GENKI RAMEN

PROJECT TEAM

PROJECT ADDRESS
7244 OUTFITTERS WAY
WEST CHESTER, OHIO 45069

BUILDING OWNER (LANDLORD)
ANCHOR RETAIL SOLUTIONS
3805 EDWARDS ROAD
CINCINNATI, OH 45209

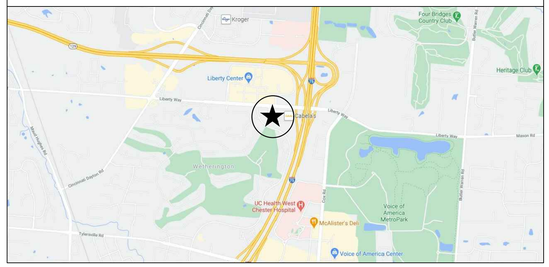
ARCHITECT
DRAWING DEPT
3217 MADISON ROAD
CINCINNATI, OH 45209
(513) 272 8099

GENERAL CONTRACTOR
TO BE SELECTED
11131 DEERFIELD ROAD
CINCINNATI, OH 45242
(513) 335 1840

MEP ENGINEER
MARQUE ENGINEERING
2055 READING RD. #280
CINCINNATI, OH
(513) 901 0043

HOOD SUPPLIER
AIR SOLUTIONS, INC.
1329 E. KEMPER RD., STE 4210
CINCINNATI, OH 45246
(513) 860 5555

7244 OUTFITTERS WAY, 45069 PARCEL # M5620400000106



GRAPHIC SYMBOLS

- EXISTING NON-STRUCTURAL CONSTRUCTION TO BE REMOVED
- EXISTING STRUCTURAL CONSTRUCTION TO BE REMOVED
- EXISTING CONSTRUCTION TO REMAIN
- PROPOSED SCHEDULED PARTITION/FRAMING
- 1-HR RATED CONSTRUCTION
- 2-HR RATED CONSTRUCTION
- PROPOSED SCHEDULED PARTIAL PARTITION - COORD. w/ PLAN
- PARTITION ABOVE CEILING TO DECK - COORD. w/ RCP
- DOOR TAG - REFER TO DOOR SCHEDULE (12)
- WINDOW TAG - REFER TO WINDOW SCHEDULE (W 01)
- ALIGN w/ ESTABLISHED SURFACES (ALIGN)
- PARTITION TYPE (P1)
- INTERIOR ELEVATION (1 / 12)
- FINISH TAG (PT-1)
- CENTERLINE
- KEYNOTE (1)
- SPOT ELEVATION (100.00')
- DETAIL SECTION (1 / 12)
- REVISION (1)
- FLOOR LEVEL ELEVATION (FLOOR LEVEL +/-0'-0")
- DETAIL (1 / 7.00)

PROJECT DESCRIPTION
THIS PROJECT IS THE INTERIOR TENANT FINISH OF A PROPOSED RESTAURANT AT OUTFITTERS WAY, PREVIOUSLY A MERCANTILE USE, WITH ITS OWN RESTROOMS. A NEW KITCHEN EXHAUST HOOD WILL BE PROVIDED. SPRINKLER ALTERATIONS ARE UNDER SEPARATE PERMIT BY OTHERS. EXTERIOR SIGNAGE IS UNDER SEPARATE PERMIT BY OTHERS.

ZONING - WEST CHESTER TOWNSHIP

ZONING DISTRICT:	GENERAL BUSINESS PUD (C-PUD)
HISTORIC:	NO
HILLSIDE:	NO
PARKING:	54 REQUIRED OF ALL TENANTS; 70 SPACES AVAILABLE (SHARED AMONGST TENANTS) 3 ACCESSIBLE SPACES REQUIRED; 4 ACCESSIBLE SPACES PROVIDED (SHARED AMONGST TENANTS) (1)
SIGNAGE:	UNDER SEPARATE PERMIT BY OTHERS

GENERAL CONDITIONS
THE GENERAL CONDITION OF THE CONTRACT FOR CONSTRUCTION ARE CONTAINED IN AIA DOCUMENT A201-2017 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AND ARE HEREBY MADE A PART OF THIS SPECIFICATION AS IF FULLY INCLUDED HEREIN. COPIES OF THIS DOCUMENT ARE AVAILABLE FROM THE ARCHITECT.

BUILDING CODE COMPLIANCE:
THE COMPLETED PROJECT IS TO MEET OR EXCEED THE REQUIREMENTS FOR A COMMERCIAL INTERIOR RENOVATION USING FRAMING AND GYPSUM WALLBOARD ASSEMBLIES AS SPECIFIED. ALL MATERIALS, ASSEMBLIES AND FABRICATIONS SUPPLIED AND/OR INCLUDED IN THE PROJECT, AND ALL PROCEDURES, ASSEMBLY, SEQUENCES ETC. PERFORMED AS A PART OF THE WORK OF THE PROJECT SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE CODE, INCLUDING ALL REFERENCED CODES, STANDARDS, GUIDELINES, STATE AND FEDERAL LAWS.

CONSTRUCTION SAFETY:
IN ACCORDANCE WITH THE GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE COMPLETELY AND SOLELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING THE SAFETY OF ALL THE PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL HOURS. WHEN ON SITE, THE ARCHITECT IS RESPONSIBLE FOR HIS OWN SAFETY BUT HAS NO RESPONSIBILITY FOR THE SAFETY OF OTHER PERSONNEL OR SAFETY CONDITIONS AT THE SITE.

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTOR.

THE CONTRACTOR SHALL BRACE THE ENTIRE STRUCTURE AS REQUIRED TO MAINTAIN STABILITY UNTIL COMPLETE AND FUNCTIONING AS THE DESIGNED UNIT.

DEMOLITION AND SALVAGE:
ITEMS OF SALVAGEABLE VALUE TO THE OWNER SHALL BE REMOVED FROM THE WORK AREA AND STORED AT A LOCATION MUTUALLY AGREED UPON BY BOTH THE OWNER AND CONTRACTOR. CONTRACTOR SHALL VERIFY ALL ITEMS OF SALVAGE WITH THE OWNER PRIOR TO ANY DEMOTION.

REMOVE FROM SITE ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS.
EXISTING SITE CONDITIONS:
THE CONTRACTOR AND HIS AGENT(S) SHALL VERIFY ALL INFORMATION, PLAN LAYOUT, AND DIMENSIONS CONTAINED WITHIN THESE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, INCLUDING SITE CONDITIONS AND SOIL BEARING PRESSURE. ALL ERRORS, OMISSIONS, INCONSISTENCIES, AND DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. FAILURE TO DO SO WILL RELEASE THE ARCHITECT FROM ALL RESPONSIBILITY.

DUE TO THE NATURE OF REMODELING AN EXISTING STRUCTURE, CERTAIN ASSUMPTIONS MUST BE MADE BY THE ARCHITECT REGARDING EXISTING CONDITIONS WHICH MAY NOT BE VERIFIABLE WITHOUT EXPENDING ADDITIONAL SUMS OF MONEY OR DESTROYING OTHERWISE ADEQUATE PORTIONS OF THE BUILDING. IN THE EVENT THAT DISCREPANCIES ARISE WHICH CONFLICT WITH THE INTENT OF THESE DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO CONTINUING WITH THAT PORTION OF THE WORK.

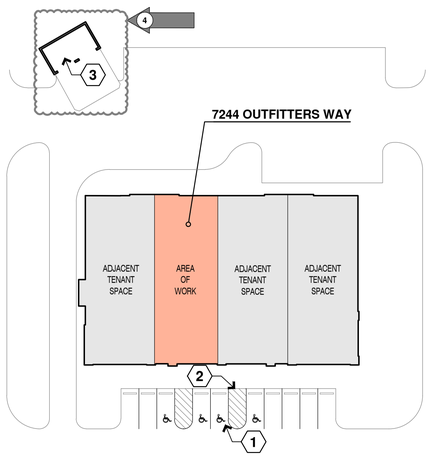
PROPERTY PROTECTION:
THE AREAS OF MAJOR CONSTRUCTION WORK AND RENOVATION ARE DEPICTED ON THE DRAWINGS. THE REMAINING AREAS OF THE FACILITY AND SITE ARE TO BE SECURED AND PROTECTED FROM WEATHER AND DAMAGE. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR THE ERECTION AND MAINTENANCE OF PROTECTIVE MEASURES SUCH AS BARRICADES, DUST PROTECTION, FLOOR COVERING, TENTING, FENCING OR HOARDING OF LANDSCAPING ETC. SUCH PROTECTION SHALL REMAIN IN PLACE FOR THE DURATION OF THE WORK.

THE CONTRACTOR SHALL ENDEAVOR TO UTILIZE THE SMALLEST OR LIGHTEST EQUIPMENT OR METHODS CONSISTENT WITH THE TASK TO MINIMIZE DISTURBANCE TO THE SITE. THIS SHALL APPLY TO ALL OPERATIONS INCLUDING EXCAVATION, HAULING, DEMOLITION, DELIVERY AND MATERIAL STORAGE.

DRAWINGS AND DIMENSIONS:
ALL EXTERIOR FRAME WALLS ARE DIMENSIONED FROM THE EXTERIOR FACE OF SHEATHING TO INTERIOR FACE OF STUD. ALL INTERIOR WALLS ARE DIMENSIONED TO FACE OF STUD. THESE DRAWINGS ARE NOT TO BE SCALED. IF INSUFFICIENT INFORMATION EXISTS, CONTACT THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.

WHEN +/- DIMENSIONS ARE GIVEN THEY SHOULD BE CONSIDERED VARIABLE TO ALLOW FOR EXISTING CONDITIONS. ALL OTHER DIMENSIONS SHOULD BE CONSIDERED FIXED UNLESS PREVIOUSLY APPROVED BY THE ARCHITECT.

FIELD CONDITIONS
IT SHALL BE THE RESPONSIBILITY OF THE TENANT TO VERIFY ALL EXISTING CONDITIONS PERTAINING TO THE LEASED PREMISES (INCLUDING, BUT NOT LIMITED TO, UNDERGROUND ELECTRICAL CONDUITS AND MECHANICAL PIPING) PRIOR TO AND AFTER COMMENCEMENT OF CONSTRUCTION TO THE LEASED PREMISES AND REFLECT THOSE CONDITIONS IN THE SUBMITTAL DOCUMENTS TO THE LANDLORD FOR REVIEW. TENANT SHALL COORDINATE TENANT'S WORK WITH THE WORK OF THE LANDLORD, THE EXISTING CONDITIONS, AND MAKE CHANGES FROM TIME TO TIME AS REQUIRED TO ACCOMMODATE SUCH WORK AND OR CONDITIONS. TENANT SHALL PERFORM ALL OF ITS WORK IN A MANNER THAT WILL NOT INTERFERE WITH, IMPEDE, OR DELAY LANDLORD'S WORK OR OTHER TENANT'S WORK.



PLAN N N

2 / A0.0 Building Diagram

1/32"=1'-0"

CODED NOTES
1. ACCESSIBLE PARKING, WHERE PARKING IS BEING PROVIDED.
2. EXISTING ACCESSIBLE ROUTE CONNECTING ACCESSIBLE PARKING AND ACCESSIBLE PASSENGER LOADING ZONES TO AN ACCESSIBLE ENTRANCE.
3. EXISTING DUMPSTER LOCATION (4)

BUILDING CODE
2017 OHIO BUILDING CODE
2017 OHIO MECHANICAL CODE

CONSTRUCTION TYPE
TYPE II-B, FULLY SPRINKLERED (EXISTING TO REMAIN)
MIXED-OCCUPANCY (A, M, B) ONE-STORY

USE AND OCCUPANCY
EXISTING USE GROUP: M
PROPOSED USE GROUP: A-2 RESTAURANT
TOTAL TENANT SPACE = 2,018 SF (NO CHANGE)
ALLOWABLE BUILDING AREA = 38,000 SF (RESTRICTED BY A-2)
ACTUAL BUILDING AREA = 9,270 SF (NO CHANGE)
OCCUPANCY = 85 OCCUPANTS - SEE LIFE SAFETY PLAN FOR OCCUPANCY CALCULATIONS PER OBC 1004

INTERIOR WALL & CEILING FINISH REQUIREMENTS - SPRINKLERED

USE	EXIT ENCLOSURES & PASSAGEWAYS	CORRIDORS	ROOMS & ENCLOSED SPACES	FLOORING
B	B	C	C	CLASS II

AUTOMATIC SPRINKLER SYSTEM
AN EXISTING FULLY AUTOMATIC NFPA 13 SPRINKLER SYSTEM IS PROVIDED THROUGHOUT THE BUILDING IN ACCORDANCE WITH SECTION 903.
ALL SPRINKLER WORK SHALL BE DESIGNED BY A LICENSED SPRINKLER CONTRACTOR UNDER A SEPARATE PERMIT. PROVIDE DRY PENDANT HEADS AT WALK-IN COOLER. (1)

MAXIMUM EXIT ACCESS TRAVEL DISTANCE FOR B OCCUPANCIES DOES NOT EXCEED 300 FT. PER TABLE 1016.1.

ANSUL SYSTEM BY HOOD INSTALLER UNDER SEPARATE PERMIT. (1)

FIRE ALARM AND DETECTION SYSTEMS
AN EXISTING FIRE ALARM AND DETECTION SYSTEM IS INSTALLED AS REQUIRED IN ACCORDANCE WITH SECTION 907.
FIRE EXTINGUISHERS PER NFPA 10

EXIT REQUIREMENTS
2 MEANS OF EGRESS REQUIRED; 2 PROVIDED (REFER TO LIFE SAFETY DIAGRAMS)

REQUIRED EGRESS WIDTH:
TOTAL OCCUPANT LOAD = 85
85 OCCUPANTS x 0.15" = 12.75" REQ'D
ALL PROPOSED & EXIST. EGRESS COMPONENTS = 36" MIN. / MIN. CORRIDOR WIDTH 44" (OBC TABLE 1020.2)

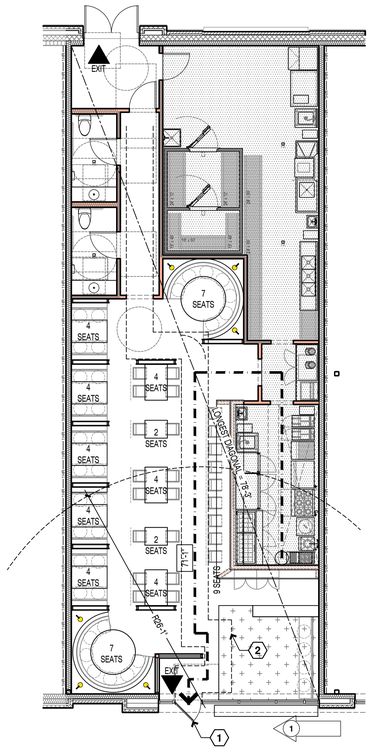
LONGEST DIAGONAL = 78'-3"
EXIT SEPARATION (L/3) > 26'-1"

EXIT ACCESS TRAVEL DISTANCE:
GROUP B, SPRINKLED = 300'-0"
MAX. PROPOSED = 71'-1"

PLUMBING
85 TOTAL OCCUPANTS (A-2 RESTAURANT)

SEX	OCC	WC	WC REQ'D (WC PROVIDED)	LAV	LAV REQ'D (LAV PROVIDED)	MOP SINK REQ'D (MOP SINK PROVIDED)
M	43	1:75	1 (1 PROVIDED)	1:200	1 (1 PROVIDED)	1 (1 PROVIDED)
F	43	1:75	1 (1 PROVIDED)	1:200	1 (1 PROVIDED)	

*RESTROOMS WILL BE SHARED BETWEEN CUSTOMERS AND EMPLOYEES



1 / A0.0 Life Safety Diagram

1/8"=1'-0"

CODED NOTES
1. AT LEAST ONE ACCESSIBLE BUILDING ENTRANCE. (1)
2. AT LEAST ONE ACCESSIBLE ROUTE FROM AN ACCESSIBLE BUILDING ENTRANCE TO PRIMARY FUNCTION AREAS.

DRAWING INDEX

- ● ISSUED OR REVISED DRAWING
- ○ PREVIOUSLY ISSUED DRAWING IS CURRENT
- ● PREVIOUSLY ISSUED DRAWING SUPERCEDED
- X SHEET REMOVED

SHEET #	SHEET DESCRIPTION	8 APRIL 2021 - PERMIT	29 APRIL 2021 - REVISION 1	18 MAY 2021 - REVISION 2	11 JUNE 2021 - REVISION 3	21 JUNE 2021 - REVISION 4
	ARCHITECTURAL					
A0.0	COVER	●	○	●	○	●
A0.1	SPECIFICATION	●	○	●	○	○
A1.0	DEMOLITION PLAN	●	○	○	○	○
A2.0	ARCHITECTURAL FLOOR PLAN	●	○	●	○	●
A2.1	REFLECTED CEILING PLAN	●	○	●	○	●
A2.2	FINISH PLAN	●	○	○	○	●
A3.0	EXTERIOR ELEVATIONS	●	○	○	○	○
A5.0	DETAILS					
A7.0	ENLARGED AREAS / INTERIOR ELEVATIONS	●	○	●	○	○
A7.1	INTERIOR ELEVATIONS	●	○	●	○	○
A7.2	INTERIOR ELEVATIONS	●	○	●	○	○
	MECHANICAL					
M1.0	MECHANICAL PLAN	●	○	●	○	○
M1.1	MECHANICAL PLAN ROOF	●	○	●	○	○
M2.0	MECHANICAL DETAILS	●	○	●	○	○
M3.0	MECHANICAL DETAILS	●	○	○	○	○
M4.0	MECHANICAL SPECIFICATIONS	●	○	○	○	○
M5.0	ENERGY COMPLIANCE	●	○	○	○	○
	ELECTRICAL					
E1.0	POWER PLAN	●	○	●	○	○
E1.1	POWER PLAN ROOF	●	○	●	○	○
E2.0	LIGHTING PLAN	●	○	●	○	○
E3.0	ELECTRICAL DETAILS	●	○	●	○	○
E4.0	ELECTRICAL SPECIFICATIONS	●	○	○	○	○
E5.0	ENERGY COMPLIANCE	●	○	●	○	○
	PLUMBING					
P1.0	PLUMBING PLAN	●	●	●	●	○
P2.0	PLUMBING DETAILS AND ISOMETRICS	●	●	●	●	○
P3.0	PLUMBING SPECIFICATIONS	●	○	○	○	○
	HOOD					
1	HOOD 1	●	○	●	○	○
2	HOOD 2	●	○	●	○	○
3	HOOD 3	●	○	X	X	X

INTERIOR

A-2 COMMERCIAL KITCHEN – KITCHEN	200 SQ. FT. GROSS PER OCCUPANT 694 SF / 200 = 4 SUBTOTAL	4
A-2 STANDING – WAITING	5 SQ. FT. NET PER OCCUPANT 109 SF / 5 = 22 SUBTOTAL	22
A-2 BUILT-IN SEATING – BANQUETTE SEATING* – TABLE SEATING* – COUNTER SEATING*	BY DESIGN 34 SEATS 16 SEATS 9 SEATS SUBTOTAL	59

*TOTAL SEATS = 85x 5% ADA = 5 ACCESSIBLE SEATS REQ'D (PROVIDED)

TOTAL INDOOR OCCUPANTS 85

TOTAL OCCUPANTS = 85

drawing dept
architecture & design
3217 madison rd cincinnati ohio 45209
513.272.8099 | www.drawingdept.com

STATE OF OHIO ROBERT M. BUSCH 10392 REGISTERED ARCHITECT

Robert M. Busch
License #: 10392
Exp. Date: 12/31/2021

GENKI
West Chester
7244 Outfitters Way
West Chester, Ohio 45069

A0.0
COVER
21 June 2021 - Permit Rev 4

GENERAL CONSTRUCTION NOTES

A. ALL ITEMS SHOWN DASHED ARE TO BE REMOVED OR MODIFIED.

B. ALL ITEMS SHOWN SOLID ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

C. ALL DIMENSIONS SHOWN ON THESE DRAWINGS ARE BASED ON FIELD REVIEWS. DIMENSIONS ARE TO FINISH FACE UNLESS OTHERWISE NOTED. CONTRACTOR TO VERIFY ALL DIMENSIONS.

D. ALL EXTERIOR WALLS, DOORS, WINDOWS & ROOF TO REMAIN AS-IS, UNLESS NOTED OTHERWISE

E. PROTECT ALL ITEMS TO REMAIN FROM DEMOLITION and CONSTRUCTION

F. REMOVE ALL WASTE & DEBRIS FROM SITE & DISPOSE OF IN RESPONSIBLE MANNER

G. REMOVE ALL PIPING ASSOCIATED WITH FIXTURES/DEVICES TO BE REMOVED BACK TO NEAREST JUNCTION and CAP, UNLESS NOTED OTHERWISE

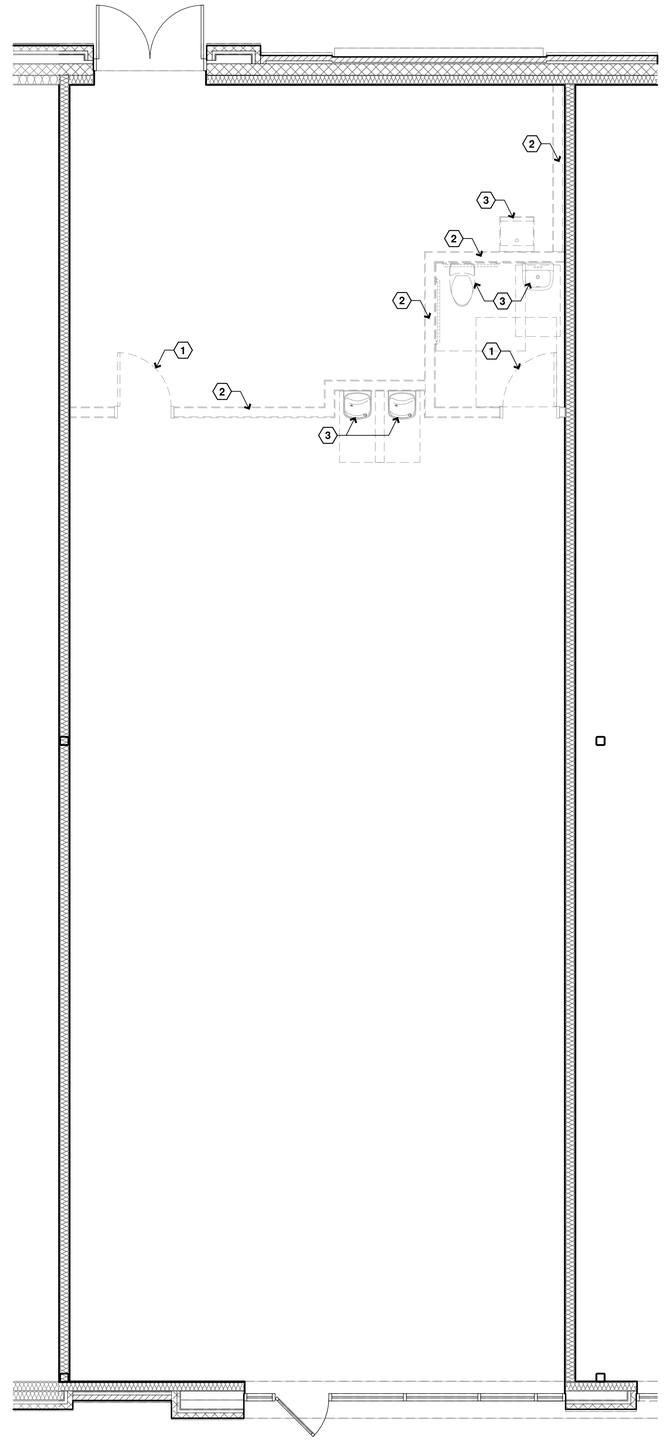
H. REMOVE ALL CONDUIT & WIRE ASSOCIATED WITH FIXTURES/DEVICES TO BE REMOVED - COORDINATE w/ ELECTRICAL DRAWINGS FOR MORE INFORMATION

I. REQUIRED MEANS OF EGRESS PATH & LIGHTING, 1 MIN. FOOTCANDLE, SHALL BE MAINTAINED AT ALL TIMES DURING THE COURSE OF DEMOLITION and CONSTRUCTION, UNLESS A TEMPORARY MEANS HAS BEEN APPROVED

J. 42" h. CONSTRUCTION GUARDS SHALL BE PROVIDED ALONG OPEN-SIDED WALKING SURFACES THAT ARE LOCATED MORE THAN 30" MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36" HORIZ. TO THE EDGE OF THE OPEN SIDE. GUARDS SHALL BE SUFFICIENT TO DIRECT WORKERS AROUND CONSTRUCTION AREAS.

⬡ CONSTRUCTION CODED NOTES

1. REMOVE DOOR AND COMPONENTS - VERIFY SALVAGE w/ TENANT.
2. REMOVE EXISTING NON-BEARING PARTITION.
3. REMOVE EXISTING PLUMBING FIXTURE - VERIFY SALVAGE w/ TENANT.



WALL LEGEND

NON-STRUCTURAL WALL TO BE DEMOLISHED

EXISTING WALL TO REMAIN

PLAN N

1 / A1.0

Demolition Plan

1/4"=1'-0"

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A1.0
Demolition Plan
21 June 2021 - Permit Rev 4

KITCHEN EQUIP. SCHEDULE

ITEM	QTY.	ITEM DESCRIPTION	MANUFACTURER	MODEL#	COMMENT
1	1	GAS RANGE (6 BURNER)	ATOSA	ATO-6B	
2	1	GAS CHARBROILER	COOK RITE	ATCB-24	
3	1	MANUAL GRIDDLE	COOK RITE	ATMG-36	
4	1	SINGLE-BURNER STOCK POT STOVE	ATOSA	ATSP-18-1	
5	2	GAS DEEP FRYER	ATOSA	ATFS-40	
6	1	PASTA COOKER	AXIS	AX-GPC-1	
7	1	RICE COOKER	RINNAI	RER-55AS	SUPPLIED BY OWNER
8	1	72" SANDWICH PREP TABLE	ATOSA	MSF8304GR	
9	1	48" UNDERCOUNTER REFRIGERATOR	ATOSA	MGF8402GR	
10	1	48" UNDERCOUNTER REFRIGERATOR	ATOSA	MBB48G-GR	GLASS DOOR
11	1	WALK-IN COOLER / FREEZER			SEE FABRICATOR'S DRAWINGS SH. A0.1
12	1	ICE MACHINE	ATOSA	YR450-AP-161	w/ CYR400P ICE BIN
13	1	SODA MACHINE w/ DROP-IN ICE BIN			w/ DROP-IN ICE BIN
14	1	COFFEE BREWER	AXIOM	15-3	AUTOMATIC COFFEE BREWER - 3 WARMERS
15	1	HOT WATER			
16	1	DISH MACHINE	ECOLAB	EH-2000HT	
17	1	TYPE-1 KITCHEN EXHAUST HOOD (18 feet)			SEE HOOD DRAWINGS
18	1	PREP SINK - ONE COMPARTMENT SINK	ADVANCE TABCO	93-1-24 REGALINE	
19	1	THREE COMPARTMENT SINK	MIX RITE BY ATOSA	MRSA-3-D	
20	1	PREP SINK - ONE COMPARTMENT SINK	ADVANCE TABCO	93-1-24 REGALINE	
21	1	HAND SINK	REGENCY		17"x15" WALL-MOUNTED HAND SINK w/ GOOSENECK FAUCET AND SIDE SPLASH
22	1	MOP SINK			
23	1	POT FILLER			
24	1	PREP TABLE			36"x48"
25	4	24"x66" METRO SHELF			
26	4	TRASH			
27	2	P.O.S.			PROVIDE POWER AND DATA
28	1	DISH CART			
29	1	27" UNDERCOUNTER FREEZER	ATOSA	MGF8405GL	

PARTITION TYPE SCHEDULE

EXISTING WALL	A	• EXISTING WALL FRAMING & GYP. BOARD TO REMAIN • FINISH AS INDICATED ON FINISH PLAN AND/OR INTERIOR ELEVATIONS
FULL-HEIGHT CEMENT BOARD	B	• METAL STUDS @ 16" o.c. MAX. (WIDTH PER PLAN) • 3/8" CEMENT BOARD TO HEIGHT OF MATERIAL CHANGE OR FULL-HEIGHT BOTH SIDES, TYP. (COORDINATE HEIGHTS w/ INTERIOR ELEVATIONS) • 5/8" GYP. BOARD FROM CEMENT BOARD TO CEILING BOTH SIDES, TYP. WHERE REQ'D. • FINISH AS INDICATED ON FINISH PLAN AND/OR INTERIOR ELEVATIONS • INSULATION WHERE INDICATED ON PLAN • BRACED TO DECK @ 48" o.c. MAX. TYP. - OR - FRAME FULL-HEIGHT TO DECK WHERE INDICATED ON PLAN
	B1	• SAME AS PARTITION 'B' EXCEPT ONE SIDE ONLY
FULL-HEIGHT GYP. BOARD	C	• METAL STUDS @ 16" o.c. MAX. (WIDTH PER PLAN) • 5/8" TYPE 'X' GYP. BOARD FULL-HEIGHT BOTH SIDES, TYP. • FINISH AS INDICATED ON FINISH PLAN AND/OR INTERIOR ELEVATIONS • INSULATION WHERE INDICATED ON PLAN • BRACED TO DECK @ 48" o.c. MAX. TYP. - OR - FRAME FULL-HEIGHT TO DECK WHERE INDICATED ON PLAN
	C1	• SAME AS PARTITION 'C' EXCEPT ONE SIDE ONLY
	C2	• FULL-HEIGHT METAL STUDS @ 16" o.c. MAX. 600S162-43, COORDINATE w/ WALL FRAMING • INTERIOR SURFACE AS INDICATED BY PARTITION TYPE ON PLAN • R-19 BATT INSULATION • ½" FIBERGLASS MAT GYPSUM SHEATHING • EXTERIOR FINISH PER EXTERIOR ELEVATIONS
FULL-HEIGHT PLYWOOD	D	• METAL STUDS @ 16" o.c. MAX. (WIDTH PER PLAN) • 5/8" FRT CONTINUOUS PLYWOOD SUBSTRATE (FOR FINISH BLOCKING) • FINISH AS INDICATED ON FINISH PLAN AND/OR INTERIOR ELEVATIONS • INSULATION WHERE INDICATED ON PLAN • BRACED TO DECK @ 48" o.c. MAX. TYP. - OR - FRAME FULL-HEIGHT TO DECK WHERE INDICATED ON PLAN
	D1	• SAME AS PARTITION 'D' EXCEPT ONE SIDE ONLY
COMBINATION	E	• METAL STUDS @ 16" o.c. MAX. (WIDTH PER PLAN) • 5/8" CEMENT BOARD BASE FROM FLOOR TO 24" A.F.F. • 5/8" FRT PLYWOOD FROM 24" A.F.F. TO 120" A.F.F. (2 ROWS OF FULL 4FT SHEETS) • 5/8" GYP. BOARD ABOVE AS NEEDED • FINISH AS INDICATED ON FINISH PLAN AND/OR INTERIOR ELEVATIONS • BRACED TO DECK @ 48" o.c. MAX. TYP. - OR - FRAME FULL-HEIGHT TO DECK WHERE INDICATED ON PLAN
	E1	• SAME AS PARTITION 'E' EXCEPT ONE SIDE ONLY
	F	• METAL STUDS @ 16" o.c. MAX. (WIDTH PER PLAN) • 5/8" CEMENT BOARD BASE 24" A.F.F. • 5/8" GYP. BOARD ABOVE AS NEEDED • FINISH AS INDICATED ON FINISH PLAN AND/OR INTERIOR ELEVATIONS • BRACED TO DECK @ 48" o.c. MAX. TYP. - OR - FRAME FULL-HEIGHT TO DECK WHERE INDICATED ON PLAN
	F1	• SAME AS PARTITION 'F' EXCEPT ONE SIDE ONLY
	F2	• SAME AS PARTITION 'F' EXCEPT CEMENT BOARD UP TO TILE WAINSCOT HEIGHT, VARIES, COORDINATE w/ INTERIOR ELEVS • ONE SIDE ONLY

NOTE: MOISTURE RESISTANT GYP. BOARD TO BE USED AT WET AREAS

GENERAL CONSTRUCTION NOTES

a. ALL DIMENSIONS ARE ROUGH FRAMING PER SCHEDULED PARTITION UNLESS NOTED OTHERWISE.

b. ALL DIMENSIONS NOTED AS 'CLEAR' ARE TO FINISH FACE OF SCHEDULED PARTITION.

c. SCHEDULED PARTITION TYPE APPLIES TO ONE SIDE OF WALL ONLY. IF BOTH SIDES OF PARTITION ARE NOT INDICATED, CONTACT ARCHITECT FOR CLARIFICATION.

d. DO NOT SCALE DRAWINGS - WRITTEN DIMENSIONS GOVERN. CONSULT THE ARCHITECT IN CASE OF CONFLICT.

e. CONTRACTOR SHALL REMEDY, WITHOUT COST TO TENANT, ANY DEFECTS DUE TO FAULTY WORKMANSHIP.

f. COORDINATE ALL WORK W/ MECHANICAL, ELECTRICAL, PLUMBING, & SPECIALTY CONSULTANT DRAWINGS.

g. CONTRACTOR SHALL COORDINATE WORK OF VARIOUS TRADES IN INSTALLATION OF INTERRELATED WORK. BEFORE INSTALLATION OR WORK BY ANY TRADE BEGINS, MAKE PROPER PROVISIONS TO AVOID INTERFERENCES.

h. WORK ASSOCIATED W/ INDEPENDENT PERMIT PACKAGES SHALL BE SCHEDULED & COORDINATED BY CONTRACTOR.

i. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW.

j. CONTRACTOR SHALL SUBMIT PRODUCT AND FINISH SELECTION INFORMATION TO ARCHITECT FOR REVIEW.

k. USE TYPE-X GYPSUM BOARD ON ALL PARTITIONS UNLESS NOTED OTHERWISE

l. CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS OR BEGINNING WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION.

m. FLOOR SURFACES SHALL BE LEVEL TO ASSURE SMOOTH SURFACE FOR FINISHED FLOOR INSTALLATION.

n. SUBMIT REQUESTS FOR SUBSTITUTIONS, REVISIONS, OR CHANGES TO ARCHITECT FOR REVIEW PRIOR TO PURCHASE, FABRICATION, OR INSTALLATION.

o. ALL MATERIALS, PRODUCTS AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS, RECOMMENDATIONS AND SPECIFICATIONS.

p. CONTRACTOR SHALL COORDINATE AND PROVIDE SOLID WOOD BLOCKING IN STUD WALLS AS REQUIRED TO SUPPORT WALL-MOUNTED CABINETRY, SHELVING, COUNTERS, HANDRAILS, WINDOW/DOOR FRAMES, TRIM, AND ALL OTHER MILLWORK.

q. ALL CEILINGS AND SOFFITS ARE INTENDED TO BE FRAMED WITH METAL FRAMING SUCH AS USG SUSPENDED DRYWALL CEILING SYSTEM OR OTHER METAL SYSTEMS - COORDINATE W/ ARCHITECT.

r. PROVIDE SOUND ATTENUATING BATT INSULATION AT ALL WALLS AROUND MECHANICAL CLOSETS, PLUMBING STACKS, DISHTANK & RESTROOMS AS INDICATED ON PLAN.

s. INSULATING MATERIALS SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE DEVELOPMENT INDEX NOT MORE THAN 450

t. CONTRACTOR IS RESPONSIBLE FOR ALL FLOOR AND WALL PENETRATIONS FOR ELECTRICAL AND MECHANICAL WORK. SUCH OPENINGS SHALL BE FRAMED AND REINFORCED.

u. THE CONTRACTOR SHALL SUPPLY ALL MATERIALS, LABOR AND COORDINATION REQUIRED FOR THE INSTALLATION OF ALL OWNER SUPPLIED ITEMS (FURNITURE, LIGHTING AND ARTWORK) UNLESS OTHERWISE NOTED.

v. PROVIDE PORTABLE FIRE EXTINGUISHERS WITHIN 50FT OF COMMERCIAL EQUIPMENT, MAXIMUM 75FT TRAVEL DISTANCE ELSEWHERE, AND ADDITIONALLY AS REQUIRED BY ICC SECTION 906 AND THE INTERNATIONAL FIRE CODE. REVIEW LOCATIONS IN THE FIELD WITH FIRE MARSHALL WHERE QUESTIONS ARISE.

w. JAMBS AT HINGE SIDE OF DOOR OCCUR 4" FROM INSIDE CORNER, UNLESS DIMENSIONED OTHERWISE.

x. REFER TO ELECTRICAL PLANS FOR EXIT SIGNAGE, EMERGENCY LIGHTING, AND EGRESS LIGHTING.

y. COOLER AND FREEZER WALLS: FOAM PLASTIC INSTALLED IN A MAXIMUM THICKNESS OF 10 INCHES (254 mm) IN COOLER AND FREEZER WALLS SHALL: (1) HAVE A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450, WHERE TESTED IN A MINIMUM 4-INCH (102 MM) THICKNESS, (2) HAVE FLASH IGNITION AND SELF-IGNITION TEMPERATURES OF NOT LESS THAN 600°F AND 800°F (316°C AND 427°C), RESPECTIVELY, (3) HAVE A COVERING OF NOT LESS THAN 0.032-INCH (0.8 mm) ALUMINUM OR CORROSION-RESISTANT STEEL HAVING A BASE METAL THICKNESS NOT LESS THAN 0.0160 INCH (0.4 MM) AT ANY POINT, and (4) BE PROTECTED BY AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1. WHERE THE COOLER OR FREEZER IS WITHIN A BUILDING, BOTH THE COOLER OR FREEZER AND THAT PART OF THE BUILDING IN WHICH IT IS LOCATED SHALL BE SPRINKLERED.

CONSTRUCTION CODED NOTES

1. TYPE I HOOD VENTED TO EXTERIOR - NO COMBUSTIBLES WITHIN 18" IN PLAN OR ELEVATION, INCLUDING DUCTWORK, SEE REFLECTED CEILING PLAN AND MECHANICAL DRAWINGS FOR MORE INFO.
2. NOT USED
3. EXISTING LEVEL LANDING AT BOTH SIDES OF EXISTING DOOR TO REMAIN
4. BUILT-IN BANQUETTE SEATING - SEE INTERIOR ELEVATIONS FOR MORE INFO.
5. PROPOSED PLANTER - SEE EXTERIOR ELEVATION.
6. COORDINATE DOOR LOCATION WITH LOCATION OF PROPOSED ELECTRICAL PANEL - SEE ELECTRICAL.
7. SEE SH. A0.1 FOR WALK-IN COOLER SPECIFICATIONS.
8. 42" h. COUNTER TO PROVIDE SHIELDING OF PREP AREA - SEE ELEVATIONS.

