVIDE 240V/1ϕ, 30A POWER CONNECTION WITH 3/4" C. – 2#10 CU + 1#10 CU GND. COORDINATE THE RECEPTACLE NEMA CONFIGURATION WITH THE MANUFACTURER REQUIREMENTS.
23. PROVIDE 120V/1ϕ POWER CONNECTION FOR WASHING MACHINE.
24. IEF–1 EXHAUST FAN; 120V/1ϕ, 64W. PROVIDE 120V POWER CONNECTION. INTERLOCK EXHAUST FAN CIRCUIT WITH ASSOCIATED ROOM LIGHTING SWITCH.
25. FIRE SMOKE DAMPER; PROVIDE 120V POWER CONNECTION. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY WORK. REPORT TO ENGINEERS ANY DISCREPANCIES.
2. CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENTS SUPPLIER AND/OR INSTALLER FOR ALL THE EQUIPMENTS ELECTRICAL REQUIREMENTS AND PROVIDE THE PROPER VOLTAGE, NEMA CONFIGURATION RECEPTACLE AND/OR OUTLET TYPES TO BE COMPATIBLE WITH THE EQUIPMENT BEING SUPPLIED, INCLUDING ALL NECESSARY ELECTRICAL MATERIALS AND LABOR REQUIRED FOR THE COMPLETE FUNCTION AND/OR OPERATION OF EACH EQUIPMENT IN COMPLIANCE WITH ALL APPLICABLE CODES.
3. BEFORE START OF THE ROUGH–IN ELECTRICAL WORK, CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT VENDOR AND/OR INSTALLER FOR THE EXACT LOCATIONS OF THE EQUIPMENTS BEING INSTALLED.
4. LOW VOLTAGE SYSTEM; CONTRACTOR SHALL PROVIDE AND INSTALL EMPTY BOXES, CONDUITS AND RELATED ACCESSORIES. CONTRACTOR SHALL INSTALL THE OWNER FURNISHED EQUIPMENTS AND WIRING FOR A COMPLETE AND OPERATIONAL SYSTEM.
5. AUDIO AND VIDEO SYSTEM; CONTRACTOR SHALL PROVIDE ALL REQUITED COMPONENTS AND WIRING FOR A COMPLETE AND OPERATIONAL SYSTEM. PER MANUFACTURER/OWNER REQUIREMENTS.



ELECTRICAL PLAN

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

PLAN NORTH 1

KITCHEN EQUIPMENT ELECTRICAL SCHEDULE

ELEC. NO.	DESCRIPTION	QTY.	VOLT.	PH	DIRECT	PLUG	NEMA	LOAD WATT	LOAD AMPS. DRAW	LOAD HP	OUTLET HEIGHT	REMARKS
E1	AIR CURTAIN	1EA.	120	1	X	–	–	–	9	1	+86	PROVIDE J–BOX IN WALL, INSTALL DOOR LIMIT SWITCH FOR INSTANT ON/OFF SWITCH BY F.S.E.C. SEE FOOD SERVICE DRAWINGS FOR MORE INFORMATION.
E2	REACH–IN REFRIGERATOR	1EA.	120	1	–	X	5–15P	–	3.8	1/4	+88"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E3	DOUBLE STACK CONVECTION OVEN	2EA.	120	1	–	X	5–15P	–	6	–	+20" / +51"	PROVIDE DUPLEX RECEPTACLE IN WALL FLUSH FACE WITH S/S WALL LINING UNIT PROVIDED WITH CORD AND PLUG SET.
E4	CASHIER STATION (DATA) VERIFY W/ DISTRICT FURNISHED POS UNIT	1EA.	120	1	–	X	5–15P	–	5.0	–	+0"	PROVIDE (1) DATA PLUG AND (1) DUPLEX RECEPTACLE (VERIFY W/ DISTRICT POS REQ.).
E5	FIRE SYSTEM ANSUL CONTROL AUTOMAN PANEL,	1EA.	120	1	X	–	–	–	20	–	+104"	120V/1–20AMP @ ANSUL CONTROL PANEL.
E6	FIRE SYSTEM (REMOTE PULL STATION)	1EA.	–	–	X	–	–	–	–	–	+48"	EMPTY FLUSH MT'D. OCTAGONAL BOX (REMOTE PULL). SEE FOOD SERVICE DRAWINGS FOR MORE INFORMATION.
E7	COUNTER MIXER	1EA.	120	1	–	X	5–15P	–	8	1/2	+54"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E8	RESTAURANT GAS RANGE	1EA.	120	1	–	X	5–15P	–	.1	–	+24"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E11	WALK–IN REFRIGERATOR (BOX)	1EA.	120	1	X	–	–	–	2.0	–	+88"	(1) 39W LED CLG. MT'D. LIGHT FIXTURES (1) 11.5W LED LIGHT FIXTURE AT DOOR. CONTRACTOR TO PROVIDE ALL INTERCONNECTIONS.
E12	WALK–IN REFRIGERATOR (COIL)	1EA.	120	1	X	–	–	–	2.7	–	+74"	CONNECT TO UNIT ELECTRICAL CONNECTION AT COIL INSIDE WALK–IN REFRIGERATOR. SEE FOOD SERVICE DRAWINGS FOR MORE INFORMATION.
E13	WALK–IN FREEZER (BOX)	1EA.	120	1	X	–	–	–	5.0	–	+88"	(1) 39W LED CLG. MT'D. LIGHT (1) 11.5W LED LIGHT FIXTURE AT DOOR. 250W DOOR HEATER, 20W P.R.P. 100W WINDOW HEATER EC. TO PROVIDE ALL INTERCONNECTIONS.
E14	WALK–IN FREEZER (COIL)	1EA.	208 / 240	1	X	–	–	–	26.1	–	+74"	CONNECT TO UNIT ELECTRICAL CONNECTION AT COIL INSIDE WALK–IN FREEZER. SEE FOOD SERVICE DRAWINGS FOR MORE INFORMATION.
E15	RESTAURANT GAS RANGE	3EA.	120	1	–	X	5–15P	–	.1	–	+24"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E17	REMOTE REFRIGERATION UNIT LOCATED ON ROOF	1EA.	208 / 240	3	X	–	–	–	18.4	–	+48"	STUB UP TO ELECTRICAL DISCONNECT PROVIDED BY REFRIGERATION MFG. REFER TO SHEET E1.3. AND SEE FOOD SERVICE DRAWINGS FOR MORE INFORMATION.
E18	FIRE SYSTEM (REMOTE PULL STATION)	1EA.	–	–	X	–	–	–	–	–	+48"	EMPTY FLUSH MT'D. OCTAGONAL BOX (REMOTE PULL). SEE FOOD SERVICE DRAWINGS FOR MORE INFORMATION.
E18.1	FIRE SYSTEM ANSUL CONTROL AUTOMAN PANEL	1EA.	120	1	X	–	–	–	20	–	+104"	120V/1–20AMP @ ANSUL CONTROL PANEL
E19	HIGH TEMP WAREWASHER (TANK HEAT/MOTORS)	1EA.	208 / 240	3	X	–	–	–	24.9	–	+18"	PROVIDE J–BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION.
E20	HIGH TEMP WAREWASHER (BOOSTER HEATER)	1EA.	208 / 240	3	X	–	–	–	20.4	–	+18"	PROVIDE J–BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION.
E21	HEATED HOLDING/PROOFING CABINET	1EA.	120	1	–	X	5–20P	–	16.7	–	+48"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E22	REACH–IN REFRIGERATOR	1EA.	120	1	–	X	5–15P	–	3.8	–	+88"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E23	COFFEE BREWER	1EA.	120 / 208	1	X	–	–	–	22.4	–	+54"	PROVIDE J–BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION.
E24	UNDER COUNTER REFRIGERATOR	1EA.	120	1	–	X	5–15P	–	2	–	+24"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E25	BLENDER	2EA	120	1	–	X	5–15P	–	15	–	+54"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E26	EXPRESSO MACHINE	1EA.	120	1	–	X	L6–30P	–	30	–	+54"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E27	REFRIGERATOR AIR CURTAIN TYPE	1EA.	120	1	–	X	5–15P	–	10.4	–	+24"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET.
E28	ICE MAKER W/BIN	1EA.	120	1	X	–	–	–	12.2	–	–	PROVIDE J–BOX IN WALL, CONNECT TO UNIT ELECTRICAL CONNECTION.

KITCHEN EXHAUST HOOD ELECTRICAL SCHEDULE

QTY.	DESCRIPTION	QTY.	VOLT.	PH	DIRECT	PLUG	NEMA	LOAD WATT	LOAD AMPS. DRAW	LOAD HP	OUTLET HEIGHT	REMARKS
EH1	EXHAUST HOOD (ENERGY MANAGEMENT SYS. LIGHTS)	1EA.	120	1	X	–	–	-	15	-	+106	PROVIDE J–BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION SEE SHEET E1.1 AND SEE FOOD SERVICE DRAWINGS FOR MORE INFORMATION.
EH2	EXHAUST HOOD (ENERGY MANAGEMENT SYS. LIGHTS)	1EA.	120	1	X	-	–	–	15	–	+106	PROVIDE J–BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION SEE SHEET E1.1 AND SEE FOOD SERVICE DRAWINGS FOR MORE INFORMATION.

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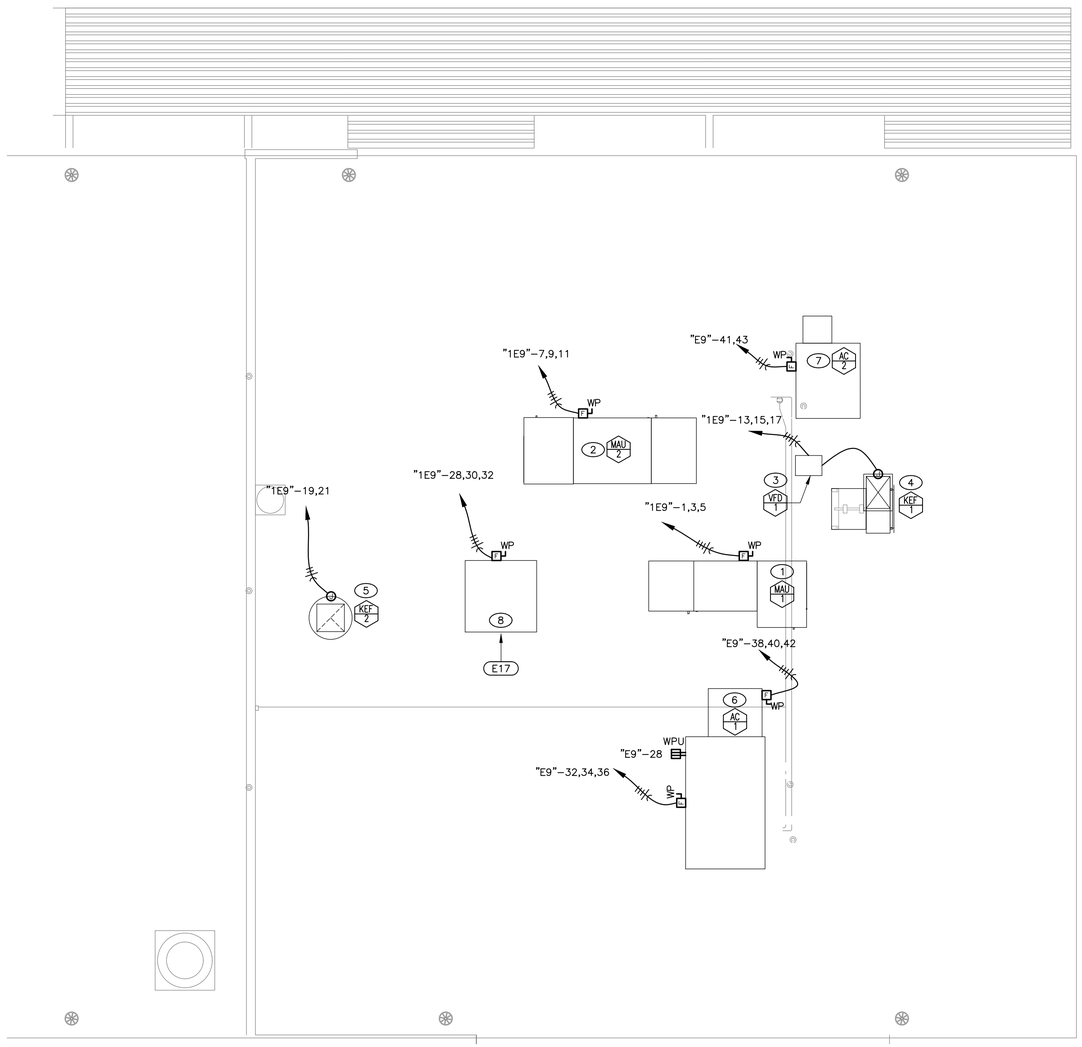
DATE 2019-12-20
SHEET NUMBER E1.2



ELECTRICAL ROOF PLAN

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

PLAN NORTH

1

KEYNOTES

1. MAU-1, 230V/3ϕ, 10.7A MCA, 15A MOCP. PROVIDE 20AF,3PH/30A WEATHERPROOF DISCONNECT SWITCH. PROVIDE ALL INTERCONNECTIONS REQUIRED BETWEEN MAU, HOOD EXHAUST FAN AND THE HOOD CONTROL PANEL PER FOOD SERVICE AND MECHANICAL DRAWINGS.
2. MAU-2, 230V/3ϕ, 10.7A MCA, 15A MOCP. PROVIDE 20AF,3PH/30A WEATHERPROOF DISCONNECT SWITCH. PROVIDE ALL INTERCONNECTIONS REQUIRED BETWEEN MAU, HOOD EXHAUST FAN AND THE HOOD CONTROL PANEL PER FOOD SERVICE AND MECHANICAL DRAWINGS.
3. VFD UNIT, 230V/3ϕ, 4.6 FLA, 1 HP, PROVIDE POWER CONNECTION AND ALL INTERCONNECTIONS REQUIRED BETWEEN VFD AND EXHAUST FAN-1 PER FOOD SERVICE AND MECHANICAL REQUIREMENTS.
4. EXHAUST FAN-1, 230V/3ϕ, 0.97 HP; PROVIDE POWER CONNECTION. PREWIRED DISCONNECT SWITCH PROVIDED BY FACTORY.
5. EXHAUST FAN-2, 230V/1ϕ, 1.7 HP; PROVIDE POWER CONNECTION. PREWIRED DISCONNECT SWITCH PROVIDED BY FACTORY.
6. AC UNIT-1 , 208V/3ϕ, 37.4A MCA, 50A MOCP. POWERED EXHAUST; 0.5HP, 2.3A FLA. PROVIDE 50AF/3ϕ/60A WEATHERPROOF DISCONNECT SWITCH , W/ 1" C.- 3 # 6 CU + 1 # 10 CU GND FOR AC. PROVIDE 15AF/3ϕ/30A WEATHERPROOF DISCONNECT SWITCH , W/ 3/4" C.- 3 # 12 CU + 1 # 12 CU GND FOR POWERED EXHAUST.
7. AC UNIT-2 , 208V/1ϕ, 19.5A MCA, 30A MOCP. PROVIDE 30AF/1ϕ/30A WEATHERPROOF DISCONNECT SWITCH , W/ 3/4" C.- 2 # 10 CU + 1 # 10 CU GND.
8. REFRIGERATION UNIT; 208V/3ϕ, 18.5 AMP. PROVIDE 30AF/3ϕ/30A WEATHERPROOF DISCONNECT SWITCH , W/ 3/4" C.- 3 # 10 CU + 1 # 10 CU GND. PLEASE SEE SHEET E1.2. TO KITCHEN EQUIPMENTS SCHEDULE FOR MORE INFORMATION.

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.
2. NO EXPOSED CONDUIT SHALL RUN ON THE ROOF, UNLESS NOTED OTHERWISE. ROUTE ALL CONDUITS BELOW ROOF AND STUB-UP AT/NEAR THE EQUIPMENT AND DEVICES LOCATION. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION OF MECHANICAL UNITS. FEEDERS SHALL BEE CONDUIT CLIPPED TO TRUSSES BELOW. SEAL ALL ROOF PENETRATIONS, WATER TIGHT PER ARCHITECTURAL DETAILS AND SPECIFICATIONS.

CONSULTING ENGINEERS
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www.lpengineers.com
Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER
KENNETH R. RUBINSKY
No. 11798
Exp. 9/30/20
ELECTRICAL
STATE OF CALIFORNIA

DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117832 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/21/20

DERIVI CASTELLANOS ARCHITECTS
www.dcaaia.com
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Professional Seals

NEVADA JOINT UNION
HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
ELECTRICAL ROOF PLAN

SCALE:

REVISIONS

No.	Issue Description	Date
1		
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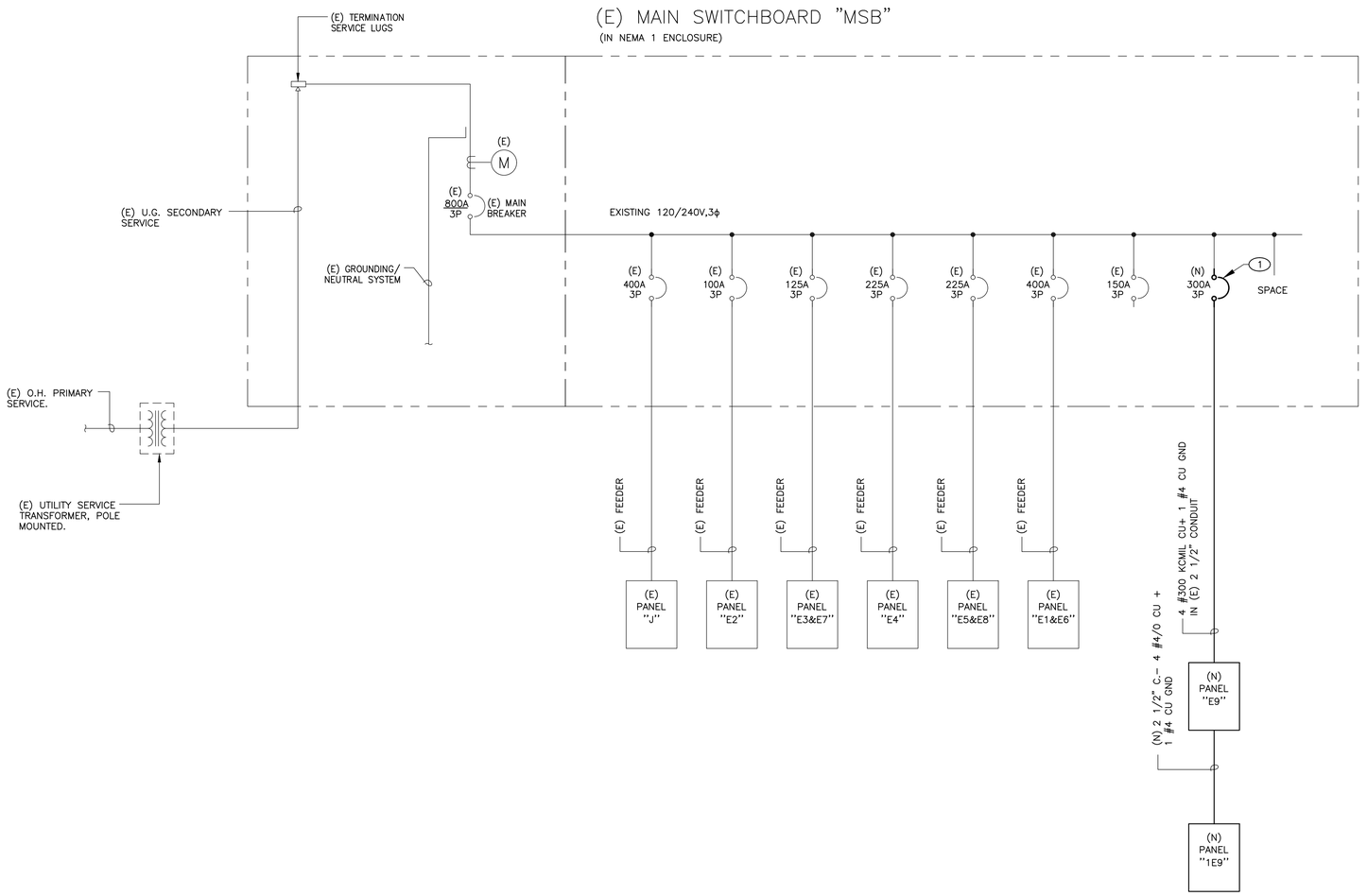
Drawn By: ---

Checked By: ---

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER E1.3



KEYNOTES

1. REPLACE THE EXISTING BREAKER, FEEDING THE DEMOLISHED PANEL, WITH A NEW BREAKER, AS SHOWN. MATCH EXISTING TYPE AND IC RATING.

GENERAL NOTES

1. ALL EXISTING PANELS, DEVICES, FEEDERS, AND ETC., WHERE SHOWN ON SINGLE LINE DIAGRAM ARE BASED ON AVAILABLE EXISTING DOCUMENTS AND LIMITED SITE SURVEYS.
2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY WORK. REPORT TO ENGINEERS ANY DISCREPANCIES.
3. SERVICE CONDUITS, CONDUCTORS, EQUIPMENT AND METERING PROVISIONS SHALL MEET UTILITY COMPANY'S REQUIREMENTS.
4. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, UNLESS SPECIFIED OTHERWISE.

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
ONE LINE DIAGRAM

SCALE:

REVISIONS

No.	Issue Description	Date
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Drawn By: ---

Checked By: ---

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER E2.1

48 of 89

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LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER & CATALOG NUMBER	LAMP (CROSS SECTION)	VOLTS / VA	MOUNTING	REMARKS
A1	LITHONIA LIGHTING 2WRTL-G-L48-5000LM-OAW-AFL-MVOLT-EZ1-35K-80CRI-WH	LED 3500K 5000 LUMEN	208 / 38.7	RECESSED T-BAR	2X4 LED LAY-IN TROFFER SAFETY TYPE FIXTURE, WITH 0-10V DIMMING DRIVER, EQUIP W/ E10W EMERGENCY BATTERY BACKUP WHERE MARKED AS EMERGENCY.
A3	LITHONIA LIGHTING 2WRTL-G-L24-5000LM-OAW-AFL-MVOLT-EZ1-35K-80CRI-WH	LED 3500K 5000 LUMEN	208 / 41.8	RECESSED T-BAR	2X2 LED LAY-IN TROFFER SAFETY TYPE FIXTURE, WITH 0-10V DIMMING DRIVER, EQUIP W/ E10W EMERGENCY BATTERY BACKUP WHERE MARKED AS EMERGENCY.
B1	LITHONIA LIGHTING BLWP4-40L-ADP-GZ10-LP835	LED 3500K 4000 LUMEN	208 / 35	CEILING SURFACE	LED CEILING SURFACE MOUNTED VANDAL WRAP TYPE FIXTURE.W/ DIMMING DRIVER, EQUIP W/ EM/10W EMERGENCY BATTERY BACKUP WHERE MARKED AS EMERGENCY.
C1	ORACLE LIGHTING OVT-LED-1500L-MVOLT-40K-GR-WM	LED 4000K 1500 LUMEN	208 / 18	WALL MOUNTED	LED WALL MOUNTED VAPOR TIGHT TYPE FIXTURE.
D1	GOTHAM EV06FS-35/-30-6DFR-SOL-MVOLT-EZ10	LED 3500K 3000 LUMEN	120 / 39.2	RECESSED	6" LED ROUND DOWNLIGHT.W/ DIMMING DRIVER, EQUIP W/ EM/10W EMERGENCY BATTERY BACKUP WHERE MARKED AS EMERGENCY. WET LOCATION RATED.
E1	PINNACLE ARCHITECTURAL LIGHTING WET-O-835-835-8-PP24JB-U	LED 3500K 9000 LUMEN	208 / 104	WALL / CEILING	8' LED SUSPENDED LINEAR TYPE FIXTURE, WITH 0-10V DIMMING DRIVER, EQUIP W/ E10W EMERGENCY BATTERY BACKUP WHERE MARKED AS EMERGENCY. MOUNTED @ +11'-0" AFF.
F1	LUMINAIRE LED ARV13-25W-4000K-208-CP-PC	LED 4000K 3346 LUMEN	208 / 25	CEILING SURFACE	6" LED ROUND DOWNLIGHT.W/ DIMMING DRIVER, EQUIP W/ EM/10W EMERGENCY BATTERY BACKUP WHERE MARKED AS EMERGENCY. WET LOCATION RATED.
H1	LITHONIA LIGHTING WSTLED-P2-40K-VW-MVOLT	LED 4000K 3000 LUMEN	208 / 11	WALL MOUNTED	EXTERIOR EGRESS/WATERPROOF LIGHTING. EQUIP W/ E10W EMERGENCY LED BATTERY BACKUP WHERE MARKED AS EMERGENCY.
X1	H.E. WILIAMS INC. EXIT/CA-R-AF-WHT-EM-D	LED	120 /3	WALL/ CEILING	SINGLE/DOUBLE FACE LED EXIT SIGN WITH BATTERY BACK-UP FOR 90 MINUTES. W/ TEST SWITCH AND LED INDICATOR LIGHT.

LIGHTING FIXTURE NOTES:

1. COORDINATE LUMINAIRE FINISH WITH ARCHITECT (TYPICAL).

(N) PANEL "E9" [1]

120/240 Volt, 3 Phase, 4 Wire
400 Amp BUS CU.
300 Amp MCB
Amp MLO

10 KAIC Rating
RECESSED Mounted
NEMA 1 Type

			PHASE SUMMARY (WATTS)								
CKT.	BKR	DESCRIPTION	A	B	C		A	B	C	DESCRIPTION	BKR	CKT.
1	20/1	LIGHTING	948				720			AUDIO/VIDEO SYSTEM POWER	20/1	2
3	20/1	LIGHTING		789				360		RECEPT. MONITORS	20/1	4
5	20/1	LIGHTING-EXTERIOR			65				1,080	RECEPT. CEILING POWER CORD	20/1	6
7	20/1	IDF RACK	360				1,080			RECEPT. STORE, DINNING	20/1	8
9	20/1	AIR CURTAIN		1,080				1,080		RECEPT. DINING, RESTRM.	20/1	10
11	20/1	SPARE							1,248	REFRIGERATOR AIR CURTAIN	20/1	12
13	20/1	SPARE					600			CASHIER STATION	20/1	14
15	20/1	REACH-IN REFRIGERATOR		420				3,600		EXPRESSO MACHINE	40/1	16
17	30/1	HEATED HOLDING			2,004				456	REACH-IN REFRIGERATOR	20/1	18
19	20/1	GAS RANGE	12				2,688			COFFEE BREWER	30/1	20
21	20/2	DOUBLE STACK CONVECT. OVEN		720				240		UNDER COUNTER REFRIGERATOR	20/1	22
23	-	SHUNT TRIP							1,800	BLENDER	20/1	24
25	20/2	DOUBLE STACK CONVECT. OVEN	720				1,800			BLENDER	20/1	26
27	-	SHUNT TRIP						1,080		RECEPT. STORE, DINNING, ROOF	20/1	28
29	20/1	EXHAUST HOOD SYS. LIGHTS			1,800				180	DEDICATED RECEPT. MONITOR	20/1	30
31	30/1[2]	FIRE SYSTEM ANSUL CONTROL	2,400				4,500			AC UNIT #1	50/3	32
33	20/1	COUNTER MIXER		960				4,500		-	-	34
35	20/1	ICE MAKER			1,464				4,500	-	-	36
37	20/1	SPARE					250			AC UNIT #1 POWERED EXHAUST	15/3	38
39	20/1	SPARE						250		-	-	40
41	30/2	AC UNIT #2			2,023				250	-	-	42
43	-	-	2,023							SPARE	20/1	44
45	20/1	SPARE								SPARE	20/1	46
47	20/1	SPARE								SPARE	20/1	48
49	20/1	SPARE								SPARE	20/1	50
51	20/1	SPARE								SPARE	20/1	52
53	20/1	SPARE								SPARE	20/1	54
55	20/1	SPARE					19,345			(N) PANEL "1E9"	225/3	56
57	20/1	SPARE						18,059		-	-	58
59		SPACE							13,326	-	-	60
			PHASE TOTALS									
			A	B	C							
			37,446	33,138	30,196							

PANEL AND CIRCUIT BREAKER NOTES:

[1] MULTIPLE CIRCUITS SHARING THE SAME CONDUIT AND NEUTRAL SHALL HAVE HANDLE TIES AT BREAKERS AND WIRE IN PANEL TIES PER CEC 210.4.
[2] PAINT BREAKER RED AND PROVIDE LOCK-ON DEVICE FOR CIRCUIT BREAKER FEEDING FIRE ALARM CIRCUIT.

DEMAND LOADS		
LIGHTING / CONTINUOUS LOAD x 125%	4,503	Watts
RECEPTACLES / OTHER x 100%	46,448	Watts
LARGEST MOTOR x 25%	1,125	Watts
TOTAL DEMAND LOADS	52,076	Watts
TOTAL DEMAND AMPS	125	AMPS

Indoor Lighting Controls Sequence of Operation

		WALL SWITCH					DIMMING			OCCUPANCY SENSING					TIME CLOCK				DAYLIGHT CONTROL			SYSTEM		
ROOM TYPE	ROOM NUMBER	ON / OFF ONLY	DIMMER SWITCH	KEY SWITCH	SCENE SWITCH	GRAPHICAL WALL STATION	CONTINUOUS	STEP	MULTI ZONE	VACANCY MODE (MANUAL ON / AUTO OFF)	OCCUPANCY MODE (AUTO ON / AUTO OFF)	PARTIAL AUTO ON (WHEN OCCUPIED)	PARTIAL AUTO OFF (WHEN VACANT)	AUTO OFF TIME OUT (IN MINUTES)	AUTO OFF AFTER HOURS	SCHEDULED ON AT	SCHEDULED OFF AT	OVERRIDE SWITCH (2 HOUR)	ON / OFF ONLY	DIMMING	LIGHT LEVEL MAINTAINED AT (IN FOOTCANDLES @2'-6" A.F.F.)	AUTO-CONTROLLED RECEPTACLE	NETWORK	DEMAND RESPONSE	NOTES
STORE	-		X				X				X	50%		20									X	X	
TEACHER COOK STATION	-		X				X				X	50%		20									X	X	
CUSTODIAN	-	X								X				20											
RESTROOM	-	X								X				20											
LECTURE/DINING	-		X				X				X	50%		20									X	X	
STUDENT COOK STATIONS	-		X				X				X	50%		20									X	X	
DRY STORAGE	-		X				X			X				20									X	X	

LIGHTING CONTROLS NOTES:

(N) PANEL "1E9" [1]

120/240 Volt, 3 Phase, 4 Wire
225 Amp BUS CU.
Amp MCB
225 Amp MLO

10 KAIC Rating
RECESSED Mounted
NEMA 1 Type

			PHASE SUMMARY (WATTS)								
CKT.	BKR	DESCRIPTION	A	B	C		A	B	C	DESCRIPTION	BKR	CKT.
1	20/3	MAKE-UP AIR UNIT #1	1,420				2,990			WAREWASHER TANK HEAT	40/3	2
3	-	-		1,420				2,990		-	-	4
5	-	-			1,420				2,990	-	-	6
7	20/3	MAKE-UP AIR UNIT #2	1,420				2,450			WAREWASHER BOOSTER HEATER	30/3	8
9	-	-		1,420				2,450		-	-	10
11	-	-			1,420				2,450	-	-	12
13	20/3	VDF UNIT - REF UNIT#1	350				240			WALK-IN REFRIGERATOR (BOX)	20/1	14
15	-	-		350				324		WALK-IN REFRIGERATOR (COIL)	20/1	16
17	-	-			350				600	WALK-IN FREEZER (BOX)	20/1	18
19	20/2	EXHUST FAN #2	1,000				2,715			WALK-IN FREEZER (COIL)	40/2	20
21	-	-		1,000				2,715		-	-	22
23	20/1	IEF-#1 UNIT			100					SPARE	20/1	24
25	30/2	ELECTRIC DRYER	2,500							SPARE	20/1	26
27	-	-		2,500				2,210		REMOTE REFRIGERATION UNIT	30/3	28
29	20/1	WASHING MACHINE			1,500				2,210	-	-	30
31	20/1	AUDIO/VIDEO RACK	250				2,210			-	-	32
33	20/1[2]	FIER ALARM EXPANDER PANEL		200				480		WATER HEATER	20/1	34
35	20/1[2]	FIRE BELL			200				120	FIRE SMOKE DAMPER	20/1	36
37	20/1	SPARE					50			CIRCULATION PUMP	20/1	38
39	20/1	SPARE						36		GAS RANGE	20/1	40
41	20/1	SPARE							1,800	EXHAUST HOOD SYS. LIGHTS	20/1	42
43	20/1	SPARE					2,400			FIRE SYSTEM ANSUL CONTROL	30/1	44
45	20/1	SPARE								SPARE	20/1	46
47	20/1	SPARE								SPARE	20/1	48
49	20/1	SPARE								SPARE	20/1	50
51	20/1	SPARE								SPARE	20/1	52
53		SPACE								SPACE		54
55		SPACE								SPACE		56
57		SPACE								SPACE		58
59		SPACE								SPACE		60
			PHASE TOTALS									
			A	B	C							
			19,995	18,095	15,160							

PANEL AND CIRCUIT BREAKER NOTES:

[1] MULTIPLE CIRCUITS SHARING THE SAME CONDUIT AND NEUTRAL SHALL HAVE HANDLE TIES AT BREAKERS AND WIRE IN PANEL TIES PER CEC 210.4.
[2] PAINT BREAKER RED AND PROVIDE LOCK-ON DEVICE FOR CIRCUIT BREAKER FEEDING FIRE ALARM CIRCUIT

DEMAND LOADS		
LIGHTING / CONTINUOUS LOAD x 125%	2,250	Watts
RECEPTACLES / OTHER x 100%	51,450	Watts
LARGEST MOTOR x 25%	748	Watts
TOTAL DEMAND LOADS	54,448	Watts
TOTAL DEMAND AMPS	131	AMPS

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SHEET TITLE:
ELECTRICAL SCHEDULE

SCALE:

REVISIONS

No.	Issue Description	Date
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Drawn By: ---
Checked By: ---

JOB NO. 19.010
DATE 2019-12-20
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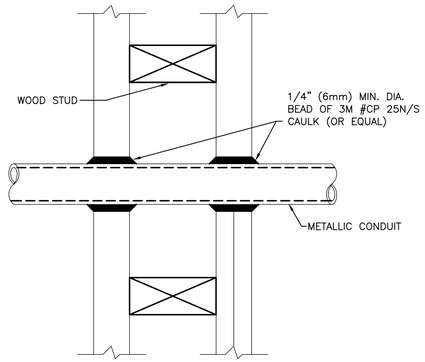
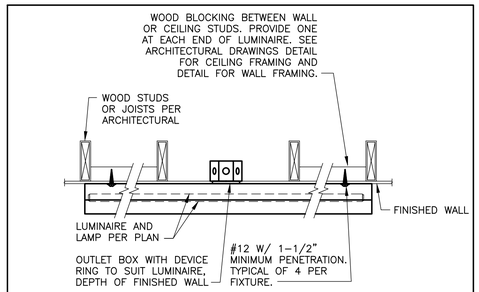


STUD WALL

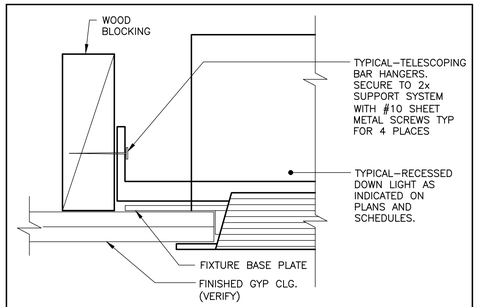
NOTES:

1. THE CAULK IS TO BE FORCED INTO THE ANNULAR SPACE TO THE MAXIMUM EXTENT POSSIBLE FLUSH WITH THE EXTERIOR OF THE PENETRATION SURFACE
2. FINISH CAULKING WITH A 1/4" (6mm) MINIMUM BEAD OF CP 25N/S CAULK APPLIED TO THE PERIMETER OF THE CONDUIT/PIPE AT ITS EGRESS FROM THE WALL.
3. THE MAXIMUM ANNULAR SPACE IS NOT TO EXCEED 3/16" (5mm).
4. INSTALL 3M FIRESTOP ON BOTH SIDES OF THE WALL.
5. THESE RECOMMENDATIONS ARE BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL THROUGH-PENETRATION FIRESTOP SYSTEM #WL1001.

FILENAME: CONDUIT PENETRATION FIRESTOP DETAIL | NTS | 5



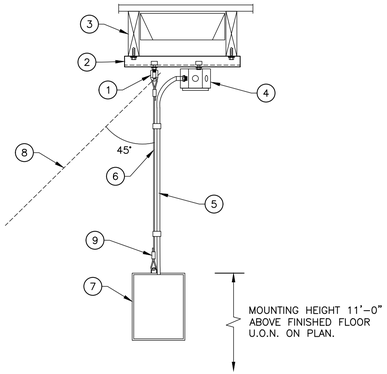
FILENAME: WALL/CEILING SURFACE LIGHT FIXTURE MOUNTING DETAIL FOR WOOD FRAMING | NTS | 3



ELGEQ01B: RECESSED DOWNLIGHT MOUNTING DETAIL WOOD FRAMING | NTS | 4

NOTES

1. 3/8" MALE SWIVEL HANGER, SECURE TO CHANNEL WITH NUT, LOCK WASHER AND CHANNEL TWIRL-NUT.
2. B-LINE B22 CHANNEL, ATTACH TO MIN. (2) ROOF FRAMING MEMBERS WITH 3/8"ø NUTS, WASHERS AND BOLTS.
3. ROOF FRAMING, SEE STRUCTURAL.
4. 4"X 1.5" SQUARE WEATHER PROOF ELECTRICAL BOX WITH BLANK COVER PLATE. SECURE TO CHANNEL WITH NUT, WASHER AND CHANNEL TWIRL STUD NUT.
5. 1/2" FLEXIBLE CONDUIT OR CORD. PROVIDE WITH CONNECTORS AND 24" SLACK COILED ABOVE THE FIXTURE. SECURE TIGHTLY TO AIRCRAFT CABLE WITH WIRE TIES AT 3' INTERVALS AND NOT MORE THAN 18" FROM LUMINAIRE OR ELECTRICAL BOX. (MINIMUM (2) WIRE TIES PER CABLE).
6. 3/32" DIA. STAINLESS STEEL FLEXIBLE TYPE 302/304 7X7 STRANDED AIRCRAFT CABLE. LENGTH AS REQUIRED. (REFER TO LIGHTING PLAN FOR MOUNTING HEIGHTS).
7. LUMINAIRE PER PLAN.
8. LIGHT FIXTURE TO BE ABLE TO SWING 45° WITHOUT HITTING ANY OBSTRUCTIONS.
9. STAINLESS STEEL OVAL SLEEVE. USE A MECHANICAL OR HYDRAULIC SWAGER ONLY TO OBTAIN THE FULL HOLDING POWER OF THE SLEEVE. (TYPICAL OF 2)



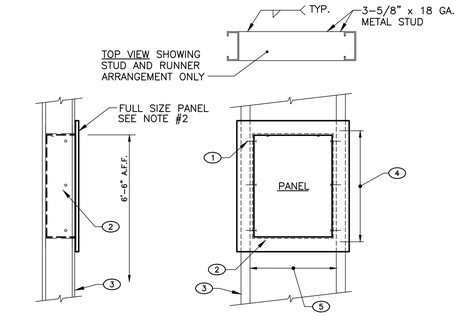
FILENAME: CABLE SUSPENDED LUMINAIRE MOUNTING DETAIL | NTS | 2

KEY NOTES:

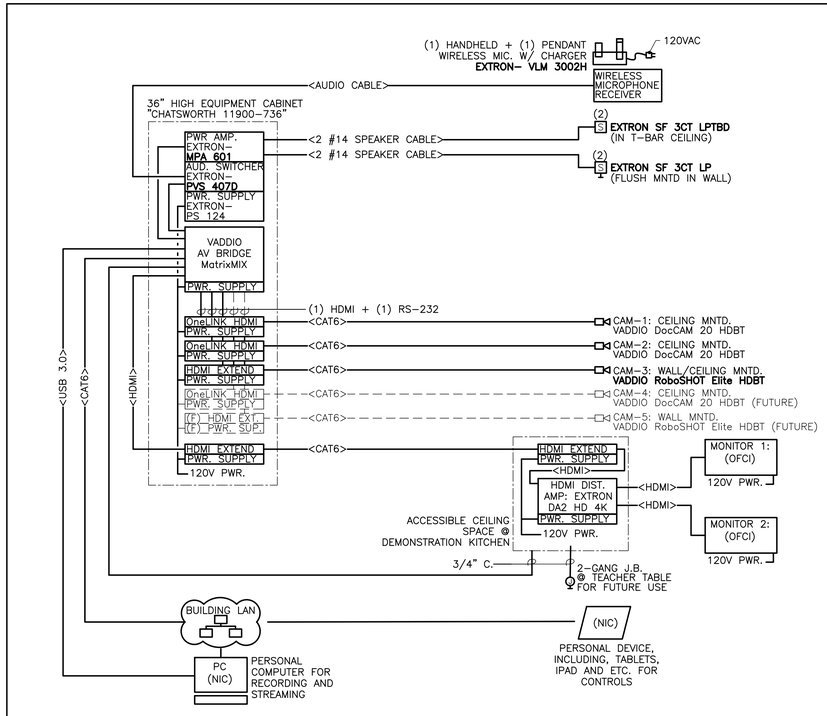
1. 1/4" x 1-1/2" MACHINE BOLTS, TYPICAL AT 3 EACH SIDE AND 2 EACH AT TOP AND BOTTOM OF THE PANEL. (BY ELECTRICAL CONTRACTOR)
2. 5/8" GYPBOARD AROUND PANEL (TYP) FOR PANELS IN CORRIDOR WALLS, AREA SEPARATION WALLS, OCCUPANCY SEPERATION WALLS, AND FIRE REATED WALLS.
3. METAL STUD PER ARCHITECTURAL DRAWINGS AND REQUIREMENTS.
4. ADD 1 1/8" TO PANEL HEIGHT INSIDE DIM. OF FRAME VERIFY EQUIPMENT SIZE IN FIELD
5. ADD 1 1/8" TO PANEL WIDTH INSIDE DIM. OF FRAME VERIFY EQUIPMENT SIZE IN FIELD

NOTES:

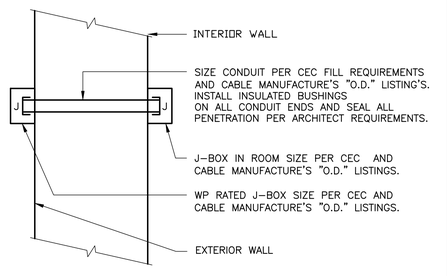
1. USE FENDER WASHER ON ALL BOLTS.
2. REGULAR PANELS 150# MAX. ISOLATION PANELS 225# MAX.
3. MOUNT TERMINAL CABINETS, AND ETC., SIMILAR TO 30 CIRCUIT PANELBOARD.
4. REFER TO PANEL SCHEDULE SHEET FOR SIZES OF PANELS.
5. CENTER OF GRAVITY OF CABINET FROM TOP OF FLOOR = ±50".



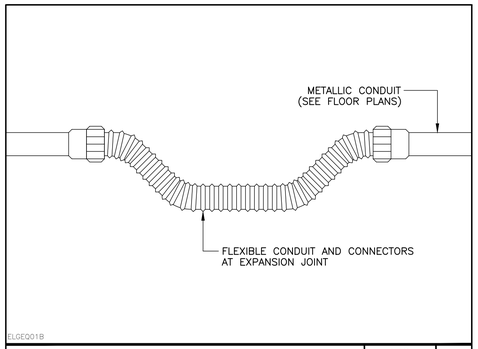
FILENAME: FLUSH MOUNTED PANELBOARD/CABINET METAL FRAMING MOUNTING DETAIL | NTS | 1



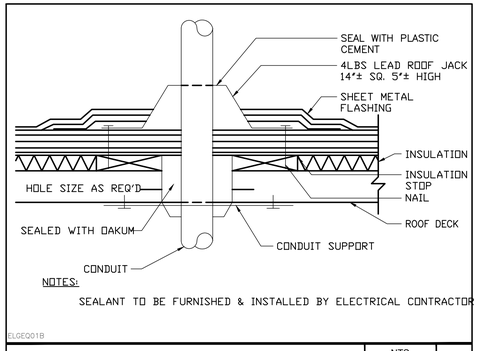
AUDIO/VIDEO SYSTEM DIAGRAM | NTS | 9



FILENAME: TYPICAL CONDUIT PENETRATION THROUGH OUTSIDE WALL | NTS | 7



ELGEQ01B: SEISMIC JOINT CONDUIT DETAIL | NTS | 6



NOTES:

SEALANT TO BE FURNISHED & INSTALLED BY ELECTRICAL CONTRACTOR

ELGEQ01B: ROOF CONDUIT PENETRATION DETAIL | NTS | 8

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE: ELECTRICAL DETAILS

SCALE:

REVISIONS

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Drawn By: ---

Checked By: ---

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER E4.1

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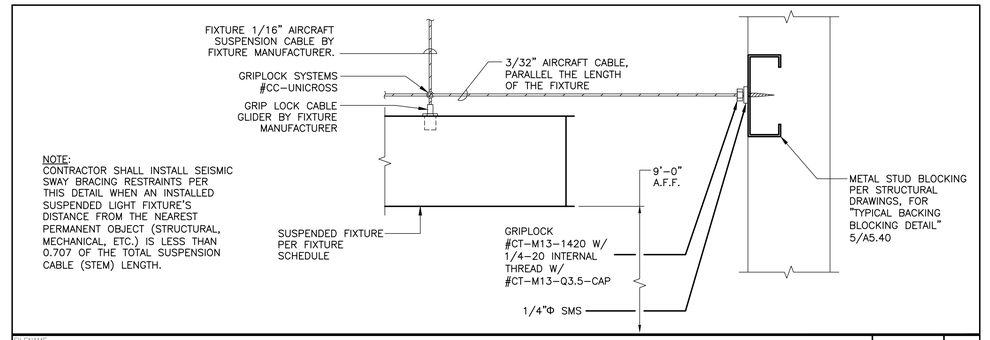
REGISTERED PROFESSIONAL ENGINEER
KENNETH R. RUBITSKY
No. 11798
Exp. 9/30/20
ELECTRICAL
STATE OF CALIFORNIA

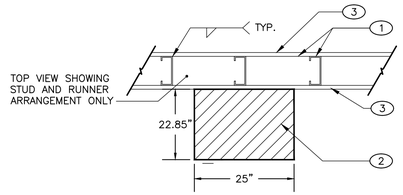


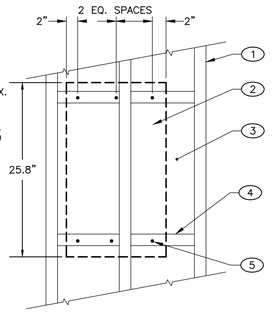
FILENAME

SEISMIC SWAY BRACING DETAIL FOR CABLE SUSPENDED LIGHTING FIXTURES | NTS | 1

KEY NOTES:

1. 3-5/8" X 18 GA METAL STUD
2. SURFACE MOUNTED PANEL CABINET
3. SHEET ROCK OR OTHER WALL SURFACE MATERIAL (SEE ARCH. DRAWINGS)
4. 3-5/8" x 18 GA. METAL STUDS FILLET WELDED TO VERTICAL STUDS AT EACH END
5. 1/4" x 1-1/2" TEK SCREWS (BY ELECTRICAL CONTRACTOR)





NOTES:

1. IDF CABINET ARE 225# MAX. (INCLUDING CONTENTS)
2. MOUNT TERMINAL CABINETS, J-BOXES, ETC., SIMILAR TO IDF CABINET.
3. CENTER OF GRAVITY OF CABINET FROM TOP OF FLOOR = ±50".

FILENAME

IDF CABINET FRAMING MOUNTING DETAIL | NTS | 2

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SHEET TITLE:
ELECTRICAL DETAILS

SCALE:

REVISIONS

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DATE 2019-12-20

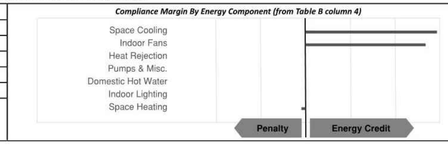
SHEET NUMBER E4.2

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 2 of 20
Project Address:	11645 Ridge Road Grass Valley 95945	Calculation Date/Time:	17:05, Tue, Aug 27, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-2078 Title 24 Calc.cibd16x

C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings)

1st	Space Cooling: Check envelope and mechanical
2nd	Indoor Fans: Check envelope and mechanical
3rd	Heat Rejection: Check envelope and mechanical
4th	Pumps & Misc.: Check mechanical
5th	Domestic Hot Water: Check mechanical
6th	Indoor Lighting: Check lighting
7th	Space Heating: Check envelope and mechanical

Compliance Margin By Energy Component (from Table B column 4)



D. EXCEPTIONAL CONDITIONS

The building does not include service water heating. Verify that service water heating is not required and is not included in the design.

E. HERS VERIFICATION

This Section Does Not Apply

F. ADDITIONAL REMARKS

None Provided

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 1 of 20
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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-2078 Title 24 Calc.cibd16x

A. PROJECT GENERAL INFORMATION

1.	Project Location (city)	Grass Valley	**8.**	Standards Version	Compliance2016
2.	CA Zip Code	95945	**9.**	Compliance Software (version)	EnergyPro 7.2
3.	Climate Zone	11	**10.**	Weather File	MARYSVILLE-BEALE-AFB_724837_CZ2010.epw
4.	Total Conditioned Floor Area in Scope	2,104 ft^2	**11.**	Building Orientation (deg)	(N) 15 deg
5.	Total Unconditioned Floor Area	0 ft^2	**12.**	Permitted Scope of Work	ExistingAdditionAndAlteration
6.	Total # of Stories (Habitable Above Grade)	1	13	Building Type(s)	Nonresidential
7.	Total # of dwelling units	0	14	Gas Type	NaturalGas

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft ^{2}-yr) **§ 140.1**

BUILDING COMPLIES

1. Energy Component	2. Standard Design (TDV)	3. Proposed Design (TDV)	4. Compliance Margin (TDV)	5. Percent Better than Standard
Space Heating	6.49	7.29	-0.80	-12.3%
Space Cooling	121.50	90.94	30.56	25.2%
Indoor Fans	120.62	92.73	27.89	23.1%
Heat Rejection	--	--	--	--
Pumps & Misc.	--	--	--	--
Domestic Hot Water	24.86	24.86	--	0.0%
Indoor Lighting	115.26	115.26	--	0.0%
COMPLIANCE TOTAL	**388.73**	**331.08**	**57.65**	**14.8%**
Receptacle	112.46	112.46	0.0	0.0%
Process	137.03	137.03	0.0	0.0%
Other Ltg	--	--	--	--
Process Motors	--	--	--	--
TOTAL	**638.22**	**580.57**	**57.7**	**9.0%**

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 4 of 20
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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

The following building components are only eligible for prescriptive compliance. Indicate which are relevant to the project.				*The following building components may have mandatory requirements per Part 6. Indicate which are relevant to the project.*			
Yes	**NA**	**Prescriptive Requirement**	**Compliance Forms**	**Yes**	**NA**	**Mandatory Requirement**	**Compliance Forms**
☐	☒	Lighting (Indoor Unconditioned) §140.6	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	☐ ☐	☒ ☒	Commissioning: §120.8 Simple Systems Complex Systems	 NRCC-CXR-01 / 02 / 03 / 05-E NRCC-CXR-01 / 02 / 04 / 05-E
☐	☒	Lighting (Outdoor) §140.7	NRCC-LTO-01 / 02 / 03-E	☐	☒	Electrical: §130.5	NRCC-ELC-01-E
☐	☒	Lighting (Sign) §140.8	NRCC-LTS-01-E	☐	☒	Solar Ready: §110.10	NRCC-SRA-01 / 02-E
☐	☒	Solar Thermal Water Heating: §140.5	NRCC-STH-01-E	☐ ☐ ☐ ☐ ☐	☒ ☒ ☒ ☒ ☒	Covered Process: §120.6 Parking Garage Commercial Refrigeration Warehouse Refrigeration Compressed Air Process Boilers	NRCC-PRC-01-E NRCC-PRC-02-E NRCC-PRC-05-E NRCC-PRC-06/07/08-E NRCC-PRC-10-E NRCC-PRC-11-E

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 3 of 20
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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

Identify which building components use the performance or prescriptive path for compliance. "NA"= not in project

For components that utilize the performance path, indicate the sheet number that includes mandatory notes on plans.