DOOR SCHEDULE

	LOCATION	SIZE	TYPE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	HARDWARE	CLOSER	RATING	COMMENT
1	ENTRY	3'-0" x 7'-0"	A	STOREFRONT	STOREFRONT	STOREFRONT	STOREFRONT	ENTRY	YES		EXISTING - CONFIRM ACCESSIBILITY CRITERIA
2	BATH	3'-0" x 7'-0"	B	WOOD	T.B.D.	K.D. METAL	PAINTED	PRIVACY	YES		
3	BATH	3'-0" x 7'-0"	B	WOOD	T.B.D.	K.D. METAL	PAINTED	PRIVACY	YES		
4	VESTIBULE	3'-0" x 7'-0"	B	METAL	PAINTED	K.D. METAL	PAINTED	PASSAGE	YES		
5	NOT USED	-	-	-	-	-	-	-	-		
6	OFFICE	-	-	-	-	-	-	-	-		
7	VESTIBULE	(2)3'-0" x 7'-0"	B	WOOD	T.B.D.	K.D. METAL	PAINTED	ENTRY	YES		EXISTING
6	PREP	3'-0" x 7'-0"	B	METAL	PAINTED	K.D. METAL	PAINTED	ENTRY	YES		

DOOR ACCESSIBILITY NOTES

A. DOORS WITH CLOSERS SHALL HAVE A SWEEP PERIOD OF 3 SECONDS MINIMUM FROM AN OPEN POSITION OF 70 DEGREES TO A POINT 3" FROM THE LATCH
B. ALL DOOR THRESHOLDS SHALL NOT EXCEED ½" IN HEIGHT AND SHALL MEET ALL ADA REQUIREMENTS
C. ALL DOORS SHALL HAVE ADA COMPLIANT LEVER STYLE HANDLES MOUNTED NO HIGHER THAN 48"
D. ALL DOORS SHALL HAVE ADA COMPLIANT LOCKS AND LATCHES
E. EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE

U.N.O. PROVIDE MIN. CLEARANCES AT LATCH SIDE: 18" CLR. @ PULL SIDE
12" CLR. @ PUSH SIDE

DOOR HARDWARE FUNCTIONS & NOTES:

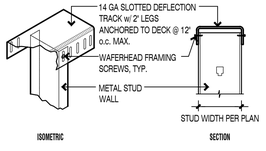
DOOR HARDWARE
PASSAGE LATCH ANSI F75
PRIVACY ANSI F76A
OFFICE ANSI F82
CLASSROOM ANSI F84
STOREROOM ANSI F86
ENTRY ANSI F109
EXIT ANSI F111

DOOR STOP: IVES FS410 FLOOR MOUNTED

CLOSER - ALUMINUM FINISH:
COORD. FINISH SELECTION w/ OWNER & ARCHITECT

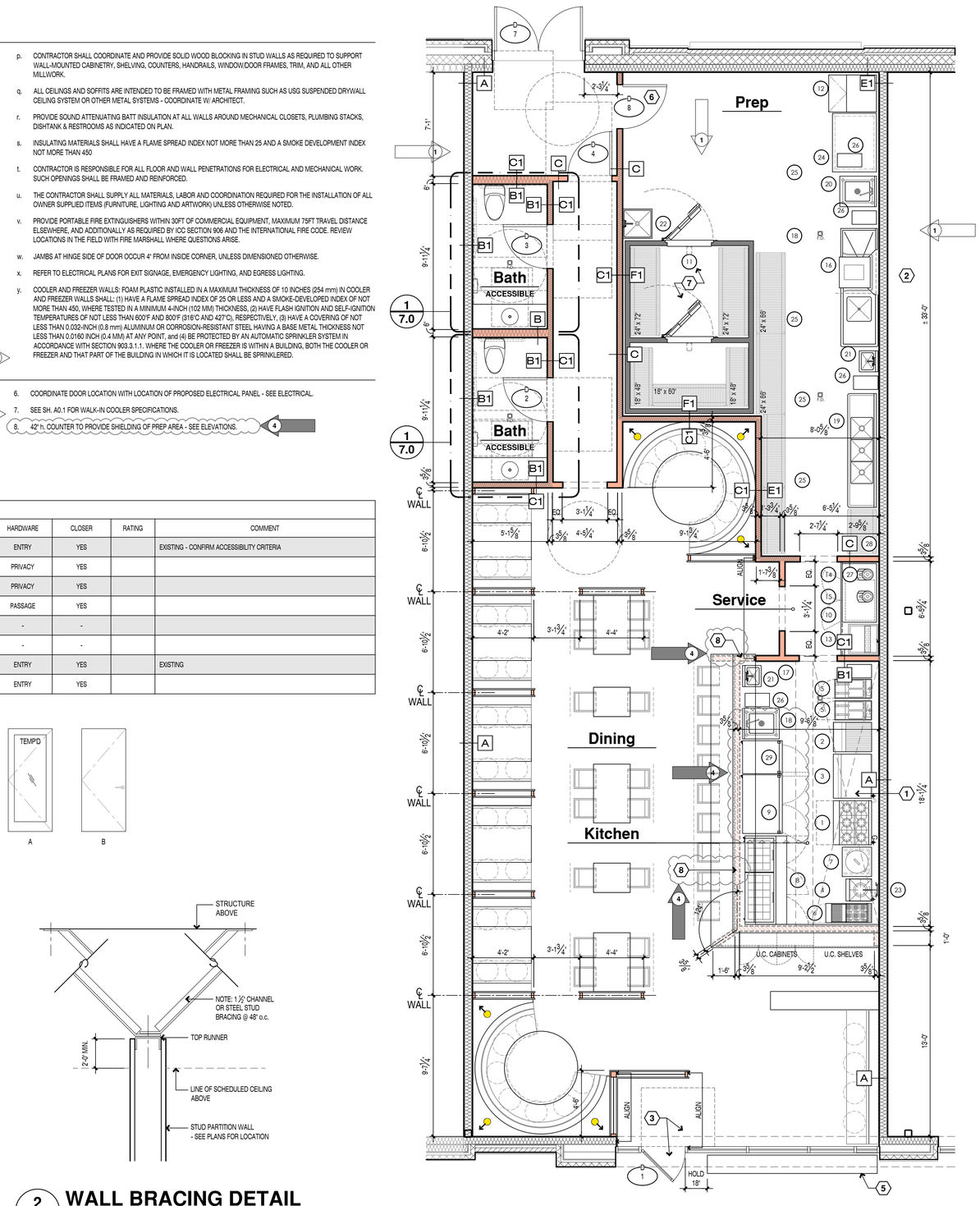
DOOR HARDWARE NOTES w/ FUNCTIONS & DESCRIPTION

PASSAGE	ANSIF75	Latchbolt operated by lever from either side at all times.
PRIVACY	ANSI F76A	Latchbolt operated by lever from either side. Outside lever is locked by push button and unlocked by emergency release outside, operating inside lever or closing door.
OFFICE	ANSI F82	Push-button locking. Push-button locks outside lever until unlocked with key or by rotating inside lever.
CLASSROOM	ANSI F84	Deadlocking latchbolt operated by lever from either side except when outside lever is locked from outside by key. When outside lever is locked, latchbolt is operated by inside lever.
STOREROOM	ANSI F86	Deadlocking latchbolt operated by key in outside lever, or by operating inside lever. Outside lever is always locked.
ENTRY	ANSI F109	Deadlocking latchbolt operated by lever from either side except when outside lever is locked by the push or turn button inside. Key outside or operating inside lever releases push or turn button unlocking outside lever except when push or turn button has been rotated to keep outside lever locked. Inside push or turn button must be manually operated to unlock outside lever. Inside lever always operates latchbolt.
EXIT	ANSI F111	Blank plate outside. Inside lever always unlocked.
DOOR STOP	IVES FS410 FLOOR MOUNTED	
CLOSER	ALUMINUM FINISH: COORD. w/ CLIENT & CONTRACTOR	



3 A2.0 **Deflection Track Detail**
NTS
- INSTALL AT ALL FULL-HEIGHT WALL LOCATIONS
- DO NOT FASTEN G.W.B. TO DEFLECTION TRACK

2 A2.0 **WALL BRACING DETAIL**
1-1/2" = 1'-0"
REQUIRED FOR ALL WALLS WHICH DO NOT EXTEND TO STRUCTURE ABOVE



PLAN N
1 A2.0 **Architectural Floor Plan**
1/4"=1'-0"

drawing dept
architecture & design
3217 madison rd cincinnati ohio 45209
513.272.8099 | www.drawingdept.com

STATE OF OHIO ROBERT M. BUSCH 10392 REGISTERED ARCHITECT

Robert M. Busch
License #: 10392
Exp. Date: 12/31/2021

GENKI
West Chester
7244 Outfitters Way
West Chester, Ohio 45069

A2.0
Floor Plan
21 June 2021 - Permit Rev 4

LEGEND

ACOUSTICAL CEILING (2x2 or 2x4 AS INDICATED)

ACOUSTICAL CEILING (2x2 or 2x4 AS INDICATED)

GYP. BOARD CEILING

FINISHED WOOD CEILING

FINISHED WOOD CEILING

WALL FRAMING TO DECK ABOVE CEILING PLANE

2 x 4 TROFFER LIGHT FIXTURE

2 x 2 TROFFER LIGHT FIXTURE

RECESSED 2 x 2 SUPPLY (DIFFUSER)

RECESSED 2 x 2 RETURN (GRILLE)

CEILING FAN

STRIP FLUORESCENT LIGHT

TRACK LIGHTING

LED TAPE LIGHT

STEP LIGHT

CEILING MOUNTED RECESSED CAN LIGHT

CEILING MOUNTED ADJUSTABLE ACCENT LIGHT

CEILING MOUNTED EXHAUST FAN

CEILING MOUNTED LIGHT

CEILING MOUNTED PENDANT OR CHANDELIER

WALL MOUNTED LIGHT

CEILING MOUNTED SPEAKER

TV LOCATION

EMERGENCY HEADS

ILLUMINATED EXIT SIGN

COMBO EXIT SIGN/EMERGENCY LIGHT

EMERGENCY LIGHT REMOTE HEAD

X'-XX" CEILING HEIGHT

12' DUPLEX OUTLET (NOTE HEIGHT IF MARKED)

QUADRUPLEX OUTLET

FLOOR OUTLET

SD SMOKE DETECTOR

$ SINGLE POLE SWITCH

$3 3-WAY SWITCH

$D DIMMER SWITCH

$WP WEATHER PROOF SWITCH

DATA JACK

PHONE JACK

NOTES TO SPRINKLER CONTRACTOR:
- EXPOSED HEADS AT EXPOSED STRUCTURE/OPEN CEILING AREAS
- RECESSED HEADS AT LAY-IN CEILINGS
- FLUSH HEADS AT HARD FINISH CEILINGS

WALL LEGEND

BULKHEAD

BRACED WALL

FULL HEIGHT WALL

GENERAL REFLECTED CEILING PLAN NOTES

a. THIS SHEET IS INTENDED TO SHOW ARRANGEMENT OF ALL MAJOR CEILING DEVICES. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF SEPARATE TRADES AND RESOLVING POTENTIAL CEILING CONFLICTS. COORDINATE w/ MEP DRAWINGS.

b. ALL LIGHT FIXTURE & DEVICE LOCATIONS & SPECIFICATIONS SHOWN ON ARCHITECTURAL DRAWINGS TAKE PRECEDENCE OVER ELECTRICAL SHEETS. IF CONFLICTS EXIST, CONTACT ARCHITECT FOR RESOLUTION BEFORE INSTALLATION.

c. LIGHTING INTENSITY SHALL BE (1) AT LEAST 10 FOOT CANDLES AT DRY FOOD STORAGE AREAS, (2) AT LEAST 20 FOOT CANDLES WHERE FOOD IS CONSUMER SELF-SERVED OR WHERE FRESH PRODUCE OR PACKAGED FOODS ARE SOLD, INSIDE REACH-INS AND UNDER-COUNTER REFRIGERATORS, ABOVE HAND WASHING & WARE WASHING AREAS, AND AT EQUIPMENT & UTENSIL STORAGE (3) AND AT LEAST 50 FOOT CANDLES IN FOOD PREP AREAS.

d. ALL CEILINGS AND SOFFITS ARE INTENDED TO BE FRAMED w/ USG SUSPENDED CEILING SYSTEM AND/OR METAL CHANNELS, T-BARS, ETC.

e. CEILING TILES TO BE CENTERED BOTH WAYS IN ROOM OR SPACE UNLESS NOTED OTHERWISE.

f. ALL DIMENSIONS ARE TO CENTER OF LIGHT FIXTURE U.N.O.

g. LIGHT FIXTURES LOCATED IN CEILING GRID ARE NOT NECESSARILY CENTERED IN EACH CEILING TILE (ALTHOUGH PREFERRED). FOLLOW DIMENSIONS ON PLAN. IF NO DIMENSIONS PRESENT CONTACT ARCHITECT TO VERIFY LOCATION.

h. LIGHT FIXTURES TO BE LOCATED AS INDICATED ON THIS PLAN. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION - CONTACT ARCHITECT/ENGINEER IMMEDIATELY IF THERE ARE ANY DISCREPANCIES.

i. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL BUILDING CODES AND N.E.C. AND SHALL BE PERFORMED BY LICENSED ELECTRICIANS. CONVENIENCE RECEPTACLE LOCATIONS SHOWN ARE NOT TO BE INTERPRETED AS IN COMPLETE ADHERENCE WITH NEC REQUIREMENTS. COORDINATE WITH NEC, ELECTRICAL PLANS, EQUIPMENT MANUFACTURER'S CUT SHEETS, AND OWNER / ARCHITECT.

j. REFER TO MECHANICAL DRAWINGS FOR MECHANICAL DUCT DISTRIBUTION SYSTEM. ALL AIR DEVICE TYPES AND COLORS SHALL BE COORDINATED WITH SURROUNDING CEILING FINISH. SUBMIT TO ARCHITECT AND MECHANICAL ENGINEER FOR REVIEW.

k. THE G.C. SHALL SET ALL CEILING AND SOFFITS TO ACHIEVE A SURFACE THAT IS PLUMB, LEVEL AND SQUARE TO ALL WALLS AND SOFFITS.

l. ALL NOTED CEILING DIMENSIONS ARE INDICATED AS CLEAR ABOVE FINISHED FLOOR DIMENSIONS. VERIFY THICKNESS OF FINISHED FLOOR AND SUBSTRATE REPAIRS/OVERLAYMENT WITH CONTRACTORS PRIOR TO THE INSTALLATION OF ANY NEW CEILING CONSTRUCTION TO ACHIEVE NOTED REQUIRED DIMENSIONS.

m. ALL SOFFIT DIMENSIONS ARE TO FINISHED FACE - U.N.O

n. G.C. TO PROVIDE ADEQUATE CLEARANCE FOR FIXTURES, DUCTS, CEILING TO MAINTAIN SPECIFIC HEIGHTS. COORDINATE MECHANICAL, ELECTRICAL AND PLUMBING - REPORT ANY DISCREPANCIES TO ARCHITECT/ENGINEER IMMEDIATELY.

o. ADDITIONAL HANGER AND SAFETY WIRES FOR LIGHT FIXTURES, SPEAKERS AND AIR SUPPLY/RETURN DIFFUSERS AS REQUIRED BY LOCAL CODES TO BE THE RESPONSIBILITY OF THE SUB-CONTRACTOR.

p. MODIFY SPRINKLER HEADS AS REQUIRED FOR DROPPED CEILINGS AND BULKHEAD AREAS. SPRINKLERS MUST COVER EXPOSED STRUCTURE ABOVE SOFFIT AREAS AS WELL AS OCCUPIABLE SPACE BELOW SOFFITS. SPRINKLER CONTRACTOR TO SUPPLY SPRINKLER SHOP DRAWINGS FOR REVIEW AND APPROVAL. FIRE PROTECTION PLAN SHOWS DESIGN INTENT.

NOTES TO SPRINKLER CONTRACTOR:
- FLUSH HEADS AT LAY-IN CEILINGS
- FLUSH HEADS AT HARD FINISH CEILINGS

REFLECTED CEILING PLAN CODED NOTES

1. CENTER IN ROOM.
2. BULKHEAD AT 6'-8" A.F.F.
3. TYPE-I EXHAUST HOOD TO EXTERIOR - REFER TO HOOD DRAWINGS. HOOD SHALL BE LISTED & LABELED IN ACCORDANCE W/ UL 710. COORDINATE REQUIREMENTS FOR EXHAUST, MAKE-UP AIR, & LIGHTING w/ HOOD MANUFACTURER DRAWINGS. NO COMBUSTIBLE MATERIALS WITHIN 18" OF HOOD, TYP. ENTIRE WALL SURFACE UNDER HOOD AND WITHIN 18" OF EACH SIDE SHALL BE COVERED IN METAL WALL PANELS FROM FLOOR TO BOTTOM OF HOOD, TYP. GREASE DUCT SHALL BE WRAPPED CONTINUOUSLY ON ALL SIDES FROM HOOD TO THE OUTLET TERMINAL w/ LISTED & LABELED WRAP TESTED IN ACCORDANCE w/ ASTM E 2336 TO CREATE A 2-HR RATED ZERO CLEARANCE FIELD-APPLIED GREASE DUCT ENCLOSURE. PROVIDE LIGHTING AS REQ'D. TO MAINTAIN 50 FOOTCANDLES @ 30" A.F.F.
4. CENTER OVER SINK
5. PROVIDE POWER AT BANQUETTE DECK FOR ACCENT LIGHTING - SEE ELECTRICAL PLAN, TYP.

NOTE: ALL FIXTURES ARE REPRESENTATIVE OF LIGHTING TYPE, BUT SELECTIONS ARE NOT FINAL ELECTRICIAN SHALL REFER TO ARCHITECTURAL RCP FOR MOST CURRENT FIXTURE SCHEDULE

LIGHT FIXTURE SCHEDULE

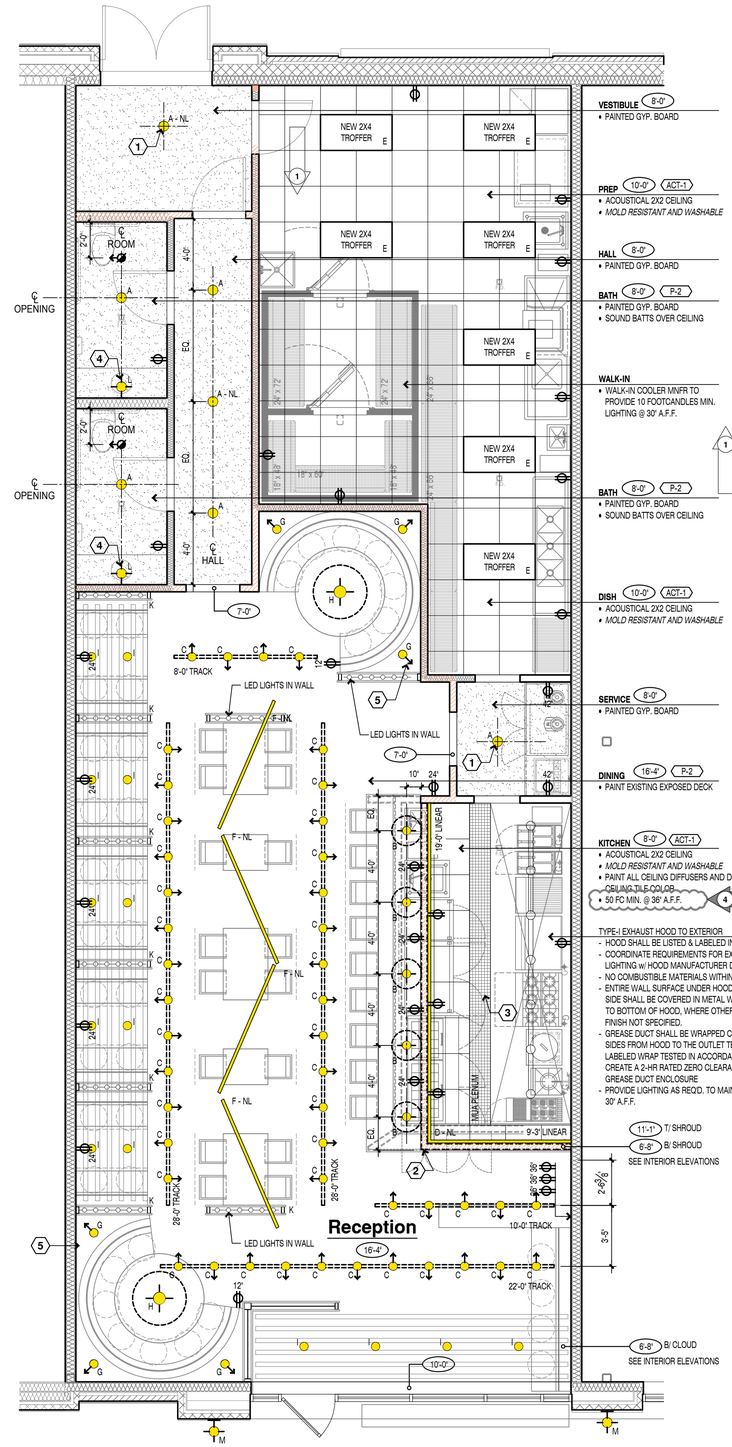
★ DENOTES FIXTURE TO BE CIRCUITED FOR EGRESS

ITEM	DESCRIPTION	FIXTURE MAKE	FIXTURE MODEL#	LAMP TYPE	DIM	REMARKS
A	4" RECESSED (LOW VOLTAGE)	NORA LIGHTING	NL-401QAT HOUSING + TRIM TO MATCH CEILING FINISH	9W MR16 LED, 3000K, 90+ CRI, xx°, 750 lm±	YES	35° ADJUSTABLE BAFFLE
B	PENDANT LIGHT	STUDIO ITALIA	A-TUBE PENDANT LIGHT; FINISH: MATTE BLACK; SIZE: MEDIUM	6W PAR16 E26 LED, 2700K, 90+ CRI	YES	
C	TRACK HEAD	E-CONOLIGHT	E-KCH08A-DV30K	10W MR16 LED, 2700K, 90+ CRI, 25°, 750 lm±	YES	TRACK SELECTION BY INSTALLER - SEE INTERIOR ELEVATIONS
D	LINEAR RECESSED	LUMENWERX	VIA 2 LED RECESSED	VIA2RF-HLO-FH-LED-90-750-30-_-120-_-NL-_-W-_-_	NO	COORD. w/ CEILING finish: - TOTAL LENGTH: +/- 28'-3"
	ALTERNATE:	AXIS LIGHTING	BEAM 2 LED RECESSED	BRLED-1000-90-30-FL-S#-C-120-DP-_-_		
E	2x4 TROFFER (LED)	TBS	TBS	3000K, 80+ CRI	NO	
F	LINEAR PENDANT	ALCON	12100-R2-9-D6-D-6-27K-010-BK-AC10-9-_-_	6.75 W / LF LED, 2700K, 90+ CRI, 898 lm	YES	FIXTURE TO BE 6' IN OVERALL LENGTH. VARY SUPPORTING CABLE LENGTHS AT ENDS - COORDINATE WITH ARCHITECT
G	BANQUETTE LIGHTING	LOTUS	LRG2-27K-HO-BK	LED; 2700K, 90+ CRI	YES	
H	BANQUETTE CHANDELIER	RESTORATION HARDWARE	40" GRAND DOME PENDANT, COLOR: BRONZE	LED, 2700K, 90+ CRI		
I	3" CAN LIGHTS	TBS	TBS	9W MR16 LED, 2700K, 90+ CRI, xx°, 750 lm±	YES	BLACK TRIM RING AND BAFFLE - INSTALL WITH BLACK - PAINTED BLIND TO CONCEAL HOUSING
K	LED TAPE LIGHTS	TBS	TBS	LED, 2700K, 90+ CRI	YES	
L	PICTURE LIGHT / WALL SCONCE	KUZCO LIGHTING	WS10423 GALLERIA LED WALL SCONCE - SIZE: MEDIUM; COLOR: BLACK	LED, 2700K, 90+ CRI	NO	
M	EXTERIOR SCONCE	KICHLER	49786BKLED - ROCKBRIDGE 21" LED WALL LIGHT - BLACK	3000K, LED, 90+ CRI	NO	

LIGHT FIXTURE NOTES
1. REFER TO MANUFACTURER'S SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS
2. REFER TO LIGHTING SUPPLIER'S SCHEDULE AND CUT SHEETS FOR MORE INFORMATION AND ALL LAMP SELECTIONS.
3. RUBBER COATED OR LENSED LAMPS MAY BE NEEDED IN FOOD PREP AREAS. COORDINATE W/ ELECTRICIAN.
4. A/V & SECURITY NOT SHOWN - REVIEW SPEAKER, CAMERA & SECURITY SYSTEM ACCESSORIES BY LOCATION WITH CLIENT.
5. COORDINATE ANY DIMMING LOCATIONS WITH LAMP SELECTIONS.
6. REFER TO ENGINEERING DRAWINGS FOR SWITCHING/CONTROL SYSTEM LOCATIONS.
7. CONTRACTOR TO COORDINATE DIMMERS w/ FIXTURE AND/OR LAMP MANUFACTURER'S APPROVED LIST.

LED LAMP NOTES:
a. PROVIDE SUBMITTALS OF ALL LED LAMPS FOR OWNER AND ARCHITECT APPROVAL PRIOR TO ORDERING
b. ALL MR16 LED LAMPS ARE TO RECEIVE COLORED GELS FOR FILTERING. CONFIRM SUITABILITY OF ACCESSORIES PRIOR TO SUBMITTAL.
c. NOTE DIMMING REQUIREMENTS PER SCHEDULE AND CONFIRM SUITABILITY OF DIMMING DEVICE WITH LIGHTING CIRCUIT.
d. LED LAMP SPECS ARE PROVIDED FOR DESIGN BASIS - MATCH ALL LINE ITEMS AS CLOSE AS POSSIBLE ON SUBMITTAL CALLING ATTENTION TO ANY DISCREPANCIES FOR OWNER AND ARCHITECT REVIEW.

ELECTRICAL DEVICE COLORS:
OWNER TO PROVIDE FINAL APPROVAL ON ALL ELECTRICAL DEVICES PRIOR TO ORDERING PER DESIGN BASIS BELOW



Reflected Ceiling Plan

1/4"=1'-0"

drawing dept
architecture & design
3217 madison rd cincinnati ohio 45209
513.272.8099 | www.drawingdept.com

STATE OF OHIO ROBERT M. BUSCH 10392 REGISTERED ARCHITECT

Robert M. Busch
License #: 10392
Exp. Date: 12/31/2021

GENKI
West Chester
7244 Outfitters Way
West Chester, Ohio 45069

A2.1
Reflected Ceiling Plan
21 June 2021 - Permit Rev 4

FINISH SCHEDULE

	KEY	MANUFACTURER	DESCRIPTION
ACT	ACT-1	USG	SIZE: 24' X 24' X 1/2', SCRUBBABLE, SHEETROCK LAY-IN CEILING PANEL CLIMAPLUS #3260 FLAT WHITE 050, USG DX/DXL ALUMINUM 15/16' SUSPENSION GRID, FLAT WHITE 050 (CLEANABLE&SCRUBBABLE)
	ACT-2	EXIST.	SIZE: 24' x 48' x 3/4', WHITE, EXIST LAY-IN CEILING PANEL. DRAW ADDITIONAL PANELS / GRID FROM SALVAGE or, IF REQD, PROVIDE NEW TILES AND GRID T.M.E.
CONCRETE	CO-1		STAIN EXISTING CONCRETE. COLOR: 'BLACK'
	CO-2		CEMENTITIOUS URETHANE CONCRETE COATING SYSTEM
FABRIC	F-1		VINYL UPHOLSTERY (banquette) MANUFACTURER: JUSTIN DAVID, COLOR: GUNNITE, PATTERN: NAPA, or APPROVED EQUAL
FRP	FRP-1		MARLITE CLASS II/C, COLOR P-100 WHITE or EQUAL - INSTALL FULL HEIGHT WHERE APPLIED TO WALLS
	FRP-2		MARLITE CLASS II/C, COLOR P-807 WHITE or EQUAL - INSTALL FULL HEIGHT WHERE APPLIED TO WALLS
FURNITURE	FRN-1	TABLE	WHITE OAK TABLE TOP, NATURAL STAIN; POWDER COATED BLACK STEEL BASE (BY OWNER)
	FRN-2	CHAIR	(BY OWNER)
	FRN-3	TABLE	WHITE OAK TABLE TOP, NATURAL STAIN; POWDER COATED BLACK STEEL BASE (BY OWNER)
	FRN-4	TABLE	
GLASS	GL-1		BATHROOM MIRROR - SEE INTERIOR ELEVATIONS
	GL-2		STORE FRONT 'WINDBREAK' - SPACED BOARD CLADDING
METAL	M-1		WALL BASE - 1' SCHLUTER 'DESIGN LINE' POLISHED BRASS ANODIZED ALUMINUM
	M-2		'DIAMOND PLATE' WALL BASE, BLACK
	M-3		POWDER COATED ALUMINUM AWNING; COLOR: BLACK
	M-4		POWDER-COATED 2x4 ALUMINUM TUBES; COLOR: BLACK; SEE INTERIOR ELEVATIONS; ALTERNATES SHALL BE CONSIDERED.
	SS-1		STAINLESS STEEL WALL PANEL
PAINT	P-1	SHERWIN WILIAMS	SW 6001 'GREYISH'
	P-2	SHERWIN WILIAMS	SW 6993 'BLACK OF NIGHT'
	P-3	SHERWIN WILLIAMS	SW 6395 'ALCHEMY'
STONE	ST-1	-	GRANITE: 2cm UBATUBA GRANITE COUNTERTOPS - SQUARE EDGE PROFILE
PLASTIC LAMINATE	PL-1		PLASTIC LAMINATE 'MATTE BLACK' FINISH - COUNTERTOP and BASE CABINETS
TILE	T-1	*NOT USED*	*NOT USED*
	T-2	ATLAS USA	COLOR: FORGE STEEL PORCELAIN WALL TILE; SIZE: 18' x 36'
	T-3	DALTILE	PATTERN: EQUINOX; COLOR: LUNA; SIZE: 3' x 12'
WALL COVERING	WC-1	BY OWNER	WALL COVERING / WALL GRAPHIC BY OWNER
WOOD	WD-1	*NOT USED*	*NOT USED*
	WD-2	-	1x4 PAINTED WOOD BASE; COLOR: 'P-2'
	WD-3	-	SPACED 2x6 CLEAR CEDAR, EBONY STAIN - PROVIDE SAMPLE (ALTERNATE: THERMORY 'IGNITE' PINE CLADDING - C20 *DRAGON SCALE*)
	WD-4	-	QUARTER SAWN WHITE OAK VENEER PLYWOOD w/ SPRAY-APPLIED CLEAR COAT FINISH - TO MATCH WHITE OAK FLOORING.
	WD-5		SPACED (2) 2x12 CLEAR CEDAR, EBONY STAIN - PROVIDE SAMPLE
MILLWORK	MW-1		UPHOLSTERED LINEAR BANQUETTE SEATING
	MW-2		SERVICE COUNTERTOP & BASE CABS; BLACK LAMINATE - MATTE FINISH
	MW-3		HOST STAND - SEE INTERIOR ELEVATIONS
FIBER CEMENT	FC-1		PAINTED FIBER CEMENT RAINSCREEN (SMOOTH) LAY OUT SO AS TO MINIMIZE VISIBLE JOINTS

FINISH LEGEND

ACC	=	ACCESSORIES	M	=	METAL
ACR	=	ACRYLIC	MIR	=	MIRROR
ACT	=	ACOUSTIC CEILING TILE	P	=	PAINT
BA	=	BASE	SF	=	SPECIAL FINISH
BR	=	BRICK	SS	=	STAINLESS STEEL
CNT	=	COUNTERTOP	SSU	=	SOLID SURFACE
CO	=	CONCRETE	ST	=	STONE
CA	=	CASING	T	=	TILE
EF	=	EXTERIOR FURNITURE	TB	=	TILE BASE
F	=	FABRIC	TT	=	TABLE TOP
FRP	=	FIBERGLASS REINFORCED PANEL	TTB	=	TABLE TOP BASE
GL	=	GLASS	VB	=	VINYL OR RUBBER BASE
GR	=	GROUT	VCT	=	VINYL COMPOSITION TILE
HW	=	HARDWARE	WC	=	WALL COVERING
IF	=	INTERIOR FURNITURE	WD	=	WOOD

FINISH PLAN NOTES

a. REFER TO INTERIOR ELEVATIONS FOR SPECIFIC FINISH LOCATIONS, MATERIAL ORIENTATION, PATTERNS & LAYOUTS.

b. ALL WALL SURFACES TO BE PAINTED TYPE 'A' GYP. BOARD U.N.O.

c. TYPICAL FINISHES INDICATED WITHIN ROOM U.N.O. - REFER TO FINISH SCHEDULE.

d. ALL INTERIOR WALL CEILING FINISHES SPECIFIED SHALL NOT BE LESS THAN CLASS 'C'

e. ALL JOINTS BETWEEN MATERIALS TO BE TIGHT AND CONSTRUCTED IN A NEAT, WORKMAN-LIKE MANNER.

f. ABSOLUTELY NO SUBSTITUTIONS WILL BE PERMITTED FOR SPECIFIED MATERIALS UNLESS WRITTEN APPROVAL IS OBTAINED FROM OWNER OR DESIGNER.

g. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PREPARATION OF ALL NEW AND EXISTING SURFACES IN A SATISFACTORY MANNER TO RECEIVE NEW FINISHES. THIS INCLUDES THE DEMOLITION AND REMOVAL OF NECESSARY ITEMS. TOUCH-UP AND/OR REFINISH OF SURFACES DAMAGED BY SUBSEQUENT WORK SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH THE MANUFACTURERS RECOMMENDED INSTALLATION METHODS. THE GENERAL CONTRACTOR SHALL PREPARE THE EXISTING FLOOR PRIOR TO THE APPLICATION OF FINISH FLOORING.

h. THE FLOORING SUB-CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT THE CONDITION OF THE BASE FLOOR MEETS THE INSTALLATION SPECIFICATIONS PRIOR TO THE INSTALLATION OF NEW FLOORING MATERIAL.

i. UNDER NO CIRCUMSTANCES SHOULD WOOD BE USED FOR FLOOR LEVELING OR AS A SUBSTRATE UNLESS SPECIFICALLY NOTED OTHERWISE.

j. ALL FLOOR COVERING MATERIALS TO BE INSTALLED PER MANUFACTURERS STANDARD DETAILS AND SPECIFICATIONS. VERIFY W/ MANUFACTURER PRIOR TO INSTALLATION.

k. FINISH FLOORING APPLICATION SHALL BE IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES.

l. ALL FLOOR MATERIAL TRANSITIONS AT DOOR THRESHOLDS TO TAKE PLACE AT DOOR CENTERLINE.

m. THE G.C. IS RESPONSIBLE FOR PROVIDING A SMOOTH LEVEL FLOOR SURFACE THAT MEETS THE MANUFACTURERS INSTALLATION SPECIFICATIONS PRIOR TO THE INSTALLATION OF ALL FLOORING MATERIALS. USE LEVELING COMPOUND UNDER TILE AND CARPET AREAS. PATCH/SHIM ALL AREAS AS NECESSARY SO THAT NEW FLOORING MEETS LEVEL WITH ALL OTHER FLOORING SURFACES MAX SLOPE OF 1:20.

n. GENERAL CONTRACTOR TO MAINTAIN EXISTING FINISH OF ALL EXPOSED STRUCTURE THAT WILL NOT HAVE AN ENCLOSED CEILING CONSTRUCTED.

o. ALL JOINTS IN GYPSUM BOARD WALLS SHALL BE FINISHED WITH PAPER TAPE 2' WIDE AND THREE COATS OF JOINT COMPOUND. ALL OUTSIDE CORNERS SHALL BE FINISHED WITH METAL CORNER BEADS, TAPED AND SPACKLED. ALL AREAS TO BE PAINTED SHALL BE SANDED SMOOTH. JUST PRIOR TO THE APPLICATION OF PAINT, WIPE SANDED SURFACES WITH A DAMP CLOTH IN ORDER TO LAY FLAT ANY NAP WHICH MAY HAVE FORMED IN SANDING.

p. GYPSUM WALLBOARD: INDICATED THICKNESS(ES) BY 48 IN. WIDTH BY LENGTHS AS REQUIRED, TAPERED EDGE, PAPER FINISH, CONFORMING TO ASTM C36. WHERE USED IN FIRE RATED ASSEMBLIES, TYPE X FIRE RESISTANT TYPE SHALL BE USED. MOISTURE RESISTANT GYPSUM WALL BOARD SHALL BE USED AT TOILET ROOMS AND KITCHEN AREAS AS INDICATED ON DRAWINGS.

q. ALL FINISHES SHALL BE TOUCHED UP TO CORRECT ANY IMPERFECTIONS AFTER INSTALLATION.

r. THE PAINT CONTRACTOR SHALL REMOVE ALL HARDWARE, SWITCH COVERS, ETC. PRIOR TO PAINTING AND BE RESPONSIBLE FOR THE REINSTALLATION AFTER PAINTING IS COMPLETED. ALL SURFACES WHICH ARE TO RECEIVE A PAINT FINISH SHALL BE PRIMED.

s. PAINT TO BE AS SPECIFIED, NO EXCEPTIONS.

t. FLAT PAINT FINISH TO BE USED ON CEILINGS ONLY.

u. EGGSHELL PAINT FINISH TO BE USED ON ALL DINING AREAS, TOILET ROOMS, AND KITCHEN AREA WALLS.

v. SEMI-GLOSS PAINT FINISH TO BE USED ON ALL DOORS, DOOR FRAMES, AND PAINTED WOOD WALL BASE.

w. INSTALL CLEAR SEALANT AROUND ALL FOOD SERVICE EQUIPMENT AND AT ANY MISCELLANEOUS GAPS TO MEET HEALTH DEPARTMENT INSPECTION.

x. WOOD BLOCKING FOR SUPPORT OF FIXTURES, ACCESSORIES ETC. SHALL BE CONSTRUCTION AND/ OR STANDARD GRADE SPF.

y. CONTRACTOR TO COORDINATE ALL EQUIPMENT RELATED PLUMBING AND FLOOR DRAIN LOCATIONS WITH CABINETRY DESIGN AND EQUIPMENT REQUIREMENTS.

z. PROVIDE WOOD BASE IN ALL AREAS VISIBLE TO CUSTOMERS. REVIEW EXTENT OF WOOD BASE w/ ARCHITECT AND TENANT IF QUESTIONS ARISE.

aa. PROVIDE SUBMITTAL FOR BASE MATERIAL WHERE WALL FINISH IS FRP.

ab. AREAS WITH STAINLESS STEEL WALL PANELS SHALL BE INSTALLED/SEALED TIGHT TO FINISH FLOOR SURFACE

ac. AREAS WITH WALL TILE SHALL BE INSTALLED/SEALED TIGHT TO FINISH FLOOR SURFACE

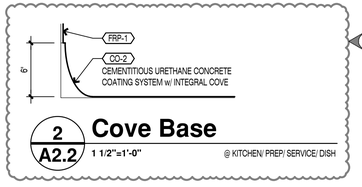
FINISH PLAN CODED NOTES

1. REFER TO INTERIOR ELEVATIONS FOR FINISHES AT BULKHEAD AND DIE WALL.
2. 4 LINEAR FOOT BANQUETTE TYP.

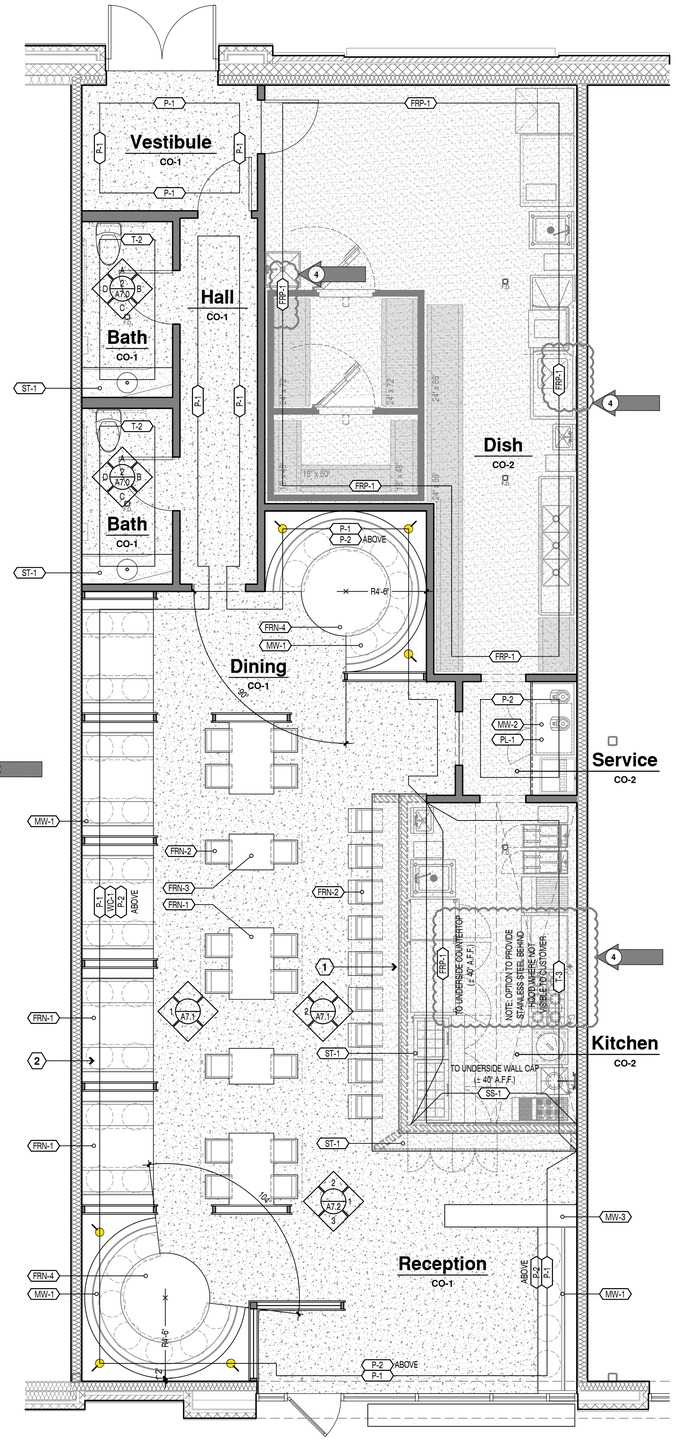
MATERIAL LEGEND

CO-1
EXISTING CONCRETE TO BE STAINED

CO-2
CEMENTITIOUS URETHANE CONCRETE COATING SYSTEM
- DUR-A-FLEX, POLYCRETE MDB
- GRAY TOPCOAT
- INSTALL PER MANUFACTURERS INSTRUCTIONS
- PROVIDE INTEGRAL COVE BASE



2 / A2.2 **Cove Base**
1 1/2"=1'-0" @ KITCHEN/ PREP/ SERVICE/ DISH



1 / A2.2 **Finish Plan**
1/4"=1'-0"

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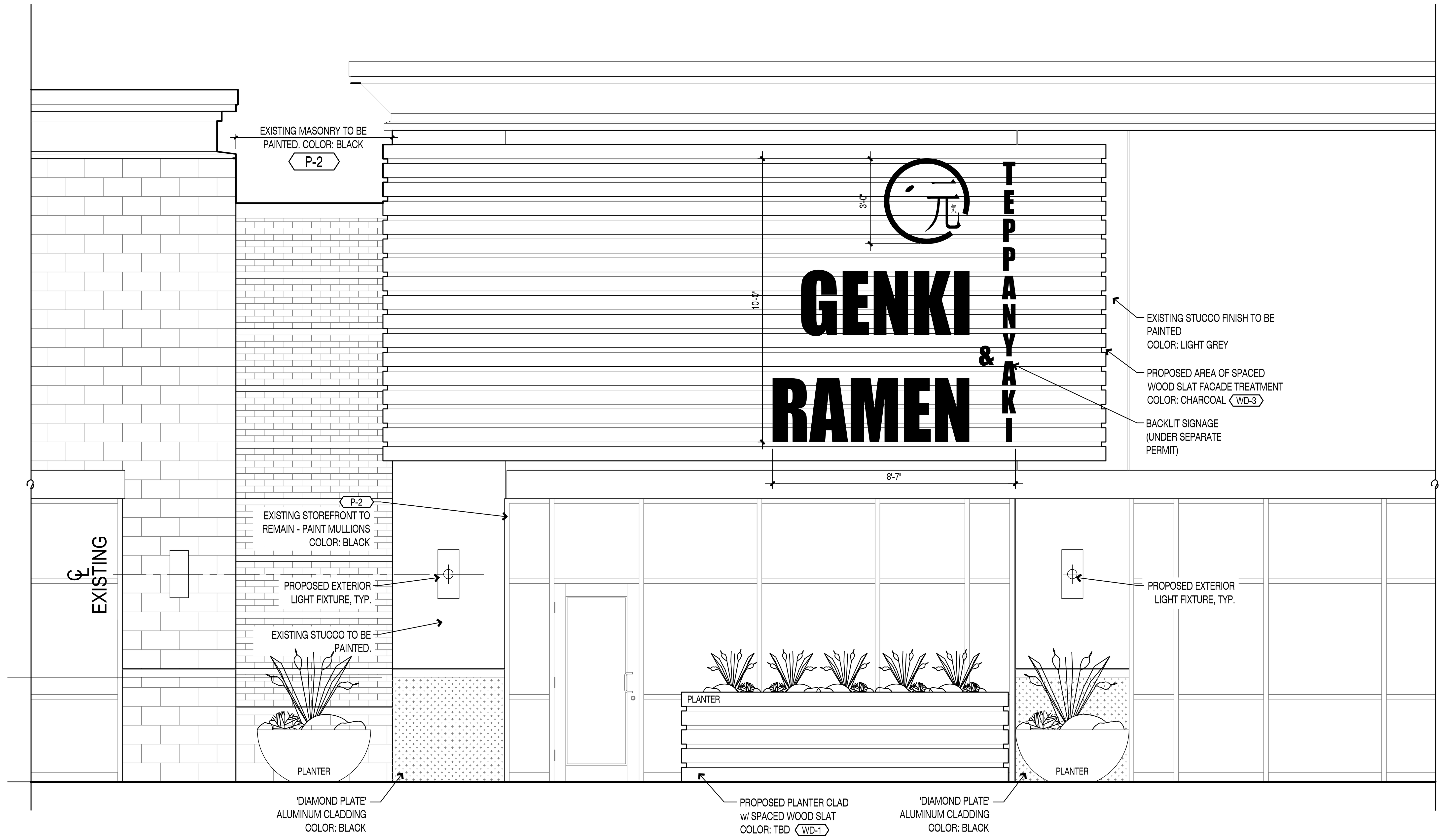
A2.2
Floor Plan
21 June 2021 - Permit Rev 4



1
A3.0
Exterior Elevations
3/8"=1'-0"

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A3.0
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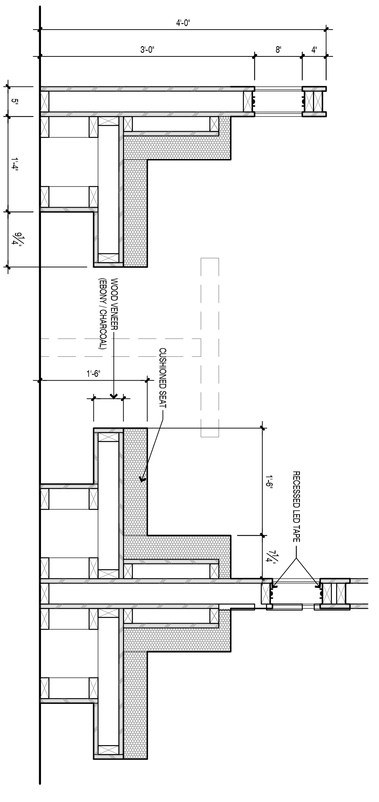

1 A5.0 1"=1'-0"

Exterior Elevations

A5.0
Details
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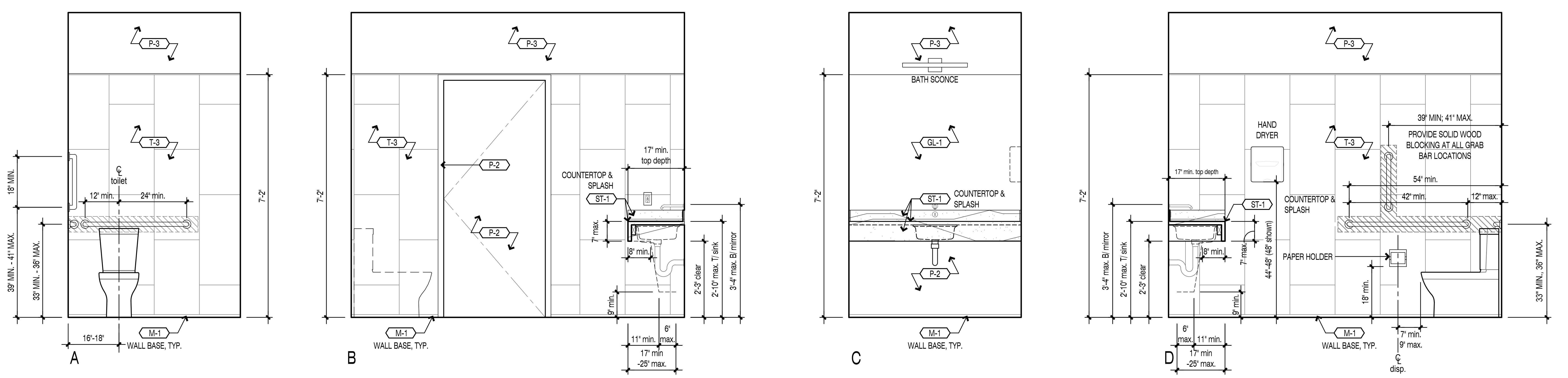
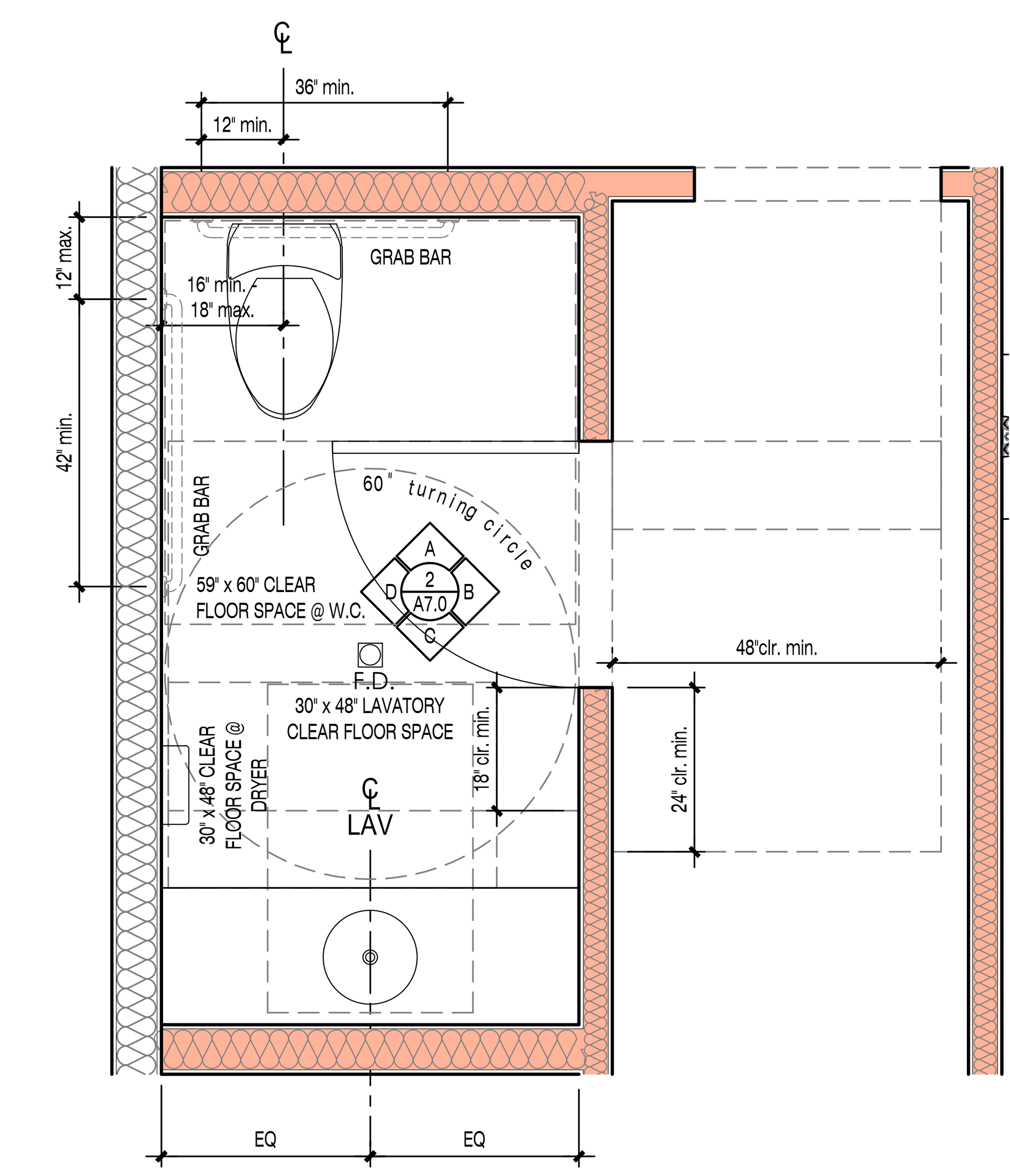


2 A7.0 Interior Elevations

1/2"=1'-0"



1 A7.0 Enlarged Area Plan

1/2"=1'-0"

ACCESSIBLE BATHROOM NOTES

1. PROVIDE GRAB BARS ON SIDE AND BACK OF WATER CLOSET:
   A. GRAB BARS TO BE PARALLEL TO THE FLOOR
   B. SIDE BARS TO BE 42" LONG MIN. & PROJECT 24" MIN. IN FRONT OF WATER CLOSET STOOL. GRAB BAR @ BACK TO BE 36" MIN. LONG.
   C. DIAMETER OF GRAB BARS TO BE 1-1/4" TO 1-1/2"
   D. PROVIDE 1-1/2" CLEARANCE BETWEEN GRAB BARS AND WALL
   E. GRAB BARS (INCLUDING CONNECTORS, FASTENERS, SUPPORT BACKING, ETC.) SHALL SUPPORT A 250 POUND LOAD
   F. GRAB BARS TO BE STAINLESS STEEL FINISH U.N.O.
2. SEE DOOR SCHEDULE FOR ACCESSIBILITY NOTES PERTAINING TO DOORS & HARDWARE
3. MOUNT LAVATORIES WITH A MINIMUM CLEARANCE OF 27" FROM THE FLOOR TO THE BOTTOM OF THE APRON. PROVIDE KNEE CLEARANCE UNDER THE FRONT LIP EXTENDING A MINIMUM OF 30" IN WIDTH WITH 8" MINIMUM WIDTH, AND SHALL BE A MINIMUM OF 9" HIGH FROM THE FLOOR A MINIMUM OF 17" DEEP FROM THE FRONT OF THE LAVATORY.
4. 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 POUNDS. LEVER OPERATED, PUSH TYPE AND ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS.
5. INSULATE OR OTHERWISE COVER HOT WATER AND DRAIN PIPES UNDER LAVATORIES.
6. PROVIDE SIGNAGE USING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AT ACCESSIBLE BATHROOM. INCLUDE THE REQUIRED GRADE II BRAILLE ON THE PICTOGRAM PER THE ADAAG RECOMMENDATIONS. (1)
7. ALL ELECTRICAL AND MECHANICAL DEVICES, INCLUDING BUT NOT LIMITED TO THERMOSTATS, LIGHT SWITCHES, OUTLETS, AND OTHER DEVICES SHALL BE MOUNTED BETWEEN 9" AND 54" ABOVE THE FINISHED FLOOR.

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A7.0

Enlarged Areas / Interior Elevations
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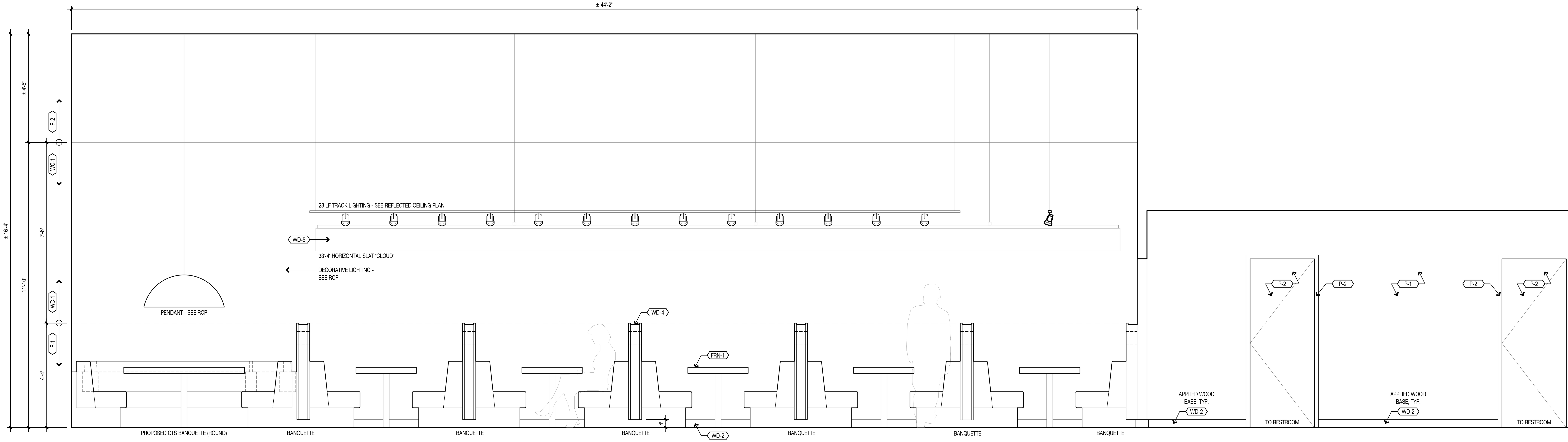
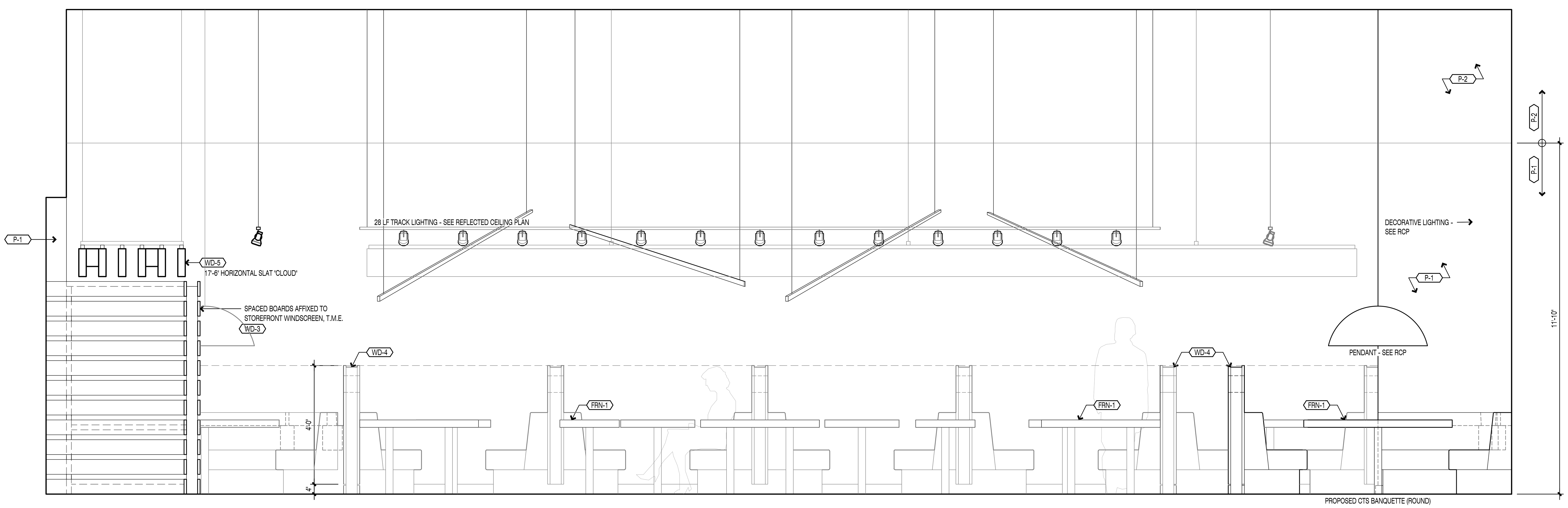


1
A7.1
Interior Elevations
1/2"=1'-0"



2
A7.1
Interior Elevations
1/2"=1'-0"

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Interior Elevations
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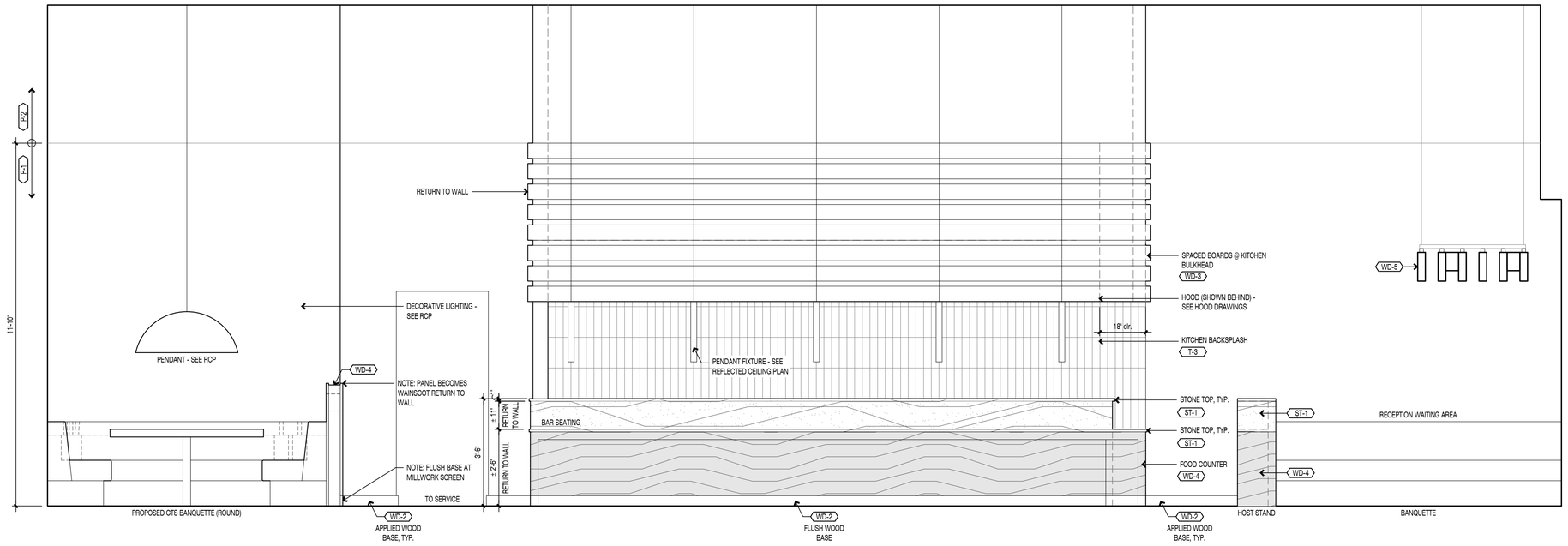
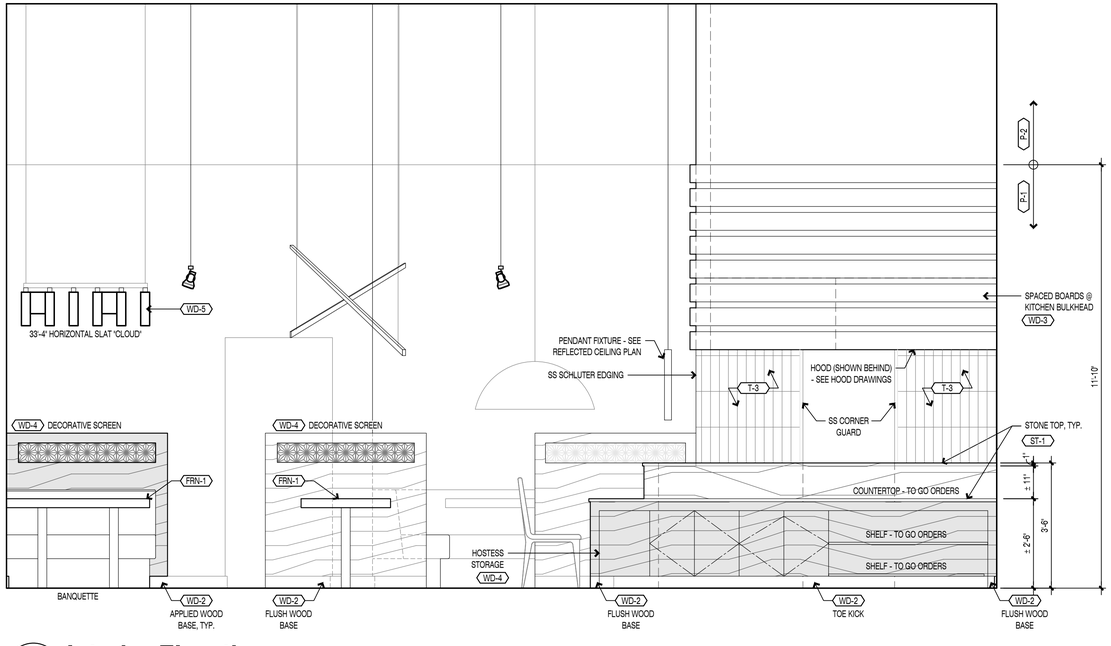


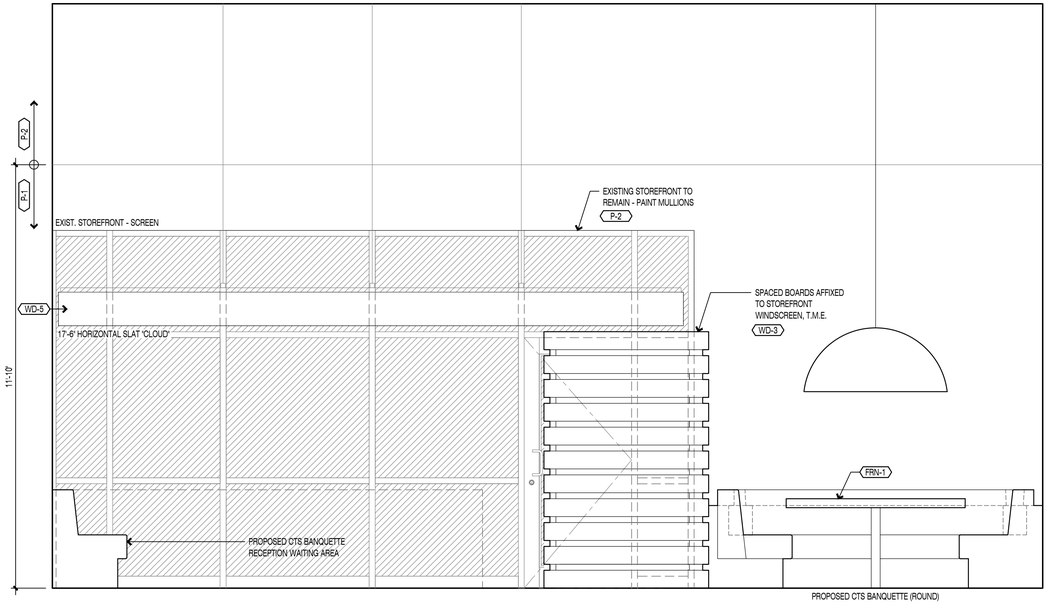
1 A7.2 Interior Elevations

1/2"=1'-0"



2 A7.2 Interior Elevations

1/2"=1'-0"



3 A7.2 Interior Elevations

1/2"=1'-0"

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Interior Elevations
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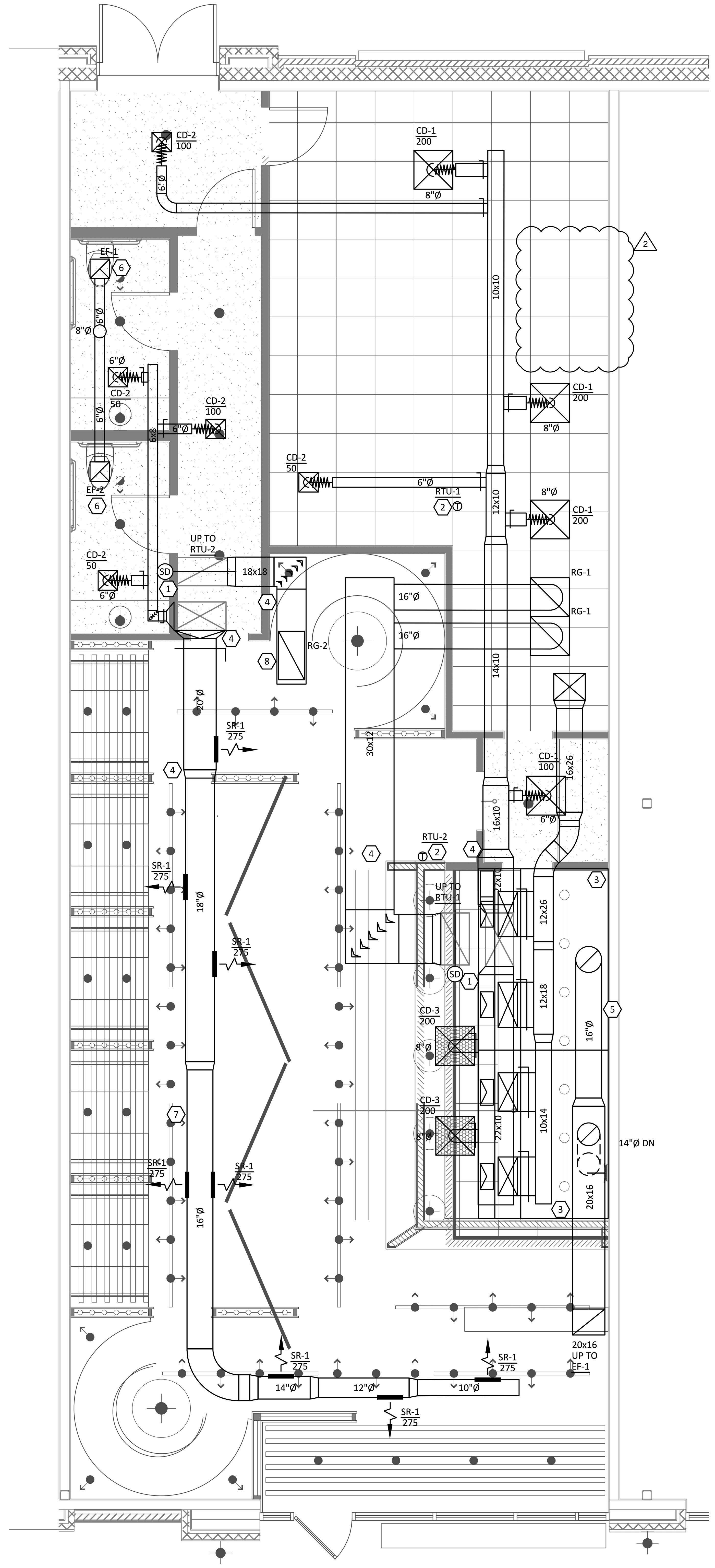

1
M1.0
MECHANICAL PLAN
1/4" = 1'-0"

KEYED NOTES

1. IF NOT EXISTING (RTU-1), PROVIDE DUCT MOUNTED SMOKE DETECTOR. COMPATIBLE REMOTE ANNUNCIATOR/TEST SWITCH FURNISHED BY EC. MC TO INSTALL SMOKE DETECTOR IN RETURN DUCT, PRIOR TO ANY OUTDOOR AIR CONNECTIONS. MC TO PROVIDE INTERLOCK WIRING BETWEEN SMOKE DETECTOR AND UNIT TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. EC SHALL PROVIDE WIRING FOR FINAL CONNECTION TO CENTRAL FIRE ALARM SYSTEM, IF APPLICABLE, AND WIRING TO REMOTE ANNUNCIATOR/TEST SWITCH.
2. PROVIDE THERMOSTAT AND MOUNT ON WALL 5 FEET A.F.F.
3. TYPE I HOOD WITH ANSUL FIRE SUPPRESSION SYSTEM FURNISHED BY KITCHEN CONSULTANT AND INSTALLED BY MECHANICAL CONTRACTOR. MAKE ALL DUCT CONNECTIONS AS INDICATED AND INSTALL HOOD AT 80" A.F.F.. REFER TO CAPTIVE AIRE DRAWINGS FOR ADDITIONAL INFORMATION. SEE ROOF PLAN FOR CONTINUATION.
4. INTERNALLY LINE FIRST 10 FEET OF SUPPLY AND RETURN AIR DUCTWORK WITH JOHN'S MANVILLE, OR EQUIVALENT, 1 INCH THICK SPIRACOUSTIC FIBERGLASS DUCT LINER. DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.
5. PROVIDE 16 GA. STEEL DUCT, WITH SEAMS WELDED LIQUID TIGHT, IN ACCORDANCE WITH SECTION 506.3 OF INTERNATIONAL MECHANICAL CODE AND SLOPE DUCT AT $\frac{1}{4}$"/FT TOWARDS HOOD. PROVIDE CLEANOUT AT EVERY CHANGE OF DIRECTION, EVERY 20' HORIZONTALLY AND AS REQUIRED BY NFPA 96. PROVIDE 2 LAYERS OF 3M 615+, OR EQUIVALENT, FIRE BARRIER DUCT WRAP ON EXHAUST DUCT BETWEEN HOOD AND ROOF. AS AN OPTION TO UTILIZING 16 GA STEEL DUCT, PROVIDE CAPTIVE AIRE MODEL DW ROUND 20 GAUGE STAINLESS STEEL DOUBLE WALL DUCT SYSTEM.
6. PROVIDE NEW EXHAUST FAN AND ROUTE 6"Ø EXHAUST DUCT OFF EACH RESTROOM EXHAUST FAN AND COMBINE INTO 8"Ø EXHAUST DUCT. ROUTE EXHAUST DUCT UP THROUGH ROOF. REFER TO ROOF PLAN FOR CONTINUATION.
7. ALL SPIRAL DUCTWORK TO BE PAINT GRIP GALVANIZED TO ALLOW FOR FIELD PAINTING
8. PROVIDE RETURN GRILLE AND INSTALL ON TOP OF RETURN DUCT. PROVIDE SHEET METAL AT END OF DUCT, SAME GAUGE AS DUCTWORK AND SEAL AIR TIGHT.

2

GENERAL NOTES

A. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE. EXACT LOCATIONS OF DEVICES AND ROUTING OF DUCTWORK SHALL BE DETERMINED BY CONTRACTOR AFTER COORDINATION WITH ALL OTHER TRADES AND FIELD DETERMINATION OF FINAL CONSTRUCTION DETAILS. MINOR ADJUSTMENTS TO DUCT ROUTING AND CONFIGURATION TO AVOID CONFLICT WITH BUILDING STRUCTURE OR OTHER TRADES SHALL BE INCLUDED IN CONTRACTOR'S PRICE. CONTRACTOR SHALL OBTAIN ENGINEERS APPROVAL IN WRITING FOR ANY MODIFICATIONS TO SYSTEM DESIGN PRIOR TO INSTALLATION.

B. ALL EXPOSED MATERIALS AND EQUIPMENT SHALL BE INSTALLED AND SUPPORTED IN A FIRST-CLASS AND WORKMANLIKE FASHION. DUCTWORK SHALL RUN PARALLEL AND/ OR PERPENDICULAR TO MAIN BUILDING STRUCTURE. ANY WORK THAT IS NOT DONE IN A FIRST-CLASS OR WORKMANLIKE FASHION, IN THE ARCHITECTS OPINION, SHALL BE REDONE AT THE CONTRACTORS EXPENSE.

C. ALL DUCT JOINTS, SEAMS AND CONNECTIONS SHALL BE SECURELY FASTENED AND SEALED. DUCTS SHALL BE SUPPORTED WITH APPROVED HANGERS AT INTERVALS NOT EXCEEDING TEN FEET. DUCT COVERINGS AND LININGS SHALL HAVE A FLAME-SPREAD INDEX NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX NOT MORE THAN 50.

D. PROVIDE VOLUME DAMPERS AT ALL ROUND BRANCH DUCT TAKE-OFFS THAT ARE ACCESSIBLE. PROVIDE TURNING VANES AT ALL 90 DEGREE SQUARE ELBOWS IN SUPPLY AIR DUCTS. PROVIDE 45 DEGREE HEEL AT ALL RECTANGULAR SUPPLY AND RETURN BRANCH DUCT TAKE-OFFS.

E. OUTDOOR AIR INTAKES SHALL BE 10'-0" MINIMUM AWAY FROM ANY EXHAUST AND PLUMBING VENT OUTLET.

F. WIRE UP ALL LOW VOLTAGE (24V) THERMOSTATS.

G. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL PIPES, DUCTWORK, UNITS, ETC. WITH ALL OTHER TRADES AND SHIFT LOCATION OR OFFSET WHERE NECESSARY. PROVIDE TRANSITIONS IN DUCTWORK TO AVOID CONFLICT WITH EXISTING DUCTWORK AND OTHER STRUCTURES.

H. CONTRACTOR SHALL COORDINATE ALL AIR DEVICES WITH ELECTRICAL AND ARCHITECTURAL REFLECTED CEILING PLANS.

I. COORDINATE LOCATION OF ALL EXTERIOR LOUVER OR OUTLET WITH ARCHITECTURAL ELEVATION PLAN.

J. COORDINATE ROOF WORK WITH BUILDING OWNER'S ROOFING CONTRACTOR TO ASSURE THAT THE ROOF WARRANTY IS NOT VOIDED.

K. INSTALL DUCTWORK AS HIGH AS POSSIBLE.

L. EXHAUST AIR DUCTS SHALL BE EQUIPPED WITH BACKDRAFT DAMPERS.

M. ALL DUCT OPENINGS AND OTHER AIR DISTRIBUTION OPENINGS SHALL BE COVERED DURING CONSTRUCTION EXCEPT FOR TESTING AND INSPECTION.

N. PROVIDE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND WARRANTIES /WRITTEN GUARANTEE FOR EACH SYSTEM. O&M INSTRUCTIONS SHALL BE CONSISTENT WITH OSHA REQUIREMENTS IN CCR TITLE 8 , SECTION 5142 AND OTHER RELATED REGULATIONS.

O. ALL DUCT ELBOWS SHALL BE LONG RADIUS OR MITERED.

HVAC LEGEND

1	DRAWING NOTE SYMBOL
26x16	NEW RECTANGULAR DUCTWORK AND SIZE
10"Ø	NEW ROUND DUCTWORK AND SIZE
	BALANCING/VOLUME DAMPER
	FLEX DUCT
T	THERMOSTAT
CD-1 240	NEW SUPPLY AIR DIFFUSER AND CFM
RG-1	NEW RETURN GRILLE
	NEW EXHAUST FAN
SD	SMOKE DETECTOR
	SUPPLY DUCT UP THROUGH ROOF
	RETURN/EXHAUST DUCT UP THROUGH ROOF
M	MOTOR OPERATED DAMPER

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John Quinn Jr.
79076
REGISTERED PROFESSIONAL ENGINEER
04/29/2021

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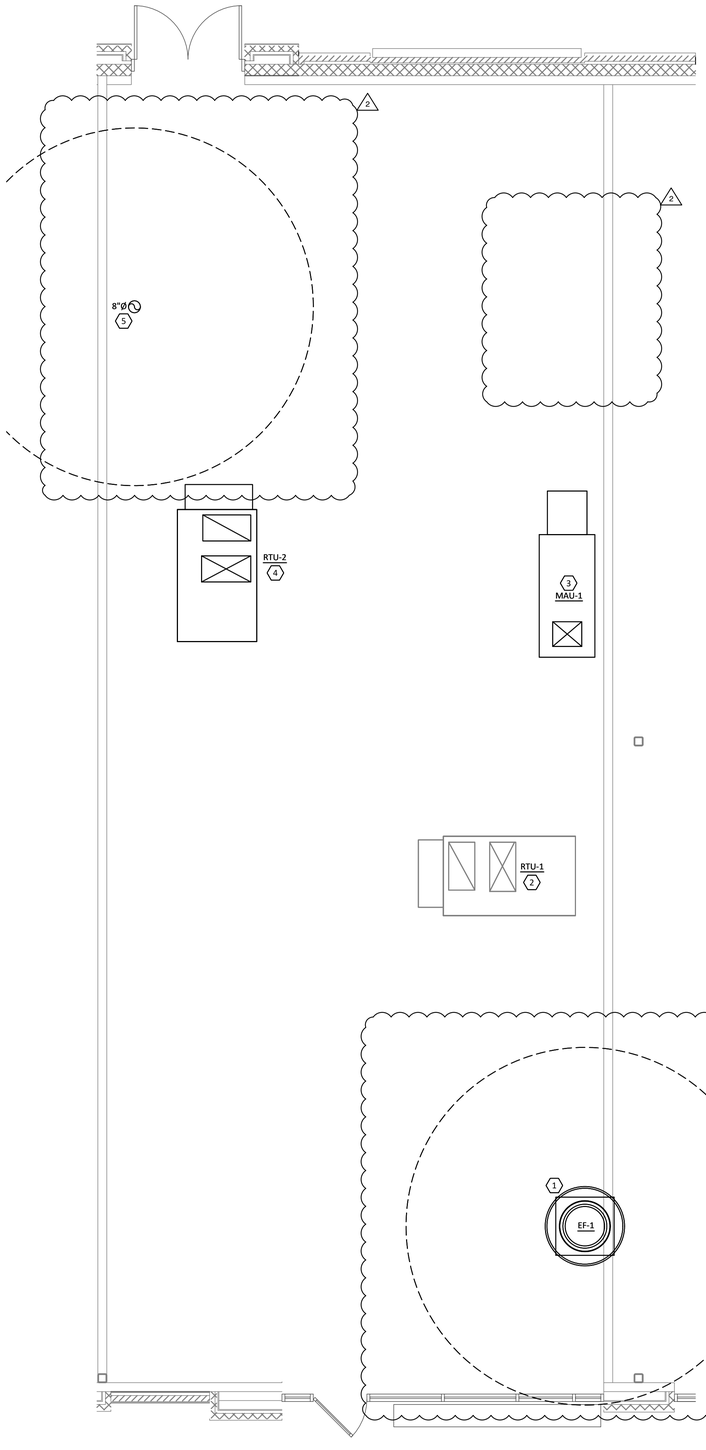
Sheet M1.0
MECHANICAL PLAN
19 May 2021 - Rev 2 - Plan Revisions



1 M1.1 MECHANICAL PLAN ROOF

1/4" = 1'-0"

KEYED NOTES

1. HOOD EXHAUST FAN AND CURB FURNISHED BY KITCHEN CONSULTANT AND INSTALLED BY MECHANICAL CONTRACTOR. INSTALL EXHAUST FAN ON 24" HIGH INSULATED AND VENTILATED ROOF CURB. REFER TO CAPTIVE AIRE DRAWINGS FOR ADDITIONAL INFORMATION. MAINTAIN MINIMUM 40" DISCHARGE HEIGHT ABOVE ROOF, IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE. MAINTAIN MINIMUM 10' CLEARANCE FROM ANY OUTDOOR AIR INTAKES. REFER TO MECHANICAL FLOOR PLAN FOR CONTINUATION.
2. EXISTING ROOFTOP UNIT TO REMAIN. MECHANICAL CONTRACTOR TO FIELD VERIFY EXACT LOCATION PRIOR TO BID AND SERVICE UNIT TO ASSURE IT IS OPERATING PROPERLY. REPLACE ALL FILTERS PRIOR TO LEAVING JOB SITE. BALANCE SUPPLY AND OUTSIDE AIR TO CFM SCHEDULED.
3. MAKEUP AIR UNIT AND CURB FURNISHED BY KITCHEN CONSULTANT AND INSTALLED BY MECHANICAL CONTRACTOR. INSTALL ON ROOF CURB. REFER TO CAPTIVE AIRE DRAWINGS. FOR ADDITIONAL INFORMATION. MAINTAIN MINIMUM 10' CLEARANCE FROM ANY PLUMBING VENTS OR EXHAUST OUTLETS. REFER TO MECHANICAL FLOOR PLAN FOR CONTINUATION.
4. PROVIDE NEW ROOFTOP UNIT AND CURB. ROUTE SUPPLY/RETURN DROPS DOWN THROUGH ROOF. REFER TO HVAC PLAN FOR CONTINUATION. COORDINATE ROOF TOP UNIT LOCATION WITH STRUCTURE BELOW. PROVIDE NEW THERMOSTAT, CONTROL WIRING, AND STAND ALONE CONTROLS FOR RTU OPERATION. ROUTE CONDENSATE TO ROOF. BALANCE SUPPLY AND OUTSIDE AIRFLOW AS SCHEDULED.
5. 8" EXHAUST VENT FROM TOILET EXHAUST FANS BELOW. TERMINATE WITH MANUFACTURER'S STANDARD ROOF EXHAUST CAP AND INSTALL ON 12" INSULATED ROOF CURB. MAINTAIN MINIMUM 10' CLEARANCE FROM ANY OUTDOOR AIR INTAKES.

GENERAL NOTES

A. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE. EXACT LOCATIONS OF DEVICES AND ROUTING OF DUCTWORK SHALL BE DETERMINED BY CONTRACTOR AFTER COORDINATION WITH ALL OTHER TRADES AND FIELD DETERMINATION OF FINAL CONSTRUCTION DETAILS. MINOR ADJUSTMENTS TO DUCT ROUTING AND CONFIGURATION TO AVOID CONFLICT WITH BUILDING STRUCTURE OR OTHER TRADES SHALL BE INCLUDED IN CONTRACTOR'S PRICE. CONTRACTOR SHALL OBTAIN ENGINEERS APPROVAL IN WRITING FOR ANY MODIFICATIONS TO SYSTEM DESIGN PRIOR TO INSTALLATION.

B. ALL EXPOSED MATERIALS AND EQUIPMENT SHALL BE INSTALLED AND SUPPORTED IN A FIRST-CLASS AND WORKMANLIKE FASHION. DUCTWORK SHALL RUN PARALLEL AND/ OR PERPENDICULAR TO MAIN BUILDING STRUCTURE. ANY WORK THAT IS NOT DONE IN A FIRST-CLASS OR WORKMANLIKE FASHION, IN THE ARCHITECTS OPINION, SHALL BE REDONE AT THE CONTRACTORS EXPENSE.

C. ALL DUCT JOINTS, SEAMS AND CONNECTIONS SHALL BE SECURELY FASTENED AND SEALED. DUCTS SHALL BE SUPPORTED WITH APPROVED HANGERS AT INTERVALS NOT EXCEEDING TEN FEET. DUCT COVERINGS AND LININGS SHALL HAVE A FLAME-SPREAD INDEX NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX NOT MORE THAN 50.

D. PROVIDE VOLUME DAMPERS AT ALL ROUND BRANCH DUCT TAKE-OFFS THAT ARE ACCESSIBLE. PROVIDE TURNING VANES AT ALL 90 DEGREE SQUARE ELBOWS IN SUPPLY AIR DUCTS. PROVIDE 45 DEGREE HEEL AT ALL RECTANGULAR SUPPLY AND RETURN BRANCH DUCT TAKE-OFFS.

E. OUTDOOR AIR INTAKES SHALL BE 10'-0" MINIMUM AWAY FROM ANY EXHAUST AND PLUMBING VENT OUTLET.

F. WIRE UP ALL LOW VOLTAGE (24V) THERMOSTATS.

G. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL PIPES, DUCTWORK, UNITS, ETC. WITH ALL OTHER TRADES AND SHIFT LOCATION OR OFFSET WHERE NECESSARY. PROVIDE TRANSITIONS IN DUCTWORK TO AVOID CONFLICT WITH EXISTING DUCTWORK AND OTHER STRUCTURES.

H. CONTRACTOR SHALL COORDINATE ALL AIR DEVICES WITH ELECTRICAL AND ARCHITECTURAL REFLECTED CEILING PLANS.

I. COORDINATE LOCATION OF ALL EXTERIOR LOUVER OR OUTLET WITH ARCHITECTURAL ELEVATION PLAN.

J. COORDINATE ROOF WORK WITH BUILDING OWNER'S ROOFING CONTRACTOR TO ASSURE THAT THE ROOF WARRANTY IS NOT VOIDED.

K. INSTALL DUCTWORK AS HIGH AS POSSIBLE.

L. EXHAUST AIR DUCTS SHALL BE EQUIPPED WITH BACKDRAFT DAMPERS.

M. ALL DUCT OPENINGS AND OTHER AIR DISTRIBUTION OPENINGS SHALL BE COVERED DURING CONSTRUCTION EXCEPT FOR TESTING AND INSPECTION.

N. PROVIDE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND WARRANTIES /WRITTEN GUARANTEE FOR EACH SYSTEM. O&M INSTRUCTIONS SHALL BE CONSISTENT WITH OSHA REQUIREMENTS IN CCR TITLE 8 , SECTION 5142 AND OTHER RELATED REGULATIONS.

O. ALL DUCT ELBOWS SHALL BE LONG RADIUS OR MITERED.

ROOF PENETRATIONS

COORDINATE ROOF WORK WITH BUILDING OWNER'S ROOFING CONTRACTOR:

HOLLAND ROOFING RMM OF CINCINNATI

7450 INDUSTRIAL ROAD

FLORENCE, KY 41042

EXHAUST TERMINATIONS

ALL EXAHSUT TERMINATIONS MUST BE AT A MINIMUM OF 3 FT FROM PROPERTY LINES, 3 FT FROM ANY OPERABLE OPENINGS AND 10 FT FROM ANY MECHANICAL AIR INTAKES.

HVAC LEGEND

	SUPPLY DUCT UP THROUGH ROOF
	RETURN/EXHAUST DUCT UP THROUGH ROOF

MARQUE ENGINEERING
2230 PARK AVE., STE. 100, CINCINNATI, OH 45206
513.457.7131 - WWW.MARQUEENG.COM
OH COA #4715

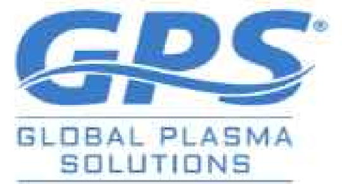
STATE OF OHIO
JOHN C. QUIKEN JR.
79076
REGISTERED PROFESSIONAL ENGINEER

04/29/2021

GENKI
West Chester
7244 Outfitters Way
West Chester, Ohio 45069

Sheet M1.1

MECHANICAL PLAN ROOF
19 May 2021 - Rev 2 - Plan Revisions



Global Plasma Solutions, Inc.

3101 Yorkmont Rd
Suite 400
Charlotte, NC 28208
www.globalplasmasolutions.com
VERSION 2.0 running ASHRAE 62.1-2016

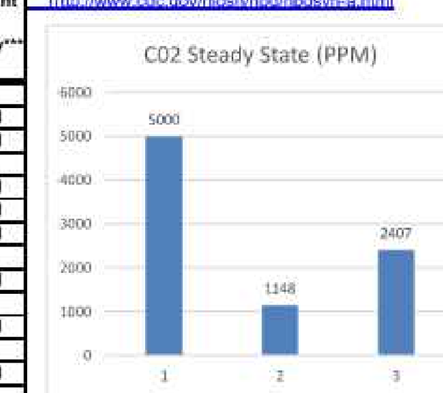
Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp	Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
RTU-2	Food & Beverage Service	afeteria and Fast Food Dini	1,361.0	46.0	7.5	0.18	345	245	0.8	737 OA required per VRP

Zone Height (feet)	12.0
Desired Outside Air (Vo) IAQP (CF	275
Supply Air (Vs) (CFM)	2,400
Return Air (Vr)	2125
Recirc. Flow Factor (R)	0.89
Ventilation Effectiveness (Ez)	0.8
Level of Physical Activity	Standing (desk work)
Filter Location	B
HVAC Flow Type	Constant
Outdoor Air Flow Type	Constant

Air Changes Per Hour	8.8	VRP OA CFM per person	16.0
Outside Air Per VRP	737 CFM	IAQ OA CFM per person	6.0
Outside Air Per IAQ	275 CFM		
Outside Air Savings	462 CFM	Winter Heating Savings	
OA Summer Drybulb	91.0	OA Winter Design DB (F)	1
OA Summer Wetbulb	74.0	Supply Air DB Setpoint (F)	85
Coil Leaving Air Drybulb (F	55.0	MBH Saved Winter	42.1
Coil Leaving Air Wetbulb (F	55.0	KW Saved Winter	12.4
OA MBH Saved Summer*	#NAME?		
OA Tons Saved Summer*	#NAME?		