Building Component	**Compliance Path**		**Compliance Forms** ***(required for submittal)***	**Location of Mandatory Notes on Plans**
Envelope	☒	Performance	NRCC-PRF-ENV-DETAILS (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-ENV-01 / 02 / 03 / 04 / 05 / 06-E	
	☐	NA		
Mechanical	☒	Performance	NRCC-PRF-MCH-DETAILS (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-MCH-01 / 02 / 03 / 04 / 05 / 06 / 07-E	
	☐	NA		
Domestic Hot Water	☐	Performance	NRCC-PRF-PLB-DETAILS (section of the NRCC-PRF-01-E)	
	☒	Prescriptive	NRCC-PLB-01-E	
	☐	NA		
Lighting (Indoor Conditioned)	☒	Performance	NRCC-PRF-LTI-DETAILS (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	
	☐	NA		
Covered Process: Commercial Kitchens	☐	Performance	S2 (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-PRC-01/ 03-E	
	☒	NA		
Covered Process: Computer Rooms	☐	Performance	S3 (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-PRC-01/ 04-E	
	☒	NA		
Covered Process: Laboratory Exhaust	☐	Performance	S4 (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-PRC-01/ 09-E	
	☒	NA		

TITLE 24 SHEET INDEX

SHEET NO.	SHEET TITLE
T24.1	TITLE 24 CALCULATIONS
T24.2	TITLE 24 CALCULATIONS
T24.3	TITLE 24 CALCULATIONS
T24.4	TITLE 24 CALCULATIONS
T24.5	TITLE 24 CALCULATIONS
T24.6	TITLE 24 CALCULATIONS
T24.7	TITLE 24 CALCULATIONS
T24.8	TITLE 24 CALCULATIONS

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M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

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SHEET TITLE:
TITLE 24 CALCULATIONS

SCALE:

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Checked By: RH

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DATE 2019-12-20

SHEET NUMBER T24.1

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 6 of 20
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H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) –
Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance
(Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).
See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Plumbing	☐ NRCI-PLB-01-E - For all buildings with Plumbing Systems	☐	☐
	☐ NRCI-PLB-02-E - required on central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-03-E - Single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-21-E - HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-22-E - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-21-H- HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-STH-01-E - Any solar water heating	☐	☐
Indoor Lighting	☒ NRCI-LTI-01-E - For all buildings	☐	☐
	☐ NRCI-LTI-02-E - Lighting control system, or for an Energy Management Control System (EMCS)	☐	☐
	☐ NRCI-LTI-03-E - Line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting	☐	☐
	☐ NRCI-LTI-04-E - Two interlocked systems serving an auditorium, a convention center, a conference room, or a theater	☐	☐
	☐ NRCI-LTI-05-E - Lighting Control Credit Power Adjustment Factor (PAF)	☐	☐
	☐ NRCI-LTI-06-E - Additional wattage installed in a video conferencing studio	☐	☐
	☒ NRCA-LTI-02-A - Occupancy sensors and automatic time switch controls.	☐	☐
	☒ NRCA-LTI-03-A - Automatic daylighting controls	☐	☐
	☐ NRCA-LTI-04-A - Demand responsive lighting controls	☐	☐
Outdoor Lighting	☐ NRCI-LTO-01-E – Outdoor Lighting	☐	☐
	☐ NRCI-LTO-02-E- EMCS Lighting Control System	☐	☐
	☐ NRCA-LTO-02-A - Outdoor Lighting Control	☐	☐
Sign Lighting	☐ NRCI-LTS-01-E – Sign Lighting	☐	☐
Electrical	☐ NRCI-ELC-01-E - Electrical Power Distribution	☐	☐
Photovoltaic	☐ NRCI-SPV-01-E Photovoltaic Systems	☐	☐

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Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Envelope	☒ NRCI-ENV-01-E - For all buildings	☐	☐
	☒ NRCA-ENV-02-F- NFRC label verification for fenestration	☐	☐
Mechanical	☒ NRCI-MCH-01-E - For all buildings with Mechanical Systems	☐	☐
	☒ NRCA-MCH-02-A- Outdoor Air	☐	☐
	☒ NRCA-MCH-03-A – Constant Volume Single Zone HVAC	☐	☐
	☐ NRCA-MCH-04-H- Air Distribution Duct Leakage	☐	☐
	☒ NRCA-MCH-05-A- Air Economizer Controls	☐	☐
	☒ NRCA-MCH-06-A- Demand Control Ventilation	☐	☐
	☐ NRCA-MCH-07-A – Supply Fan Variable Flow Controls	☐	☐
	☐ NRCA-MCH-08-A- Valve Leakage Test	☐	☐
	☐ NRCA-MCH-09-A – Supply Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-10-A- Hydronic System Variable Flow Controls	☐	☐
	☐ NRCA-MCH-11-A – Auto Demand Shed Controls	☐	☐
	☐ NRCA-MCH-12-A- Packaged Direct Expansion Units	☐	☐
	☐ NRCA-MCH-13-A- Air Handling Units and Zone Terminal Units	☐	☐
	☐ NRCA-MCH-14-A- Distributed Energy Storage	☐	☐
	☐ NRCA-MCH-15-A – Thermal Energy Storage	☐	☐
	☐ NRCA-MCH-16-A- Supply Air Temp Reset Controls	☐	☐
	☐ NRCA-MCH-17-A – Condensate Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-18-A- Energy Management Controls Systems	☐	☐
	☐ NRCV-MCH-04-H- Duct Leakage Test	☐	☐

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-06262019-5583 Report Generated at: 2019-08-27 17:06:29

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J. FENESTRATION ASSEMBLY SUMMARY — § 110.6 — Confirmed

1. Fenestration Assembly Name / Tag or I.D.	2. Fenestration Type / Product Type / Frame Type	3. Certification Method[1]	4. Assembly Method	5. Area ft²	6. Overall U-factor	7. Overall SHGC	8. Overall VT	9. Status[2]	Pass	Fail
Single Non Metal Tinted	VerticalFenestration FixedWindow NonMetalFraming	Default Performance	SiteBuilt	135	0.55	0.55	0.77	E	☐	☐

[1] Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.
[2] Status: N - New, A – Altered, E – Existing

Taking compliance credit for fenestration shading devices? (if "Yes", see NRCC-PRF-ENV-DETAILS for more information) — No

K. OPAQUE SURFACE ASSEMBLY SUMMARY — § 120.7/ § 140.3 — Confirmed

1. Surface Name	2. Surface Type	3. Area (ft²)	4. Framing Type	5. Cavity R-Value	6. Continuous R-Value	7. U-Factor / F-Factor / C-Factor	8. Status[1]	Pass	Fail
R-19 Wall4	ExteriorWall	2479	Wood	19	NA	U-Factor: 0.072	E	☐	☐
Slab On Grade7	UndergroundFloor	2104	NA	0	NA	F-Factor: 0.730	E	☐	☐
R-30 Roof Attic9	Roof	2104	Wood	30	NA	U-Factor: 0.038	E	☐	☐
R-19 Wall41	InteriorWall	100	Wood	19	NA	U-Factor: 0.069	E	☐	☐

[1] Status: N - New, A – Altered, E – Existing

L. ROOFING PRODUCT SUMMARY — § 140.3 — Confirmed

1. Product Type	2. Product Density (lb/ft³)	3. Aged Solar Reflectance	4. Thermal Emittance	5. SRI	6. Cool Roof Credit	7. Roofing Product Description	Pass	Fail
R-30 Roof Attic9	5.813	0.08	0.75	NA	No	NA	☐	☐

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-06262019-5583 Report Generated at: 2019-08-27 17:06:29

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See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Covered Process	☐ NRCI-PRC-01-E Covered Processes	☐	☐
	☐ NRCA-PRC-01-F- Compressed Air Systems	☐	☐
	☐ NRCA-PRC-02-F- Kitchen Exhaust	☐	☐
	☐ NRCA-PRC-03-F- Garage Exhaust	☐	☐
	☐ NRCA-PRC-04-F- Refrigerated Warehouse- Evaporator Fan Motor Controls	☐	☐
	☐ NRCA-PRC-05-F- Refrigerated Warehouse- Evaporative Condenser Controls	☐	☐
	☐ NRCA-PRC-06-F- Refrigerated Warehouse- Air Cooled Condenser Controls	☐	☐
	☐ NRCA-PRC-07F- Refrigerated Warehouse- Variable Speed Compressor	☐	☐
	☐ NRCA-PRC-08-F- Electrical Resistance Underslab Heating System	☐	☐

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information)

						Confirmed Pass	Confirmed Fail
1.	Total Conditioned Floor Area	2,104 ft²	5.	Number of Floors Above Grade	1		
2.	Total Unconditioned Floor Area	0 ft²	6.	Number of Floors Below Grade	0		
3.	Addition Conditioned Floor Area	0 ft²					
4.	Addition Unconditioned Floor Area	0 ft²					

7. Opaque Surfaces & Orientation	8. Total Gross Surface Area	9. Total Fenestration Area	10. Window to Wall Ratio	Pass	Fail
North Wall	437 ft²	135 ft²	30.8%	☐	☐
East Wall	693 ft²	0 ft²	00.0%	☐	☐
South Wall	648 ft²	0 ft²	00.0%	☐	☐
West Wall	701 ft²	0 ft²	00.0%	☐	☐
Total	**2,479 ft²**	**135 ft²**	**05.4%**	☐	☐
Roof	2,104 ft²	0 ft²	00.0%	☐	☐

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SHEET TITLE:
TITLE 24 CALCULATIONS

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JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER T24.2

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 9 of 20
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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-2078 Title 24 Calc.cibd16x

M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information) — **§ 110.1 / § 110.2**

Dry System Equipment [1] (Fan & Economizer info included below in Table N) — Confirmed: Pass ☐ Fail ☐

1. Equip Name	2. Equip Type	3. System Type (Simple [2] or Complex [3])	4. Qty	5. Total Heating Output (kBtu/h)	6. Supp Heat Source (Y/N)	7. Supp Heat Output (kBtuh)	8. Total Cooling Output (kBtu/h)	9. Efficiency: Cooling	9. Efficiency: Heating	10. Acceptance Testing Required? (Y/N) [4]	11. Status [5]	Pass	Fail
Trane 6 Ton	SZAC (Split3Phase)	Simple	1	65	No	0	64	SEER-15.50 / EER-13.10	AFUE-78.0	Yes	N	☐	☐
Trane 2 Ton	SZAC (Split3Phase)	Simple	1	60	No	0	23	SEER-16.00 / EER-12.00	AFUE-78.0	Yes	N	☐	☐

[1] *Dry System Equipment includes furnaces, air handling units, heat pumps, etc.*
[2] *Simple Systems must complete NRCC-CXR-03-E commissioning design review form*
[3] *Complex Systems must complete NRCC-CXR-04-E commissioning design review form*
[4] *A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS*
[5] *Status: N - New, A – Altered, E – Existing*

Wet System Equipment Section Does Not Apply

Discrepancy between modeled and designed equipment sizing? (if "Yes", see Table F. "Additional Remarks" for an explanation)	No

N. ECONOMIZER & FAN SYSTEMS SUMMARY [1] — **§ 140.4** — Confirmed: Pass ☐ Fail ☐

1. Equip Name	2. Outside Air: CFM	3. Supply Fan: CFM	HP	BHP	TSP (inch WC)	Control	4. Return Fan: CFM	HP	BHP	TSP (inch WC)	Control	5. Economizer Type (if present)
Trane 6 Ton	455	2400	0.910	0.910	1.44	ConstantVolume	NA	NA	NA	NA	NA	FixedDryBulb
Trane 2 Ton	96	800	0.500	0.500	1.98	ConstantVolume	NA	NA	NA	NA	NA	NoEconomizer

[1] *Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section*

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O. EQUIPMENT CONTROLS — **§ 120.2** — Confirmed

1. Equip Name	2. Equip Type	3. Controls	Pass	Fail
Trane 6 Ton	SZAC	1 Zones With CO2Sensor Vent. Control Fixed Drybulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐
Trane 2 Ton	SZAC	No DCV Controls No Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐

P. SYSTEM DISTRIBUTION SUMMARY — **§ 120.4/ § 140.4(l)**

		Dry System Distribution					Confirmed	
1. Equip Name	2. Equip Type	3. Duct Leakage and Sealing Required per 140.4(l)	4. Duct Leakage will be verified per NA1 and NA2	5. Ducts: Insulation R-Value	5. Ducts: Location	6. Status [1]	Pass	Fail
Trane 6 Ton	SZAC	No	No	8.0	Unconditioned	N	☐	☐
Trane 2 Ton	SZAC	No	No	8.0	Unconditioned	N	☐	☐

[1] *Status: N - New, E – Existing*

Does the Project Include Zonal Systems? (if "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Does the Project Include a Solar Hot Water System? (if "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Multifamily or Hotel/ Motel Occupancy? (if "Yes", see NRCC-PRF-MCH-DETAILS for DHW system information)	No

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Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info)[3] — **§ 140.6** — Confirmed

1. Occupancy Type [1]	2. Conditioned Floor Area [2] (ft²)	3. Installed Lighting Power (Watts)	4. Lighting Control Credits (Watts)	5. Additional (Custom) Allowance: Area Category Footnotes (Watts)	5. Additional (Custom) Allowance: Tailored Method (Watts)	Pass	Fail
Corridors, Restrooms, Stairs, and Support Areas	147	88	0	0	0	☐	☐
Kitchen, Commercial Food Preparation	919	1,103	0	0	0	☐	☐
Dining Area	590	590	0	0	0	☐	☐
Commercial and Industrial Storage Areas (conditioned or unconditioned)	163	98	0	0	0	☐	☐
Grocery Sales Areas	285	342	0	0	0	☐	☐
Building Totals:	**2,104**	**2,221**	**0**	**0**	**0**		

[1] *See Table 140.6-C*
[2] *See NRCC-LTI-01-E for unconditioned spaces*
[3] *Lighting information for existing spaces modeled is not included in the table*

R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E)[1] — **§ 130.0**

This Section Does Not Apply

[1] *If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.*

S1. COVERED PROCESS SUMMARY – ENCLOSED PARKING GARAGES — **§ 140.9**

This Section Does Not Apply

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S2. COVERED PROCESS SUMMARY – COMMERCIAL KITCHENS — **§ 140.9**

Space Name	Exhaust Hood Style	Exhaust Hood Duty	Exhaust Length (ft)	Exhaust Flow Rate (cfm)	Confirmed: Pass	Confirmed: Fail
S-2-FOOD PREPARATION		Light			☐	☐
		Light			☐	☐
		Light			☐	☐
		Light			☐	☐
		Light			☐	☐

S3. COVERED PROCESS SUMMARY – COMPUTER ROOMS — **§ 140.9**

This Section Does Not Apply

S4. COVERED PROCESS SUMMARY – LABORATORY EXHAUSTS — **§ 140.9**

This Section Does Not Apply

T. UNMET LOAD HOURS

This Section Does Not Apply

U. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	--	--	--	8.1	9.1	-1.0
Space Cooling	6.7	4.8	1.9	--	--	--
Indoor Fans	11.9	9.1	2.8	--	--	--
Heat Rejection	--	--	--	--	--	--
Pumps & Misc.	--	--	--	--	--	--
Domestic Hot Water	--	--	--	36.4	36.4	0.0
Indoor Lighting	10.6	10.6	0.0	--	--	--
COMPLIANCE TOTAL	**29.2**	**24.5**	**4.7**	**44.5**	**45.5**	**-1.0**
Receptacle	10.2	10.2	0.0	1.6	1.6	0.0

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STATE OF CALIFORNIA

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER T24.3

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 14 of 20
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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-2078 Title 24 Calc.cibd16x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		**§ 10-103**
I certify that this Certificate of Compliance documentation is accurate and complete.		
Documentation Author Name: Dionece Pria	Signature:	
Company: LP Consulting Engineers, Inc.		
Address: 1209 Pleasant Grove Blvd.	Signature Date:	08-27-2019
City/State/Zip: Roseville CA 95678	CEA Identification (If applicable):	
Phone: (916) 771-0778		

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1	I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer, or I am a licensed architect.
2	I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
3	I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

Responsible Envelope Designer Name:	**Signature:**	
Company: Derivi Castellanos Architects		
Address: 95 S Market St, Suite 480	Date Signed:	
City/State/Zip: San Jose CA 95113	Declaration Statement Type:	
Phone:	Title:	License #:
Responsible Lighting Designer Name: Kenneth Rubitsky	**Signature:**	
Company: LP Consulting Engineers		
Address: 1209 Pleasant Grove Blvd.	Date Signed:	08-27-2019
City/State/Zip: Roseville CA 95678	Declaration Statement Type:	
Phone: (916) 771-0778	Title:	License #: E.11789
Responsible Mechanical Designer Name: Sean Pourvakil	**Signature:**	
Company: LP Consulting Engineers, Inc.		
Address: 1209 Pleasant Grove Blvd	Date Signed:	08-27-2019
City/State/Zip: Roseville CA 95678	Declaration Statement Type:	
Phone: (916) 771-0778	Title:	License #: M.32311

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 13 of 20
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U. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Process	14.0	14.0	0.0	--	--	--
Other Ltg	--	--	--	--	--	--
Process Motors	--	--	--	--	--	--
TOTAL	**53.4**	**48.7**	**4.7**	**46.1**	**47.1**	**-1.0**

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 16 of 20
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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-2078 Title 24 Calc.cibd16x

NRCC-PRF-MCH-DETAILS -SECTION START-

A. MECHANICAL VENTILATION AND REHEAT *(Adapted from 2016-NRCC-MCH-03-E)*

1. DESIGN AIR FLOWS								2. VENTILATION (§ 120.1)										Confirmed	
CONDITIONED ZONE NAME	HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN PRIMARY MINIMUM AIR FLOW (CFM)	MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	DDC CONTROL (Y/N)	VENT SYSTEM ID	CONDITIONED AREA (ft2)	MIN. VENT PER AREA (CFM/ft2)	DESIGN NUM. OF PEOPLE	MIN. VENT PER PERSON (CFM/person)	REQ'D VENT AIR FLOW (CFM)	DESIGN VENT AIR FLOW (CFM)	TRANSFER AIRFLOW (CFM)	DCV (Y/N)	Operable Window Interlock § 140.4(o) (Y/N)	Pass	Fail
1-RESTROOM	Trane 6 Ton	101	NA	0.00	NA	NA	N	Trane 6 Ton	70	0.15	0.35	30.00	11	11	NA	N	NA	☐	☐
2-FOOD PREPARATION	Trane 6 Ton	1,332	NA	0.00	NA	NA	N	Trane 6 Ton	919	0.15	2.30	60.00	138	138	NA	N	NA	☐	☐
3-JANITOR	Trane 6 Ton	112	NA	0.00	NA	NA	N	Trane 6 Ton	77	0.15	0.39	30.00	12	12	NA	N	NA	☐	☐
4-DINNING	Trane 6 Ton	855	NA	0.00	NA	NA	N	Trane 6 Ton	590	0.50	19.67	15.00	295	295	NA	Y	NA	☐	☐
5-STORAGE	Trane 2 Ton	291	NA	0.00	NA	NA	N	Trane 2 Ton	163	0.15	0.16	150.00	24	24	NA	N	NA	☐	☐
6-STORE	Trane 2 Ton	509	NA	0.00	NA	NA	N	Trane 2 Ton	285	0.25	4.75	15.00	71	71	NA	N	NA	☐	☐
								TOTAL	2,104		27.62		551	551	NA			☐	☐

B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY — **§ 140.4**

1.	2.	3.	4.		5.	6.	7.			8.			Confirmed	
System ID	System Type	Qty	Rated Capacity (kBtuh)		Economizer	Zone Name	Airflow (cfm)			Fan			Pass	Fail
			Heating	Cooling			Design	Min.	Min. Ratio	BHP	Cycles	ECM Motor		
4-DINNING-Trm	Uncontrolled	1	NA	NA	NA	4-DINNING	855	NA	0.00	NA	NA	☐	☐	☐
3-JANITOR-Trm	Uncontrolled	1	NA	NA	NA	3-JANITOR	112	NA	0.00	NA	NA	☐	☐	☐

Project Name:	CTE - Culinary Arts	NRCC-PRF-01-E	Page 15 of 20
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NRCC-PRF-ENV-DETAILS -SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS

1.	2.	3.	4.	Confirmed	
Surface Name	Surface Type	Description of Assembly Layers	Notes	Pass	Fail
R-19 Wall4	ExteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 5.5in., R-19 Gypsum Board - 1/2 in.		☐	☐
Slab On Grade7	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		☐	☐
R-30 Roof Attic9	Roof	Asphalt shingles - 1/4 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Wood framed roof, 24in. OC, 3.5in., R-30 Gypsum Board - 1/2 in.		☐	☐
R-19 Wall41	InteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 5.5in., R-19 Gypsum Board - 1/2 in.		☐	☐

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E)

This Section Does Not Apply

C. OPAQUE DOOR SUMMARY

This Section Does Not Apply

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G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS *(Adapted from 2016-NRCC-MCH-01-E)* — **§ RA4**

Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description		MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A	MCH-12A	MCH-13A	MCH-14A	MCH-15A	MCH-16A	MCH-17A	MCH-18A	Confirmed	
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Dist. Ducts	Economizer Controls	DCV	Supply Fan VAV	Valve Leakage	Supply Water Temp. Reset	Hyd. Variable Flow Control	Auto Demand Shed Control	FDD for DX Units	Auto FDD for Air & Zone	Dist. Energy Storage DX AC	TES Systems	Supply Air Temp. Reset	Condenser Water Reset Controls	ECMS	Pass	Fail
Trane 6 Ton	1	X	X	--	X	X	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐
Trane 2 Ton	1	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐

H. EVAPORATIVE COOLER SUMMARY

This Section Does Not Apply

NRCC-PRF-LTI-DETAILS -SECTION START-

A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E) — **§ 140.6**

This Section Does Not Apply

B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E) — **§ 130.1**

This Section Does Not Apply

§130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive

C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E)	§ 140.6
General lighting power (see Table D)	0
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (See Table G)	0

B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY — **§ 140.4**

1.	2.	3.	4.		5.	6.	7.			8.			Confirmed	
System ID	System Type	Qty	Rated Capacity (kBtuh)		Economizer	Zone Name	Airflow (cfm)			Fan			Pass	Fail
			Heating	Cooling			Design	Min.	Min. Ratio	BHP	Cycles	ECM Motor		
2-FOOD PREPARATION-Trm	Uncontrolled	1	NA	NA	NA	2-FOOD PREPARATION	1332	NA	0.00	NA	NA	☐	☐	☐
1-RESTROOM-Trm	Uncontrolled	1	NA	NA	NA	1-RESTROOM	101	NA	0.00	NA	NA	☐	☐	☐
6-STORE-Trm	Uncontrolled	1	NA	NA	NA	6-STORE	509	NA	0.00	NA	NA	☐	☐	☐
5-STORAGE-Trm	Uncontrolled	1	NA	NA	NA	5-STORAGE	291	NA	0.00	NA	NA	☐	☐	☐

C. EXHAUST FAN SUMMARY

This Section Does Not Apply

D. DHW EQUIPMENT SUMMARY – *(Adapted from NRCC-PLB-01)*

This Section Does Not Apply

E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS

This Section Does Not Apply

F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01)

This Section Does Not Apply

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6. Floor Display and Task Lighting

This Section Does Not Apply

7. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

8. Very Valuable Merchandise

This Section Does Not Apply

H. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTO-01-E) — **§ 130.4**

Declaration of Required Acceptance Certificates (NRCA) –Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description		Indoor			Outdoor	Confirmed	
		NRCA-LTI-02-A	NRCA-LTI-03-A	NRCA-LTI-04-A	NRCA-LTO-02-A	Pass	Fail
Equipment Requiring Testing or Verification	# of units	Occ Sensors / Auto Time Switch	Auto Daylight	Demand Responsive	Outdoor Controls		
Occupant Sensors	0	☒	☐	☐	☐	☐	☐
Automatic Time Switch	0	☒	☐	☐	☐	☐	☐
Automatic Daylighting	0	☐	☒	☐	☐	☐	☐
Demand Responsive	0	☐	☐	☐	☐	☐	☐
Outdoor Controls	0	☐	☐	☐	☐	☐	☐

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-06262019-5583 Report Generated at: 2019-08-27 17:06:29

C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E) — **§ 140.6**

Total watts 0

D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E) — **§ 140.6-D**

This Section Does Not Apply

E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E) — **§ 140.6(c) 3H**

Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed Pass	Confirmed Fail
NA	NA	NA	NA	NA	NA	NA	☐	☐

Note: Tailored Method for Special Function Areas is not currently implemented

F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E)

Rectangular Spaces

Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed Pass	Confirmed Fail
NA	NA	NA	NA	NA	NA	☐	☐

Non-Rectangular Spaces

This Section Does Not Apply

Note: All applicable spaces are listed under the Non-Rectangular Spaces table

G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E)

1.	2.	3.	4.	Allowed Watts	Confirmed Pass	Confirmed Fail
Wall Display	Combined Floor Display and Task Lighting	Combined Ornamental and Special Effects Lighting	Very Valuable Merchandise			
0	0	0	0	**0**	☐	☐

5. Wall Display

This Section Does Not Apply

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-06262019-5583 Report Generated at: 2019-08-27 17:06:29

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DATE: 01/21/20

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
TITLE 24 CALCULATIONS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: DP

Checked By: RH

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER T24.5

CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
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Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER
SEAN POURVAHABI
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REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 2 of 4)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

G. Schedule of Luminaires Exempt from the Cutoff Requirements in §130.2(b)

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

H. Schedule of Luminaires Exempt from the Outdoor Lighting Control Requirements in §130.2(c)

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 1 of 4)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

A. General Information

Project Address: 11645 Ridge Road, Grass Valley, CA 95945 — Total Illuminated Hardscape Area: 575.88

Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration

Outdoor Lighting Zone (LZ) ☐ LZ-1 ☐ LZ-2 ☑ LZ-3 ☐ LZ-4

I have confirmed with the AHJ which LZ applies to this site. For default lighting zone designations, see Title 24 Part 6, §10-114

B. Lighting Compliance Documents (check box for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

☑	NRCC-LTO-01-E	Certificate of Compliance
☑	NRCC-LTO-02-E	Outdoor Lighting Controls Certificate of Compliance
☑	NRCC-LTO-03-E	Outdoor Lighting Power Allowance Certificate of Compliance
☐	NRCC-LTO-04-E	Outdoor Lighting Existing Conditions Certificate of Compliance

C. Summary of Allowed Outdoor Lighting Power — Watts

01	**Sum Total ALLOWED** Outdoor Lighting Wattage from NRCC-LTO-03-E, page 1 Alterations with NO increase of connected lighting load may instead use the allowed wattage from NRCC-LTO-04, page 2.	575.88
	Complies ONLY if **Installed** (Box 02) ≤ **Allowed** (Box 01)	
02	**Sum Total INSTALLED** Outdoor Lighting Wattage from NRCC-LTO-01-E, page 3.	61

D. Declaration of Required Installation Certificates

Declare by checking all Installation Certificates that will be submitted. (Retain copies and verify compliance documents are completed and signed.)

☑ NRCI-LTO-01-E - Must be submitted for all buildings	☐ Field Inspector
☑ NRCI-LTO-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector

E. Declaration of Required Certificates of Acceptance

Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify compliance documents are completed and signed.)

☑ NRCA-LTO-02-A - Must be submitted for outdoor lighting controls.	☐ Field Inspector

F. Schedule of Luminaires Exempt from the Outdoor Lighting Power Requirements in §140.7

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL — ENV-MM

Project Name: *NUHS CTE - Culinary Arts* Date: *8/27/2019*

DESCRIPTION

Building Envelope Measures:

§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft.² of window area, 0.3 cfm/ft.² of door area for residential doors, 0.3 cfm/ft.² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft.² for nonresidential double doors (swinging).
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§110.6(a) :	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Metal Building-** The weighted average U-factor of the roof assembly shall not exceed 0.098. **Wood Framed and Others-** The weighted average U-factor of the roof assembly shall not exceed 0.075.
§120.7(b):	The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows: **Metal Building-** The weighted average U-factor of the wall assembly shall not exceed 0.113. **Metal Framed-** The weighted average U-factor of the wall assembly shall not exceed 0.151. **Light Mass Walls-** A 6 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. **Heavy Mass Walls-** An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. **Wood Framed and Others-** The weighted average U-factor of the wall assembly shall not exceed 0.110. **Spandrel Panels and Opaque Curtain Wall-** The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. **Demising Walls-**. The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.
§120.7(c):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Raised Mass Floors-** Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. **Other Floors-**The weighted average U-factor of the floor assembly shall not exceed 0.071.

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 4 of 4)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Anthony Zamarripa	Documentation Author Signature:
Company: LP Consulting Engineers, Inc.	Signature Date: 08/27/2019
Address: 1209 Pleasant Grove Blvd.	CEA Certification Identification (if applicable):
City/State/Zip: Roseville, CA 95678	Phone: 916-771-0778

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: Kenneth R. Rubitsky	Responsible Designer Signature:
Company: LP Consulting Engineers, Inc.	Date Signed: 08/27/2019
Address: 1209 Pleasant Grove Blvd.	License: 11798
City/State/Zip: Roseville, CA 95678	Phone: 916-771-0778

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 3 of 4)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

I. Outdoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule		Installed Watts					Location	Cutoff	Field Inspector	
01	02	03	04		05	06	07	08	09	
Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	How wattage was determined: CEC Default from NA8	How wattage was determined: According to §130.0(c)	Number of Luminaires	Total Installed Watts in this area (03 x 05)	Primary Function area in which these luminaires are installed (Outdoor Lighting Zone)	BUG Rating	Pass	Fail
F1	6" LED Round Downlight	25	☑	☐	2	50	Pedestrian Hardscape	UH: n/a UL: n/a FVH: n/a BVH: n/a FH: n/a BH: n/a	○	○
H1	Exterior Egress/Waterproof Lighting	11	☑	☐	1	11	Pedestrian Hardscape	UH: n/a UL: n/a FVH: n/a BVH: n/a FH: n/a BH: n/a	○	○
			☐	☐		0		UH: UL: FVH: BVH: FH: BH:	○	○
					INSTALLED WATTS PAGE TOTAL:	61	Enter sum total of all pages (**Sum Total INSTALLED** Outdoor lighting wattage) into NRCC-LTO-01-E; Page 1		61	

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JOB NO. 19.010

DATE 2019-12-20

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STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 08/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 2 of 3)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

B. Mandatory Outdoor Lighting Control Schedule and Field Inspection Checklist

Outdoor Lighting Control Schedule			Standards Complying With (✓ all that apply, or leave empty if Exempted)						Total Required ✓ if Acceptance	Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	
Location and Application of Luminaires Being Controlled	Type/ Description of Lighting Control (i.e. outdoor motion sensor, outdoor photocontrol, outdoor astronomical time-switch control, automatic scheduling control, part-night outdoor lighting control)	# of Units	§130.2(a)	§130.2(c)1	§130.2(c)2	§130.2(c)3	§130.2(c)4	§130.2(c)5		Pass	Fail
Exterior Bldg Mtd Lighting & Shade Struc	Controlled by Time Clock located in Classroom 1	1	◆	◆	◆				☑	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
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									☐	○	○
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STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 1 of 4)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

A. OUTDOOR LIGHTING POWER ALLOWANCE SUMMARY

1. General Hardscape Lighting Power Allowance (Site Total from Section B of NRCC-LTO-03-E)	1.	575.88
2. Additional Specific "use it or lose it" Lighting Power Allowances listed in each of these cells shall be identical to total allowed watts determined in Section C-1 to C-4 of NRCC-LTO-03-E.		

PER APPLICATION from Section C-1		PER UNIT LENGTH (SALES FRONTAGE) from Section C-2		PER HARDSCAPE AREA (ORNAMENTAL LIGHTING) from Section C-3		PER SPECIFIC AREA from Section C-4.			
0	+	0	+	0	+	82	=	2.	82
3. **Sum Total ALLOWED** Outdoor Lighting Wattage (add rows 1 and 2)								3.	657.88

B. GENERAL HARDSCAPE LIGHTING POWER ALLOWANCE FROM TABLE 140.7-A

Area Wattage Allowance (AWA)				Linear Wattage Allowance (LWA)			Initial Wattage Allowance (IWA)	Total General Hardscape Lighting Allowance
01	02	03	04	05	06	07	08	09
Name of Area	Illuminated Hardscape Area	AWA Per Square Foot	AWA (B02 x B03)	Perimeter Length of General Hardscape	LPA per Linear Foot	LWA (B05 x B06)	IWA (Watts)	B04 + B07 + B08
Pedestrian Hardscape	347	0.04	13.88	120	0.35	42	520	575.88
			0			0	0	0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
			0			0		0
							TOTAL	575.88

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 08/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 1 of 3)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

A. Mandatory Outdoor Lighting Control Declaration Statements

Check all that apply:

- ☑ Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with §110.9(a).
- ☑ Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with §130.4(b).
- ☑ All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with §130.0(d).
- ☐ Part-Night Outdoor Lighting Controls, as defined in Section 100.1(b), shall meet the requirements in Section 110.9(b)5.
- ☐ All outdoor incandescent luminaires rated over 100 watts, determined in accordance with Section 130.0(c), shall be controlled by a motion sensor.
- ☐ All outdoor luminaires rated for use with lamps greater than 150 lamp watts, determined in accordance with Section 130.0(c), shall comply with Uplight and Glare requirements in accordance with Section 130.2(b)
- ☑ All installed outdoor lighting shall be controlled by a photocontrol or outdoor astronomical time-switch control, or other control capable of automatically switching OFF in accordance with Section 130.2(c)1.
- ☑ All installed outdoor lighting shall be circuited and independently controlled from other electrical loads by an automatic scheduling control in accordance with Section 130.2(c)2.
- ☐ All installed outdoor lighting, where the bottom of the luminaire is mounted 24 feet or less above the ground, shall be controlled with automatic lighting controls in accordance with Section 130.2(c)3.
- ☐ For Outdoor Sales Frontage, an automatic lighting control shall be installed in accordance with Section 130.2(c)4.
- ☐ For Building Facade, Ornamental Hardscape and Outdoor Dining lighting, an automatic lighting control shall be installed in accordance with Section 130.2(c)5
- ☑ Before an occupancy permit is granted for the newly constructed building or for the addition, or for any altered outdoor lighting controls, shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with §130.4.(a). Outdoor lighting controls shall comply with the applicable requirements of Section 130.2(c) and Reference Nonresidential Appendix NA7.8.

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 08/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 3 of 3)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Anthony Zamarripa	Documentation Author Signature: Anthony Zamarripa
Company: LP Consulting Engineers, Inc.	Signature Date: 08/27/2019
Address: 1209 Pleasant Grove Blvd.	CEA Certification Identification (if applicable):
City/State/Zip: Roseville, CA 95678	Phone: 916-771-0778

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: Kenneth R. Rubitsky	Responsible Designer Signature:
Company: LP Consulting Engineers, Inc.	Date Signed: 08/27/2019
Address: 1209 Pleasant Grove Blvd.	License: 11798
City/State/Zip: Roseville, CA 95678	Phone: 916-771-0778

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Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER — KEVAN POURVAHABI — M 32311 — REN. 6-30-21 — MECHANICAL — STATE OF CALIFORNIA

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SHEET TITLE:
TITLE 24 CALCULATIONS

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REVISIONS

No.	Issue Description	Date
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Checked By: RH

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER T24.7

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 3 of 4)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

C-3. WATTAGE ALLOWANCE PER SQUARE FOOT OF HARDSCAPE AREA (Ornamental Lighting) – Table 140.7-B

- Allowance for the total site illuminated hardscape area. Luminaires qualifying for this allowance shall be rated for 100 watts or less as determined in accordance with Section 130.0(c), and shall be post-top luminaires, lanterns, pendant luminaires, or chandeliers.
- If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of area for which ornamental allowance is claimed	Square Feet of Hardscape	Wattage Allowance per Square Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
			0					0	
			0					0	
			0					0	
			0					0	
								Sum total allowance for ornamental lighting on the site:	0

C-4. WATTAGE ALLOWANCE PER SQUARE FOOT OF SPECIFIC AREA - Table 140.7-B

- Allowances for Building Facades; Outdoor Sales Lots; Vehicle Service Station Hardscape; Vehicle Service Station Canopies; Sales Canopies; Non-sales Canopies; Tunnels; Guard Stations; Student Pick-up/Drop-off zone: Outdoor Dining; Special Security Lighting for Retail Parking and Pedestrian Hardscape.
- If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Illuminated Area of Application	Wattage Allowance per Square Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
		0.408	0					0	82
			0					0	
			0					0	
			0					0	
								Sum total allowance for specific area on the site:	82

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 2 of 4)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

C. ADDITIONAL "USE IT OR LOSE IT" OUTDOOR LIGHTING POWER ALLOWANCES FOR SPECIFIC APPLICATIONS

☐ The additional specific outdoor lighting power allowance shall be the smaller of the allowed lighting power or the actual lighting power used.
☐ Use Outdoor Lighting Zone (OLZ) that is documented on page 1 of NRCC-LTO-01-E to calculate the specific wattage allowances.

C-1. WATTAGE ALLOWANCE PER APPLICATION – Table 140.7-B

☐ Available only for qualifying locations, which include Building Entrances or Exits; Primary Entrances to Senior Care Facilities, Police Stations, Hospitals, Fire Stations, and Emergency Vehicle Facilities; Drive Up Windows; Vehicle Service Station Uncovered Fuel Dispenser, ATM Machine Lighting
☐ If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Number of Qualifying Locations	Wattage Allowance per Qualifying Location	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
			0					0	
			0					0	
			0					0	
			0					0	
								Sum total allowance per application on this site:	0

C-2. WATTAGE ALLOWANCE PER UNIT LENGTH (Sales Frontage) from Table 140.7-B

☐ If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Linear Feet of Sales Frontage	Wattage Allowance per Linear Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
			0					0	
			0					0	
			0					0	
			0					0	
								Sum total allowance for sales frontage on the site:	0

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 4 of 4)
Project Name: Nevada Union High School - Classroom Modernization CTE - Culinary Arts	Date Prepared: 08/27/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Anthony Zamarripa	Documentation Author Signature:
Company: LP Consulting Engineers, Inc.	Signature Date: 08/27/2019
Address: 1209 Pleasant Grove Blvd.	CEA Certification Identification (if applicable):
City/State/Zip: Roseville, CA 95678	Phone: 916-771-0778

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: Kenneth R. Rubitsky	Responsible Designer Signature:
Company: LP Consulting Engineers, Inc.	Date Signed: 08/27/2019
Address: 1209 Pleasant Grove Blvd.	License: 11798
City/State/Zip: Roseville, CA 95678	Phone: 916-771-0778

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
Roseville, CA 95678
p 916-771-0778
www.lpengineers.com
Job #: 19-2078

REGISTERED PROFESSIONAL ENGINEER — SEAN POURVAEZ — M 32311 — REN. 6-30-21 — MECHANICAL — STATE OF CALIFORNIA

DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117832 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/21/20

DERIVI CASTELLANOS ARCHITECTS
www.dcaia.com
Central Valley
3031 W March Ln, Suite 334
Stockton, CA 95219
(209) 462-2873
Silicon Valley
95 S Market St, Suite 480
San Jose, CA 95113
(408) 320-4871

Professional Seals

NEVADA JOINT UNION HIGH SCHOOL DISTRICT
NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
TITLE 24 CALCULATIONS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: DP
Checked By: RH

JOB NO. 19.010
DATE 2019-12-20
SHEET NUMBER T24.8

FIRE ALARM GENERAL NOTES

1. THE INTENT OF THESE DRAWINGS AND/OR SPECIFICATIONS DESCRIBE A COMPLETE, FUNCTIONING FIRE ALARM SYSTEM (INLCUDING VOICE EVACUATION PER SB575) WITH DEVICES, WIRING AND FIRE ALARM CONTROL PANEL TO MEET THE REQUIREMENTS OF NFPA 72 AND 2016 CALIFORNIAN FIRE CODE AND APPLICABLE LOCAL FIRE MARSHALL REGULATIONS AND REQUIREMENTS.
2. LOCATIONS OF EXISTING EQUIPMENT AND DEVICES SHOWN ON THESE PLANS ARE BASED ON AVAILABLE AS-BUILT PLANS AND LIMITED SITE SURVEYS. CONTRACTOR SHALL THOROUGHLY INSPECT THE EXISTING SYSTEM AND SITE CONDITIONS BEFORE BID. ADVISE THE SCHOOL'S REPRESENTATIVE OF ALL CONDITIONS REQUIRING IMMEDIATE ATTENTION OR MIGHT CAUSE DIFFICULTIES THAT ARE NOT ADDRESSED, OR INFERRED TO, IN THE CONTRACT DRAWINGS AND SPECIFICATIONS PRIOR TO NEW CONSTRUCTION AND THE COMMENCEMENT OF THE GUARANTEE PERIOD.
3. CONTRACTOR SHALL SUBMIT ANY ALTERATIONS OF THE APPROVED CONSTRUCTION DOCUMENTS TO THE SPECIAL INSPECTOR AND DSA FOR NEW APPROVALS. START INSTALLATION OF THE SYSTEM AFTER DETAILED PLANS, SPECIFICATIONS, NEW SHOP DRAWINGS AND SUBMITTALS HAS BEEN APPROVED BY DSA. CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR ANY DELAY.
4. FIRE WATCH IN CONFORMANCE WITH THE CALIFORNIA FIRE CODE SHALL BE PROVIDED AT THE DIRECTION OF THE CONTRACTOR FOR EVERY OFF-LINE BUILDING. THE SCHOOL SHALL ASSIST WITH FIRE WATCH ACTIVITIES DURING SCHOOL HOURS AND WHENEVER THE CAMPUS IS OCCUPIED BY STUDENTS, TEACHERS AND STAFF. THE CONTRACTOR SHALL PROVIDE ALL FIRE WATCH ACTIVITIES AFTER SCHOOL HOURS AND WHENEVER THE CAMPUS IS NOT OCCUPIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING AND MAINTAINING ALL FIRE WATCH LOGS.
5. REQUEST FOR ADDITIONAL COSTS ASSOCIATED WITH RE-USE OF ANY EXISTING SYSTEM COMPONENT, INCLUDING CONDUITS, BOXES, CONTROL PANELS, ETC. WILL NOT BE CONSIDERED.
6. NO KNOWN EXISTING CEILING OR ATTIC SPACE IN ROOMS OR AREA WITH HARD CEILING. IF CEILING OR ATTIC SPACE OCCUR DURING FIELD CONSTRUCTION THAT REQUIRE ADDING DETECTORS ABOVE THE CEILING OR ATTIC SPACE, PROVIDE A CONSTRUCTION CHANGE DOCUMENT, OR A SEPARATE SHEET OF PLANS SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK.
7. THE FIRE ALARM SYSTEM SHALL CONFORM TO THE CALIFORNIA FIRE CODE, ARTICLE 10, CBC 305 AND CALIFORNIA ELECTRICAL CODE, ARTICLE 760.
8. FIRE ALARM SYSTEM SHALL TRANSMIT ALARM, SUPERVISORY AND TROUBLE SIGNAL TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72 AND CBC 907.6.6.3.
9. CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONAL CODE COMPLIANT SYSTEM WITH ALL REQUIRED HARDWARE, DEVICES, PROGRAMMING AND POINT/DEVICE DESCRIPTION SCHEDULES.
10. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
11. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.
12. INSTALLATION OF THE FIRE ALARM SYSTEM SHALL NOT BE STARTED UNTIL DETAILED SPECIFICATIONS, INCLUDING CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAVE BEEN APPROVED BY THE CALIFORNIA STATE FIRE MARSHAL, AND THE LOCAL FIRE MARSHAL.
13. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE ENFORCING AGENCY AND SPECIAL INSPECTOR. THE SCHOOL SHALL NOT BE IN OPERATION UNTIL THE IOR AND THE LOCAL FIRE MARSHAL HAS VERIFIED AND/OR SIGNED OFF ON OPERATIONAL CAPACITY OF THE FIRE ALARM SYSTEM.
14. ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND /OR TESTING.
15. CONTRACTOR SHALL SUBMIT THE SPECIAL INSPECTOR NFPA CERTIFICATE OF COMPLIANCE FORM TO THE SCHOOL REPRESENTATIVE FOR SUBMISSION TO THE FIRE DEPARTMENT.
16. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE SYSTEM INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE INSPECTOR OF RECORD TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND COMPLETELY TESTED IN ACCORDANCE WITH THE 2016 NFPA 72, 7.5.2 AND 7.6.
17. CONTRACTOR SHALL PROVIDE INTELLIGIBILITY TESTING USING INTELLIGIBILITY METERS APPROVED FOR SUCH USE. REFERENCE NFPA 72 CHAPTER 24. AN STI SCORE OF 7.0 IS A MINIMUM REQUIREMENT. CONTRACTOR SHALL IDENTIFY ALL ACOUSTICALLY DISTINGUISHABLE SPACES (ADS) ON CONTRACTOR SHOP DRAWINGS.
18. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
19. PROVIDE FIRE ALARM AUDIBLE SOUND LEVEL AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL IN ALL OCCUPIED AREA, BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 120 DBA IN TOTAL, THROUGHOUT. SYNCHRONIZED TEMPORAL CODE 3 SOUND. (NFPA 72, 18.4.2.1)
20. WALL MOUNTED VISIBLE NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR.
21. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
22. A FLASHING VISUAL WARNING DEVICE HAVING A FREQUENCY OF NOT MORE THAN 60 FLASHES PER MINUTE [TWO (2) FLASHES OR LESS THAN ONE (1) FLASH PER SECOND] SHALL BE INSTALLED TO WARN THE HEARING-IMPAIRED AS SHOWN ON THE DRAWINGS. FLASHING VISUAL WARNING DEVICES VIEWABLE WITHIN THE SAME INTERIOR SPACE SHALL BE SYNCHRONIZED. (NFPA 72, 18.5.3.6, A18.5.3.6 AND 18.5.5.5.7)
23. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
24. LOCATE SMOKE AND HEAT DETECTORS AT LEAST ONE FOOT AWAY FROM FLUORESCENT LIGHT FIXTURES.
25. CONTRACTOR SHALL AFFIX TO EACH FIELD DEVICE A DEVICE LABEL. DEVICE LABEL SHALL BE ARRANGED FOLLOWING DETAIL "FIRE ALARM CIRCUIT IDENTIFIERS". INITIATION DEVICES CONNECTED TO EQUIPMENT BY OTHERS SHALL HAVE A LABEL AFFIXED TO MODULE INDICATING THE EQUIPMENT CONNECTED.
26. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
27. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
28. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.
29. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
30. NO SPLICES SHALL BE ALLOWED FOR FIRE ALARM SYSTEM UNDERGROUND CABLES.
31. NEW FIRE ALARM WIRING SHALL NOT BE INSTALLED IN ANY RACEWAY WITH WIRING IN EXCESS OF 24 VOLT.
32. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
33. ALL FIRE ALARM EQUIPMENT BRANCH CIRCUITS SHALL BE DEDICATED AS PER NFPA 72, 10.6.5.1 AND ITS LOCATION BE CLEARLY LABELED AT THE FIRE ALARM CONTROL PANEL.
34. ALL FIRE ALARM EQUIPMENT POWER SOURCE CIRCUITS SHALL BE IDENTIFIED AT THE POWER SOURCE PER NFPA 72, 10.6.5.2. USING A RED CLEARLY MARKED DISCONNECT WITH LOCK-ON CAPABILITY. COORDINATE WITH ELECTRICAL.
35. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
36. WHERE ACCESSIBILITY IS NOT AVAILABLE TO THE NEW FIRE ALARM DEVICES LOCATED ABOVE THE CEILING/ATTIC SPACES, PROVIDE ACCESS PANELS TO THESE DEVICES, COORDINATE PRIOR TO THE EXECUTION OF WORK.
37. THE CONTRACTOR SHALL PROVIDE AS-BUILT SHOP DRAWINGS INDICATING CIRCUITING OF ALL DETECTOR AS AND OTHER DEVICES IN ALL THE BUILDINGS OF THIS PROJECT. AS-BUILT DRAWINGS SHALL BE STORED IN FIRE ALARM DOCUMENT CABINET INSTALLED ADJACENT TO FIRE ALARM CONTROL PANEL OR LOCATION APPROVED BY AUTHORITY HAVING JURISDICTION.
38. PROVIDE DOCUMENTATION CABINET TO BE INSTALLED PROXIMAL TO FACP (NFPA 72, 7.7.2.1). ALL RECORD DOCUMENTATION SHALL BE STORED IN THE DOCUMENTATION CABINET (NFPA 72 7.7.2.3). THE DOCUMENTATION CABINET TO BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS" (NFPA 72 7.7.2.5).

FIRE ALARM EQUIPMENT SCHEDULE

QTY.	SYM	MODEL #	MFG	DESCRIPTION	CSFM
1	FACP	E3 SERIES	GAMEWELL	(E)FIRE ALARM CONTROL PANEL WITH (E) MASS NOTIFICATION SYSTEM	7165-1703:0125
1	FAEP	INI-VGX-UTP	GAMEWELL	(E) & (N) INTELLIGENT NETWORK INTERFACE VOICE GATEWAY (INSIDE FAEP CABINET)	7165-1703:0125
1		INCC-MIC	GAMEWELL	(E) & (N) PAGING MICROPHONE MODULE (INSIDE FAEP CABINET)	7165-1703:0125
1	FAPS	HPFF8	GAMEWELL	NAC REMOTE BATTERY SUPPLY	7315-1637:0102
9		ASD-PTL3	GAMEWELL	PHOTOELECTRIC SMOKE DETECTOR	7272-1703:0501
3		ASD-PL3R	GAMEWELL	DUCT SMOKE DETECTOR WITH HOUSING AND REMOTE TEST SWITCH/LED	7272-1703:0501
		DNR	GAMEWELL	DUCT SMOKE DETECTOR HOUSING	3240-1653:0209
		RTS151KEY	GAMEWELL	REMOTE TEST STATION WITH KEY	7300-1653:0212
1		ATD-L3	GAMEWELL	THERMAL HEAT DETECTOR (135°F FIXED)	7270-1703:0502
4		MCS-4-WARN	GAMEWELL	MULTI-CRTERIA DETECTOR	7272-1703:0173
4	CO	MS-COF	GAMEWELL	MULTI-CRTERIA & CO DETECTOR	7275-1703:0175
		B200S	GAMEWELL	SOUNDER BASE	7300-1653:0213
4	MM	AMM-2F	GAMEWELL	ADDRESSABLE MONITOR MODULE	7300-1703:0102
5	CM	AOM-2RF	GAMEWELL	ADDRESSABLE OUTPUT RELAY CONTROL MODULE	7300-1703:0102
2		SRL	SYSTEM SENSOR	STROBE (15cd, 30cd, 75cd, 110cd) WALL MOUNTED	7125-1653:0504
8		SPSRL	SYSTEM SENSOR	SPEAKER-STROBE (15cd, 30cd, 75cd, 110cd) WALL MOUNTED	7125-1653:0505

SCHEDULE NOTES:
1. "C" ADJACENT TO NOTIFICATION DEVICES INDICATE CEILING MOUNTED DEVICE.
2. "15" ADJACENT TO NOTIFICATION DEVICES IS THE CANDELA RATING IS LISTED.
3. "WP" ADJACENT TO NOTIFICATION DEVICES INDICATES WEATHERPROOF INSTALLATION. SEE DETAILS FOR ADDITIONAL INFORMATION.

FIRE ALARM MONITORING NOTE

AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AS AMENDED BY ARTICLE 91. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUJS BY UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011. SUPERVISION OF SYSTEM AND LEASED TELEPHONE LINES SHALL BE ARRANGED BY DISTRICT.

FIRE ALARM SPEAKER/STROBE NOTES

1. PROGRAM FIRE ALARM CONTROL "FACP" FOR AUDIBLE SILENCE FEATURE. STROBES SHALL CONTINUE TO FLASH WHEN PANEL IS SILENCED. STROBE TO STOP FLASHING ONLY WHEN PANEL IS RESET.
2. THE APPLIANCE SHALL BE DESIGNED SO THAT THE AUDIBLE SIGNAL MAY BE SILENCED WHILE MAINTAINING STROBE ACTIVATION WHEN USED WITH SYSTEM SENSOR SYNCHRONIZATION.
3. PROVIDE FIRE ALARM EMERGENCY COMMUNICATION SYSTEM AUDIBLE NOTIFICATION IN ALL COMMON AREAS. AUDIBLE LEVELS SHALL MEET APPLICABLE STANDARDS IN NFPA 72 CHAPTER 24.4 ONE-WAY EMERGENCY COMMUNICATION SYSTEM. TESTING AND REPORTS REQUIREMENTS FOR INTELLIGIBILITY SHALL BE PROVIDED PRIOR TO ACCEPTANCE OR FINAL TESTING WITH AUTHORITY HAVING JURISDICTION.
4. A FLASHING VISUAL WARNING DEVICE HAVING A FREQUENCY OF NOT MORE THAN TWO (2) FLASHES OR LESS THAN ONE (1) FLASH PER SECOND BE INSTALLED TO WARN THE HEARING IMPAIRED AS SHOWN ON THE DRAWINGS. NFPA 72 18.5.3.1.
5. ALL STROBE CIRCUITS SHALL BE SYNCHRONIZED NFPA 72 A.18.5.3.6

CARBON MONOXIDE NOTES

1. PROGRAM CARBON MONOXIDE ALARM SIGNAL TO TAKE PRIORITY OVER SUPERVISORY AND TROUBLE SIGNALS PER NFPA 720, 7.2.1
2. FACP MUST BE CAPABLE OF GENERATING BOTH A 3-PULSE (FIRE ALARM) AND 4-PULSE (CARBON MONOXIDE ALARM) TEMPORAL PATTERN PER NPFA 720, 5.8.6.5.1.

FIRE ALARM GENERAL DEMO NOTES

1. ALL EXISTING FIRE ALARM EQUIPMENT, DEVICES, CONDUIT AND WIRING, ETC., WHERE SHOWN ON PLANS ARE BASED ON AVAILABLE EXISTING DOCUMENTS AND LIMITED SITE SURVEY AND ARE SHOWN FOR CLARITY. IT SHALL BE REGARDED AS AN APPROXIMATION ONLY. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT. PRIOR TO SUBMITTING BID AND BEFORE START OF ANY ELECTRICAL WORK, CONTRACTOR SHALL VERIFY ON-SITE ALL EXISTING LOCATIONS AND CONDITIONS TO ASCERTAIN ALL WORK REQUIRED.
2. EXISTING FIRE ALARM SYSTEM SHALL REMAIN ACTIVE UNTIL CONSTRUCTION IS COMPLETED. CAUSE AS LITTLE INTERFERENCE OR INTERRUPTION OF EXISTING FIRE ALARM SYSTEMS AND/OR OTHER EXISTING FACILITY'S SYSTEMS AND SERVICES AS POSSIBLE. CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AT LEAST 72 HOURS TO SCHEDULE ALL NECESSARY SHUTDOWNS. SHUTDOWN WORK SHALL BE PERFORMED AFTER THE NORMAL OPERATION HOURS OF THE FACILITY, IF SO DIRECTED BY THE OWNER'S REPRESENTATIVE.
3. FIRE WATCH IN CONFORMANCE WITH THE CALIFORNIA FIRE CODE SHALL BE PROVIDED AT THE DIRECTION OF THE CONTRACTOR FOR EVERY OFF-LINE BUILDING. THE SCHOOL SHALL ASSIST WITH FIRE WATCH ACTIVITIES DURING SCHOOL HOURS AND WHENEVER THE CAMPUS IS OCCUPIED BY STUDENTS, TEACHERS AND STAFF. THE CONTRACTOR SHALL PROVIDE ALL FIRE WATCH ACTIVITIES AFTER SCHOOL HOURS AND WHENEVER THE CAMPUS IS NOT OCCUPIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING AND MAINTAINING ALL FIRE WATCH LOGS.
4. ALL REMOVED AND/OR DEMOLISHED ELECTRICAL MATERIALS AND EQUIPMENT TO BE ACCOMPLISHED UNDER THIS CONTRACT, WHICH IN THE OPINION OF THE OWNER'S REPRESENTATIVE ARE DEEM SALVAGEABLE, SHALL REMAIN THE PROPERTY OF THE OWNER. ALL FIRE ALARM MATERIAL AND EQUIPMENT CONSIDERED NOT SALVAGEABLE SHALL BE REMOVED FROM THE SITE AND DISPOSED BY THE CONTRACTOR ACCORDINGLY.
5. WHERE REMOVAL OF AN EXISTING SYSTEM'S DEVICE WILL RESULT IN LOSS OF CIRCUIT CONTINUITY, THE ISOLATED PORTIONS OF THE CIRCUIT SHALL BE RECONNECTED TO PROVIDE SERVICE TO ALL REMAINING DEVICES. IF SITE CONDITIONS MAKE RECONNECTION IMPOSSIBLE, CONNECTION SHALL BE MADE FROM AN ADJACENT AVAILABLE DEVICE AS NOTED AND/OR AS DIRECTED BY THE ARCHITECT AND/OR THE OWNER'S REPRESENTATIVE.
6. WHEREVER EXISTING DEVICES, PANELS, CONDUITS, CABLES, ETC., CONFLICT WITH REMODEL WORK, WHETHER SHOWN OR NOT, RELOCATE THESE ITEMS AS DIRECTED BY THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE AND REPAIR ALL SURFACES.
7. COORDINATE WITH OTHER TRADES AND PROMPTLY TRANSMIT ALL INFORMATION REQUIRED BY THEM. COORDINATE THE SEQUENCE OF DEMOLITION WITH OTHER TRADES TO ENSURE THAT ALL WORK PROCEEDS WITH A MINIMUM OF INTERFERENCE AND DELAY.
8. WHERE EXISTING WIRING OR EQUIPMENT IS ABANDONED AS A RESULT OF THIS CONTRACT, IT SHALL BE REMOVED INSOFAR AS POSSIBLE. THIS INCLUDES BUT IS NOT LIMITED TO:
   a. REMOVE ALL WIRE AND CABLE.
   b. REMOVE ALL DEVICES AND EQUIPMENT.
   c. REMOVE ALL EXPOSED CONDUIT AND CONDUIT IN ACCESSIBLE CONCEALED AREA, AS FAR AS POSSIBLE.
   d. CUT OFF AND CAP ALL ABANDONED CONDUIT. STUBS SHALL NOT BE PROTRUDED ABOVE FLOOR AND/OR FINISHED WALLS AND CEILINGS.

FIRE ALARM ABBREVIATIONS/SYMBOLS

SYMBOL	DESCRIPTIONS
A/AMP	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFC	ABOVE FINISHED CEILING
AFG	ABOVE FINISHED GRADE
C	CONDUIT
CCT	CIRCUIT
CKT	CIRCUIT
DC	DIRECT CURRENT
(E)	EXISTING TO REMAIN
EC	EMPTY CONDUIT
EMT	ELECTRICAL METALLIC TUBING
FLEX	FLEXIBLE METALLIC CONDUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND/G	GROUND
IDC	INITIATION DEVICE CIRCUIT
J-BOX	JUNCTION BOX (SIZE AS REQUIRED)
	JUNCTION BOX (SIZE AS REQUIRED)
KVA	KILOVOLT-AMPS
KW	KILOWATTS
MCA	MINIMUM CIRCUIT AMPACITY
MTD	MOUNTED
(N)	NEW
N	NEUTRAL CONDUCTOR (GROUNDED CIRCUIT CONDUCTOR)
N.I.E.S.	NOT IN ELECTRICAL SCOPE OR SPECIFICATIONS
NAC	NOTIFICATION APPLIANCE CIRCUIT
PH/P/Ø	PHASE OR POLE
PNL	PANELBOARD
PVC	POLYVINYL CHLORIDE CONDUIT (SCHEDULE 40)
(R)	RELOCATE/RELOCATED
RGSC	RIGID GALVANIZED STEEL CONDUIT
SLC	SIGNAL LINE CIRCUIT
U	UNSWITCHED
UNO	UNLESS NOTED OTHERWISE
V	VOLTAGE OR VOLTS
W	WATTS
WP	WEATHERPROOF
(X)	REMOVE
	FIRE SPRINKLER BELL (BY OTHERS)
BPS	BATTERY POWER SUPPLY (SEE EQUIPMENT SCHEDULE)
FACP	FIRE ALARM CONTROL PANEL (SEE EQUIPMENT SCHEDULE)
FAPS	FIRE ALARM POWER SUPPLY (SEE EQUIPMENT SCHEDULE)
FATC	FIRE ALARM TERMINAL CABINET (SIZE AS REQUIRED)
FS	FIRE SPRINKLER FLOW SWITCH (BY OTHERS)
FSD	FIRE SMOKE DAMPER (BY OTHERS)
PIV	POST INDICATOR VALVE (BY OTHERS)
TS	FIRE SPRINKLER TAMPER SWITCH (BY OTHERS)
	EOL - END OF LINE RESISTOR

GOVERNING CODES & APPLICABLE STANDARDS

TITLE 24 CODES:
1. 2016 CALIFORNIA BUILDING STANDARD ADMINISTRATIVE CODE (CAC), (PART 1, TITLE 24, CCR).
2. 2016 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1 AND 2 (PART 2, TITLE 24, CCR).
3. 2016 CALIFORNIA ELECTRICAL CODE, (PART 3, TITLE 24, CCR).
4. 2016 CALIFORNIA MECHANICAL CODE (CMC), (PART 4, TITLE 24, CCR).
5. 2016 CALIFORNIA PLUMBING CODE (CPC), (PART 5, TITLE 24, CCR).
6. 2016 CALIFORNIA ENERGY CODE, (PART 6, TITLE 24. CCR).
7. 2016 CALIFORNIA FIRE CODE (CFC), (PART 9, TITLE 24, CCR).
8. 2016 CALIFORNIA REFERENCE CODE, (PART 12, TITLE 24. CCR).