*OA = Outside Air
***OSHA, NIOSH & WHO most conservative values usec
http://www.cdc.gov/niosh/npg/npgsyn-a.html

Indoor Contaminants Generated By People & From Outdoors	Maximum Threshold Value Based on OSHA or NIOSH (PPM)	Steady State (lb/ft3) Using the VRP* (Prescribed OA) Plasma Off	Steady State (lb/ft3) Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate lb/person/min	Filtration Effectiveness	Cognizant Authority***
Acetaldehyde	100.0	2.7684E-09	1.0629E-09	Yes	1.9486E-08	50%	OSHA
Acetone	250.0	1.5487E-08	9.3017E-09	Yes	1.9622E-07	50%	NIOSH
Ammonia	25.00	1.0518E-06	6.3800E-07	Yes	1.3489E-05	50%	NIOSH
Benzene	1.0	1.7693E-08	1.0486E-08	Yes	2.2052E-07	50%	OSHA
2- Butanone (MEK)	200.0	1.0409E-06	6.3138E-07	Yes	1.3350E-05	50%	NIOSH
Carbon dioxide**	5000	4.7863E-05	5.2753E-05	Yes	3.7290E-05	0%	NIOSH
Chloroform	2.0	2.1955E-07	4.0719E-08	Yes	4.1292E-07	50%	NIOSH
Dioxane	100.0	1.9360E-08	2.1896E-09	Yes	0.0000E+00	50%	OSHA
Hydrogen Sulfide	10.0	1.2491E-10	1.4127E-11	Yes	0.0000E+00	50%	NIOSH
Methane	NA	6.2453E-11	6.2453E-11	Yes	0.0000E+00	0%	NA
Methanol	200.0	1.3144E-08	3.5249E-08	Yes	1.6858E-07	0%	NIOSH
Methylene Chloride	25.0	9.4570E-07	5.7335E-07	Yes	1.2121E-05	50%	OSHA
Propane	1000.0	1.2491E-09	1.2491E-09	Yes	0.0000E+00	0%	NIOSH
Tetrachloroethane	5.0	0.0000E+00	0.0000E+00	Yes	0.0000E+00	50%	OSHA
Tetrachloroethylene	100.0	1.0750E-06	6.5118E-07	Yes	1.3764E-05	50%	OSHA
Toluene	100.0	2.6856E-09	1.6290E-09	Yes	3.4441E-08	50%	NIOSH
1,1,1 - Trichloroethane	350.0	4.5188E-05	2.7377E-05	Yes	5.7868E-04	50%	NIOSH
Xylene	100.0	0.0000E+00	0.0000E+00	Yes	0.0000E+00	50%	OSHA



1 = ASHRAE IAQP & NIOSH C02 Limit is 5,000 PPM
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate

**Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

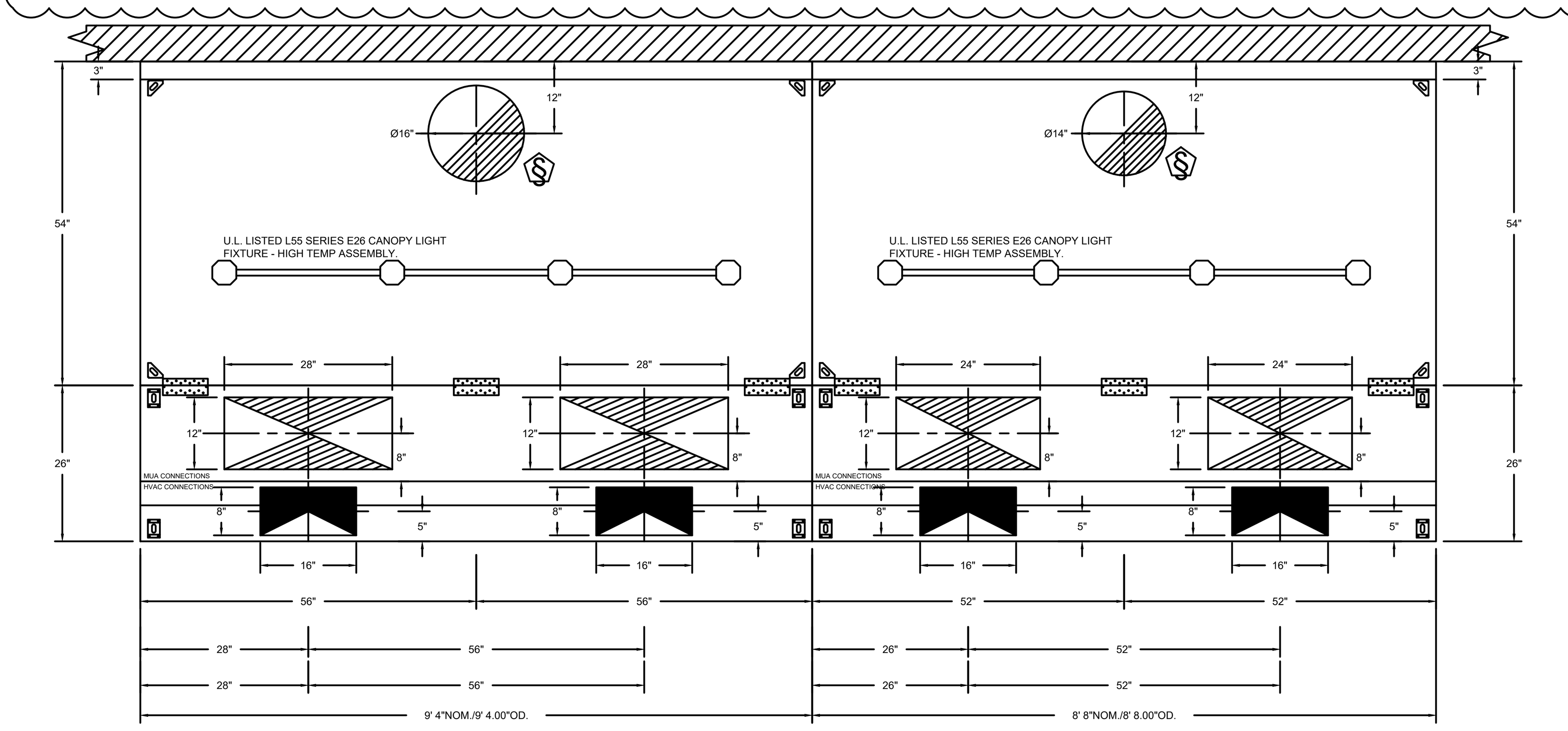
Building materials and furnishings assumed to have no VOCs and off-gassing is complete
All yellow shaded boxes require user input or review

Is IAQ acceptable at reduce outside air levels? Yes

Date	5/5/2021
Job Name	Genki
Representative	-
Engineer	Marque Engineering
Contractor	-

IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2

Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2

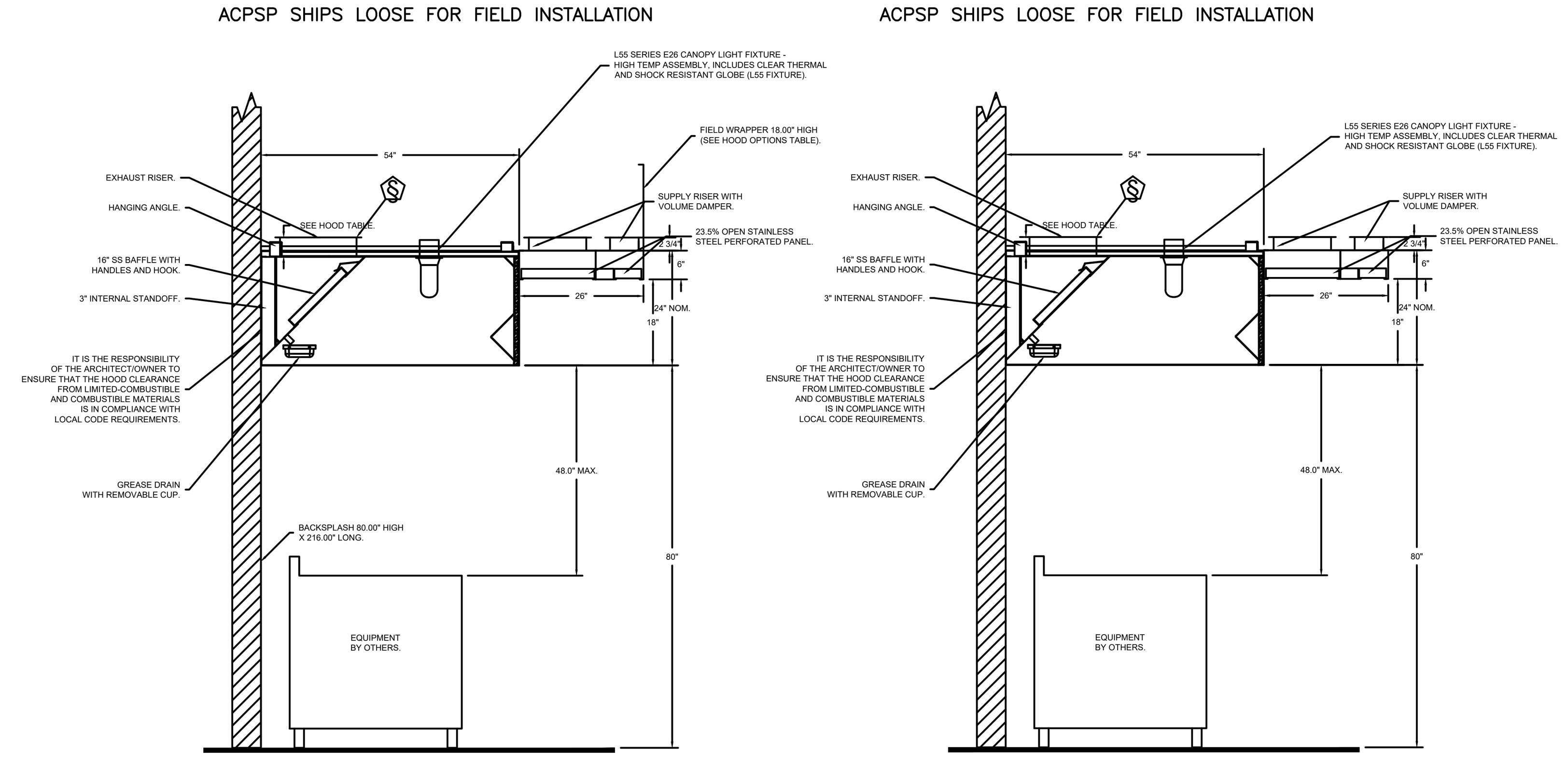


PLAN VIEW – HOOD #1 (HD1L)
9' 4.00" LONG 5424ND-2-ACPSP-F

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION

PLAN VIEW – HOOD #2 (HD1R)
8' 8.00" LONG 5424ND-2-ACPSP-F

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION



SECTION VIEW – MODEL 5424ND-2-ACPSP-F HOOD – #1 (HD1L)

SECTION VIEW – MODEL 5424ND-2-ACPSP-F HOOD – #2 (HD1R)

PLANS AND ELEVATIONS ARE SHOWN FOR REFERENCE ONLY REFER TO CAPTIVE AIRE DRAWINGS FOR ADDITIONAL INFORMATION

HOODS, FANS, FIRE SYSTEM, CONTROLS, EXHAUST & SUPPLY DUCT TO BE SUPPLIED BY OWNER DIRECT. TO INCLUDE INSTALLATION OF HOOD SYSTEM

VENTILATION SCHEDULE

Genki - West Chester, OH

							Vbz = Az x Ra + Rp x Pz										
				Table 6-1				PEOPLE	AREA	OA	AIR		SA		Zp =		Vot =
			Az	OCCUPANCY	Rp	Ra	Pz	Rp x Pz	Az x Ra	CFM	Eff	Voz=	CFM	OA	Voz /		Vou /
	ROOM #	ROOM NAME	SQFT	CATEGORY	CFM/P	CFM/SQFT	people	CFM	CFM	Vbz	Ez	Vbz/Ez	Vpz	.	Vpz	Ev	Ev
														23%			
		Prep	429	Kitchen	7.5	0.12	5	38	51	89	0.8	111	600	138	0.19	0.90	124
		Service	41	Kitchen	7.5	0.12	1	8	5	12	0.8	16	100	23	0.16	0.90	17
		Kitchen	167	Kitchen	7.5	0.12	3	23	20	43	0.8	53	1600	368	0.03	0.90	59
		Vestibule	69	Corridor	0	0.06	0	0	4	4	0.8	5	50	12	0.10	0.90	6
		Office	50	Office	5	0.06	1	5	3	8	0.8	10	50	12	0.20	0.90	11
		RTU-1	756				10					195	2400	550			217

ROOFTOP UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	NOMINAL TONNAGE	SUPPLY CFM	OA CFM	ESP IN IN. W.C.	TOT BTUH	SENS BTUH	(S)EER	STAGE	HTG IN BTUH	HTG OUT BTUH	ELECTRICAL BHP	VOLTAGE	PHASE	FLA	MCA	MOCP	WEIGHT	REMARKS
RTU-1	TRANE	YHC072E3RHA	6.0	2400	550	1.0	78,660	26,670	11.0	2	150,000	120,000	-	208	3	-	32.3	50	EXIST.	A,B
RTU-2	TRANE	YHC074F3RMA	6.0	2400	550	1.0	72,690	53,150	13.1	1	150,000	121,500	-	208	3	-	37	50	EXIST.	A,C,D,E,F,G,H,I

REMARKS:
A. ALL HVAC EQUIPMENT TO BE FIELD LABELED TO IDENTIFY WHICH AREAS OF THE BUILDING THEY SERVE.
B. EXISTING ROOFTOP UNIT TO REMAIN
C. MERV 13 PLEATED FILTER.
D. DRY BULB ECONOMIZER WITH BAROMETRIC RELIEF.
E. SMOKE DETECTOR WITH REMOTE ANNUNCIATOR (BY EC)
F. 14" HIGH INSULATED ROOF CURB
G. NON POWERED CONVENIENCE OUTLET.
H. UNIT MOUNTED NON FUSED DISCONNECT SWITCH
I. SINGLE PRINT IONIZATION INSTALLED ON COOLING COIL

AIR DEVICE SCHEDULE

TAG	MANUFACTURER	MODEL	FUNCTION	FACE SIZE	DUCT SIZE	BORDER TYPE	MATERIAL	FINISH	REMARKS
CD-1	PRICE	SPD	SUPPLY	24x24	-	LAY-IN	STEEL	WHITE	A,B
CD-2	PRICE	SPD	SUPPLY	12x12	-	LAY-IN	STEEL	WHITE	A,B
CD-3	PRICE	PDDR	SUPPLY	24x24	-	SURFACE	STEEL	WHITE	A,B
SR-1	PRICE	SDGE	SUPPLY	11x6	10x4	DUCT	ALUMINUM	WHITE	C
RG-1	PRICE	80	RETURN	24x24		SURFACE	ALUMINUM	WHITE	B
RG-2	PRICE	80	RETURN	30X16	-	DUCT	ALUMINUM	WHITE	-

REMARKS:
A. PROVIDE VOLUME DAMPERS IN TAKEOFFS WHERE ACCESSIBLE. WHERE DAMPERS ARE NOT ACCESSIBLE, PROVIDE OPPOSED BLADE DAMPER AT DIFFUSER.
B. COORDINATE FRAME TYPE WITH ARCHITECTURAL REFLECTED CEILING PLAN.
C. SCOOP DAMPER

EXHAUST FAN SCHEDULE

TAG	MANUFACTURER	MODEL	CFM	ESP	RPM	WATTS	VOLTAGE	PHASE	FLA	WEIGHT LBS	SONES	REMARKS
EF-1	CAPTIVEAIRE	DU240HFA	3575	1.0	825	3.0 HP	208	3	10.2	304	15.6	A,B,C,D,H
EF-2	GREENHECK	SP-B110	75	0.375	950	80	120	1	-	10	2.5	D,E,F,G
EF-3	GREENHECK	SP-B110	75	0.375	950	80	120	1	-	10	2.5	D,E,F,G

REMARKS:
A. FAN TO BE INTERLOCKED WITH MAU-1
B. GREASE CUP
C. VARIABLE SPEED CONTROL
D. DISCONNECT SWITCH
E. FAN TO BE ACTIVATED BY LIGHT SWITCH
F. BACKDRAFT DAMPER
G. ALUMINUM GRILLE WITH WHITE ENAMEL FINISH
H. 24" HIGH VENTILATED, HINGED AND INSULATED ROOF CURB

AIR BALANCE SCHEDULE

EXHAUST		SUPPLY		
UNIT	CFM	UNIT	CFM	OA CFM
EF-1	3575	RTU-1	2400	550
EF-2	75	RTU-2	2400	275
EF-3	75	MAU-1	3320	3320
TOTAL	3725		TOTAL	4145

RESTAURANT IS 420 CFM POSITIVE

MAKEUP AIR UNIT SCHEDULE

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)	SONES	BURNER EFFICIENCY(%)
1	MAU-1	A2-D.250-20D	20MF-2-MOD	A2-D.250	3320	0.421	1283	2.0	1.214	3	208	6.1	672	11.3	92

FAN UNIT NO.	TAG	INPUT BTUs	OUTPUT BTUs	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE
1	MAU-1	209,138	192,407	55 deg F	7 in. w.c. - 14 in. w.c.	Natural

COMMERCIAL KITCHEN HOOD SCHEDULE

TAG	MANUFACTURER	MODEL	LENGTH	MAX COOKING TEMP °F	EXHAUST PLENUM TOTAL EXH CFM	EXHAUST RISER SIZE	EXHAUST RISER CFM	EXHAUST RISER SP	AC PLENUM TOTAL AC CFM	AC RISER SIZE	AC RISER CFM	AC RISER SP	MUA PLENUM TOTAL MAU CFM	MUA RISER SIZE	MUA RISER CFM	MUA RISER SP	WEIGHT (LBS.)	HOOD CONSTRUCTION	REMARKS
HD1L	CAPTIVE AIRE	5424 ND-2-ACPSP-F	9'-4"	600	2055	16"Ø	2053	-0.437"	600	8x16	300	0.084"	1725	12x28	862	0.237"	595	430 SS WHERE EXPOSED	A,B,C
HD1R	CAPTIVE AIRE	5424 ND-2-ACPSP-F	8'-8"	450	1520	14"Ø	1517	-0.330"	600	8x16	300	0.099"	1350	12x24	675	0.202"	500	430 SS WHERE EXPOSED	A,B,C

REMARKS:
A. TYPE I HOOD. WITH GREASE EXTRACTORS, GREASE DRAIN AND CUP.
B. LIGHT: INCANDESCENT LIGHT FIXTURE W/O WIRE GUARD.
C. ANSUL SYSTEM WITH FIRE SUPPRESSION PIPING.

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2230 PARK AVE., STE. 100, CINCINNATI, OH 45206
513.457.7131 - WWW.MARQUEENG.COM
OH COA #4715

STATE OF OHIO
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04/29/2021

GENKI
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7244 Outfitters Way
West Chester, Ohio 45069

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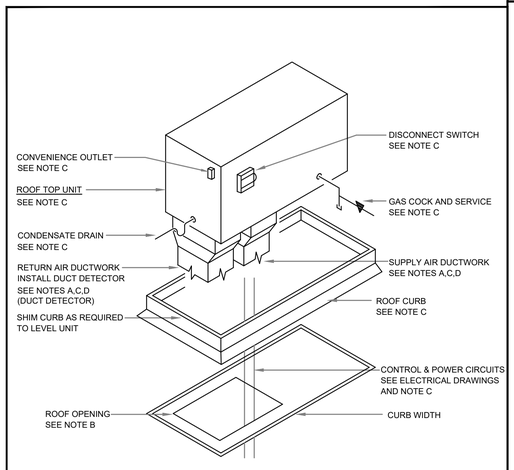
MECHANICAL DETAILS
19 May 2021 - Rev 2 - Plan Revisions



ROOF TOP UNIT NOTES

A. DUCT TRANSITION FROM RTU TO DUCT SIZE SHOWN ON MECHANICAL DRAWING SHALL BE MADE BETWEEN RTU & TOP OF ROOF WITH-IN CURB.

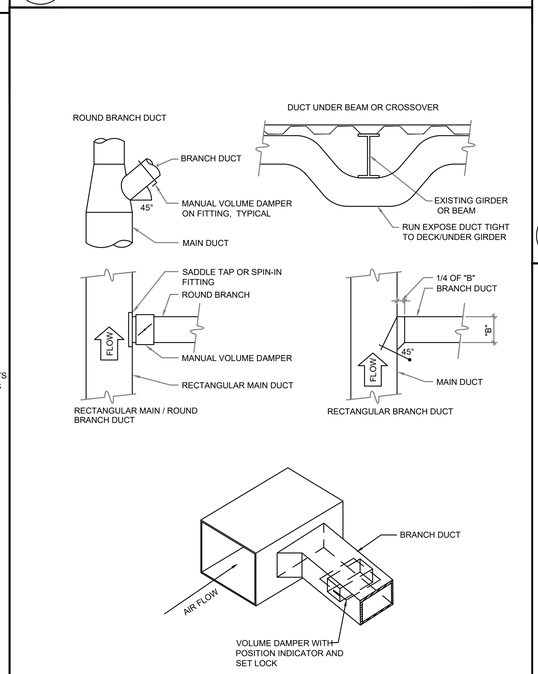
B. SIZE OF OPENING IN ROOF DECK TO BE AS SMALL AS POSSIBLE. COORDINATE WITH STRUCTURAL DRAWINGS (6" MIN. LARGER THAN DUCT SIZE SHOWN).

C. INSTALL PER MANUFACTURER'S RECOMMENDATION AND INSTALLATION MANUAL. PROVIDE TAPERED INSULATION SADDLE AT ROOF CURB. COORDINATE WITH ROOFING CONTRACTOR. SEE ARCHITECT'S DETAIL.

D. NEOPRENE FLEXIBLE CONNECTOR.

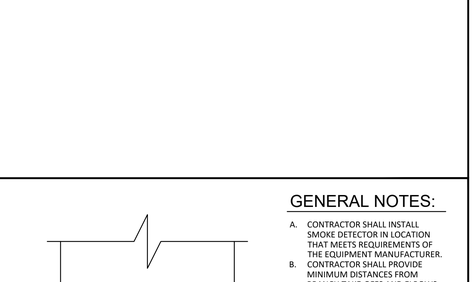
9 ROOF TOP UNIT DETAIL

SCALE: NONE



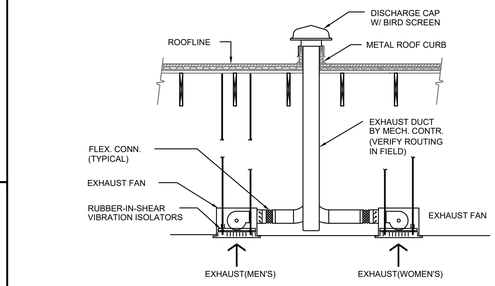
8 BRANCH DUCT TAKEOFF DETAIL

SCALE: NONE



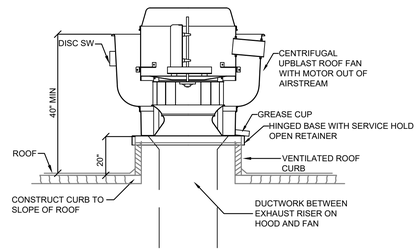
7 DUCT SMOKE DETECTOR DETAIL

SCALE: NONE



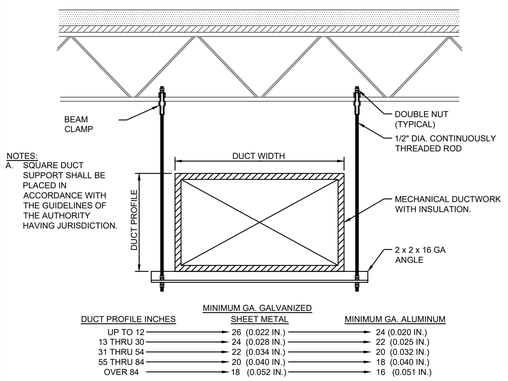
4 EXHAUST RISER DETAIL

SCALE: NONE



1 TYPE I HOOD EXHAUST FAN DETAIL

SCALE: NONE



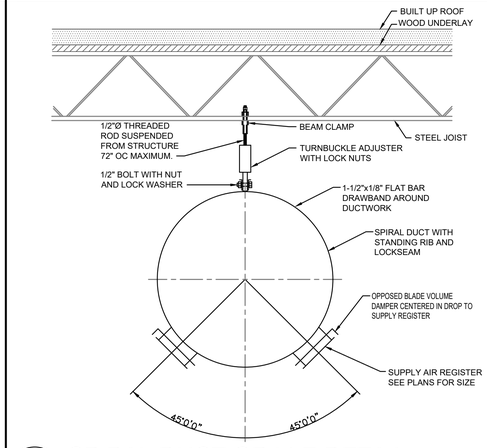
NOTES:
A. SQUARE DUCT SUPPORT SHALL BE PLACED IN ACCORDANCE WITH THE GUIDELINES OF THE AUTHORITY HAVING JURISDICTION.

MINIMUM GA. GALVANIZED

DUCT PROFILE INCHES	SHEET METAL	MINIMUM GA. ALUMINUM
UP TO 12	26 (0.022 IN.)	24 (0.020 IN.)
13 THRU 30	24 (0.028 IN.)	22 (0.025 IN.)
31 THRU 54	22 (0.034 IN.)	20 (0.032 IN.)
55 THRU 84	20 (0.040 IN.)	18 (0.040 IN.)
OVER 84	18 (0.052 IN.)	16 (0.051 IN.)

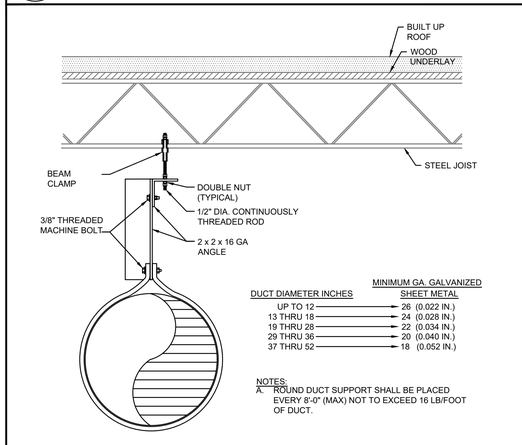
5 RECT. DUCT SUPPORT DETAIL

SCALE: NONE



2 SPIRAL DUCT GRILLE DETAIL

SCALE: NONE

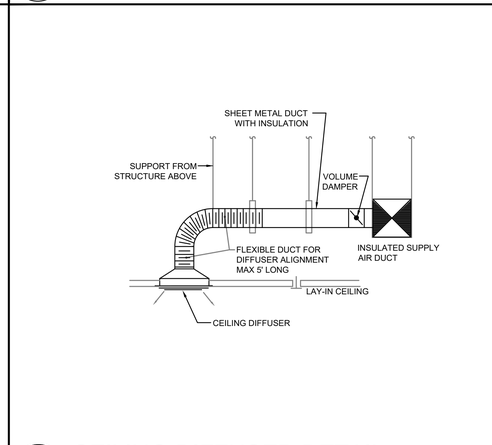


DUCT DIAMETER INCHES	MINIMUM GA. GALVANIZED SHEET METAL
UP TO 12	26 (0.022 IN.)
13 THRU 18	24 (0.028 IN.)
19 THRU 28	22 (0.034 IN.)
29 THRU 36	20 (0.040 IN.)
37 THRU 52	18 (0.052 IN.)

NOTES:
A. ROUND DUCT SUPPORT SHALL BE PLACED EVERY 8'-0" (MAX) NOT TO EXCEED 16 LB/FOOT OF DUCT.

6 ROUND DUCT SUPPORT DETAIL

SCALE: NONE



3 CEILING DIFFUSER DETAIL

SCALE: NONE

MARQUE ENGINEERING
2230 PARK AVE., STE. 100, CINCINNATI, OH 45206
513.457.7131 - WWW.MARQUEENG.COM
OH COA #4715

STATE OF OHIO
JOHN C. QUINN JR.
79076
REGISTERED PROFESSIONAL ENGINEER
04/29/2021

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7244 Outfitters Way
West Chester, Ohio 45069

Sheet M3.0

MECHANICAL DETAILS
19 May 2021 - Rev 2 - Plan Revisions

DIVISION 23 MECHANICAL SPECIFICATIONS

23 05 01 COMMON REQUIREMENTS FOR HVAC

ALL MECHANICAL WORK AND TESTS SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST STATE, COUNTY, AND LOCAL REGULATIONS, LAWS, AND ORDINANCES WHICH MAY BE APPLICABLE.

BEFORE SUBMITTING A BID, EXAMINE DOCUMENTS OF ALL OTHER TRADES, VISIT THE SITE AND GET ACQUAINTED WITH ALL CONDITIONS THAT MAY IN ANY WAY AFFECT THE EXECUTION OF THIS CONTRACT. TAKE MEASUREMENTS AND BE RESPONSIBLE FOR EXACT SIZE AND LOCATIONS OF ALL OPENINGS REQUIRED. VERIFY INSTALLATION MAY BE MADE IN COMPLETE ACCORDANCE WITH ALL PERTINENT CODES AND REGULATIONS. IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE PROFESSIONAL ENGINEER OF RECORD. DO NOT PROCEED WITH THE INSTALLATION IN AREAS OF DISCREPANCY UNTIL ALL SUCH DISCREPANCIES HAVE BEEN FULLY RESOLVED.

IT IS NOT THE INTENT OF THE DRAWINGS THAT EXISTING CONDITIONS BE ACCURATELY SHOWN. EXISTING MECHANICAL WORK IS SHOWN TO LIMITED EXTENT ON DRAWINGS AND IS SHOWN FOR GENERAL REFERENCE ONLY. LOCATIONS AND INFORMATION WERE DERIVED FROM CURSORY SITE VISUAL OBSERVATIONS OR FROM DOCUMENTS THAT WERE PREPARED FOR PREVIOUSLY INSTALLED WORK WHEN AVAILABLE.

THE WORK COVERED BY THESE SPECIFICATIONS SHALL CONSIST OF PROVIDING ALL NEW MATERIAL, LABOR, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE MECHANICAL INSTALLATION AS SPECIFIED HEREIN. WORK IN THIS SECTION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:

- TOILET EXHAUST FANS
- KITCHEN HOOD AND EXHAUST FAN
- LOW VOLTAGE THERMOSTATS
- DUCT
- DAMPERS
- DIFFUSERS, REGISTERS, AND LOUVERS

WHENEVER THE WORDS "CONTRACTOR" APPEAR ON MECHANICAL DRAWINGS OR IN THESE SPECIFICATIONS, IT SHALL REFER TO THE MECHANICAL SUB-CONTRACTOR. WHENEVER THE WORD "PROVIDE" APPEARS IN THESE DOCUMENTS, IT SHALL BE INTERPRETED TO MEAN "FURNISH AND INSTALL".

COORDINATE ALL WORK WITH THE OWNER TO MINIMIZE INTERRUPTION OF BUILDING OPERATION.

COORDINATE THE INSTALLATION OF MECHANICAL ITEMS WITH THE SCHEDULES FOR WORK OF ALL OTHER TRADES TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

THIS CONTRACTOR SHALL VERIFY AND SATISFY HIMSELF THAT ALL EQUIPMENT FURNISHED WILL PROPERLY FIT IN THE SPACE PROVIDED, THAT IT WILL FUNCTION PROPERLY, AND THAT ALL PARTS OF EQUIPMENT REQUIRING SERVICE ARE READILY ACCESSIBLE.

ALL PIPING SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING WALLS AND FRAMING SYSTEM. ALL VERTICAL RUNS SHALL BE HELD AGAINST WALLS, COLUMNS, ETC., AS POSSIBLE TO PERMIT MAKING OF PIPE JOINTS.

CONTRACTOR SHALL PROVIDE A GUARANTEE IN WRITTEN FORM STATING THAT ALL WORK SHALL BE FREE OF DEFECTS OR ERRORS, AND ALL EQUIPMENT, MATERIALS, OR PARTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S FINAL ACCEPTANCE AND SHALL REPAIR, REVISE OR REPLACE AT NO COST TO THE OWNER ANY SUCH DEFECTS OCCURRING WITHIN THE GUARANTEE PERIOD.

CONTRACTOR SHALL ALSO STATE IN WRITTEN FORM THAT ANY ITEMS OR OCCURRENCES ARISING DURING THE GUARANTEE PERIOD WILL BE ATTENDED TO IN A TIMELY MANNER AND WILL IN NO CASE EXCEED THREE (3) WORKING DAYS FROM DATE OF NOTIFICATION BY OWNER.

PROVIDE A COMPLETE INSTALLATION IN CONFORMANCE WITH THE FOLLOWING STANDARDS.
AGA: AMERICAN GAS ASSOCIATION
ASHRAE: AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS
NFPA: NATIONAL FIRE PROTECTION ASSOCIATION
SMACNA: SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION.
STATEWIDE BUILDING CODE
INTERNATIONAL MECHANICAL CODE

CONTRACTOR SHALL DO ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF THIS WORK. ALL OPENINGS IN WALLS, FLOORS OR CEILINGS SHALL BE PROPERLY SEALED AND RESTORED IN KIND. ALL ROOF PENETRATIONS AND PATCHING MUST BE PERFORMED BY LANDLORD REQUIRED ROOFER (HOLLAND ROOFING RMM OF CINCINNATI. 7450 INDUSTRIAL ROAD, FLORENCE, KY 41042). FLASH AND COUNTERFLASH AT ROOF OPENINGS.

ALL EQUIPMENT SHALL BE LISTED AND LABELED, UNLESS OTHERWISE APPROVED.

ALL WIRING SHALL MEET THE REQUIREMENTS LISTED IN THE ELECTRICAL SPECIFICATIONS. ALL CONTROL AND INTERLOCK WIRING AND CONDUIT (120V OR 24V) SHALL BE BY THE MECHANICAL CONTRACTOR.

EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE CONDITIONS OF LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THIS CODE.

CLEANING: THIS CONTRACTOR SHALL REMOVE FROM THE PREMISES ALL ACCUMULATION OF DIRT, DEBRIS, WASTE MATERIALS AND RUBBISH CAUSED BY HIS EMPLOYEES OR WORK, AT LEAST ONCE A WEEK, EXCEPT THAT COMBUSTIBLE MATERIALS SHALL BE REMOVED DAILY.

DURING PROGRESS OF THE WORK, MAINTAIN ON DRAWINGS AT THE SITE, AN ACCURATE RECORD OF THE INSTALLATION OF THE MECHANICAL SYSTEM, INDICATING ALL ITEMS WHICH HAVE BEEN CHANGED OR ADDED.

APPLY FOR AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY LOCAL AUTHORITY, FOR THE APPROVAL OF WORK.

A CERTIFICATE OF FINAL INSPECTION AND APPROVAL SHALL BE SUBMITTED WITH THE CONTRACTOR'S REQUEST FOR FINAL PAYMENT. NO FINAL PAYMENT WILL BE APPROVED WITHOUT THIS CERTIFICATE.

GUARANTEE ALL WORKMANSHIP, MATERIAL, AND EQUIPMENT AND REPLACE ANY FOUND DEFECTIVE WORK WITHOUT COST TO THE OWNER, FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE.

EXISTING CONDITIONS

DO NOT REUSE REMOVED MECHANICAL MATERIALS UNLESS SPECIFICALLY INDICATED ON DRAWINGS. EXISTING SYSTEMS MAY BE UTILIZED ONLY TO THE EXTENT INDICATED ON DRAWINGS.

IF REQUIRED TO ACCOMMODATE CONSTRUCTION RELATED ACTIVITIES TEMPORARILY REMOVE, STORE IN PROTECTED LOCATION ON SITE, AND REINSTALL CONFLICTING MECHANICAL EQUIPMENT, OR DEVICES THAT ARE TO REMAIN OR TO BE RELOCATED.

WHERE THE TERM “DEMOLITION” IS USED HEREIN, INTERPRET IT TO MEAN “DEMOLITION” OR “SELECTIVE DEMOLITION” WHERE APPLICABLE.

PROVIDE MECHANICAL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT DEMOLITION AND AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION. DISCONNECT AND REMOVE WORK TO BE ABANDONED, AND AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES, IN AREAS AFFECTED BY THIS PROJECT.

LEGALLY DISPOSE OF MATERIALS TO SALVAGED OR RETAINED.

23 05 03 SUBMITTALS FOR MECHANICAL SYSTEMS

DESIGN BASIS MANUFACTURERS OF MATERIAL AND EQUIPMENT ARE SPECIFIED AND PLANS ARE DETAILED ACCORDING TO THIS MATERIAL. CONTRACTOR SHALL BASE HIS BID ON FURNISHING AND INSTALLING THIS MAKE OF MATERIAL AND EQUIPMENT.

AN ACCEPTABLE MANUFACTURER'S NAME AND MODEL NUMBER OF A PRODUCT MAY BE PROVIDED IN THESE DOCUMENTS. THIS IS THE EQUIPMENT INCLUDED DURING THE DESIGN PROCESS AND FORMS THE BASIS OF A STANDARD OF QUALITY. WHERE MORE THAN ONE MAKE OF MATERIAL OR EQUIPMENT IS SPECIFIED, THE CONTRACTOR SHALL STATE IN HIS BID WHICH MAKE HE PROPOSES TO FURNISH AND INSTALL. SHOP DRAWING APPROVAL SHALL BE OBTAINED PRIOR TO SHIPMENT OF EQUIPMENT.

VERIFY THE MODEL NUMBER OR PRODUCT IS STILL ACCURATE AND MEETS ALL REQUIREMENTS SHOWN ON THE DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN THE REQUIREMENTS AND THE PRODUCT OR MODEL NUMBER, THE STRICTER OF THE TWO SHALL GOVERN.

SUBMIT SHOP DRAWINGS AND/OR PRODUCT DATA (ELECTRONIC COPIES) ON THE FOLLOWING ITEMS FOR REVIEW BEFORE FABRICATION OR SHIPMENT:

- TOILET EXHAUST FANS
- KITCHEN HOOD AND EXHAUST FAN
- LOW VOLTAGE THERMOSTATS
- DUCT
- DAMPERS
- DIFFUSERS, REGISTERS, AND LOUVERS

MAINTENANCE MANUALS: THE MANUALS SHALL INCLUDE WIRING DIAGRAMS, MAINTENANCE AND OPERATING INSTRUCTIONS, PARTS LISTINGS, AND COPIES OF OTHER SUBMITTALS INDICATED FOR INCLUSION.

REVIEW AND CORRECTIONS OR COMMENTS MADE ON SHOP DRAWINGS, PRODUCT DATA: CATALOGS, CUT SHEETS, CHARTS, AND OTHER ITEMS DURING CONSTRUCTION PHASE SUBMITTAL REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS, FOR PROVIDING A COMPLETE AND FUNCTIONING PROJECT, NOR SHALL THEY RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS OR ERRORS OF ANY SORT. THIS REVIEW IS FOR THE LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH INFORMATION GIVEN AND THE DESIGN CONCEPT EXPRESSED IN THE CONTRACT DOCUMENTS. CONTRACTOR REMAINS RESPONSIBLE FOR DETERMINING THE ACCURACY AND COMPLETENESS OF OTHER DETAILS SUCH AS DIMENSIONS AND QUANTITIES, FOR SUBSTANTIATING INSTRUCTIONS FOR INSTALLATIONS, VERIFYING MATERIALS REQUIRED, OBTAINING FIELD MEASUREMENTS AND RELATED CRITERIA, COORDINATING WORK WITH OTHER DISCIPLINES AND PERFORMING WORK IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.

ANY CHANGES TO ITEMS SPECIFIED MUST BE SUBMITTED IN WRITING AS A SUBSTITUTION, WITH COMPLETE DOCUMENTATION OF PRICE DIFFERENTIAL AND EQUIPMENT DETAILS. ANY SUBSTITUTIONS PROVIDED SHALL BE REVIEWED AT MARQUE ENGINEERING'S HOURLY RATES. REVIEW SHALL BE PAID FOR BY THE CONTRACTOR TO MARQUE ENGINEERING AT NO COST TO THE OWNER. BY USING PRE-APPROVED SUBSTITUTIONS, THE CONTRACTOR ACCEPTS ALL RESPONSIBILITY AND ASSOCIATED COSTS FOR ALL REQUIRED MODIFICATIONS TO THE CONTRACT DOCUMENTS TO INCLUDE BUT NOT LIMITED TO MATERIAL OR EQUIPMENT COSTS FOR THEIR OR OTHER TRADES, AND ENSURING THAT SUBSTITUTED MATERIALS AND EQUIPMENT TO BE FURNISHED FIT INTO SPACE AVAILABLE.

EXTENSIVE REVISIONS NECESSITATED TO THE CONTRACT DOCUMENTS, OR SUBSTITUTION ACTIONS RELATED TO ANY SPECIFIED PRODUCT NOT ABLE TO BE PROVIDED DUE TO A FAILURE TO COMMENCE WORK, RELEASE PRODUCT OR COORDINATE CONSTRUCTION ACTIVITIES SHALL BE PROVIDED AT MARQUE ENGINEERING'S HOURLY RATES. COSTS SHALL BE BORN BY THE CONTRACTOR AT NO COST TO THE OWNER.

23 05 29 HANGERS AND SUPPORTS

SUPPORT ALL PIPING, DUCTWORK AND EQUIPMENT BY HANGERS OR BRACKETS. FURNISH STRUCTURAL STEEL MEMBERS WHERE REQUIRED TO SUPPORT PIPING AND EQUIPMENT. NO PORTION OF PIPING OR VALVES SHALL BE SUPPORTED BY EQUIPMENT.

DUCTWORK - SUPPORT BY MEANS OF HANGERS AS FOLLOWS:

DUCT WIDTH	30 OR LESS
HANGER SIZE	(16 GAUGE)
TYPE MAX. SPACING	8

A PAIR OF HANGERS SHALL BE LOCATED AT EVERY TRANSVERSE JOINT AND ELSEWHERE ACCORDING TO THE TABLE.

23 05 93 HVAC SYSTEM TESTING , ADJUSTING AND BALANCING FOR HVAC

ALL SYSTEMS AND EQUIPMENT SHALL BE CAREFULLY ADJUSTED TO PROVIDE COMFORTABLE AND UNIFORM CONDITIONS IN EACH AND EVERY SPACE TO THE OWNER'S SATISFACTION. PROVIDE ANY REQUIRED DRIVES TO SATISFY QUANTITIES INDICATED. PROVIDE A CERTIFIED AIR BALANCE OF THE DIFFUSERS AND AIR HANDLERS.

AIR SYSTEM:

AIR BALANCE AND TESTING SHALL NOT BEGIN UNTIL THE SYSTEM HAS BEEN COMPLETED AND IS IN FULL WORKING ORDER. CONTRACTOR SHALL PUT ALL HEATING, VENTILATING AND AIR CONDITIONING SYSTEM AND EQUIPMENT INTO FULL OPERATION AND SHALL CONTINUE THE OPERATION OF SAME DURING EACH WORKING DAY OF TESTING AND BALANCING. CONTRACTOR SHALL SUBMIT WITHIN 30 DAYS AFTER RECEIPT OF CONTRACT, COPIES OF SUBMITTAL DATA FOR THE TESTING AND BALANCING OF THE AIR CONDITIONING, HEATING, AND VENTILATING SYSTEMS. THE AIR BALANCE AND TESTING AGENCY SHALL PROVIDE PROOF OF HAVING SUCCESSFULLY COMPLETED AT LAST FIVE PROJECTS OF SIMILAR SIZE AND SCOPE.

CONTRACTOR SHALL PROCURE THE SERVICES OF AN INDEPENDENT AIR BALANCE AND TESTING AGENCY, APPROVED BY THE ENGINEER, AND A MEMBER OF AABC OR NEBB, WHICH SPECIALIZES IN THE BALANCING AND TESTING OF HEATING VENTILATION AND AIR CONDITIONING SYSTEMS, TO BALANCE, ADJUST AND TEST AIR MOVING EQUIPMENT AND AIR DISTRIBUTION OR EXHAUST SYSTEMS AS HEREIN SPECIFIED.

ALL WORK BY THIS AGENCY SHALL BE DONE UNDER THE DIRECT SUPERVISION OF A QUALIFIED HEATING AND VENTILATING ENGINEER EMPLOYED BY THIS AGENCY. ALL INSTRUMENTS USED BY THIS AGENCY SHALL BE ACCURATELY CALIBRATED AND MAINTAINED IN GOOD WORKING ORDER.

23 07 13 DUCT INSTALLATION

INSULATE ALL SUPPLY, DIFFUSER PLENUMS, AND OUTSIDE AIR DUCTWORK OF ALL UNITS WITH OWENS CORNING "ALL SERVICE DUCT WRAP" TYPE 150 GLASS FIBER INSULATION UNLESS OTHERWISE NOTED. INSULATION SHALL BE 1-1/2" THICK (2" THICK FOR SUPPLY AND RETURN IN TRUSS SPACE). 1.5 PCF. DENSITY WITH FRK JACKET .002 THICK REINFORCED ALUMINUM FOIL VAPOR BARRIER. INSULATION SHALL CONFORM TO NFPA 90A AND 90B PER ASTM E-84 FOR FLAME SPREAD AND SMOKE DEVELOPED RATING.

INSULATE ALL EXTERIOR SUPPLY AND RETURN DUCTWORK WITH RIGID FIBERGLASS BOARD INSULATION WITH OUTDOOR JACKET. INSULATION SHALL BE 2" THICK WITH A 'K' VALUE OF 0.23 AT 75 F. INSTALL ON DUCTWORK USING IMPALE ANCHORS AND WIRES. SEAL VAPOR BARRIER WITH VAPOR BARRIER ADHESIVE.

PROVIDE INSULATION ON ALL CONCEALED SUPPLY, RETURN DUCTWORK. ALL LINERS, INSULATION AND ADHESIVES SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50.

RIGID FIBERGLASS DUCTWORK INSULATION: GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 612, TYPE IB, WITHOUT FACING AND WITH VAPOR BARRIER ALL-SERVICE JACKET MANUFACTURED FROM KRAFT PAPER, REINFORCING SCRIM, ALUMINUM FOIL, AND VINYL FILM. INSULATION SHALL HAVE A MINIMUM R VALUE AS REQUIRED BY CODE.

FLEXIBLE FIBERGLASS DUCTWORK INSULATION: GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 553, TYPE II, WITHOUT FACING AND WITH VAPOR BARRIER ALL-SERVICE JACKET MANUFACTURED FROM KRAFT PAPER, REINFORCING SCRIM, ALUMINUM FOIL, AND VINYL FILM. INSULATION SHALL HAVE A MINIMUM R VALUE AS REQUIRED BY CODE.

VAPOR BARRIER MATERIAL FOR DUCTWORK: PAPER-BACKED ALUMINUM-FOIL, EXCEPT AS OTHERWISE INDICATED; STRENGTH AND PERMEABILITY RATING EQUIVALENT TO FACTORY-APPLIED VAPOR BARRIERS ON ADJOINING DUCTWORK INSULATION, WHERE AVAILABLE; WITH FOLLOWING ADDITIONAL CONSTRUCTION CHARACTERISTICS:

HIGH PUNCTURE RESISTANCE: LOW VAPOR TRANSMISSION (FOR DUCTS IN EXPOSED AREAS: MECH. ROOMS, ETC.)
MODERATE PUNCTURE RESISTANCE: MEDIUM VAPOR TRANSMISSION (FOR DUCTS IN CONCEALED AREAS).

INSTALLATION IS NOT PERMITTED ABOVE DRYWALL CEILINGS AND INACCESSIBLE CEILINGS.

23 09 93 SEQUENCE OF OPERATION

ROOFTOP UNIT

STARTUP

THE UNIT SHALL OPERATE ON A 7 DAY/NIGHT PROGRAMMABLE THERMOSTAT. DURING STARTUP, THE FAN SHALL RUN WITH THE DAMPERS IN THE FULL RECIRCULATION POSITION. PROVIDE OCCUPIED CHANGEOVER SEQUENCE WITH OPTIMUM START FUNCTION. WHEN THE RETURN AIR TEMPERATURE REACHES OCCUPIED SETPOINT (ADJUSTABLE), THE MINIMUM OUTSIDE AIR DAMPER SHALL OPEN TO THE CONTROLLED MINIMUM OUTDOOR AIR POSITION.

SUPPLY FAN CONTROL

THE SUPPLY FAN SPEED SHALL BE CONSTANT AND SET TO THE REQUIRED CFM.

SPACE TEMPERATURE CONTROL

PROVIDE LOCAL WALL MOUNTED ROOM TEMPERATURE THERMOSTAT WITH DIGITAL DISPLAY OFROOMTEMPERATURE AND SETPOINT (+/- DEG. F. ADJUSTABLE), AND OVERRIDE FEATURE. PROVIDE REMOTE SENSOR TO MONITOR SPACE TEMPERATURE AND MAINTAIN THERMOSTAT SETPOINT.

MINIMUM OUTSIDE AIR CONTROL

DURING OCCUPIED MODE THE MINIMUM OUTSIDE AIR DAMPER SHALL BE OPEN. PROVIDE MOTORIZED OUTDOOR AIR DAMPER.

ECONOMIZER CONTROL (ROOFTOP UNIT ONLY)

DRY BULB CONTROLLED ECONOMIZER: OPERATED TO AUTOMATICALLY USE OUTDOOR AIR FOR "FREE COOLING" WHEN OUTDOOR AIR TEMPERATURE IS AT ACCEPTABLE LEVELS. AUTOMATICALLY MODULATED OUTDOOR AND RETURN AIR DAMPERS MAINTAIN PROPER DISCHARGE AIR TEMPERATURE INTO THE CONDITIONED SPACE. ADJUSTABLE MINIMUM POSITION CONTROL IS STANDARD. ECONOMIZER SHALL HAVE POWERED OR BAROMETRIC RELIEF, AS SCHEDULED.

COOLING CONTROL

COOLING SHALL BE CONTROLLED TO MAINTAIN SPACE TEMPERATURE SETPOINT. ON A CALL FOR COOLING THE HEATING SHALL BE OFF. ON A FURTHER CALL FOR COOLING, ENABLE THE ECONOMIZER MODE. ON A FURTHER CALL FOR COOLING, DISABLE THE ECONOMIZER MODE AND THE MECHANICAL COOLING SHALL BE STAGED ON.

HEATING CONTROL

HEATING SHALL BE CONTROLLED TO MAINTAIN SPACE TEMPERATURE SETPOINT. ON A CALL FOR HEATING, THE MECHANICAL COOLING SHALL BE OFF. ON A FURTHER CALL FOR HEATING, THE ECONOMIZER MODE SHALL BE DISABLED. ON A FURTHER CALL FOR HEATING THE GAS HEATING SHALL BE STAGED ON.

SMOKE DETECTOR

WHEN THE SMOKE DETECTOR IS ALARMED, THE SYSTEM SHALL BE ALARMED AND THE AIR HANDLER SHALL FAIL SAFE WITH MANUAL RESET. ELECTRICAL CONTRACTOR SHALL FURNISH, HVAC CONTRACTOR SHALL MOUNT & ELECTRICAL CONTRACTOR SHALL WIRE A UL LISTED PHOTOELECTRIC SMOKE DETECTOR PER LOCAL CODE AUTHORITY HAVING JURISDICTION.

UNOCCUPIED MODE

DURING THE UNOCCUPIED MODE OF OPERATION, THE RTU SHALL GO INTO NIGHT SETBACK MODE. AT NIGHT SETBACK/SHUTDOWN THE RTU SHALL GO TO FAIL SAFE POSITION. FAIL SAFE POSITION IS DEFINED BY THE FOLLOWING: THE SUPPLY FAN IS OFF, THE OUTDOOR AIR INTAKE DAMPER IS CLOSED, THE HEATING IS OFF AND THE MECHANICAL COOLING IS OFF. THE SUPPLY FAN SHALL CYCLE IN CONJUNCTION WITH EITHER THE HEATING OR COOLING SYSTEM TO MAINTAIN A MINIMUM/MAXIMUM SPACE TEMPERATURE DEPENDING ON THE SEASON.

LOW VOLTAGE THERMOSTATS SHALL BE PROVIDED AND WIRED BY THE HVAC CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE 4” SQUARE X 1- 1/2” DEEP WALL OUTLET BOXES (WITH SINGLE-GANG RINGS) FOR ALL THERMOSTATS/SENSORS. ELECTRICAL CONTRACTOR SHALL PROVIDE ONE 3/4” EMPTY CONDUIT FROM EACH THERMOSTAT/SENSOR LOCATION, TURNED OUT ABOVE ACCESSIBLE CEILINGS (IN JOIST SPACE OR AGAINST OVERHEAD SLAB/DECK). HVAC/TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL OTHER NECESSARY CONDUIT, RACEWAY AND WIRING RELATED WORK. CONDUIT SHALL BE IDENTIFIED IN CEILING CAVITY AND SHALL BE PROVIDED WITH SWEEP BENDS, BUSHINGS AND DRAGLINE.

EXHAUST FANS SHALL BE TIED TO LIGHT SWITCH, WHICH SHALL BE FURNISHED, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. WHEN ACTIVATED, EXHAUST FAN MOTOR DAMPER SHALL OPEN AND FAN SHALL START.

KITCHEN HOOD EXHAUST FANS: PROVIDE HEAT DETECTOR IN HOOD COLLAR INTERLOCKED TO FAN OPERATION. KITCHEN HOOD EXHAUST SYSTEM SHALL BE INITIATED BY THE HEAT DETECTOR. PROVIDE INDICATOR LIGHT ON FACE OF HOOD. AT STARTUP, ENERGIZE EXHAUST FAN MOTOR. INTERLOCK TO MAKEUP AIR SYSTEM (WHETHER DEDICATED MAKEUP AIR OR MAKEUP AIR FROM HVAC SYSTEM), SO THAT MAKEUP AIR IS PROVIDED WHENEVER EXHAUST FAN IS RUNNING. EXHAUST FAN SHALL RUN CONTINUOUSLY AT CONSTANT SPEED. AT SHUTDOWN, THE EXHAUST FAN SHALL STOP.

PROVIDE ALL CONTROLS AND WIRING FOR COMPLETE INTERLOCK AND OPERATION OF KITCHEN HOOD, EXHAUST FAN, ROOFTOP UNIT, ETC. AND ALL ASSOCIATED MOTOR DAMPERS.

ALL DUCT SMOKE DETECTORS WILL BE FURNISHED BY ELECTRICAL CONTRACTOR, INSTALLED BY THE HVAC CONTRACTOR, AND WIRED BY THE ELECTRICAL CONTRACTOR PER LOCAL CODES. HVAC CONTRACTOR WILL INTERLOCK FAN WITH SMOKE DETECTOR.

MOTOR OPERATED DAMPERS: ALL FRESH AIR INTAKES AND EXHAUST LOUVERS SHALL HAVE MOTOR OPERATED DAMPERS. DAMPERS SHALL BE LOW LEAK WITH BLADE AND EDGE SEALS. MOTOR OPERATED DAMPERS SHALL BW PROVIDED, INSTALLED AND WIRED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED. PROVIDE ALL NECESSARY TRANSFORMERS, CONTACTORS, CONTROLS AND WIRING FOR INTERLOCKING EQUIPMENT TO MOTOR OPERATED DAMPERS.

23 22 00 CONDENSATE DRAIN PIPING

INSTALL TRAP AT EVAPORATOR COIL DRAIN. EXTEND DRAIN LINE FROM COIL TRAP TO DRAIN. PIPING SHALL BE STANDARD WEIGHT, PVC PIPE AND FITTINGS AND WITH JOINTS OF PVC SOLVENT CEMENT. PROVIDE CLEANOUTS THROUGHOUT RUN AND AT TOPS OF TRAPS.

23 30 00 AIR DISTRIBUTION SYSTEM

CEILING AIR DIFFUSERS:
SQUARE: SQUARE HOUSING, CORE OF SQUARE CONCENTRIC LOUVERS, SQUARE OR ROUND DUCT CONNECTION.

LINEAR: EXTRUDED ALUMINUM CONTINUOUS SLOT, SINGLE OR MULTIPLE.

DIFFUSER MOUNTINGS:
SURFACE MOUNT: DIFFUSER SHALL HAVE ROLLED EDGE BELOW FINISHED CEILING FOR SURFACE MOUNTING OR DIFFUSER SHALL BE FURNISHED WITH ACCESSORY PLASTER FRAME.

LAY-IN: DIFFUSER HOUSING SIZED TO FIT BETWEEN CEILING EXPOSED SUSPENSION TEE BARS AND REST ON TOP SURFACE OF TEE BAR.

DIFFUSER ACOUSTIC PERFORMANCE: NC LESS THAN OR EQUAL TO 30

DIFFUSER ACCESSORIES: PLASTER RING: PERIMETER RING DESIGNED TO ACT AS PLASTER STOP AND DIFFUSER ANCHOR.

DIFFUSER FINISHES: WHITE ENAMEL: SEMI-GLOSS WHITE ENAMEL PRIME FINISH.

CEILING AND WALL REGISTERS & GRILLES:
STEEL CONSTRUCTION: MANUFACTURER'S STANDARD STAMPED SHEET STEEL FRAME AND ADJUSTABLE BLADES.

REGISTER AND GRILLE FINISHES: WHITE ENAMEL: SEMI-GLOSS WHITE ENAMEL PRIME FINISH.

REGISTER AND GRILLE ACOUSTIC PERFORMANCE: NC LESS THAN OR EQUAL TO 30

23 31 13 METAL DUCTS

CONSTRUCTION, INSTALLATION AND SUPPORT OF ALL DUCTWORK SHALL CONFORM TO THE LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARD -METAL AND FLEXIBLE".

ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ACHIEVE AIR-TIGHT (5% LEAKAGE FOR SYSTEMS RATED 3" AND UNDER; 1% FOR SYSTEMS RATED OVER 3") AND NOISELESS (NO OBJECTIONABLE NOISE) SYSTEMS. INSTALL EACH RUN WITH MINIMUM NUMBER OF JOINTS. ALIGN DUCTWORK ACCURATELY AT CONNECTIONS, WITHIN 1/8" MISALIGNMENT TOLERANCE AND WITH INTERNAL SURFACES SMOOTH.

SUPPORT VERTICAL DUCTS AT EVERY FLOOR. SUPPORT DUCT WITH APPROVED HANGERS AT INTERVALS NOT EXCEEDING 10 FEET.

DUCTS SHALL BE GALVANIZED SHEET METAL OF STANDARD GAUGES. DUCTWORK SHALL HAVE A MINIMUM THICKNESS OF 24 GAUGE. ALL DUCT ELBOWS SHALL BE EITHER FULL RADIUS OR WITH TURNING VANES.

WHERE DUCTWORK IS INDICATED TO BE EXPOSED IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL IMPERFECTIONS INCLUDING PITTING, SEAM MARKS, ROLLER MARKS, STAINS AND DISCOLORATIONS, AND OTHER IMPERFECTIONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.

EXPOSED DUCTWORK WHICH IS TO BE PAINTED SHALL HAVE PAINT GRIP APPLIED.

PROVIDE VOLUME DAMPERS IN ALL BRANCH DUCTS OR AS REQUIRED FOR BALANCING TO REQUIRED AIR FLOWS.

PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEG. CHANGE OF DIRECTION PER SECTION. UNLESS DETAILED OTHERWISE, USE 45 DEG. LATERALS AND 45 DEG. ELBOWS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEG. BRANCHES ARE INDICATED, PROVIDE CONICAL TYPE TEES.

PROVIDE DUCT SEALANT AND/OR CEMENT WHICH IS NON-HARDENING, NON-MIGRATING MASTIC OR OF LIQUID ELASTIC SEALANT, TYPE APPLICABLE FOR FABRICATION/INSTALLATION DETAIL, AS COMPOUNDED AND RECOMMENDED BY MANUFACTURER SPECIFICALLY FOR SEALING JOINTS AND SEAMS IN DUCTWORK.

FLEXIBLE DUCTS SHALL EITHER BE SPIRAL-WOUND SPRING STEEL WITH FLAMEPROOF VINYL SHEATHING OR CORRUGATED ALUMINUM. THE MAXIMUM LENGTH OF FLEX DUCT ON THE SUPPLY EQUALS 5 FEET. FLEX IS NOT ALLOWED FOR RETURN, RELIEF OR EXHAUST APPLICATIONS.

FLEXIBLE DUCTS SHALL CONFORM TO THE REQUIREMENTS OF UL 181 FOR CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCTS AND SHALL BE SO IDENTIFIED.

WHERE INSTALLED IN UNCONDITIONED SPACES OTHER THAN RETURN AIR PLENUMS, PROVIDE 1" THICK 1-1/2 LB. CONTINUOUS FLEXIBLE FIBERGLASS SHEATH WITH VINYL VAPOR BARRIER JACKET.

SHOP FABRICATE DUCTWORK IN 4, 8, 10 OR 12-FT LENGTHS, OR REQUIRED TO COMPLETE RUNS.

FABRICATE DUCTWORK WITH DUCT LINER IN EACH SECTION OF DUCT WHERE INDICATED. LAMINATE LINER TO INTERNAL SURFACES OF DUCT IN ACCORDANCE WITH INSTRUCTIONS BY MANUFACTURERS OF LINING AND ADHESIVE, AND FASTEN WITH MECHANICAL FASTENERS. DUCT LINER TO BE 3-LB DENSITY FOR ACOUSTIC REQUIREMENTS 1" THICK OR AS NOTED. SIZE OF DUCTWORK SHOWN ON THE DRAWINGS IS FREE NET AREA, OUTSIDE DIMENSION OF DUCTS WILL NEED TO BE INCREASED IF LINED DUCT IS USED.

DUCT LINER SHALL BE OF FIBROUS GLASS OF THICKNESS INDICATED. 3-LB DENSITY. ALL LINERS, INSULATION AND ADHESIVES SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50.

23 33 13 DAMPERS

DAMPERS WITH LOCKING DEVICE, WHERE ACCESSIBLE, SHALL BE RUSKIN MD-35. OPPOSED BLADE FOR RECTANGULAR DUCTS 12 INCHES AND ABOVE, AND MODEL MD-25 PARALLEL BLADE FOR DUCTS 10 INCHES AND BELOW, AND MODEL MDRS-25 FOR ROUND DUCTS. INSTALL PER MANUFACTURER'S INSTRUCTIONS. SINGLE BLADE ROUND DAMPERS WITH LOCKING DEVICE SHALL BE IN SPIN-IN COLLARS.

FIRE DAMPERS SHALL BE RUSKIN MODEL IBD, STYLE B WITH BLADE PACKAGE OUT OF AIR STREAM. HORIZONTAL, INSTALL WHERE INDICATED ON DRAWINGS AND AS REQUIRED BY AUTHORITY HAVING LOCAL JURISDICTION.

ELECTRIC MOTORIZED DAMPER SHALL BE SIZED TO OPERATE WITH SUFFICIENT RESERVE POWER TO PROVIDE SMOOTH MODULATING ACTION OR TWO-POSITION ACTION. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

23 38 13.00 - COMMERCIAL KITCHEN HOODS AND DUCTWORK

TYPE I HOOD

REFER TO CAPTIVE AIRE DRAWINGS FOR SPECIFICATIONS.

INSPECTION

GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH EQUIPMENT IS TO BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

INSTALLATION

COORDINATE WORK WITH WORK OF ROOFING, WALLS, AND CEILINGS, AS NECESSARY FOR PROPER INTERFACING.

DUCT CONNECTIONS TO BE PROVIDED BY THE HVAC CONTRACTOR.

REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS.

ELECTRICAL WIRING: INSTALL ELECTRICAL DEVICES FURNISHED BY MANUFACTURER BUT NOT SPECIFIED TO BE FACTORY-MOUNTED. FURNISH COPY OF MANUFACTURER'S WIRING DIAGRAM SUBMITTAL TO ELECTRICAL INSTALLER.

VERIFY THAT ELECTRICAL WIRING INSTALLATION IS IN ACCORDANCE WITH MANUFACTURER'S SUBMITTAL AND INSTALLATION REQUIREMENTS OF DIVISION-16 SECTIONS.

ENSURE THAT ROTATION IS IN DIRECTION INDICATED AND INTENDED FOR PROPER PERFORMANCE.

DO NOT PROCEED WITH CENTRIFUGAL FAN START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO FAN INSTALLER.

FIELD QUALITY CONTROL

TESTING: AFTER INSTALLATION OF HOOD EXHAUST SYSTEM HAS BEEN COMPLETED, TEST EACH SYSTEM TO DEMONSTRATE PROPER OPERATION OF UNITS AT PERFORMANCE REQUIREMENTS SPECIFIED. WHEN POSSIBLE, FIELD CORRECT MALFUNCTIONING UNITS, THEN RETEST TO DEMONSTRATE COMPLIANCE. REPLACE UNITS WHICH CANNOT BE SATISFACTORILY CORRECTED.

PROVIDE TESTING, PERMITS AND APPROVALS AS REQUIRED BY STATE AND LOCAL AUTHORITIES.

ADJUSTING AND CLEANING

CLEAN FACTORY-FINISHED SURFACES.

REPAIR ANY MARRED OR SCRATCHED SURFACES.

TYPE I KITCHEN GREASE DUCT SPECIFICATION

FURNISH SINGLE WALL 16 GAUGE CARBON STEEL DUCTWORK WITH CONTINUOUS LIQUID TIGHT WELDS. ALL DUCTWORK SHALL BE WRAPPED WITH A FIRE RESISTIVE MATERIAL. THE DUCT WRAP SYSTEM SHALL BE UL LISTED PER ASTM E 2336 FOR ZERO CLEARANCE TO COMBUSTIBLES AND SHALL MAINTAIN A FLAME/SMOKE RATING LESS THAN 25/50.

THE TERMINATION OF KITCHEN EXHAUST OUTLETS SHALL NOT BE LESS THAN 10 FEET HORIZONTALLY FROM PARTS OF THE SAME OR CONTIGUOUS BUILDINGS, ADJACENT PROPERTY LINES AND AIR INTAKES.

OUTLET SHALL NOT BE LESS THAN 10 FEET VERTICALLY ABOVE ADJOINING GRADE LEVEL AND 40" ABOVE THE ROOF LEVEL.

THE EXHAUST FAN SHALL BE INSTALLED A MINIMUM OF 10'-0” FROM ANY ROOF EDGE REGARDLESS OF LOCATION INDICATED ON PLANS, UNLESS A SCREEN WALL OR RAILING IS INSTALLED PER THE LOCAL BUILDING CODE. SEE THE ARCHITECTURAL PLANS FOR COORDINATION.

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04/29/2021

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West Chester, Ohio 45069

Sheet M4.0
MECHANICAL SPECIFICATIONS
19 May 2021 - Rev 2 - Plan Revisions

COM*check* Software Version 4.1.5.1

Mechanical Compliance Certificate

Project Information

Energy Code:	2012 IECC
Project Title:	Genki
Location:	Cincinnati, Ohio
Climate Zone:	4a
Project Type:	Alteration

Construction Site:
7244 Outfitters Way
West Chester, OH 45069

Owner/Agent:

Designer/Contractor:
Marque Engineering

Mechanical Systems List

Quantity **System Type & Description**

1 RTU-2 (Single Zone):
Heating: 1 each - Other, Gas, Capacity = 122 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 73 kBtuh, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 13.10 EER, Required Efficiency: 11.00 EER +11.2 IEER
Fan System: None

1 IWH-1:
Gas Instantaneous Water Heater, Capacity: 0 gallons, Input Rating: 199 kBtu/h
Proposed Efficiency: 0.80 EF, Required Efficiency: 0.62 EF

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2012 IECC requirements in COM*check* Version 4.1.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

COM*check* Software Version 4.1.5.1

Inspection Checklist

Energy Code: 2012 IECC

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C103.2 [PR3][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C403.2.4.5 [FO9][2]	Freeze protection and snow/ice melting system sensors for future connection to controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.2.3 [ME55][1]	HVAC equipment efficiency verified.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Mechanical Systems list for values.*
C403.2.5.1 [ME59][1]	Demand control ventilation provided for spaces >500 sq.ft. and >25 people/1000 sq.ft. occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.2.7 [ME60][2]	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.2.8.1 [ME7][3]	Piping insulation exposed to weather is protected from damage (due to sun, moisture, wind, etc.).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.8 [ME41][3]	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.7 [ME10][2]	Ducts and plenums sealed based on static pressure and location.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.7.1.3 [ME11][3]	Ductwork operating >3 in. water column requires air leakage testing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.3.1, C403.3.1.1 [ME62][1]	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.2.1 [ME53][3]	Air outlets and zone terminal devices have means for air balancing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.2 [ME66][2]	VAV fan motors >=7.5 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.4.2 [ME68][2]	VAV fan motors >=7.5 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.2.6 [ME57][1]	Exhaust air energy recovery on systems meeting Table C403.2.6	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.2.11 [ME71][3]	Unenclosed spaces that are heated use only radiant heat.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C403.2.4.1 [FI47][3]	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2 [FI38][3]	Thermostatic controls have a 5 °F deadband.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2 [FI20][3]	Temperature controls have setpoint overlap restrictions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.3 [FI39][3]	Each zone equipped with setback controls using automatic time clock or programmable control system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.3 [FI40][3]	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5.1 [FI7][3]	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C303.3, C408.2.5.3 [FI8][3]	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5.3 [FI43][3]	An air and/or hydronic system balancing report is provided for HVAC systems.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.3.2 [FI10][3]	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.3 [FI11][3]	Public lavatory faucet water temperature <=110°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.5 [FI45][3]	First 8 ft of outlet piping is insulated	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.2 [FI27][3]	HVAC systems and equipment capacity does not exceed calculated loads.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C408.2.1 [FI28][3]	Commissioning plan developed by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.4 [FI29][3]	Preliminary commissioning report completed and certified by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5.4 [FI30][3]	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.3.1 [FI31][3]	HVAC equipment has been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.3.3 [FI32][3]	Economizers have been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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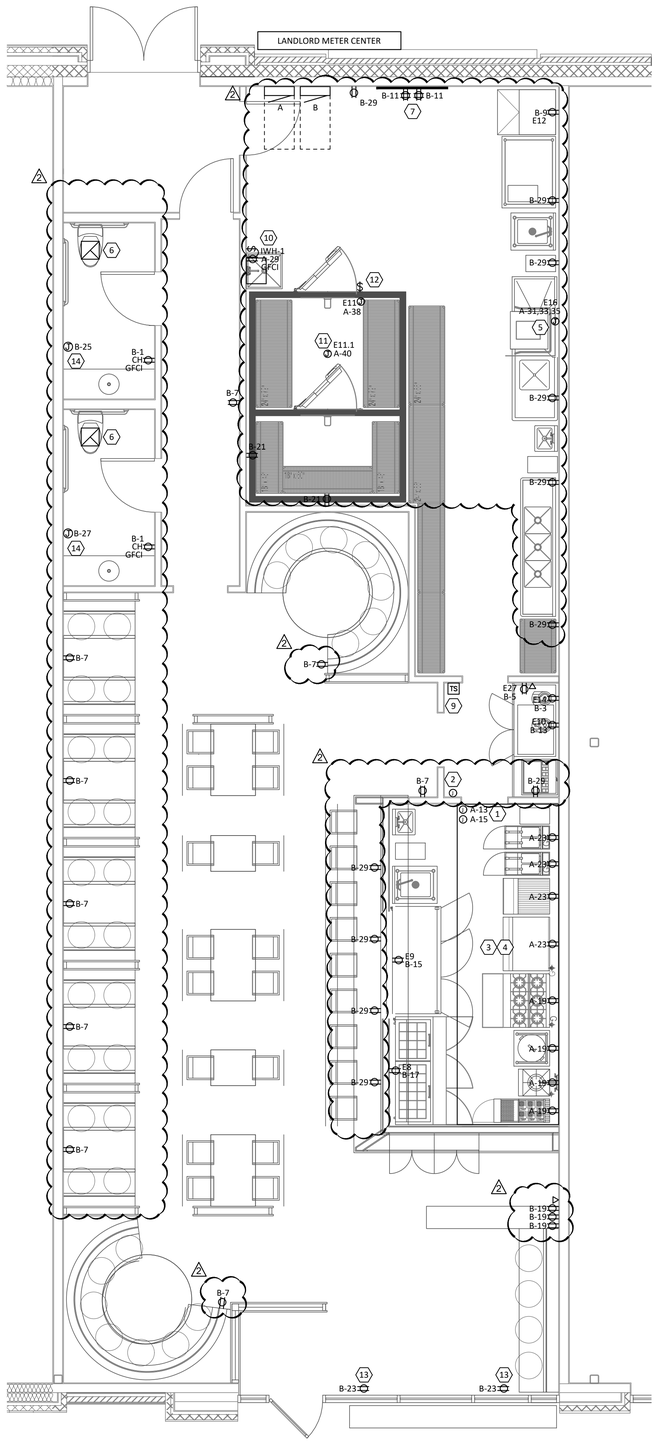
Sheet M5.0
ENERGY COMPLIANCE
19 May 2021 - Rev 2 - Plan Revisions



1 E1.0 POWER PLAN

1/4" = 1'-0"

KEYED NOTES

1. PROVIDE 120V CONNECTION FOR HOOD LIGHTS (SWITCHES PROVIDED BY HOOD MANUFACTURER). VERIFY EXACT LOCATION AND REQUIREMENTS WITH HOOD INSTALLER.
2. PROVIDE OCTAGON JUNCTION BOX AND CONDUIT TO HOOD CONTROL PANEL FOR MANUAL ANSUL PULL STATION. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH HOOD INSTALLER AND LOCAL AHJ ON SITE.
3. INTERLOCK HOOD EXHAUST FAN AND MAKE UP AIR UNIT TO SHUT DOWN DURING FIRE. PROVIDE CONTROL CABLES AS REQUIRED. INTERLOCK GAS SHUT OFF WITH FIRE SUPPRESSION SYSTEM FOR AUTOMATIC SHUT OFF DURING A FIRE. REFER TO CAPTIVEAIRE DRAWINGS FOR INTERLOCK INFORMATION AND RESPONSIBILITIES.
4. PROVIDE SHUNT TRIP BREAKERS TO SERVE EQUIPMENT AND INTERCONNECT WITH THE FIRE SUPPRESSION CONTROL PANEL FOR AUTOMATIC SHUT DOWN DURING A FIRE.
5. PROVIDE LOCAL DISCONNECTING MEANS FOR EQUIPMENT IF NONE PRESENT.
6. EXHAUST FAN SHALL BE INTERLOCKED WITH THE LUMINAIRE CONTROL IN EACH RESTROOM AND CONNECTED TO THE SAME BRANCH CIRCUIT.
7. PROVIDE NEW TELEPHONE BOARD AS SHOWN. EXTEND EXISTING TELECOMMUNICATION CONDUIT TO LOCATION SHOWN. COORDINATE TELEPHONE BOARD REQUIREMENTS WITH OWNER AND CONSTRUCTION MANAGER ON SITE.
8. NOT USED. 2
9. RELOCATE EXISTING REMOTE KEYED TEST SWITCH. MAINTAIN ALL NECESSARY CONNECTIONS TO THE DUCT SMOKE DETECTORS AND SMOKE DAMPER SMOKE DETECTORS. COORDINATE LOCATIONS WITH ARCHITECTURAL DRAWINGS.
10. PROVIDE 120V/1P TOGGLE SWITCH FOR GAS WATER HEATER.
11. PROVIDE JUNCTION BOX AND FINAL CONNECTION FOR WALK-IN COOLER/FREEZER LIGHTS AND DOOR HEATER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH KITCHEN EQUIPMENT INSTALLER. PROVIDE J-BOX AND MAKE FINAL CONNECTION TO CONDENSATE LINE HEAT TRACE TAPE.
12. TOGGLE SWITCH AND LIGHT PROVIDED WITH KITCHEN EQUIPMENT. PROVIDE 120V CIRCUIT AS INDICATED. COORDINATE INSTALLATION WITH KITCHEN EQUIPMENT INSTALLER.
13. HORIZONTALLY MOUNT RECEPTACLE ABOVE WINDOW.
14. PROVIDE JUNCTION BOX AND 120V CIRCUIT FOR NEW HAND DRYER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH CONSTRUCTION MANAGER ON SITE. 2

GENERAL NOTES

A. ALL RECEPTACLES IN KITCHENS/BARS AND/OR WITHIN 6'-0" OF A WATER SOURCE MUST BE GFCI PROTECTED PER NEC. PROVIDE GFCI RECEPTACLES OR GFCI BREAKERS AS REQUIRED, REGARDLESS OF WHETHER OR NOT IT IS INDICATED ON PLANS.

B. IT IS THE RESPONSIBILITY OF THE E.C. TO REVIEW ALL ARCHITECTURAL DRAWINGS, ELECTRICAL DRAWINGS AND NOTES TO INSURE THAT ALL ELECTRICAL REQUIREMENTS ARE MET.

C. COORDINATE LOCATIONS AND HEIGHTS OF ALL ELECTRICAL DEVICES WITH KITCHEN EQUIPMENT CONTRACTOR DRAWINGS PRIOR TO ROUGH-IN.

D. PROVIDE ALL SAW CUTTING AND PATCHING OF EXISTING FLOORS AND WALLS AS REQUIRED FOR INSTALLATION OF HIS WORK.

E. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH (2)#12 (CU) THHN AND (1)#12 (CU) THHN GND IN 3/4" EMT CONDUIT FOR EACH 20 AMP CIRCUIT.

F. PROVIDE ALL ELECTRICAL ROUGH-INS, OUTLETS, SWITCHES, DISCONNECTS, CORDS AND PLUGS, AND OTHER SIMILAR ITEMS NECESSARY TO MAKE FOOD SERVICE EQUIPMENT OPERATIONAL.

G. PROVIDE ALL ROUGH-IN AND FINAL CONNECTIONS AS THEY RELATE TO WALK-IN AND REMOTE REFRIGERATION SYSTEM INCLUDING: LIGHTS, BLOWER COIL, DEFROST COIL, DRAIN LINE HEATER, DOOR HEATER AND COMPRESSORS.

H. SEAL ALL PENETRATIONS THROUGH WALK-IN COOLER/FREEZERS. AVOID SEAMS IN WALK-IN COOLER/FREEZER PANELS WHEN MAKING PENETRATIONS. MAKE ALL NECESSARY CONNECTIONS TO THE LIGHTS, DEFROST TIMER, EVAPORATER, CONDENSOR, ETC.

I. ALL WORK SHOWN IS NEW, UNLESS OTHERWISE NOTED.

J. ANY PENETRATIONS THROUGH FIRE-RESISTANT/RATED WALLS, PARTITIONS, FLOORS, AND CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING.

K. REFER TO ELECTRICAL SPECIFICATIONS FOR ELECTRICAL DEVICE TYPES AND RATINGS.

L. ALL CONDUITS SHALL BE CONCEALED IN WALLS AND OUTLET BOXES SHALL BE FLUSH WITH FINISHED WALL UNLESS OTHERWISE NOTED.

M. RECEPTACLES TO BE MOUNTED AT 1'-6" ABOVE FINISHED FLOOR TO CENTER OF RECEPTACLE UNLESS NOTED OTHERWISE.

N. PROVIDE JUNCTION BOX AND RACEWAY FOR THERMOSTATS AND HVAC LOW VOLTAGE CONTROLS AT 48" A.F.F. THERMOSTATS AND HVAC LOW VOLTAGE CONTROLS INSTALLED AND WIRED BY M.C.. COORDINATE EXACT LOCATIONS WITH M.C.. TYPICAL OF ALL.

O. REFER TO ARCHITECTURAL DRAWINGS FOR DEVICE COLORS AND PART NUMBERS. IN THE CASE OF A CONFLICT BETWEEN LOCATIONS ON THE ELECTRICAL DRAWINGS AND LOCATIONS ON THE ARCHITECTURAL DRAWINGS, THE ARCHITECTURAL DRAWINGS SHALL TAKE PRIORITY.

P. ALL RECEPTACLES MOUNTED ON EXPOSED BRICK/MASONRY WALLS SHALL HAVE SURFACE MOUNT CONDUIT RUN FROM BELOW.

Q. REFER TO SPECIFICATIONS FOR WIRE SIZING.

KITCHEN EQUIPMENT SCHEDULE

CALLOUT	SYMBOL	CUSTOM PANEL DESCRIPTION	LOAD IN AMPS	KVA	VOLTS	CIRCUIT
E8	⊖	SANDWICH PREP TABLE	2.8A	0.34	120V 1P 2W	B-17
E9	⊖	UNDERCOUNTER REFRIGERATOR	2.8A	0.34	120V 1P 2W	B-15
E10	⊖	UNDERCOUNTER REFRIGERATOR	2.3A	0.28	120V 1P 2W	B-13
E11	Ⓙ	WALK-IN COOLER	16A	1.92	120V 1P 2W	A-38
E11.1	Ⓙ	WALK-IN EVAP.	7.2A	0.86	120V 1P 2W	A-40
E11.2	⊗⌒□	WALK-IN COND.	13.88A	5	208V 3P 4W	A-32,34,36
E12	⊖	ICE MACHINE	9.6A	1.15	120V 1P 2W	B-9
E14	⊖	COFFEE BREWER	15A	1.8	120V 1P 2W	B-3
E16	Ⓙ	DISH MACHINE	46.8A	16.86	208V 3P 4W	A-31,33,35
E27	⊖	POS	1.5A	0.18	120V 1P 2W	B-5

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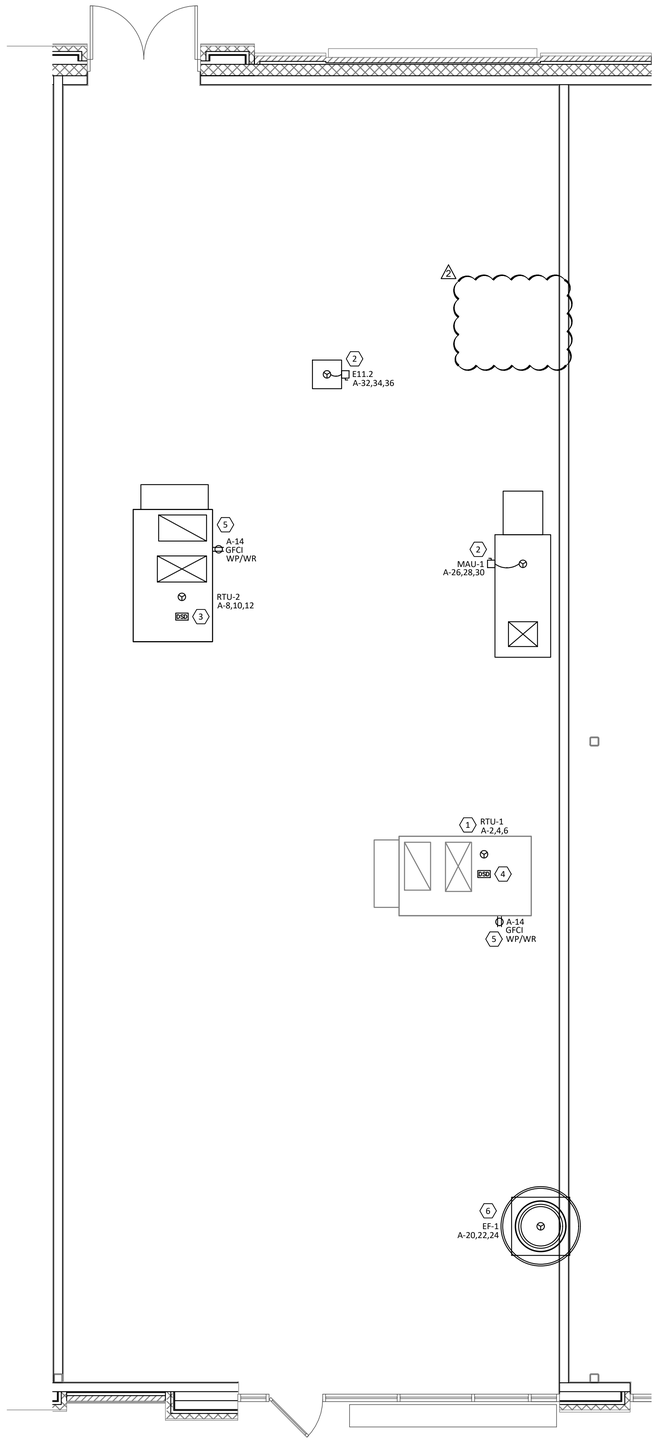
Sheet E1.0

POWER PLAN
19 May 2021 - Rev 2 - Plan Revisions



1 / E1.1 POWER PLAN ROOF

1/4" = 1'-0"

KEYED NOTES

1. EXISTING ROOFTOP UNIT AND ASSOCIATED DISCONNECT TO REMAIN. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PROVIDE 30A/3P/NF 240V NEMA-3R DISCONNECT SWITCH. PROVIDE FINAL CONNECTION FOR EQUIPMENT AS INDICATED. REFER TO SPECIFICATIONS FOR BRANCH CIRCUIT WIRE AND CONDUIT SIZES. REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.
3. PROVIDE NEW ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR. M.C. SHALL INSTALL SMOKE DETECTOR. M.C. SHALL PROVIDE WIRING TO FAN INTERLOCK. E.C. SHALL PROVIDE WIRING FOR FINAL CONNECTION TO THE BASE BUILDING FIRE ALARM SYSTEM (IF REQUIRED) AND REMOTE ANNUNCIATORS.
4. EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR TO REMAIN.
5. WEATHER PROOF SERVICE RECEPTACLE FOR ROOFTOP HVAC EQUIPMENT.
6. PROVIDE FINAL CONNECTION TO NEW EXHAUST FAN.

GENERAL NOTES

A. ALL RECEPTACLES IN KITCHENS/BARS AND/OR WITHIN 6'-0" OF A WATER SOURCE MUST BE GFCI PROTECTED PER NEC. PROVIDE GFCI RECEPTACLES OR GFCI BREAKERS AS REQUIRED, REGARDLESS OF WHETHER OR NOT IT IS INDICATED ON PLANS.

B. IT IS THE RESPONSIBILITY OF THE E.C. TO REVIEW ALL ARCHITECTURAL DRAWINGS, ELECTRICAL DRAWINGS AND NOTES TO INSURE THAT ALL ELECTRICAL REQUIREMENTS ARE MET.

C. COORDINATE LOCATIONS AND HEIGHTS OF ALL ELECTRICAL DEVICES WITH KITCHEN EQUIPMENT CONTRACTOR DRAWINGS PRIOR TO ROUGH-IN.

D. PROVIDE ALL SAW CUTTING AND PATCHING OF EXISTING FLOORS AND WALLS AS REQUIRED FOR INSTALLATION OF HIS WORK.

E. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH (2)#12 (CU) THHN AND (1)#12 (CU) THHN GND IN 3/4" EMT CONDUIT FOR EACH 20 AMP CIRCUIT.

F. PROVIDE ALL ELECTRICAL ROUGH-INS, OUTLETS, SWITCHES, DISCONNECTS, CORDS AND PLUGS, AND OTHER SIMILAR ITEMS NECESSARY TO MAKE FOOD SERVICE EQUIPMENT OPERATIONAL.

G. PROVIDE ALL ROUGH-IN AND FINAL CONNECTIONS AS THEY RELATE TO WALK-IN AND REMOTE REFRIGERATION SYSTEM INCLUDING: LIGHTS, BLOWER COIL, DEFROST COIL, DRAIN LINE HEATER, DOOR HEATER AND COMPRESSORS.

H. SEAL ALL PENETRATIONS THROUGH WALK-IN COOLER/FREEZERS. AVOID SEAMS IN WALK-IN COOLER/FREEZER PANELS WHEN MAKING PENETRATIONS. MAKE ALL NECESSARY CONNECTIONS TO THE LIGHTS, DEFROST TIMER, EVAPORATER, CONDENSOR, ETC.

I. ALL WORK SHOWN IS NEW, UNLESS OTHERWISE NOTED.

J. ANY PENETRATIONS THROUGH FIRE-RESISTANT/RATED WALLS, PARTITIONS, FLOORS, AND CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING.

K. REFER TO ELECTRICAL SPECIFICATIONS FOR ELECTRICAL DEVICE TYPES AND RATINGS.

L. ALL CONDUITS SHALL BE CONCEALED IN WALLS AND OUTLET BOXES SHALL BE FLUSH WITH FINISHED WALL UNLESS OTHERWISE NOTED.

M. RECEPTACLES TO BE MOUNTED AT 1'-6" ABOVE FINISHED FLOOR TO CENTER OF RECEPTACLE UNLESS NOTED OTHERWISE.

N. PROVIDE JUNCTION BOX AND RACEWAY FOR THERMOSTATS AND HVAC LOW VOLTAGE CONTROLS AT 48" A.F.F. THERMOSTATS AND HVAC LOW VOLTAGE CONTROLS INSTALLED AND WIRED BY M.C.. COORDINATE EXACT LOCATIONS WITH M.C.. TYPICAL OF ALL.

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P. ALL RECEPTACLES MOUNTED ON EXPOSED BRICK/MASONRY WALLS SHALL HAVE SURFACE MOUNT CONDUIT RUN FROM BELOW.

Q. REFER TO SPECIFICATIONS FOR WIRE SIZING.

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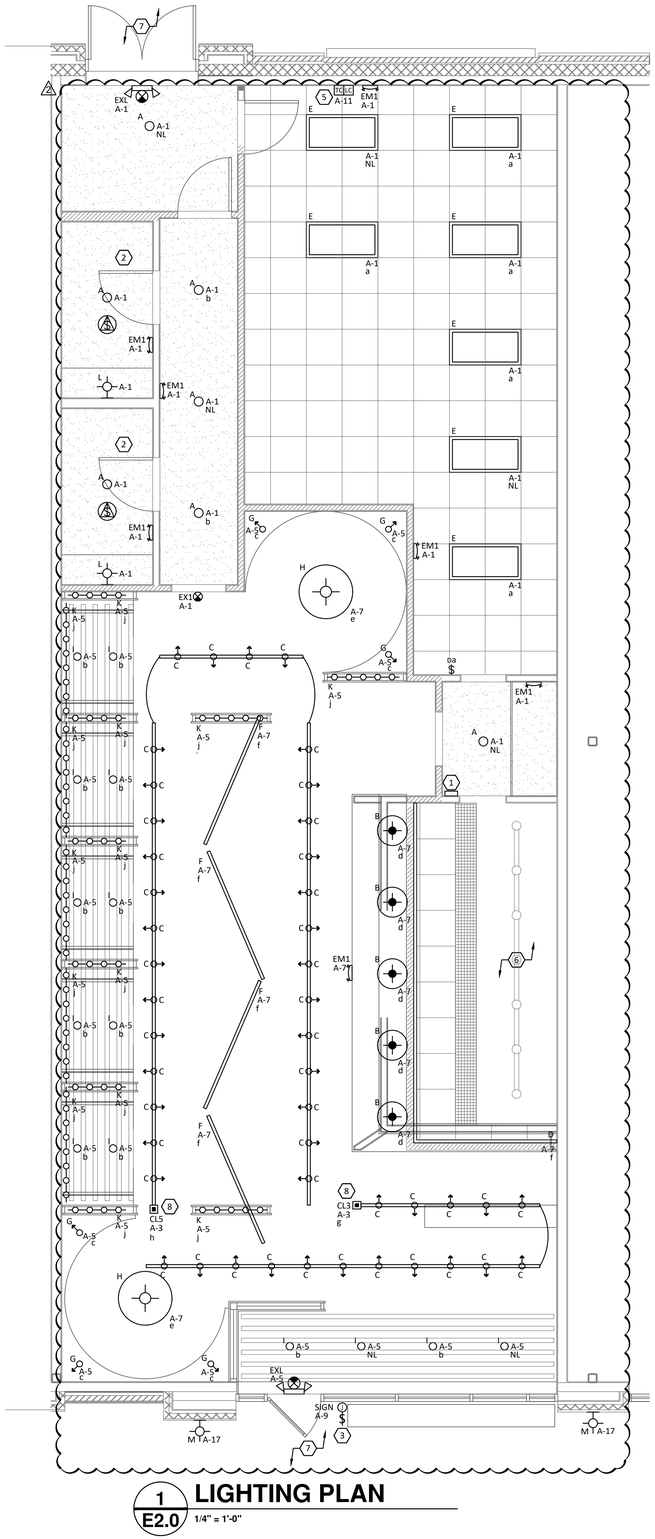
Sheet E1.1

POWER PLAN ROOF
19 May 2021 - Rev 2 - Plan Revisions



1 **LIGHTING PLAN** E2.0
1/4" = 1'-0"

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	MODEL	LAMP	INPUT WATTS	VOLTS	NOTE 1
A		CEILING MOUNTED RECESSED CAN LIGHT	TO BE SELECTED	20W MAX LED (INTEGRAL)	20	120	0-10V DIMMING
B		CEILING MOUNTED PENDANT	TO BE SELECTED	20W MAX LED (INTEGRAL)	20	120	0-10V DIMMING
C		TRACK LIGHT	TO BE SELECTED	15W MAX LED (INTEGRAL)	15	120	0-10V DIMMING
D		RECESSED LED LINEAR STRIP	TO BE SELECTED	VIF - LED (INTEGRAL)	45	120	0-10V DIMMING
E		2'X4' LED	TO BE SELECTED	45W MAX LED (INTEGRAL)	45	120	0-10V DIMMING
EM1		EMERGENCY FIXTURE	TO BE SELECTED	LED (INTEGRAL)	5	120	PROVIDE 90 MINUTES OF EMERGENCY LIGHTING
EX1		EXIT SIGN	TO BE SELECTED	LED (INTEGRAL)	5	120	PROVIDE 90 MINUTES OF BATTERY BACKUP
EXL		EMERGENCY EXIT SIGN COMBO	TO BE SELECTED	LED (INTEGRAL)	5	120	PROVIDE 90 MINUTES OF EMERGENCY LIGHTING
F		LED LINEAR STRIP	TO BE SELECTED	6.7W/LF MAX LED (INTEGRAL)	40	120	0-10V DIMMING
G		CEILING MOUNTED RECESSED CAN LIGHT	TO BE SELECTED	20W MAX LED (INTEGRAL)	20	120	0-10V DIMMING
H		CEILING MOUNTED PENDANT	TO BE SELECTED	40W MAX LED (INTEGRAL)	40	120	0-10V DIMMING
I		CEILING MOUNTED RECESSED CAN LIGHT	TO BE SELECTED	20W MAX LED (INTEGRAL)	20	120	0-10V DIMMING
K		LED TAPE LIGHT	TO BE SELECTED	15W MAX LED (INTEGRAL)	15	120	0-10V DIMMING
L		WALL SCONCE	TO BE SELECTED	(1) 20W MAX LED (INTEGRAL)	20	120	
M		EXTERIOR WALL SCONCE	TO BE SELECTED	(1) 20W MAX LED (INTEGRAL)	20	120	

LUMINAIRE SCHEDULE NOTES

A. REFER TO ARCHITECTURAL RCP(S), ELEVATIONS, AND DETAILS. FULLY COORDINATE WITH ALL MATERIAL.

B. COORDINATE WITH ALL TRADES PRIOR TO INSTALLATION TO AVOID CONFLICTS AND ENSURE SUFFICIENT SPACE ABOVE CEILINGS.

C. ALL LUMINAIRES WITHIN A ROOM OR AREA SHALL BE CONTROLLED BY SWITCHES/OCCUPANCY SENSORS SHOWN IN THAT ROOM OR AREA U.N.O.