REFERENCE CODE SECTIONS FOR APPLICABLE STANDARDS:
1. 2016 CBC, CHAPTER 35.
2. 2016 CFC, CHAPTER 80.
3. 2016 NFPA 72, AS AMENDED BY CFC CHAPTER 80.

FIRE ALARM CABLE SCHEDULE

TYPE	DESCRIPTION	USE
CABLES INSTALLED IN CONDUIT (MINIMUM 3/4" C.)		
A	WEST PENN D990 (2#16 SOL, UTP, FPL)	SLC (ADDRESSABLE LOOP) INTERIOR
AE	WEST PENN AQ225 (2#16 STR, UTP, FPL)	SLC (ADDRESSABLE LOOP) EXTERIOR
M	ESSEX 2#14 THHN/THWN SOL	IDC (INITIATING DEVICE CIRCUIT) - INTERIOR/EXTERIOR
R	WEST PENN D975 (2#18 SOL, STP, FPL) ESSEX 2#14 THHN/THWN SOL	ANNUNCIATOR INTERIOR
B	WEST PENN 995S (2#14 FPLR)	NAC (NOTIFICATION APPLIANCE CIRCUIT) INTERIOR
C	WEST PENN 975 (2#18 SOL, STP)	AUDIO SPEAKER CABLE - INTERIOR
CE	WEST PENN AQ294 (2#16 STR, STP, FPL)	AUDIO SPEAKER CABLE - EXTERIOR
DE	WEST PENN AQ225 (2#16 SOL, UTP, FPL)	NETWORK CABLE LINK - EXTERIOR
F	CORNING #004K81-31130-24(4-STRND MULTI-MODE)	NETWORK FIBER LINK - INTERIOR/EXTERIOR

CABLE DESCRIPTION ABBREVIATIONS

ABBREV.	DEFINITION	ABBREV.	
FPL	FIRE ALARM POWER-LIMITED	STR	STRANDED CONDUCTOR
FPLP	FIRE ALARM POWER-LIMITED, PLENUM	STP	SHIELDED TWISTED PAIR
FPLR	FIRE ALARM POWER-LIMITED, RISER	US	UNSHIELDED CABLE
OS	OVERALL SHIELDED CABLE	UTP	UNSHIELDED TWISTED PAIR
SOL	SOLID CONDUCTOR		

WIRE GAGE INDICATED IS A MINIMUM.

ELECTRICAL SHEET INDEX

SHEET NO.	SHEET TITLE
FA0.1	FIRE ALARM NOTES AND SCHEDULES
FA1.0	FIRE ALARM SITE PLAN
FA1.1	FIRE ALARM FLOOR PLAN
FA4.1	FIRE ALARM RISER DIAGRAM AND CALCULATIONS
FA4.2	FIRE ALARM DETAILS
FA4.3	FIRE ALARM DETAILS AND ANCHORAGE NOTES

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NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
FIRE ALARM NOTES, SCHEDULES AND ABBREVIATIONS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
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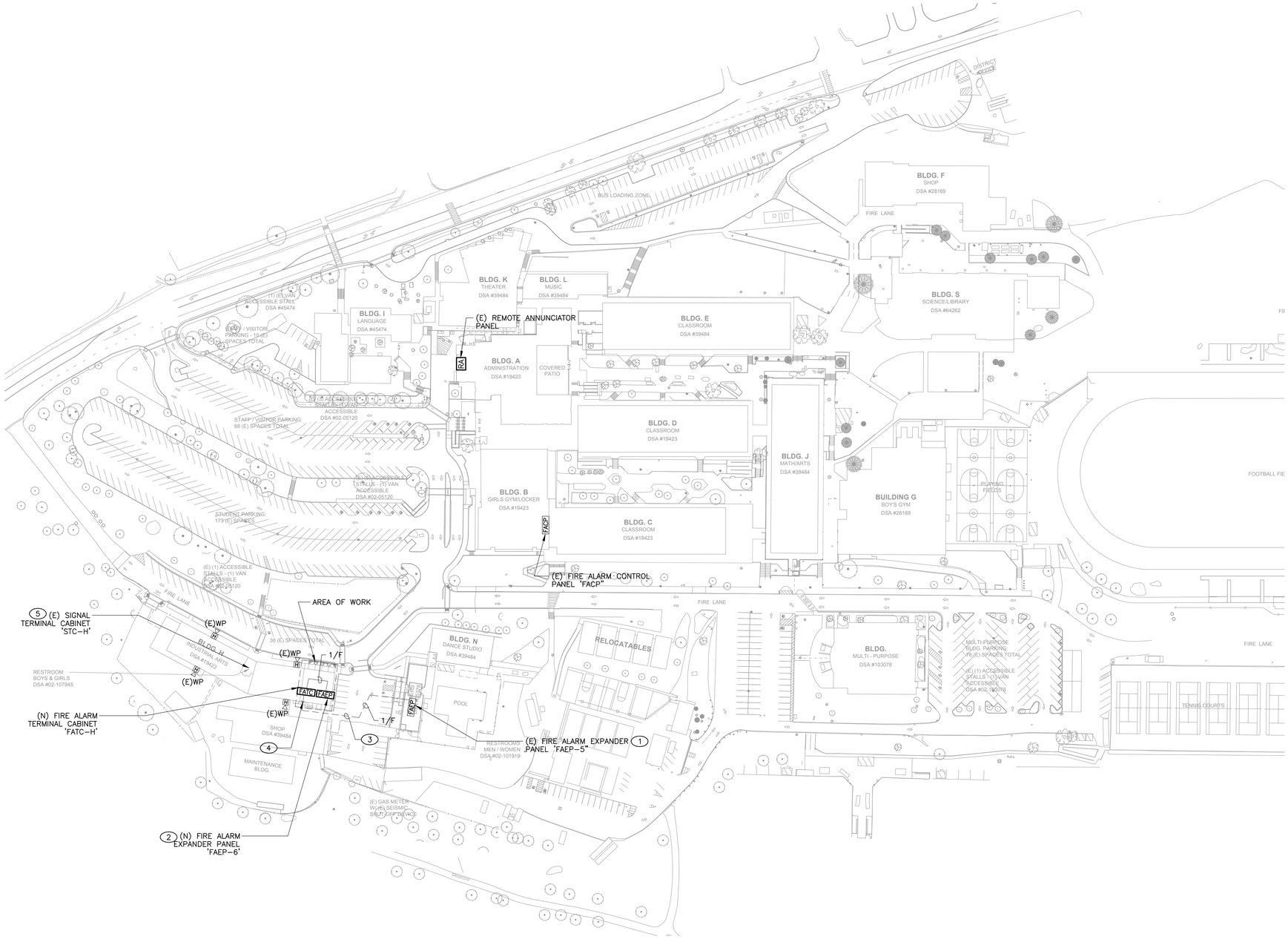
Drawn By: ---
Checked By: ---

JOB NO. 19.010
DATE 2019-12-20
SHEET NUMBER FA0.1
60 of 89



FIRE ALARM SITE PLAN

SCALE : 1" = 80'-0"

1

PLAN NORTH

KEY NOTES

1. (E) FIRE ALARM CONTROL PANEL "FAEP-5" TO REMAIN. RE-CONFIGURE (E) SYSTEM TO EXPAND INITIATION AND NOTIFICATION CIRCUITS FROM (E) LAST NODE LOCATED IN POOL BUILDING AND TO 'FAEP-6' IN (N) CULINARY SPACE.
2. (N) FIRE ALARM EXPANDER PANEL 'FAEO-6'. INSTALL PER DETAIL 3/FA4.3. REFER TO FLOOR PLANS FOR ADDITIONAL REQUIREMENTS.
3. USE (E) 2"C. TO PULL-IN (N) CONDUCTORS AS INDICATED ON PLANS.
4. USE (E) 12"X12"X6"D WALL MOUNTED PULL BOX TO PULL-IN (N) CONDUCTORS AS INDICATED ON PLANS.
5. INTERCEPT AND EXTEND (E) FIRE ALARM DEVICES LOCATED OUTSIDE OF THIS SCOPE OF WORK TO (N) 'FAEP-6'. SEE FLOOR PLAN FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. ALL (E) EQUIPMENT, DEVICES, CONDUIT AND WIRING, ETC., WHERE SHOWN ON PLANS ARE BASED ON AVAILABLE (E) DOCUMENTS AND LIMITED SITE SURVEYS THEREFORE, ARE SHOWN FOR CLARITY AND SHALL BE REGARDED AS AN APPROXIMATION ONLY. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT. PRIOR TO SUBMITTING BID AND BEFORE START OF ANY ELECTRICAL WORK, CONTRACTOR SHALL VERIFY ON-SITE ALL (E) LOCATIONS AND CONDITIONS TO ASCERTAIN ALL WORK REQUIRED.
2. MAINTAIN CIRCUIT CONTINUITY FOR THOSE (E) FIRE ALARM INITIATION AND NOTIFICATION CIRCUITS TO REMAIN. PROVIDE NECESSARY HARDWARE FOR A COMPLETE AND FULLY FUNCTIONING SYSTEM. PROVIDE FIRE WATCH ANYTIME THE CAMPUS AND/OR BUILDING IS NOT BEING MONITORED.
3. (E) ELECTRICAL PANEL ARE SHOWN FOR REFERENCE ONLY. REFER TO ELECTRICAL PLANS FOR ADDITIONAL INFORMATION
4. WHERE (E) WIRING OR EQUIPMENT IS ABANDONED AS A RESULT OF THIS CONTRACT, IT SHALL BE REMOVED INSOFAR AS POSSIBLE. THIS INCLUDES BUT IS NOT LIMITED TO:
   a. REMOVE ALL WIRE AND CABLE.
   b. REMOVE ALL DEVICES AND EQUIPMENT.
   c. REMOVE ALL EXPOSED CONDUIT AND CONDUIT IN ACCESSIBLE CONCEALED AREA, AS FAR AS POSSIBLE.
   d. CUT OFF AND CAP ALL ABANDONED CONDUIT. STUBS SHALL NOT BE PROTRUDED ABOVE FLOOR AND/OR FINISHED WALLS AND CEILINGS.
   e. REPAIR ANY BUILDING SURFACE DAMAGED WHILE PERFORMING WORK ON THIS SCOPE OF WORK.
5. WHERE (E) CONDUITS, CONCEALED OR EXPOSED, AND (WIREMOLD) SURFACE RACEWAY IS NOT IN PLACE AS SHOWN ON PLANS, PROVIDE NEW CONDUITS AND (WIREMOLD) SURFACE RACEWAY FOR THE NEW WORK. VERIFY (E) CONDITION ON SITE AND PROVIDE ALL NECESSARY NEW MATERIAL, APPARATUS, AND WORK THAT ARE REQUIRED TO BE INCLUDED IN THE BID PACKAGE.
6. FIRE ALARM SYSTEM INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF APPLICABLE CODES, STANDARDS, AND STATE REGULATIONS.
7. FIRE CIRCUIT ROUTING IS SHOWN SHCEMATICALLY FOR CLARITY ILLUSTRATING THE WIRING CONFIGURATION NECESSARY FOR PROPER CIRUIT SUPERVISION.
8. ALL EXTERIOR SPEAKERS SHALL BE SET AT 2 WATT UNLESS OTHERWISE NOTED ON THESE PLANS.
9. REFER TO CIVIL PLANS FOR EXACT LOCATIONS OF PIV, BFP, AND/OR DOUBLE CHECK VALVES. COORDINATE ROUTING REQUIEMENTS PRIOR TO EXECUTION OF WORK WITH OTHER TRADES.
10. REFER TO FIRE PROTECTION PLANS FOR EXACT LOCATIONS OF FLOW AND TAMPER SWITCHES (PROVIDED BY OTEHRS). COORDINATE ROUTING REQUIEMENTS PRIOR TO EXECUTION OF WORK WITH OTHER TRADES.

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SHEET TITLE:
FIRE ALARM SITE PLAN

SCALE:

REVISIONS

No.	Issue Description	Date
1		
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Drawn By: ---

Checked By: ---

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER FA1.0

System Inputs	A	B	C	D	E	F	G	K	L	M	N	O	Q	T	U	V	W	X	AA	
1 ANSUL MANUAL PULL STATIONS	•	•					•	•	•	•			•	•			•	•	•	1
2 SMOKE DETECTORS	•	•					•	•	•	•							•		•	2
3 MULTI-CRITERIA DETECTORS	•	•						•									•		•	3
4 MULTI-CRITERIAVOD DETECTORS	•	•						•									•		•	4
5 IN-DUCT SMOKE DETECTOR	•	•					•		•	•			•				•	•	•	5
6 HEAT DETECTORS	•	•					•		•	•							•		•	6
7 ANSUL SYSTEM DISCHARGE	•	•							•	•			•	•			•	•	•	7
8 WATERFLOW (FLOWSWITCH BY OTHERS)	•	•					•		•	•			•				•	•	•	8
9 SPRINKLER CONTROL VALVE (TAMPERSWITCH BY OTHERS)			•	•					•		•						•			9
12 FIRE ALARM AC POWER FAILURE					•	•						•								12
13 FIRE ALARM SYSTEM LOW BATTERY					•	•						•								13
14 OPEN CIRCUIT					•	•						•								14
15 GROUND FAULT					•	•						•								15
16 NOTIFICATION APPLIANCE CIRCUIT SHORT					•	•						•								16
	A	B	C	D	E	F	G	K	L	M	N	O	Q	T	U	V	W	X	AA	

ACTUATE COMMON ALARM SIGNAL INDICATOR
ACTUATE AUDIBLE ALARM SIGNAL CAMPUS
ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR
ACTUATE AUDIBLE SUPERVISORY SIGNAL
ACTUATE COMMON TROUBLE SIGNAL INDICATOR
ACTUATE AUDIBLE COMMON TROUBLE SIGNAL
ACTUATE ALARM INDICATOR
ACTUATE ZONE EVACUATION SIGNALS
DISPLAY/PRINT CHANGE OF STATUS
TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION
TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION
TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION
CLOSE SMOKE/FIRE DAMPERS IN RATED WALLS
ACTUATE SUPPRESSION SYSTEM PREDISCHARGE ALARMS
INITIATE SUPPRESSION SYSTEM RELEASING SEQUENCE
ENERGIZE RELEASING SOLENOIDS
ACTUATE GRAPHICS SYSTEM - DISPLAY FLOOR MAP
SHUTDOWN ELECTRICAL, GAS AND HVAC
ACTUATE EXTERIOR STROBE AT F.D. RESPONSE POINT

FILENAME:

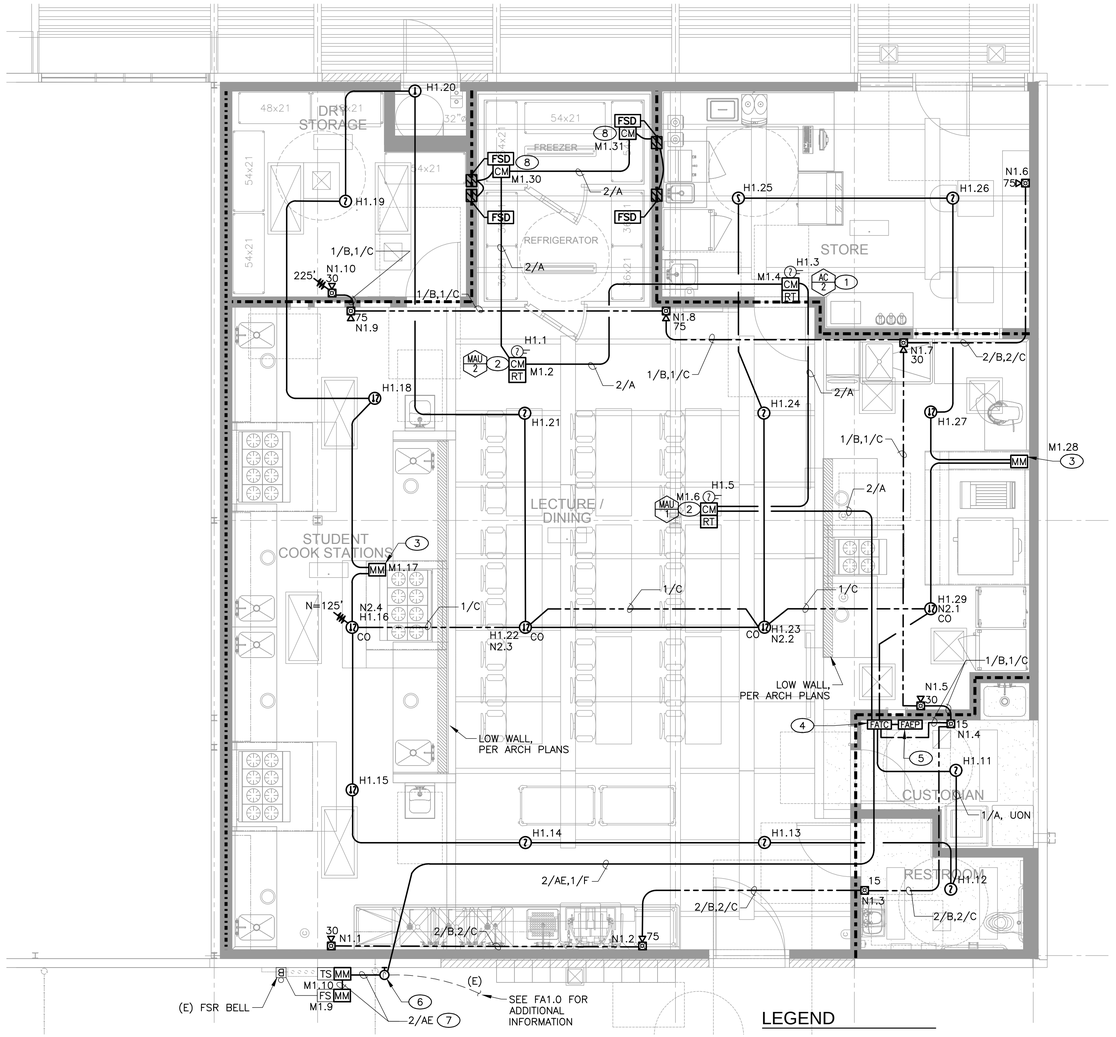
FIRE ALARM SEQUENCE OF OPERATION | NTS | 2

GENERAL NOTES

1. ALL (E) EQUIPMENT, DEVICES, CONDUIT AND WIRING, ETC., WHERE SHOWN ON PLANS ARE BASED ON AVAILABLE (E) DOCUMENTS AND LIMITED SITE SURVEYS THEREFORE, ARE SHOWN FOR CLARITY AND SHALL BE REGARDED AS AN APPROXIMATION ONLY. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT. PRIOR TO SUBMITTING BID AND BEFORE START OF ANY ELECTRICAL WORK, CONTRACTOR SHALL VERIFY ON-SITE ALL (E) LOCATIONS AND CONDITIONS TO ASCERTAIN ALL WORK REQUIRED.
2. MAINTAIN CIRCUIT CONTINUITY FOR THOSE (E) FIRE ALARM INITIATION AND NOTIFICATION CIRCUITS TO REMAIN. PROVIDE NECESSARY HARDWARE FOR A COMPLETE AND FULLY FUNCTIONING SYSTEM. PROVIDE FIRE WATCH ANYTIME THE CAMPUS AND/OR BUILDING IS NOT BEING MONITORED.
3. (E) ELECTRICAL PANEL ARE SHOWN FOR REFERENCE ONLY. REFER TO ELECTRICAL PLANS FOR ADDITIONAL INFORMATION
4. WHERE (E) WIRING OR EQUIPMENT IS ABANDONED AS A RESULT OF THIS CONTRACT, IT SHALL BE REMOVED INSOFAR AS POSSIBLE. THIS INCLUDES BUT IS NOT LIMITED TO:
   a. REMOVE ALL WIRE AND CABLE.
   b. REMOVE ALL DEVICES AND EQUIPMENT.
   c. REMOVE ALL EXPOSED CONDUIT AND CONDUIT IN ACCESSIBLE CONCEALED AREA, AS FAR AS POSSIBLE.
   d. CUT OFF AND CAP ALL ABANDONED CONDUIT. STUBS SHALL NOT BE PROTRUDED ABOVE FLOOR AND/OR FINISHED WALLS AND CEILINGS.
   e. REPAIR ANY BUILDING SURFACE DAMAGED WHILE PERFORMING WORK ON THIS SCOPE OF WORK.
5. WHERE (E) CONDUITS, CONCEALED OR EXPOSED, AND (WIREMOLD) SURFACE RACEWAY IS NOT IN PLACE AS SHOWN ON PLANS, PROVIDE NEW CONDUITS AND (WIREMOLD) SURFACE RACEWAY FOR THE NEW WORK. VERIFY (E) CONDITION ON SITE AND PROVIDE ALL NECESSARY NEW MATERIAL, APPARATUS, AND WORK THAT ARE REQUIRED TO BE INCLUDED IN THE BID PACKAGE.
6. FIRE ALARM SYSTEM INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF APPLICABLE CODES, STANDARDS, AND STATE REGULATIONS.
7. FIRE CIRCUIT ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY ILLUSTRATING THE WIRING CONFIGURATION NECESSARY FOR PROPER CIRCUIT SUPERVISION.
8. COORDINATE FIRE ALARM CEILING MOUNTED DEVICES WITH OTHER CEILING MOUNTED DEVICES BY OTHERS TOO AVOID CONFLICT PRIOR TO EXECUTION OF WORK.
9. ALL NEW CONDUCTOR SHALL BE CONCEALED IN CONDUIT (SIZE AS INDICATED IN CABLE SCHEDULE) OR APPROVED SURFACE RACEWAY WHEN IN EXPOSED CONDITION. CABLE INSTALLED ABOVE ACCESSIBLE CEILING CAN BE FREE-AIR WHEN USING APPLICABLE CODE AND SUPPORT SHALL NOT EXCEED 48" WITH J-HOOKS (SIZE AS REQUIRED).
10. ALL INTERIOR SPEAKERS SHALL BE SET AT 1/2 WATT UNLESS OTHERWISE NOTED ON THESE PLANS.
11. ALL EXTERIOR SPEAKERS SHALL BE SET AT 2 WATT UNLESS OTHERWISE NOTED ON THESE PLANS.

KEY NOTES

1. AC UNITS DUCT SMOKE DETECTOR PROVIDE BY OTHERS. COORDINATE EXACT LOCATION WITH AC UNIT ON-SITE (SEE SHEET E1.3, M0.1& M3.1) AND CONNECT AS REQUIRED TO CONTROL MODULE AND FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE ALL NECESSARY HARDWARE AND PROGRAMMING FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. MAKE-UP AIR UNIT DUCT SMOKE DETECTOR PROVIDE BY OTHERS. COORDINATE EXACT LOCATION WITH UNIT ON-SITE (SEE SHEET E1.3, M0.1& M3.1). REFER TO FOOD SERVICE PLANS FOR ADDITIONAL WIRING REQUIREMENTS AND CONNECT AS REQUIRED TO CONTROL MODULE AND FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE ALL NECESSARY HARDWARE AND PROGRAMMING FOR A COMPLETE AND OPERATIONAL SYSTEM.
3. CONNECT MONITOR MODULE TO ANSUL SUPPRESSION SYSTEM PROVIDED BY FOOD SERVICE. COORDINATE EXACT LOCATION OF ANSUL CONTACTS AND CONNECT AS REQUIRED FOR A FULLY FUNCTIONING SYSTEM.
4. FIRE ALARM TERMINAL CABINET. REFER TO 3/FA4.3 FOR INSTALLATION INFORMATION. PROVIDE TERMINAL BLOCKS AS REQUIRED FOR CONNECTION TO EXISTING FIRE ALARM SYSTEM.
5. FIRE ALARM EXPANDER PANEL 'FAEP-6'. REFER TO 3/FA4.3 FOR INSTALLATION INFORMATION. PROVIDE ALL NECESSARY COMPONENTS, TERMINATIONS AND PROGRAMMING FOR A FULLY OPERATIONAL SYSTEM. CONNECT TO 120V, 1Ø USING 1/2"C. WITH (2)12 AND #10 'G'. REFER TO ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
6. EXISTING WALL MOUNTED JUNCTION BOX. EXTEND 2" C. TO (N) FATC AND PULL-IN (N) CONDUCTORS AND CONNECT AS REQUIRED FOR A FULLY FUNCTIONING SYSTEM. REFER TO SITE PLAN FOR PANEL CONNECTIONS AND RISER DIAGRAM FOR ADDITIONAL INFORMATION.
7. RE-CONNECT TO (E) FIRE SPRINKLER RISER DEVICES. REFER TO 4/FA4.2 FOR ADDITIONAL INFORMATION. PROVIDE ALL NECESSARY COMPONENTS, TERMINATIONS AND PROGRAMMING FOR A FULLY OPERATIONAL SYSTEM.
8. FSD (FIRE SMOKE DAMPER BY OTHERS). CONNECT CONTROL MODULE PER DETAIL 8/FA4.2. COORDINATE EXACT LOCATION OF FSD CONTACTS PRIOR TO EXECUTION OF WORK. PROVIDE ALL NECESSARY COMPONENTS, TERMINATIONS AND PROGRAMMING FOR A FULLY OPERATIONAL SYSTEM.



FIRE ALARM PLAN

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

PLAN NORTH

1

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GRASS VALLEY, CA 95945

SHEET TITLE:
FIRE ALARM FLOOR PLAN

SCALE:

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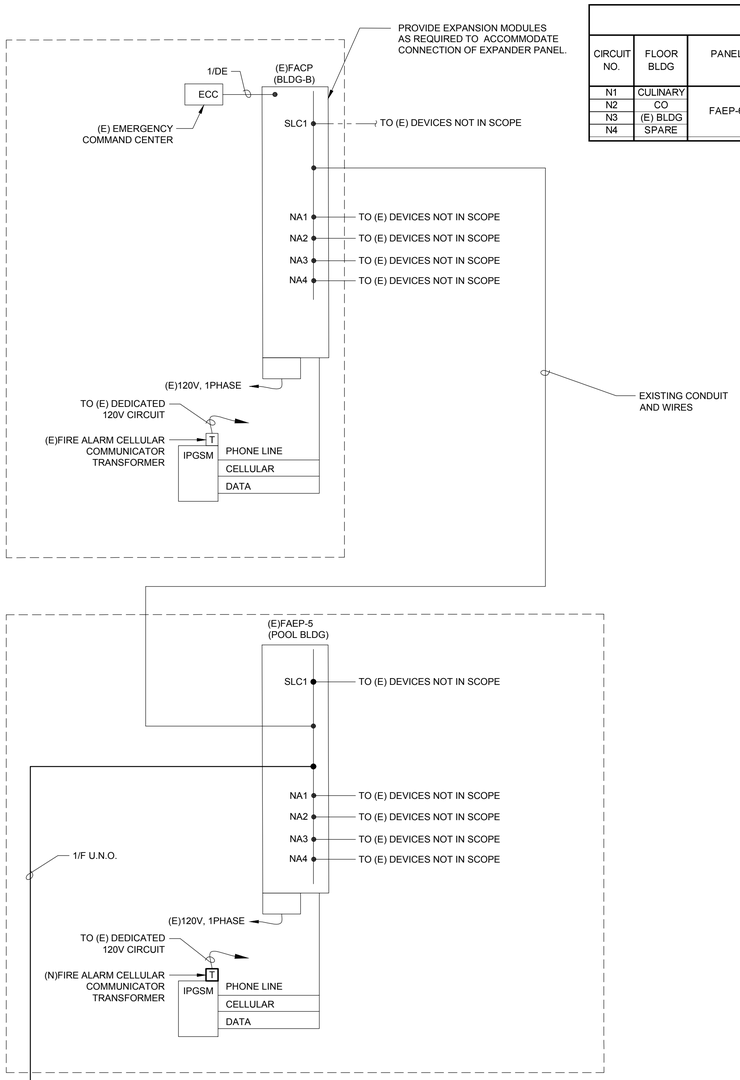
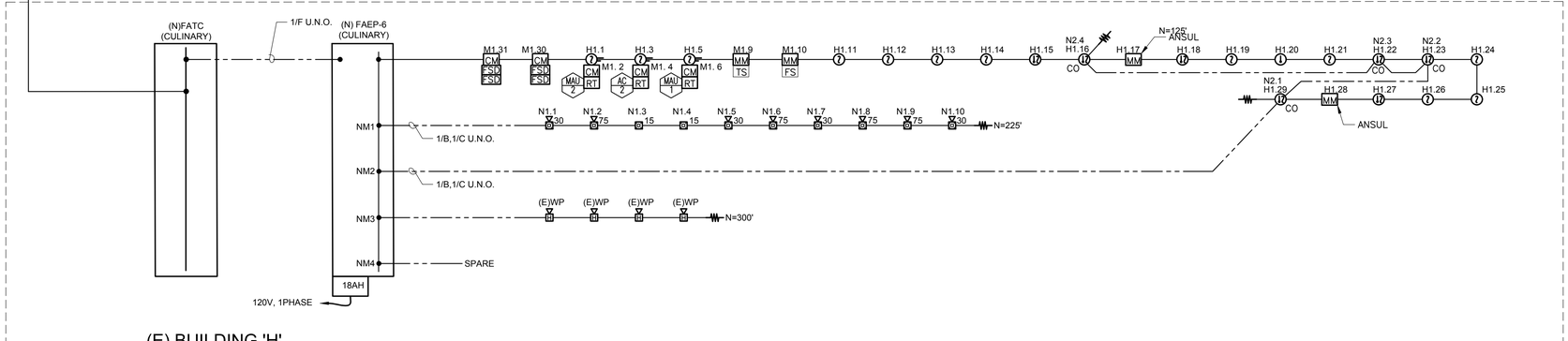


VOLTAGE DROP CALCULATIONS FAEP-6

CIRCUIT NO.	FLOOR BLDG	PANEL	CO SOUNDER 96dBA @ 0.035 A	INTERIOR SPEAKER 96dBA @ 0.075 A	EXTERIOR SPEAKER 99dBA @ 0.075 A	SPEAKER STROBE 15cd @ 0.041 A	SPEAKER STROBE 30cd @ 0.063 A	SPEAKER STROBE 75cd @ 0.111 A	SPEAKER STROBE 110cd @ 0.158 A	STROBE ONLY 15cd @ 0.041 A	STROBE ONLY 30cd @ 0.063 A	WIRE SIZE (AWG)	RESISTANCE (IN OHMS/ 1000FT)	LENGTH (IN FEET)	TOTAL CURRENT (IN AMPS)	VOLTAGE DROP	% OF VOLTAGE DROP
N1	CULINARY	FAEP-6					4	4		2		12	1.98	250	0.778	0.77	3.21%
N2	CO		4									12	1.98	125	0.140	0.07	0.29%
N3	(E) BLDG				4							12	1.98	300	0.300	0.36	1.49%
N4	SPARE											12	1.98				

FIRE ALARM REMOTE PANEL 'FAEP-6' BATTERY CALCULATIONS

		STANDBY CURRENT		ALARM CURRENT	
DEVICE	QUANTITY	AMPS	TOTAL	AMPS	TOTAL
FAEP (ADDRESSIBLE)	1	0.275	0.275	0.44	0.44
HEAT DETECTOR	1	0.0003	0.0003	0.0065	0.0065
SMOKE DETECTOR	9	0.0003	0.0027	0.0065	0.0585
DUCT SMOKE DETECTOR HOUSING	3	0.0003	0.0009	0.0065	0.0195
CO DETECTOR WITH SOUNDER BASE	4	0.0005	0.002	0.035	0.14
MULTI-CRITERIA DETECTOR	4	0.0002	0.0008	0.007	0.028
MONITOR MODULE	4	0.004	0.016	0.008	0.032
CONTROL MODULE	5	0.004	0.02	0.008	0.04
POWER BOOSTER	1	0.075	0.075	0.205	0.205
15CD HORN/STROBE	0		0	0.088	0
30CD HORN/STROBE	4		0	0.12	0.48
75CD HORN/STROBE	4		0	0.174	0.696
110CD HORN/STROBE	0		0	0.224	0
15CD STROBE	2		0	0.047	0.094
30CD STROBE	0		0	0.081	0
75CD STROBE	0		0	0.128	0
110CD STROBE	0		0	0.166	0
EXTERIOR SPEAKER	4		0	0.041	0.164
TOTAL			0.3927		2.4035
24 HR STANDBY			9.4248		
15 MIN ALARM					0.600875
AH REQUIRED	10.025675				
TOTAL AH +20%SPARE	12.03081				
PROVIDED BATTERY AH	18				



FIRE ALARM RISER DIAGRAM

1 PLAN NORTH

FIRE ALARM RISER NOTES

1. ALL FIRE ALARM EQUIPMENT BRANCH CIRCUITS SHALL BE DEDICATED AS PER NFPA 72, 10.6.5.1 AND ITS LOCATION BE CLEARLY LABELED AT THE FIRE ALARM CONTROL PANEL.
2. ALL FIRE ALARM EQUIPMENT POWER SOURCE CIRCUITS SHALL BE IDENTIFIED AT THE POWER SOURCE PER NFPA 72, 10.6.5.2. USING A RED CLEARLY MARKED DISCONNECT WITH LOCK–ON CAPABILITY. COORDINATE WITH ELECTRICAL.
3. ALL INTERIOR SPEAKERS SHALL BE SET AT 1/2 WATT UNLESS OTHERWISE NOTED ON THESE PLANS.
4. ALL EXTERIOR SPEAKERS SHALL BE SET AT 2 WATT UNLESS OTHERWISE NOTED ON THESE PLANS.
5. ALL EMERGENCY CONTROL FUNCTION MODULES SHALL BE LOCATED WITHIN 3'–0" OF THE COMPONENT CONTROLLING THE EMERGENCY CONTROL FUNCTION AND BE LABELED WITH THE EQUIPMENT BEING CONTROLLED.
6. DUCT DETECTORS INSTALLED ABOVE 10'–0" FROM FINISHED FLOOR A REMOTE ALARM AND SUPERVISORY INDICATOR SHALL BE INSTALLED ON THE WALL DIRECTLY BELOW DUCT DETECTOR.
7. P.I.V., CHECK VALVES, DOUBLE CHECK VALVES AND BFP ARE EXISTING AND ARE NOT INCLUDED IN THIS SCOPE OF WORK.
8. REFER TO FIRE PROTECTION PLANS TO CONFIRM RISER LOCATIONS AND FOR ADDITIONAL REQUIREMENTS.
9. REFER TO ELECTRICAL PLANS FOR DEDICATED 120V, 1PHASE BRANCH CIRCUIT IDENTIFICATIONS.

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CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
FIRE ALARM RISER AND CALCULATIONS
SCALE:

REVISIONS

No.	Issue Description	Date
1		
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Drawn By: ---
Checked By: ---

JOB NO. 19.010
DATE 2019-12-20
SHEET NUMBER FA4.1
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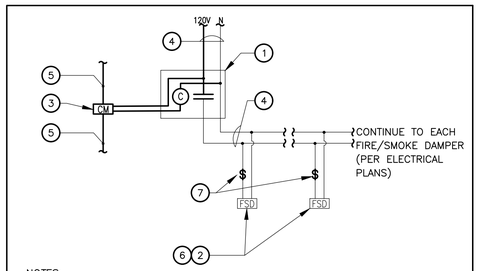
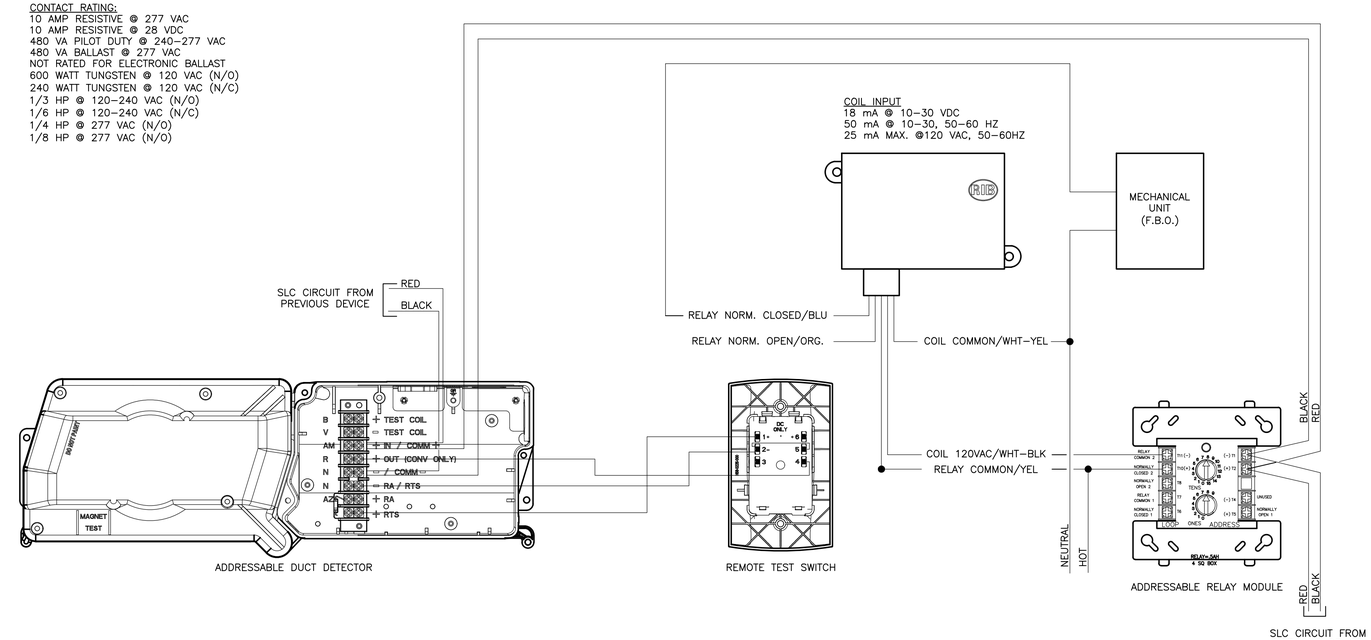


NOTES:

1. SHUTDOWN RELAY, 120V 20A DPDT W/120V AC COIL, P&B KRP-11AG-120 W/27E122 SOCKET AND AND HOLD DOWN SPRING, MOUNTED IN NEMA1 ENCLOSURE. PROVIDED BY FIRE ALARM CONTRACTOR, INSTALLED BY ELECTRICAL.
2. FIRE-SMOKE DAMPER (N.I.E.S.) LOCATIONS PER MECHANICAL PLANS. COORDINATE EXACT LOCATION OF DAMPER TERMINALS PRIOR TO ROUGH-IN.
3. FIRE ALARM CONTROL RELAY MODULE WITH LED INDICATOR PER FIRE ALARM PLANS. FIRE ALARM SYSTEM TO CLOSE DAMPER UPON ACTIVATION OF DUCT MOUNTED SMOKE DETECTOR OR COMPLETE AREA DETECTION. COORDINATE EXACT LOCATION OF DAMPER CONTACTS PRIOR TO ROUGH-IN. COORDINATE EXACT LOCATION OF REMOTE LED INDICATOR WITH ARCHITECTURAL PRIOR TO ROUGH-IN.
4. 1/2"C., WITH 2#12 & 1#12 GND DEDICATED 120V, 1Ø BRANCH CIRCUIT PER NFPA 72, 10.6.5.1 AND NFPA 72, 10.6.5.2 TO PANEL INDICATED ON ELECTRICAL PLANS. LABEL BREAKER "FIRE-SMOKE DAMPER".
5. 3/4"C. WITH 1/A ROUTED TO NEXT FIRE ALARM DEVICE PER PLANS.
6. REFER TO MECHANICAL PLANS, ELECTRICAL PLANS AND FIRE-SMOKE DAMPER SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. CONNECT AS REQUIRED FOR FULLY FUNCTIONING SYSTEMS.
7. 120V, NEMA1 TOGGLE SWITCH DISCONNECT IN

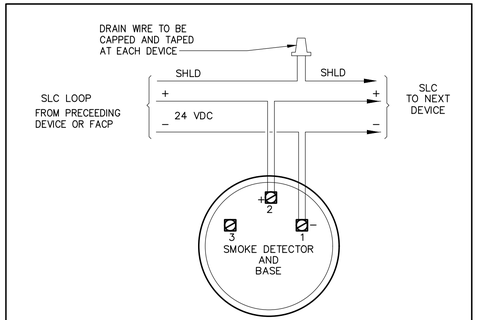
FILENAME | FIRE/SMOKE DAMPER RELAY DETAIL (AREA COVERAGE) | NTS | 8

CONTACT RATING:
10 AMP RESISTIVE @ 277 VAC
10 AMP RESISTIVE @ 28 VDC
480 VA PILOT DUTY @ 240-277 VAC
480 VA BALLAST @ 277 VAC
NOT RATED FOR ELECTRONIC BALLAST
600 WATT TUNGSTEN @ 120 VAC (N/O)
240 WATT TUNGSTEN @ 120 VAC (N/C)
1/3 HP @ 120-240 VAC (N/O)
1/6 HP @ 120-240 VAC (N/C)
1/4 HP @ 277 VAC (N/O)
1/8 HP @ 277 VAC (N/O)

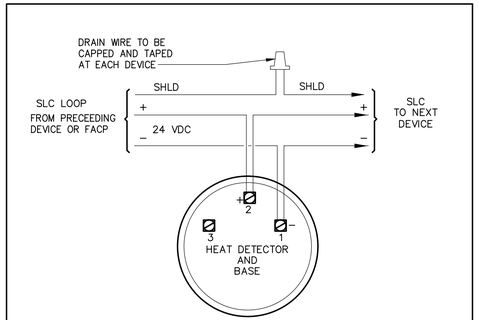


ADDRESSABLE DUCT DETECTOR
REMOTE TEST SWITCH
ADDRESSABLE RELAY MODULE

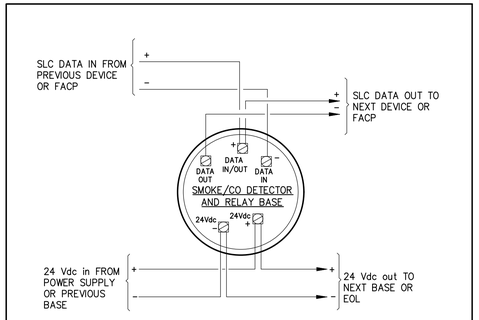
FILENAME | FIRE ALARM MECHANICAL UNIT SHUTDOWN TYPICAL | NTS | 3



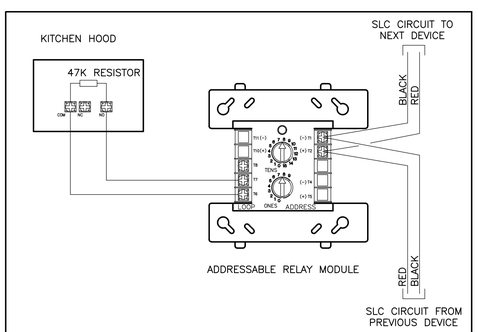
FILENAME | SMOKE OR MULTI-CRITERIA DETECTOR POINT TO POINT DIAGRAM | NTS | 7



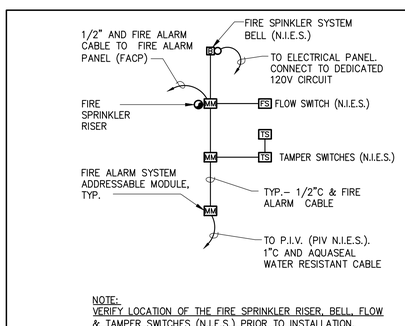
FILENAME | HEAT DETECTOR POINT TO POINT DIAGRAM | NTS | 5



FILENAME | CO/SMOKE DETECTOR POINT TO POINT DIAGRAM | NTS | 2

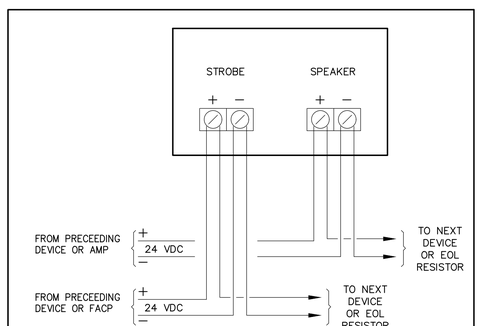


FILENAME | KITCHEN HOOD MONITOR MODULE WIRING DETAIL | NTS | 6



NOTE:
VERIFY LOCATION OF THE FIRE SPRINKLER RISER, BELL, FLOW & TAMPER SWITCHES (N.I.E.S.) PRIOR TO INSTALLATION.

FILENAME | FIRE SPRINKLER RISER DETAIL | NTS | 4
FOR METALLIC CONDUITS THROUGH FIRE RATED WALLS



FILENAME | SPEAKER STROBE POINT TO POINT DIAGRAM | NTS | 1

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REGISTERED PROFESSIONAL ENGINEER
KENNETH R. RUBISKY
No. 11798
Exp. 9/30/20
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STATE OF CALIFORNIA

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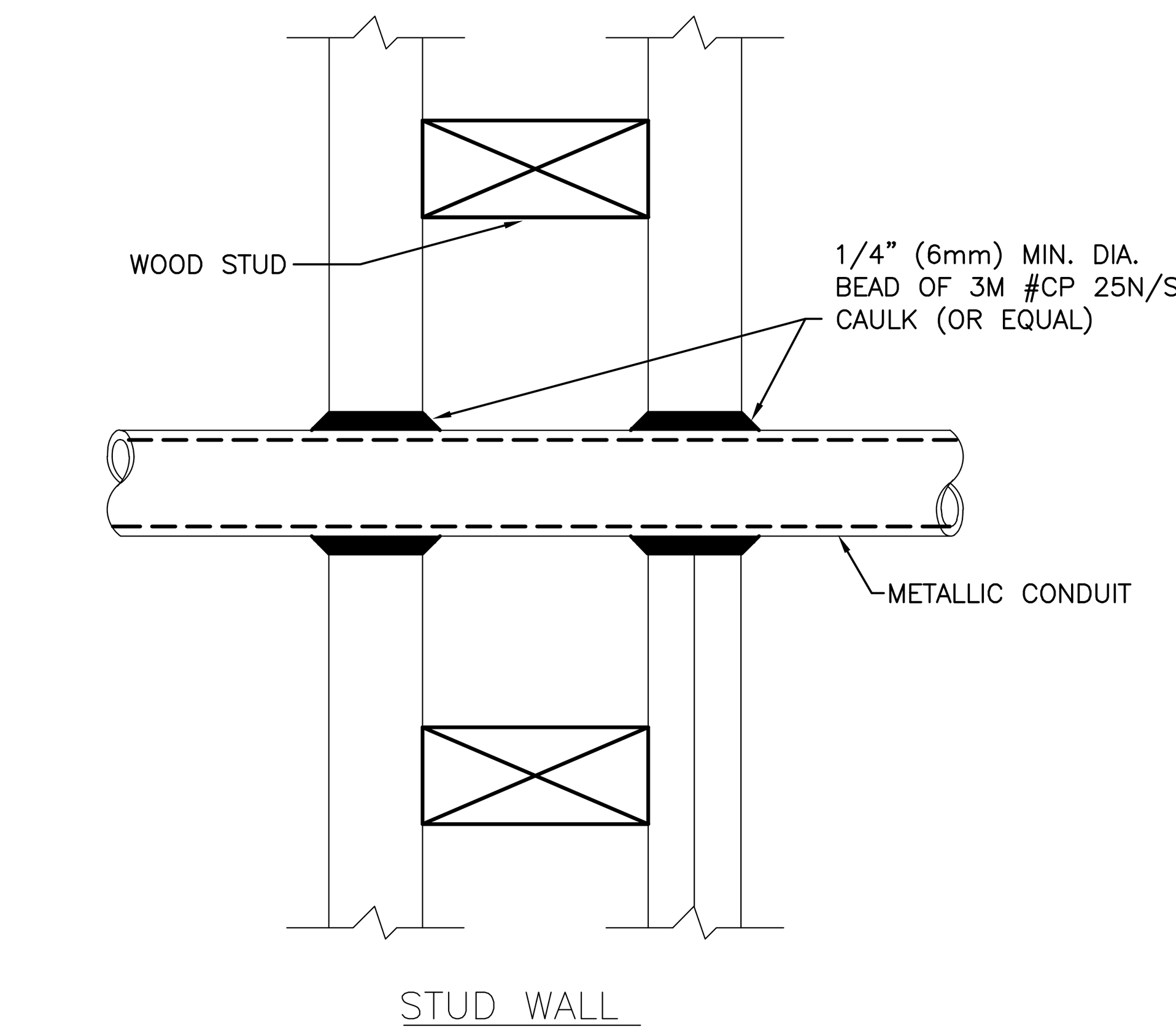
CONDUIT PENETRATION FIRESTOP DETAIL (4)



NOTES:

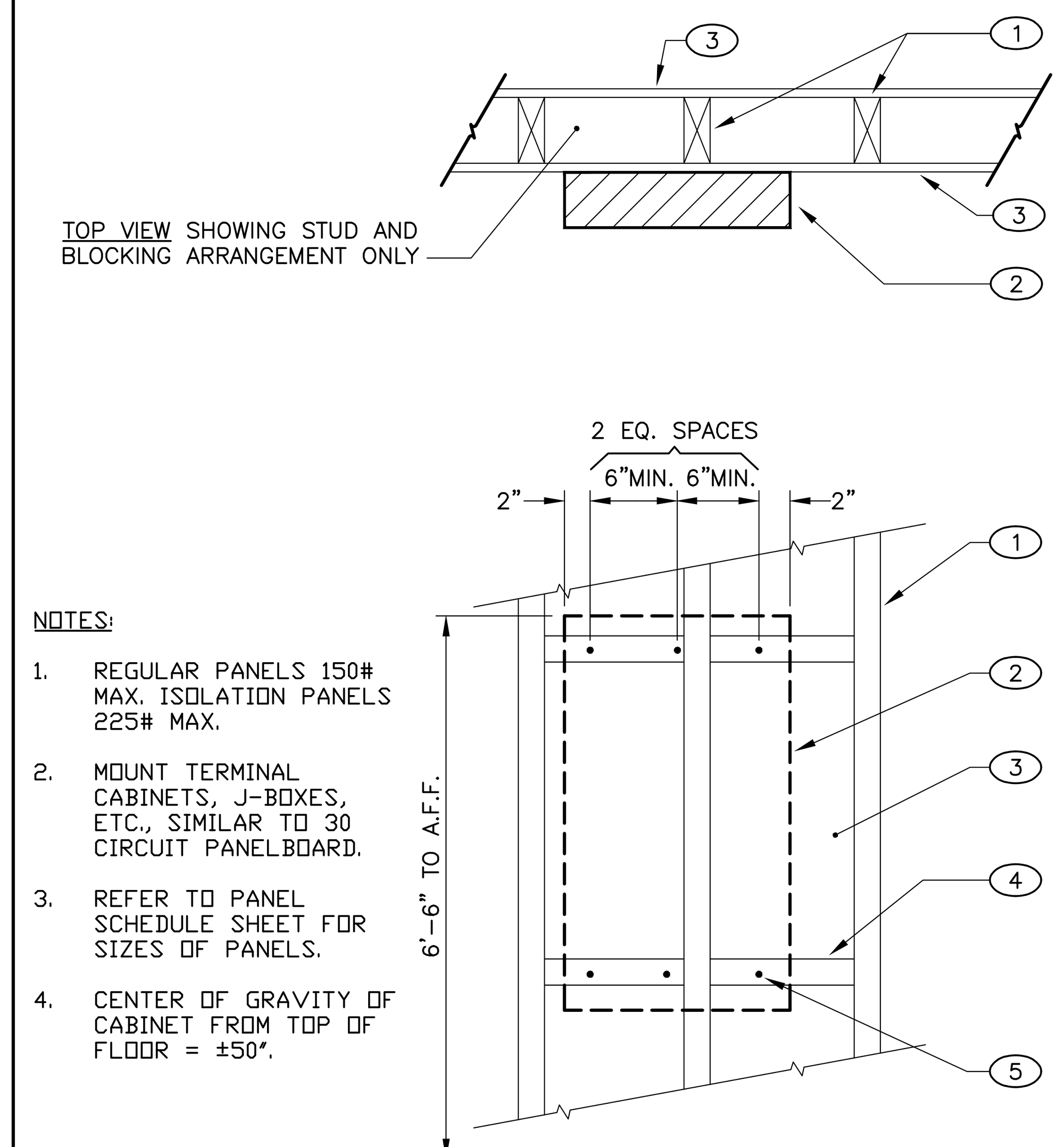
1. THE CAULK IS TO BE FORCED INTO THE ANNULAR SPACE TO THE MAXIMUM EXTENT POSSIBLE FLUSH WITH THE EXTERIOR OF THE PENETRATION SURFACE
2. FINISH CAULKING WITH A 1/4" (6mm) MINIMUM BEAD OF CP 25N/S CAULK APPLIED TO THE PERIMETER OF THE CONDUIT/PIPE AT ITS EGRESS FROM THE WALL.
3. THE MAXIMUM ANNULAR SPACE IS NOT TO EXCEED 3/16" (5mm).
4. INSTALL 3M FIRESTOP ON BOTH SIDES OF THE WALL.
5. THESE RECOMMENDATIONS ARE BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL THROUGH-PENETRATION FIRESTOP SYSTEM #WL1001.

FILENAME | CONDUIT PENETRATION FIRESTOP DETAIL | NTS | 4

SURFACE PANELBOARD/CABINET WOOD FRAMING MOUNTING DETAIL (3)

KEY NOTES:

1. WOOD STUD
2. SURFACE MOUNTED PANEL CABINET, SEE NOTE #1
3. SHEET ROCK OR OTHER WALL SURFACE MATERIAL (SEE ARCH. DRAWINGS)
4. WOOD STUDS FASTENED TO VERTICAL STUDS AT EACH END WITH TWO 16D NAILS AT EACH END
5. 5/16" X 2 1/2" LAG SCREWS (BY ELECTRICAL CONTRACTOR)



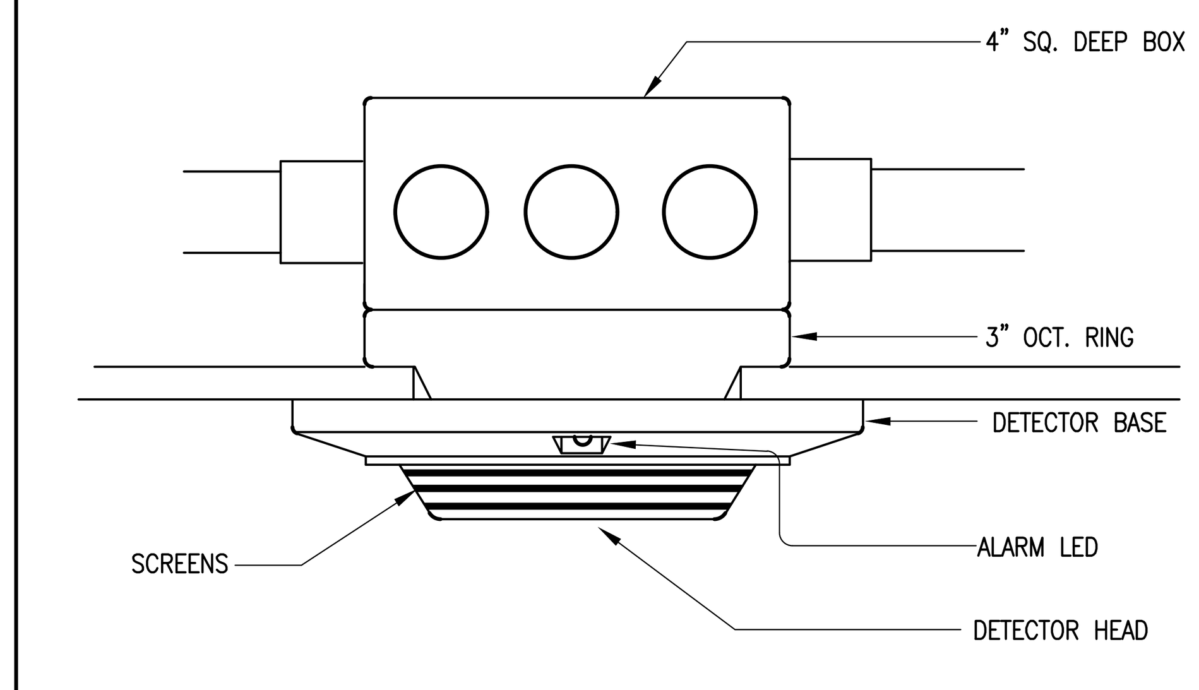
NOTES:

1. REGULAR PANELS 150# MAX. ISOLATION PANELS 225# MAX.
2. MOUNT TERMINAL CABINETS, J-BOXES, ETC., SIMILAR TO 30 CIRCUIT PANELBOARD.
3. REFER TO PANEL SCHEDULE SHEET FOR SIZES OF PANELS.
4. CENTER OF GRAVITY OF CABINET FROM TOP OF FLOOR = ±50".