D. LUMINAIRES IDENTIFIED AS NIGHT LIGHT (NL) SHALL BE CONNECTED AHEAD OF ANY SWITCHING FOR CONTINUOUS OPERATION.

E. LOCATIONS OF LUMINAIRES WITHIN MECHANICAL EQUIPMENT ROOMS SHALL BE COORDINATED IN FIELD WITH INSTALLED EQUIPMENT. LUMINAIRES SHALL BE LOCATED OVER ACCESS PATHWAYS AROUND EQUIPMENT AND NOT OVER TOP OF DUCTWORK WHERE INACCESSIBLE.

F. DO NOT SUSPEND LUMINAIRES FROM PIPING OR DUCTWORK.

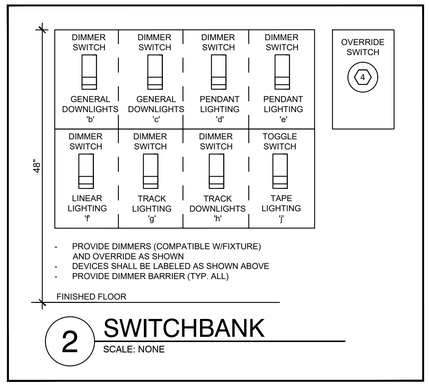
G. PROVIDE APPROPRIATE MOUNTING HARDWARE, UNISTRUT, ALL THREAD, ETC., AS REQUIRED TO SUPPORT ALL LUMINAIRES.

H. ALL LUMINAIRES SHALL BE U.L. LISTED.

I. INSTALL LUMINAIRES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

J. PROVIDE ALL EXIT SIGNAGE WITH APPROPRIATE MOUNTING HARDWARE AND DIRECTIONAL CHEVRONS.

K. UPON VERIFICATION OF EXISTING EMERGENCY LIGHTING OPERABILITY; IF DEEMED NOT COMPLIANT, REPLACE WITH NEW.



2 **SWITCHBANK**
SCALE: NONE

KEYED NOTES

1. LOCATION OF MASTER SWITCH BANK. REFER TO DETAIL 2 ON THIS SHEET FOR ADDITIONAL INFORMATION.
2. EXHAUST FAN TO BE INTERLOCKED WITH RESTROOM LIGHTING SUCH THAT IF LIGHTING IN THE RESTROOM IS ON, THE EXHAUST FAN IS ON.
3. PROVIDE 120V CONNECTION AND TOGGLE TYPE DISCONNECT SWITCH TO SERVE EXTERIOR SIGN. COORDINATE WITH GENERAL CONTRACTOR AND SIGN MANUFACTURER PRIOR TO ROUGH-IN. EXTEND CIRCUIT THROUGH NEW TIME CLOCK. REFER TO ONE-LINE DIAGRAM. COORDINATE TIME CLOCK PROGRAMMING WITH LANDLORD AND TENANT PRIOR TO PROJECT CLOSEOUT.
4. PROVIDE 2-HOUR OVERRIDE TIME SWITCH EQUAL TO INTERMATIC FF SERIES. OVERRIDE SWITCH SHALL SERVE AS THE EXTERNAL OVERRIDE SIGNAL TO TIMECLOCK 'TC' POLE #1. PROVIDE PRINTED LABEL AT SWITCH LOCATION TO READ "OVERRIDE SWITCH". REFER TO LIGHTING CONTROL DETAIL 3 AND SWITCH BANK DETAIL 2 ON THIS SHEET FOR ADDITIONAL INFORMATION.
5. PROVIDE NEW TIMECLOCK 'TC' AND NEW LIGHTING CONTACTOR 'LC'. TIMECLOCK SHALL BE DIGITAL, 365-DAY SKIPPER TYPE WITH HOLIDAY PROGRAMMING AND WITH EXTERNAL OVERRIDE CAPABILITIES (TORK, PARAGON, OR ACCEPTED EQUIVALENT). COORDINATE ON/OFF SCHEDULING WITH PROJECT MANAGER.
6. LIGHTING IN HOOD COMES PREWIRED. REFER TO POWER PLAN FOR CIRCUIT INFORMATION.
7. EXTERIOR EGRESS LIGHTING EXISTING TO REMAIN.
8. PROVIDE END FEED CURRENT LIMITER COMPATIBLE WITH TRACK LIGHTING. CURRENT LIMITER SIZE DESIGNATED AS CL#, WHERE # IS THE RATING OF THE DEVICE IN AMPS. MATCH COLOR WITH TRACK.

GENERAL NOTES

A. EMERGENCY AND EXIT FIXTURES SHALL BE INSTALLED AND CIRCUITED PER LOCAL AND LATEST NATIONAL ELECTRICAL CODES.

B. EMERGENCY DEVICES SHALL BE PROVIDED WITH AN UNSWITCHED "HOT" TO PROVIDE CONTINUOUS POWER TO DEVICE EVEN WHEN FIXTURE IS OFF.

C. PROVIDE EMERGENCY LIGHTS TO PROVIDE A MINIMUM OF 1 FOOT CANDLE FOR 90 MINUTES AT FLOOR LEVEL FOR EMERGENCY EGRESS

D. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO ROUGH-IN. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS FOR ALL DEVICES PRIOR TO ROUGH-IN.

E. PROVIDE DIMMABLE CIRCUITS WITH A DEDICATED NEUTRAL - NO SHARED NEUTRALS.

F. ALL NIGHT LIGHTS (SHOWN WITH "NL" DESIGNATION) SHALL BE WIRED AHEAD OF SWITCHING.

G. LABEL JUNCTION BOXES WITH THE PANEL AND CIRCUIT USED TO FEED THE LUMINARES. AS BUILTS SHALL REFLECT AND SHOW THE CIRCUIT USED BY EACH FIXTURE.

H. ALL LUMINAIRES, LIGHT SWITCH COVERPLATES, EXIT SIGNS SHALL MATCH ARCHITECTURAL DECOR. PROVIDE PRODUCT SUBMITTAL FOR ARCHITECT AND OWNER APPROVAL.

I. LUMINAIRES IN CONTACT WITH INSULATION SHALL BE U.L. LISTED FOR THERMAL BARRIER OR BE PROVIDED WITH 3" MINIMUM CLEARANCE.

J. LIGHTS AND PANELS SHALL NOT BE RECESSED IN FIRE RATED ASSEMBLIES UNLESS BOXED WITH EQUIVALENT CONSTRUCTION AS UTILIZED TO MAINTAINED INTEGRITY OF FIRE RATING.

K. ALL WIRING AND LAMPS INSTALLED IN HIGH TEMPERATURE HOOD OR IN OTHER AREAS SUBJECT TO HIGH TEMPERATURES SHALL BE RATED FOR THAT USAGE.

L. LIGHTING SHALL BE CIRCUITED AS SHOWN ON PLANS. CIRCUITING SHALL BE THRU-WIRING WHEREVER POSSIBLE. MULTIPLE CONNECTIONS TO A SINGLE LIGHT FIXTURE FOR VOLTAGE DROP CONDITIONS OR AS A RESULT OF A FIELD CONDITION ARE ACCEPTABLE. LUMINAIRES SHALL BE MANUFACTURED TO ACCOMMODATE THRU-WIRING, ANY RELATED COSTS FOR MULTIPLE CONNECTIONS SHALL BE INCLUDED IN BID.

M. PROVIDE LIFTING MEANS TO ACCESS ALL LUMINAIRES DURING FINAL AIMING. AIM DIRECTIONAL LUMINAIRES AFTER INSTALLATION PER DIRECTION FROM OWNER.

N. COORDINATE ALL SIGNAGE REQUIREMENTS WITH SIGNAGE VENDOR AS IT RELATES TO POWER, PLACEMENT, AND ANY OTHER PERTINENT INFORMATION.

O. PROVIDE UPDATED PANEL SCHEDULES UPON COMPLETION OF WORK.

P. ALL CONDUITS RUN IN AREAS WITHOUT SUSPENDED CEILINGS SHALL BE RUN INCONSPICUOUSLY AS POSSIBLE, HIDDEN BEHIND BEAMS, TIGHT TO DECK, ETC. PAINT ALL CONDUIT TO MATCH FINISH OF EACH SPECIFIC AREA.

Q. CONDUIT SHALL NOT BE INSTALLED WITHIN FIRE PROOFING. PROVIDE ALL REQUIRED DROP HANGERS.

R. ALL WIRING SHALL BE COPPER, MINIMUM SIZE SHALL BE #12, UNLESS OTHERWISE NOTED.

S. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED FOR A MAXIMUM OF 3% VOLTAGE DROP.

T. LOCATIONS OF LUMINAIRES WITHIN MECHANICAL EQUIPMENT ROOMS SHALL BE COORDINATED IN FIELD WITH INSTALLED EQUIPMENT. LUMINAIRES SHALL BE LOCATED OVER ACCESS PATHWAYS AROUND EQUIPMENT AND NOT OVER TOP OF DUCTWORK WHERE INACCESSIBLE. DO NOT SUSPEND LUMINAIRES FROM PIPING OR DUCTWORK. PROVIDE APPROPRIATE MOUNTING HARDWARE, UNISTRUT, ALL THREAD, ETC., AS REQUIRED TO SUPPORT FIXTURES.

U. ALL LUMINAIRES WITHIN A ROOM OR AREA SHALL BE CONTROLLED BY SWITCHES/OCCUPANCY SENSORS SHOWN IN THAT ROOM OR AREA UNLESS OTHERWISE NOTED.

V. POWER PACKS AND SATELLITE PACKS FOR OCCUPANCY SENSORS ARE NOT SHOWN. AS PRODUCTS REQUIRE, PROVIDE POWER AND SATELLITE PACKS WITHIN EACH ROOM ABOVE CEILING ADJACENT TO ENTRY DOOR.

W. LOWER CASE LETTER DENOTES LIGHTING CONTROL (I.E. (a)). REFER TO DETAIL THIS SHEET.

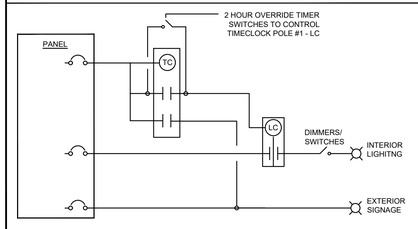
X. OCCUPANCY SENSOR LOCATIONS SHOWN FOR SCHEMATIC INTENT AND COVERAGE PURPOSES ONLY. VERIFY EXACT SPACING WITH SELECTED OCCUPANCY SENSOR'S MANUFACTURER RECOMMENDATIONS TO PROVIDE ADEQUATE COVERAGE IN CORRIDORS.

LIGHTING CONTROL INTENT

EVENT: NORMAL BUSINESS HOURS (HOURS TO BE DETERMINED BY OWNER)
- LIGHT SWITCHES/DIMMERS AT THE LIGHTING SWITCH BANK SHALL CONTROL THE LIGHT FIXTURES.

EVENT: CONCLUSION OF BUSINESS DAY (TIME TO BE DETERMINED BY OWNER)
- TIMECLOCK SHALL SWEEP "OFF" ALL LIGHTS

EVENT: AFTER BUSINESS HOURS
- LIGHT FIXTURES SHALL REMAIN "OFF".
- IF AFTER HOURS CONTROL OF THE LIGHT FIXTURES IS DESIRED, THE OVERRIDE SWITCH SHALL SERVE AS AN OVERRIDE SIGNAL TO THE TIMECLOCK AND THE LIGHT SWITCHES SHALL BE CAPABLE OF CONTROLLING THE LIGHT FIXTURES AGAIN (2 HOUR OVERRIDE MAX).



3 **LIGHTING CONTROL**
SCALE: NONE

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Sheet E2.0
LIGHTING PLAN
19 May 2021 - Rev 2 - Plan Revisions

GENERAL PROJECT NOTES

A. ALL DEVICES SHOWN ON THE EXTERIOR OF THE BUILDING SHALL BE WEATHER PROOF TYPE.

B. REFER TO ALL OTHER CONSTRUCTION TRADES' DRAWINGS' AND SPECIFICATIONS' FOR ADDITIONAL ELECTRICAL WORK THAT IS INCLUDED IN DIVISION 26'S SCOPE.

C. ALL CONDUITS RUN IN AREAS WITHOUT SUSPENDED CEILINGS SHALL BE RUN INCONSPICUOUSLY AS POSSIBLE, HIDDEN BEHIND BEAMS, TIGHT TO DECK, ETC. PAINT ALL CONDUIT TO MATCH FINISH OF EACH SPECIFIC AREA.

D. CONDUIT SHALL NOT TO BE INSTALLED WITHIN FIRE PROOFING. PROVIDE ALL REQUIRED DROP HANGERS.

E. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED FOR A MAXIMUM OF 3% VOLTAGE DROP.

F. PROVIDE ALL RACEWAY FOR HVAC THERMOSTATS AND SENSORS. THERMOSTAT AND SENSORS ARE FURNISHED AND INSTALLED UNDER MECHANICAL DIVISION 23 SCOPE.

MOUNTING HEIGHTS

ALL MOUNTING HEIGHTS ARE BASED ON NECA-1, NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION STANDARD PRACTICE OF GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION, UNLESS OTHERWISE NOTED. ALL HEIGHTS ARE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE.

WALL SWITCHES:	48" (120 cm)
RECEPTACLE OUTLETS (GENERAL):	18" (45 cm)
RECEPTACLE OUTLETS:	
(KITCHEN, UTILITY ROOM, WORKBENCHES, ETC.)	42" (105 cm) OR 6" (15 cm) ABOVE COUNTERTOP
SPECIAL PURPOSE OUTLET	WITHIN 72" (180 cm) OF INTENDED USE
TELEPHONE OUTLETS	18" (45 cm)
WALL INTERCOM STATIONS	48" (120 cm)
NIGHT LIGHTS	18" (45 cm)
WALL LIGHTING OUTLETS	84" (210 cm)
THERMOSTATS	48" (120 cm)
PUSH BUTTONS	48" (120 cm)
BELLS, BUZZERS, CHIMES	96" (240 cm) PREFERRED, OR 6" (15 cm) BELOW CEILING

ELECTRIC ABBREVIATIONS

1ø	SINGLE-PHASE
1P	SINGLE POLE
3ø	THREE-PHASE
4W	FOUR-WIRE
AF	AMPERE FRAME OR AMP FUSE
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
ALT	ALTERNATE
A	AMPERE
AT	AMPERE TRIP
AV	AUDIO VISUAL
C	CONDUIT
cd	CANDELA
CD	CONSTRUCTION DOCUMENTS
CLG	CEILING
COMM	COMMUNICATION
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
EC	ELECTRICAL CONTRACTOR
EG	EQUIPMENT GROUND
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
ETR	EXISTING TO REMAIN
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLE
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METALLIC CONDUIT
GND	GROUND
GFI/GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HP	HORSEPOWER
IMC	INTERMEDIATE METAL CONDUIT
IR	INFRARED
JBOX	JUNCTION BOX
kV	KILOVOLT
kVA	KILOVOLT AMPERE
kW	KILOWATT
kWH	KILOWATT HOUR
LV	LOW VOLTAGE
MC	METAL-CLAD
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MOCP	MAXIMUM OVERCURRENT PROTECTION
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
NA	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NM	NON-METALLIC
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PC	PHOTOCELL
PNL	PANEL
PWR	POWER
RCP	REFLECTED CEILING PLAN
RMC	RIGID METAL CONDUIT
RMS	ROOT MEAN SQUARE
SE	SERVICE ENTRANCE
SER	SERVICE ENTRANCE RATED
SF	SQUARE FOOT (FEET)
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TV	TELEVISION AND/OR MONITOR
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
V	VOLT
VA	VOLT AMPERE
VOLT	VOLTAGE
W	WATT
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER

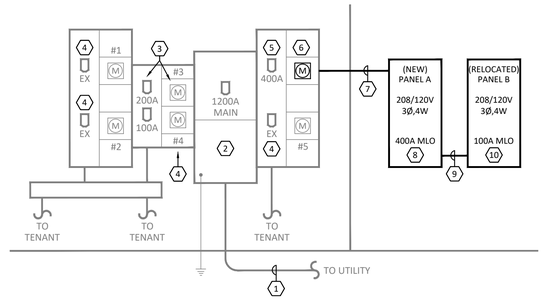
PANEL SCHEDULE LEGEND

(EX) = EXISTING CIRCUIT /BREAKER TO REMAIN.
(EL) = PROVIDE LOCK-ON DEVICE
(T) = TIME CLOCK CONTROLLED (VIA CONTACTOR).
(G) = PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER.
(ST) = PROVIDE SHUNT TRIP BREAKER.

PANEL SCHEDULE GENERAL NOTES

A. PROVIDE HACR RATED BREAKERS FOR ALL MOTOR LOADS.
B. PROVIDE LOCKING TYPE BREAKER (LOCK-ON) FOR ALL LIFE SAFETY AND NIGHT LIGHTING BRANCH CIRCUITS, EVEN IF NOT SPECIFICALLY CALLED OUT CASE-BY-CASE.
C. UNLESS INDICATED OTHERWISE ON PLANS OR SCHEDULES, PROVIDE NEW BRANCH OVERCURRENT PROTECTIVE DEVICE (OPD) BREAKER OR FUSED SWITCH, WITH FUSE, AS APPLICABLE) IN CASES WHERE NEW CIRCUITS OR FEEDERS ARE SHOWN CONNECTED TO EXISTING POWER DISTRIBUTION EQUIPMENT. PROVIDE OPD MANUFACTURED BY THE SAME MANUFACTURER AS THE EXISTING EQUIPMENT IN WHICH IT WILL BE INSTALLED. PROVIDE A.I.C. RATINGS THAT MEET OR EXCEED THE RATINGS OF THE EXISTING EQUIPMENT AND OPD's.

ALL EXISTING CONDITIONS WERE TAKEN FROM VISUAL OBSERVATION ONLY. IF ANYTHING IS NOT INSTALLED AS SHOWN, NOTIFY THE ARCHITECT AND ENGINEER IMMEDIATELY.



1 E3.0 **SINGLE LINE DIAGRAM**
NOT TO SCALE

KEYED NOTES

1. EXISTING (4) SETS OF (4)#350 KCMIL CU IN 3" CONDUIT EACH TO REMAIN.
2. EXISTING 1200A, 208/120V, 3ø, 4W LANDLORD METER CENTER TO REMAIN.
3. EXISTING ELECTRIC METER AND 200A BREAKER TO REMAIN FOR FUTURE USE. LABEL AS SPARE.
4. EXISTING BREAKER AND ASSOCIATED ELECTRIC METER SHOWN FOR REFERENCE ONLY - NOT IN SCOPE.
5. EXISTING 400A BREAKER TO REMAIN. VERIFY IN FIELD AND NOTIFY ENGINEER IMMEDIATELY IF FIELD CONDITIONS DIFFER.
6. PROVIDE NEW ELECTRIC METER. COORDINATE WITH LOCAL UTILITY COMPANY TO ARRANGE SERVICE IN OWNER'S NAME. COORDINATE EXACT REQUIREMENTS WITH LANDLORD AND LOCAL UTILITY FOR ADDITIONAL INFORMATION..
7. PROVIDE (2) SETS OF (4)#3/0 AWG CU & (1)#3 AWG CU GND. IN 3" CONDUIT EACH. ROUTE CONDUIT THROUGH BACK OF METER CENTER, THROUGH EXISTING MASONRY WALL, DIRECTLY INTO BACK OF NEW ELECTRIC PANEL.
8. PROVIDE NEW ELECTRIC PANEL. REFER TO PANEL SCHEDULE FOR ADDITIONAL INFORMATION.
9. PROVIDE NEW (4)#1 AWG CU & (1)#8 AWG CU GND. IN 1-1/2" CONDUIT.
10. RELOCATE EXISTING PANEL TO LOCATION SHOWN ON PLAN. REFER TO PANEL SCHEDULE FOR ADDITIONAL INFORMATION.

GENERAL NOTES

A. WORKING CLEARANCES SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT (SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, STARTERS, DISCONNECTS, ETC. AS APPLICABLE) IN STRICT COMPLIANCE WITH N.E.C. CHAPTER 1, PART B, SECTION 110-26(a). LOCATIONS SHOWN ON FLOOR PLANS ARE SCHEMATIC AND DIAGRAMMATIC IN NATURE. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH THE ABOVE N.E.C. REFERENCE. THIS REQUIREMENT APPLIES TO EQUIPMENT ON FLOOR PLANS AS WELL AS TO EQUIPMENT SHOWN ON RISER.

B. BALANCE ALL PANEL LOADS SO PHASES ARE WITHIN 10% OF EACH OTHERS.

A

ROOM
MOUNTING SURFACE
FED FROM LANDLORD METER CENTER
NOTE
VOLTS 208Y/120V 3P 4W
BUS AMPS 400
NEUTRAL 100%
AIC MATCH EXISTING
MAIN BKR MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	20/1	(T) BOH LIGHTING	0.535			2	50/3	RTU-1	3.88		
3	20/1	(T) TRACK LIGHTING		0.96		4	|			3.88	
5	20/1	(T) GENERAL LIGHTING			0.615	6	|				3.88
7	20/1	(T) DECORATIVE LIGHTING	0.39			8	50/3	RTU-2	4.44		
9	20/1	(T) STOREFRONT SIGNAGE		1.2		10	|			4.44	
11	20/1	LIGHTING CONTACTOR, TIME CLOCK			0.4	12	|				4.44
13	20/1	HOOD CONTROL PANEL	1			14	20/1	HVAC RECEPTACLE	0.36		
15	20/1	HOOD LIGHTS		0.3		16	20/2	SPACE		0	
17	20/1	(T) EXTERIOR LIGHTING			0.04	18	|				0
19	20/1	(ST) GAS IGNITER	0.72			20	20/3	EF-1	1.22		
21	-/1	SPACE FOR SHUNT TRIP		0		22	|			1.22	
23	20/1	(ST) GAS IGNITER			0.72	24	|				1.22
25	-/1	SPACE FOR SHUNT TRIP	0			26	20/3	MAU-1	0.942		
27	20/3	SPACE		0		28	|			0.942	
29	20/1	IWH-1			0.24	30	|				0.942
31	60/3	DISH MACHINE	5.62			32	20/3	WALK-IN COND.	1.67		
33	|			5.62		34	|			1.67	
35	|				5.62	36	|				1.67
37	100/3	PANEL B	5.56			38	20/1	WALK-IN COOLER	1.92		
39	|			5.69		40	20/1	WALK-IN EVAP.		0.864	
41	|				2.32	42	20/1	SPACE			0
		TOTAL CONNECTED KVA BY PHASE							28.3	26.8	22.1

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	4.04	5.05	(125%)	KITCHEN EQUIPMENT	12.7	8.24	(65%)
LARGEST MOTOR	13.3	3.33	(25%)	NONCONTINUOUS	20.5	20.5	(100%)
RECEPTACLES	8.46	8.46	(50%>10)	HEATING	31.5	31.5	(100%)
				COOLING	31.5	0	(0%)
				TOTAL LOAD		77.1	
				BALANCED 3-PHASE LOAD		214 A	

B

ROOM
MOUNTING SURFACE
FED FROM A
NOTE
VOLTS 208Y/120V 3P 4W
BUS AMPS 100
NEUTRAL 100%
AIC EXISTING
MAIN BKR MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	20/1	(EX) BATHROOM RECEPTACLE	0.36			2	50/3	SPARE	0		
3	20/1	(EX) COFFEE BREWER		1.8		4	|			0	
5	20/1	(EX) POS			0.18	6	|				0
7	20/1	(EX) CONVENIENCE RECEPTACLE	1.62			8	20/2	SPARE	0		
9	20/1	(EX) ICE MACHINE		1.15		10	|			0	
11	20/1	(EX) IT RECEPTACLE			0.72	12	20/2	SPARE			0
13	20/1	(EX) UNDERCOUNTER REFRIGERATOR	0.276			14	|		0		
15	20/1	(EX) UNDERCOUNTER REFRIGERATOR		0.336		16	20/2	SPARE		0	
17	20/1	(EX) SANDWICH PREP TABLE			0.336	18	|				0
19	20/1	(EX) HOST STAND RECEPTACLE	0.54			20	20/1	SPARE	0		
21	20/1	(EX) FREEZER RECEPTACLE		0.54		22	20/1	SPARE		0	
23	20/1	(EX) STOREFRONT RECEPTACLE			0.36	24	-/1	SPACE			0
25	20/1	(EX) HAND DRYER	1.5			26	-/1	SPACE	0		
27	20/1	(EX) HAND DRYER		1.5		28	-/1	SPACE		0	
29	20/1	(EX) COUNTER RECEPTACLE			0.72	30	-/1	SPACE			0
31	20/1	(G) BOH CONV. RECEPTACLE	1.26			32	-/1	SPACE	0		
33	-/1	SPACE		0		34	-/1	SPACE		0	
35	-/1	SPACE			0	36	-/1	SPACE			0
37	-/1	SPACE	0			38	-/1	SPACE	0		
39	-/1	SPACE		0		40	-/1	SPACE		0	
41	-/1	SPACE			0	42	-/1	SPACE			0
		TOTAL CONNECTED KVA BY PHASE							5.56	5.33	2.32

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
RECEPTACLES	6.3	6.3	(50%>10)	KITCHEN EQUIPMENT	3.9	2.95	(LARGEST 2)
				NONCONTINUOUS	3	3	(100%)
				TOTAL LOAD		12.3	
				BALANCED 3-PHASE LOAD		34 A	

ELECTRIC SERVICE LOAD SUMMARY

LOAD SUMMARY FOR EXISTING 208/120V-3ø-4W SERVICE

PEAK DEMAND FOR METER 1 # 319 984 394 SEPT 2020 = 18.53KW
PEAK DEMAND FOR METER 2 # 108 261 735 SEPT 2020 = 22.96KW
PEAK DEMAND FOR METER 4 # 108 172 433 MAR 2020 = 6.06KW
PEAK DEMAND FOR METER 5 # 108 412 294 AUG 2020 = 43.96KW

TOTAL PEAK DEMAND = 91.51KW

PEAK DEMAND X 125% = 114.39KW
CALCULATED ADDED LOAD = 77.1KW

TOTAL DEMAND LOAD = 191.49KW = 531.9A

EXISTING 1200AMP RATED METER CENTER IS SUFFICIENT FOR NEW LOAD TOTAL.

RECEPTACLE SCHEDULE

CALLOUT	SYMBOL
DUPLEX	
QUAD	

LOW VOLTAGE SCHEDULE

CALLOUT	SYMBOL
DATA	

SWITCH SCHEDULE

CALLOUT	SYMBOL
DIMMER SWITCH	$D
OCCUPANCY SENSOR - CEILING	
SWITCH	$

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Sheet E3.0
ELECTRICAL DETAILS
19 May 2021 - Rev 2 - Plan Revisions

DIVISION 26 ELECTRICAL SPECIFICATIONS

26 05 01 COMMON REQUIREMENTS FOR ELECTRIC

ALL ELECTRICAL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF NFPA 70 AND ALL REGULATIONS, LAWS, AND ORDINANCES WHICH MAY BE APPLICABLE AND BY TRAINED AND LICENSED ELECTRICIANS.

BEFORE SUBMITTING A BID, EXAMINE DOCUMENTS OF ALL OTHER TRADES, VISIT THE SITE AND GET ACQUAINTED WITH ALL CONDITIONS THAT MAY IN ANY WAY AFFECT THE EXECUTION OF THIS CONTRACT. TAKE MEASUREMENTS AND BE RESPONSIBLE FOR EXACT SIZE AND LOCATIONS OF ALL OPENINGS REQUIRED. VERIFY INSTALLATION MAY BE MADE IN COMPLETE ACCORDANCE WITH ALL PERTINENT CODES AND REGULATIONS. IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE PROFESSIONAL ENGINEER OF RECORD. DO NOT PROCEED WITH THE INSTALLATION IN AREAS OF DISCREPANCY UNTIL ALL SUCH DISCREPANCIES HAVE BEEN FULLY RESOLVED.

IT IS NOT THE INTENT OF THE DRAWINGS THAT EXISTING CONDITIONS BE ACCURATELY SHOWN. EXISTING ELECTRICAL WORK IS SHOWN TO LIMITED EXTENT ON DRAWINGS AND IS SHOWN FOR GENERAL REFERENCE ONLY. LOCATIONS AND INFORMATION WERE DERIVED FROM CURSORY SITE VISUAL OBSERVATIONS OR FROM DOCUMENTS THAT WERE PREPARED FOR PREVIOUSLY INSTALLED WORK WHEN AVAILABLE.

LIST OF EQUIPMENT, TABULATIONS OF DATA, SCHEDULES, ETC. APPEARING IN THE SPECIFICATIONS OR ON THE DRAWINGS ARE INCLUDED FOR REFERENCE BY THE CONTRACTOR IN ARRIVING AT A MORE COMPLETE UNDERSTANDING OF THE INTENDED INSTALLATION. THEY ARE NOT INTENDED OR TO BE CONSTRUED AS RELIEVING THE RESPONSIBILITY OF THE CONTRACTOR IN MAKING HIS/HER OWN TAKE-OFF AND PROVIDING ALL REQUIRED WORK.

THE WORK COVERED BY THESE SPECIFICATIONS SHALL CONSIST OF PROVIDING ALL NEW MATERIAL, LABOR, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE ELECTRICAL INSTALLATION AS SPECIFIED HEREIN. WORK IN THIS SECTION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:

- WIRING DEVICES
- BRANCH CIRCUITING
- GROUNDING
- CONNECTION OF HVAC EQUIPMENT
- LIGHTING

WHENEVER THE WORDS "CONTRACTOR" APPEAR ON ELECTRICAL DRAWINGS OR IN THESE SPECIFICATIONS, IT SHALL REFER TO THE ELECTRICAL SUB-CONTRACTOR. WHENEVER THE WORD "PROVIDE" APPEARS IN THESE DOCUMENTS, IT SHALL BE INTERPRETED TO MEAN "FURNISH AND INSTALL".

COORDINATE ALL WORK WITH THE OWNER TO MINIMIZE INTERRUPTION OF BUILDING OPERATION. SCHEDULE OF ALL POWER OUTAGES MUST BE APPROVED BY THE OWNER PRIOR TO THE BEGINNING OF ANY WORK.

PRIOR TO ALL WORK, CAREFULLY INSPECT THE INSTALLED WORK OF ALL OTHER TRADES AND VERIFY THAT ALL SUCH WORK IS COMPLETE TO THE POINT WHERE THIS INSTALLATION MAY PROPERLY COMMENCE. COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE SCHEDULES FOR WORK OF ALL OTHER TRADES TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

COORDINATE EXACT ELECTRICAL REQUIREMENTS (VOLTAGE, PHASE, AMPS, WIRING, CONNECTIONS, AND ETC.) OF EQUIPMENT FURNISHED BY OTHERS PRIOR TO PERFORMING WORK. COORDINATE MANUFACTURER'S ELECTRICAL WIRING AND CONNECTION REQUIREMENTS WITH PRODUCT DATA AND/OR SUBMITTAL DRAWINGS PRIOR TO ROUGH-IN AND FURNISHING EQUIPMENT'S OVER-CURRENT PROTECTIVE DEVICES. ALL WIRING REQUIREMENTS SHOWN ARE SCHEMATIC IN NATURE.
- COORDINATE SPECIALITY RECEPTACLE AND/OR OUTLET TYPES WITH EQUIPMENT REQUIREMENTS.
- WHEN LOOSE DISCONNECT SWITCHES ARE FURNISHED UNDER MECHANICAL CONTRACT, RECEIVE AND INSTALL AND PROVIDE ALL FINAL TERMINATIONS NECESSARY.

VERIFY ALL EQUIPMENT LOCATIONS, SWITCHES, RECEPTACLES, LIGHTING FIXTURES, ETC., IN FIELD. THE OWNER RESERVES THE RIGHT TO CHANGE LOCATION OF ANY OUTLET OR FIXTURE FOR A DISTANCE OF 15 FT. IN ANY DIRECTION FROM DRAWING LOCATION, BEFORE THE WORK IS ACTUALLY ROUGHED IN, AT NO EXTRA CHARGE.

WHERE LIGHT FIXTURE AND OTHER ELECTRICAL ITEMS ARE SHOWN IN CONFLICT WITH LOCATIONS OF STRUCTURAL MEMBERS AND MECHANICAL OR OTHER EQUIPMENT, PROVIDE ALL REQUIRED SUPPORTS AND WIRING TO CLEAR THE ENCROACHMENT.

PROVIDE ALL MISCELLANEOUS HARDWARE AND MATERIAL NOT SPECIFIED BUT NECESSARY TO PROVIDE A COMPLETE AND WORKING ELECTRICAL SYSTEM. THIS HARDWARE SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL MISCELLANEOUS CONDUIT FITTINGS AND MOUNTING HARDWARE, LUMINAIRE MOUNTING HARDWARE, BRACKETS, CONNECTORS, CORDS AND PLUGS.

PROVIDE ACCESS DOORS TO PROVIDE ACCESS TO ALL J-BOXES, PULL BOXES, AND OTHER EQUIPMENT AS REQUIRED. ACCESS DOORS FOR INSTALLATION IN FIRE RATED CONSTRUCTION SHALL HAVE APPROPRIATE FIRE RATING.

DURING PROGRESS OF THE WORK, MAINTAIN ON DRAWINGS AT THE SITE, AN ACCURATE RECORD OF THE INSTALLATION OF THE ELECTRICAL SYSTEM, INDICATING ALL ITEMS WHICH HAVE BEEN CHANGED OR ADDED.

APPLY FOR AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY LOCAL AUTHORITY, FOR THE APPROVAL OF WORK.

A CERTIFICATE OF FINAL INSPECTION AND APPROVAL SHALL BE SUBMITTED WITH THE CONTRACTOR'S REQUEST FOR FINAL PAYMENT. NO FINAL PAYMENT WILL BE APPROVED WITHOUT THIS CERTIFICATE.

GUARANTEE ALL WORKMANSHIP, MATERIAL, AND EQUIPMENT AND REPLACE ANY FOUND DEFECTIVE WORK WITHOUT COST TO THE OWNER, FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE.

ADDITIONAL WORK REQUIRED FOR COMMERCIAL KITCHENS, WHETHER OR NOT EXPLICITLY LISTED ON A CASE BY CASE BASIS ON PLANS:

ALL 15 AND 20 AMP, 125 VOLT RATED RECEPTACLES IN KITCHENS AND/OR WITHIN 6'-0" OF A WATER SOURCE MUST HAVE GFCI PROTECTION. PROVIDE GFCI RECEPTACLES IN READILY ACCESSIBLE LOCATION. WHERE ELECTRIC PANEL IS IN READILY ACCESSIBLE LOCATION, GFCI CIRCUIT BREAKERS MAY BE UTILIZED IN PLACE OF GFCI RECEPTACLES AT THE CONTRACTOR'S DISCRETION.

WALK IN COOLERS/FREEZERS: AVOID PENETRATIONS WHEREVER POSSIBLE. IF RECEPTACLES MUST BE MOUNTED TO THE EXTERIOR OF COOLER/FREEZER, SURFACE MOUNT CONDUIT/RECEPTACLE DOWN FROM CEILING ABOVE TO AVOID PENETRATIONS. SEAL ALL PENETRATIONS THROUGH THE WALK-IN COOLER/FREEZER. AVOID SEAMS IN WALK-IN COOLER/FREEZER PANELS WHEN MAKING PENETRATIONS. MAKE ALL NECESSARY CONNECTIONS TO THE LIGHTS, DEFROST TIMER, EVAPORATER, CONDENSOR, ETC. WHERE CONDUITS ARE INSTALLED IN WALK-IN COOLERS/FREEZERS, PROVIDE RUNS VERTICALLY TO AVOID TRAPPING CONDENSATION.

HARD WIRED EQUIPMENT ON PLAN IS SHOWN DIRECTLY CONNECTED WITH DISCONNECTING MEANS PER THE PROVISIONS OF NFPA 70, SECTION 422.34. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE WITH FINAL EQUIPMENT SELECTIONS. IF NO UNIT SWITCH WITH A MARKED-OFF POSITION IS INTEGRAL TO THE APPLIANCE BEING SERVED, PROVIDE GENERAL PURPOSE LOCAL DISCONNECT SWITCH SUITABLE FOR THE VOLTAGE, AMPERAGE AND PHASE OF THE APPLIANCE.

ALL MATERIALS, APPARATUS AND EQUIPMENT SHALL BEAR THE SEAL OF UNDERWRITERS LABORATORIES INC. (UL) OR A SIMILAR CREDIBLE TESTING AGENCY. DESIGN BASIS MANUFACTURERS OF MATERIAL AND EQUIPMENT ARE SPECIFIED AND PLANS ARE DETAILED ACCORDING TO THIS MATERIAL. CONTRACTOR SHALL BASE HIS BID ON FURNISHING AND INSTALLING THIS MAKE OF MATERIAL AND EQUIPMENT.

AN ACCEPTABLE MANUFACTURER'S NAME AND MODEL NUMBER OF A PRODUCT MAY BE PROVIDED IN THESE DOCUMENTS. THIS IS THE EQUIPMENT INCLUDED DURING THE DESIGN PROCESS AND FORMS THE BASIS OF A STANDARD OF QUALITY. WHERE MORE THAN ONE MAKE OF MATERIAL OR EQUIPMENT IS SPECIFIED, THE CONTRACTOR SHALL STATE IN HIS BID WHICH MAKE HE PROPOSES TO FURNISH AND INSTALL. SHOP DRAWING APPROVAL SHALL BE OBTAINED PRIOR TO SHIPMENT OF EQUIPMENT.

VERIFY THE MODEL NUMBER OR PRODUCT IS STILL ACCURATE AND MEETS ALL REQUIREMENTS SHOWN ON THE DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN THE REQUIREMENTS AND THE PRODUCT OR MODEL NUMBER, THE STRICTER OF THE TWO SHALL GOVERN.

26 05 03 SUBMITTALS FOR ELECTRICAL SYSTEMS

SUBMIT SHOP DRAWINGS AND/OR PRODUCT DATA (ELECTRONIC COPIES) ON THE FOLLOWING ITEMS FOR REVIEW BEFORE FABRICATION OR SHIPMENT:

- DISCONNECT SWITCHES
- WIRING DEVICES
- LIGHTING
- LIGHTING CONTROLS (SWITCHES - TOGGLE, DIMMER, OCCUPANT SENSORS, ETC.)

MAINTENANCE MANUALS: THE MANUALS SHALL INCLUDE WIRING DIAGRAMS, MAINTENANCE AND OPERATING INSTRUCTIONS, PARTS LISTINGS, AND COPIES OF OTHER SUBMITTALS INDICATED FOR INCLUSION.

REVIEW AND CORRECTIONS OR COMMENTS MADE ON SHOP DRAWINGS, PRODUCT DATA: CATALOGS, CUT SHEETS, CHARTS, AND OTHER ITEMS DURING CONSTRUCTION PHASE SUBMITTAL REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS, FOR PROVIDING A COMPLETE AND FUNCTIONING PROJECT, NOR SHALL THEY RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS OR ERRORS OF ANY SORT. THIS REVIEW IS FOR THE LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH INFORMATION GIVEN AND THE DESIGN CONCEPT EXPRESSED IN THE CONTRACT DOCUMENTS. CONTRACTOR REMAINS RESPONSIBLE FOR DETERMINING THE ACCURACY AND COMPLETENESS OF OTHER DETAILS SUCH AS DIMENSIONS AND QUANTITIES, FOR SUBSTANTIATING INSTRUCTIONS FOR INSTALLATIONS, VERIFYING MATERIALS REQUIRED, OBTAINING FIELD MEASUREMENTS AND RELATED CRITERIA, COORDINATING WORK WITH OTHER DISCIPLINES AND PERFORMING WORK IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.

ANY CHANGES TO ITEMS SPECIFIED MUST BE SUBMITTED IN WRITING AS A SUBSTITUTION, WITH COMPLETE DOCUMENTATION OF PRICE DIFFERENTIAL AND EQUIPMENT DETAILS.

26 05 05 - EXISTING CONDITIONS & DEMOLITION

DO NOT REUSE REMOVED ELECTRICAL MATERIALS UNLESS SPECIFICALLY INDICATED ON DRAWINGS. EXISTING WIRING SYSTEMS MAY BE UTILIZED ONLY TO THE EXTENT INDICATED ON DRAWINGS.

IF REQUIRED TO ACCOMMODATE CONSTRUCTION RELATED ACTIVITIES TEMPORARILY REMOVE, STORE IN PROTECTED LOCATION ON SITE, AND REINSTALL CONFLICTING ELECTRICAL EQUIPMENT, LUMINAIRES, OR DEVICES THAT ARE TO REMAIN OR TO BE RELOCATED.

WHERE THE TERM “DEMOLITION” IS USED HEREIN, INTERPRET IT TO MEAN “DEMOLITION” OR “SELECTIVE DEMOLITION” WHERE APPLICABLE.

PROVIDE ELECTRICAL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT DEMOLITION AND AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION. DISCONNECT AND REMOVE WORK TO BE ABANDONED, AND AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES, IN AREAS AFFECTED BY THIS PROJECT.

MAINTAIN EXISTING ELECTRICAL SERVICE AND FEEDERS TO OCCUPIED AREAS AND OPERATIONAL FACILITIES, UNLESS OTHERWISE INDICATED, OR WHEN AUTHORIZED OTHERWISE IN WRITING BY OWNER'S REPRESENTATIVE. PROVIDE TEMPORARY SERVICE DURING INTERRUPTIONS TO EXISTING FACILITIES. SCHEDULE MOMENTARY OUTAGES WHEN NECESSARY FOR REPLACING EXISTING WIRING SYSTEMS WITH NEW WIRING SYSTEMS. WHEN THAT "CUTTING-OVER" HAS BEEN SUCCESSFULLY ACCOMPLISHED, REMOVE RELATED WIRING THAT HAS BEEN ABANDONED.

CAREFULLY COORDINATE WORK AND SYSTEM SHUTDOWNS IN ADVANCE WITH OWNER'S REPRESENTATIVE, AND WITH AFFECTED TRADES SO THAT NORMAL BUILDING ACTIVITIES AND OTHER CONSTRUCTION TRADES ARE MINIMALLY AFFECTED. PERFORM ELECTRICALLY RELATED CONSTRUCTION WORK, WHICH WILL AFFECT AN OCCUPIED AREA (INCLUDING THOSE WHICH ARE LOCATED OUTSIDE THE IMMEDIATE AREA OF PROJECT WORK) AT SPECIAL TIMES AS DIRECTED BY OWNER'S REPRESENTATIVE IN FIELD.

PROVIDE WORK IN A MANNER THAT ENSURES EXISTING SYSTEMS AND COMPONENTS REMAIN FULLY OPERATIONAL IN OCCUPIED SPACES DURING OCCUPIED PERIODS.

PROVIDE AND MAINTAIN TEMPORARY PARTITIONS AND DUST BARRIERS ADEQUATE TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT FINISHED AREAS AND OTHER SYSTEM COMPONENTS. PROTECT ADJACENT INSTALLATIONS DURING CUTTING AND PATCHING OPERATIONS. REMOVE PROTECTION AND BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE.

INSPECT EXISTING ELECTRICAL WORK IN AREAS ACCESSED UNDER THIS PROJECT AND BRING INTO COMPLIANCE WITH CURRENT NFPA 70. THIS APPLIES ONLY TO THE EXTENT THAT SUCH WORK IS UNCOVERED IN THE IMMEDIATE PROJECT AREAS AFFECTED BY CONSTRUCTION ACTIVITIES, AND ONLY TO THE LIMITED EXTENT THAT IT APPLIES TO PRE-EXISTING GENERAL INSTALLATION METHODS SUCH AS MISSING JUNCTION BOX PLATE, OPEN JUNCTION BOX KNOCKOUT, MINOR CONDUIT RE-ANCHORING AND MINOR EXPOSED WIRING/CONNECTIONS. IF MORE EXTENSIVE CODE OR SAFETY VIOLATIONS ARE DISCOVERED, IMMEDIATELY BRING THEM TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE (DETAILED IN WRITING) ALONG WITH PROPOSED COST FOR CORRECTIONS AND IMPACT (IF ANY) ON THE CONSTRUCTION SCHEDULE.

THE FOLLOWING APPLIES TO ELECTRICAL MATERIALS THAT WILL REMAIN OR BE REUSED UNDER THIS PROJECT: PROTECT DURING CONSTRUCTION ACTIVITIES:

- DETERMINE WHICH EXISTING BRANCH CIRCUITS MUST REMAIN ACTIVE. RECONNECT (OR MAINTAIN IN OPERATION WHERE APPLICABLE) AND SCHEDULE THEM IN THE PANELBOARD(S).
- EXISTING BRANCH CIRCUIT AND SYSTEMS CONDUIT, NOT CONFLICTING WITH NEW CONSTRUCTION AND NOT CONFLICTING WITH OVERHEAD OR CEILING CAVITY REQUIREMENTS, MAY BE RE-USED AT THE DISCRETION OF THE ELECTRICAL INSTALLER (AFTER ALL ABANDONED CONDUCTORS AND CABLES HAVE BEEN REMOVED FROM THEM). DO NOT EXCEED NFPA 70 REQUIRED CONDUIT FILL AND DO NOT INSTALL WIRING FED FROM DIFFERENT SOURCES IN COMMON CONDUIT.
- COMPLETELY RE-TYPE PANELBOARD DIRECTORIES FOR PANELBOARD(S) AFFECTED BY THIS PROJECT USING ACCURATE “AS-BUILT” INFORMATION.
- WHERE APPLICABLE ENSURE THAT RECONNECTED SHARED NEUTRALS ARE PROPERLY BALANCED WITH THE CORRECT PHASE CONDUCTORS.
- WHERE APPLICABLE, PROVIDE CORRECT COLOR-CODING FOR INSULATION OF RECONNECTED CONDUCTORS IN A MANNER COMPLIANT WITH NFPA 70.
- FOR ALL EXISTING LUMINAIRES SCHEDULED FOR REUSE, REMOVE FROM EXISTING CEILINGS DURING DEMOLITION; PROTECT DURING CONSTRUCTION; CLEAN, SERVICE (IF REQUIRED), RE-LAMP (WITH LAMPS TO MATCH BUILDING STANDARD OR PER THIS SECTION AS NOTED) AND REINSTALL AT LOCATIONS INDICATED. RE-LAMP LUMINAIRES IMMEDIATELY PRIOR TO OCCUPANCY OF THE FINISHED CONSTRUCTION AREA.
- CLEAN COMPONENTS TO BE REUSED INSIDE AND OUT, AND REINSTALL WHERE INDICATED ON DRAWINGS. MODIFY AND EXTEND RELATED EXISTING BRANCH WIRING AND/OR CONTROL WIRING ACCORDINGLY TO INCLUDE CONDUIT, CABLING, ETC.

26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

FURNISH AND INSTALL ALL NECESSARY CABLE OF THE SIZE AND TYPE INDICATED ON THE DRAWINGS. ALL WIRE SHALL BE COPPER UNLESS OTHERWISE SPECIFIED.

NO CONDUCTOR SMALLER THAN NO. 12 AWG SHALL BE USED UNLESS OTHERWISE INDICATED. IN GENERAL, CONDUCTORS SMALLER THAN NO. 12 WILL BE PERMITTED ONLY FOR COMMUNICATION, SIGNAL, OR CONTROL CIRCUITS.

PROVIDE THE FOLLOWING MINIMUM AWG CONDUCTOR SIZES FOR GENERAL BRANCH CIRCUITING AND GROUNDS THAT ARE NOT INDICATED ON DRAWINGS. ALL WIRING IS BASED ON USING COPPER CONDUCTORS UNLESS OTHERWISE INDICATED. WHERE APPLICABLE INCREASE AS REQUIRED TO ACCOMMODATE VOLTAGE DROP AND TO ACCOMMODATE SPECIAL CONDITIONS. DO NOT DERATE ANY GROUNDED (NEUTRAL) CONDUCTORS. TEMPERATURE RATINGS LISTED BELOW PERTAIN TO BOTH WIRE AND TERMINATIONS.

	60 DEG. C RATING	EQUIPMENT GROUNDING
SOURCE BREAKER/FUSE	AWG WIRE SIZE	AWG WIRE SIZE
15 AMPERE	#12	#12
20 AMPERE	#12	#12
25 AMPERE	#10	#10
30 AMPERE	#10	#10
35 AMPERE	# 8	#10
40 AMPERE	# 8	#10
45 AMPERE	# 6	#10
50 AMPERE	# 6	#10
60 AMPERE	# 4	#10
70 AMPERE	# 4	#8
80 AMPERE	# 3	#8
90 AMPERE	# 2	#8
100 AMPERE	# 1	#8

CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET, NO SPLICES SHALL BE PERMITTED EXCEPT AT OUTLETS. ALL ELECTRICAL CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC.

COLOR CODING IS REQUIRED FOR ALL SERVICE, FEEDER, BRANCH, CONTROL, AND SIGNALING CIRCUIT CONDUCTORS. INSULATION COLOR FOR NEUTRALS SHALL BE WHITE FOR 120 VOLT CIRCUITS. EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN. THE COLOR OF THE INSULATION OF THE UNGROUNDED CONDUCTORS SHALL BE AS FOLLOWS:

208Y/120V SYSTEM: BLACK, RED, BLUE AND WHITE (NEUTRAL)
480Y/277V SYSTEM: BROWN, ORANGE, YELLOW AND GRAY (NEUTRAL)
EQUIPMENT GROUNDING: GREEN
ALL UNGROUNDED CONDUCTORS OF THE SAME COLOR SHALL BE CONNECTED TO THE SAME UNGROUNDED FEEDER CONDUCTOR.

USE NO WIRE SMALLER THAN NO. 12 AWG, RATED AT 600 VOLTS, FOR POWER AND LIGHTING CIRCUITS AND NO SMALLER THAN NO. 14 FOR CONTROL WIRING. BRANCH CIRCUIT CONDUCTORS FOR 20 AMPERE, 120 VOLT CIRCUITS SHALL BE NO. 12 AWG, WITH CONDUCTOR FROM PANEL BOARD TO THE FIRST OUTLET AS FOLLOWS:

0 - 75 FEET-----------------------#12 AWG
75 -150 FEET----------------------#10 AWG
150-250 FEET----------------------# 8 AWG
250-350 FEET----------------------# 6 AWG

ALL JOINTS AND SPLICES SHALL BE MADE MECHANICALLY AND ELECTRICALLY SECURE. ALL SPLICES AND JOINTS SHALL BE MADE WITH APPROVED SOLDERLESS CONNECTORS, PROPERLY INSTALLED.

TYPE MC CABLE MAY MAY BE USED FOR SHORT (LESS THAN 6 FEET) FINAL CONNECTIONS ONLY.

26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

ALL WIRE FOR GROUNDING PURPOSE SHALL BE STRANDED COPPER, OR COPPER CLAD STEEL AS REQUIRED FOR TYPE AND SIZES INDICATED ON DRAWINGS.

METAL RACEWAYS MAY NOT BE USED FOR EQUIPMENT GROUNDING CONDUCTOR.

PROPERLY GROUND ALL MOTORS, TRANSFORMERS, EQUIPMENT, CONDUITS, SWITCH GEAR, ETC.

GROUND ALL LUMINAIRES BY INSTALLING A SEPARATE GREEN GROUND WIRE IN ANY FLEXIBLE CONDUIT BETWEEN OUTLET BOX AND FIXTURE.

26 05 29 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

CONDUIT SHALL BE SUPPORTED BY APPROVED STRAPS, FASTENERS AND HANGERS. HANGERS SHALL BE SUSPENDED FROM RODS. PERFORATED STRAPS WILL NOT BE ACCEPTABLE. FASTENERS SHALL BE LEAD EXPANSION SHIELDS IN BLOCK OR CONCRETE, TOGGLE BOLTS IN HOLLOW WALLS, MACHINE SCREWS ON METAL SURFACES AND WOOD SCREWS ON WOOD CONSTRUCTION.

ALL CONDUIT SHALL BE SUPPORTED INDEPENDENTLY FROM ALL OTHER BUILDING SYSTEMS AND SHALL BE SUPPORTED DIRECTLY FROM STRUCTURAL COMPONENTS. AT BUILDING EXPANSION JOINTS AND WHERE DEFLECTION IS EXPECTED, CONDUITS SHALL BE PROVIDED WITH EXPANSION FITTINGS WITH BONDING JUMPERS. CONDUITS PASSING THROUGH STRUCTURAL MEMBERS SHALL BE PROVIDED WITH STUB AND COUPLING OR SLEEVE IN THE MEMBER. WHERE MOISTURE CONDITIONS ARE ENCOUNTERED, A HOLE SHALL BE DRILLED AT THE LOWEST POINT IN THE CONDUIT RUN.

26 05 33 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

CONCEAL CONDUIT AND EMT WITHIN FURNISHED WALLS, CEILINGS, AND FLOORS UNLESS OTHERWISE INDICATED. INSTALL CONDUITS PARALLEL OR PERPENDICULAR TO BUILDING LINES.

INTERIOR CONDUIT SHALL BE OF SUFFICIENT SIZE AND INSTALLED SO THE REQUIRED NUMBER OR CONDUCTORS CAN BE INSERTED OR REMOVED WITHOUT INJURY TO, OR EXCESSIVE STRAIN UPON, THE INSULATION. THE MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS OTHERWISE NOTED.

CONDUITS SHALL BE RUN CONTINUOUS FROM OUTLET TO OUTLET AND SHALL BE FASTENED TO ALL BOXES AND CABINETS WITH DOUBLE LOCKOUTS, TO PROVIDE CONTINUITY OF GROUND, AND A BUSHING. THE FULL NUMBER OF THREADS MUST PROJECT BEYOND LOCKOUT IN BOXES AND CABINETS TO ALLOW THE BUSHING TO BUTT UP TIGHT AGAINST THE END OF THE CONDUIT.

CONDUIT RUN EXPOSED SHALL RUN PARALLEL, OR PERPENDICULAR TO WALLS, CEILINGS, OR PRINCIPAL FRAMING MEMBERS. IT IS REQUIRED THAT ALL CONDUIT BE INSTALLED TO REFLECT NEAT, CAREFUL WORKMANSHIP THROUGHOUT THE JOB. CONDUIT WHICH HAS BEEN CRUSHED, DAMAGED, OR DEFORMED IN ANY WAY SHALL NOT BE INSTALLED IN THE JOB. CONDUIT SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST TROUBLE FROM COLLECTION OF TRAPPED CONDENSATE, AND ALL RUNS OF CONDUIT SHALL BE FREE OF SUCH TRAPS WHEREVER POSSIBLE.

ALL CONDUIT HANGERS AND SUPPORTS SHALL BE RIGIDLY FASTENED TO THE BUILDING STRUCTURE. NO CONDUIT SHALL BE SUPPORTED FROM DUCTWORK, PIPING, OR CEILING GRID SYSTEMS.

PROVIDE FIRE SEALS WHEREVER CONDUIT PENETRATES FIRE WALLS, CEILING OR RATED FLOOR SLABS.

RIGID STEEL CONDUIT SHALL BE USED FOR ALL CONDUIT RUNS INSTALLED IN CONCRETE SLABS, IN ALL POURED CONCRETE CONSTRUCTION AND ALL APPLICATIONS INSIDE BUILDING REQUIRING 2" OR LARGER IN SIZE. CONDUIT SHALL BE SUPPORTED AT INTERVALS NOT-TO-EXCEED 7 FEET FOR 3/4" CONDUIT, 8 FEET INTERVALS FOR CONDUIT ON 1" TO AND INCLUDING 2", AND 10 FEET FOR CONDUITS 2-1/2" OR LARGER.

RIGID CONDUIT (ALUMINUM) SHALL NOT BE INSTALLED IN POURED CONCRETE. ALUMINUM CONDUIT MAY BE USED FOR SWITCH LEGS AND BRANCH CIRCUITS IN PARTITIONS, ABOVE CEILING, AND WHERE CONDUIT RUN IS EXPOSED. CONDUIT SHALL BE SUPPORTED AT INTERVALS NOT-TO-EXCEED 7 FEET FOR 3/4" CONDUIT, 8 FEET INTERVALS FOR CONDUIT 1" TO AND INCLUDING 2".

ELECTRICAL METALLIC TUBING (THIN WALL) MAY BE USED FOR SWITCH LEGS (EXCEPT IN POURED CONCRETE WALLS) AND BRANCH CIRCUITS IN PARTITIONS, ABOVE CEILINGS, AND WHERE CONDUIT RUN IS EXPOSED. CONDUIT SHALL BE SUPPORTED AT INTERVALS NOT-TO-EXCEED 7 FEET FOR 3/4" CONDUIT, 8 FEET INTERVALS FOR CONDUIT 1" TO AND INCLUDING 1-1/2". EMT LARGER THAN 1-1/2" WILL NOT BE PERMITTED.

PLASTIC CONDUIT (PVC): PLASTIC CONDUIT MAY BE USED FOR UNDERGROUND CONDUIT RUNS OUTSIDE BUILDING AND BELOW FLOOR SLAB. UNDERGROUND CONDUIT RUNS OUTSIDE BUILDING SHALL BE A MINIMUM OF 2'-6" BELOW GRADE. CONDUIT RUN BELOW FLOOR SLAB SHALL BE A MINIMUM OF 12" BELOW FLOOR SLAB.

FLEXIBLE CONDUIT SHALL BE USED BETWEEN OUTLET BOXES IN HUNG OR FURRED CEILINGS AND RECESSED LIGHTING FIXTURES. FLEXIBLE CONDUIT SHALL NOT EXCEED 6 FEET IN LENGTH.

LIQUID TIGHT FLEXIBLE CONDUIT SHALL BE USED FOR FINAL CONNECTIONS TO ALL MOTORS. LIQUID TIGHT FLEXIBLE CONDUIT SHALL BE USED FOR FINAL CONNECTIONS TO ALL MOTORS OR DEVICES WHICH DO OR MAY VIBRATE. LIQUID TIGHT FLEXIBLE CONDUIT SHALL NOT EXCEED 3 FEET IN LENGTH.

PROVIDE SEALING BUSHINGS IN ALL UNDERGROUND CONDUITS AS REQUIRED TO PREVENT THE ENTRY OF MOISTURE INTO ELECTRICAL EQUIPMENT.

PROVIDE CONDUIT EXPANSION FITTINGS WHERE CONDUIT CROSSES A BUILDING EXPANSION JOINT, AND IN ALL STRAIGHT CONDUIT RUNS 200 FEET OR LONGER.

ALL OUTLET, SWITCH, JUNCTION AND PULL BOXES SHALL BE MADE OF CODE GALVANIZED STEEL COMPLETE WITH RINGS AND SCREW COVER PLATES AND LOCATED WHERE SHOWN AND NOTED ON DRAWINGS. WHERE CONDUIT IS CONCEALED, BOXES SHALL NOT BE LESS THAN 4" SQUARE X 1-1/2" DEEP. ALL BOXES SHALL BE EQUIPPED WITH PROPER COVERS TO BRING FLUSH WITH FINISHED WALL SURFACE.

USE GANG BOXES WHERE MORE THAN ONE DEVICE IS TO BE INSTALLED AT THE SAME LOCATION.

ALL BOXES FOR CONCRETE WORK SHALL BE OF TYPE ESPECIALLY DESIGNED FOR INSTALLATION IN CONCRETE.

PROVIDE OUTLET BOX ACCESSORIES AS REQUIRED FOR EACH INSTALLATION, INCLUDING MOUNTING BRACKETS, WALLBOARD HANGERS, EXTENSION RINGS, FIXTURE STUDS, CABLE CLAMPS, AND METAL STRAPS FOR SUPPORTING OUTLET BOXES, COMPATIBLE WITH OUTLET BOXES BEING USED AND MEETING REQUIREMENTS OF INDIVIDUAL WIRING SITUATIONS.

PULL BOXES (NOT SHOWN ON THE CONTRACT DRAWINGS) SHALL BE INSTALLED AS REQUIRED TO FACILITATE PULLING OF CONDUCTORS ON LONG RUNS. PULL BOXES LOCATED IN FLOORS SHALL BE FLUSH WITH FINISHED FLOOR, AND OF CAST WROUGHT IRON, ALUMINUM, OR BRONZE WITH SEALED WATERPROOF COVER. CONDUIT ENTRANCES SHALL BE THREADED.

PROVIDE CORROSION RESISTANT CAST METAL WEATHERPROOF OUTLET WIRING BOXES, OF THE TYPE, SHAPE, AND SIZE REQUIRED FOR EACH APPLICATION, WITH THREADED CONDUIT ENDS, CAST METAL FACE PLATE WITH SPRING-HINGE WATERPROOF CAP, SUITABLE CONFIGURED FOR EACH APPLICATION, INCLUDING FACE PLATE GASKET AND CORROSION PROOF FASTENERS.

PROVIDE WATERPROOF OUTLETS FOR INTERIOR AND EXTERIOR LOCATIONS EXPOSED TO WEATHER OR SUBJECT TO FREQUENT WASHING.

SECURE BOXES RIGIDLY TO THE SUBSTRATE UPON WHICH THEY ARE BEING MOUNTED, OR SOLIDLY EMBED BOXES IN CONCRETE OR MASONRY.

26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS

PROVIDE MANUFACTURERS STANDARD SELF-ADHESIVE VINYL TAPE NOT LESS THAN 3 MILS THICK BY 1-1/2" WIDE. INSTALL ON ALL CONCEALED RACEWAYS AT CONNECTION TO ALL JUNCTION BOXES, PULL BOXES, EQUIPMENT, WALL/FLOOR/ROOF PENETRATIONS, ETC.

PROVIDE CIRCUIT IDENTIFICATION BANDS FOR ALL CABLES AND CONDUCTORS. PROVIDE ON ALL CONDUCTORS OF ALL SYSTEMS.

INSTALL ENGRAVED PLASTIC-LAMINATE SIGN ON ELECTRICAL EQUIPMENT, INCLUDING PANELBOARDS, DISCONNECTS, STARTERS, CONTROL PANELS, ETC. PROVIDE SINGLE LINE OF TEXT, 1/2" HIGH LETTERING, ON 1-1/2" HIGH SIGN (2" HIGH WHERE 2 LINES ARE REQUIRED), WHITE LETTERING IN BLACK FIELD.

26 05 84 MECHANICAL EQUIPMENT

PROVIDE ALL NECESSARY ELECTRICALLY RELATED WORK AS REQUIRED TO RENDER ALL MECHANICAL EQUIPMENT (INCLUDING PLUMBING, HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT) FULLY OPERATIONAL AND FULLY COMPLIANT WITH ALL LOCAL AND NATIONAL CODES. THIS INCLUDES, PRIOR TO ORDERING MATERIALS OR COMMENCING WITH ROUGH-IN, REVIEWING EQUIPMENT SUBMITTAL DATA AND COORDINATING WITH INSTALLING CONTRACTORS TO ENSURE THE CORRECT SIZE, RATING AND QUANTITY OF CONDUCTORS ARE PROVIDED.

26 27 26 WIRING DEVICES

ALL WIRING DEVICES SHALL BE UL LISTED, COMMERCIAL SPECIFICATION GRADE.

SWITCHES IN THE SAME LOCATION SHALL BE GANGED BEHIND A SINGLE PLATE.

DEVICE PLATES IN THE COMMERCIAL FOOD SERVICE AND/OR KITCHEN AREA SHALL BE METAL, ALUMINUM OR STAINLESS.

DEVICES IN RESTAURANT DINING AREA(S) SHALL BE TAMPER RESISTANT, AND THERMOPLASTIC (NYLON) OR METAL, COLOR AS APPROVED BY BRAND, OR ARCHITECT OF RECORD. APPROVED MANUFACTURER OF SWITCHES AND RECEPTACLES ARE HUBBELL, ARROW HART, BRYANT, LEVITON, PASS & SEYMOUR, GENERAL ELECTRIC, SLATER OR EQUAL.

DUPLEX RECEPTACLES SHALL BE 20 AMP., 125 VOLT, 3 WIRE GROUNDING TYPE. PROVIDE SMOOTH THERMOPLASTIC COVER PLATE AND MATCHING SCREWS. DEVICES AND COVER PLATES SHALL MATCH ADJACENT ARCHITECTURAL FINISHES UNLESS SPECIFICALLY NOTED OTHERWISE. APPROVED PRODUCTS: HUBBELL, LEVITON, BRYANT OR EQUAL.

WEATHERPROOF RECEPTACLES SHALL BE DUPLEX, 20 AMP., 125 VOLT, GROUND FAULT 3 WIRE GROUNDING TYPE WITH WEATHERPROOF COVER. APPROVED PRODUCTS: HUBBELL, LEVITON, BRYANT OR EQUAL.

USB RECEPTACLES SHALL BE DUPLEX, 20 AMP., 125 VOLT, GROUND FAULT 3 WIRE GROUNDING TYPE WITH TWO VERTICAL USB PORTS WITH A MINIMUM OF 3.6A CHARGING CAPACITY AND TWO 20A RATED OUTLETS. APPROVED PRODUCTS: HUBBELL, LEVITON, BRYANT OR EQUAL.

WALL SWITCHES SHALL BE 20 AMP., 120-277 VOLT, QUIET, HIGH CAPACITY, TOGGLE TYPE. SINGLE POLE SWITCHES - APPROVED PRODUCTS ARE HUBBELL, LEVITON, BRYANT OR EQUAL. THREE-WAY SWITCHES - APPROVED PRODUCTS HUBBELL, LEVITON, BRYANT OR EQUAL.

WALL PLATES FOR SWITCHES, TELEPHONE OUTLETS AND OTHER SPECIAL OUTLETS SHALL MATCH THE WALL PLATES PREVIOUSLY SPECIFIED WITH THE RECEPTACLES. ALL PLATES IN EACH ROOM SHALL MATCH. APPROVED PRODUCTS:HUBBELL, LEVITON, BRYANT OR EQUAL.

DISCONNECT SWITCHES SHALL BE HEAVY DUTY, SINGLE THROW DISCONNECT SWITCHES. ENCLOSURE SHALL BE NEMA 1 INDOOR AND NEMA 3R (RAIN TIGHT) ON EXTERIOR OF BUILDING UNLESS SPECIFICALLY NOTED ELSEWHERE IN THE CONTRACT DRAWINGS. DISCONNECT SWITCHES LOCATED ON THE EXTERIOR OF THE BUILDING IN AN AREA ACCESSIBLE TO THE PUBLIC OR SUBJECT TO VANDALISM SHALL BE CAPABLE OF BEING LOCKED IN THE CLOSED (ON) POSITION. THE AMPERE RATING, FUSIBLE OR NOT FUSIBLE AND VOLTAGE CHARACTERISTICS SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS. APPROVED PRODUCTS: SQUARE D COMPANY, GENERAL ELECTRIC, SIEMENS, OR EATON.

INSTALLATION OF WIRING DEVICES: OUTLET HEIGHTS GIVEN BELOW, OR AS SHOWN ON DRAWINGS, ARE TO THE CENTER OF THE OUTLET BOX. IN UNPLASTERED MASONRY WALLS WHERE OUTLETS ARE NOT DIMENSIONED, ADJUST HEIGHT TO THE NEXT HIGHER COURSE, AND ADJUST LOCATION TO THE NEAREST CENTER OF THE MASONRY UNIT.

TESTING: TEST WIRING DEVICES TO ENSURE ELECTRICAL CONTINUITY OF GROUNDING CONNECTIONS, AND AFTER ENERGIZING CIRCUITRY, TO DEMONSTRATE COMPLIANCE WITH REQUIREMENTS.

26 28 13 FUSES

ALL FUSES SHALL BE OF THE SAME MANUFACTURER. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE FUSES OF ONE OF THE FOLLOWING: BUSSMAN, LITTELFUSE, SHAWMUT.

PROVIDE FUSES OF TYPES, SIZES, RATINGS, AND AVERAGE TIME-CURRENT AND PEAK LET-THROUGH CURRENT CHARACTERISTICS INDICATED, WHICH COMPLY WITH MANUFACTURER'S STANDARD DESIGN, MATERIALS, AND CONSTRUCTED IN ACCORDANCE WITH PUBLISHED PRODUCT INFORMATION, AND WITH INDUSTRY STANDARDS AND CONFIGURATIONS.

PROVIDE FACTORY FUSE IDENTIFICATION LABELS, INSTALLED ON THE INSIDE OF THE DOOR OF EACH SWITCH INDICATING TYPE AND SIZE OF FUSES INSTALLED. FOR TYPES AND RATINGS REQUIRED.

EACH FUSE SHALL BE CLEARLY FACTORY MARKED WITH CLASSIFICATION, CHARACTERISTICS, AMPERE RATINGS, VOLTAGE RATINGS, ETC. FUSES SHALL NOT BE SHIPPED INSTALLED IN SWITCHES NOR SHALL THEY BE INSTALLED IN THE EQUIPMENT UNTIL THE EQUIPMENT UNTIL THE EQUIPMENT IS READY TO BE ENERGIZED.

PRIOR TO INSTALLING FUSES FOR PROTECTION OF SPECIFIC EQUIPMENT, MOTORS, ETC., VERIFY RECOMMENDED FUSE SIZE/TYPE IN FIELD FROM RESPECTIVE EQUIPMENT MANUFACTURER. IF A CONFLICT IN FUSE SIZE/TYPE RESULTS BETWEEN MANUFACTURER'S RECOMMENDATIONS AND ABOVE SPECIFICATIONS, CONTACT ENGINEER.

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Sheet E4.0
ELECTRICAL SPECIFICATIONS
19 May 2021 - Rev 2 - Plan Revisions

2

COMcheck Software Version 4.1.5.1

Interior Lighting Compliance Certificate

Project Information

Energy Code:	2012 IECC
Project Title:	Genki
Project Type:	Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
7244 Outfitters Way West Chester, OH 45069		Marque Engineering

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Common Space Types:Corridor / Transition	160	0.70	112
2-Common Space Types:Restroom	103	1.00	103
3-Common Space Types:Food preparation	686	1.20	823
4-Common Space Types:Family dining area	1021	1.40	1429
		Total Allowed Watts =	2468

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Common Space Types:Corridor / Transition (160 sq.ft.)				
LED 1: A: Downlights: Other:	1	4	20	80
Common Space Types:Restroom (103 sq.ft.)				
LED 1: A: Downlights: Other:	1	2	20	40
LED 2: L: Wall Sconce: Other:	1	2	20	40
Common Space Types:Food preparation (686 sq.ft.)				
LED 3: E: 2' x 4' troffers: Other:	1	7	45	315
LED 1: A: Downlights: Other:	1	1	20	20
Common Space Types:Family dining area (1021 sq.ft.)				
LED 4: B: Pendants: Other:	1	5	20	100
LED 5: H: Large Pendants: Other:	1	2	40	80
LED 6: G: Adjustables: Other:	1	6	20	120
LED 7: I: Downlights: Other:	1	14	20	280
LED 8: F: Suspended Linear: Other:	1	4	40	160
LED 9: K: Tape Lighting: Other:	1	14	15	210
LED 10: D: Recessed linear: Other:	1	1	45	45
Track lighting 1: CL3 ('C'): Current Limited Track: Wattage based on current limiting device capacity	0	0	360	360
Track lighting 2: CL5 ('C'): Current Limited Track: Wattage based on current limiting device capacity	0	0	600	600
			Total Proposed Watts =	2450

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2012 IECC requirements in COM*check* Version 4.1.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _______________ Signature _______________ Date _______________

COMcheck Software Version 4.1.5.1

Inspection Checklist

Energy Code: 2012 IECC

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2.1 [EL22][2]	Automatic controls to shut off all building lighting installed in all buildings.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1.1 [EL23][2]	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1.2 [EL15][1]	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.2.3 [EL16][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.3 [EL17][3]	Sleeping units have at least one master switch at the main entry door that controls wired luminaires and switched receptacles.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.2.2 [EL18][1]	Occupancy sensors installed in required spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.2.3 [EL20][1]	Primary sidelighted areas are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.2.3 [EL21][1]	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.3 [EL4][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.3 [EL19][3]	Fluorescent luminaires with odd numbered lamp configurations that are within 10 feet center to center (if recess mounted) or are within 1 foot edge to edge (if pendant or surface mounted) shall be tandem wired.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.4 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.3 [EL8][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C408.2.5.1 [FI16][3]	Furnished as-built drawings for electric power systems within 30 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.5.2 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

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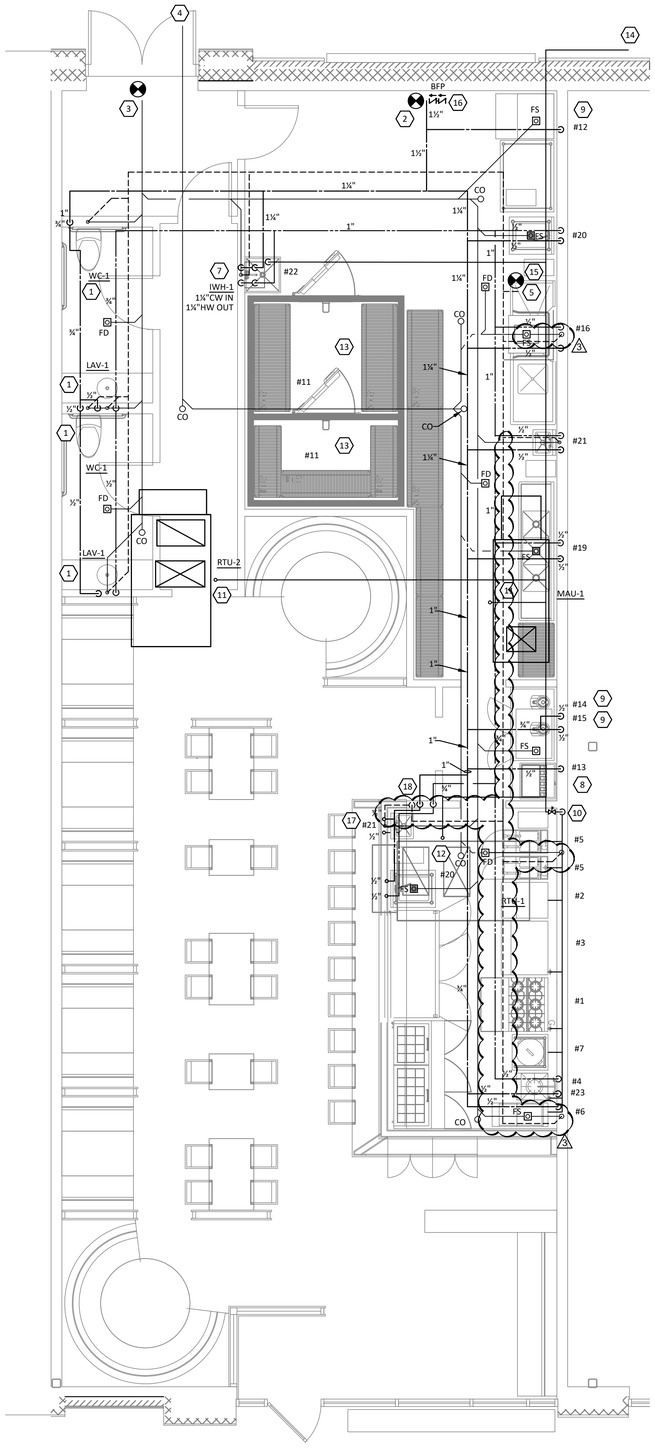
Sheet E5.0
ENERGY COMPLIANCE
19 May 2021 - Rev 2 - Plan Revisions



1 PLUMBING PLAN

P1.0 — 1/4" = 1'-0"

KEYED NOTES

1. NEW PLUMBING FIXTURE LOCATION.
2. CONNECT NEW COLD WATER LINE TO RELOCATED BFP.
3. CONNECT NEW SANITARY LINE TO EXISTING SANITARY LINE. FIELD VERIFY LOCATION, SIZE, INVERT AND FLOW DIRECTION.
4. ROUTE NEW GREASE LINE TO NEW SCHIER GB-250 GREASE INTERCEPTOR LOCATED IN REAR PARKING LOT. COORDINATE LOCATION OF NEW GREASE INTERCEPTOR WITH EXISTING CONDITIONS, UTILITIES, ETC. PRIOR TO CONSTRUCTION.
5. CONNECT NEW VENT LINE TO EXISTING VENT LINE. FIELD VERIFY LOCATION AND SIZE.
6. CONNECT NEW GAS LINE TO NEW GAS METER LOCATED APPROXIMATELY 125' AWAY. BRING TO THE ENGINEERS IMMEDIATE ATTENTION IF ACTUAL DISTANCE DIFFERS. FIELD VERIFY LOCATION, SIZE AND PRESSURE PRIOR TO CONSTRUCTION.
7. INSTALL NEW WATER HEATER ABOVE MOP SINK. ROUTE RELIEF PIPING TO MOP SINK BELOW.
8. PROVIDE IN-LINE ASSE 1022 BACKFLOW PREVENTER AT BEVERAGE DISPENSER.
9. PROVIDE IN-LINE ASSE 1024 BACKFLOW PREVENTER AT COFFEE BREWER, HOT WATER DISPENSER AND ICE MACHINE.
10. PROVIDE SOLENOID VALVE. CONNECT TO HOOD SUPPRESSION SYSTEM.
11. PROVIDE CONNECTION THROUGH ROOF TO HVAC EQUIPMENT. PROVIDE ONE PIECE SPUN ALUMINUM BASE WITH GRADUATED STEPPED PVC BOOT AND ADJUSTABLE STAINLESS STEEL CLAMPS. SEAL BASE TO ROOF WATER TIGHT. VERIFY FLASHING AND COUNTER FLASHING REQUIREMENTS WITH ROOFING CONTRACTOR TO ASSURE ROOF WARRANTY IS NOT VOIDED.
12. RECONNECT EXISTING GAS PIPE FEEDING RTU-1 BELOW ROOF. FIELD VERIFY LOCATION OF EXISTING PENETRATION PRIOR TO BEGINNING WORK.
13. ROUTE 3/4" INSULATED CONDENSATE LINE FROM WALK-IN TO HUB DRAIN. TERMINATE WITH AIR GAP.
14. ROUTE GAS LINE TO EXISTING GAS METER LOCATED APPROXIMATELY 50' AWAY. COORDINATE WITH LOCAL UTILITY COMPANY. FIELD VERIFY LOCATION, SIZE AND PRESSURE PRIOR TO CONSTRUCTION.
15. EXISTING WATER METER AND BFP AT THIS LOCATION TO BE RELOCATED.
16. NEW LOCATION OF RELOCATED WATER METER AND BFP.
17. ROUTE VENT LINE DOWN FULL WALL AND UNDER BAR TOP OVER TO SINK.
18. ROUTE WATER LINES DOWN FULL WALL AND UNDER BAR TOP OVER TO PLUMBING FIXTURES.

GENERAL NOTES

A. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK. VERIFY ALL DIMENSIONS. DRAWINGS ARE ILLUSTRATIVE AND MAY NOT REFLECT EXACT CONDITIONS OR DIMENSIONS.

B. DO NOT SCALE THE DRAWINGS. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND SYSTEMS. THEY ARE NOT INTENDED TO SHOW EVERY OFFSET, FITTING AND COMPONENT. DO NOT USE THE PLANS FOR EXACT LOCATION OF EQUIPMENT, FIXTURES OR ARCHITECTURAL ITEMS SUCH AS WALLS, WINDOWS, SOFFITS, AND PILASTERS. SPECIFIC LOCATIONS, MOUNTING HEIGHTS AND OVERALL DIMENSIONS OF DEVICES AND FIXTURES ARE TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS AND DETAILS WHEN AVAILABLE.

C. DRAWINGS SPECIFIC TO THIS TRADE DO NOT LIMIT THE RESPONSIBILITY OR WORK REQUIRED BY THE CONTRACT DOCUMENTS REFER TO DRAWINGS AND SPECIFICATIONS OF OTHER TRADES FOR COMPLETE INFORMATION PRIOR TO BID.

D. WHERE CONFLICTS EXIST AMONG DRAWINGS, SPECIFICATIONS AND EQUIPMENT SCHEDULES, THE MORE STRINGENT SHALL APPLY. NOTIFY THE ENGINEER OF ALL CONFLICTS FOR RESOLUTION OR INTERPRETATION.

E. NOTIFY THE OWNER IN WRITING AND FIELD VERIFY CONDITIONS BEFORE PERFORMING ANY SAWCUTTING, TRENCHING, CORING OR ANY OTHER STRUCTURAL MODIFICATIONS. INSURE THAT NO ADVERSE EFFECT TO THE BUILDING'S STRUCTURAL INTEGRITY WILL OCCUR.

F. ANY EXISTING CONDITION DISCOVERED DURING THE DEMOLITION OR CONSTRUCTION PROCESS WHICH, BY GENERALLY ACCEPTED CONSTRUCTION PRACTICES, SHOULD BE REMEDIED, SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER/ARCHITECT IMMEDIATELY, IN WRITING.

G. OBTAIN WRITTEN APPROVAL FROM THE ENGINEER BEFORE REUSING ANY EXISTING EQUIPMENT, COMPONENTS OR OPENINGS.

H. INSULATE PLUMBING LINES IN EXTERIOR WALLS TO PREVENT FREEZING.

I. COORDINATE ROOF WORK WITH ROOFING CONTRACTOR TO ASSURE THAT THE ROOF WARRANTY IS NOT VOIDED.

RETURN AIR PLENUM

THE ENTIRE AREA ABOVE THE CEILING IS A RETURN AIR PLENUM. ALL SANITARY AND VENT PIPING ABOVE THIS CEILING SHALL BE CAST IRON. IF PVC IS USED, UNIFRAX, OR EQUIVALENT, FYREWRAP 0.5 PLENUM INSULATION SHALL BE APPLIED TO THE PVC PIPE.

PLUMBING LEGEND

SAN	SANITARY PIPING
	SANITARY VENT PIPING
	UNDERGROUND WATER PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RETURN PIPING
ST	STORM DRAINAGE PIPING
GAS	NATURAL GAS
	GATE VALVE
	CHECK VALVE
CO	CLEAN OUT
WCO	WALL CLEAN OUT
FD	FLOOR DRAIN
FS	FLOOR SINK
FWH	FROSTPROOF WALL HYDRANT
VTR	VENT THROUGH ROOF
8	DRAWING NOTE SYMBOL
	THRUST BLOCK
	ELBOW DOWN
EWH	ELECTRIC WATER HEATER
BFP	BACKFLOW PREVENTER
HB	HOSE BIBB
B.F.F.	BELOW FINISH FLOOR
	CONNECT TO EXISTING
E	EXISTING
D	DEMOLITION
N	NEW
R	RELOCATED

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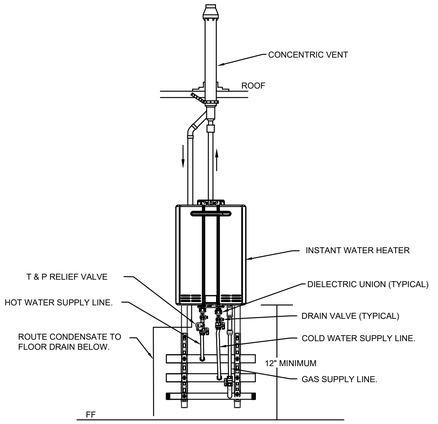
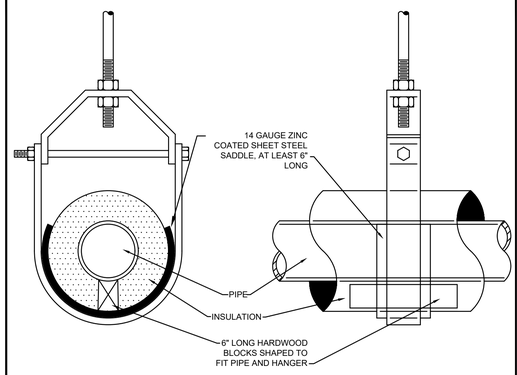
Sheet P1.0

PLUMBING PLAN
11 June 2021 - Rev 3 - Plan Revisions



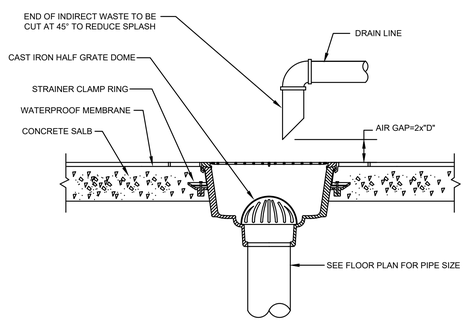
1 WATER HEATER DETAIL

SCALE: NONE



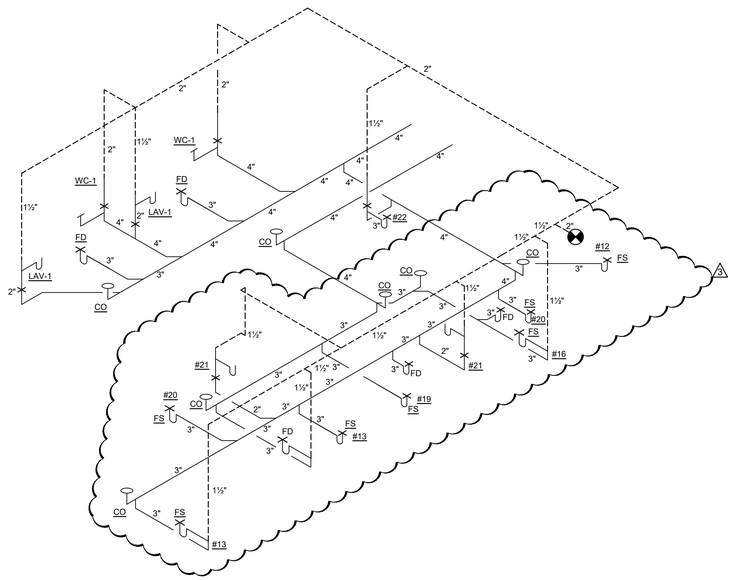
2 PIPE HANGER DETAIL

SCALE: NONE



3 INDIRECT WASTE DETAIL

SCALE: NONE



4 SANITARY ISOMETRIC

SCALE: NONE

GAS NOTES:

A. GAS LINE SIZING BASED ON INLET PRESSURE OF LESS THAN 2 PSI AND PRESSURE DROP OF 0.3" WC. 2015 IFGC TABLE 402.4(1) SCHEDULE 40 METALLIC PIPE.

B. INDICATED LENGTHS OF PIPE ARE EQUIVALENT DEVELOPED LENGTHS. MAXIMUM DEVELOPED LENGTH IS 125'.

C. ALL GAS PIPING OTHER THAN BLACK STEEL SHALL BE PERMANENTLY IDENTIFIED BY A YELLOW LABEL AT INTERVALS OF NOT MORE THAN 5'-0" .

D. ALL OUTSIDE EXPOSED GAS PIPING SHALL BE COATED WITH A RUST INHIBITOR TO PREVENT ATMOSPHERIC CORROSION.

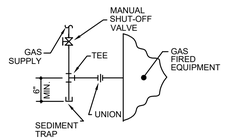
E. GAS PIPING SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS PER IFGC 406.1, NFPA 54 AND ANSI B 31.2.

F. MAINTAIN 3 FEET AWAY FROM ELECTRIC LINE.

G. PROVIDE ANVIL H-BLOCK HBS SUPPORT WITH H-164 STEEL CHANNEL ROOFTOP SUPPORT SYSTEM WHEN PIPING IS INSTALLED ON ROOFTOP.

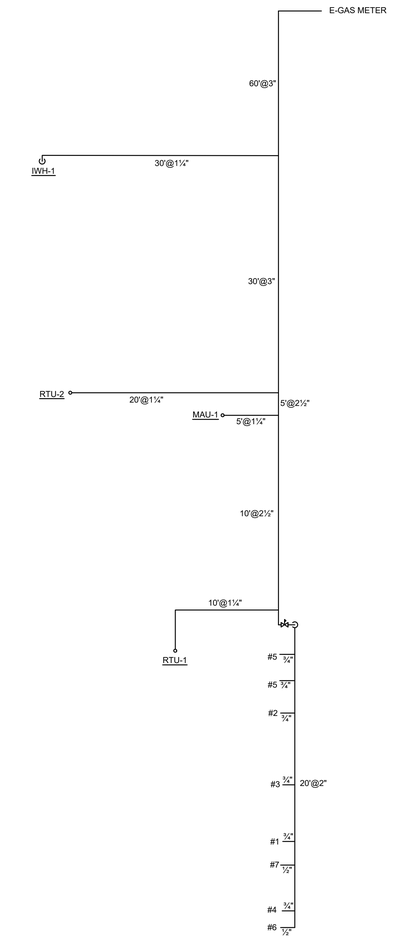
GAS LOADS

EQUIPMENT	MBH
#1	177
#2	70
#3	90
#4	80
#5	102
#5	102
#6	50
#7	34
IWH-1	199
RTU-1	150
RTU-2	150
MAU-1	209
TOTAL	1,413



EQUIPMENT GAS PIPING

NOT TO SCALE



GAS RISER

NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	SAN	VENT	CW	HW
WC-1	WATER CLOSET: WHITE VITREOUS CHINA, FLOOR MOUNTED, ELONGATED FRONT BOWL, BOLT CAPS, 1.6 GALLONS/FLUSH, EQUAL TO AMERICAN STANDARD CHAMPION PRO 211AA.004. 4" FLUSH VALVE. WITH OPEN FRONT WHITE SEAT LESS COVER. SUPPLY WITH STOP. MEETS ADA GUIDELINES. 211AA.005 RIGHT HAND TRIP LEVER.	4"	2"	1/2"	-
FD	FLOOR DRAIN: SIOUX CHIEF ON GRADE ADJUSTABLE FLOOR DRAIN 832-36PNR. 3" CONNECTION. PVC BASE ADAPTER. ROUND NICKEL-BRONZE STRAINER.	3"	-	-	-
FS	FLOOR SINK: ZURN FD-2370-PV3-H-Y 12 X12 X 6 DEEP PVC BODY. 1/2 GRATE. SEDIMENT BUCKET.	3"	-	-	-
LAV-1	LAVATORY: AMERICAN STANDARD "AQUALYN" COUNTERTOP SINK 0476.028, WHITE VITREOUS CHINA WITH FRONT OVERFLOW. 16"X10" BOWL. RELIANT 7385.003 SINGLE LEVER FAUCET WITH GRID DRAIN, SUPPLIES, STOPS AND 1-1/4" "P" TRAP. PROVIDE ZURN CONCEALED CARRIER. INSULATE PIPING BELOW LAVATORY USING TRUEBRO "LAVGUARD2." WATER TEMPERATURES AT ALL PUBLIC LAVATORIES MUST BE A MINIMUM OF 100 DEGREES WITH A MAXIMUM OF 110 DEGREES, VIA THERMOSTAT MIXING VALVE POWERS HYDROGUARD LFe480. MEETS ADA GUIDELINES.	1-1/2"	1-1/2"	1/2"	1/2"
IWH-1	INSTANTANEOUS WATER HEATER: NAVIEN NPE-240. 199 MBH INPUT, 120 VOLT CONNECTION. WATER HEATER SHALL BE MOUNTED ON WALL ABOVE MOP SINK AND SET TO 140° OUTLET TEMPERATURE. EXTEND 3" PVC FLUE AND INTAKE UP THROUGH ROOF WITH MAXIMUM CLEARANCE TO ROOFTOP UNIT AIR INTAKES (MAINTAIN A MINIMUM OF 10' CLEARANCE). 1" COLD WATER IN, 1" HOT WATER OUT. PIPE DRAIN AND PRESSURE RELIEF VALVE INDEPENDENTLY AND INDIRECTLY TO MOP SINK.	-	-	-	-
CO	CLEAN OUT: SIOUX CHIEF ON GRADE ADJUSTABLE CLEAN OUT 834-PNR. PVC BASE ADAPTER. ROUND NICKEL-BRONZE COVER.	-	-	-	-
HD	HUB DRAIN: SIOUX CHIEF 832 SERIES FINISH LINE ADJUSTABLE ON-GRADE FLOOR DRAIN WITH 832-3HHD HUB DRAIN ACCESSORY	3"	-	-	-

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STATE OF OHIO
JOHN C. COLBERT JR.
79076
REGISTERED PROFESSIONAL ENGINEER
06/11/2021

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Sheet P2.0

PLUMBING DETAILS AND ISOMETRICS
11 June 2021 - Rev 3 - Plan Revisions

DIVISION 22 - PLUMBING SPECIFICATION

22 05 00 COMMON WORK RESULTS FOR PLUMBING

ALL PLUMBING WORK AND TESTS SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST STATE, COUNTY, AND LOCAL REGULATIONS, LAWS, AND ORDINANCES WHICH MAY BE APPLICABLE.