FILENAME | SURFACE PANELBOARD/CABINET WOOD FRAMING MOUNTING DETAIL | NTS | 3

FIRE ALARM DETECTOR MOUNTING DETAIL (TYPICAL) (1)

NOTE:
DEVICES MAY REQUIRE DEEPER OR LARGER BACKBOXES DUE TO CABLE FILL. REFER TO NEC FOR SIZING, DETAIL SHOWS TYPICAL INSTALLATION.



FILENAME | FIRE ALARM DETECTOR MOUNTING DETAIL (TYPICAL) | NTS | 1

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND 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.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 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 MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT 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 HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, 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 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENT TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

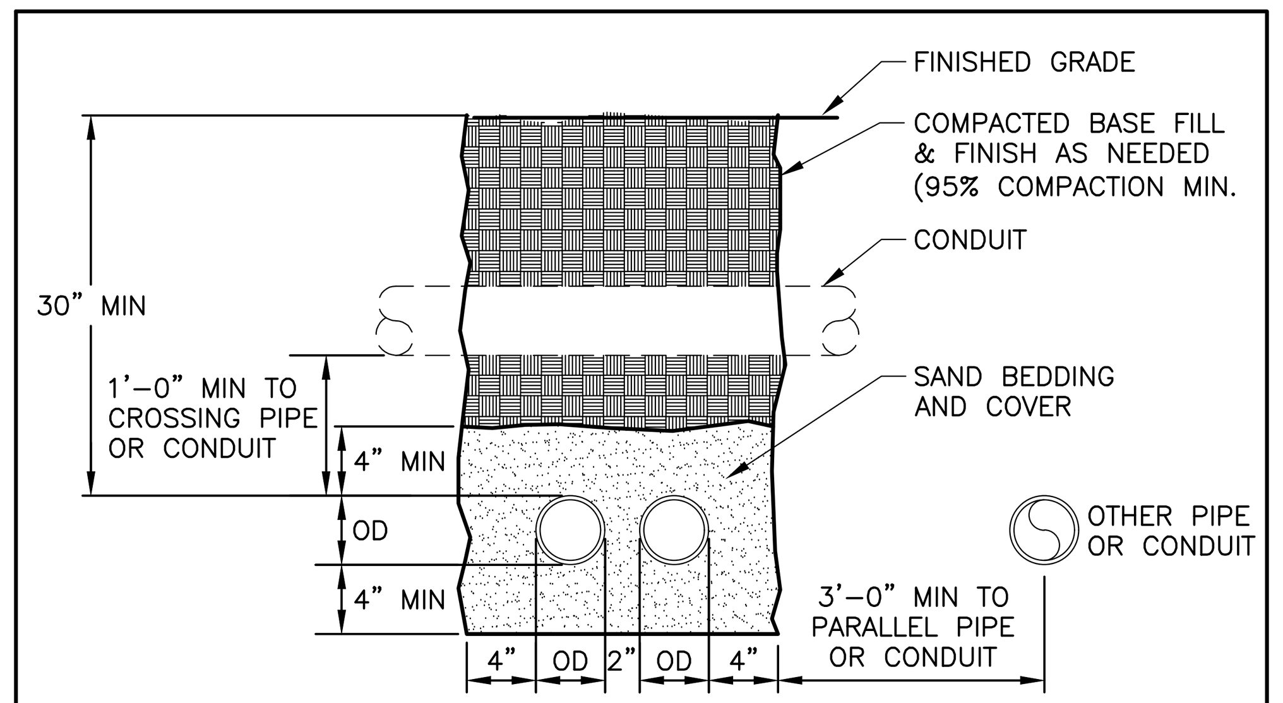
MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

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

MP MD PP E
☐ ☐ ☐ ☒ OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#) #0043-13.

MP MD PP
☐ ☐ ☐ OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSPHD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL _____ AND CONNECTION LEVEL _____ FOR THE PROJECT AND CONDITIONS.

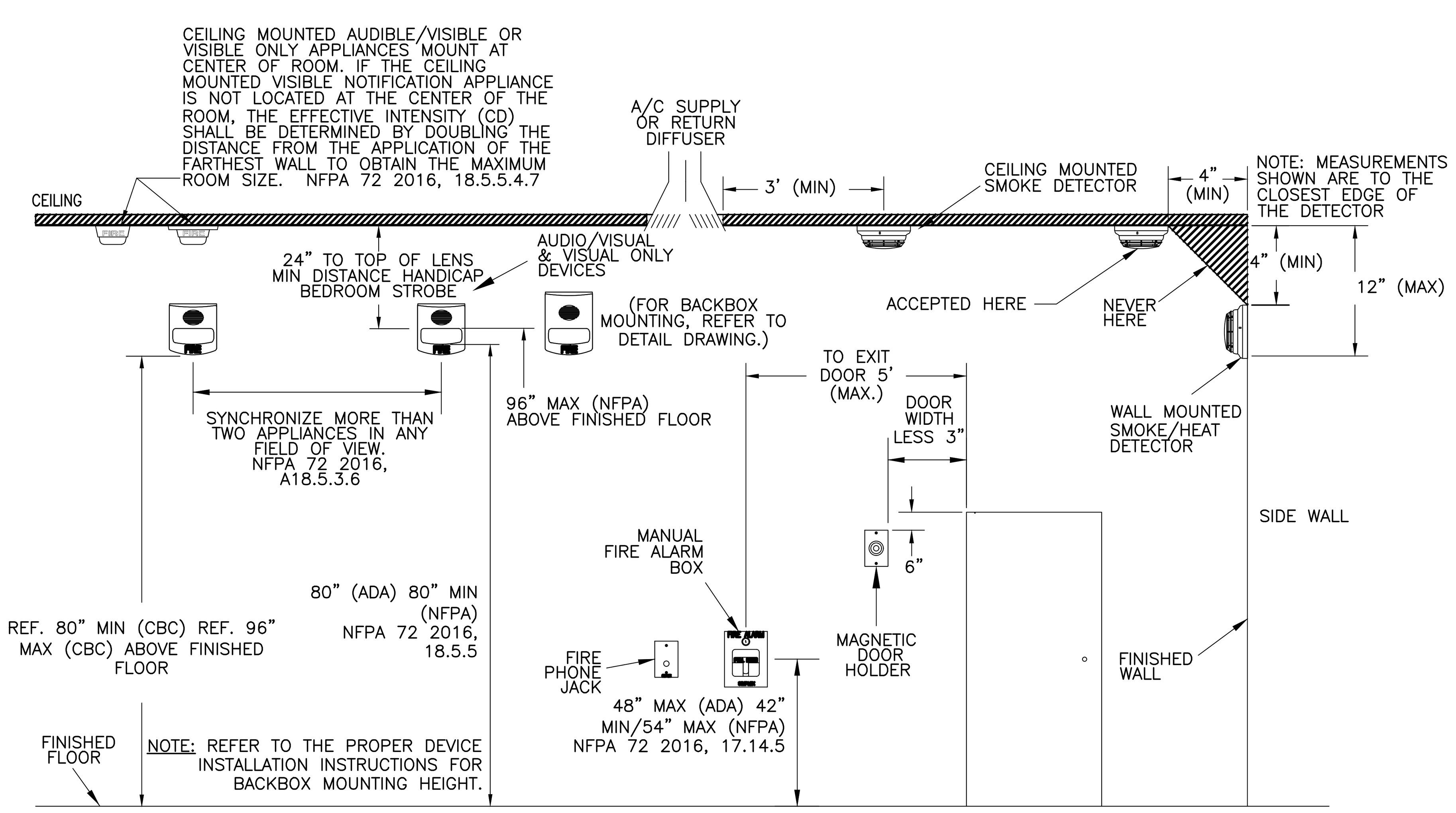
TYPICAL TRENCH DETAIL (5)



NOTE:
TRENCHING LOCATED IN PAVED AREAS - ALL EARTHWORK AND REPAIR SHALL BE IN ACCORDANCE WITH AGENCY THAT HAS JURISDICTION.

FILENAME | TYPICAL TRENCH DETAIL | NTS | 5

TYPICAL FIRE ALARM DEVICE & NOTIFICATION APPLIANCES ELEVATION DETAIL (2)



FILENAME | TYPICAL FIRE ALARM DEVICE & NOTIFICATION APPLIANCES ELEVATION DETAIL | NTS | 2

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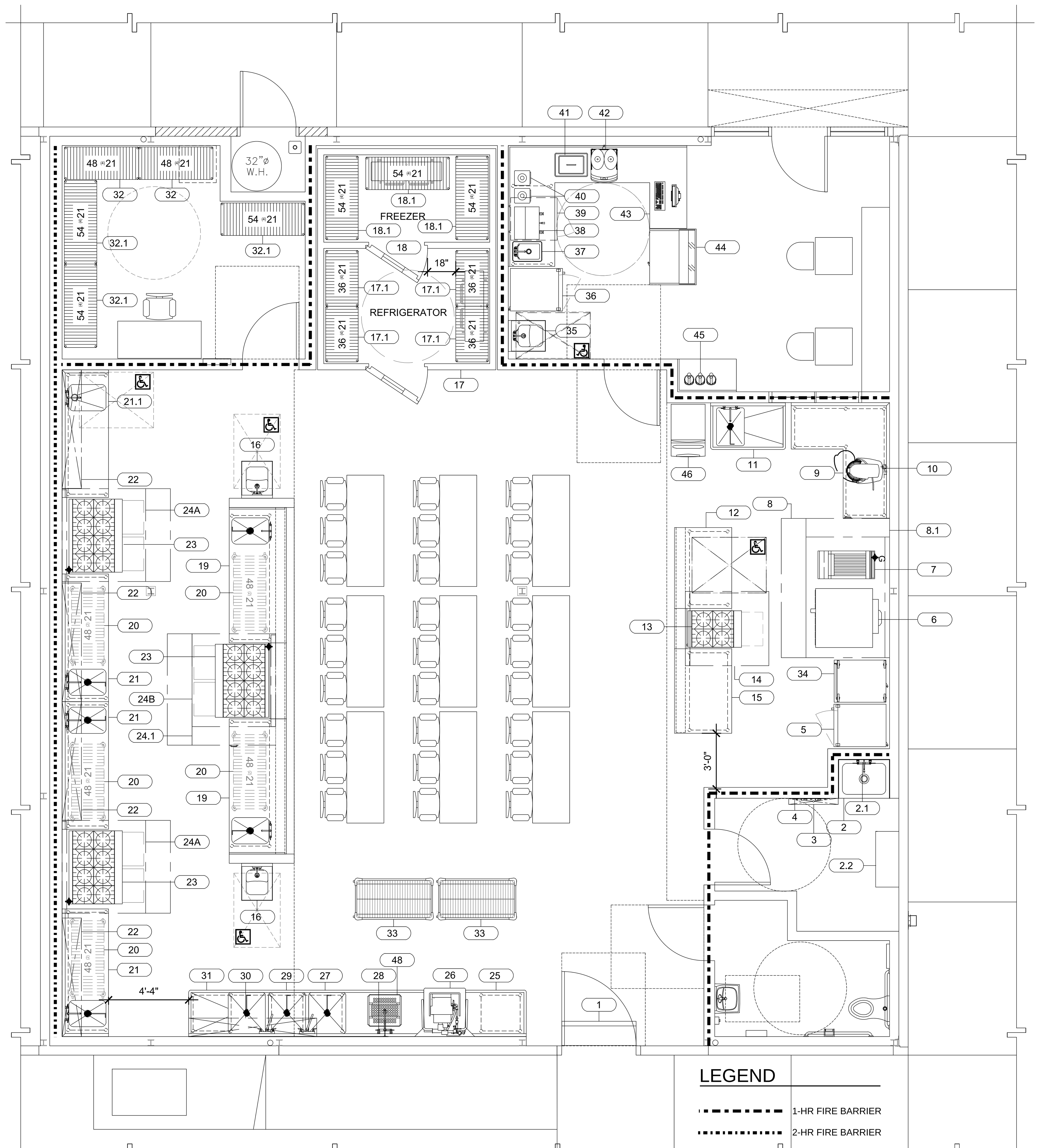

FOODSERVICE EQUIPMENT FLOOR PLAN

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

1
FS1.1

EQUIPMENT SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	MANUFACTURER	MODEL NUMBER	ANCHORAGE DETAILS	WEIGHT LBS.
1	1	AIR CURTAIN, UNHEATED	MARS AIR SYSTEMS	HV248-1U*	A/FS8.2	125
2	1	MOP SINK	ADVANCE TABCO	9-OP-28		47
2.1	1	SERVICE SINK FAUCET	FISHER	18031		5
2.2	1	WALL STORAGE CABIENT FOR CLEANING SUPPLIES	ADVANCE TABCO	WCH 15-36	F/FS8.1	126
3	1	MOP DRAINAGE TRAY	ADVANCE TABCO	K-243		13
4	1	MOP RACK	ADVANCE TABCO	K-242		2
5	1	REACH-IN REFRIGERATOR	TRUE MANUFACTURING CO., INC.	STA1R-1G	D/FS8.2-C	370
6	1	OVEN, CONVECTION, GAS	BLODGETT	DFG200 DOUBLE	D/FS8.2-C	1130
7	1	RANGE, HEAVY DUTY, GAS	VULCAN	VCBB18B	D/FS8.2-C	255
8	1	TYPE I - EXHAUST HOOD AND S/S WALL LINING	CAPTIVE AIRE	5424ND-2-PSP-F	E/FS8.3	505
8.1	1	FIRE SYSTEM	CAPTIVE AIRE / ANSUL	R-102	1/FS5.4	INCL IN HOOD
9	1	WORK COUNTER	CUSTOM	FABRICATED ITEM	D/FS8.1	165
10	1	COUNTER MIXER	HOBART US FOODSERVICE	HL120		204
11	1	PREPERATION SINK	CUSTOM	FABRICATED ITEM	B/FS8.1	190
12	1	TEACHERS WORK TABLE	CUSTOM	FABRICATED ITEM	D/FS8.2-C	210
13	1	RANGE, RESTAURANT, GAS	GARLAND	GFE24-4L	D/FS8.2-C	302
14	1	TYPE 1 EXHAUST HOOD ISLAND CANOPY	CAPTIVE AIRE	5424ND-2WI	E/FS8.3	229
15	1	TEACHERS WORK TABLE	CUSTOM	FABRICATED ITEM	D/FS8.2-C	280
16	2	HAND SINK, WALL MOUNT	ADVANCE TABCO	7-PS-46	E/FS8.2	50
17	1	WALK-IN COOLER	DURACOLD	FABRICATED ITEM	A/FS6.1	8.5LBS PER SQFT OF 4" PANEL
17.1	4	COLD STORAGE SHELVING	METRO	A2136NK3	I/FS8.1	60
18	1	WALK-IN FREEZER	DURACOLD	FABRICATED ITEM	A/FS6.1	8.5LBS PER SQFT OF 4" PANEL
18.1	3	COLD STORAGE SHELVING	METRO	A2154NK3	I/FS8.1	80
19	2	WORK COUNTER W/PREP SINK	CUSTOM	FABRICATED ITEM	D/FS8.1	315
20	5	UNDERCOUNTER MOBILE STORAGE RACK	METRO	A2148NC	MOBILE	43
21	3	WORK COUNTER W/PREP SINK	CUSTOM	FABRICATED ITEM	D/FS8.1	315
21.1	1	WORK COUNTER W/PREP SINK (ADA)	CUSTOM	FABRICATED ITEM	D/FS8.1	265
22	4	WALL SHELF	CUSTOM	FABRICATED ITEM	H/FS8.1	45
23	3	RANGE, RESTAURANT, GAS	GARLAND	GFE48-8LL	D/FS8.2-C	572
24A	2	TYPE 1 EXHAUST HOOD AND S/S WALL LINING	CAPTIVE AIRE	5424ND-2-PSP-F	E/FS8.3	301
24B	1	TYPE 1 EXHAUST HOOD AND S/S WALL LINING	CAPTIVE AIRE	5424ND-2-PSP-F	E/FS8.3	470
24.1	1	FIRE SYSTEM	CAPTIVE AIRE / ANSUL	R-102	1/FS5.3	INCL IN HOOD
25	1	CLEAN DISHTABLE	CUSTOM	FABRICATED ITEM	C/FS8.1	165
26	1	WAREWASHER, DOOR TYPE, HIGH TEMP	HOBART US FOODSERVICE	AM15VLT-2	D/FS8.2-C	494
27	1	SOILED DISHTABLE	CUSTOM	FABRICATED ITEM	C/FS8.1	INCL IN 29
28	1	PRE-RINSE SPRAY UNIT	FISHER	13390		12
29	1	THREE COMPARTMENT POT WASH SINK	CUSTOM	FABRICATED ITEM	A/FS8.1	390
30	1	WALL MOUNTED SHELF	CUSTOM	FABRICATED ITEM	H/FS8.1	35
31	1	CLEAN DISHTABLE	CUSTOM	FABRICATED ITEM	C/FS8.1	INCL IN 29
32	1	DRY STORAGE SHELVING	METRO	A2148NC	F/FS8.2	72
32.1	5	DRY STORAGE SHELVING	METRO	A2154NC	F/FS8.2	80
33	2	MOBILE POT AND PAN STORAGE SHELVING	INTERMETRO INDUSTRIES	N556PBR	MOBILE	108
34	1	CABINET, HOLDING/PROOFING	METRO	C537-CFC-4A	MOBILE	173
35	1	HAND SINK	ADVANCE TABCO	7-PS-46	E/FS8.2	50
36	1	REACH-IN REFRIGERATOR	TRUE MANUFACTURING CO., INC.	STA1R-1G	D/FS8.2-C	370
37	1	SINK, DROP-IN	ADVANCE TABCO	DI-1-10		34
38	1	COFFEE MAKER, INSULATED SERVER, AUTOMATIC	FETCO	CBS-52H-20		127
39	1	REFRIGERATOR, UNDERCOUNTER, LOW PROFILE	TRUE MANUFACTURING CO., INC.	TUC-27-HC-LP		185
40	2	BLENDER	VITA MIX	36019-QUIET ONE		26
41	1	DROP-IN, ICE STATION	DELFIELD	305		18
42	1	ESPRESSO MACHINES, SUPER AUTOMATIC	SCHAERER USA	040381-00001EUS		130
43	1	SERVING COUNTER	CUSTOM	FABRICATED ITEM	D/FS8.2-C	310
44	1	REFRIGERATOR, AIR CURTAIN TYPE	TRUE FOOD SERVICE	THAC-36DG-LD		480
45	1	AIRPOT	FETCO	L3D-20		16
46	1	ICE MAKER W/ BIN	MANITOWOC ICE	IYT0620A-161 /D-420	D/FS8.2-C	269
47	1	REMOTE REFRIGERATION (LOC ON ROOF)	COOLTEC	CRS-4	A/FS7.1	800
48	1	SCRAP SINK WITH LIFT OUT PERF. BASKET	CUSTOM	FABRICATED ITEM		

FOODSERVICE EQUIPMENT LEGEND

SYMBOL/ABBREVIATION	DESCRIPTION	SYMBOL	DESCRIPTION
OFCI	OWNER FURNISH / CONTRACTOR INSTALLED	30" CLR. / 48" CLR.	ACCESSIBLE CLEARANCES AND SYMBOL 30"x48" MIN CLEARANCE
OFOI	OWNER FURNISH / OWNER INSTALLED		OUTLINE OF (N) FOODSERVICE EQUIPMENT
FSEC	FOODSERVICE EQUIPMENT CONTRACTOR		FOODSERVICE EQUIPMENT BELOW EQUIPMENT TOP
VFVI	VENDER FURNISH / VENDER INSTALLED		FOODSERVICE EQUIPMENT ABOVE EQUIPMENT TOP
(E), EXIST	EXISTING FOODSERVICE EQUIPMENT		MOBILE FOODSERVICE EQUIPMENT
(N), NEW	NEW FOODSERVICE EQUIPMENT	F.E."K"	F.E.C. (PROVIDE TYPE "K" AND 2A:10BC (MINIMUM)) FIRE EXTINGUISHER & CABINET REFER TO ARCH. DRAWINGS FOR FIRE EXTINGUISHER LOCATIONS
	BUILDING WALLS (SEE ARCH. DWGS.)	FS.01	SHEET NUMBER
	WALK-IN COOLER/ FREEZER INSULATED WALLS	W.H.	WATER HEATER (SEE PLUMBING ENG. DWG.)
1 / 1	KEY / SHEET NOTE	A FS0.1 B	ELEVATION INDICATOR SYMBOL
1	ITEM NUMBER SYMBOL (SEE EQUIPMENT SCHEDULE FOR DESCRIPTION)		
KITCHEN 1	ROOM/ AREA NAME AND ROOM NUMBER		
C	COLUMN GRIDS WITH COLUMN INDICATORS		
48(#)18	STORAGE SHELVING SIZES (Width x Length)		

FOODSERVICE DRAWING SHEET LIST

FS1.1 - FOODSERVICE EQUIPMENT FLOOR PLAN
FS2.1 - FOODSERVICE EQUIPMENT PLUMBING FLOOR PLAN
FS2.2 - FOODSERVICE EQUIPMENT PLUMBING SCHEDULE
FS3.1 - FOODSERVICE EQUIPMENT ELECTRICAL FLOOR PLAN
FS3.2 - FOODSERVICE EQUIPMENT ELECTRICAL SCHEDULE
FS4.1 - FOODSERVICE EQUIPMENT MECHANICAL FLOOR PLAN
FS4.2 - FOODSERVICE EQUIPMENT MECHANICAL SCHEDULE AND DETAILS
FS5.1 - FOODSERVICE EQUIPMENT HOOD DETAILS
FS5.2 - FOODSERVICE EQUIPMENT HOOD DETAILS
FS5.3 - FOODSERVICE EQUIPMENT FIRE SYSTEM DETAILS
FS5.4 - FOODSERVICE EQUIPMENT FIRE SYSTEM DETAILS
FS5.5 - FOODSERVICE EQUIPMENT FIRE SYSTEM SCHEDULE
FS5.6 - FOODSERVICE EQUIPMENT EXHAUST HOOD ENERGY MANAGEMENT SYSTEM
FS5.7 - FOODSERVICE EQUIPMENT EXHAUST HOOD ENERGY MANAGEMENT SYSTEM
FS6.1 - FOOODSERVICE EQUIPMENT WALK-IN REFRIG./FREEZER DETAILS
FS6.2 - FOOODSERVICE EQUIPMENT WALK-IN REFRIG./FREEZER DETAILS
FS7.1 - FOODSERVICE EQUIPMENT REFRIGERATION DETAILS
FS7.2 - FOODSERVICE EQUIPMENT REFRIGERATION DETAILS
FS8.1 - FOODSERVICE EQUIPMENT ANCHORAGE DETAILS
FS8.2 - FOODSERVICE EQUIPMENT ANCHORAGE DETAILS
FS8.3 - FOODSERVICE EQUIPMENT ANCHORAGE DETAILS

NOTES:

1. THE KITCHEN HOOD FIRE SUPPRESSION SYSTEM SHALL CONFORM TO THE REQUIREMENTS OF THE 2013 EDITION OF THE NFPA 17A. (UL 300 SYSTEM)
2. INSTALLATION OF THE FIRE SUPPRESSION SYSTEM SHALL NOT BE STARTED UNTIL COMPLETE PLANS AND SPECIFICATIONS HAVE BEEN APPROVED BY DEPT. OF STATE ARCHITECT.
3. UPON COMPLETION OF THE SYSTEM IT SHALL BE TESTED IN THE PRESENCE OF THE STATE FIRE MARSHAL.

NOTES:

1. REFER TO ARCH. DRAWINGS FOR FIRE EXTINGUISHER LOCATIONS
2. "All work shall conform to the California Building Code, California Electrical Code, California Mechanical and Plumbing Codes, California Health and Safety Code. ALL FOOD SERVICES EQUIPMENT SHALL MEET AND BE INSTALLED PER THE REQUIREMENTS OF THE CALIFORNIA HEALTH AND SAFETY CODE DIVISION 22 AND ALL LOCAL CODES AND ORDINANCES."

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APP. 02-117832 INC:
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DATE: 01/21/20

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STATE OF CALIFORNIA

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NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11645 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
FOODSERVICE EQUIPMENT FLOOR PLAN

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

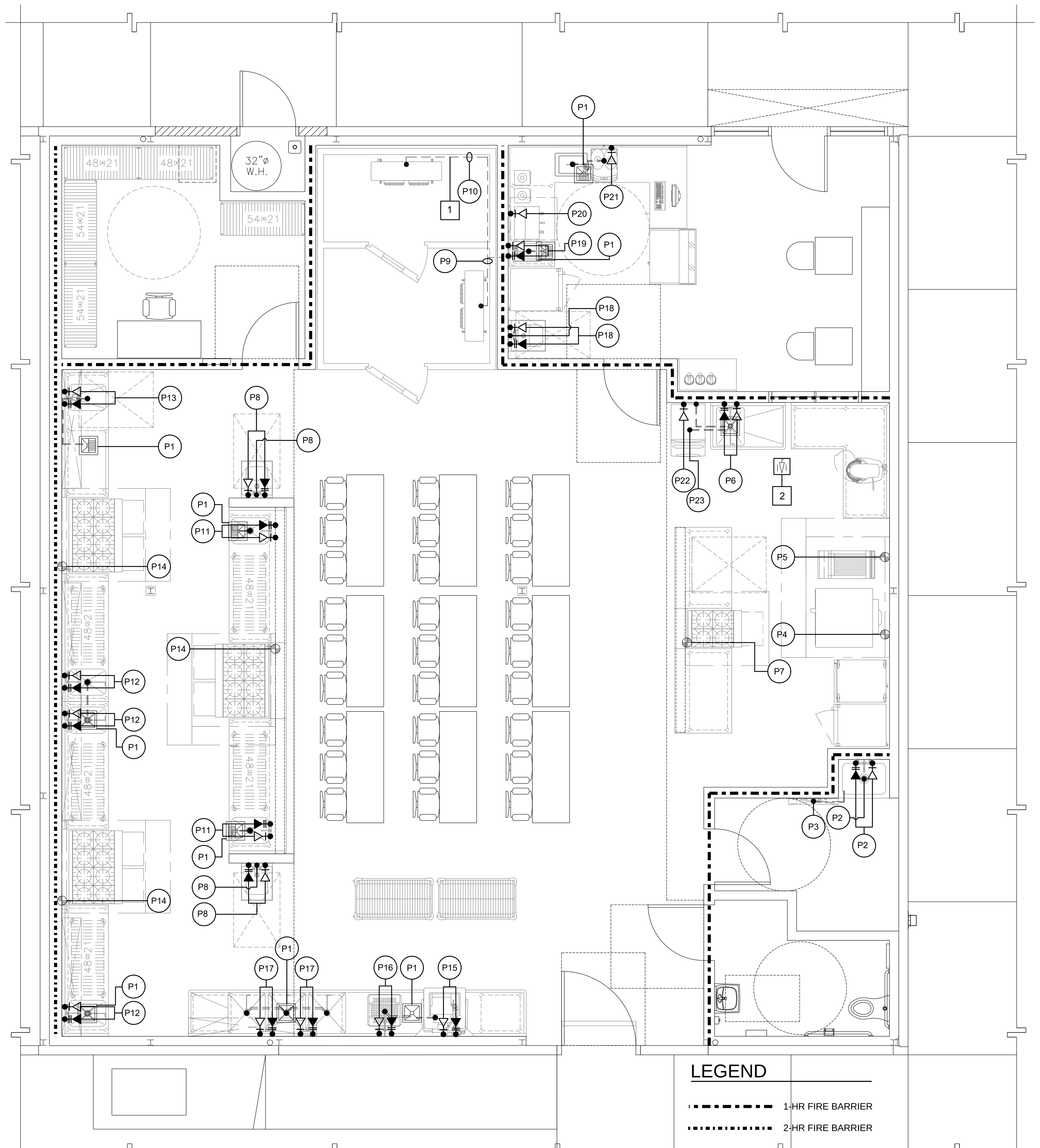
Drawn By:

Checked By:

JOB NO. 19.011

SHEET NUMBER FS1.1

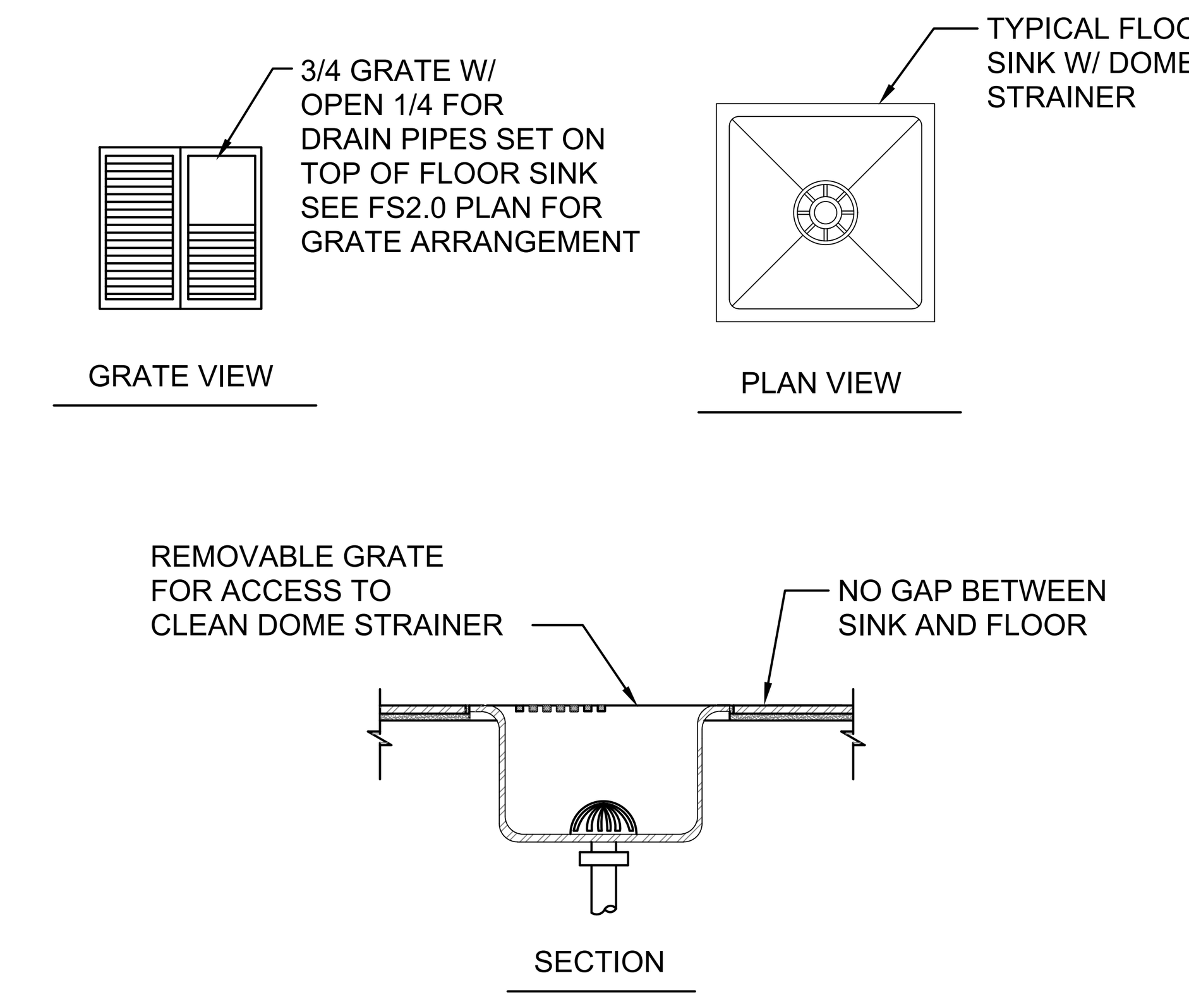
DATE 12/20/2019



FOODSERVICE EQUIPMENT PLUMBING FLOOR PLAN

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

1
FS2.1



NOTE:
FLOOR SINK DETAIL IS FOR REFERENCE ONLY. FOR FLOOR SINK TYPE AND SIZE REFER TO PLUMBING DIVISION PLANS.

FLUSH FLOOR SINK DETAIL

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

2
FS2.1

PLUMBING LEGEND

ABREVIATION	DESCRIPTION	SYMBOL	DESCRIPTION
C.W.	COLD WATER	P1	PLUMBING SCHEDULE REFERENCE, REFER TO FS2.2 FOR SCHEDULE
H.W.	HOT WATER	1 1	KEY/SHEET NOTE
DIR.	WASTE (DIRECT CONNECTION)		COLD WATER INLET
INDIR.	INDIRECT WASTE (AIR GAP)		HOT WATER INLET
LAV.	LAVATORY		SHUT OFF VALVE (S.O.V.)
W.C.	WATER CLOSET		COLD WATER SHUT OFF VALVE
F.S.	FLOOR SINK		GAS SHUT-OFF VALVE
P.C.	PLUMBING CONTRACTOR		FLOOR SINK
G.C.	GENERAL CONTRACTOR		FLOOR DRAIN
F.S.E.C.	FOODSERVICE EQUIPMENT CONTRACTOR		WASTE DOWN
S.O.V.	SHUT OFF VALVE		GAS INLET
GPH	GALLONS PER HOUR		WALK-IN DRAIN LINE
PSI	POUNDS PER SQUARE INCH		I.D. DRAIN LINE
(F)	DEGREES FAHRENHEIT		
CONN.	CONNECT		
LOC.	LOCATE		

PLUMBING SHEET NOTES

1. CONDENSATE DRAINS FROM COILS TO BE FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR F.S.E.C PROVIDE HEAT TRACE W/ INSULATION FROM COIL TO DRAIN (FREEZER) REFER D/FS7.2
2. GAS SHUT-OFF VALVE FOR ANSUL SYSTEM WITH ACCESS DOOR. VERIFY SIZE OF GAS LINE AND LOCATION. GAS TO ALL EQUIPMENT TO BE SHUT OFF UPON ACTIVATION OF EITHER FIRE SYSTEM

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SHEET TITLE:
FOODSERVICE EQUIPMENT PLUMBING FLOOR PLAN

SCALE:

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Drawn By:

Checked By:

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SHEET NUMBER FS2.1

DATE 12/20/2019

PLUMBING SCHEDULE

PLUM. NO.	ITEM. NO.	DESCRIPTION	QTY.	WATER CONN. SIZE C.W.	WATER CONN. SIZE H.W.	WATER HGT.@ WALL	WASTE CONN. SIZE DIR.	WASTE CONN. SIZE INDIR.	WASTE HGT.@ WALL	GAS BTU/HR (x1,000)	GAS CONN. SIZE	GAS HGT. @ WALL	REMARKS	NOTE(S)
P1	-	FLOOR SINK	10EA.	-	-	-	-	-	+0"	-	-	-	INSTALL FLUSH WITH FINISH FLOOR, PROVIDE GRATE COVER & DOME STRAINER, SIZE 12" X 12" X 8" (REFER TO 2&3/FS2.1)	
P2	2	MOP SINK	1EA.	-	-	-	-			-	-	-	REFER TO PLUMBING DRAWINGS	
P3	3	MOP DRAINAGE TRAY	1EA.	-	-	-	-	1"		-	-	-	RUN MOP DRIP TRAY HOSE TO FLOOR SINK	
P4	6	DOUBLE STACK CONVECTION OVEN GAS	1EA.	-	-	-	-	-	-	120	3/4"	12"	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION MANIFOLD FOR TOP OVEN TO BOTTOM OVEN BY MFG. NATURAL GAS.	4
P5	7	HEAVY DUTY GAS RANGE	1EA.	-	-	-	-	-	-	49	3/4"	25"	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. NATURAL GAS PRESSURE REGULATOR PROVIDED BY MFG.	
P6	11	PREP SINK FAUCET W/ 1/2" INLET 8" CENTER	1EA.	1/2"	1/2"	16"	-	2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. PROVIDE 2" INDIRECT DRAIN TO F.S. P1. (CHROME OR PAINT SILVER)	
P7	13	OPEN BURNER RANGE W/ OVEN	1EA.	-	-	-	-	-	-	136	3/4"	+25	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. NATURAL GAS PRESSURE REGULATOR PROVIDED BY MFG.	
P8	16	WALL MOUNTED HAND SINK FAUCET W/ 1/2" INLET 4" CENTER	2EA.	1/2"	1/2"	18"	1 1/2"	-	24"	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. RUN DIRECT WASTE WITH P-TRAP.	
P9	17	WALK-IN REFRIGERATOR CONN. DRAIN FROM COIL CONN. + 70"	1EA.	-	-	-	-	1"	-	-	-	-	1" INDIRECT DRAIN TO F.S. P1. SLOPE 1/2" PER FOOT. PROVIDE 1" MIN AIR GAP AT F.S. WITH 'P' TRAP.	
P10	18	WALK-IN FREEZER CONN. DRAIN FROM COIL CONN. + 70"	1EA.	-	-	-	-	1"	-	-	-	-	1" INDIRECT DRAIN TO F.S. P1. SLOPE 1/2" PER FOOT. PROVIDE 1" MIN AIR GAP AT F.S. WITH 'P' TRAP.	
P11	19	WORK COUNTER WITH PREP SINK FAUCET W/ 1/2" INLET 8" CENTER	2EA.	1/2"	1/2"	16"	-	2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. PROVIDE 2" INDIRECT DRAIN TO F.S. P1. (CHROME OR PAINT SILVER)	
P12	21	WORK COUNTER WITH PREP SINK FAUCET W/ 1/2" INLET 8" CENTER	3EA.	1/2"	1/2"	16"	-	2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. PROVIDE 2" INDIRECT DRAIN TO F.S. P1. (CHROME OR PAINT SILVER)	
P13	21.1	WORK COUNTER WITH PREP SINK ADA FAUCET W/ 1/2" INLET 8" CENTER	1EA.	1/2"	1/2"	16"	-	2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. PROVIDE 2" INDIRECT DRAIN TO F.S. P1. (CHROME OR PAINT SILVER)	5 6
P14	23	OPEN BURNER RANGE W/ OVEN	3EA.	-	-	-	-	-	-	272	1"	+25	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. NATURAL GAS PRESSURE REGULATOR PROVIDED BY MFG.	
P15	26	WAREWASHER W/BUILT-IN BOOSTER	1EA.	1/2"	1/2"	12"	-	2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION	1 2 3
P16	28	PRE-RINSE FAUCET, SPLASH MOUNT FAUCET W/ 1/2" INLET 8" CENTER	1EA.	1/2"	1/2"	16"	-	-	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION.	
P17	29	POTWASH SINK FAUCET W/ 3/4" INLET 8" CENTER	2EA.	3/4"	3/4"	16"	-	2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. PROVIDE 2" INDIRECT DRAIN TO F.S. P1. (CHROME OR PAINT SILVER)	
P18	35	WALL MOUNTED HAND SINK FAUCET W/ 1/2" INLET 4" CENTER	2EA.	1/2"	1/2"	18"	1 1/2"	-	24"	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. RUN DIRECT WASTE WITH P-TRAP.	
P19	37	DROP IN HAND SINK FAUCET W/ 1/2" INLET 4" CENTER	2EA.	1/2"	1/2"	18"	-	1 1/2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. RUN INDIRECT DRAIN TO F.S P1.	
P20	38	COFFEE BREWER	1EA.	1/2"	-	-	-	3/4"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION 3/8" WATER INLET RUN INDIRECT DRAIN TO F.S P1.	
P21	42	COFFEE BREWER	1EA.	1/2"	-	-	-	3/4"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION 3/8" WATER INLET RUN INDIRECT DRAIN TO F.S P1.	
P22	46	ICE MAKER (HEAD)	1EA.	1/2"	-	52"	-	1/2"	52"	5.4	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. INTERCONNECT TO WATER FILTER ITEM 29.2 DRAIN TO F.S. P1.	
P23	46	ICE MAKER (BIN)	1EA.	-	-	-	-	3/4"	-	-	-	-	PROVIDE 3/4" INDIRECT DRAIN TO F.S P1. (CHROME OR PAINT SILVER)	
P24	48	SCRAP SINK WITH LIFT OUT PERF. BASKET	1EA.	-	-	-	-	2"	-	-	-	-	PROVIDE 2" INDIRECT DRAIN TO F.S. P1. (CHROME OR PAINT SILVER)	

PLUMBING KEY NOTE(S):

1. 110 DEGREE (F) MIN. WATER INLET HOT WATER SANITIZING 126 GPH.
2. WATER HAMMER ARRESTOR (MEETING ASSE-1010 STANDARD) BY PLUMBER IN SUPPLY LINE.
3. WATER PRESSURE 15-25 PSI- IF HIGHER, FURNISH PRESSURE REGULATOR VALVE WITH INTERNAL THERMAL EXPANSION BYPASS BY PLUMBER.
4. OVEN TO BE FURNISHED WITH THE UPPER AND LOWER OVEN WITH A GAS MANIFOLD
5. KEEP INDIRECT DRAIN CLOSE TO WALL TO MAINTAIN ADA WALL CLEARANCE
6. NO LEVER DRAIN

FIRE SYSTEM NOTE:

1. FURNISH AUTOMATIC GAS SHUT-OFF VALVE INCLUDING ANY NECESSARY ACCESS PANEL. CONTRACTOR SHALL INSTALL THE AUTOMATIC SHUT-OFF VALVE IN AN ACCESSIBLE LOCATION. REFER TO PLUMBING DRAWINGS FOR GAS VALVE LOCATION.

PLUMBING NOTES
(MINIMUM REQUIREMENTS UNLESS NOTED OTHERWISE)

1. PLUMBING CONTRACTOR TO VERIFY ALL INCOMING SERVICE AND MAKE FINAL HOOK-UPS TO ALL APPLICABLE EQUIPMENT AND TO PROVIDE ALL PIPING, TEES, ELLS, TRAPS, FILTERS, REGULATORS, FAUCETS, ETC., UNLESS SPECIFICALLY STATED OTHERWISE.
2. ALL HORIZONTAL DIMENSIONS SHOWN ON PLAN ARE FROM FINISHED FACE OF WALL TO CENTERLINE OF STUB-OUT OR FROM CENTERLINE OF STUB-OUT TO CENTERLINE OF STUB-OUT, UNLESS NOTED OTHERWISE ON PLAN OR DETAILS. (VERIFY ALL DIMENSIONS)
3. SYMBOLS NOTED +24", +48", ETC., INDICATES TO STUB-OUT OF WALL AT HEIGHT INDICATED. HEIGHT IS GIVEN FROM FINISHED FLOOR (NOT FINISHED CURB) TO CENTERLINE OF STUB-OUT. SYMBOLS INDICATED "STUB-UP" AND "STUB-DOWN" ARE TO EXTEND ABOVE FINISHED FLOOR AND/OR BELOW FINISHED CEILING AT LOCATION SHOWN.
4. PLUMBING STUBS AND CONNECTIONS SHOWN ON PLANS ARE FOR EQUIPMENT FURNISHED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR.
5. FLOOR SINKS SHOWN ARE TO BE SET FLUSHED WITH TOP OF FINISHED FLOOR. FLOOR SINKS INDICATED HALF-IN AND HALF-OUT OF EQUIPMENT TO BE SET FLUSHED WITH TOP OF FINISHED FLOOR. FLOOR SINKS LOCATED COMPLETELY WITHIN EQUIPMENT AREA TO BE SET FLUSHED WITH TOP OF FINISHED FLOOR.
6. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL REMOVABLE COVERS OR GRATES FOR ALL FULLY OR PARTIALLY EXPOSED FLOOR SINKS. GRATES TO HAVE 1/2" MAX OPEN'GS WHERE DRAIN IS EXPOSED TO P.O.T OR TO PEDESTRIAN WAYS TYP.
7. PLUMBING CONTRACTOR SHALL SEAL ALL PLUMBING PENETRATIONS THROUGH WALLS, FLOORS, AND CEILINGS. WATERTIGHT AND VERMIN-PROOF.
8. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL SHUT-OFF VALVES ON ALL WATER AND GAS LINES, INCLUDING VALVES IN FIXTURES, LOCATED IN SUCH A WAY AS TO BE ACCESSIBLE WITHOUT USE OF TOOLS.
9. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL FOR ALL APPLICABLE EQUIPMENT, A TRAPPED FLOOR SINK WITH A LEGAL AIR GAP DRAIN LINE (INDIRECT WASTE) TO FLOOR SINK. INSULATE ALL DRAIN LINES FROM ICE BINS, ICE MACHINES, REFRIG. EQUIP., ETC..

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SHEET TITLE:
FOODSERVICE EQUIPMENT PLUMBING SCHEDULE

SCALE:

REVISIONS

No.	Issue Description	Date
1		
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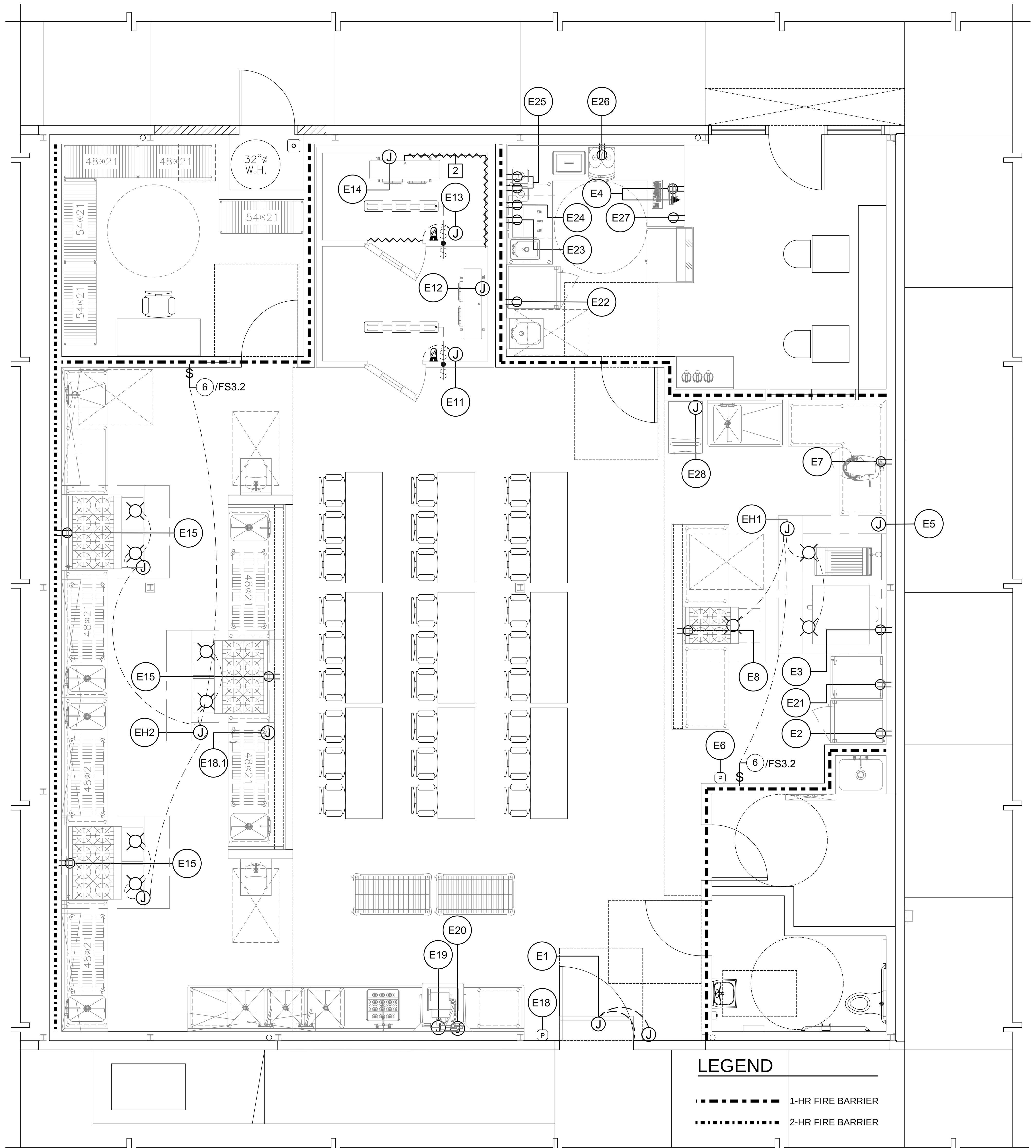
Drawn By:

Checked By:

JOB NO. 19.011

SHEET NUMBER FS2.2

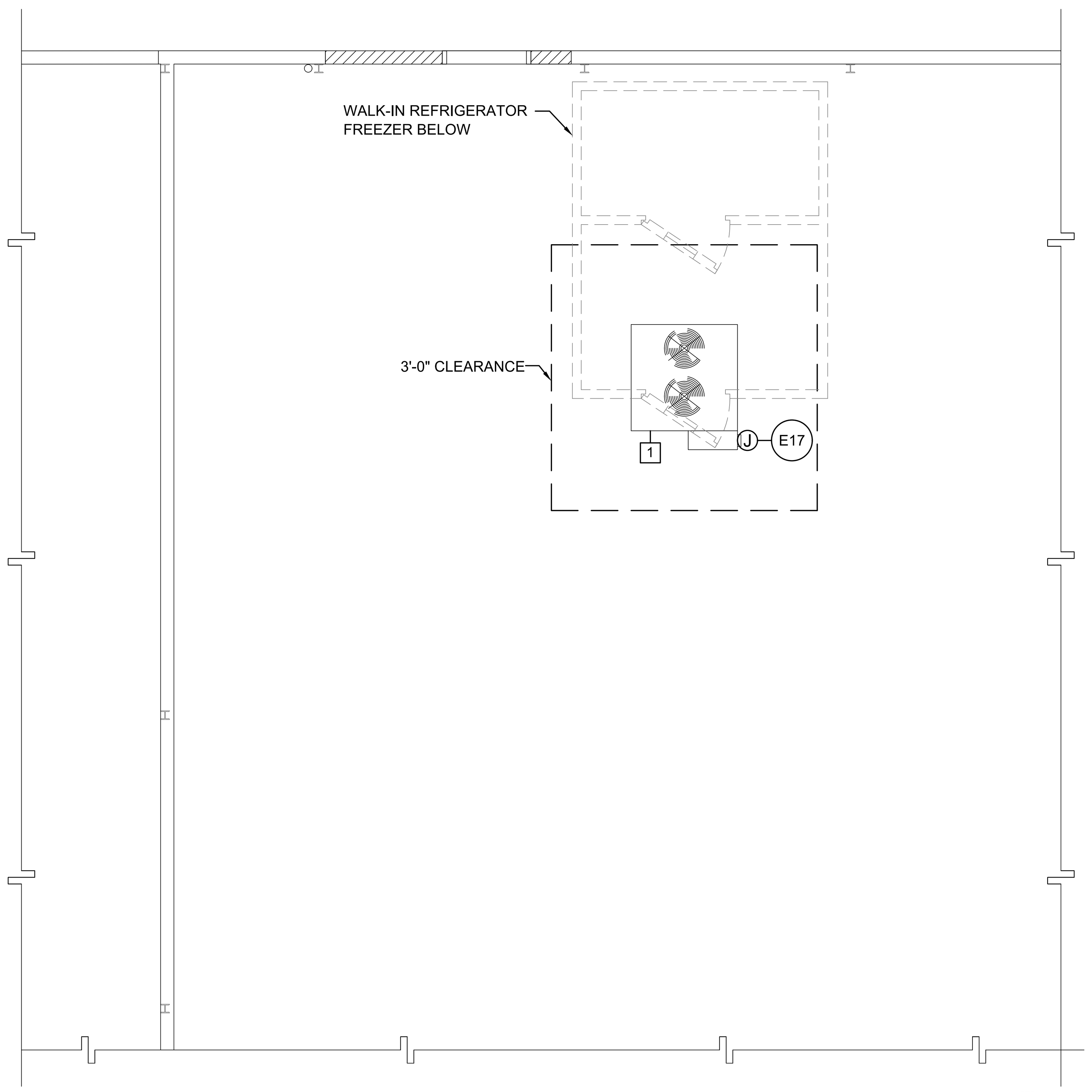
DATE 12/20/2019



FOODSERVICE EQUIPMENT ELECTRICAL FLOOR PLAN

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

1 / FS3.1



FOODSERVICE PARTIAL ROOF ELECTRICAL PLAN

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

2 / FS3.1

ELECTRICAL NOTES

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ROUGH-INS, FINAL CONNECTIONS AND INTER- CONNECTIONS TO THE FOOD SERVICE EQUIPMENT
2. CONNECTIONS SHOWN ARE FOR THE FOOD SERVICE EQUIPMENT ONLY. REFER TO ELECTRICAL DRAWINGS FOR CONVENIENCE OUTLETS AND ADDITIONAL REQUIREMENTS.
3. RECEPTACLES SHALL BE MOUNTED VERTICALLY.
4. RECEPTACLES, JUNCTION/HANDY BOXES INDICATED AT WALLS SHALL BE CONCEALED IN THE WALL AT THE HEIGHT INDICATED.
5. VERTICAL DIMENSIONS ARE GIVEN FROM FINISHED FLOOR TO CENTER LINE OF ROUGH-IN LOCATION.
6. UTILITIES WHEREVER POSSIBLE SHALL BE BROUGHT IN FROM ABOVE,
7. VERIFY THE UTILITY REQUIREMENTS OF OWNER FURNISHED AND/OR EXISTING EQUIPMENT.
8. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND/OR INSTALL ALL JUNCTION/HANDY BOXES, EXTENSION RINGS, DISCONNECT SWITCHES AS SHOWN, CONVENIENCE OUTLETS WITH STAINLESS STEEL COVERS, SWITCHES, CONNECTORS, CONTROLS AND OTHER ACCESSORIES THAT ARE NOT AN INTEGRAL PART OF THE FOOD SERVICE EQUIPMENT AS REQUIRED TO MAKE FINAL CONNECTIONS TO THE EQUIPMENT FOR A COMPLETE AND OPERABLE OPERATION MEETING ALL APPLICABLE CODES AND ORDINANCES.
9. JUNCTION/HANDY BOXES, CONVENIENCE OUTLETS AND SPECIAL PURPOSE OUTLETS SHOWN IN FABRICATED WORK TABLES AND COUNTERS SHALL BE FURNISHED BY FABRICATOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL WIRING & RECEPTACLES.

ELECTRICAL SHEET NOTES

1	REMOTE REFRIGERATION RACK SYSTEM ITEM NO. 47 REFER TO FS7.1 FOR DETAILS LOCATED ON BUILDING ROOF
2	ELECTRIC HEAT TRACE SPIRALED TAPED AND INSULATED CONNECTED AT COIL REFER C/FS7.2

WALK-IN REFRIGERATION ELECTRICAL (MINIMUM REQUIREMENTS UNLESS NOTED OTHERWISE)

1. - THE ELECTRICAL CONTRACTOR SHALL INSTALL AND INTER WIRE LIGHT SWITCHES AND FIXTURES REQUIRED FOR THE FOOD SERVICE EQUIPMENT AND MAKE FINAL CONNECTIONS.
2. - THE FOOD SERVICE EQUIPMENT CONTRACTOR SHALL INSTALL THE PRESSURE RELIEF PORT, DOOR HEATERS, DRAIN LINE HEATERS AND TEMPERATURE ALARM SYSTEM. INTER WIRING AND FINAL CONNECTIONS BY THE ELECTRICAL CONTRACTOR.
3. - THE ELECTRICAL CONTRACTOR SHALL INTER WIRE THE TIME CLOCK ON THE CONDENSING UNIT TO THE DEFROST RELAY ON THE UNIT EVAPORATOR LOCATED IN THE FREEZER COMPARTMENT.
4. - THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT AND WIRING NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM WITH ALL CONDUIT IN SO FAR AS POSSIBLE MOUNTED ON THE EXTERIOR CEILING OF THE WALK-IN ASSEMBLY. PENETRATIONS AND ESCUTCHEON PLATES SHALL BE FURNISHED AND INSTALLED BY THE FOOD SERVICE CONTRACTOR. FOOD SERVICE EQUIPMENT CONTRACTOR IS RESPONSIBLE FOR SEALING THE INSIDE OF CONDUITS WHICH PENETRATE THE CEILING OR WALL.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	(J)	JUNCTION BOX
CLG.	CEILING	▲	DATA OUTLET
CONN.	CONNECT	(P)	EMPTY OCTAGONAL BOX W/ CONDUIT TO +2" ABOVE CEILING BY E.C
E.C.	ELECTRICAL CONTRACTOR		VAPOR-PROOF LIGHT FIXTURE AT EXHAUST HOOD (PROVIDED BY F.S.E.C. INSTALLED BY E.C.)
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR	[J]	STUBBED-UP JUNCTION BOX
G.C.	GENERAL CONTRACTOR		STUBBED-UP CONVENIENCE OUTLET
S.F.	STAINLESS STEEL FABRICATOR		STUBBED-UP SIMPLEX OUTLET
M.C.	MECHANICAL CONTRACTOR	[▲]	STUBBED-UP DATA OUTLET
LOC.	LOCATE	$	WALL MOUNTED SWITCH
(E1)	ELECTRICAL SCHEDULE REFERENCE, REFER TO FS3.2 FOR SCHEDULE		
(1) [1]	KEY / SHEET NOTE		
	DUPLEX CONVENIENCE OUTLET 115V/1Ø UNLESS OTHERWISE NOTED		
	SIMPLEX OUTLET SEE SCHEDULE FOR VOLTAGE		
	CEILING MOUNTED, VAPOR-PROOF LIGHT FIXTURE W/ JUNCTION BOX, 115V/1Ø UNLESS OTHERWISE NOTED (WALK-IN REFRIGERATOR)		

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SHEET NUMBER FS3.1

ELECTRICAL SCHEDULE

ELEC. NO.	ITEM NO.	DESCRIPTION	QTY.	VOLT.	PH	DIRECT	PLUG	NEMA	LOAD WATT	LOAD AMPS. DRAW	LOAD HP	OUTLET HEIGHT	REMARKS	NOTE(S)
E1	1	AIR CURTAIN	1EA.	120	1	X	-	-	-	9.0	1	+86	PROVIDE J-BOX IN WALL INSTALL DOOR LIMIT SWITCH FOR INSTANT ON/OFF SWITCH BY F.S.E.C SEE DETAIL K/FS8.1	
E2	5	REACH-IN REFRIGERATOR	1EA.	120	1	-	X	5-15P	-	3.8	1/4	+88"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	
E3	6	DOUBLE STACK CONVECTION OVEN	2EA.	120	1	-	X	5-15P	-	6	-	+20" / +51"	PROVIDE DUPLEX RECEPTACLE IN WALL FLUSH FACE WITH S/S WALL LINING UNIT PROVIDED WITH CORD AND PLUG SET	4
E4	43	CASHIER STATION (DATA) VERIFY W/ DISTRICT FURNISHED POS UNIT	1EA.	120	1	-	X	5-15P	-	5.0	-	+0"	PROVIDE (1) DATA PLUG AND (1) DUPLEX RECEPTACLE (VERIFY W/ DISTRICT POS REQ.)	
E5	8.1	FIRE SYSTEM ANSUL CONTROL AUTOMAN PANEL,	1EA.	120	1	X	-	-	-	20	-	+104"	120V/1-20AMP @ ANSUL CONTROL PANEL	
E6	8.1	FIRE SYSTEM (REMOTE PULL STATION)	1EA.	-	-	X	-	-	-	-	-	+48"	EMPTY FLUSH MT'D. OCTAGONAL BOX (REMOTE PULL) SEE DETAIL FS5.3 AND FS5.4	5
E7	10	COUNTER MIXER	1EA.	120	1	-	X	5-15P	-	8	1/2	+54"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	
E8	13	RESTAURANT GAS RANGE	1EA.	120	1	-	X	5-15P	-	.1	-	+24"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	4
E9	-	SPARE NOT USED	-	-	-	-	-	-	-	-	-	-	-	
E10	-	SPARE NOT USED	-	-	-	-	-	-	-	-	-	-	-	
E11	17	WALK-IN REFRIGERATOR (BOX)	1EA.	120	1	X	-	-	-	2.0	-	+88"	(1) 39W LED CLG. MT'D. LIGHT FIXTURES (1) 11.5W LED LIGHT FIXTURE AT DOOR. CONTRACTOR TO PROVIDE ALL INTERCONNECTIONS.	1
E12	17	WALK-IN REFRIGERATOR (COIL)	1EA.	120	1	X	-	-	-	2.7	-	+74"	CONNECT TO UNIT ELECTRICAL CONNECTION AT COIL INSIDE WALK-IN REFRIGERATOR. SEE DETAIL H/F7.1	
E13	18	WALK-IN FREEZER (BOX)	1EA.	120	1	X	-	-	-	5.0	-	+88"	(1) 39W LED CLG. MT'D. LIGHT FIXTURES (1) 11.5W LED LIGHT FIXTURE AT DOOR. 250W DOOR HEATER, 20W P.R.P, 100W WINDOW HEATER EC. TO PROVIDE ALL INTERCONNECTIONS.	1
E14	18	WALK-IN FREEZER (COIL)	1EA.	208/240	1	X	-	-	-	26.1	-	+74"	CONNECT TO UNIT ELECTRICAL CONNECTION AT COIL INSIDE WALK-IN FREEZER. SEE DETAIL H/F7.1	2
E15	23	RESTAURANT GAS RANGE	3EA.	120	1	-	X	5-15P	-	.1	-	+24"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	4
E16	-	SPARE NOT USED	-	-	-	-	-	-	-	-	-	-	-	
E17	47	REMOTE REFRIGERATION UNIT LOCATED ON ROOF	1EA.	208/240	3	X	-	-	-	18.4	-	+48"	STUB UP TO ELECTRICAL DISCONNECT PROVIDED BY REFRIGERATION MFG. REFER TO A/FS7.1	
E18	24.1	FIRE SYSTEM (REMOTE PULL STATION)	1EA.	-	-	X	-	-	-	-	-	+48"	EMPTY FLUSH MT'D. OCTAGONAL BOX (REMOTE PULL) SEE FS5.3 AND FS5.4	5
E18.1	24.1	FIRE SYSTEM ANSUL CONTROL AUTOMAN PANEL,	1EA.	120	1	X	-	-	-	20	-	+104"	120V/1-20AMP @ ANSUL CONTROL PANEL	
E19	26	HIGH TEMP WAREWASHER (TANK HEAT/MOTORS)	1EA.	208/240	3	X	-	-	-	24.9	-	+18"	PROVIDE J-BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION	
E20	26	HIGH TEMP WAREWASHER (BOOSTER HEATER)	1EA.	208/240	3	X	-	-	-	20.4	-	+18"	PROVIDE J-BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION	
E21	34	HEATED HOLDING/PROOFING CABINET	1EA.	120	1	-	X	5-20P	-	16.7	-	+48"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	
E22	36	REACH-IN REFRIGERATOR	1EA.	120	1	-	X	5-15P	-	3.8	-	+88"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	
E23	38	COFFEE BREWER	1EA.	120/208-240	3	X	-	-	-	22.4	-	+54"	PROVIDE J-BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION	
E24	39	UNDER COUNTER REFRIGERATOR	1EA.	120	1	-	X	5-15P	-	2	-	+24"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	
E25	40	BLENDER	2EA	120	1	-	X	5-15P	-	15	-	+54"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	
E26	41	EXPRESSO MACHINE	1EA.	120	1	-	X	L6-30P	-	30	-	+54"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	
E27	42	REFRIGERATOR AIR CURTAIN TYPE	1EA.	120	1	-	X	5-15P	-	10.4	-	+24"	PROVIDE DUPLEX RECEPTACLE IN WALL UNIT PROVIDED WITH CORD AND PLUG SET	
E28	46	ICE MAKER W/BIN	1EA.	120	1	X	-	-	-	12.2	-	-	PROVIDE J-BOX IN WALL, CONNECT TO UNIT ELECTRICAL CONNECTION	

ELECTRICAL KEYNOTES:

1. INTERCONNECT TEMP ALARM WITH MECHANICAL ALARM SYSTEM
2. DRAIN LINE HEATER CONNECTED TO COIL. F.S.E.C TO PROVIDE AND CONNECT TO COIL
3. LIGHTS TO ONE PRE-WIRED CONN. POINT ON HOOD PRE-WIRED BY FACTORY
4. ELECTRICAL CONTRACTOR TO PROVIDE INTERLOCK WIRING FROM FIRE PROTECTION SYSTEMS TO ELEC. SHUNT TRIP BREAKERS.
5. ELECTRICAL CONTRACTOR TO PROVIDE EMPTY FLUSH MT'D. OCTAGONAL BOX @ +48" AFF. W/ EMPTY CONDUIT TO +2" ABOVE CEILING.
6. E.C TO INSTALL ENERGY MANAGMENT CONTROL PANEL PROVIDED BY HOOD MANUFACTURE FOR HOOD LIGHTS AND FAN CONTROLS

EXHAUST HOOD ELECTRICAL SCHEDULE

ELEC. NO.	ITEM NO.	DESCRIPTION	QTY.	VOLT.	PH	DIRECT	PLUG	NEMA	LOAD WATT	LOAD AMPS. DRAW	LOAD HP	OUTLET HEIGHT	REMARKS	NOTE(S)
EH1	8	EXHAUST HOOD (ENERGY MANAGEMENT SYSTEM LIGHTS)	1EA.	120	1	X	-	-	-	15	-	+106	PROVIDE J-BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION (REFER TO FS5.6 FOR ELECTRICAL CONNECTION)	4 3
EH2	24	EXHAUST HOOD (ENERGY MANAGEMENT SYSTEM LIGHTS)	1EA.	120	1	X	-	-	-	15	-	+106	PROVIDE J-BOX IN WALL CONNECT TO UNIT ELECTRICAL CONNECTION (REFER TO FS5.6 FOR ELECTRICAL CONNECTION)	4 3

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CTE - CULINARY ARTS
11645 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
FOODSERVICE EQUIPMENT
ELECTRICAL SCHEDULE

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.011

DATE 12/20/2019

SHEET NUMBER FS3.2

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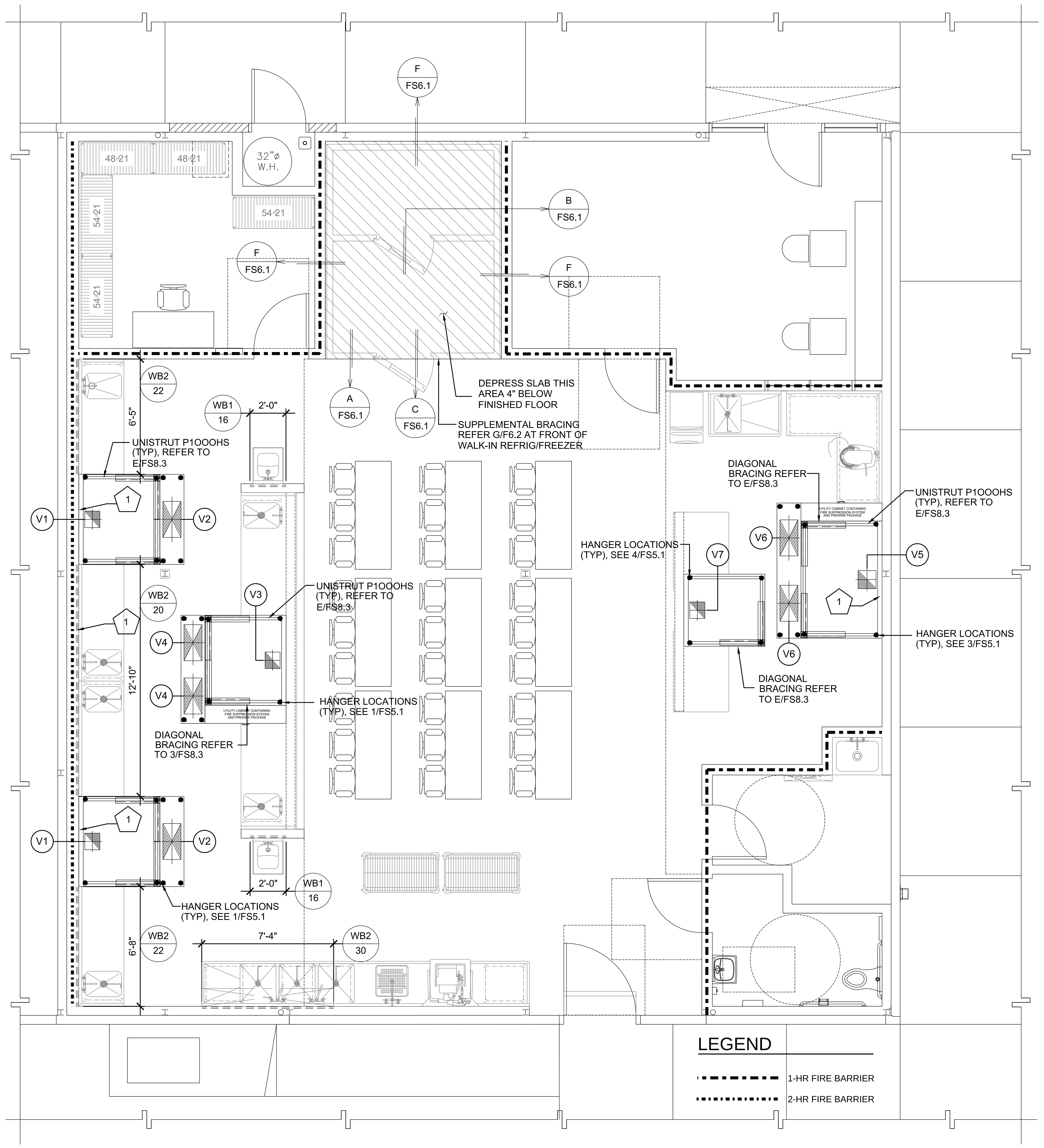
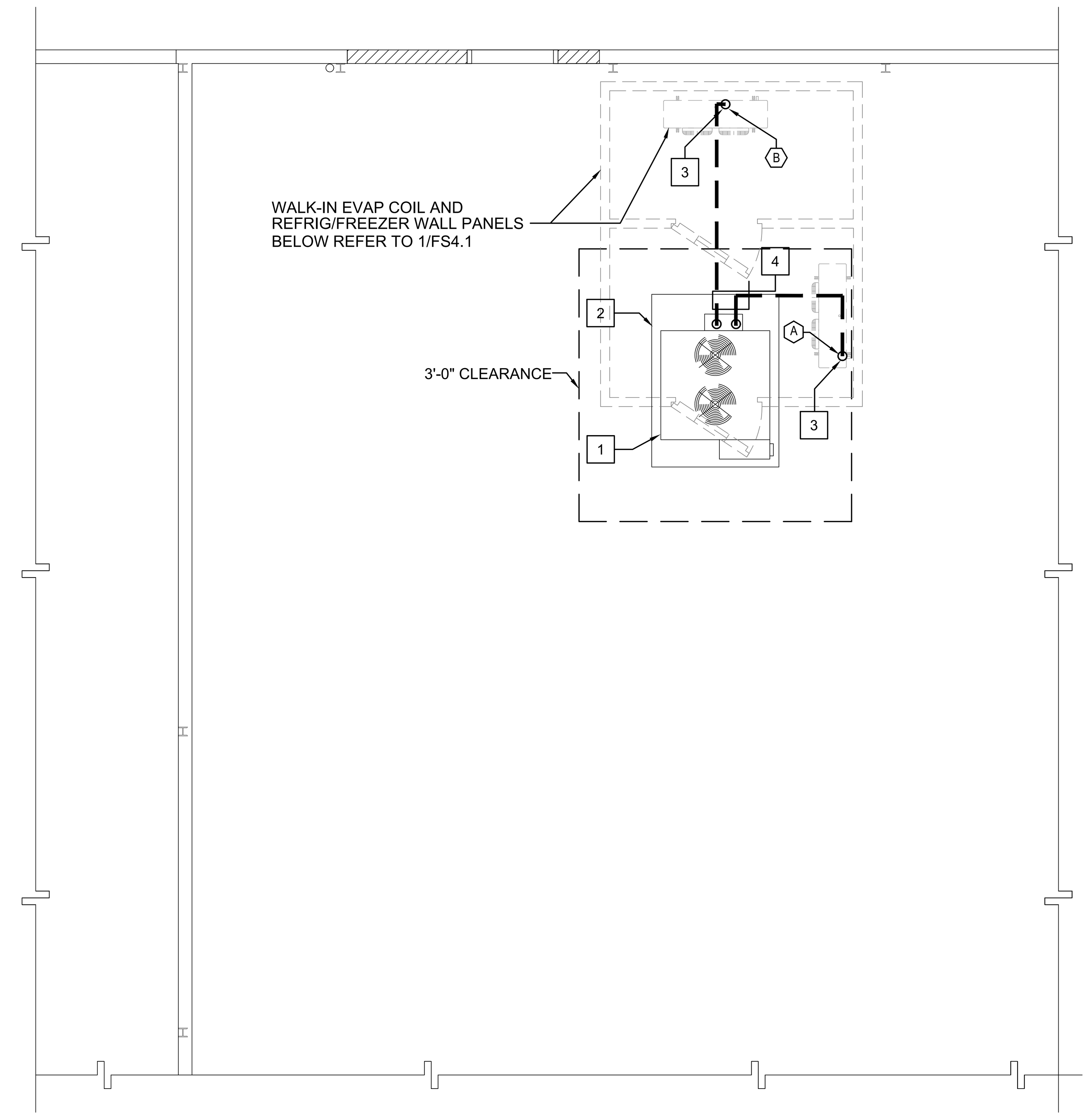


FOODSERVICE EQUIPMENT MECHANICAL FLOOR PLAN

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

1 FS4.1



FOODSERVICE PARTIAL ROOF REFRIGERATION PLAN

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

2 FS4.1

FOODSERVICE MECHANICAL LEGEND

ABREV./SYMB.	DESCRIPTION
F.S.E.C	FOODSERVICE EQUIPMENT CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
S.F.	STAINLESS STEEL FABRICATOR
G.C.	GENERAL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
CFM	CUBIC FEET PER MINUTE
SP	STATIC PRESSURE
	EXHAUST DUCT CONNECTION
	SUPPLY DUCT CONNECTION
V#	VENTILATING SCHEDULE REFERENCE REFER TO FS84.2 FOR SCHEDULE
	VENT TO ROOF
1	KEYNOTE SYMBOL (SEE SHEET NOTES FS4.1)
	ROUND DUCT CONNECTION
	CONCRETE CURB
	CONCRETE DEPRESSION
# TYPE / # ITEM	BLOCKING TYPE REFER TO FS4.1

MECHANICAL SHEET NOTES

1. 18 GA. STAINLESS STEEL WALL LINING PANELS (MINIMUM WIDTH TO BE 36") OVER NON COMBUSTIBLE WALL WALL LINING SHALL BE FABRICATED WITH VERTICAL FLUTES EVERY 6" AS SHOWN.

FOODSERVICE REFRIGERATION LEGEND

ABREV./SYMB.	DESCRIPTION
	CONDUIT FOR REFRIGERATION LINES
	REMOTE COMPRESSOR ON REFRIGERATION RACK
A	REFRIGERATION SYSTEM SEE SCHEDULE ON SHEET FS7.1
	REFRIGERATION LINE RUN FROM REFRIGERATION RACK
	REMOTE REFRIGERATED BASE AND/OR EQUIPMENT
S/C	SELF-CONTAINED REFRIGERATED BASE AND/OR EQUIPMENT
	ACCESS PULL-BOX FOR REFRIG. LINES IN THE WALL
1	KEYNOTE SYMBOL SEE SHEET NOTES FS4.1

MECHANICAL & REFRIGERATION SHEET NOTES

1. REMOTE REFRIGERATION SYSTEM REFER TO FS7.1 EQUIPMENT LOCATED ON BUILDING ROOF
2. REMOTE REFRIGERATION EQUIPMENT PLATFORM REFER TO F/FS7.1
3. REFRIGERATION LINES STUB-DOWN FROM ABOVE, PENETRATE CEILING OF WALK-IN TO EVAP COIL REFER DETAIL D/FS7.2
4. REFRIGERATION LINES RUN ABOVE CEILING LINE (UNISTRUT TRAPEZE) EXTEND FROM REFRIGERATION RACK TO DROP-DOWN POINT ABOVE WALK-IN REFRIGERATOR/ FREEZER COIL (REFRIG. LINE RUN ROUTES SHOWN ARE SCHEMATIC ONLY) REFRIGERATION LINE ROUTES WILL BE FIELD VERIFIED WITH STRUCTURE REFER TO G/FS8.2

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NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION CTE - CULINARY ARTS

11645 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
FOODSERVICE EQUIPMENT MECHANICAL FLOOR PLAN

SCALE:

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SHEET NUMBER FS4.1

VENTILATING REQUIREMENTS

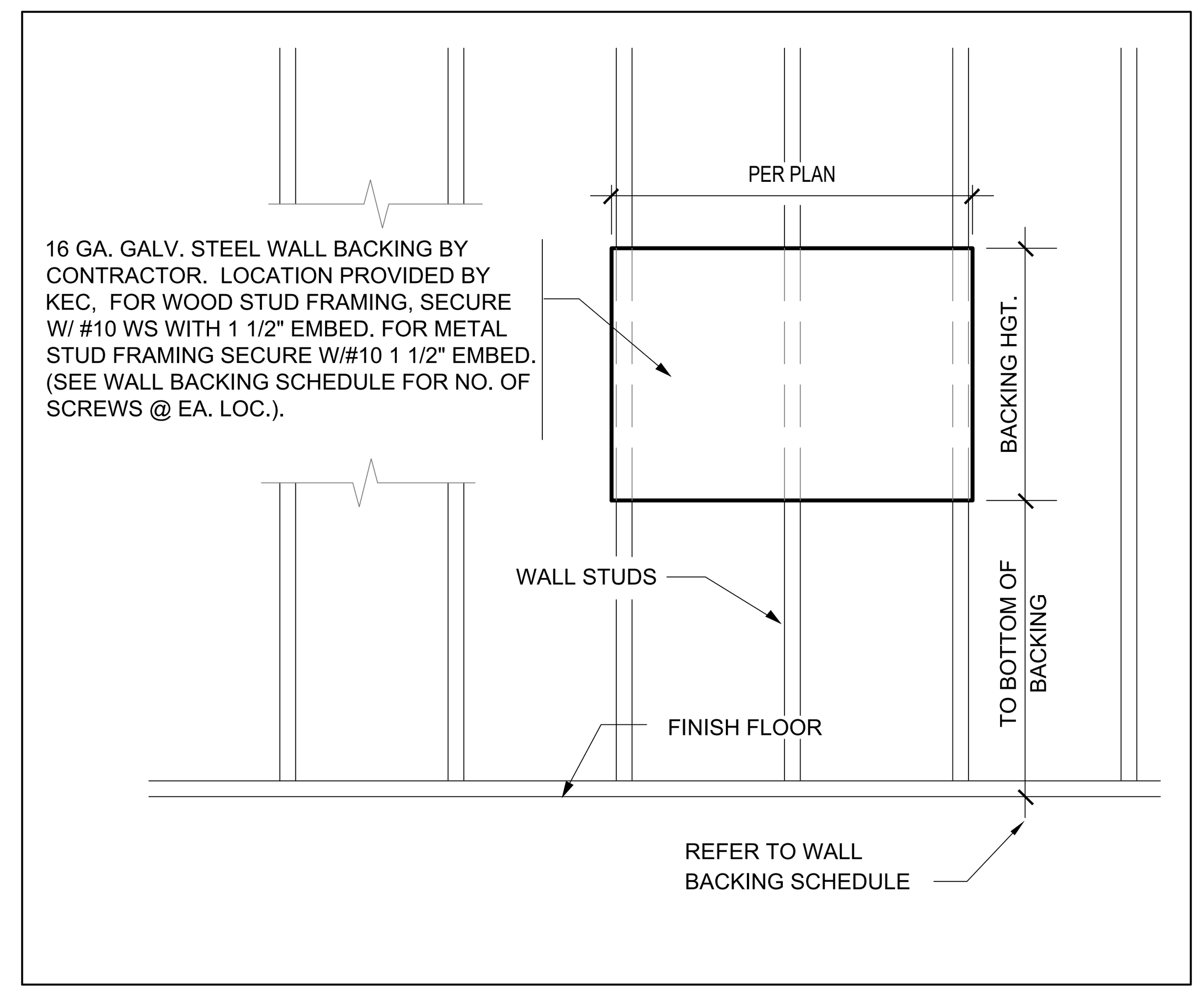
DUCT NO.	ITEM NO.	DESCRIPTION	ITEM QTY.	RISER SIZE ROUND	WIDTH	LENG.	CFM	S.P.-WC"	OUTLET HEIGHT	REMARKS
V1	24	EXHAUST DUCT EXHAUST HOOD (ITEM 24)	2EA.		10"	11"	1200	-0.614"	+108"	MAKE DUCT CONNECTION AT HOOD COLLAR REFER TO 1/FS5.1 FOR EXHAUST HOOD DETAILS
V2	24	SUPPLY DUCT EXHAUST HOOD (ITEM 24)	2EA.		12"	24"	792	0.235"	+108"	MAKE DUCT CONNECTION AT HOOD COLLAR REFER TO 1/FS5.1 FOR EXHAUST HOOD DETAILS
V3	24	EXHAUST DUCT EXHAUST HOOD (ITEM 24)	1EA.		10"	11"	1200	-0.614"	+108"	MAKE DUCT CONNECTION AT HOOD COLLAR REFER TO 2/FS5.1 FOR EXHAUST HOOD DETAILS
V4	24	SUPPLY DUCT EXHAUST HOOD (ITEM 24)	2EA.		12" 12"	24" 24"	444 444	0.092" 0.092"	+108" +108"	
V5	8	EXHAUST DUCT EXHAUST HOOD (ITEM 8)	1EA.		12"	12"	1560	-0.666"	+108"	MAKE DUCT CONNECTION AT HOOD COLLAR REFER TO 3/FS5.1 FOR EXHAUST HOOD DETAILS
V6	8	SUPPLY DUCT EXHAUST HOOD (ITEM 8)	2EA.		12" 12"	24" 24"	663 663	0.195" 0.195"	+108" +108"	
V7	14	EXHAUST DUCT EXHAUST HOOD (ITEM 14)	1EA.		10"	11"	1200	-0.737"	+108"	MAKE DUCT CONNECTION AT HOOD COLLAR REFER TO 4/FS5.1 FOR EXHAUST HOOD DETAILS

COOKING EXHAUST HOOD NOTES

1. - EACH AREA CONTAINING COOKING EXHAUST HOOD(S) WILL HAVE 80% MECHANICAL MAKE-UP AIR PROVIDED IN THE VOLUME OF THE AIR BEING EXHAUSTED.
2. - MAKE-UP AIR SHALL BE DELIVERED IN THE PROXIMITY OF THE EXHAUST HOOD(S) IN A MANNER NOT TO CREATE UNDUE AIR TURBULENCE IN THE WORKING AREAS.
3. - COOKING HOOD(S) EXHAUST AND MAKE-UP AIR SYSTEM(S) WILL BE CONNECTED BY AN ELECTRICAL INTER-LOCKING SWITCH.
4. - MAKE-UP AIR INTAKE MUST CLEAR AIR EXHAUST DISCHARGE BY A MINIMUM OF TEN (10) FEET, OR AS REQUIRED BY CODE(S).
5. - LOCATION OF COOKING HOOD EXHAUST DUCT(S) AND MAKE-UP AIR SYSTEM DUCT(S) ARE TO BE VERIFIED AT THE JOB SITE.
6. - IF REQUIRED BY LOCAL CODE(S), MAKE-UP AIR SYSTEM(S) SHALL BE CAPABLE OF DELIVERING TEMPERED AIR AT 70 DEGREES F..
7. - CONNECTING DUCTS FROM THE EXHAUST VENTILATORS TO THE EXHAUST AND/OR MAKE-UP AIR FANS SHALL BE SUPPLIED AND INSTALLED WITH ALL FINAL CONNECTIONS.
8. - PERFORMANCE TESTING FOR THE OPERATION OF THE TYPE 1 EXHAUST HOOD PER U.M.C. IS REQUIRED
9. - EXTRACTOR HOODS SHALL COMPLY TO THE C.M.C 2016, NFPA-96, U.L, N.S.F, AND ALL LOCAL CODES AN ORDINANCES.

WALL BACKING NOTES

1. - WALL BACKING TO BE 16 GAUGE GALV. STEEL IN LENGTH AND HEIGHT AS SHOWN ON DRAWINGS.
2. - ALL WALL BACKING TO BE IN FURNISHED AND INSTALLED BY CONTRACTOR
3. - FOOD SERVICE EQUIPMENT CONTRACTOR IS TO FURNISH CONTRACTOR WITH DETAILED DRAWINGS SHOWING ALL WALL BACKING LOCATION AND SIZE.
4. - WALL BACKING AS SHOWN IS MINIMUM, EXTEND BACKING TO NEXT STUD EACH DIRECTION AS NECESSARY



WALL BACKING SCHEDULE

	APPLICATION	BOTTOM OF BACKING	BACKING HGT.	FASTENERS PER STUD	ANCHORAGE DETAIL
WB1 ITEM	HAND SINK	+32" AFF	24" HIGH	4	E/FS8.2
WB2 ITEM	WALL SHELF	+48" AFF	12" HIGH	4	H/FS8.1
WB3 ITEM	DRY STO. SHELVING	+69"AFF	12" HIGH	2	F/FS8.2
WB4 ITEM	COLD STO. SHELVING	+16"AFF / +69"AFF	12" HIGH	2 PER POST BRACKET	I/FS8.1

NOTES:

1. BACKING TO BE 16 GA. G.I. or C.R.S.
2. REFER TO 1/FS4.1 FOR WALL BACKING LOCATIONS
3. DRY STO. SHELVING, FASTEN SHELVING TO BACKING WITH #14 SMS.
4. COLD STO. SHELVING, 18GA G.I. STRAP FOAMED IN WALL BY MANUFACTURER. FASTEN SHELVING TO STRAP WITH #14 SMS.

WALL BACKING DETAIL

SCALE : NONE

1
FS4.2

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SHEET TITLE:
FOODSERVICE EQUIPMENT MECHANICAL SCHEDULE AND DETAILS

SCALE:

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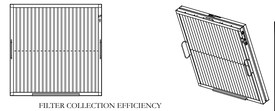
SHEET NUMBER FS4.2

DATE 12/20/2019

CAPTRATE SOLO FILTERS

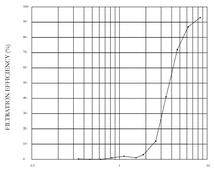


CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH

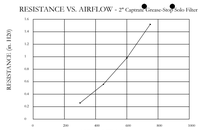
NFPA #96
NSF STANDARD #2
UL STANDARD #1046
INT. MECH. CODE (IMC)

FILTER COLLECTION EFFICIENCY

2" Captrate Grease-Stop Solo Filter



RESISTANCE VS. AIRFLOW - 2" Captrate Grease-Stop Solo Filter



SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS CONSTRUCTED OF 430 STAINLESS STEEL, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNELS).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

***GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 90% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

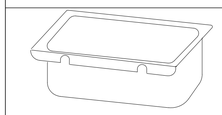
FILTER INFORMATION – CAPTRATE GREASE-STOP SOLO

NOMINAL SIZE (H x W)	ACTUAL DIMENSIONS (H x W x D)	FREE AREA (SQ. FEET)	WEIGHT (POUNDS)	VELOCITY (FEET PER MINUTE)	STATIC PRESSURE (WATER GAUGE)
20 x 20	19-5/8" x 19-5/8" x 1-7/8"	2.28	11	100	0.25
20 x 16	19-5/8" x 15-5/8" x 1-7/8"	1.78	8.9	125	0.35
16 x 20	15-5/8" x 19-5/8" x 1-7/8"	1.78	9.1	150	0.45
16 x 16	15-5/8" x 15-5/8" x 1-7/8"	1.39	7.4	175	0.75
12 x 20	11-5/8" x 19-5/8" x 1-7/8"	1.23	6.8	200	0.90
12 x 16	11-5/8" x 15-5/8" x 1-7/8"	0.96	5.6	225	1.00
10 x 20	9-5/8" x 19-5/8" x 1-7/8"	1.00	5.6	250	1.30
10 x 16	9-5/8" x 15-5/8" x 1-7/8"	0.78	4.6	275	1.50

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:

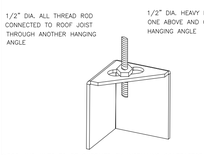
- NFPA #96
- NSF
- ETL Listed
- CALIFORNIA MECHANICAL CODE
- INTERNATIONAL MECHANICAL CODE

BUILDING CODES



Grease cup will be supported by 2 studs on the inside wall of the hood. The grease will drain through a concealed grease trough and into this removeable cup.

1/2 Pint Grease Cup Detail



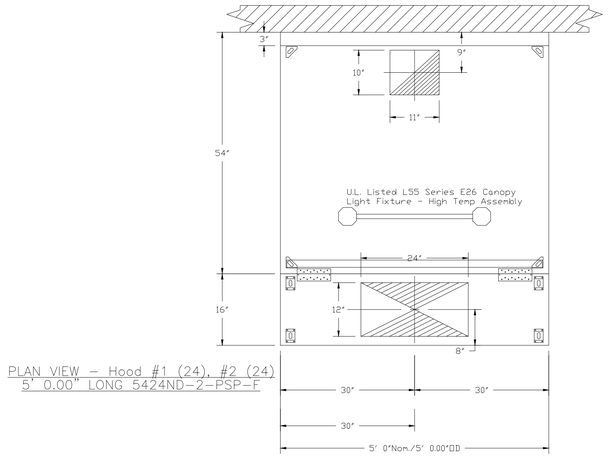
ND-2 HANGING ANGLE DETAIL

HANGING ANGLES WILL BE LOCATED IN THE FOLLOWING LOCATIONS FOR WALL CANOPIES

HOOD STYLE	DIM FROM REAR	DIM FROM FRONT (24" High Hood)	DIM FROM SIDES (24" High Hood)
ND-2 (-WI) Exhaust only	4.125"	2.25"	2.25"
VHB (-B)	2.25"	2.25"	2.25"

ALL OTHER HOOD MODELS CONTACT CAPTIVE AIRE FOR HANGING ANGLE LOCATIONS

HANGING ANGLE LOCATIONS

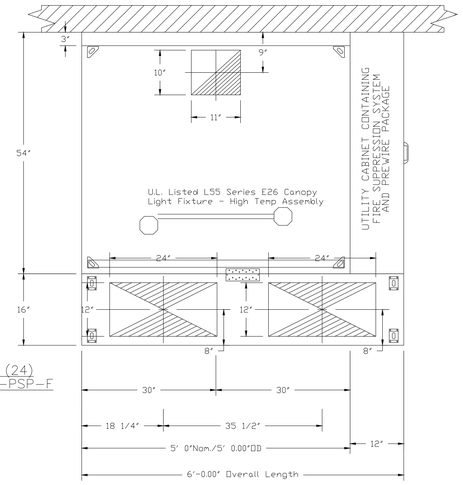


PLAN VIEW – Hood #1 (24), #2 (24)
5' 0.00" LONG 5424ND-2-PSP-F

EXHAUST HOOD No.1, No.2 - PLAN VIEW (ITEM 24A)

1 FS5.1

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

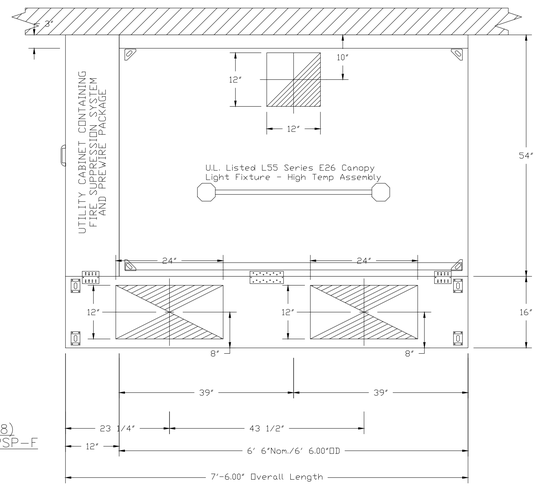


PLAN VIEW – Hood #3 (24)
5' 0.00" LONG 5424ND-2-PSP-F

EXHAUST HOOD No.3 - PLAN VIEW (ITEM 24B)

2 FS5.1

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

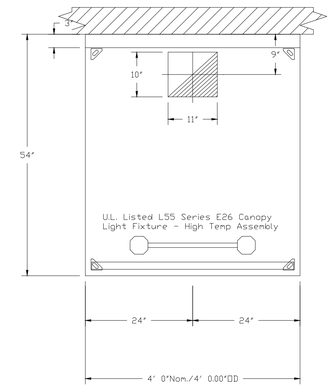


PLAN VIEW – Hood #4 (8)
6' 6.00" LONG 5424ND-2-PSP-F

EXHAUST HOOD No.4 - PLAN VIEW (ITEM 8)

3 FS5.1

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



PLAN VIEW – Hood #5 (14)
4' 0.00" LONG 5424ND-2WI

EXHAUST HOOD No.5 - PLAN VIEW (ITEM 14)

4 FS5.1

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

HOOD INFORMATION – Job#3851130

HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM								TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG.	
					TOTAL EXH. CFM	RISER(S)									END TO END	ROW
						WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.				
1	24	5424 ND-2-PSP-F	5' 0"	600 Deg.	1200	10"	11"	4"		1200	1571	-0.614"	792	304 SS 100%	ALONE	ALONE
2	24	5424 ND-2-PSP-F	5' 0"	600 Deg.	1200	10"	11"	4"		1200	1571	-0.614"	792	304 SS 100%	ALONE	ALONE
3	24	5424 ND-2-PSP-F	5' 0"	600 Deg.	1200	10"	11"	4"		1200	1571	-0.614"	888	304 SS 100%	ALONE	ALONE
4	8	5424 ND-2-PSP-F	6' 6"	600 Deg.	1560	12"	12"	4"		1560	1560	-0.666"	1326	304 SS 100%	ALONE	ALONE
5	14	5424 ND-2WI	4' 0"	600 Deg.	1200	10"	11"	4"		1200	1571	-0.737"	0	304 SS 100%	ALONE	FRONT

PERFORATED SUPPLY PLENUM(S)

HOOD NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG.	DIA.	CFM	S.P.
1	24	Front	60"	16"	6"	MUA	12"	24"		792	0.235"
2	24	Front	60"	16"	6"	MUA	12"	24"		792	0.235"
3	24	Front	72"	16"	6"	MUA	12"	24"		444	0.092"
						MUA	12"	24"		444	0.092"
4	8	Front	90"	16"	6"	MUA	12"	24"		663	0.195"
						MUA	12"	24"		663	0.195"

HOOD INFORMATION

HOOD NO.	TAG	FILTER(S)					LIGHT(S)			UTILITY CABINET(S)					FIRE SYSTEM PIPING	HOOD HANGING WGHT
		TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY.	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY		
1	24	Captrate Solo Filter	3	20"	16"	85% See Filter Spec.	2	L55 Series E26	NO							YES	301 LBS
2	24	Captrate Solo Filter	3	20"	16"	85% See Filter Spec.	2	L55 Series E26	NO							YES	301 LBS
3	24	Captrate Solo Filter	3	20"	16"	85% See Filter Spec.	2	L55 Series E26	NO	Right	12"x54"x24"	Ansul R102	3.0/3.0	DCV-3111	1 Light 1 Fan	YES	470 LBS
4	8	Captrate Solo Filter	4	20"	16"	85% See Filter Spec.	2	L55 Series E26	NO	Left	12"x54"x24"	Ansul R102	3.0	DCV-2111	1 Light 1 Fan	YES	505 LBS
5	14	Captrate Solo Filter	2	20"	20"	85% See Filter Spec.	2	L55 Series E26	NO							YES	229 LBS

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NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION CTE - CULINARY ARTS

11645 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
FOODSERVICE EQUIPMENT HOOD DETAILS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.011

DATE 12/20/2019

SHEET NUMBER FS5.1

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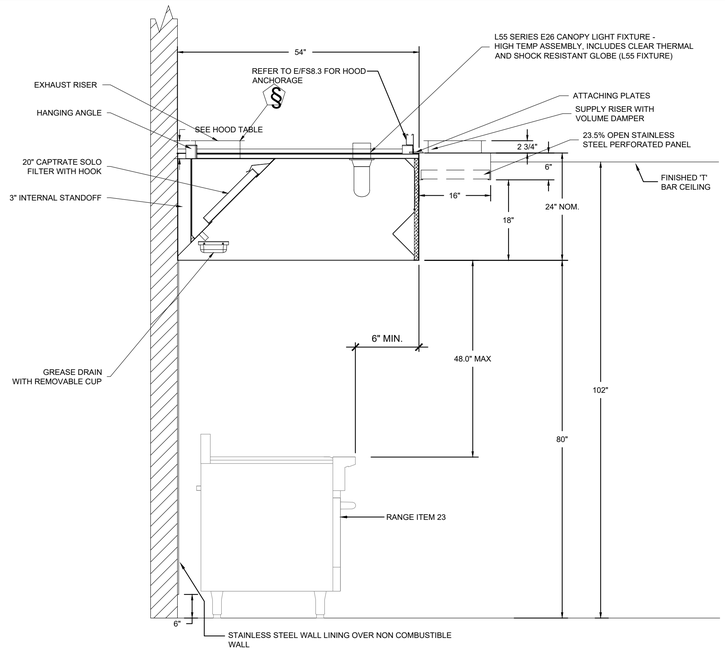
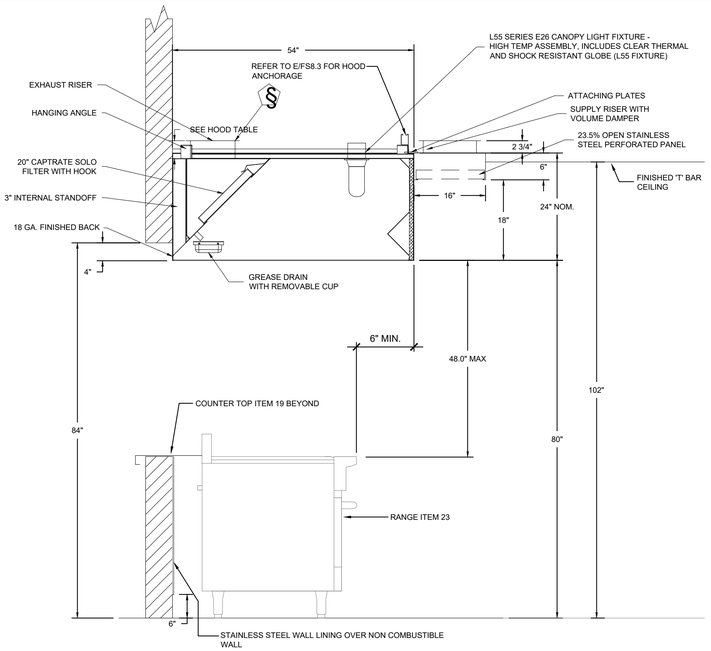


SECTION VIEW - MODEL 5424ND-2-PSP-F
HOOD - #1 (24), #2 (24)

EXHAUST HOOD NO.1, AND No.2 - SECTION

1 FS5.2

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

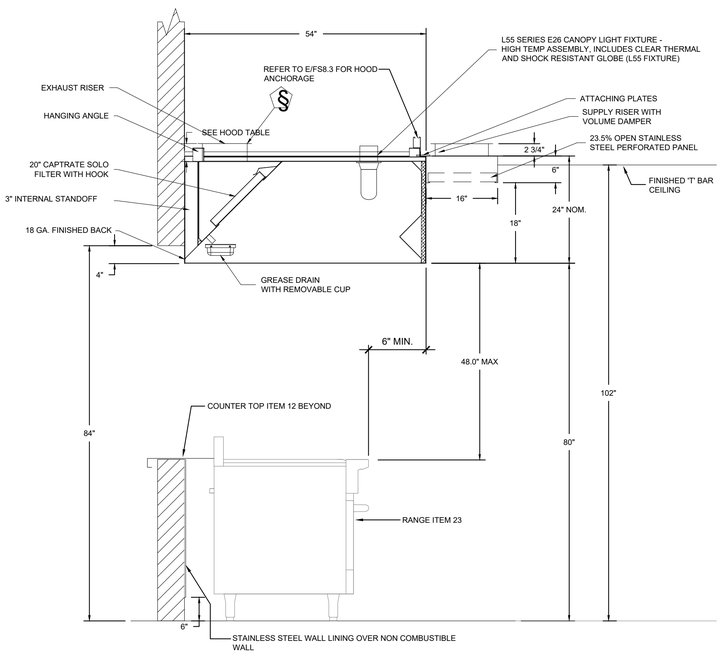


SECTION VIEW - MODEL 5424ND-2-PSP-F
HOOD - #3 (24)

EXHAUST HOOD NO.3 - SECTION

2 FS5.2

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

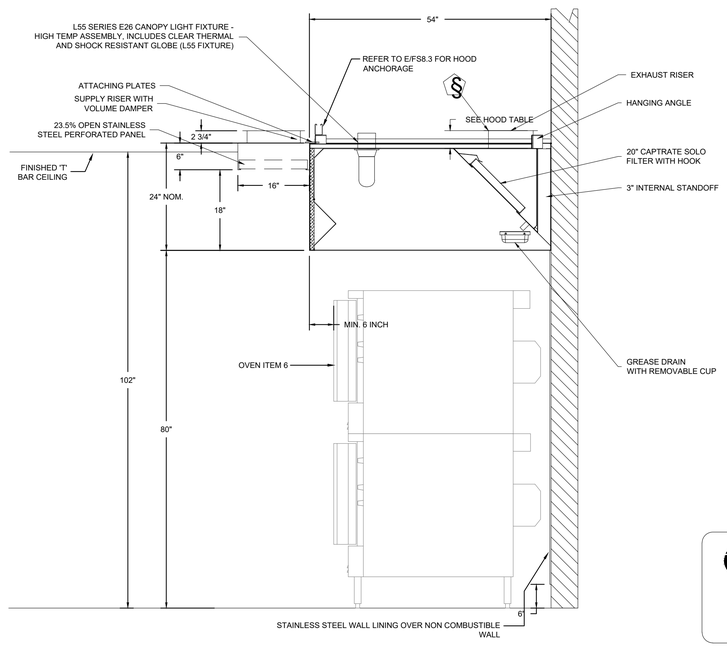


SECTION VIEW - MODEL 5424ND-2-PSP-F
HOOD - #5 (14)

EXHAUST HOOD NO.5 - SECTION

4 FS5.2

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



SECTION VIEW - MODEL 5424ND-2-PSP-F
HOOD - #4 (8)

EXHAUST HOOD NO.4 - SECTION

3 FS5.2

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

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SHEET TITLE:

FOODSERVICE EQUIPMENT HOOD DETAILS

SCALE:

REVISIONS

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3		
4		
5		

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JOB NO. 19.011

DATE 12/20/2019

SHEET NUMBER FS5.2

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LEGEND – FIRE CABINET ANSUL SYSTEM

1A	1.5 GALLON TANK
1B	3 GALLON TANK
2	OEM AUTOMAN RELEASE
3	OEM REGULATED RELEASE
4	OEM REGULATED ACTUATOR
5	ANSULEX LIQUID AGENT (3 GAL.)
6	ANSULEX LIQUID AGENT (1.5 GAL.)
7	CARTRIDGE (101-20)
8	CARTRIDGE (101-10)
9	CARTRIDGE (101-30)
9A	CARTRIDGE (LT-A-101-30)
9B	DOUBLE TANK CARTRIDGE
10	TEST LINK
11	DOUBLE MICROSWITCH
12	HOSE ASSEMBLY
1100	DUCT NOZZLE (430913)
2W	DUCT NOZZLE (419337)
1W	NOZZLE ASSEMBLY (419336)
1F	NOZZLE ASSEMBLY (419333)
1N	NOZZLE ASSEMBLY (419335)
1/2N	NOZZLE ASSEMBLY (419334)
3N	NOZZLE ASSEMBLY (419338)
245	NOZZLE ASSEMBLY (419340)
230	NOZZLE ASSEMBLY (419339)
2120	NOZZLE ASSEMBLY (419343)
290	NOZZLE ASSEMBLY (419342)
260	NOZZLE ASSEMBLY (419341)
28	DETECTOR BRACKET
29	LOW TEMP FUSIBLE LINK
30	HIGH TEMP FUSIBLE LINK
MGV	MECHANICAL GAS VALVE
EGV	ELECTRICAL GAS VALVE
34	REMOTE MANUAL PULL STATION
S	SWIVEL ADAPTOR

Job #: 3851130
Job Name: Nevada Union HS

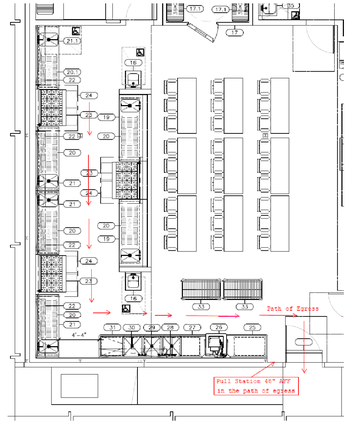
System Size: ANSUL-3.0/3.0-MANIFOLD Total FP required: 18
Hood # 1 5' 0.00" Long x 54" Wide x 24" High
Riser # 1 Size: 10" x 11"
Hood # 1 Metal Blow-Off Caps included.
Hood # 2 5' 0.00" Long x 54" Wide x 24" High
Riser # 1 Size: 10" x 11"
Hood # 2 Metal Blow-Off Caps included.
Hood # 3 5' 0.00" Long x 54" Wide x 24" High
Riser # 1 Size: 10" x 11"
Hood # 3 Metal Blow-Off Caps included.

NOTES
- FIELD PIPE DROPS AS SHOWN
  SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- MAXIMUM 9 ELBOWS IN SUPPLY LINE.

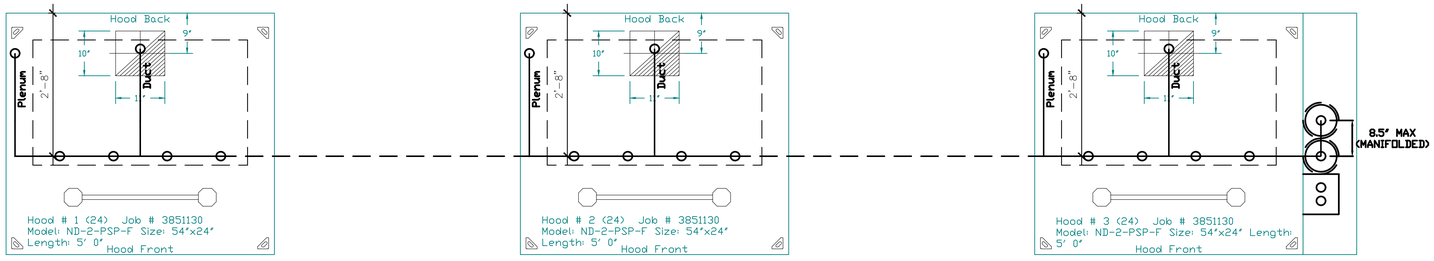
- IF APPLICABLE, PRE-PIPED CHARBROILER DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

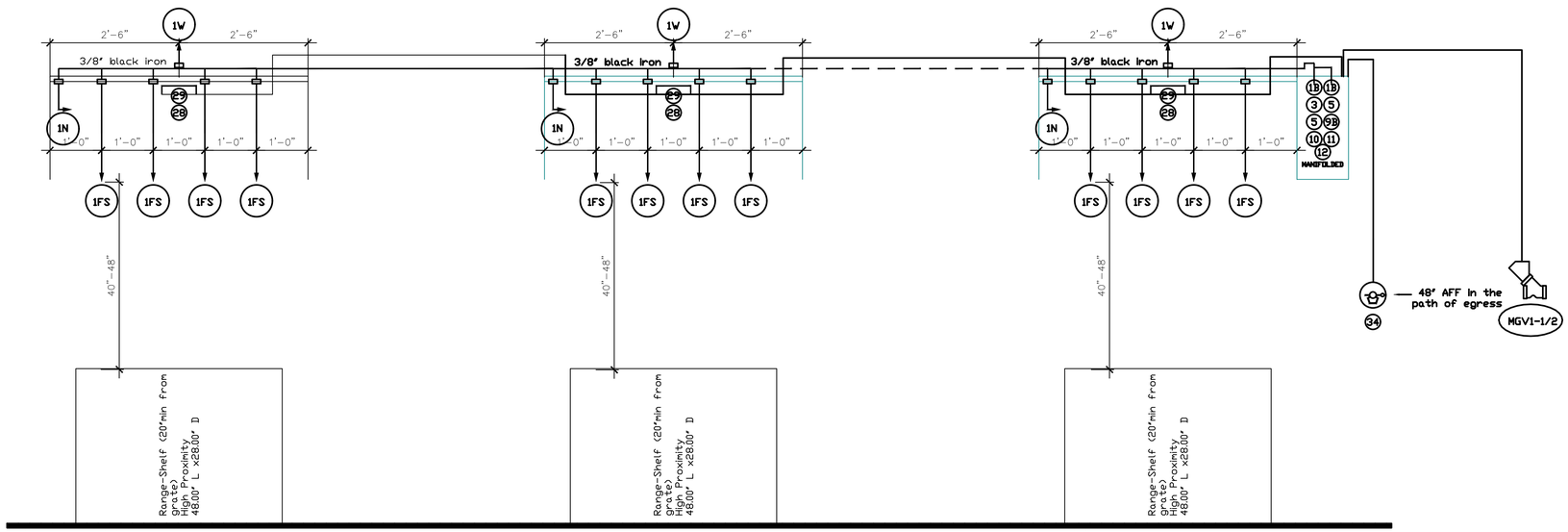
- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS



PATH OF EGRESS PLAN VIEW 3 FS5.3
SCALE : 1/4" = 1'-0"



EXHAUST HOOD FIRE SYSTEM PLAN VIEW 1 FS5.3
SCALE : 1/4" = 1'-0"



EXHAUST HOOD FIRE SYSTEM ELEVATION 2 FS5.3
SCALE : 1/4" = 1'-0"

FIRE SYSTEM NOTES

GENERAL
CUSTOMER RESPONSIBLE FOR ADDITIONAL LABOR AND PARTS CHANGES AS A RESULT OF COOKING EQUIPMENT LAYOUT CHANGES OR MISINFORMATION AFTER RELEASE OF ORDER.

CUSTOMER RESPONSIBLE FOR ADDITIONAL TRIPS BY FIRE SYSTEM DISTRIBUTOR DUE TO JOB SITE DELAYS.

UNION LABOR CHARGES, IF REQUIRED, ARE EXTRA.

GAS VALVE
MECHANICAL OR ELECTRICAL GAS VALVE IS TO BE INSTALLED BY PLUMBING CONTRACTOR. PLUMBING PERMIT REQUIRED FOR GAS VALVE INSTALLATION.

ELECTRIC SHUT OFF
ELECTRICAL COOKING EQUIPMENT MUST BE SHUT OFF WHEN FIRE SYSTEM IS ACTIVATED. ELECTRICAL CONTRACTOR IS TO PROVIDE SHUT OFF CONTACTS OR SHUNT TRIP BREAKERS. THE DESIGN OF THE FIRE SYSTEM SHALL COMPLY WITH S.M.A.C.N.A. GUIDELINES FOR SEISMIC RESTAINTS OF MECHANICAL SYSTEMS. O.S.H.P.D. APPROVED ANCHORAGE R-0010 SUPPORTS AND BRACING OF PIPE & CONDUIT.

IF APPLICABLE TO LOCAL CODE
EXISTING FIRE ALARM SYSTEM MUST BE INTERCONNECTED TO THE ANSUL SYSTEM.

FIRE SUPPRESSION SYSTEM TEST
THE TEST WILL BE CONDUCTED IN FRONT OF A SYSTEM INSPECTOR WITH A NITROGEN CARTRIDGE WITH BALLOONS COVERING THE SYSTEM NOZZLES. THE TEST WILL BE CONDUCTED SIMULATING THE REMOTE AND AUTOMATIC ACTUATION.

REMOTE PULL STATION
4-0 BOX WITH 1/2" KO'S POSITIONED AS SHOWN WITH TABS IN THE UPPER RIGHT AND LOWER LEFT OF BOX. TO BE 48" ABOVE FINISHED FLOOR 1/2" EMT. TO BE 12" ABOVE FINISHED DROP CEILING LINE WITHOUT BENDS OR OFFSETS. ONE 4-0 BOX TO BE PROVIDED FOR EACH REMOTE PULL STATION WHEN TWO REMOTE PULLS ARE MOUNTED SIDE BY SIDE. THE DISTANCE BETWEEN CENTERS SHALL BE NO LESS THAN 7".

INSTALLATION/PIPING NOTES
REGULATED RELEASE ASSEMBLY, REGULATED ACTUATOR ASSEMBLY, AND TANK ENCLOSURE MUST BE LOCATED IN AREAS WHERE AIR TEMPERATURE WILL NOT FALL BELOW 32 DEGREES F OR EXCEED 130 DEGREES F.

1. MOUNT THE REGULATED RELEASE ASSEMBLE AND EACH REGULATED ACTUATOR ASSEMBLY REQUIRED BY COMPLETING THE FOLLOWING STEPS:

A. SELECT A RIGID SURFACE FOR MOUNTING THE ENCLOSURE. THE MOUNTING LOCATIONS MUST ALLOW THE REGULATED RELEASE ASSEMBLY AND THE REGULATED ACTUATOR ASSEMBLY TO BE WITHIN THE LIMITATION OF THE ACTUATION AND EXPELLANT GAS LINE LENGTHS AND MUST BE ABLE TO SUPPORT THE WEIGHT OF THE ASSEMBLY. NOTE: WALL MOUNTED SYSTEMS ONLY.

B. DETACH THE COVER FROM THE ENCLOSURE. REMOVE AGENT TANK FROM ENCLOSURE AND THE EXPELLANT GAS LINE HOSE FROM THE TANK/ADAPTOR ASSEMBLY.

C. SECURE ENCLOSURE BOX TO SELECTED MOUNTING LOCATION USING THE FOUR MOUNTING HOLES. USE APPROPRIATE TYPE OF FASTENERS DEPENDING ON THE MOUNTING SURFACE. WALL MOUNTED SYSTEMS.

SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY C.A.S. OR FIRE DISTRIBUTOR.

ALL PIPE FOR 1.5/2.4 GALLON SYSTEM IS 1/4".

ALL PIPE FOR 3.0/3.5 GALLON SYSTEM IS 3/8".

ALL PIPE SHALL BE BLACK IRON SCHEDULE-40.

ALL EXPOSED PIPE SHALL BE CHROME SLEEVED.

NOZZLES SHALL BE A MAXIMUM OF 50" ABOVE SURFACE OF COOKING EQUIPMENT.

18 Flowpoint used on an 22FP UL300 6 gallon Ansul R102 system

Flowpoint Chart

Nozzle	FP	QTY	TTL FP
1W	1	3	3
1N	1	3	3
1FS	1	12	12
Total			18FP

System Designed by
Matt Eidson
Ansul Certified Designer
Certificate valid until
10/2019

ANSUL
A Tyco International Company

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GRASS VALLEY, CA 95945

SHEET TITLE:
FOODSERVICE EQUIPMENT FIRE SYSTEM DETAILS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.011
DATE 12/20/2019
SHEET NUMBER FS5.3
75 of 89

NOTES
- FIELD PIPE DROPS AS SHOWN
  SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- MAXIMUM 9 ELBOWS IN SUPPLY LINE.

- IF APPLICABLE, PRE-PIPED CHARBROILER DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS

Job #: 3851130
Job Name: Nevada Union HS

System Size: ANSUL-3.0 Total FP required: 8
Hood # 4 6' 6.00" Long x 60" Wide x 24" High
Riser # 1 Size: 13" x 13"
Hood # 4 Metal Blow-Off Caps included.
Hood # 5 3' 0.00" Long x 54" Wide x 24" High
Riser # 1 Size: 8" x 8"
Hood # 5 Metal Blow-Off Caps included.

LEGEND – FIRE CABINET ANSUL SYSTEM

1A	1.5 GALLON TANK
1B	3 GALLON TANK
2	OEM AUTOMAN RELEASE
3	OEM REGULATED RELEASE
4	OEM REGULATED ACTUATOR
5	ANSULEX LIQUID AGENT (3 GAL.)
6	ANSULEX LIQUID AGENT (1.5 GAL.)
7	CARTRIDGE (101-20)
8	CARTRIDGE (101-10)
9	CARTRIDGE (101-30)
9A	CARTRIDGE (LT-A-101-30)
9B	DOUBLE TANK CARTRIDGE
10	TEST LINK
11	DOUBLE MICROSWITCH
12	HOSE ASSEMBLY
1100	DUCT NOZZLE (430913)
2W	DUCT NOZZLE (419337)
1W	NOZZLE ASSEMBLY (419336)
1F	NOZZLE ASSEMBLY (419333)
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30	HIGH TEMP FUSIBLE LINK
MGV	MECHANICAL GAS VALVE
EGV	ELECTRICAL GAS VALVE
34	REMOTE MANUAL PULL STATION
S	SWIVEL ADAPTOR

General Notes:

1: All Installation procedures are in compliance with manufacturer's specifications and in accordance with NFPA17A (2016) and NFPA96 (2016) standards.

2: Remote pull station is mounted no higher than 48" from finished floor and in path of egress

3: The hood extinguishing system must be interconnected to the building alarm system

4: Automatic fuel shut down device(s) shall shut down all sources of fuel under the hood.

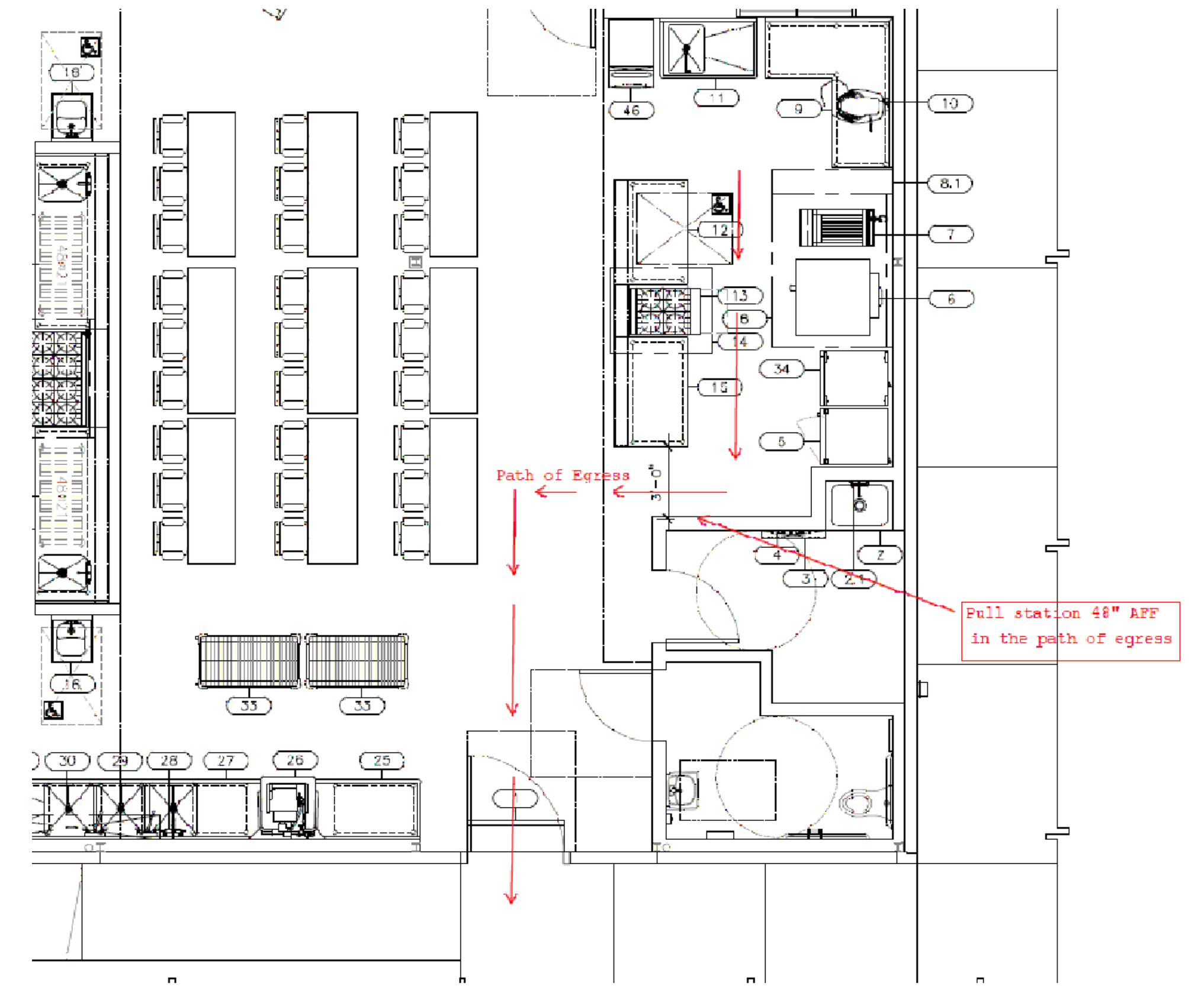
5: All electrical under the hood shall shut down upon activation

6: Exhaust fan is to stay on and make up air must shut down upon system activation

7: A K Class rated fire extinguisher accessible within 30 foot unobstructed path from cooking equipment is required

8: System to be test fired and witnessed by local fire authorities upon completion.

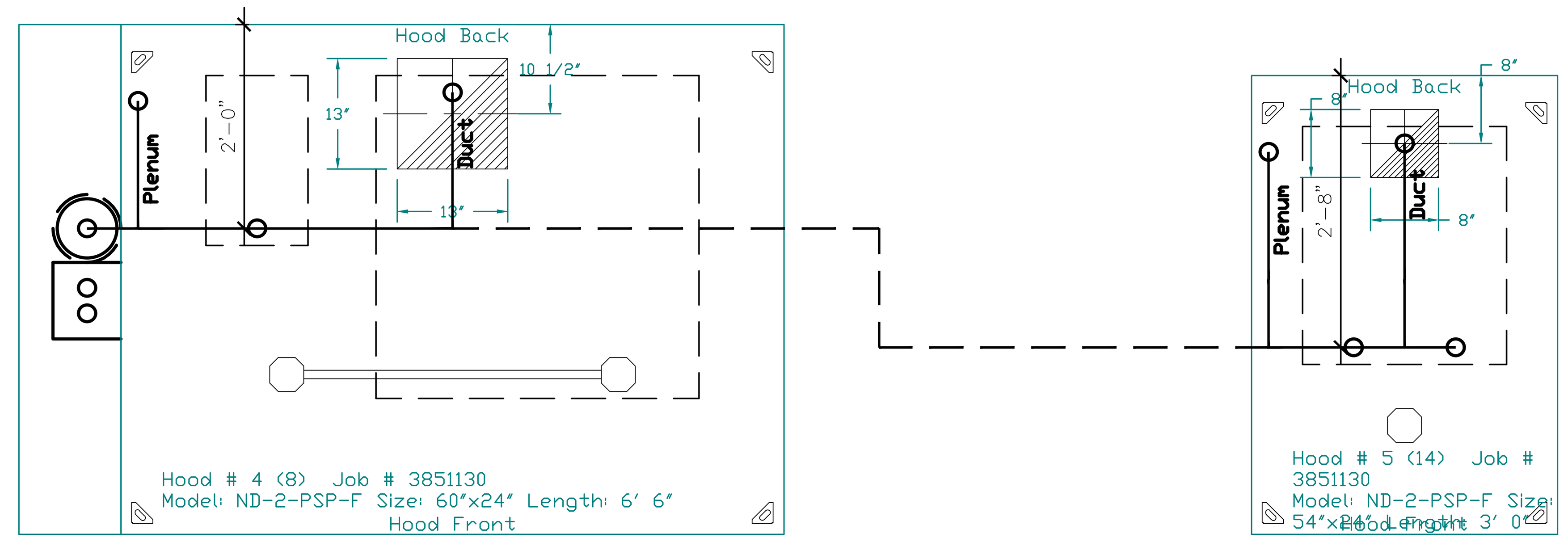
8 Flowpoint used on an 11FP UL300 3 gallon Ansul R102 system



PATH OF EGRESS PLAN VIEW

3 FS5.4

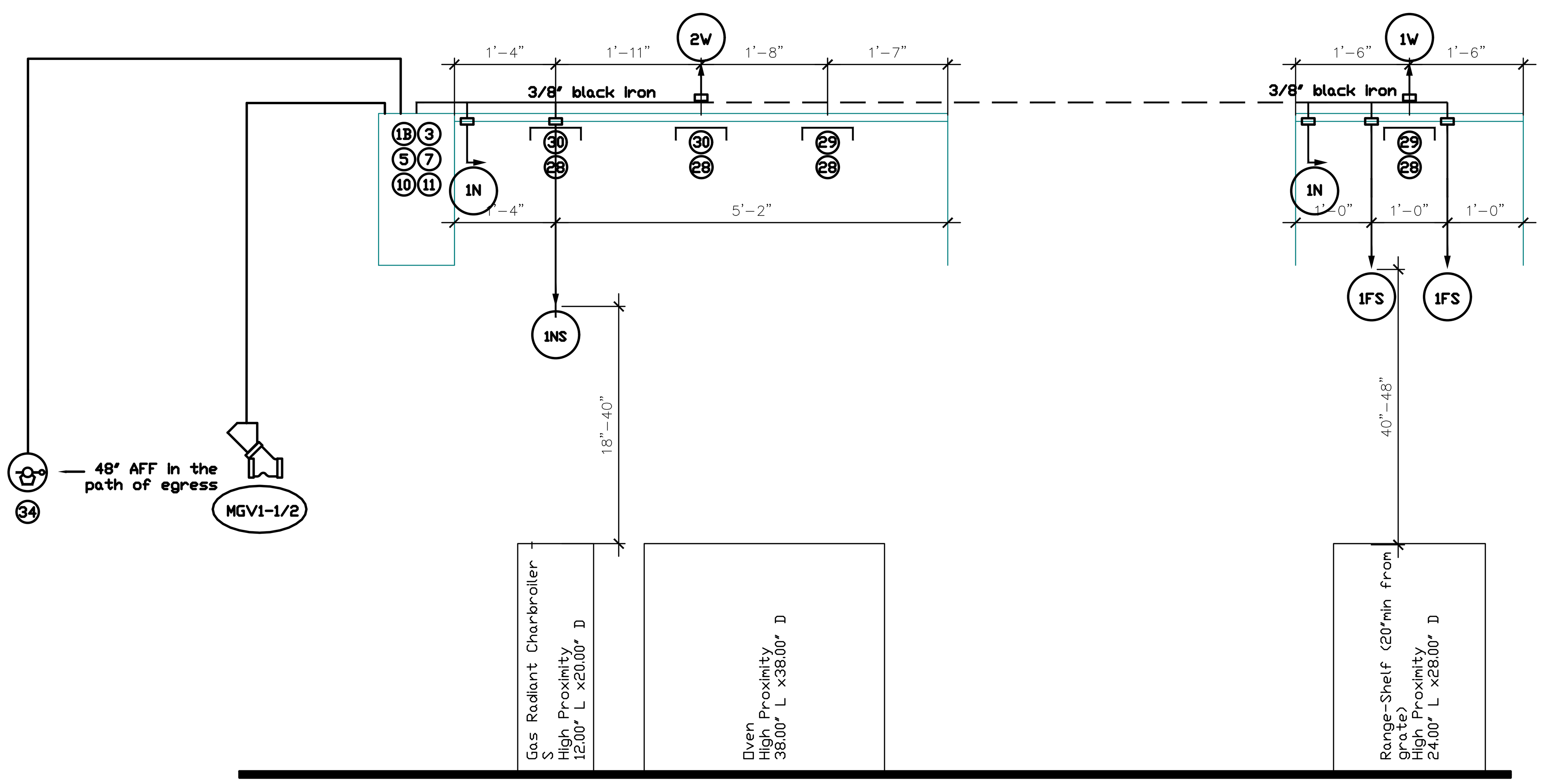
SCALE : 1/4" = 1'-0"



EXHAUST HOOD FIRE SYSTEM PLAN VIEW

1 FS5.4

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



EXHAUST HOOD FIRE SYSTEM ELEVATION

2 FS5.4

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

FIRE SYSTEM NOTES

GENERAL

CUSTOMER RESPONSIBLE FOR ADDITIONAL LABOR AND PARTS CHANGES AS A RESULT OF COOKING EQUIPMENT LAYOUT CHANGES OR MISINFORMATION AFTER RELEASE OF ORDER.

CUSTOMER RESPONSIBLE FOR ADDITIONAL TRIPS BY FIRE SYSTEM DISTRIBUTOR DUE TO JOB SITE DELAYS.

UNION LABOR CHARGES, IF REQUIRED, ARE EXTRA.

GAS VALVE

MECHANICAL OR ELECTRICAL GAS VALVE IS TO BE INSTALLED BY PLUMBING CONTRACTOR. PLUMBING PERMIT REQUIRED FOR GAS VALVE INSTALLATION.

ELECTRIC SHUT OFF

ELECTRICAL COOKING EQUIPMENT MUST BE SHUT OFF WHEN FIRE SYSTEM IS ACTIVATED. ELECTRICAL CONTRACTOR IS TO PROVIDE SHUT OFF CONTACTS OR SHUNT TRIP BREAKERS. THE DESIGN OF THE FIRE SYSTEM SHALL COMPLY WITH S.M.A.C.N.A. GUIDELINES FOR SEISMIC RESTAINTS OF MECHANICAL SYSTEMS. O.S.H.P.D. APPROVED ANCHORAGE R-0010 SUPPORTS AND BRACING OF PIPE & CONDUIT.

IF APPLICABLE TO LOCAL CODE

EXISTING FIRE ALARM SYSTEM MUST BE INTERCONNECTED TO THE ANSUL SYSTEM.

FIRE SUPPRESSION SYSTEM TEST

THE TEST WILL BE CONDUCTED IN FRONT OF A SYSTEM INSPECTOR WITH A NITROGEN CARTRIDGE WITH BALLOONS COVERING THE SYSTEM NOZZLES. THE TEST WILL BE CONDUCTED SIMULATING THE REMOTE AND AUTOMATIC ACTUATION.

REMOTE PULL STATION

4-0 BOX WITH 1/2" KO'S POSITIONED AS SHOWN WITH TABS IN THE UPPER RIGHT AND LOWER LEFT OF BOX. TO BE 48" ABOVE FINISHED FLOOR 1/2" EMT. TO BE 12" ABOVE FINISHED DROP CEILING LINE WITHOUT BENDS OR OFFSETS. ONE 4-0 BOX TO BE PROVIDED FOR EACH REMOTE PULL STATION WHEN TWO REMOTE PULLS ARE MOUNTED SIDE BY SIDE. THE DISTANCE BETWEEN CENTERS SHALL BE NO LESS THAN 7".

INSTALLATION/PIPING NOTES

REGULATED RELEASE ASSEMBLY, REGULATED ACTUATOR ASSEMBLY, AND TANK ENCLOSURE MUST BE LOCATED IN AREAS WHERE AIR TEMPERATURE WILL NOT FALL BELOW 32 DEGREES F OR EXCEED 130 DEGREES F.

1. MOUNT THE REGULATED RELEASE ASSEMBLE AND EACH REGULATED ACTUATOR ASSEMBLY REQUIRED BY COMPLETING THE FOLLOWING STEPS:

A. SELECT A RIGID SURFACE FOR MOUNTING THE ENCLOSURE. THE MOUNTING LOCATIONS MUST ALLOW THE REGULATED RELEASE ASSEMBLY AND THE REGULATED ACTUATOR ASSEMBLY TO BE WITHIN THE LIMITATION OF THE ACTUATION AND EXPELLANT GAS LINE LENGTHS AND MUST BE ABLE TO SUPPORT THE WEIGHT OF THE ASSEMBLY. NOTE: WALL MOUNTED SYSTEMS ONLY.

B. DETACH THE COVER FROM THE ENCLOSURE. REMOVE AGENT TANK FROM ENCLOSURE AND THE EXPELLANT GAS LINE HOSE FROM THE TANK/ADAPTOR ASSEMBLY.

C. SECURE ENCLOSURE BOX TO SELECTED MOUNTING LOCATION USING THE FOUR MOUNTING HOLES. USE APPROPRIATE TYPE OF FASTENERS DEPENDING ON THE MOUNTING SURFACE. WALL MOUNTED SYSTEMS.

SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY C.A.S. OR FIRE DISTRIBUTOR.

ALL PIPE FOR 1.5/2.4 GALLON SYSTEM IS 1/4".

ALL PIPE FOR 3.0/3.5 GALLON SYSTEM IS 3/8".

ALL PIPE SHALL BE BLACK IRON SCHEDULE-40.

ALL EXPOSED PIPE SHALL BE CHROME SLEEVED.

NOZZLES SHALL BE A MAXIMUM OF 50" ABOVE SURFACE OF COOKING EQUIPMENT.

Flowpoint Chart

Nozzle	FP	QTY	TTL FP
2W	2	1	2
1N	1	2	2
1FS	1	2	2
1W	1	1	1
1NS	1	1	1
Total			8FP

System Designed by Matt Eidson
Ansul Certified Designer
Certificate valid until 10/2019

ANSUL
A Tyco International Company

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FEB 28, 2021
RENEWAL DATE
STATE OF CALIFORNIA

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NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION CTE - CULINARY ARTS

11645 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
FOODSERVICE EQUIPMENT FIRE SYSTEM DETAILS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.011

DATE 12/20/2019

SHEET NUMBER FS5.4

Fire System Information – Job#3851130

FIRE SYSTEM NO.	Tag	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		Ansul R102	3.0/3.0	18	Fire Cabinet Right	Right
2		Ansul R102	3.0	8	Fire Cabinet Left	Left

Fire System Parts List Key

FIRE SYSTEM NO.	TAG	KEY NUMBER – PART DESCRIPTION	QTY. BY FACTORY	QTY. BY DIST.
1		0 – 0 – DISC UNION Bursting Disc Union Assembly for Manifold System.	1	0
		0 – 0 – Tank Strap Tank Strap – used for ANSUL Tanks	2	0
		0 – 0 – UCTANKBRACKET Tank Bracket for fire system tank installation in utility cabinets	2	0
		1 – 1 – AT – 3.0 TANK(#1B) – 3.0 Gallon SS Tank (for use with Automan Release, Actuator, or SS Enclosure (UL/ULC)) Macola # 01-429862	2	0
		3 – 3 – ANS-OEM REGULATED RELEASE – Ansul Regulated Mechanical Release/Bracket Assembly, OEM, R-102, Cartridge Detection Included, Ansul Part # 79493	1	0
		5 – 5 – LIQ-3.0 AGENT – Ansulex Low PH Wet Chemical Agent, 3 Gallon (UL) 79372	0	2
		9 – 9 – DT-CART Double Tank Nitrogen Cartridge	0	1
		10 – 10 – TLINK LINK – Test Link (1 test link) Ansul Part # 24916, Macola # 20-24916	0	1
		11 – 11 – MICRO-SDA MICROSWITCH KIT- Includes 2 switches and Mounting Hardware. Single Dual Electric Switch, One Standard Switch, One Alarm Duty Switch Ansul Part # 437155, Macola # 08-437155	1	0
		12 – 12 – HOSE HOSE – Rubber Hose	1	0
		27 – 27 – QPSA-1/2 PULLEY SEAL – 1/2" Hood Seal (UL) Ansul Part # 423253, Macola # 32-79768	7	0
		34 – 34 – RPS-A REMOTE PULL STATION – Red composite (without wire rope) 434618 (Old Macola #06-4835)	1	0
		35 – 35 – PE-LT PULLEY ELBOW – Low Temp. Pulley Elbow, Set Screw Type Ansul Part # 415670, Macola # 11-415671	7	0
		36 – 36 – PE-HT PULLEY ELBOW – High Temp Pulley Elbow, Compression Type, Ansul Part # 423251, Macola # 10-45771	6	0
2		0 – 0 – Tank Strap Tank Strap – used for ANSUL Tanks	1	0
		0 – 0 – UCTANKBRACKET Tank Bracket for fire system tank installation in utility cabinets	1	0
		1 – 1 – AT – 3.0 TANK(#1B) – 3.0 Gallon SS Tank (for use with Automan Release, Actuator, or SS Enclosure (UL/ULC)) Macola # 01-429862	1	0
		3 – 3 – ANS-OEM REGULATED RELEASE – Ansul Regulated Mechanical Release/Bracket Assembly, OEM, R-102, Cartridge Detection Included, Ansul Part # 79493	1	0
		5 – 5 – LIQ-3.0 AGENT – Ansulex Low PH Wet Chemical Agent, 3 Gallon (UL) 79372	0	1
		7 – 7 – 101-20 CARTRIDGE – Carbon Dioxide 101-20, 3 Gallon Cartridge (R-102)	0	1
		10 – 10 – TLINK LINK – Test Link (1 test link) Ansul Part # 24916, Macola # 20-24916	0	1
		11 – 11 – MICRO-SDA MICROSWITCH KIT- Includes 2 switches and Mounting Hardware. Single Dual Electric Switch, One Standard Switch, One Alarm Duty Switch Ansul Part # 437155, Macola # 08-437155	1	0
		27 – 27 – QPSA-1/2 PULLEY SEAL – 1/2" Hood Seal (UL) Ansul Part # 423253, Macola # 32-79768	5	0
		34 – 34 – RPS-A REMOTE PULL STATION – Red composite (without wire rope) 434618 (Old Macola #06-4835)	1	0
		35 – 35 – PE-LT PULLEY ELBOW – Low Temp. Pulley Elbow, Set Screw Type Ansul Part # 415670, Macola # 11-415671	5	0
		36 – 36 – PE-HT PULLEY ELBOW – High Temp Pulley Elbow, Compression Type, Ansul Part # 423251, Macola # 10-45771	4	0

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SHEET TITLE:
FOODSERVICE EQUIPMENT FIRE SYSTEM SCHEDULE

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.011

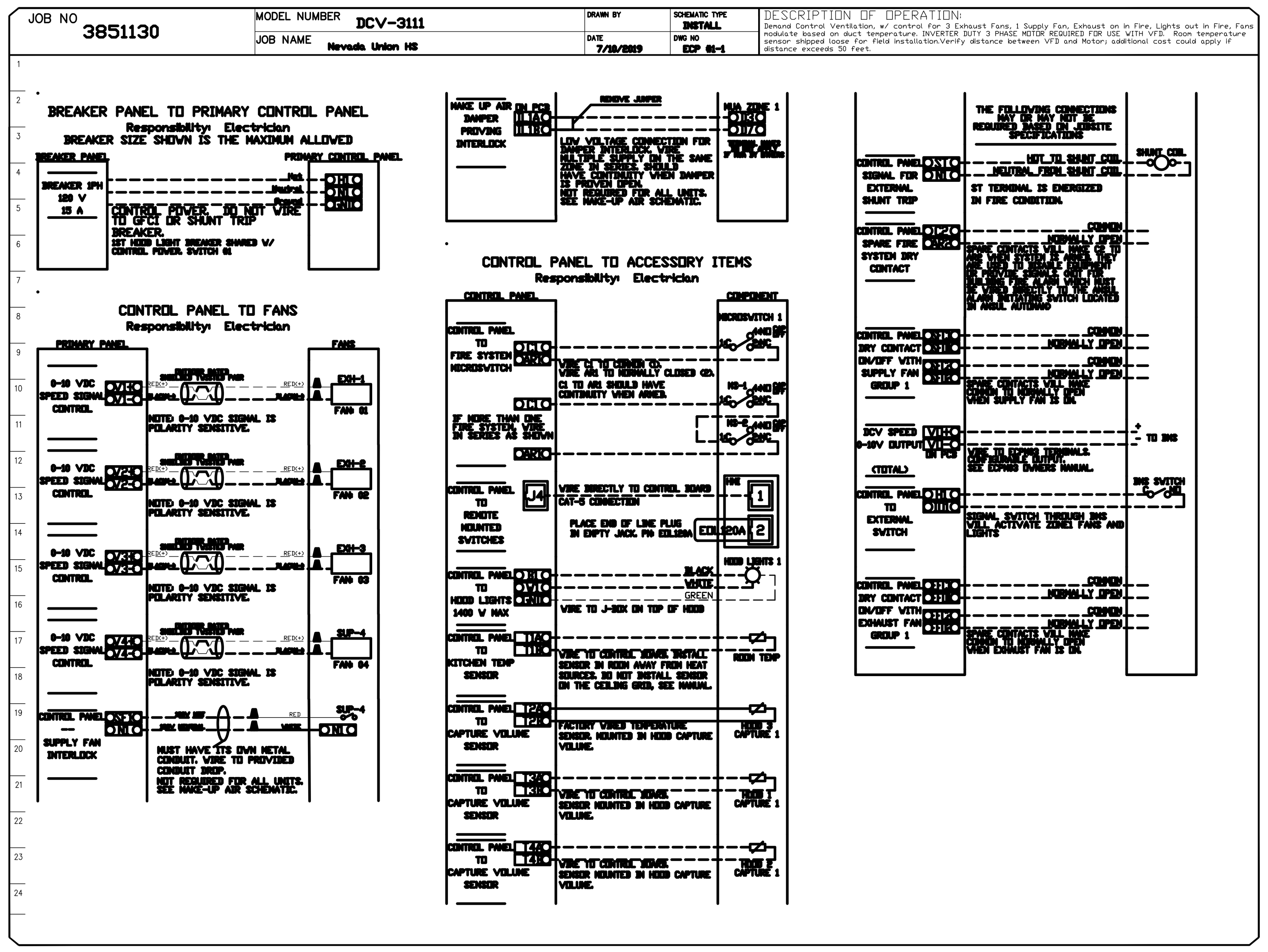
DATE 12/20/2019

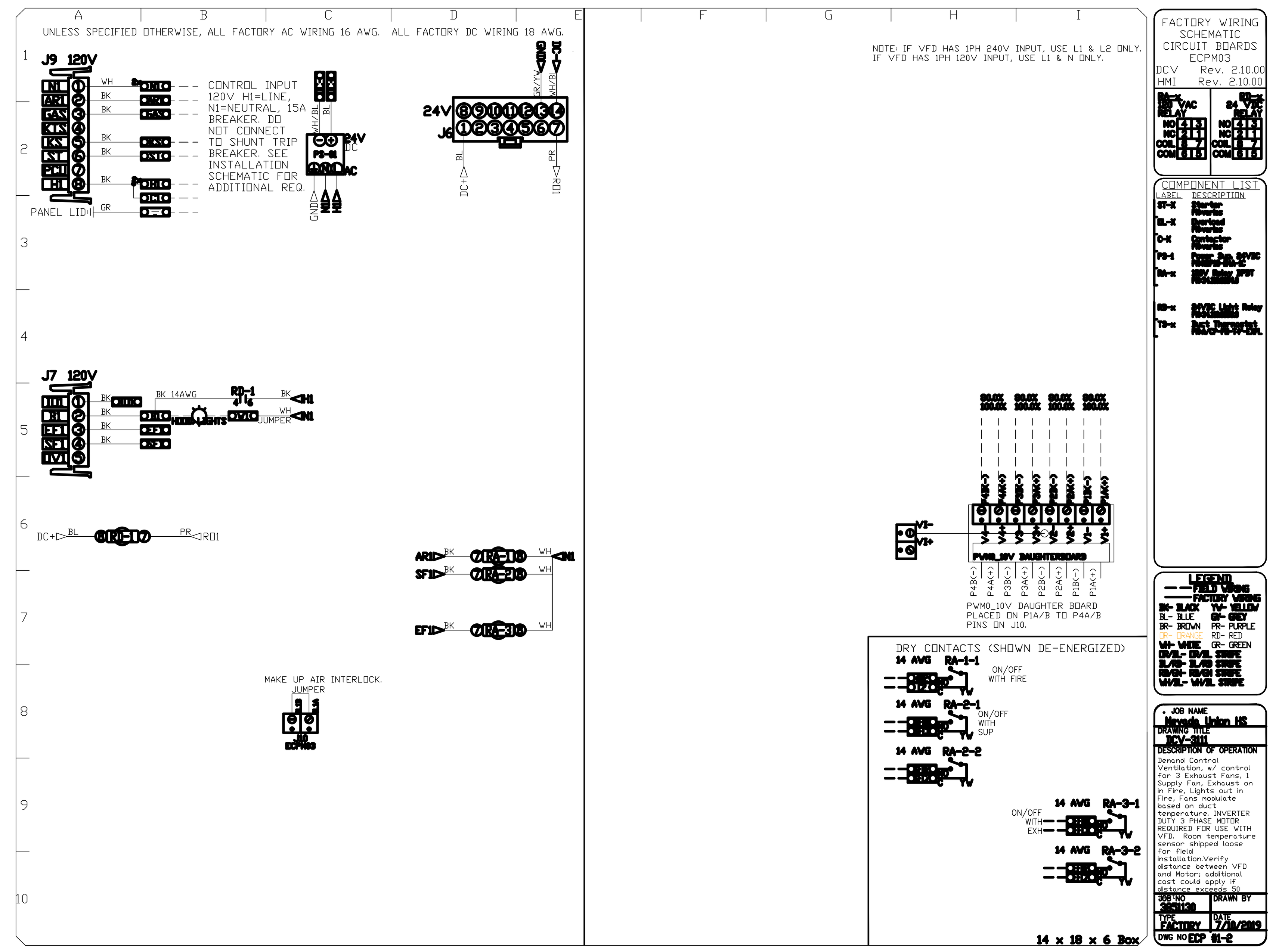
SHEET NUMBER FS5.5

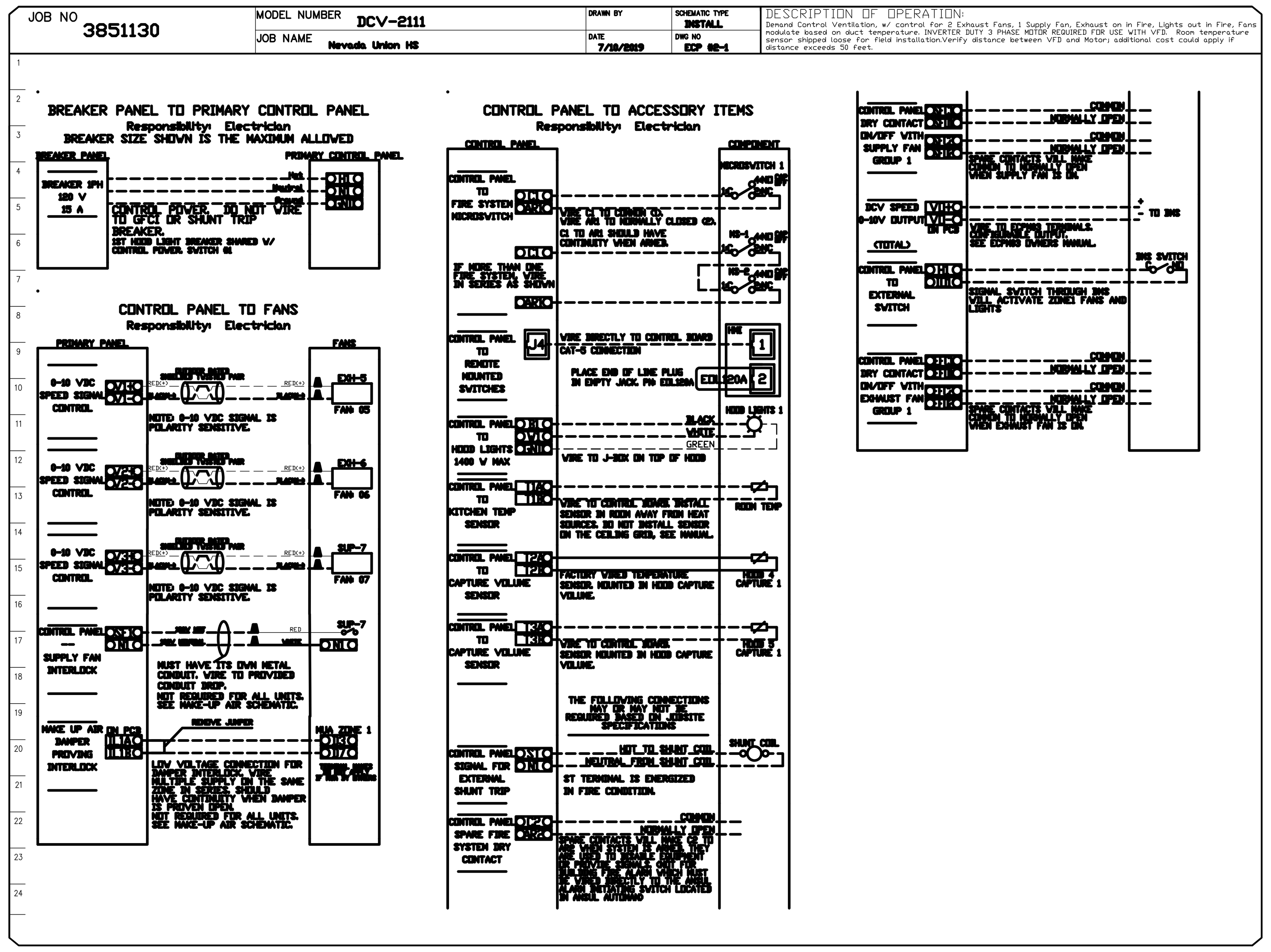
ELECTRICAL PACKAGE – Job#3851130

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	ϕ	H.P.	VOLT	FLA
1		DCV-3111	Utility Cabinet Right	08 - Ship Loose w/ Prewire	1 Light 1 Fan	Smart Controls DCV					
2		DCV-2111	Utility Cabinet Left	08 - Ship Loose w/ Prewire	1 Light 1 Fan	Smart Controls DCV					

All fans must have inverter duty motors, control provides 0-10v signal, and VFDS are provided by others.







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SHEET TITLE:

FOODSERVICE EQUIPMENT EXHAUST HOOD ENERGY MANAGEMENT SYSTEM

SCALE:

REVISIONS

No.	Issue Description	Date
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SHEET NUMBER FS5.6

DATE 12/20/2019

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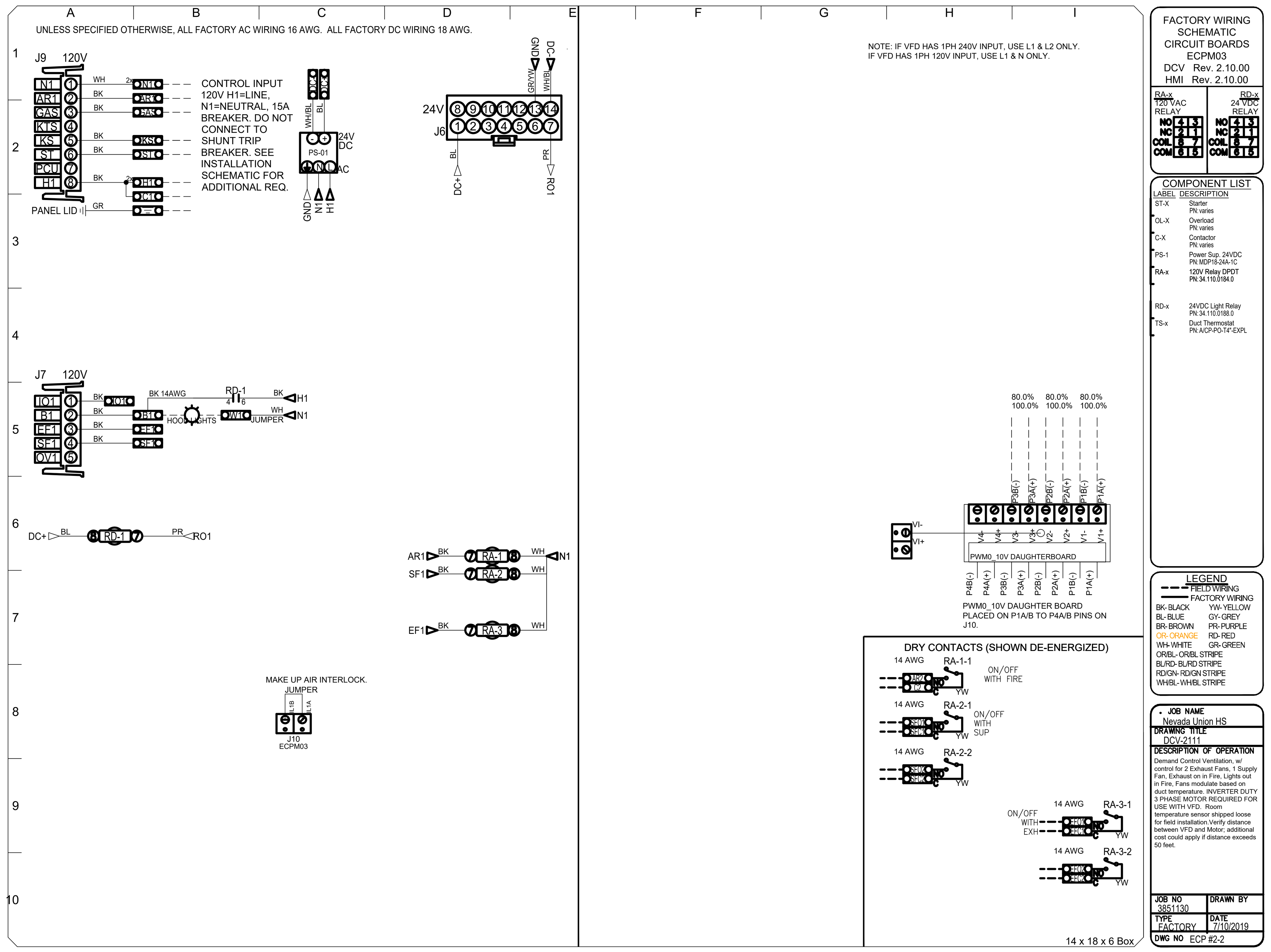

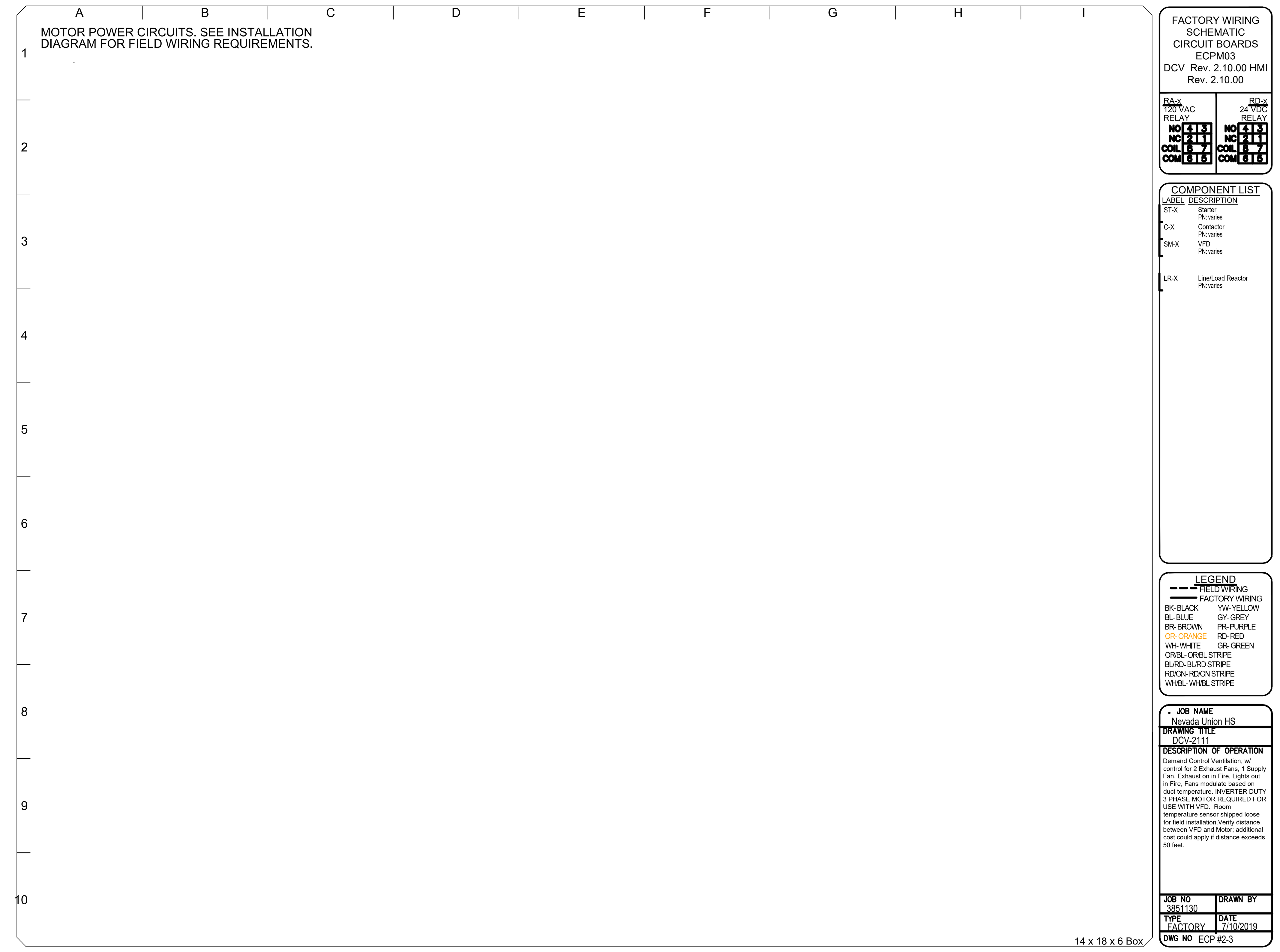

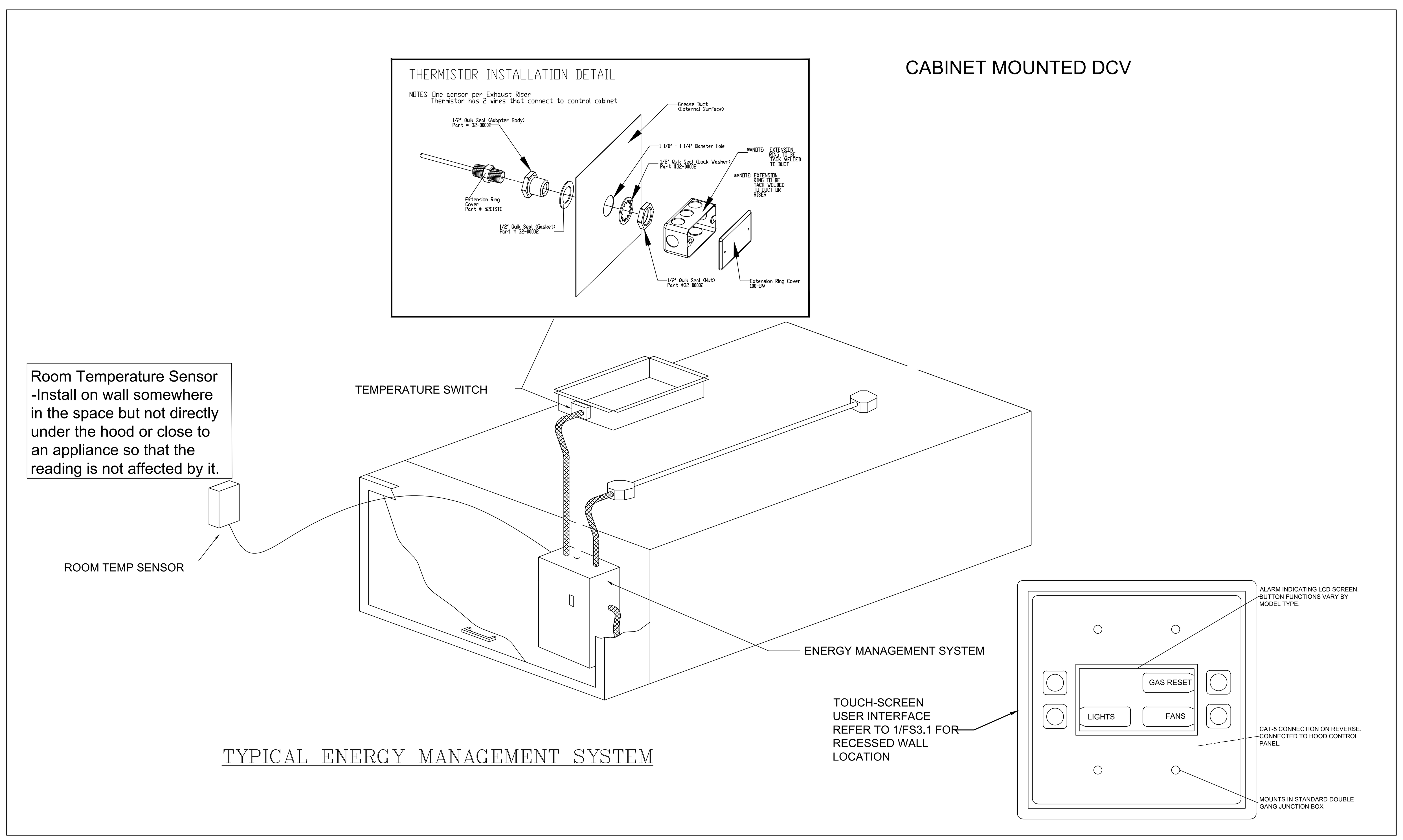

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SHEET TITLE:
FOODSERVICE EQUIPMENT EXHAUST HOOD ENERGY MANAGEMENT SYSTEM
SCALE:

REVISIONS

No.	Issue Description	Date
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DATE 12/20/2019
SHEET NUMBER FS5.7
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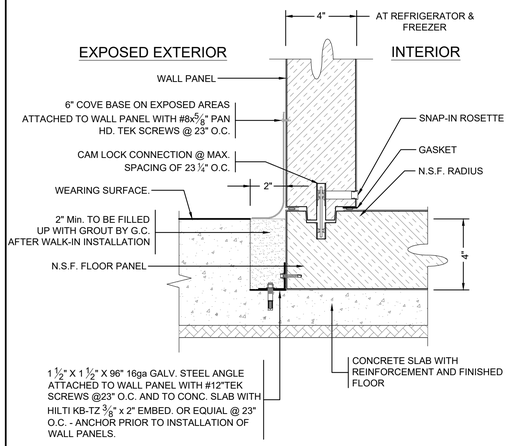
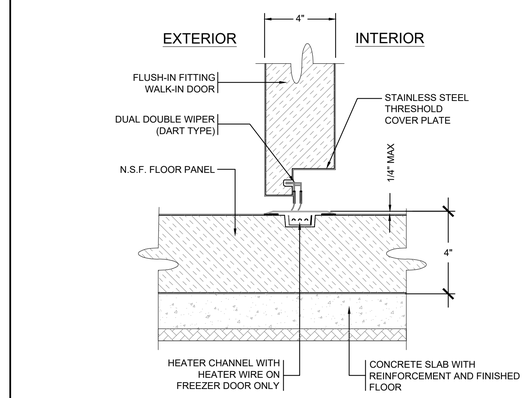
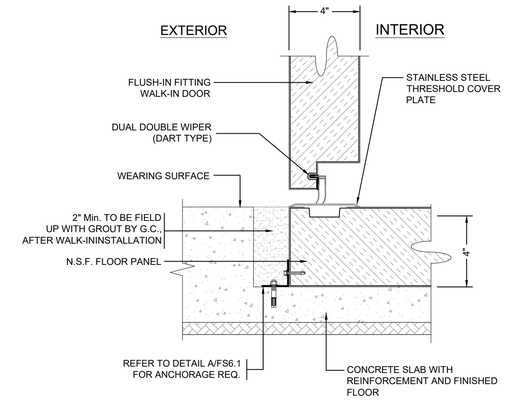


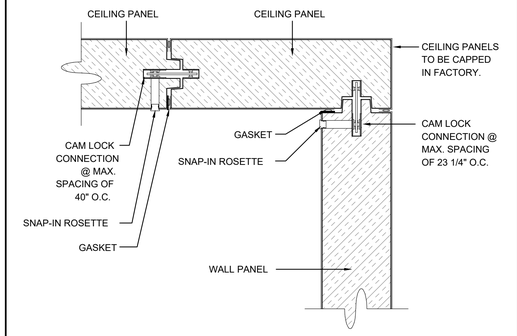
A | WALL PANEL TO RECESSED PRE-FAB FLOOR



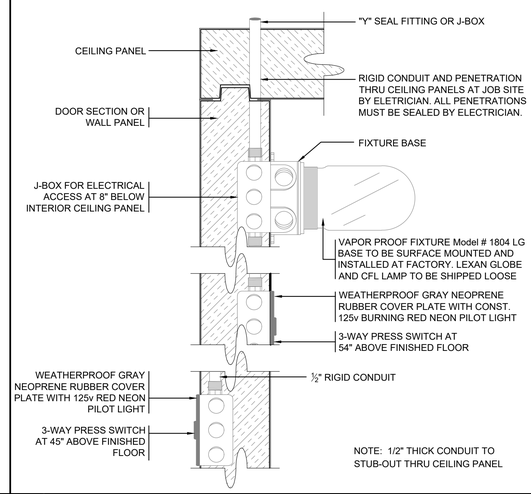
B | THRESHOLD DETAIL FOR FREEZER DOOR



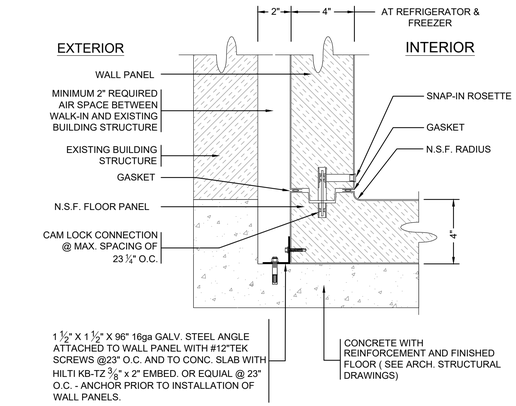
C | THRESHOLD DETAIL FOR REFRIGERATOR DOOR



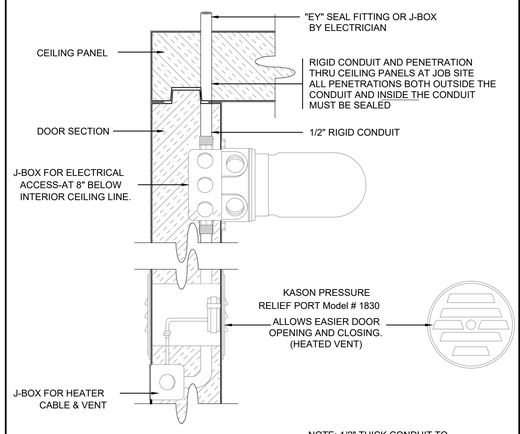
D | WALL PANEL TO CEILING PANEL



E | 3 -WAY INTERIOR & EXTERIOR PRESS SWITCH

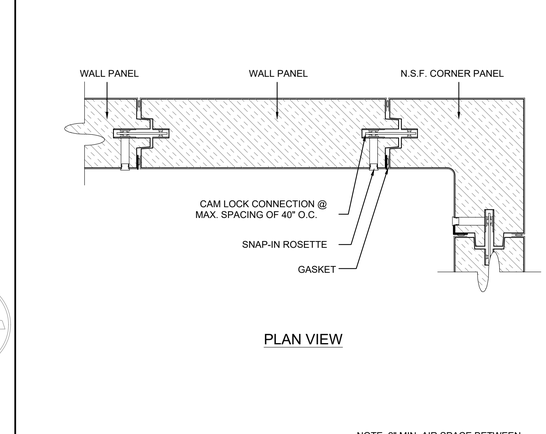


F | WALL PANEL AT BUILDING WALL

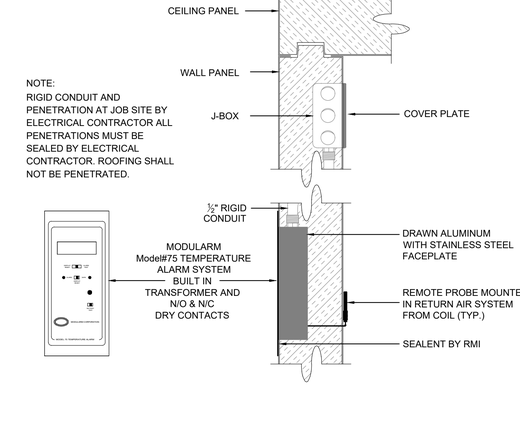


G | PRESSURE RELIEF PORT MODEL # 1830 DETAIL

WALL CLOSURE ATTACHMENT DETAIL FOR SANITARY PURPOSES NON STRUCTURAL.



H | TYPICAL CAM LOCK CONNECTION DETAIL



I | MODULARM CORP. MODEL 75 DETAIL

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SHEET TITLE:

FOODSERVICE EQUIPMENT WALK-IN REFRIGERATOR / FREEZER DETAILS

SCALE:

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No.	Issue Description	Date
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4		
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DATE 12/20/2019

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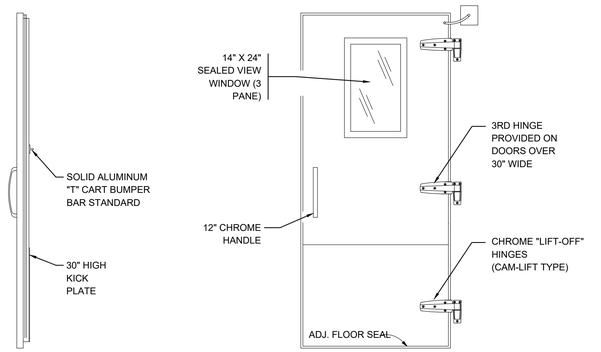
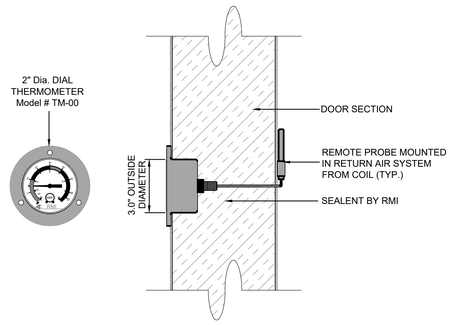


WALK-IN DOOR DETAIL FLUSH TYPE

NOTE: FREEZER DOORS HAVE 115V. HEATED VISION PANELS AND ENTIRE EXTERIOR FACE OF DOOR

A DOOR DETAIL



B 2" DIA. DIAL THERMOMETER

APPLICATION - WALK-IN COOLER/FREEZER COMBO

4" HARD NOSE TONGUE & GROOVE HIGH DENSITY URETHANE PERIMETER (CFC FREE) W/ SHT. MTL. FACING FLANGED 1/2" TO 3/4" PERIMETER OF EACH SHEET. CORNERS & T-PANELS ONE-PIECE CONSTRUCTION W/ 1/2" RADIUS AT ALL INSIDE VERTICAL CORNERS, JOINTS SEALED W/ PVC GASKET AT INT. & EXT. PERIMETER OF PANELS. PANELS RIGID CONNECTION W/ CAM-LOCK FASTENERS (WALL TO WALL: 48" O.C MAX: WALL TO CEILING: 24" O.C. MAX: WALL TO FLOOR: 24" O.C. MAX., IF APPLY)

INSULATION - 4" THICK FOAMED IN PLACE HIGH DENSITY URETHANE (CFC FREE) FILLED, OVER 90 PERCENT CLOSED CELL CONTENT. LESS THAN 25 FLAME SPREAD IN ACCORD W/ UBC STD. 42-1 (BASED ON UL 723 WHICH IS SIMILAR TO ASTM E84 THE STEINER TUNNEL TEST) AND CLASS 'A' INTERIOR FINISH IN ACCORDANCE W/ NFPA 101, SECTION 6-2, AND NFPA 255. K-FACTOR NOT TO EXCEED 0.14 BTU/HOUR/SQ. FT./°F PER INCH THICKNESS IN ACCORDANCE W/ ASTM C177 AT 75 F MEAN TEMPERATURE. UL REPORT (BLBT.R13780) FOR: SURFACE BURNING CHARACTERISTICS

FLOOR - 4" THICK FOAMED IN PLACE HIGH DENSITY URETHANE (CFC FREE) FILLED, OVER 90 PERCENT CLOSED CELL CONTENT. LESS THAN 25 FLAME SPREAD IN ACCORD W/ UBC STD. 42-1 (BASED ON UL 723 WHICH IS INTERIOR FINISH IN ACCORDANCE W/ NFPA 101, 0.14 BTU/HOUR/SQ. FT./ F PER INCH THICKNESS IN ACCORDANCE W/ ASTM C177 AT 75 F MEAN TEMPERATURE, RESULTS: FLAME SPREAD INDEX 25, SMOKE DEVELOPED INDEX: 400. FLOOR TO BE HEAVY DUTY FOR CARTS AND PALLET JACKS.

FINISH -

WALL INTERIOR -	.040 STUCCO EMBOSSED ALUMINUM WHITE FINISH
WALL EXTERIOR (EXPOSED) -	22GA. STAINLESS STEEL - TYPE 304, #4 FINISH
WALL EXTERIOR (UNEXPOSED) -	26GA. STUCCO EMBOSSED GALVANIZED STEEL
CEILING INTERIOR -	.040 STUCCO EMBOSSED ALUMINUM WHITE FINISH
CEILING PANELS -	MAX. CEIL. PANEL DEFLECTION: NOT TO EXCEED 1/240 OF THE SPAN UNDER A LOADING OF 20 LBS/SQ. FT., W/ LATERAL FORCE CAPACITY IN ACCORDANCE W/ CBC SECTION 1630A.3
FLOOR INTERIOR -	WEARING SURFACE TO BE .1875 ALUM. TREAD PLATE W/ MIN. 1/2" RADIUS COVED UP ALL INTERIOR WALLS TO A HT. OF 6"

DOOR(S) -

1EA.	42" X 80"	COOLER, FLUSH IN-FITTING DOOR W/ MAGNETIC GASKET
	INTERIOR -	22GA. STAINLESS STEEL - TYPE 304, #4 FINISH
	EXTERIOR -	22GA. STAINLESS STEEL - TYPE 304, #4 FINISH
	HANDLE -	KASON 58 RADIAL LATCH W/KASON No. 59 ROLLING LATCH W/ INSIDE RELEASE.
	HINGES -	(2) K1245 (1) K1248 -SPRING LOADED
	CLOSER -	RACK & PINION
	HEATER CABLE -	NONE
	VISION PANEL -	14" x 24" (NON-HEATED)
	INT KICKPLATES -	42" HIGH, DIAMOND TREAD PLATE ALUMINUM
	EXT KICKPLATES -	42" HIGH, DIAMOND TREAD PLATE ALUMINUM
	JAMB GUARDS -	INT., 48" HIGH, DIAMOND TREAD PLATE ALUMINUM
1EA.	42" x 80"	FREEZER, FLUSH IN-FITTING DOOR W/ MAGNETIC GASKET
	INTERIOR -	22GA. STAINLESS STEEL - TYPE 304, #4 FINISH
	EXTERIOR -	22GA. STAINLESS STEEL - TYPE 304, #4 FINISH
	HANDLE -	KASON 58 RADIAL LATCH W/KASON No. 59 ROLLING LATCH W/ INSIDE RELEASE.
	HINGES -	(2) K1245 (1) K1248 -SPRING LOADED
	CLOSER -	RACK & PINION
	HEATER CABLE -	(4) SIDES OF DOOR OPENING
	VISION PANEL -	14" x 24" (HEATED)
	INT KICKPLATES -	42" HIGH, DIAMOND TREAD PLATE ALUMINUM
	EXT KICKPLATES -	42" HIGH, DIAMOND TREAD PLATE ALUMINUM
	JAMB GUARDS -	INT., 48" HIGH, DIAMOND TREAD PLATE ALUMINUM
	THRESHOLD -	THRESHOLD COVER OVER HEATER WIRE

ACCESSORIES -	4 EA.	INT, EXT 3-WAY PRESS SWITCH, WITH EXT. INDICATING RED LIGHT-FLUSH MTD
	2 EA.	MULTI-MONITOR & AUTOMATIC MODULARM #75LC HI/LO DIGITAL TEMP ALARM W/BATTERY LIGHT CONTROL BACK-UP, REMOTE NOTIFICATION DRY CONTACTS, AUTO LIGHT CONTROL INCLUDING INSIDE ILLUMINATED SWITCH W/PANIC ALARM FEATURE & SENOR LINE (120V, 30MA) ON WALL FACING KITCHEN, PROVIDE SIGN AT EACH FOR COOLER AND FREEZER
	2 EA.	VAPOR PROOF LIGHT FIXTURE - SHIPPED LOOSE
	4 EA.	FLUORESCENT LIGHT FIXTURE KASON #1810L 48" LONG VAPORPROOF LED FIXTURE WITH TWO 5000K COLOR TEMP. 18W LED LAMPS (120V, 36W)
	1 EA.	HEATED AIR VENT (FREEZER ONLY) - FLUSH MOUNTED
	2 EA.	VINYL STRIP CURTAINS
CLOSURES -	1 LOT	INT. COVED BASE - (TO MATCH INT. WALL PANEL FINISH)
	1 LOT	EXPOSED EXT. COVED BASE - (TO MATCH EXT. WALL PANEL FINISH)
	1 LOT	WALL CLOSURES - (TO MATCH EXT. WALL PANEL FINISH)
	1 LOT	CEILING ENCLOSURES - (TO MATCH EXT. WALL PANEL FINISH)

E TYPICAL SPECIFICATIONS

C VERT. OVERTURN BRACE REFER 1/FS4.0 FOR LOCATION

D VERT. OVERTURN BRACE REFER 1/FS4.0 FOR LOCATION

F FLOOR SECTION AT EXT. AND INT. OF REF/FREEZER

G SUPPLEMENTAL LATERAL BRACING AT WALK-IN WALL PANEL

DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117832 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/21/20

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Professional Seals

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HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL
CLASSROOM MODERNIZATION
CTE - CULINARY ARTS
11645 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
FOODSERVICE EQUIPMENT WALK-IN REFRIGERATOR / FREEZER DETAILS

SCALE:

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By:

Checked By:

JOB NO. 19.011

DATE 12/20/2019

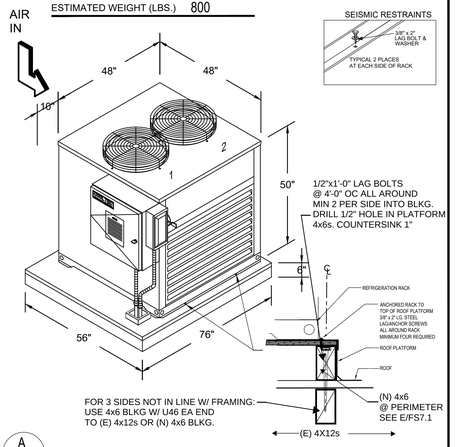
SHEET NUMBER FS6.2

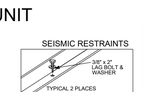
81 of 89

REFRIG-O-PAK SYSTEM

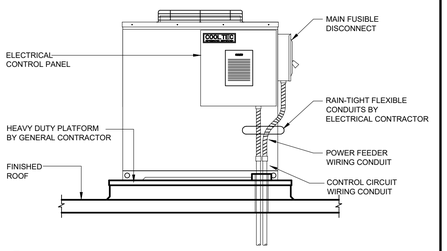
ALLOW 36" CLEAR AROUND UNIT

ESTIMATED WEIGHT (LBS.) 800

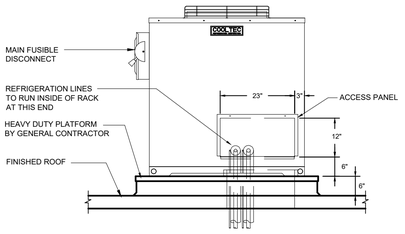




A FS7.1 "REFRIG-O-PAK" SYSTEM # CRS-4

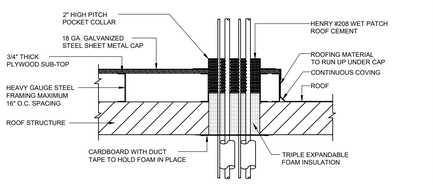


B FS7.1 ELECTRICAL CONTROL PANEL



REFRIGERATION LINE SEQUENCE	
A	B

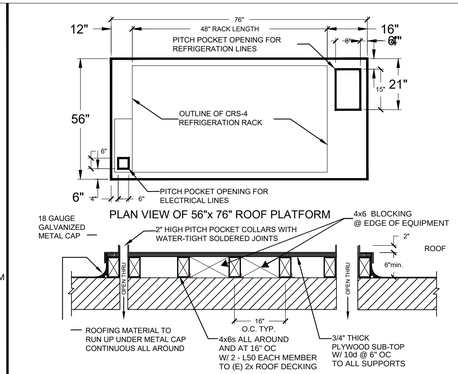
C FS7.1 REFRIGERATION PIPING CONNECTION SEQUENCE



INSTRUCTIONS FOR REFRIGERATION CONTRACTOR

A. TAPE CARDBOARD AT THE BOTTOM OF EACH PITCH POCKET OPENING AS SHOWN.
B. AT THE TOP OF THE PITCH POCKET OPENING, FILL IN WITH TRIPLE EXPANDABLE FOAM INSULATION (DOW CHEMICAL "GREAT STUFF INSULATING FOAM), AND LET FOAM CURE FOR ONE HOUR.
C. APPLY HENRY #208 WET PATCH ROOF CEMENT IN BETWEEN REFRIGERATION PIPING, ELECTRICAL LINES, AND FOAM. LET CURE FOR FOUR HOURS. THIS SHOULD SEAL ALL PIPING AND LINES IN THE PITCH POCKET, TO PREVENT RAIN WATER FROM PENETRATING THROUGH.

D FS7.1 RAIN TIGHT PITCH POCKET



PLAN VIEW OF 56"x 76" ROOF PLATFORM

TYPICAL SECTION VIEW

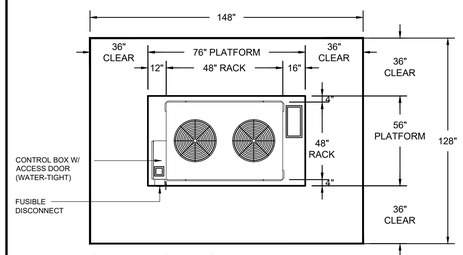
GENERAL CONTRACTOR

1. GENERAL CONTRACTOR TO PROVIDE LEVEL PLATFORM AT CODE HEIGHT.
2. PROVIDE TWO PITCH POCKETS IN THE PLATFORM AS LOCATED.
3. PROVIDE SHEET METAL CAP WITH 2" PITCH POCKET COLLAR AND WITH WATER TIGHT SOLDERED JOINTS.

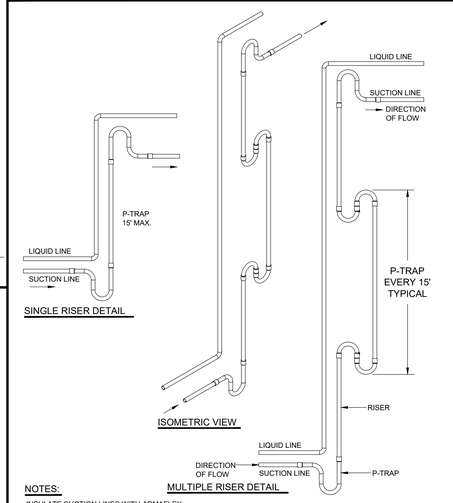
REFRIGERATION CONTRACTOR

1. BACK FILL PITCH POCKET OPENING WITH EXPANDED FOAM AND ROOF SEALANT AFTER COMPLETION OF ELECTRICAL AND REFRIGERATION PIPING.

E FS7.1 PLATFORM DETAIL



F FS7.1 CLEARANCE REQUIREMENT AROUND RACK'S PLATFORM



NOTES:

- INSULATE SUCTION LINES WITH ARMAFLEX:
  3/4" FOR COMMERCIAL TEMPERATURE AND 1" FOR LOW TEMP.
- ALL JOINTS BRAZED WITH 35% SILVER CONTENT BRAZING ROD
- INSTALL "P" TRAP ON SUCTION LINE EVERY 15' OF EVERY VERTICAL RISE
- INSTALL INVERTED TRAP ON TOP OF THE RISE TO PREVENT OIL FROM SEEPING DOWN
- NOT TO EXCEED 45' VERTICALLY OVER ALL

G FS7.1 TYPICAL P-TRAP DETAILS AND SUCTION LINE RISER DETAILS

COOLTEC ENGINEERING SUMMARY

AMBIENT TEMPERATURE 95°F

POWER SUPPLY: 208-240V/3PH/60HZ

CONNECTED LOAD= 18.4 AMP

FUSE SIZE: 25 AMP

MINIMUM AMPACITY= 20.6 AMP

SYSTEM	ITEM #	FIXTURES: DESCRIPTION	TEMP (F): FIXT.	TEMP (F): SST.	REFRIGERANT R-	REFRIGERANT LBS IN SYSTEM	COMPRESSORS: MODEL	H.P.	RATING @ 60 Hz: RLA	RATING @ 60 Hz: V	RATING @ 60 Hz: PH	MBH. (95°F)	DEFROST	UNIT COOLER: ITEM #	UNIT COOLER: QUANTITY	UNIT COOLER: MODEL	UNIT COOLER: RATING @ 60 Hz, 1 Ø FAN: RLA	UNIT COOLER: RATING @ 60 Hz, 1 Ø FAN: V	UNIT COOLER: HEATER: FLA	UNIT COOLER: HEATER: V	UNIT COOLER: HEATER: PH	SYSTEM: TOTAL POWER 208V, 60 Hz: AMPS	SYSTEM: TOTAL POWER 208V, 60 Hz: PH	LINE SIZE (O.D.) AND RUN: ROUTE	LINE SIZE (O.D.) AND RUN: SUCTION	LINE SIZE (O.D.) AND RUN: LIQUID	LINE SIZE (O.D.) AND RUN: LINE RUN LENGTH (FEET)	LINE SIZE (O.D.) AND RUN: DISCH.	LINE SIZE (O.D.) AND RUN: DRAIN	ACCESSORIES (SEE SUPPLY CODE *): HEAD PRESSURE CONTROL	CRANKCASE HEATER	FAN CYCLE SWITCH	SUCTION ACCUMULATOR	THERMOSTAT	SOLENOID VALVE	THERMOSTATIC EXPANSION VALVE	TIME CLOCK
		CONDENSER FAN MOTORS 2						1/2	4.0	208	1											8.0	1														
A	17	WALK-IN COOLER	35	25	448A	16	ZBO9KAE-TF5	1.0	7.2	208	3	11.4	D	17.A	1	ADT090AEK	1.8	115				7.2	1	S	7/8	3/8	100		F	F			F	F	F	KE2MED
B	18	WALK-IN FREEZER	-10	-20	448A	16	ZF08K4E-TF5	2.0	8.7	208	3	8.85	D	18.A	1	LET075BEK	1.0	208	7.8	208	1	8.7	3	S	7/8	3/8	100		F	F	F		F	F	F	KE2LOW

c UL us LISTED

CONDENSING UNIT

33SZ FILE SA32027

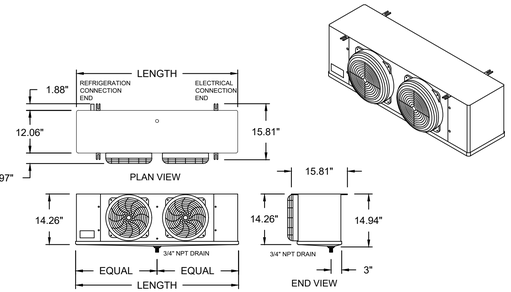
MODEL No. CRS-4

E	ELECTRIC (TIMED)
G	GRAVITY (TIMED)
H	HOT GAS (TIMED)
O	OFF CYCLE (TEMP.)
D	DEMAND DEFROST (KE2)

B	BRANCH
M	MAIN
S	SINGLE

* SUPPLY CODES:
F - FACTORY INSTALLED
L - LOOSE (FIELD INSTALLED)
M - MANUFACTURER EQUIPPED
R - REFRIGERATION CONTRACTOR

NOTE:
- ALL SYSTEMS ENGINEERED WITH R-448A REFRIGERANT. ANY BASES/COILS NOT SUPPLIED BY COOLTEC MUST BE EQUIPPED WITH R-448A EXPANSION VALVES.
- REFRIGERATION PIPE SIZES ARE BASED ON A MAXIMUM LINE RUN UP TO 100 EQUIVALENT FEET FOR LIQUID AND SUCTION LINES. VERIFY LINE LENGTHS WITH JOB SITE CONDITIONS AND LINE ROUTING AT INDIVIDUAL INSTALLATIONS. IF LINE RUNS ARE GREATER THAN 100 FEET, PLEASE CONTACT COOLTEC FACTORY.
- "COMPRESSOR MOTOR PROTECTED UNDER PRIMARY SINGLE PHASE PROTECTION".
- EFFECTIVE JANUARY 1, 2009, ALL WALK-IN COOLER AND FREEZER EVAPORATIVE COILS INSTALLED IN THE U.S.A. SHALL BE SUPPLIED WITH ENERGY EFFICIENT (EC) MOTORS BASED ON THE FEDERAL ENERGY INDEPENDENCE AND SECURITY ACT (HR-6).
- ELECTRO-FIN COATED CONDENSERS AGAINST SALT AIR CONTAMINATION AND CORROSION FOR ALL CONDENSERS.
- POWER REQUIRED FOR MEDIUM AND LOW TEMPERATURE EVAPORATOR COILS. POWER FROM BUILDING; SUPPLIED BY ELECTRICAL CONTRACTOR



H FS7.1 unit cooler detail

MODELS: ADT / LET

SYSTEM	UNIT MODEL No.	CAPACITY BTU	LENGTH	FANS: QTY.	FANS: CFM	FANS: EC MOTOR 115/160	FANS: EC MOTOR 208-240/160	ELEC DEFROST	CONNECTIONS (In.): COIL INLET OD	CONNECTIONS (In.): SUCTION ID	CONNECTIONS (In.): DRAIN MPT	APPROX. SHIP WT. (Lbs.)
A	ADT090AEK	9000	45-1/2"	2	1400	1-8	--	--	1/2"	7/8"	3/4"	48
B	LET075BEK	7500	45-1/2"	2	1300	--	1.0	7.8	1/2"	5/8"	3/4"	45

SPECIFICATION

ITEM NO. R01 REMOTE REFRIGERATION PACKAGE

THE REFRIGERATION PACKAGE SHALL BE PRE-ENGINEERED AND FACTORY ASSEMBLED UNIT, TRADE NAME "REFRIG-O-PAK", AS MANUFACTURED BY COOLTEC REFRIGERATION CORP., 1250 E. FRANKLIN AVE., POMONA, CA 91766. PHONE: (909) 865-2229, FAX: (909) 868-0777.
E-MAIL ADDRESS: sales@cooltecrefrigeration.com

CONTRACTOR SHALL FURNISH AND INSTALL, WHERE SHOWN ON PLANS, (1) COOLTEC U.L. APPROVED "REFRIG-O-PAK" AIR COOLED REMOTE REFRIGERATION PACKAGE, MODEL CRS4 WITH CONTROL PANEL, 208 VOLTS, 3 PHASE, 60 HERTZ. REFRIGERATION SYSTEM SHALL BE HOUSED IN A WEATHER PROTECTED ENCLOSURE. THE FRAME, ENCLOSURE, AND PANELS SHALL BE FABRICATED OF GALVANIZED STEEL.
THE ENTIRE FRAME SHALL BE PRE-ASSEMBLED, WELDED, CLEANED, AND PRIMED AND POWDER COATED EPOXY ENAMEL AND BAKED.
CONDENSER FAN MOTORS SHALL BE MOUNTED ON THE TOP OF THE ENCLOSURE FOR BETTER HEAT DISCHARGE.

1. REFRIGERATION UNITS
   A. AIR-COOLED CONDENSING UNITS SHALL BE HERMETIC/GLACIER SCROLL TYPE (COPELAND). EACH UNIT SHALL BE EQUIPPED WITH HIGH-LOW PRESSURE CONTROL, LIQUID LINE DRIER, SIGHT GLASS, HEAD PRESSURE CONTROL, TIME CLOCKS AND PUMP DOWN SOLENOIDS.
   B. ALL COMPRESSOR UNITS SHALL BE NEW FACTORY ASSEMBLED TO OPERATE WITH THE REFRIGERANT SPECIFIED IN THE ENGINEERING SUMMARY SHEET. REFRIGERANT R-448A SHALL BE USED ON ALL COMMERCIAL TEMPERATURE UNITS AND LOW TEMPERATURE UNITS.
   C. THE CONDENSER SHALL BE SECTIONAL, REMOVABLE, WITH RIFLED TUBE SLOTTED FINNED, AND SHALL BE DESIGNED FOR 20°FTD. THE CONDENSER SHALL BE ELECTRO-FIN COATED AGAINST SALT AIR CONTAMINATION AND CORROSION.
2. PRE-PIPING
   A. ALL REFRIGERANT LINES SHALL BE EXTENDED TO ONE SIDE OF THE PACKAGE IN A NEAT AND ORDERLY MANNER. SUCTION LINES MUST BE INSULATED WITH ARMAFLEX (1" THICK FOR LOW TEMP, 3/4" THICK FOR MEDIUM TEMP).
   B. ALL TUBING SHALL BE SECURELY SUPPORTED AND ANCHORED WITH CLAMPS.
   C. SILVER SOLDER AND/OR SIL-FOS SHALL BE USED FOR ALL REFRIGERANT PIPING. SOFT SOLDER IS NOT ACCEPTABLE.
   D. ALL PIPING TO BE PRESSURE TESTED WITH NITROGEN AT 300 PSI. AFTER THE CONDENSING UNIT AND COIL HAVE BEEN CONNECTED, THE BALANCE OF THE SYSTEM SHALL BE LEAKED TESTED WITH ALL VALVES OPENED.
3. CONTROL PANEL
   A. THE PACKAGE SHALL HAVE A FACTORY MOUNTED AND PRE-WIRED CONTROL PANEL COMPLETE WITH MAIN FUSED DISCONNECT. COMPRESSOR CIRCUIT BREAKERS, FUSES, CONTACTORS AND THE TIME CLOCKS WIRED FOR SINGLE POINT CONNECTION.
   B. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL MAIN POWER LINES TO PANEL, ALL IN ACCORDANCE WITH THE WIRING DIAGRAM AND PER LOCAL CODES.
4. SAFETY CAUTION
   A. EACH SYSTEM AND EVAPORATOR IS SHIPPED UNDER NITROGEN PRESSURE. USE CAUTION AND EXERCISE SAFETY AT ALL TIMES WHEN PREPARING FOR FINAL HOOK-UP.
5. EVAPORATIVE COIL
   A. EVAPORATIVE COILS SHALL BE DIRECT EXPANSION TYPE, FABRICATED OF COPPER TUBES WITH ALUMINUM FINS. ALL EVAPORATIVE COILS SHALL BE PROVIDED WITH SOLENOID VALVE, THERMOSTATIC EXPANSION VALVE, AND ELECTRONIC THERMOSTAT, PIPED AND WIRED TO THE JUNCTION BOX FOR POSITIVE PUMP DOWN.
   B. EVAPORATIVE COILS SHALL BE EQUIPPED WITH ENERGY SAVING "EC" MOTORS.

POWER REQUIRED FOR WALK-IN EVAPORATOR COIL'S DEMAND CONTROL AND TO DRAIN HEATERS.
POWER FROM BUILDING; SUPPLIED BY ELECTRICAL CONTRACTOR

SYSTEM	DEFROST	UNIT COOLER: ITEM #	DESCRIPTION	QUANTITY	MODEL	POWER FROM BUILDING BY ELEC. CONTRACTOR: EVAP. COIL RLA	EVAP. COIL VOLTAGE	DRAIN HEATER	DRAIN HEATER VOLTAGE	TOTAL LOAD	TOTAL LOAD VOLTAGE
A	D	17	WALK-IN COOLER	1	ADT090AEK	1.8	115/1	--	--	1.8	115/1
B	D	18	WALK-IN FREEZER	1	LET075BEK	7.8	208/1	5.0	208/1	12.8	208/1

NOTE: PROVIDE SEPARATE POWER SOURCE FOR EACH EVAPORATOR POWER FROM BUILDING.

CONSTRUCTION NOTES FOR TRADES

1. GENERAL CONTRACTOR
   A. CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND COORDINATE WITH OTHER TRADES.
   B. GENERAL CONTRACTOR TO VERIFY AND CO-ORDINATE LOCATION OF REFRIGERATION RACK WITH REFRIGERATION CONTRACTOR TO SATISFY LOCAL CODE REQUIREMENTS AND MAINTENANCE OF THE RACK.
   C. GENERAL CONTRACTOR TO VERIFY REFRIGERATION LINE RUNS THRU TO ROOF OR MULTI-STORY BUILDING PRIOR TO CONSTRUCTION WITH REFRIGERATION CONTRACTOR FOR ACCESSIBILITY.
   D. GENERAL CONTRACTOR TO VERIFY ACCESS OF CRANE OR MECHANICAL LIFT WITH REFRIGERATION CONTRACTOR PRIOR TO CONSTRUCTION (IF REQUIRED).
   E. GENERAL CONTRACTOR SHALL PREPARE AND WEATHER PROOF THE PLATFORM AND CURBED OPENINGS FOR REFRIGERATION PIPING AND ELECTRICAL CONDUIT. ROOF PAD TO BE CONSTRUCTED OF HEAVY DUTY STEEL FRAMING, AND THE FINISHED HEIGHT DICTATED PER LOCAL CODES.
   F. PROVIDE SHEET METAL CAP WITH 2" HIGH PITCH POCKET COLLAR AND WATER TIGHT SOLDERED JOINTS.
   G. GENERAL CONTRACTOR TO ALLOW 3'-0" (36") OF CLEAR SPACE AROUND ROOF PAD FOR MAINTENANCE.
   H. ALL CORE DRILLING REQUIRED FOR REMOTE REFRIGERATION PIPING WORK BY THE REFRIGERATION CONTRACTOR, IS IN THE GENERAL CONTRACTOR'S SCOOP OF WORK. COORDINATE EXACT LOCATION AND NUMBER OF PENETRATIONS WITH THE REFRIGERATION CONTRACTOR AND COMPLY WITH ALL LANDLORD REQUIREMENTS FOR X-RAY OF SLAB PRIOR TO WORK.
   I. ANY ATTACHMENT TO BUILDING STRUCTURE FOR LOAD BEARING WEIGHT TO BE PROVIDED AND CO-ORDINATED BY GENERAL CONTRACTOR.
   J. GENERAL CONTRACTOR TO BACKFILL ALL PITCH POCKETS TO TOP WITH TAR OR PITCH AFTER REFRIGERATION AND ELECTRICAL LINES HAVE BEEN RUN.
2. REFRIGERATION CONTRACTOR
   A. REFRIGERATION CONTRACTOR SHALL RUN ALL REFRIGERATION LINES WHICH EXTEND DOWN THRU WALL(S) BEFORE WALL(S) ARE CLOSED UP WHEN CONDUIT IS NOT PROVIDED.
   B. REFRIGERATION CONTRACTOR TO SEAL BOTH ENDS OF CONDUIT WITH FOMOFIL AFTER ALL LINES HAVE BEEN RUN. IF PULL BOX(ES) ARE SPECIFIED, THEY MUST BE A MINIMUM 12"x 12".
   C. REFRIGERATION CONTRACTOR SHALL INSULATE ALL REFRIGERATION SUCTION LINES.
   D. REFRIGERATION CONTRACTOR SHALL VERIFY LOCATION OF BLOWER COIL(S) AND COMPRESSOR(S) FOR ALL REFRIGERATED AREAS.
   E. REFRIGERATION CONTRACTOR SHALL VERIFY LOCATION OF PITCH POCKET(S) FOR REFRIGERATION LINE PENETRATION THRU ROOF WITH GENERAL CONTRACTOR. GENERAL CONTRACTOR TO INSTALL ALL PITCH POCKETS.
   F. CONTRACTOR SHALL USE ONLY CLEAN DEHYDRATED, SEALED REFRIGERATION GRADE A.C.R. COPPER TUBING. USE ONLY LONG RADIUS ELBOWS TO REDUCE FLOW RESISTANCE AND LINE BREAKAGE.
   G. SILVER SOLDER AND/OR SIL-FOS SHALL BE USED ON ALL REFRIGERANT PIPING. SOFT SOLDER IS NOT ACCEPTABLE. USE MINIMUM 35% SILVER SOLDER FOR DISSIMILAR METALS.
   H. ALL PIPING MUST BE SUPPORTED WITH HANGERS THAT CAN WITHSTAND THE COMBINED WEIGHT OF TUBING, INSULATION, VALVES, AND FLUID IN THE TUBING.
   I. USE NITROGEN IN THE COPPER TUBING DURING BRAZING TO PREVENT FORMATION OF COPPER OXIDES. LIQUID AND SUCTION LINES MUST BE FREE TO EXPAND INDEPENDENTLY OF EACH OTHER. DO NOT EXCEED 100 FEET WITHOUT A CHANGE IN DIRECTION OR AN OFFSET. PLAN PROPER PITCHING, EXPANSION ALLOWANCE, AND P-TRAPS AT THE BASE OF ALL SUCTION RISERS AND AT EVERY 15 FEET OF EVERY VERTICAL RISE. INSTALL SERVICE VALVES AT SEVERAL LOCATIONS FOR EASE OF MAINTENANCE. THESE VALVES MUST BE APPROVED FOR 450 PSI WORKING PRESSURE.
   J. ALL PIPING TO BE PRESSURE TESTED WITH NITROGEN AT 300 PSI WITH ALL VALVES OPEN AND HELD FOR 12 HOURS. ELECTRONIC LEAK DETECTORS SHALL BE USED TO LOCATE ALL LEAKS.
   K. COMPLETE SYSTEM SHALL BE EVACUATED TO 500 MICRONS WITH VACUUM PUMP BEFORE CHARGING THE SYSTEM.
   L. ONCE SYSTEM IS CHARGED AND RUNNING, ADJUST ALL CONTROLS _____ INCLUDING PRESSURE CONTROLS, EXPANSION VALVES, THERMOSTATS, AND TIME CLOCKS. RETURN AFTER 24 HOURS TO VERIFY PROPER OPERATION OF SYSTEMS.
   M. REFRIGERATION CONTRACTOR TO PROVIDE AND INSTALL DRAIN LINE HEATER WITH INSULATION IN FREEZER TO BE CONNECTED BY ELECTRICAL CONTRACTOR.
   N. REFRIGERANT SUCTION LINES OUTSIDE OF REFRIGERATED COMPARTMENTS, NOT RUN IN CONDUIT, SHALL BE INSULATED BACK TO COMPRESSOR WITH ARMSTRONG ARMA-FLEX AP-25/50 FOAMED PLASTIC INSULATION OR EQUAL IN ACCORD WITH DIRECTION OF THE MANUFACTURER. MINIMUM THICKNESS SHALL BE 3/4 INCH FOR COMMERCIAL TEMPERATURE AND 1.0 INCH FOR LOW TEMPERATURE.
   O. FILL ROOF REFRIGERATION AND ELECTRICAL PITCH POCKETS WITH FOAM AND SEALANT.
   P. REFRIGERATION CONTRACTOR TO SEAL ALL REFRIGERATION LINE PENETRATIONS MADE THRU WALK-IN COOLERS/FREEZERS, AND REFRIGERATED BASE SECTIONS OF COUNTERS.
3. ELECTRICAL CONTRACTOR
   A. ELECTRICAL CONTRACTOR TO PROVIDE MAIN POWER FOR THE REFRIGERATION PACKAGE AND CONNECT CONTROL AND DEFROST SYSTEMS AT THE COIL.
   B. ELECTRICAL CONTRACTOR TO PROVIDE POWER FOR MEDIUM AND LOW TEMPERATURE EVAPORATOR COILS. POWER FROM BUILDING. PROVIDE SEPARATE POWER SOURCE FOR EACH EVAPORATOR.
   C. ELECTRICAL CONTRACTOR TO CONNECT DRAIN LINE HEATER IN THE FREEZER.
   D. ALL ELECTRICAL WIRING AND INSTALLATION SHALL BE ACCORDANCE WITH THE WIRING DIAGRAM AND PER LOCAL CODES.
   E. IF CONTRACTED, ELECTRICAL CONTRACTOR TO INSTALL ALL CONDUITS FOR REFRIGERATION LINES IN WALLS, PRIOR TO WALLS ARE CLOSED UP. ALL PULL BOXES MUST BE A MINIMUM OF 12"x 12".
4. PLUMBING CONTRACTOR
   A. PLUMBING CONTRACTOR TO PROVIDE TYPE "M" COPPER DRAIN LINES FOR WALK-IN REFRIGERATOR AND FREEZER, PITCHED 1/2 INCH PER FOOT OF RUN. IN FREEZER, HEATED DRAIN LINE MUST BE INSULATED TO PREVENT FREEZING. TRAP DRAIN LINES OUTSIDE OF REFRIGERATED SPACE TO AVOID ENTRANCE OF WARM AND MOIST AIR.
   B. CONTRACTOR TO PROVIDE INDIVIDUAL DRAIN LINE FOR EACH EVAPORATOR UNLESS OTHERWISE CALLED FOR IN THE PLANS.
   C. ALL PLUMBING INSTALLATION SHALL BE IN ACCORDANCE WITH LOCAL CODES.

ROOF MOUNT

DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117832 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/21/20

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Professional Seals

NEVADA JOINT UNION HIGH SCHOOL DISTRICT

NEVADA UNION HIGH SCHOOL

CLASSROOM MODERNIZATION CTE - CULINARY ARTS

11645 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:

FOODSERVICE EQUIPMENT REFRIGERATION DETAIL

SCALE:

REVISIONS

No.	Issue Description	Date
1		
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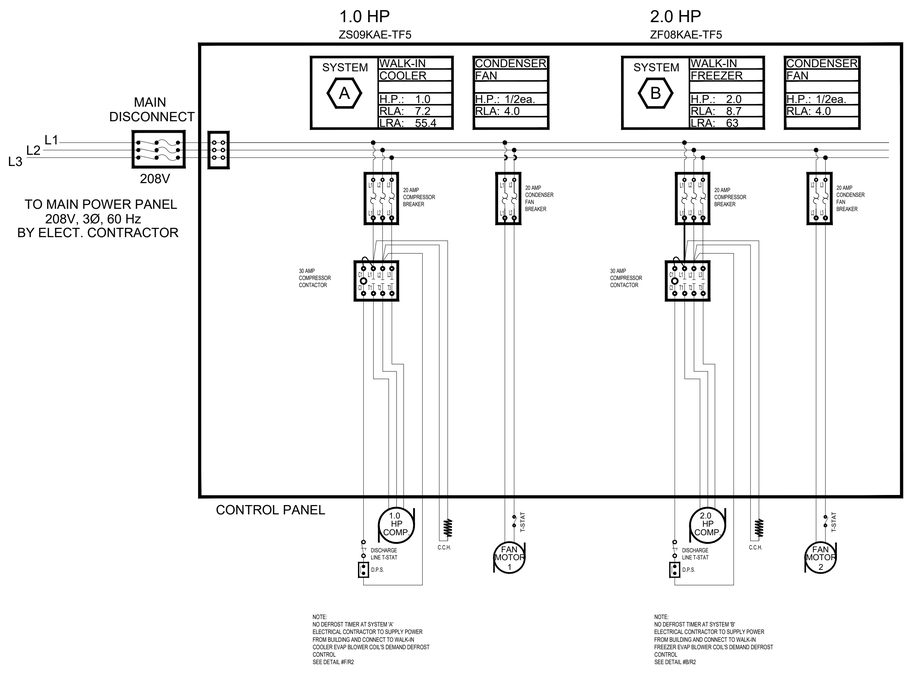
82 of 89



NOTE:
NO DEFROST TIMER AT SYSTEM 'A'.
ELECTRICAL CONTRACTOR TO SUPPLY POWER FROM BUILDING AND CONNECT TO WALK-IN COOLER EVAP BLOWER COIL'S DEMAND DEFROST CONTROL.
SEE DETAIL #F/R2

NOTE:
NO DEFROST TIMER AT SYSTEM 'B'.
ELECTRICAL CONTRACTOR TO SUPPLY POWER FROM BUILDING AND CONNECT TO WALK-IN FREEZER EVAP BLOWER COIL'S DEMAND DEFROST CONTROL.
SEE DETAIL #B/R2

A FS7.2 WIRING DIAGRAM

LEGEND
1. ——— FACTORY WIRING
2. ——— FIELD WIRING BY ELECTRICAL CONTRACTOR

POWER REQUIRED FOR WALK-IN EVAPORATOR COIL'S DEMAND CONTROL AND TO DRAIN HEATERS. POWER FROM BUILDING: SUPPLIED BY ELECTRICAL CONTRACTOR

SYSTEM	DEFROST	UNIT COOLER ITEM #	DESCRIPTION	QUANTITY	MODEL	EVAP. COIL RLA	EVAP. COIL VOLTAGE	DRAIN HEATER RLA	DRAIN HEATER VOLTAGE
B	D	18	WALK-IN FREEZER	1	LET075BEK	7.8	208/1	5.0	208/1

NOTE: PROVIDE SEPARATE POWER SOURCE FOR EACH EVAPORATOR. POWER FROM BUILDING.

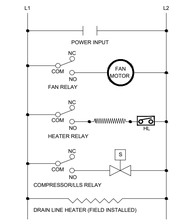
INSTALLING THE SENSORS (BY REFRIGERATION CONTRACTOR):

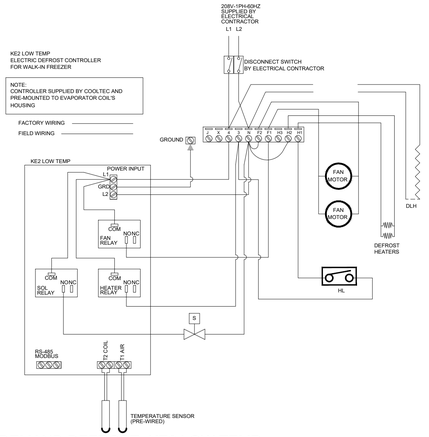
AIR SENSOR (T1)

A. USE THE STAINLESS STEEL BRACKET AND SELF-PIERCING SCREW FROM THE ACCESSORY KIT.
B. THE SINGLE LOOP'S END IS DESIGNED TO BE MOUNTED WITH THE SCREW INCLUDED.
C. THE END WITH MULTIPLE LOOPS IS DESIGNED TO HOLD THE SENSOR.
D. LOCATE THE BEST PLACE TO INSTALL THE SENSOR.
E. THE SENSOR SHOULD BE LOCATED BETWEEN 6 AND 12 INCHES AWAY FROM THE FACE OF THE EVAPORATOR. THE DISTANCE PREVENTS THE SENSOR FROM THE SENSING HEAT FROM THE HEATING ELEMENTS DURING THE DEFROST CYCLE, BUT CLOSE ENOUGH TO ACCURATELY SENSE THE RETURN AIR TEMPERATURE.
F. THE SENSOR BRACKET MAY BE BENT AS NECESSARY TO LOCATE THE SENSOR IN THE PROPER POSITION.

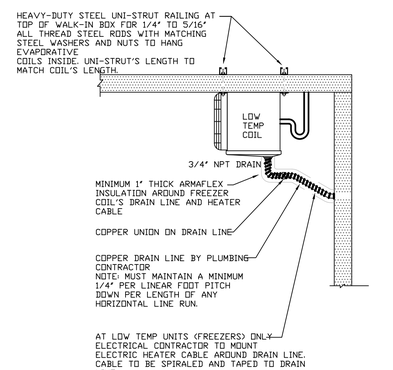
COIL SENSOR (T2)

A. LOCATION OF THIS SENSOR IS AT THE FACE SIDE OF THE COIL'S CONDENSER, 1 TO 1-1/2 INCHES FROM THE RIGHT OR LEFT ENDS OF THE ACTIVE COIL SURFACE, AND IN THE 1/3 BOTTOM SECTION OF THE CONDENSER.
THE SENSOR NEEDS TO BE AS FAR AWAY FROM THE DEFROST HEAT SOURCES AS POSSIBLE.
NOTE: INSERT PLUG (ITEM G FROM THE PARTS LIST) INTO THE COIL HOUSING WHEN MOUNTING THE SENSOR WIRE TO PREVENT DAMAGE TO THE SENSOR FROM SHARP EDGES. THE PLUG IS PROVIDED SHOULD BE INSERTED INTO THE INNER HOUSING TO ACCESS THE COIL. INSTALLER MUST PUNCTURE PLUG TO INSERT SENSOR

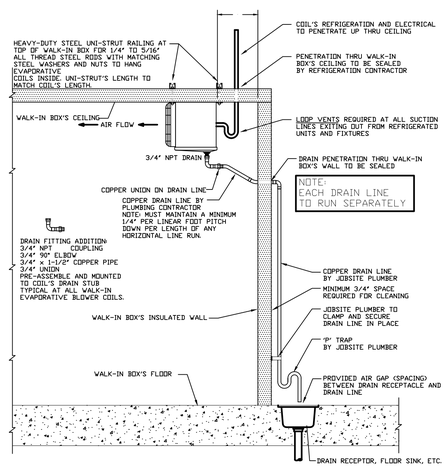




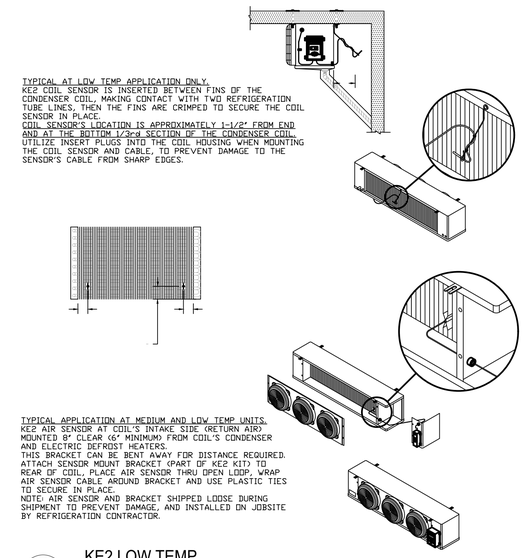
B FS7.2 DEMAND DEFROST- KE2 LOW TEMP
WIRING DIAGRAM FOR FREEZER COIL



C FS7.2 WALK-IN'S FREEZER
CONDENSATE DRAIN LINE



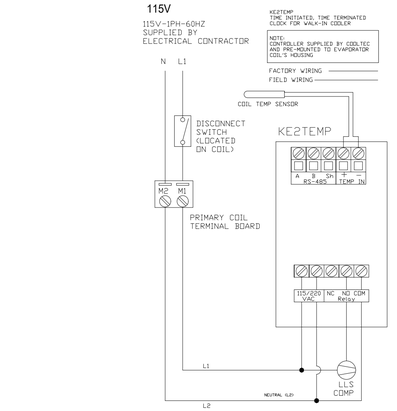
D FS7.2 WALK-IN'S COIL MOUNT AND
CONDENSATE DRAIN LINE



E FS7.2 KE2 LOW TEMP
SENSOR MOUNT DETAILS

POWER REQUIRED FOR MEDIUM TEMPERATURE EVAPORATOR COILS. POWER FROM BUILDING: SUPPLIED BY ELECTRICAL CONTRACTOR

SYSTEM	DEFROST	UNIT COOLER ITEM #	DESCRIPTION	QUANTITY	MODEL	POWER FROM BUILDING RLA	POWER FROM BUILDING VOLTAGE
A	D	17	WALK-IN COOLER	1	ADT090AEK	1.8	115/1



F FS7.2 DEMAND DEFROST- KE2 MED TEMP
WIRING DIAGRAM FOR COOLER COIL

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SHEET NUMBER FS7.2

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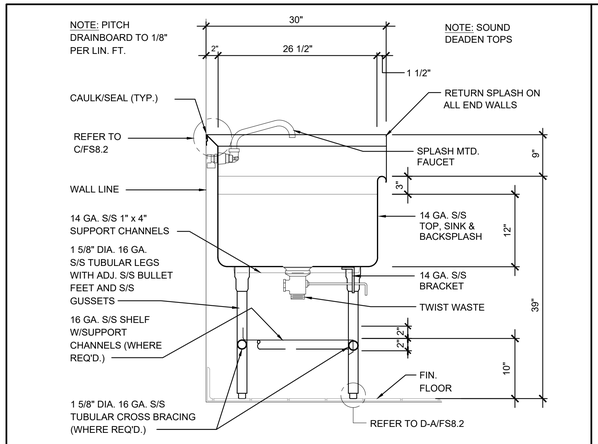
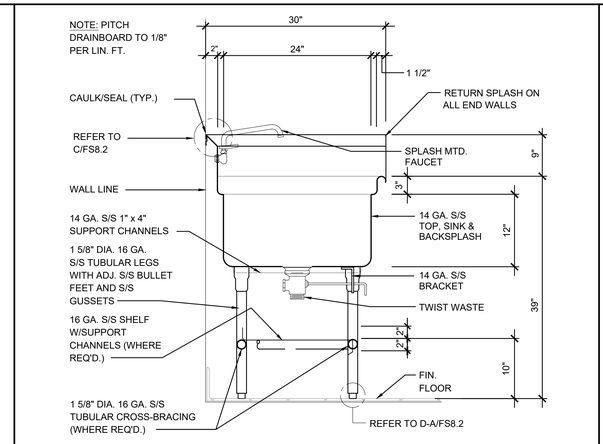
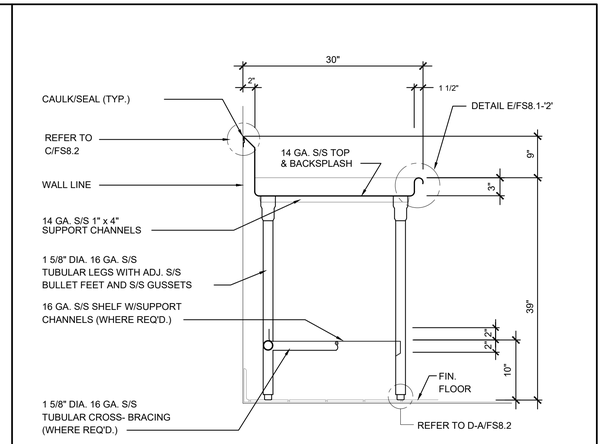


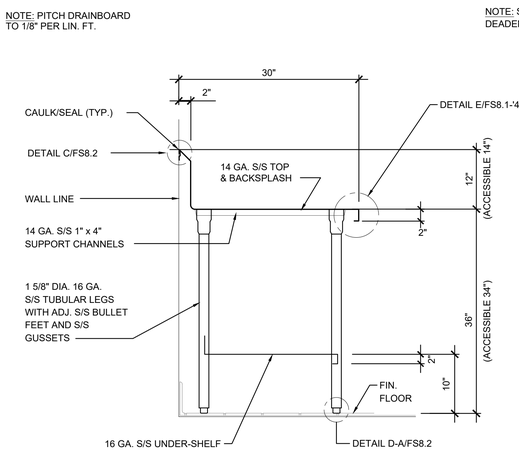
A SECTION AT POT SINK (INTEGRAL) NTS



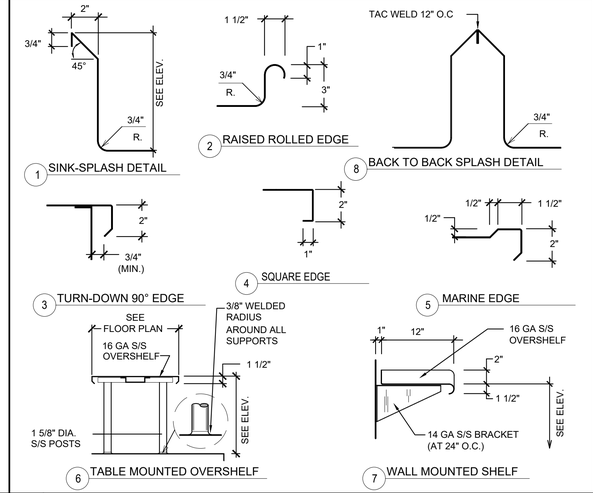
B SECTION AT PREP SINK NTS



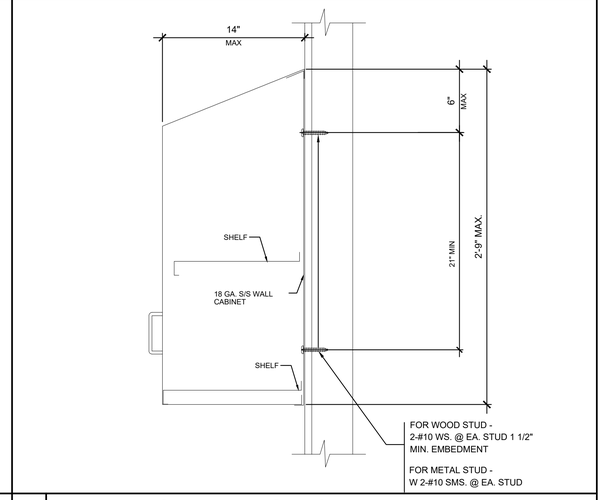
C SECTION AT DISHTABLE NTS



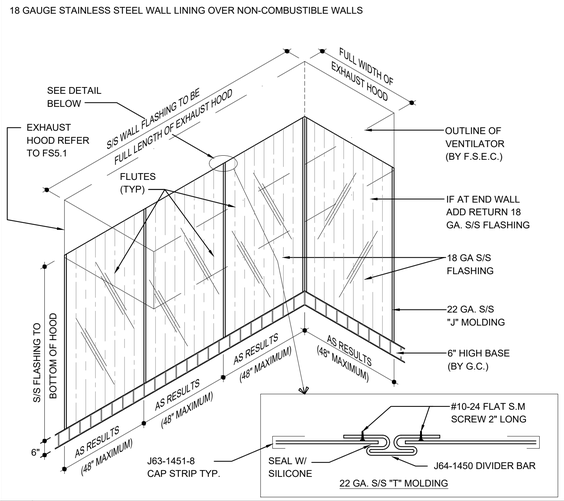
D SECTION AT WORKCOUNTER NTS



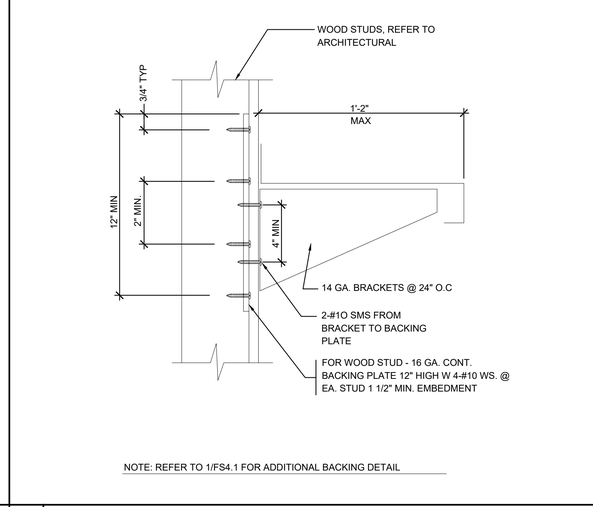
E EDGE/SPLASH/SHELF DETAILS NTS



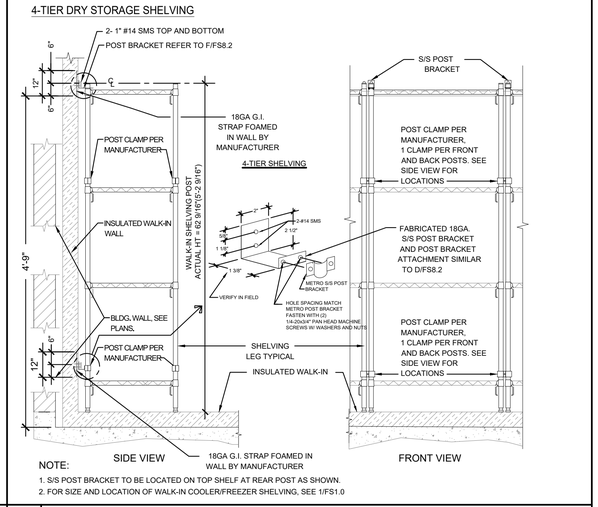
F WALL MOUNTED CABINET NTS



G S/S WALL FLASHING DETAIL NTS



H WALL MOUNTED SHELF NTS



I WALK-IN SHELVING ATTACHMENT NTS

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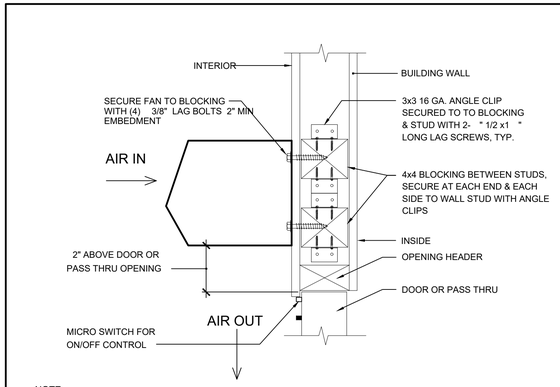
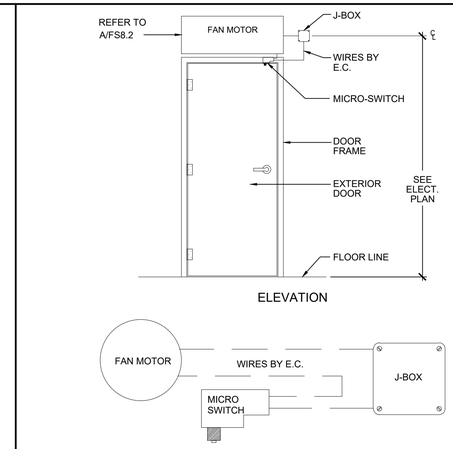


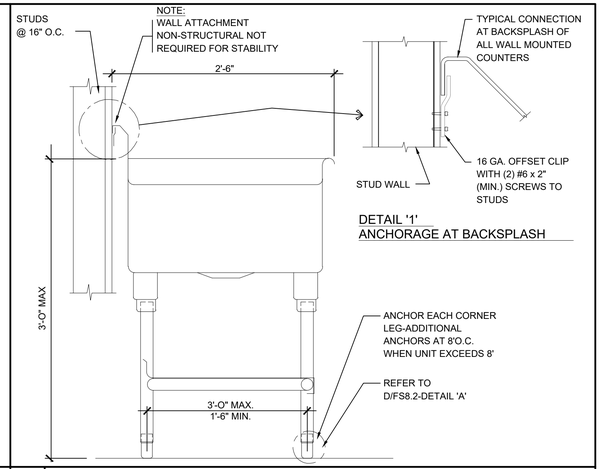
NOTE:

1. REFER TO B/FS8.2 FOR WIRING DIAGRAM.

A AIR CURTAIN MOUNTING DETAIL NTS

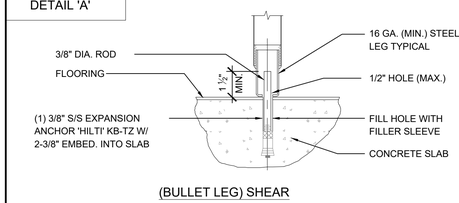


B WALL MTD. AIR CURTAIN MICRO SW. NTS



C FLOOR MOUNTED SINK @ WALL NTS

DETAIL 'A'

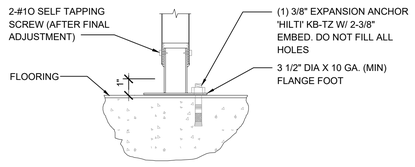


(BULLET LEG) SHEAR

DETAIL 'B'

NOTUSED

DETAIL 'C'

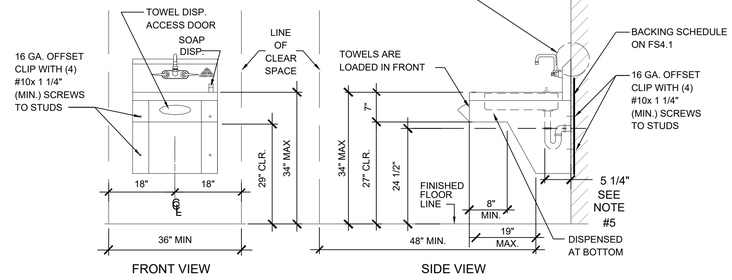


(FLANGED FOOT) SHEAR & UPLIFT

D FOOT ANCHORAGE DETAIL NTS

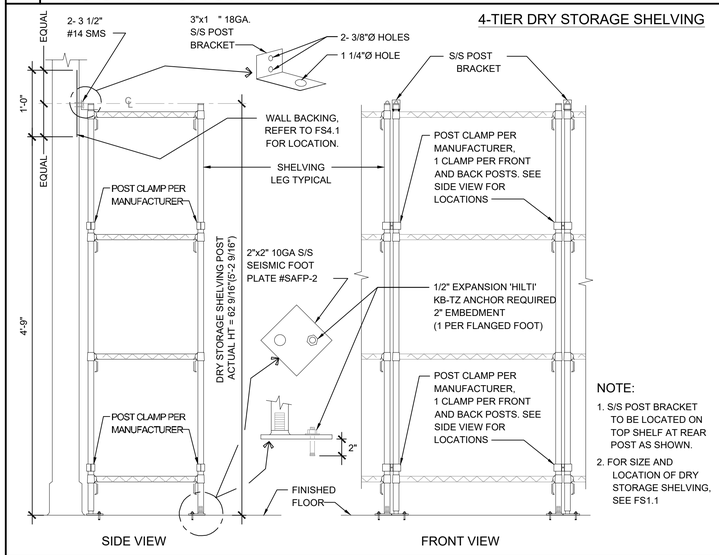
ACCESSIBLE HAND SINK REQUIREMENT NOTES

1. HOT WATER AND DRAIN PIPES UNDER ACCESSIBLE HAND SINKS SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE OBJECTS OR SURFACES UNDER HAND SINKS.
2. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBF. LEVER-OPERATED, PUSH-TYPE AND MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS.
3. WHERE TOWEL, SANITARY NAPKINS, WASTE RECEPTACLES, SOAP DISPENSER AND OTHER SIMILAR DISPENSING AND DISPOSAL FIXTURES ARE PROVIDED, AT LEAST ONE OF EACH TYPE SHALL BE LOCATED WITH ALL OPERABLE PARTS WITHIN 40 INCHES FROM THE FINISHED FLOOR.
4. ALL DIMENSIONS SHOWN ARE MINIMUM CLEARANCES, UNLESS NOTED.
5. AREA BELOW HAND SINKS SHALL BE ACCESSIBLE AND CLEAR.



E ACCESSIBLE HAND SINK DETAILS NTS

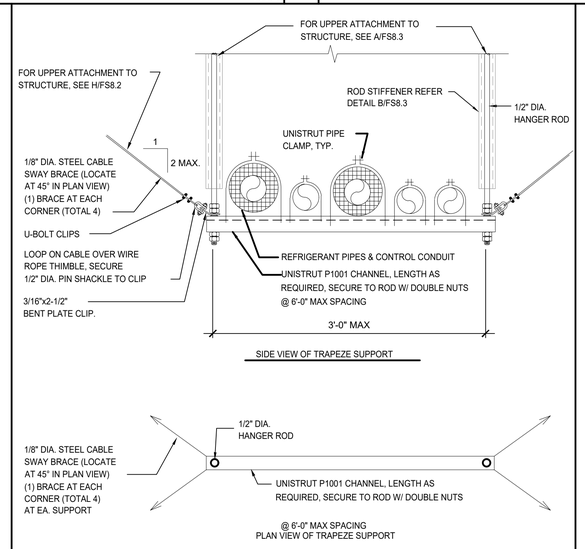
4-TIER DRY STORAGE SHELVING



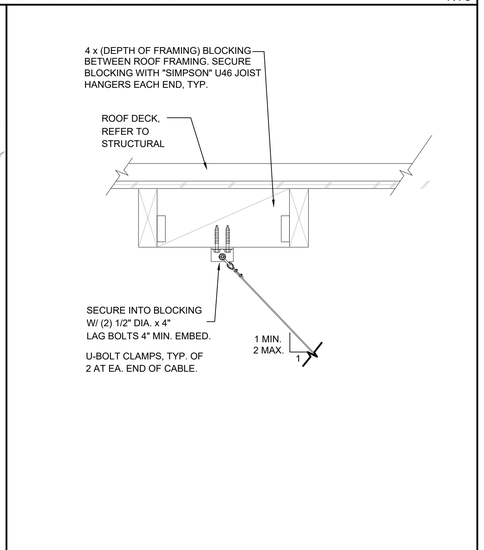
NOTE:

1. S/S POST BRACKET TO BE LOCATED ON TOP SHELF AT REAR POST AS SHOWN.
2. FOR SIZE AND LOCATION OF DRY STORAGE SHELVING, SEE FS1.1

F DRY STORAGE SHELVING ATTACHMENT NTS



G TYPICAL TRAPEZE SUPPORT NTS



H UPPER CABLE ATTACHMENT NTS

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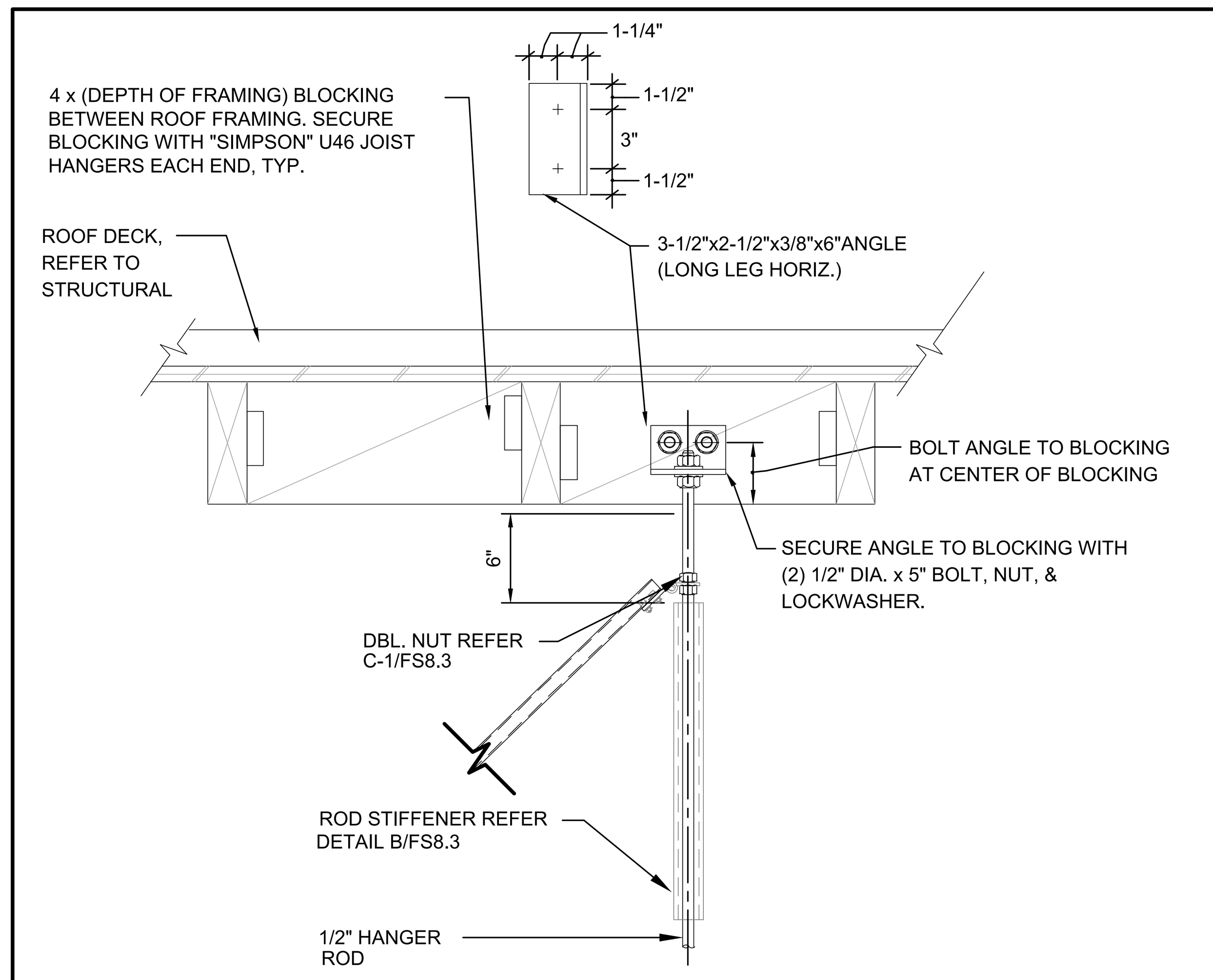
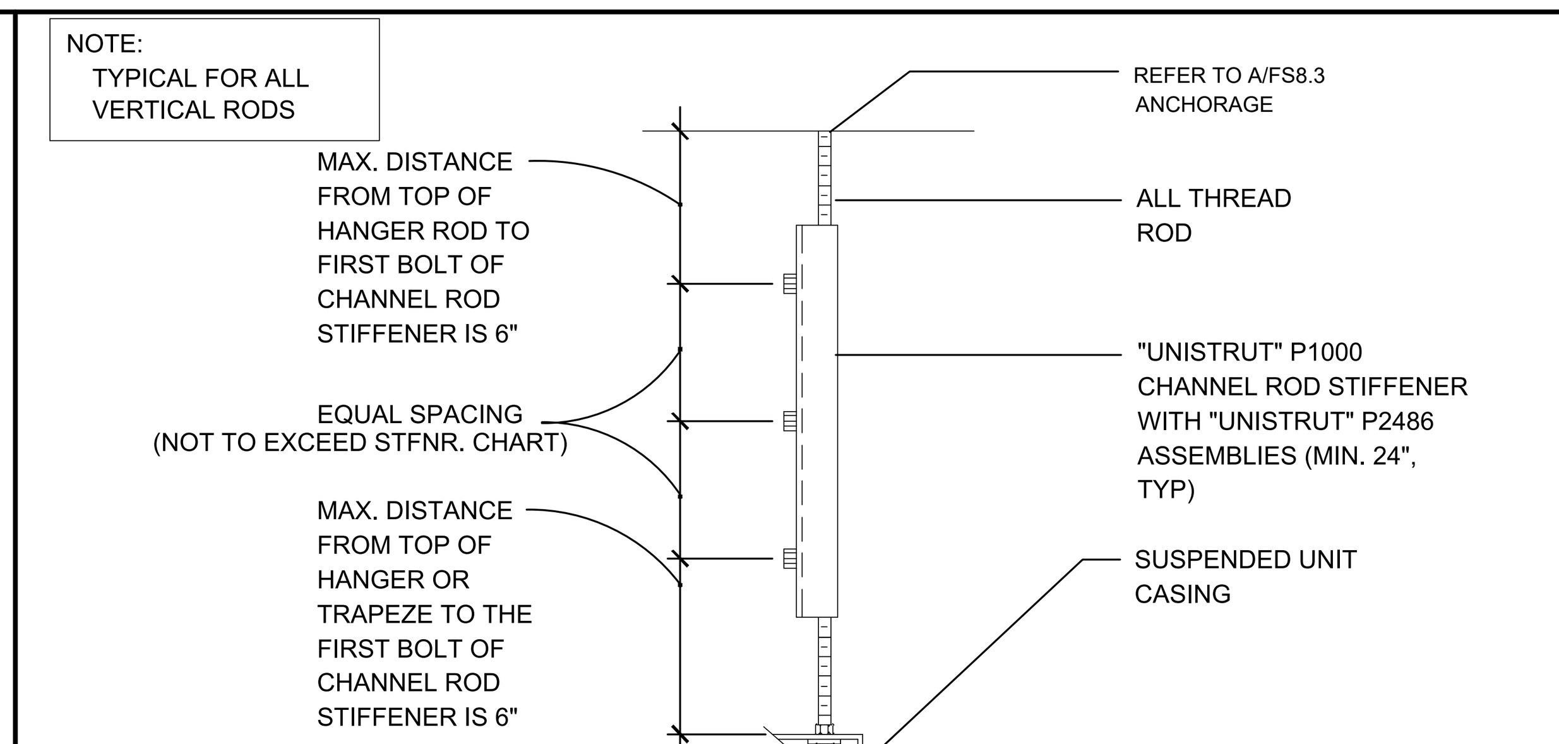
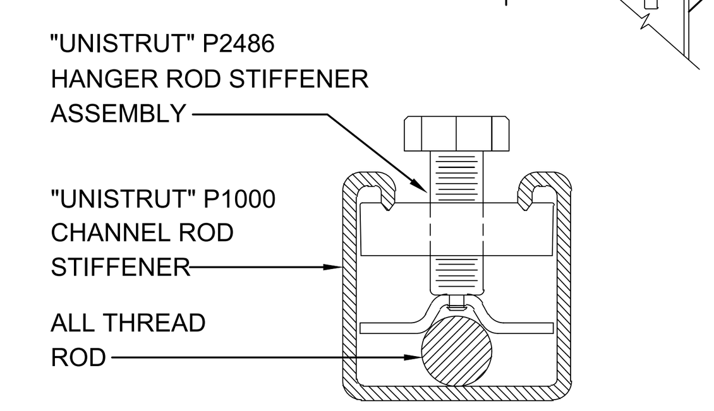


A TYPICAL UPPER ATTACHMENT NTS





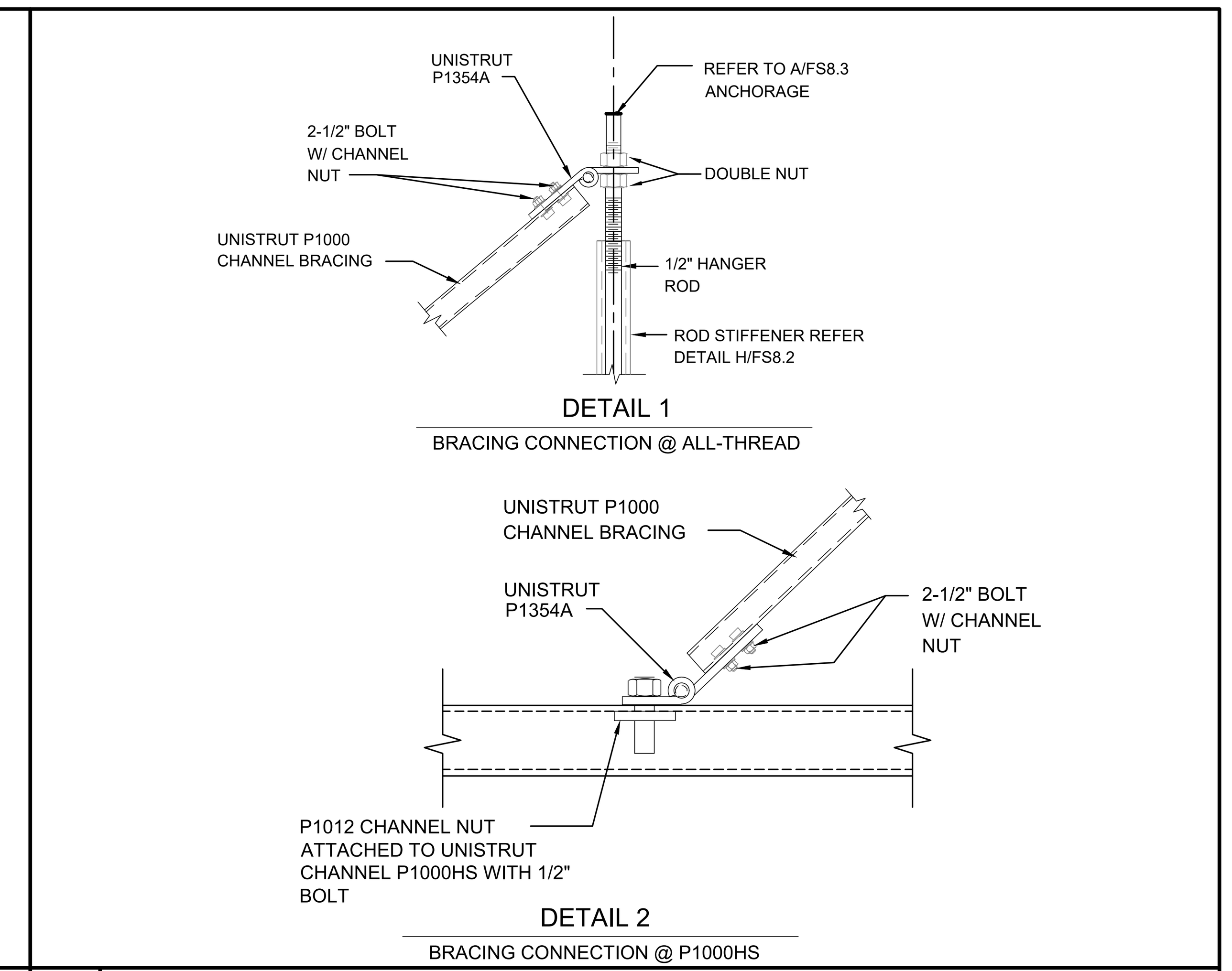
FOR 3/8" THRU 5/8" ROD
(FOR 3/4" & 7/8" ROD USE SC-UB)

ROD STIFFENER CHART

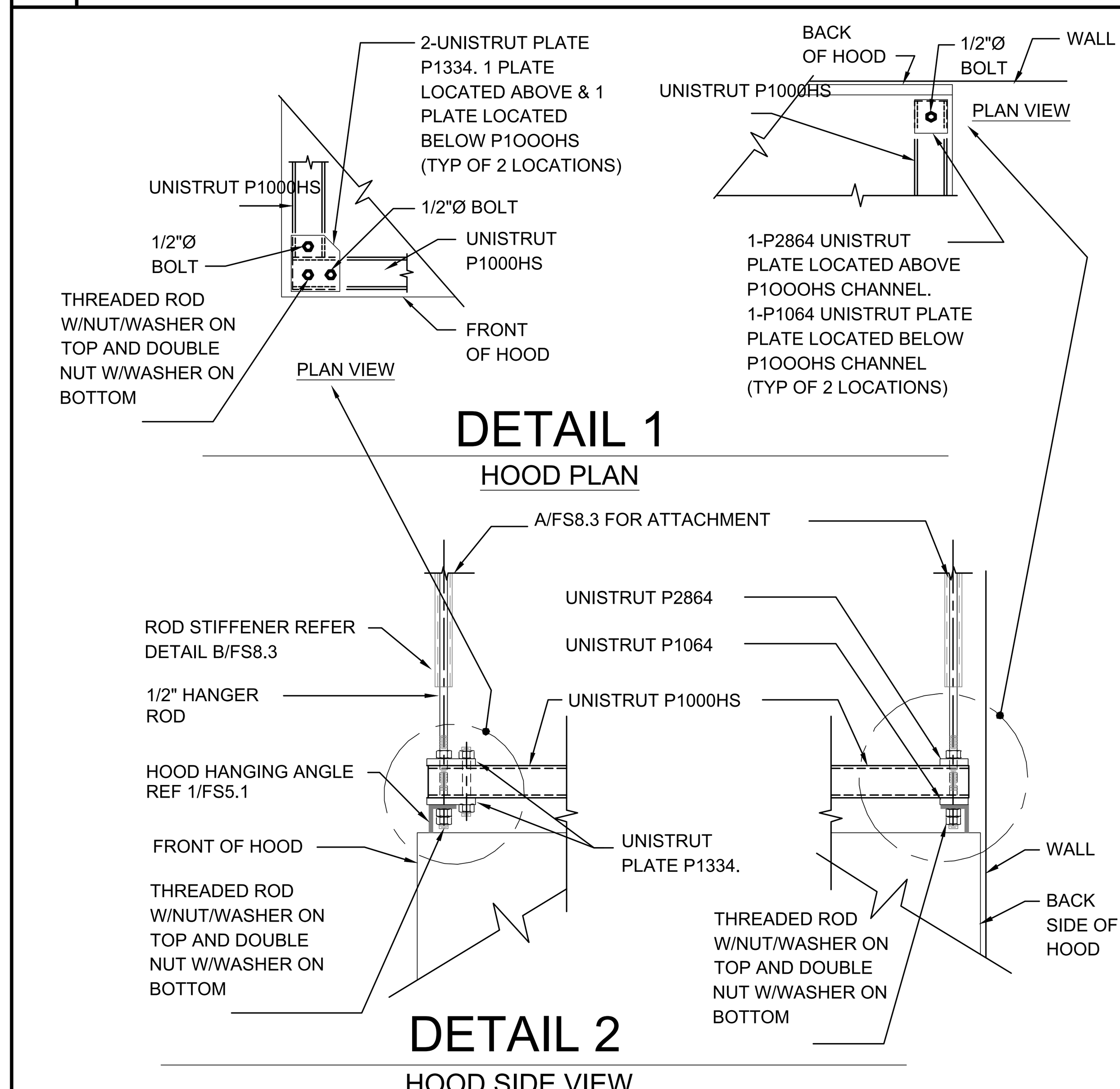
ATR Size	Max. Rod Length Without Rod Stiffener In.	(mm)
3/8"-16	19"	(482.6)
1/2"-13	25"	(635.0)
5/8"-11	31"	(787.4)
3/4"-10	37"	(939.8)
7/8"-9	43"	(1092.2)

Note: Minimum of (2)-P2486

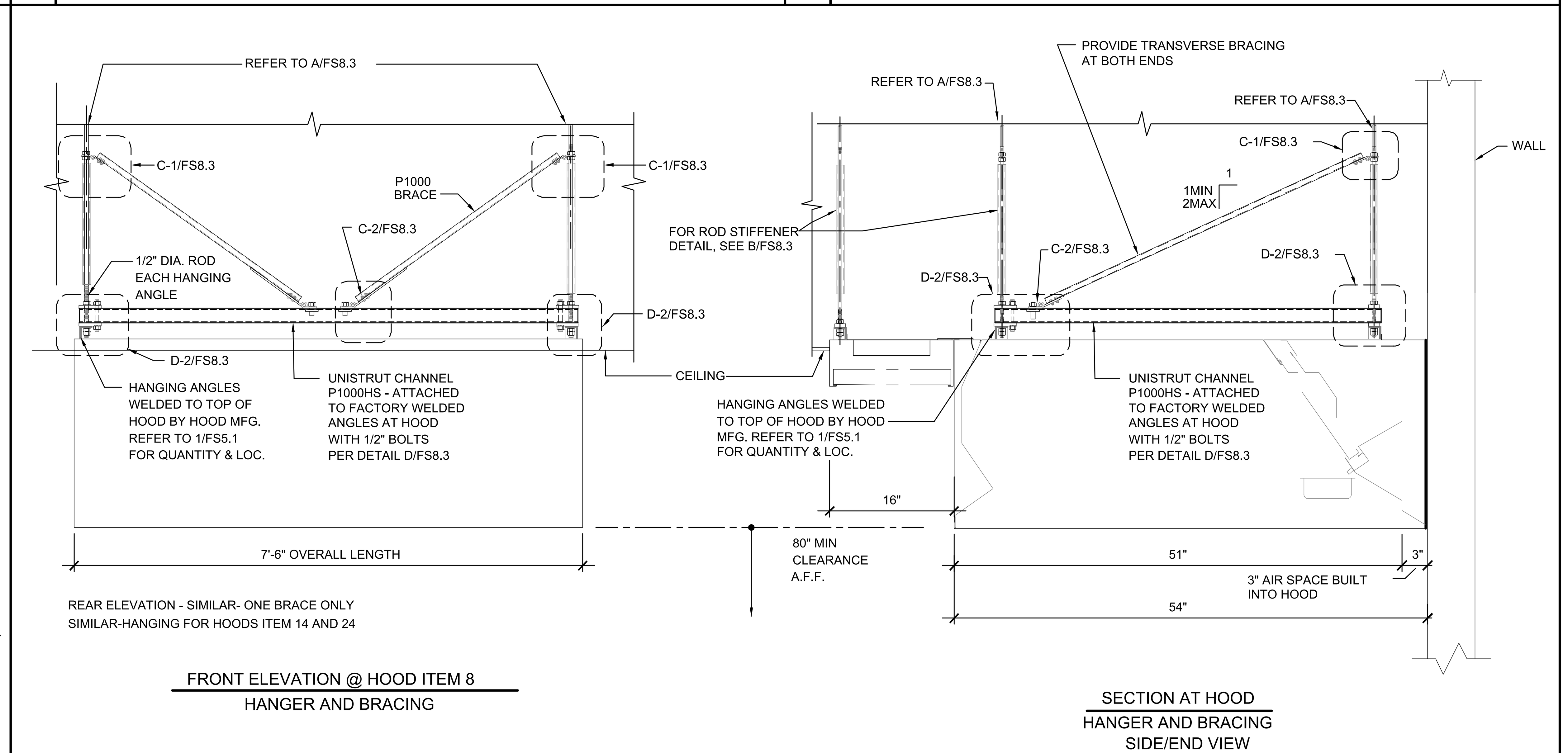
B ROD STIFFENER DETAIL NTS



C DIAGONAL HOOD BRACING NTS



D HOOD HANGING SUPPORT NTS



E EXHAUST HOOD ATTACHMENT DETAIL NTS

NOT USED

G NTS

NOT USED

H NTS

NOT USED

I

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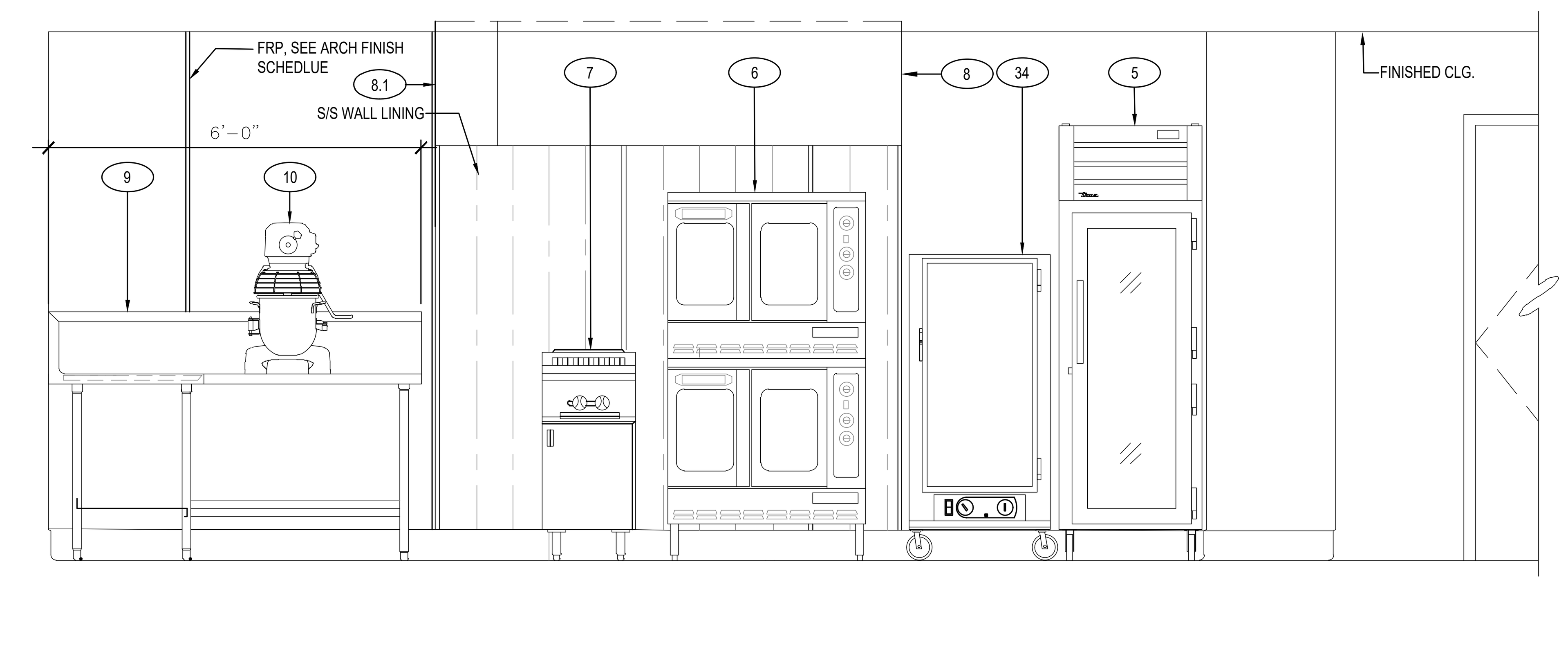
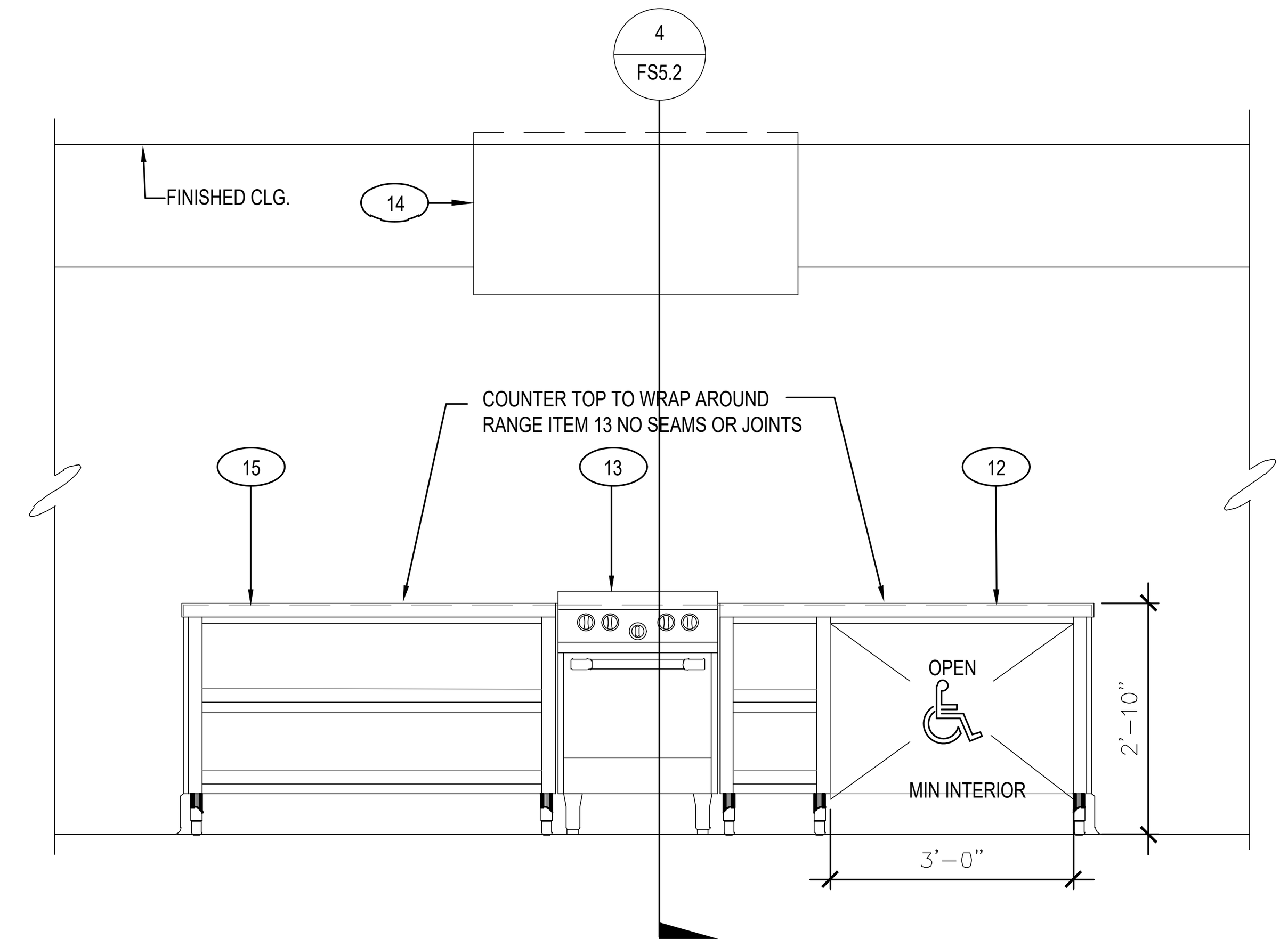
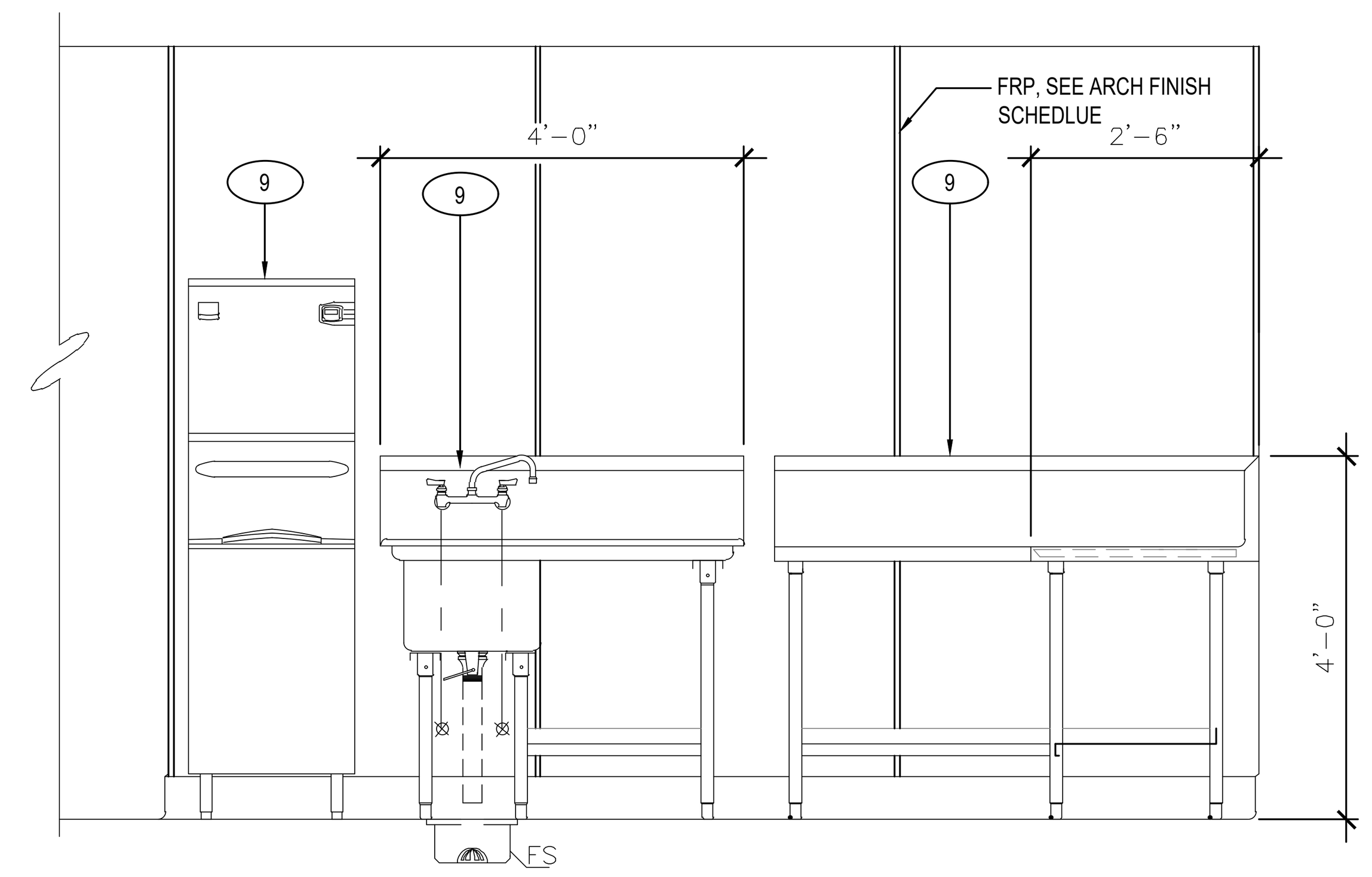


ELEVATION A
SCALE : 1/2"=1'-0"
FS9.1



ELEVATION B
SCALE : 1/2"=1'-0"
FS9.1



ELEVATION C
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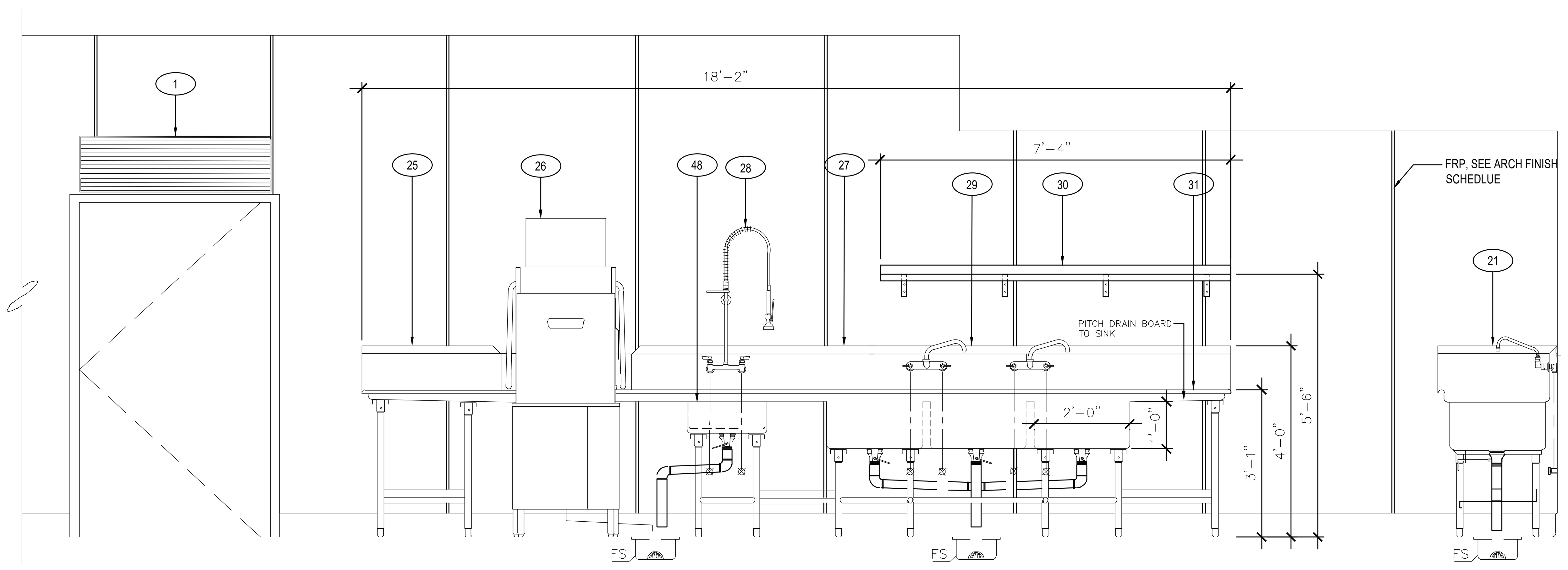

ELEVATION D
SCALE : 1/2"=1'-0"
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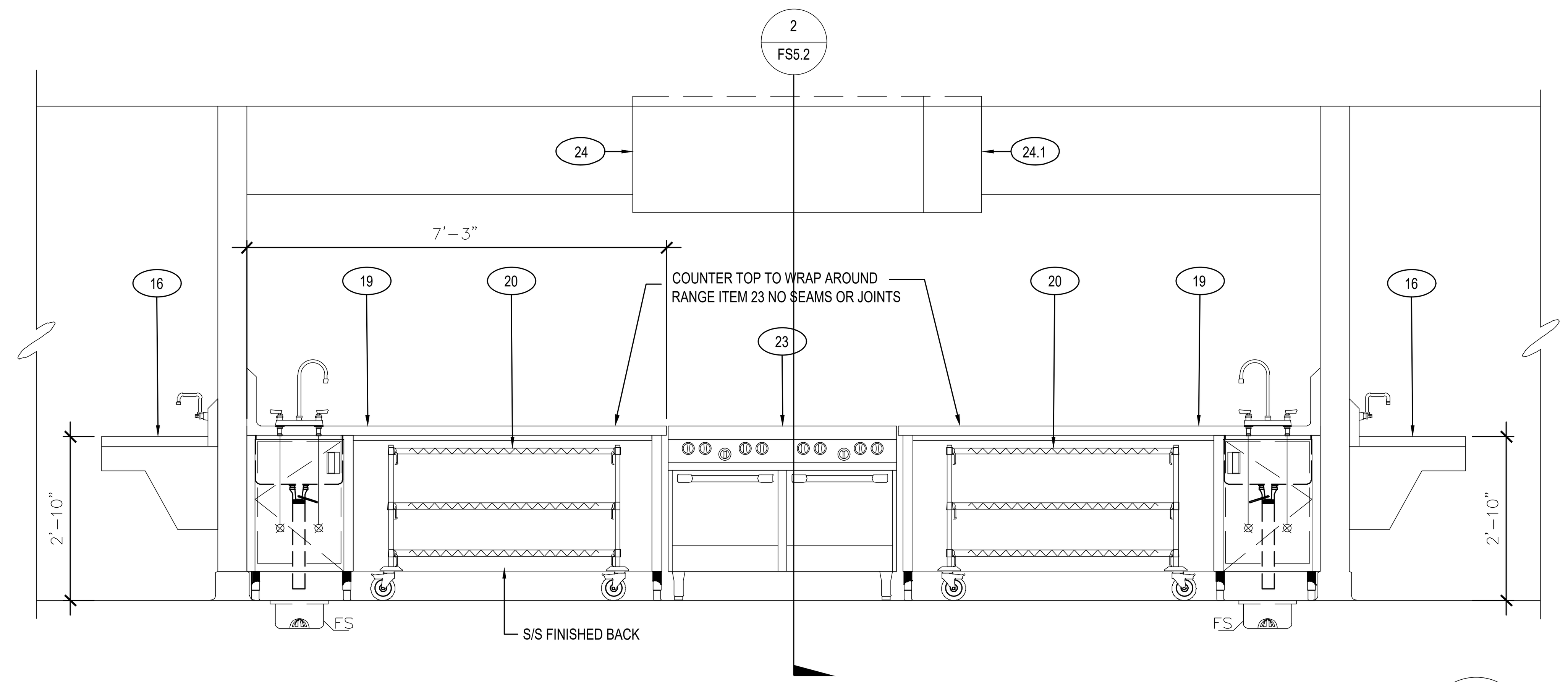
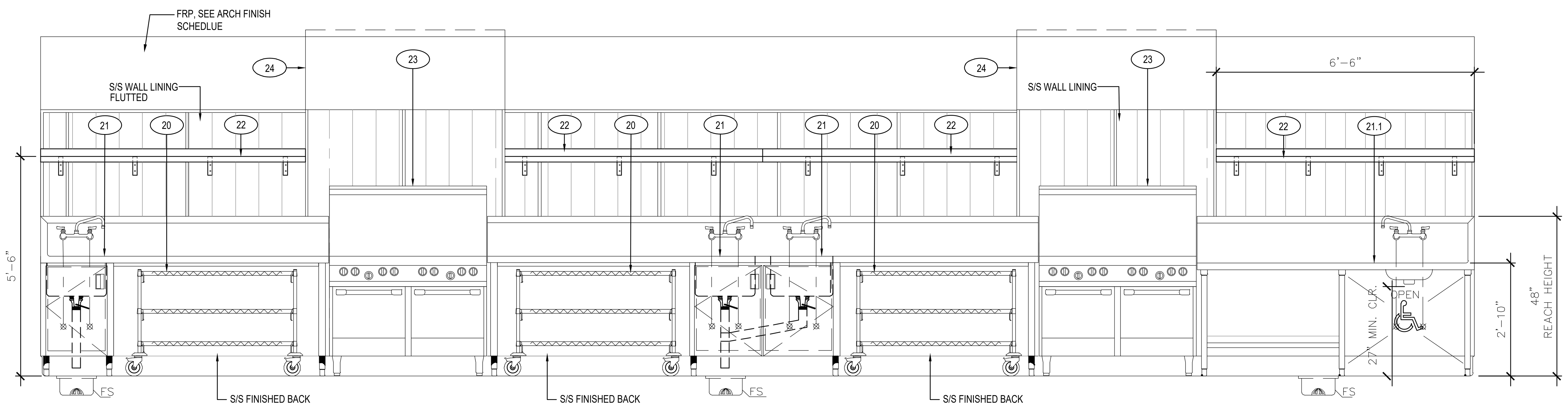


ELEVATION E
SCALE : 1/2"=1'-0"
FS9.1



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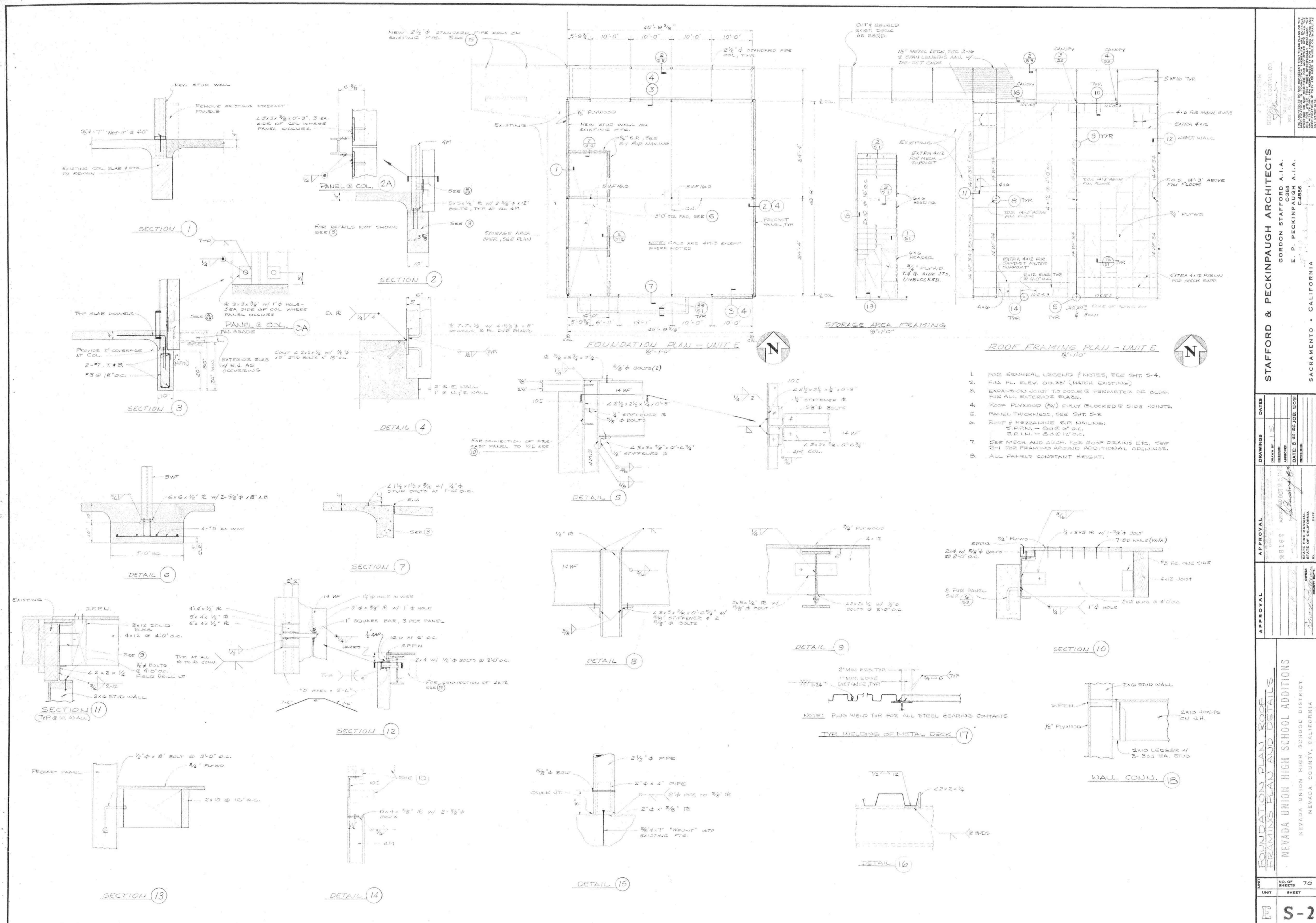

FOR REFERENCE ONLY - SHOWN FOR REFERENCE TO (E) STRUCTURAL FRAMING ONLY

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SS ☑ FLS ☑ ACS ☑
DATE: 01/21/20

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Silicon Valley
95 S Market St, Suite 480
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(408) 320-4871

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CLASSROOM MODERNIZATION CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:

(E) FOUNDATION / ROOF FRAMING 1996 ADDITION, #02-28169

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

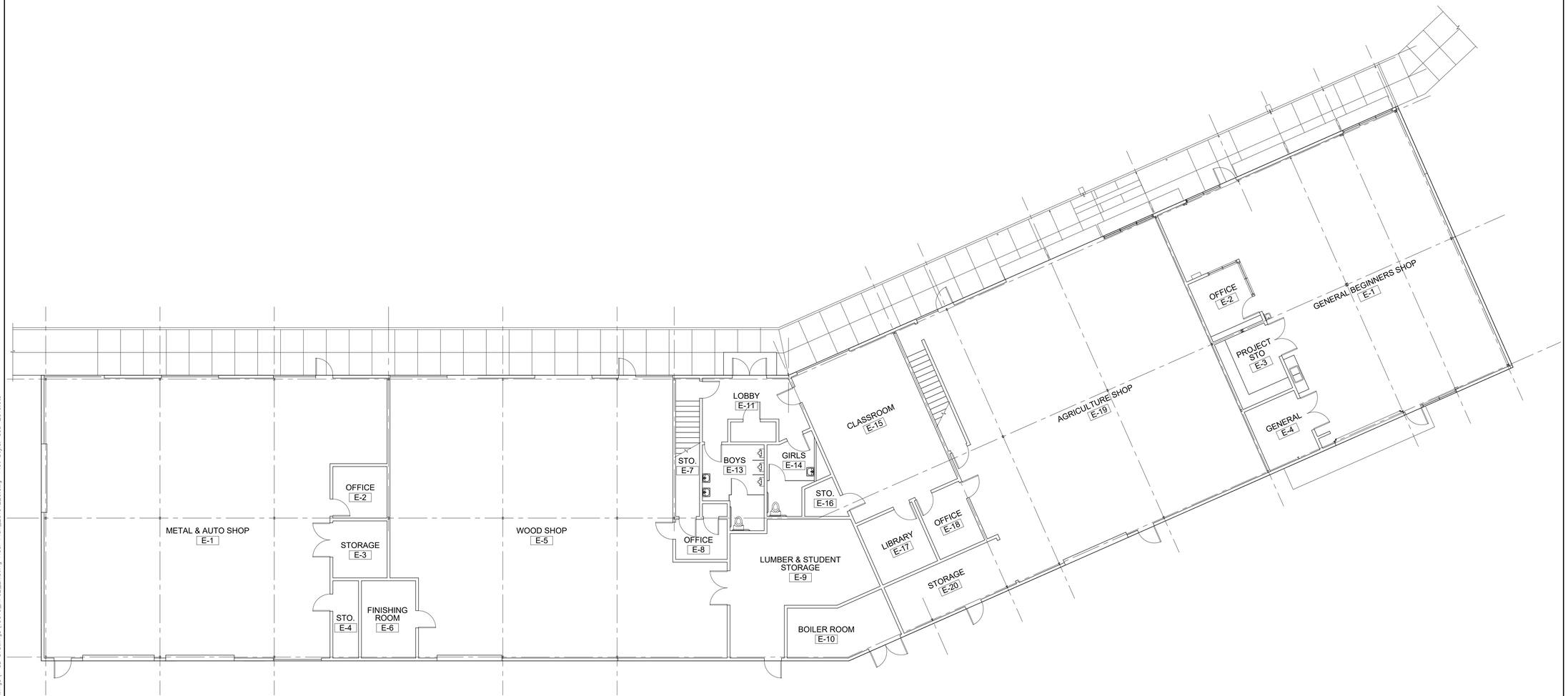
Drawn By: JWE

Checked By: CAS

JOB NO. 19.010

DATE 2019-12-20

SHEET NUMBER **RF0.1**



1 EXISTING FLOOR PLAN - INDUSTRIAL ARTS BUILDING

SCALE: 1" = 10'-0"

0 10' 20'

N

FOR REFERENCE ONLY - SHOWN FOR (E) FIRE ALARM (SEE ELECTRICAL DRAWINGS) AND (E) STUDENT ACCESSIBLE RESTROOMS

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CTE - CULINARY ARTS

11761 RIDGE ROAD
GRASS VALLEY, CA 95945

SHEET TITLE:
EXISTING FLOOR PLAN

SCALE: AS SHOWN

REVISIONS

No.	Issue Description	Date
1		
2		
3		
4		
5		

Drawn By: JWE

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DATE 2019-12-20

SHEET NUMBER **RF0.2**

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