BEFORE SUBMITTING A BID, EXAMINE DOCUMENTS OF ALL OTHER TRADES, VISIT THE SITE AND GET ACQUAINTED WITH ALL CONDITIONS THAT MAY IN ANY WAY AFFECT THE EXECUTION OF THIS CONTRACT. TAKE MEASUREMENTS AND BE RESPONSIBLE FOR EXACT SIZE AND LOCATIONS OF ALL OPENINGS REQUIRED. VERIFY INSTALLATION MAY BE MADE IN COMPLETE ACCORDANCE WITH ALL PERTINENT CODES AND REGULATIONS. IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE PROFESSIONAL ENGINEER OF RECORD. DO NOT PROCEED WITH THE INSTALLATION IN AREAS OF DISCREPANCY UNTIL ALL SUCH DISCREPANCIES HAVE BEEN FULLY RESOLVED.

IT IS NOT THE INTENT OF THE DRAWINGS THAT EXISTING CONDITIONS BE ACCURATELY SHOWN. EXISTING PLUMBING WORK IS SHOWN TO LIMITED EXTENT ON DRAWINGS AND IS SHOWN FOR GENERAL REFERENCE ONLY. LOCATIONS AND INFORMATION WERE DERIVED FROM CURSORY SITE VISUAL OBSERVATIONS OR FROM DOCUMENTS THAT WERE PREPARED FOR PREVIOUSLY INSTALLED WORK WHEN AVAILABLE.

THE WORK COVERED BY THESE SPECIFICATIONS SHALL CONSIST OF PROVIDING ALL NEW MATERIAL, LABOR, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE PLUMBING INSTALLATION AS SPECIFIED HEREIN. WORK IN THIS SECTION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:

- PLUMBING FIXTURES
- WATER HEATERS
- THERMOSTATIC MIXING VALVE

WHENEVER THE WORDS "CONTRACTOR" APPEAR ON PLUMBING DRAWINGS OR IN THESE SPECIFICATIONS, IT SHALL REFER TO THE PLUMBING SUB-CONTRACTOR. WHENEVER THE WORD "PROVIDE" APPEARS IN THESE DOCUMENTS, IT SHALL BE INTERPRETED TO MEAN "FURNISH AND INSTALL".

COORDINATE ALL WORK WITH THE OWNER TO MINIMIZE INTERRUPTION OF BUILDING OPERATION.

COORDINATE THE INSTALLATION OF PLUMBING ITEMS WITH THE SCHEDULES FOR WORK OF ALL OTHER TRADES TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

THIS CONTRACTOR SHALL VERIFY AND SATISFY HIMSELF THAT ALL EQUIPMENT FURNISHED WILL PROPERLY FIT IN THE SPACE PROVIDED, THAT IT WILL FUNCTION PROPERLY, AND THAT ALL PARTS OF EQUIPMENT REQUIRING SERVICE ARE READILY ACCESSIBLE.

ALL PIPING SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING WALLS AND FRAMING SYSTEM. ALL VERTICAL RUNS SHALL BE HELD AGAINST WALLS, COLUMNS, ETC., AS POSSIBLE TO PERMIT MAKING OF PIPE JOINTS.

CONTRACTOR SHALL PROVIDE A GUARANTEE IN WRITTEN FORM STATING THAT ALL WORK SHALL BE FREE OF DEFECTS OR ERRORS, AND ALL EQUIPMENT, MATERIALS, OR PARTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S FINAL ACCEPTANCE AND SHALL REPAIR, REVISE OR REPLACE AT NO COST TO THE OWNER ANY SUCH DEFECTS OCCURRING WITHIN THE GUARANTEE PERIOD.

CONTRACTOR SHALL ALSO STATE IN WRITTEN FORM THAT ANY ITEMS OR OCCURRENCES ARISING DURING THE GUARANTEE PERIOD WILL BE ATTENDED TO IN A TIMELY MANNER AND WILL IN NO CASE EXCEED THREE (3) WORKING DAYS FROM DATE OF NOTIFICATION BY OWNER.

PROVIDE A COMPLETE INSTALLATION IN CONFORMANCE WITH THE FOLLOWING STANDARDS:
AGA: AMERICAN GAS ASSOCIATION
ASPE: AMERICAN SOCIETY OF PLUMBING ENGINEERS
NFPA: NATIONAL FIRE PROTECTION ASSOCIATION
STATEWIDE BUILDING CODE
INTERNATIONAL PLUMBING CODE

CONTRACTOR SHALL DO ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF THIS WORK. ALL OPENINGS IN WALLS, FLOORS OR CEILINGS SHALL BE PROPERLY SEALED AND RESTORED IN KIND. FLASH AND COUNTERFLASH AT ROOF OPENINGS.

ALL EQUIPMENT SHALL BE LISTED AND LABELED, UNLESS OTHERWISE APPROVED.

ALL WIRING SHALL MEET THE REQUIREMENTS LISTED IN THE ELECTRICAL SPECIFICATIONS. ALL CONTROL AND INTERLOCK WIRING AND CONDUIT (120V OR 24V) SHALL BE BY THE PLUMBING CONTRACTOR.

EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE CONDITIONS OF LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THIS CODE.

CLEANING: THIS CONTRACTOR SHALL REMOVE FROM THE PREMISES ALL ACCUMULATION OF DIRT, DEBRIS, WASTE MATERIALS AND RUBBISH CAUSED BY HIS EMPLOYEES OR WORK, AT LEAST ONCE A WEEK, EXCEPT THAT COMBUSTIBLE MATERIALS SHALL BE REMOVED DAILY.

DURING PROGRESS OF THE WORK, MAINTAIN ON DRAWINGS AT THE SITE, AN ACCURATE RECORD OF THE INSTALLATION OF THE MECHANICAL SYSTEM, INDICATING ALL ITEMS WHICH HAVE BEEN CHANGED OR ADDED.

APPLY FOR AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY LOCAL AUTHORITY, FOR THE APPROVAL OF WORK.

A CERTIFICATE OF FINAL INSPECTION AND APPROVAL SHALL BE SUBMITTED WITH THE CONTRACTOR'S REQUEST FOR FINAL PAYMENT. NO FINAL PAYMENT WILL BE APPROVED WITHOUT THIS CERTIFICATE.

GUARANTEE ALL WORKMANSHIP, MATERIAL, AND EQUIPMENT AND REPLACE ANY FOUND DEFECTIVE WORK WITHOUT COST TO THE OWNER, FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE.

EXISTING CONDITIONS

DO NOT REUSE REMOVED PLUMBING MATERIALS UNLESS SPECIFICALLY INDICATED ON DRAWINGS. EXISTING SYSTEMS MAY BE UTILIZED ONLY TO THE EXTENT INDICATED ON DRAWINGS.

IF REQUIRED TO ACCOMMODATE CONSTRUCTION RELATED ACTIVITIES TEMPORARILY REMOVE, STORE IN PROTECTED LOCATION ON SITE, AND REINSTALL CONFLICTING PLUMBING EQUIPMENT, OR DEVICES THAT ARE TO REMAIN OR TO BE RELOCATED.

WHERE THE TERM “DEMOLITION” IS USED HEREIN, INTERPRET IT TO MEAN “DEMOLITION” OR “SELECTIVE DEMOLITION” WHERE APPLICABLE.

PROVIDE PLUMBING DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT DEMOLITION AND AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION. DISCONNECT AND REMOVE WORK TO BE ABANDONED, AND AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES, IN AREAS AFFECTED BY THIS PROJECT.

LEGALLY DISPOSE OF MATERIALS TO SALVAGED OR RETAINED.

22 05 03 SUBMITTALS FOR PLUMBING

DESIGN BASIS MANUFACTURERS OF MATERIAL AND EQUIPMENT ARE SPECIFIED AND PLANS ARE DETAILED ACCORDING TO THIS MATERIAL. CONTRACTOR SHALL BASE HIS BID ON FURNISHING AND INSTALLING THIS MAKE OF MATERIAL AND EQUIPMENT.

SHOP DRAWINGS SHALL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: MAKE, MODEL NUMBER, DIMENSIONS, ELECTRICAL CHARACTERISTICS (RATING). SHOP DRAWINGS SHALL BEAR NAME OF PROJECT AND LOCATION.

THE MAKE, TYPE, AND FINISH OF ALL MATERIALS, EQUIPMENT AND APPARATUS SHALL BE APPROVED BY THE ENGINEER/ ARCHITECT IN WRITING BEFORE THE CONTRACTOR INSTALLS IT. ANY SUBSTITUTION FOR ANY SPECIFIED EQUIPMENT OR MATERIAL SHALL FIRST BY APPROVED BY THE ENGINEER/ARCHITECT IN WRITING.

SUBMIT SHOP DRAWINGS ON THE FOLLOWING ITEMS FOR REVIEW BEFORE FABRICATION OR SHIPMENT:

- PLUMBING FIXTURES
- WATER HEATERS
- THERMOSTATIC MIXING VALVE

MAINTENANCE MANUALS: FURNISH THREE FINAL COPIES, INCLUDING WIRING DIAGRAMS, MAINTENANCE AND OPERATING INSTRUCTIONS, PARTS LISTINGS, AND COPIES OF OTHER SUBMITTALS INDICATED FOR INCLUSION.

ANY CHANGES TO ITEMS SPECIFIED MUST BE SUBMITTED AS A SUBSTITUTION, WITH COMPLETE DOCUMENTATION OF PRICE DIFFERENTIAL AND EQUIPMENT DETAILS.

1. CERTAIN MAKES OF MATERIALS AND EQUIPMENT ARE SPECIFIED AND DRAWINGS ARE DETAILED ACCORDING TO THIS MATERIAL. CONTRACTOR SHALL BASE HIS BID ON FURNISHINGS AND INSTALLING THE SPECIFIED MAKE AND MODEL OR THE "EQUIVALENT" MODEL OF ANOTHER OF THE SPECIFIED MANUFACTURERS WHICH MEETS ALL THE QUALIFICATIONS OF THE SPECIFIED ITEMS.

2. WHERE MORE THAN ONE MAKE OF MATERIAL OR EQUIPMENT IS SPECIFIED, THE CONTRACTOR SHALL STATE IN HIS BID WHICH MAKE HE PROPOSES TO FURNISH. SHOP DRAWING APPROVAL SHALL BE OBTAINED PRIOR TO SHIPMENT OF EQUIPMENT.

3. "EQUIVALENT" MATERIALS AND EQUIPMENT ARE THOSE OF MANUFACTURER WHICH MEET THE SAME STANDARDS OF PERFORMANCE, HAVE EQUAL OR BETTER MATERIALS OF CONSTRUCTION, AND EQUAL OR BETTER MAINTENANCE CHARACTERISTICS. ALL EQUIVALENTS MUST FIT THE SPACE PROVIDED IN THE BUILDING STRUCTURE. WHERE THE USE OF EQUIVALENTS RESULTS IN CHANGES, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR SUCH CHANGES AND ANY COSTS RESULTING FROM THEM.

4. IF THE CONTRACTOR INTENDS TO USE EQUIPMENT OR MATERIALS NOT SPECIFIED, HE MUST RECEIVE APPROVAL FROM THE ENGINEER/ARCHITECT PRIOR TO THE AWARD OF THE CONTRACT. THIS PRIOR APPROVAL ONLY PERMITS SUBMITTAL OF A PARTICULAR MANUFACTURER'S EQUIPMENT IN GENERAL. THE SPECIFIED ITEM TO BE USED MUST AGAIN BE SUBMITTED FOR FINAL REVIEW AS SPECIFIED UNDER "SHOP DRAWINGS".

22 05 23 GENERAL DUTY VALVES

GENERAL

PROVIDE STOPS OR ISOLATION VALVES ON DOMESTIC WATER SUPPLIES TO ISOLATE HOT AND COLD WATER TO EACH FIXTURE, INCLUDING ALL EQUIPMENT AND EQUIPMENT PROVIDED BY OTHERS.

FIXTURES, ITEM OR UNITS FURNISHED BY THE MANUFACTURER WITH INTEGRAL STOPS OR STOPS SPECIFIED WITH THE FIXTURE ARE CONSIDERED TO BE PROPERLY VALVED AT THE FIXTURES.

ACCESS SHALL BE PROVIDED TO ALL VALVES.

VALVES ON DOMESTIC WATER PIPING SHALL BE BALL VALVES.

[BALL VALVES - 1 INCH AND SMALLER: 2-PIECE BODY, 600 PSI CWP, 150 PSI SWP, CAST BRONZE BODY, FULL PORT, TEFLON SEATS, BLOWOUT-PROOF STEM, ADJUSTABLE PACKING GLAND, CHROME PLATED BRONZE BALL, WITH SCREWED ENDS, AND VINYL-COVERED STEEL HANDLE. PROVIDE SOLDER ENDS. PROVIDE EXTENDED VALVE STEMS FOR VALVES USED ON INSULATED LINES. PROVIDE NIBCO SERIES 585-70-NS.]

[BALL VALVES: 1-1/4 INCH TO 3 INCH: 3-PIECE BODY, 600 PSI CWP, 150 PSI SWP, CAST BRONZE BODY, CONVENTIONAL PORT, TEFLON SEATS, BLOWOUT-PROOF STEM, ADJUSTABLE PACKING GLAND, CHROME PLATED BRONZE BALL, SCREWED ENDS, AND VINYL-COVERED STEEL HANDLE. PROVIDE SOLDER ENDS. PROVIDE EXTENDED VALVE STEMS FOR VALVES USED ON INSULATED LINES. PROVIDE TO NIBCO SERIES 590-Y.]

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
AMERICAN VALVE, INC.
CONBRACO INDUSTRIES, INC.; APOLLO VALVES.
CRANE CO.; CRANE VALVE GROUP; CRANE VALVES.
HAMMOND VALVE.
MILWAUKEE VALVE COMPANY.
NIBCO INC.
RED-WHITE VALVE CORPORATION.
WATTS REGULATOR CO.; A DIVISION OF WATTS WATER TECHNOLOGIES, INC

CHECK VALVES

SWING CHECK VALVES - CLASS 125, CAST BRONZE BODY AND CAP, HORIZONTAL SWING, Y-PATTERN, WITH A BRONZE DISC, AND HAVING THREADED OR SOLDER ENDS. PROVIDE SOLDER ENDS FOR DOMESTIC HOT AND COLD WATER SERVICE. PROVIDE NIBCO S-413.

22 05 29 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

GENERAL

SUPPORT ALL PIPING AND EQUIPMENT BY HANGERS OR BRACKETS. PROVIDE STRUCTURAL STEEL MEMBERS WHERE REQUIRED TO SUPPORT PIPING AND EQUIPMENT. NO PORTION OF PIPING OR VALVES SHALL BE SUPPORTED BY EQUIPMENT.

DELEGATED DESIGN

FOR EQUIPMENT SUPPORTS, THIS CONTRACTOR SHALL RETAIN A QUALIFIED PROFESSIONAL ENGINEER TO PROVIDE SUPPORT CALCULATIONS OF STATIC AND DYNAMIC LOADING DUE TO OPERATING EQUIPMENT WEIGHT, SEISMIC AND WIND FORCES. THE SIGNED AND SEALED CALCULATIONS AND DETAILS SHALL BE SUBMITTED BY THE RETAINED PROFESSIONAL ENGINEER.

PIPING

PROVIDE HANGERS, SUPPORTS, CLAMPS AND ATTACHMENTS TO SUPPORT PIPING PROPERLY FROM BUILDING STRUCTURE. ARRANGE FOR GROUPING OF PARALLEL RUNS OF HORIZONTAL PIPING SUPPORTED TOGETHER ON FIELD-FABRICATED, HEAVY-DUTY TRAPEZE HANGERS WHERE POSSIBLE. WHERE PIPING OF VARIOUS SIZES IS SUPPORTED TOGETHER BY TRAPEZE HANGERS, SPACE HANGERS FOR SMALLEST PIPE SIZE OR PROVIDE INTERMEDIATE SUPPORTS FOR SMALLER DIAMETER PIPE AS SPECIFIED ABOVE FOR INDIVIDUAL PIPE HANGERS.

INDIVIDUAL PIPE HANGERS TO BE ANVIL INTERNATIONAL CLEVIS HANGER FIG. 260, ELCEN.

ROD SIZES TO CONFORM TO THE FOLLOWING: 3/8" RODS FOR 3/4" TO 2" PIPE; 1/2" RODS FOR 2-1/2" TO 3" PIPE; 5/8" RODS FOR 4" TO 5" PIPE; 3/4" RODS FOR 6" PIPE.

HANGERS SHALL BE SIZED TO ALLOW INSULATION TO PASS THROUGH UNOBSTRUCTED, PROVIDE SADDLE SUPPORT FOR INSULATION AT ALL HANGERS.

HANGER SPACING FOR STEEL PIPING UNLESS OTHERWISE NOTED IS TO BE AS FOLLOWS: 1-1/4” OR SMALLER TO BE 8' ON CENTER; 1-1/2" TO 2" TO BE 10' ON CENTER; 2-1/2" AND LARGER TO BE 12' ON CENTER AND AT EACH CHANGE OF DIRECTION. HANGER SPACING FOR COPPER PIPE TO BE AS FOLLOWS: 1" OR SMALLER 6' ON CENTER; 1-1/4" OR LARGER 8' ON CENTER.

HANGER SPACE FOR CPVC AND PVC PIPE TO BE AS FOLLOWS: 1” AND SMALLER TO BE 3' ON CENTER; 1-1/4” OR LARGER TO BE 4' ON CENTER.

PIPING SHALL ALSO BE SUPPORTED AT EACH CHANGE IN DIRECTION, VALVES AND EQUIPMENT.

22 05 53 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PIPING

PROVIDE SELF-ADHESIVE PIPE LABELS WITH WHITE BACKGROUND AND BLACK LETTERING, CONTACT TYPE WITH PERMANENT ADHESIVE BACKING. INCLUDE IDENTIFICATION OF PIPING SERVICE USING SAME DESIGNATIONS OR ABBREVIATIONS AS USED ON THE DRAWINGS AND AN ARROW INDICATING FLOW DIRECTION.

EQUIPMENT

PROVIDE SELF-ADHESIVE PLASTIC EQUIPMENT LABELS WITH WHITE BACKGROUND AND BLACK LETTERING, CONTACT TYPE WITH PERMANENT ADHESIVE BACKING, 160 DEGREE F TEMPERATURE. INCLUDE EQUIPMENT'S DRAWING DESIGNATION AND SPECIFICATION SECTION NUMBER WHERE EQUIPMENT IS SPECIFIED.

22 07 19 PLUMBING SYSTEM INSULATION

GENERAL

INSULATION SHALL BE LISTED AND LABELED PER ASTM E 84 FOR PLENUM INSTALLATIONS EMPLOYING SLIP ON TECHNIQUES.

PROVIDE INSULATION MATERIALS, ACCESSORIES, AND FINISHES WITH SMOOTH, STRAIGHT, AND EVEN SURFACES; FREE OF VOIDS THROUGHOUT THE LENGTH OF PIPING INCLUDING FITTINGS, VALVES, AND SPECIALTIES.

SURFACE PREPARATION: CLEAN AND DRY SURFACES TO RECEIVE INSULATION. REMOVE MATERIALS THAT WILL ADVERSELY AFFECT INSULATION APPLICATION.

PIPING SYSTEMS REQUIRING INSULATION

INSULATE DOMESTIC COLD WATER PIPING, ASSOCIATED FITTINGS AND VALVES WITH FLEXIBLE ELASTOMERIC 1/2” WALL THICKNESS INSULATION.

INSULATE DOMESTIC HOT WATER PIPING, ASSOCIATED FITTINGS AND VALVES WITH 1” THICK FLEXIBLE ELASTOMERIC, 1” THICK MINERAL WOOL, 1-1/2” THICK FIBERGLASS INSULATION OR PER LOCAL ENERGY CODE, WHICHEVER GREATER.

INSULATE DOMESTIC HOT WATER RETURN PIPING, ASSOCIATED FITTINGS AND VALVES WITH 1” WALL THICKNESS INSULATION OR PER LOCAL ENERGY CODE, WHICHEVER GREATER.

INSULATE WASTE PIPING ABOVE CEILINGS THAT RECEIVE CONDENSATE WITH 1/2" WALL THICKNESS INSULATION.

INSULATE EXPOSED SANITARY DRAINS, DOMESTIC WATER, DOMESTIC HOT WATER, AND STOPS FOR PLUMBING FIXTURES FOR PEOPLE WITH DISABILITIES.

FLEXIBLE ELASTOMERIC INSULATION

CLOSED-CELL, SPONGE- OR EXPANDED-RUBBER MATERIALS. COMPLY WITH ASTM C 534, TYPE I FOR TUBULAR MATERIALS AND TYPE II FOR SHEET MATERIALS.

ADHESIVES, SEALERS, AND PROTECTIVE FINISHES: AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
AEROFLEX USA, INC.; AEROCEL.
ARMACELL LLC; AP ARMAFLEX.
K-FLEX USA; INSUL-LOCK, INSUL-TUBE, AND K-FLEX LS.

FIBERGLASS INSULATION

FIBERGLASS PIPING INSULATION: ASTM C 547, CLASS 1

ENCASE PIPE FITTINGS INSULATION WITH ONE-PIECE PRE-MOLDED PVC FITTING COVERS.

VAPOR BARRIER MATERIAL: PAPER-BACKED ALUMINUM FOIL, EXCEPT AS OTHERWISE INDICATED, STRENGTH AND PERMEABILITY RATING EQUIVALENT TO ADJOINING PIPE INSULATION JACKETING.

STAPLES, BANDS, WIRES, AND CEMENT: AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.

ADHESIVES, SEALERS, AND PROTECTIVE FINISHES: AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
ARMSTRONG WORLD INDUSTRIES, INC.
OWENS-CORNING FIBERGLASS CORP.
KEENE CORP.
CERTAINTEED.
JOHNS MANVILLE.

ADHESIVES

MATERIALS SHALL BE COMPATIBLE WITH INSULATION MATERIALS, JACKETS, AND SUBSTRATES AND FOR BONDING INSULATION TO ITSELF AND TO SURFACES TO BE INSULATED, UNLESS OTHERWISE INDICATED.

INSULATION FOR HANDICAP ACCESSIBLE FIXTURES

ALL HANDICAP LAVATORY P-TRAP AND ANGLE STOP ASSEMBLIES SHALL BE INSULATED WITH TRAP WRAP PROTECTIVE KIT MANUFACTURED BY PROFLO MODEL PF202WH. ABRASION RESISTANT, ANTI-MICROBIAL VINYL EXTERIOR COVER SHALL BE SMOOTH. FOR TRAPS, THE INSULATION SHALL HAVE A CLEANOUT NUT CAP TO ALLOW SERVICE TO THE TRAP WITHOUT DISASSEMBLY. FOR STOPS, THE INSULATION SHALL HAVE A LOCK LID THAT PREVENTS TAMPERING BUT ALLOWS ACCESS WITHOUT REMOVAL OF THE INSULATION. FASTENERS SHALL REMAIN SUBSTANTIALLY OUT OF SIGHT.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS:
PROFLO
TRUEBRO
PLUMBEREX

22 11 16 DOMESTIC WATER PIPING

GENERAL

INSTALL PIPING CONCEALED FROM VIEW UNLESS NOTED OTHERWISE, FREE OF SAGS AND BENDS. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION. CLEAN AND DISINFECT POTABLE DOMESTIC WATER PIPING USING APPROVED PROCEDURES BY AUTHORITIES HAVING JURISDICTION.

INSTALL AT RIGHT ANGLES; DIAGONAL RUNS ARE PROHIBITED UNLESS OTHERWISE SHOWN. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL. COORDINATE ALL PIPING WITH ALL OTHER TRADES.

PROVIDE WATER PRESSURE REGULATORS WHERE NECESSARY TO LIMIT THE INCOMING WATER PRESSURE TO 80 PSI INSIDE THE BUILDING.

DOMESTIC WATER PIPING ABOVE GROUND:

HARD COPPER TUBE, ASTM B 88, TYPE L; WROUGHT-COPPER, SOLDER-JOINT FITTINGS; AND SOLDERED JOINTS.

SOLDER FILLER METALS: ASTM B 32, LEAD-FREE ALLOYS.

FLUX: ASTM B 813, WATER FLUSHABLE.

TYPE “L”; COPPER PRESSURE-SEAL JOINT; AND PRESSURE-SEAL JOINT SYSTEMS.

CATHODIC PROTECTION

PROVIDE DIELECTRIC INSULATION AT POINTS WHERE COPPER OR BRASS PIPE COMES IN CONTACT WITH FERROUS PIPING, REINFORCING STEEL OR OTHER DISSIMILAR METAL IN STRUCTURE.

22 11 19 DOMESTIC WATER PIPING SPECIALTIES

REDUCED PRESSURE BACKFLOW PREVENTERS

BACKFLOW PREVENTER (2” AND SMALLER) - PROVIDE A REDUCED PRESSURE BACKFLOW PREVENTER ON WATER SERVICE MAIN WHERE THE WATER SERVICE ENTERS THE BUILDING. REDUCED PRESSURE BACKFLOW PREVENTER SHALL BE SIZED EQUAL TO THE SIZE OF THE WATER SERVICE AND CONFORM TO ASSE 1013. PIPE BACKFLOW PREVENTER DISCHARGE TO APPROVED PLACE OF DISPOSAL.

DUAL CHECK VALVE BACKFLOW PREVENTER

PROVIDE A DUAL CHECK VALVE BACKFLOW PREVENTER THAT COMPLIES WITH ASSE 1022 AT CONNECTION OF DOMESTIC WATER SUPPLY TO ANY PERMANENTLY CONNECTED CARBONATED BEVERAGE DISPENSER OR WHERE INDICATED IN THE CONTRACT DOCUMENTS.

PROVIDE A DUAL CHECK VALVE BACKFLOW PREVENTER THAT COMPLIES WITH ASSE 1024 AT CONNECTION OF DOMESTIC WATER SUPPLY TO ANY POTABLE WATER DISPENSING EQUIPMENT SUCH AS ICE MAKERS, COFFEE MACHINES, TEA MACHINES, ESPRESSO MACHINES OR WHERE INDICATED IN THE CONTRACT DOCUMENTS.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
AMES FIRE & WATERWORKS; A DIVISION OF WATTS WATER TECHNOLOGIES, INC.
CONBRACO INDUSTRIES, INC.
FEBCO; A DIVISION OF WATTS WATER TECHNOLOGIES, INC.
FLOMATIC CORPORATION.
WATTS; A DIVISION OF WATTS WATER TECHNOLOGIES, INC.; WATTS REGULATOR COMPANY.
ZURN INDUSTRIES, LLC; PLUMBING PRODUCTS GROUP; WILKINS WATER CONTROL PRODUCTS.

BALANCING VALVES

PROVIDE BALANCING VALVES WHERE REQUIRED FOR PROPER BALANCING OF WATER SYSTEMS AS SHOWN ON THE CONTRACT DOCUMENTS.

BALANCING VALVES SHALL BE RED-WHITE VALVE CORPORATION MODEL 9517AB (NPT) OR MODEL 9519 (SOLDER). VALVE SHALL HAVE BRASS BODY, GLOBE VALVE REGULATION AND ISOLATION PROPERTIES, FIXED ORIFICE DESIGN FOR PRECISE MEASUREMENT, INTEGRAL MEMORY STOP TO ENSURE REPEATABLE SETTING, FULL SHUTOFF WITHOUT AFFECTING MEMORY SETTINGS, HIGH AND LOW PRESSURE METERING POINTS, PRECISION INDICATOR WINDOWS, RUGGED TOP SET HAND-WHEEL ASSEMBLY, PRESSURE RATING OF 300 PSI, AND TEMPERATURE RATING OF 15 DEG. F TO 260 DEG. F.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
CRANE CO.; CRANE VALVE GROUP; CRANE VALVES.
HAMMOND VALVE.
MILWAUKEE VALVE COMPANY.
NIBCO INC.
WATTS
RED-WHITE VALVE CORP.

VACUUM BREAKERS

VACUUM BREAKERS SHALL BE WATTS MODEL LF288A FOR PIPING CONNECTIONS OR WATTS LF8 SERIES FOR HOSE CONNECTIONS. VACUUM BREAKERS SHALL COMPLY WITH ASSE 1001 FOR PIPED CONNECTIONS, ASSE 1011 FOR HOSE CONNECTIONS, BRONZE BODY AND THREADED CONNECTIONS WITH ROUGH BRONZE FINISH.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND LIMITED TO, THE FOLLOWING:
MIFAB, INC.
PRIER PRODUCTS, INC.
WATTS; A DIVISION OF WATTS WATER TECHNOLOGIES, INC.; WATTS REGULATOR COMPANY.
ZURN INDUSTRIES, LLC; PLUMBING PRODUCTS GROUP; LIGHT COMMERCIAL PRODUCTS.
ZURN INDUSTRIES, LLC; PLUMBING PRODUCTS GROUP; WILKINS WATER CONTROL PRODUCTS

PRESSURE REDUCING VALVES

PROVIDE PRESSURE REDUCING VALVE TO REGULATE INCOMING DOMESTIC WATER PRESSURE IN EXCESSIVE OF 80 PSIG. PRESSURE REDUCING VALVE SHALL BE WATTS MODEL LF223S, COMPLY WITH ASSE 1003, INITIAL WORKING PRESSURE OF 300 PSIG, INTEGRAL STRAINER, LEAD-FREE BRASS BODY WITH THREADED CONNECTIONS.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND LIMITED TO, THE FOLLOWING:
CASH ACME; A DIVISION OF RELIANCE WORLDWIDE CORPORATION.
CONBRACO INDUSTRIES, INC.
HONEYWELL INTERNATIONAL INC.
WATTS; A DIVISION OF WATTS WATER TECHNOLOGIES, INC.; WATTS REGULATOR COMPANY.
ZURN INDUSTRIES, LLC; PLUMBING PRODUCTS GROUP; WILKINS WATER CONTROL PRODUCTS.

STRAINERS

PROVIDE LEAD-FREE WYE-PATTERN STRAINER WATTS MODEL LFS777S RATED FOR 125 PSIG MINIMUM, BRONZE BODY, THREADED CONNECTIONS, STAINLESS STEEL SCREEN WITH ROUND PERFORATIONS OF 0.020 INCH AND PIPE PLUG DRAIN. PROVIDE STRAINERS ON SUPPLY SIDE OF EACH PRESSURE REDUCING VALVE, SOLENOID VALVE AND PUMP.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND LIMITED TO, THE FOLLOWING:
MIFAB, INC.
PRIER PRODUCTS, INC.
WATTS; A DIVISION OF WATTS WATER TECHNOLOGIES, INC.; WATTS REGULATOR COMPANY.
ZURN INDUSTRIES, LLC; PLUMBING PRODUCTS GROUP; LIGHT COMMERCIAL PRODUCTS.
ZURN INDUSTRIES, LLC; PLUMBING PRODUCTS GROUP; WILKINS WATER CONTROL PRODUCTS

TRAP-SEAL PRIMER DEVICE

THE PLUMBING CONTRACTOR SHALL PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS. TRAP PRIMER SHALL BE MIFAB MR-500 TRAP PRIMER VALVE. PROVIDE ACCESS PANEL IN WALL OR CEILING FOR ALL CONCEALED TRAP PRIMERS. INSTALL TRAP SEAL PRIMER VALVES WITH OUTLET PIPING PITCHED DOWN TOWARD DRAIN TRAP A MINIMUM OF 1% AND CONNECT TO FLOOR DRAIN BODY, TRAP OR INLET FITTING.COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND LIMITED TO, THE FOLLOWING:
MIFAB, INC.
PRECISION PLUMBING PRODUCTS, INC.
SIOUX CHIEF MANUFACTURING COMPANY, INC.
SMITH, JAY R. MFG. CO.; DIVISION OF SMITH INDUSTRIES, INC.
WATTS; A DIVISION OF WATTS WATER TECHNOLOGIES, INC.; WATTS REGULATOR COMPANY.

WATER TAB METERS

DISPLACEMENT-TYPE WATER METERS:

PLUMBING CONTRACTOR TO COORDINATE WITH OWNER FOR EXACT MODEL AND MANUFACTURER.

DESCRIPTION: DISPLACEMENT-TYPE WATER METER COMPLYING WITH AWWA C700.

REMOTE REGISTRATION SYSTEM: DIRECT-READING TYPE COMPLYING WITH AWWA C706; MODIFIED WITH SIGNAL-TRANSMITTING ASSEMBLY, LOW-VOLTAGE CONNECTING WIRING, AND REMOTE REGISTER ASSEMBLY AS REQUIRED BY LANDLORD OR OWNER. MOUNT READER IN AN ACCESSIBLE LOCATION.

WATER HAMMER ARRESTERS

PROVIDE WATER-HAMMER ARRESTERS IN WATER PIPING ACCORDING TO PDI-WH 201.

STANDARD: ASSE 1010 OR PDI-WH 201.

TYPE: METAL BELLOWS OR COPPER TUBE WITH PISTON.

SIZE: ASSE 1010, SIZES AA AND A THROUGH F, OR PDI-WH 201, SIZES A THROUGH F.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
AMTROL, INC.
JOSAM COMPANY.
PRECISION PLUMBING PRODUCTS, INC.
SIOUX CHIEF MANUFACTURING COMPANY, INC.
SMITH, JAY R. MFG. CO.; DIVISION OF SMITH INDUSTRIES, INC.
WATTS DRAINAGE

22 16 13 NATURAL GAS PIPING SYSTEMS

GENERAL

PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING GAS PIPING RUN-OUTS TO ALL GAS-FIRED EQUIPMENT, INCLUDING EQUIPMENT SUPPLIED BY THE HVAC AND ELECTRIC CONTRACTORS. PIPING SHALL BE INSTALLED FULL-SIZE (AS INDICATED ON THE DRAWINGS) TO EACH UNITS' GAS INLET CONNECTION, BURNER, REGULATOR, ETC. PLUMBING SUBCONTRACTOR SHALL PROVIDE GAS COCK AND MAKE FINAL CONNECTIONS. CONNECTIONS TO EACH GAS-FIRED EQUIPMENT ITEM SHALL INCLUDE A DRIP LEG AND SHUTOFF GAS COCK. COMPLY WITH EQUIPMENT MANUFACTURER'S INSTRUCTION. FOR CONNECTIONS TO GAS-FIRED ROOFTOP EQUIPMENT, PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE ROOF PENETRATION AND SHALL INSTALL THE GAS PIPING THROUGH THE ROOF IN A LOCATION THAT HAS BEEN COORDINATED WITH THE HVAC CONTRACTOR.

BUILDING DISTRIBUTION PIPING:

ALL PIPING FROM METER/REGULATOR TO GAS FIRED EQUIPMENT CONNECTIONS SHALL BE BLACK STEEL.

STEEL PIPE: ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B.

PIPE SIZE 2” AND SMALLER: MALLEABLE-IRON THREADED FITTINGS

MALLEABLE-IRON THREADED FITTINGS: ASME B16.3, CLASS 150, STANDARD PATTERN.

PIPE SIZE 2-1/2” AND LARGER: WROUGHT-STEEL WELDING FITTINGS FOR BUTT WELDING AND SOCKET WELDING.

WROUGHT-STEEL WELDING FITTINGS: ASTM A 234/A 234M FOR BUTT WELDING AND SOCKET WELDING.

FIELD PREPARE AND PAINT EXTERIOR NATURAL GAS PIPING, FITTINGS, ETC… WITH ALKYD ANTICORROSIVE METAL PRIMER AND TOPCOAT WITH EXTERIOR ALKYD ENAMEL FLAT. COLOR TO MATCH BUILDING EXTERIOR AND APPROVED BY THE ARCHITECT

GENERAL DUTY VALVES:

METALLIC VALVES 2 INCHES AND SMALLER SHALL COMPLY WITH ASME B16.33, COLD WORKING PRESSURE OF 125 PSIG.

METALLIC VALVES LARGER THAN 2 INCHES SHALL COMPLY WITH ASME B16.38, COLD WORKING PRESSURE OF 125 PSIG.

PROVIDE ONE-PIECE BALL VALVES WITH BRONZE BODY, CHROME-PLATED BRASS BALL, BLOWOUT PROOF STEM AND SEAT, AND BRONZE TRIM COMPLYING WITH MSS SP-110.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND LIMITED TO, THE FOLLOWING:
BRASSCRAFT MANUFACTURING COMPANY; A MASCO COMPANY.
CONBRACO INDUSTRIES, INC.; APOLLO DIV.
LYALL, R. W. & COMPANY, INC.
MCDONALD, A. Y. MFG. CO.
PERFECTION CORPORATION; A SUBSIDIARY OF AMERICAN METER COMPANY.

SOLENOID VALVES

PROVIDE BRASS OR ALUMINUM SOLENOID VALVE WITH NITRILE RUBBER SEATS AND DISCS, STAINLESS STEEL SPRINGS, 120 VOLT, 60 HZ, CLASS B, CONTINUOUS DUTY MOLDED REPLACEABLE COIL, VISUAL POSITION INDICATOR. PROVIDE NEMA ICS 6, TYPE 4 COIL ENCLOSURE. VALVE WILL BE NORMALLY OPEN, FAIL SAFE CLOSED.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND LIMITED TO, THE FOLLOWING:
ASCO POWER TECHNOLOGIES, LP; DIVISION OF EMERSON.
DUNGS, KARL, INC.
ECLIPSE COMBUSTION, INC.
GOYEN VALVE CORP.; TYCO ENVIRONMENTAL SYSTEMS.
MAGNATROL VALVE CORPORATION.
WATTS REGULATOR CO.; DIVISION OF WATTS WATER TECHNOLOGIES, INC.

PRESSURE REGULATORS:

PROVIDE PRESSURE REGULATORS TO CONFORM WITH ANSI Z21.80, CAST IRON OR DIE-CAST ALUMINUM BODY, INTERCHANGEABLE ZINC-PLATED STEEL SPRINGS AND DIAPHRAGM PLATE, SINGLE PORT, SELF-CONTAINED REGULATOR WITH ORIFICE NO LARGER THAN REQUIRED AT MAXIMUM PRESSURE INLET AND NO PRESSURE SENSING PIPING EXTERNAL TO THE REGULATOR.

PRESSURE REGULATOR SHALL MAINTAIN DISCHARGE PRESSURE SETTING DOWNSTREAM, AND NOT EXCEED 150 PERCENT OF DESIGN DISCHARGE PRESSURE AT SHUTOFF.

OVERPRESSURE PROTECTION DEVICE: FACTORY MOUNTED ON PRESSURE REGULATOR.

REGULATOR SHALL INCLUDE VENT LIMITING DEVICE, INSTEAD OF VENT CONNECTION AND PIPING, IF APPROVED BY AUTHORITIES HAVING JURISDICTION.

NATURAL GAS METERS:

SERVICE METERS SHALL COMPLY WITH THE REQUIREMENTS OF THE UTILITY SUPPLYING GAS TO THE FACILITY.

22 13 16 SANITARY, WASTE AND VENT PIPING SYSTEM

GENERAL

PROVIDE A COMPLETE SOIL, WASTE AND VENT SYSTEM IN THE BUILDING AND ON THE SITE AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.

ABOVE GROUND SOIL, WASTE AND VENT PIPING WITHIN BUILDINGS INCLUDING SOIL STACKS, VENT STACKS, HORIZONTAL BRANCHES, TRAPS, AND CONNECTIONS TO FIXTURES AND DRAINS.

UNDERGROUND BUILDING DRAIN PIPING INCLUDING MAINS, BRANCHES, TRAPS, CONNECTIONS TO FIXTURES AND DRAINS, AND CONNECTIONS TO STACKS, TERMINATING AT CONNECTION TO EXISTING SANITARY SEWER.

INTERIOR PIPING

LINE SHALL BE SCHEDULE 40 CELLULAR-CORE PVC PIPE. ASTM F891, WITH ALL COMPATIBLE PVC SOCKET FITTINGS. MAKE TO ASTM D3311, DRAIN, WASTE, AND VENT PATTERNS.

PROVIDE DRAIN LINE TEMPERING KIT ON EQUIPMENT WHERE DISCHARGE WATER EXCEEDS 140°F. WHEN TEMPERING KIT IS NOT PERMISSIBLE, INSTALL 10' OF CAST IRON PIPING DOWNSTREAM OF EQUIPMENT'S WASTE RECEPTOR.

PIPING ALIGNMENT SHALL BE AS INDICATED ON THE DRAWINGS USING APPROVED WYE BRANCHES OR EIGHT BANDS FOR DIRECTION CHANGES AND SHALL BE SURELY SUPPORTED OR SECURED TO MAINTAIN SUCH ALIGNMENT.

PITCH OF SANITARY PIPING SHALL BE UNIFORM AT A MINIMUM OF 1/8" PER FOOT FOR BUILDING DRAINS, DRAINAGE PIPING GREATER THAN 2” AND AS INDICATED ON THE DRAWINGS. PITCH OF SANITARY PIPING SHALL BE UNIFORM AT A MINIMUM OF 1/4" PER FOOT FOR DRAINAGE PIPING 2” AND SMALLER AND AS INDICATED ON THE DRAWINGS.

PROTECTION SHALL BE GIVEN ALL FOOTINGS, OTHER STRUCTURAL ELEMENTS DURING UNDERGROUND WORK ADJACENT TO SUCH ITEMS. REFER TO ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS FOR LOCATIONS.

VENT ALL FIXTURES, CONNECT BRANCH VENTS TO MAIN VENT RISERS AT LEAST SIX INCHES ABOVE FLOOD RIM OF FIXTURES. PITCH VENT LINES BACK TO SOIL OR WASTE PIPE, FREE OF DROPS AND SAGS.

CLEANOUTS SHALL BE FULL SIZE OF PIPE UP TO 4", AND 4" FOR LARGER SIZES. FOR UNDERGROUND AND CONCEALED LINES, PROVIDE CLEANOUTS IN ACCESSIBLE POSITIONS AT EACH RIGHT ANGLE TURN AND AT INTERVALS NOT TO EXCEED FIFTY FEET. IN FLOORS, INSTALL FLUSH WITH FINISH FLOOR WITH EXTENSION PIPE FROM CLEANOUT WYE.

22 13 19 SANITARY WASTE PIPING SPECIALTIES

CLEANOUTS

FLOOR CLEANOUT: AS SCHEDULED.

WALL CLEANOUT: AS SCHEDULED.

PROVIDE A SANITARY TEE AND THREADED CAP CLEANOUT PLUG IN SUSPENDED WASTE PIPING.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
JOSAM
JAY R SMITH
WATTS REGULATOR CO.; A DIVISION OF WATTS WATER TECHNOLOGIES, INC
MIFAB
ZURN
SIOUX CHIEF

FLOOR DRAINS

JOSAM, SMITH, ZURN, WATTS, MIFAB, SIOUX CHIEF, OR OATEY

ALL FLOOR DRAINS LOCATED IN ROOMS WHICH HAVE TILE FLOORS SHALL HAVE SQUARE STRAINERS.

REFER TO PLUMBING FIXTURE AND EQUIPMENT SCHEDULE FOR PROJECT SPECIFIC FLOOR DRAIN MANUFACTURERS AND MODELS.

22 30 01 POINT OF USE THERMOSTATIC MIXING VALVES

GENERAL

THERMOSTATIC MIXING VALVES SHALL BE PROVIDED FOR ALL PUBLIC HAND WASHING SINKS AND LAVATORIES AND SHALL BE ASSE 1070 LISTED, LEAD FREE, SWEAT CONNECTIONS, 125 PSI OPERATING PRESSURE. MOUNT UNDER SINK OR LAVATORY. SET OUTLET TEMPERATURE OF THERMOSTATIC MIXING VALVE TO 110 DEGREES F.

POINT-OF USE THERMOSTATIC MIXING VALVES SHALL BE POWERS HYDROGUARD LFe480. ROUTE TEMPERED WATER TO HOT WATER SIDE OF SINK AND LAVATORIES.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
SYMMONS
LAWLER
LEONARD
POWERS
BRADLEY

22 33 00 COMMERCIAL GAS, DOMESTIC WATER HEATERS

TANKLESS

PROVIDE COMMERCIAL GAS TANKLESS WATER HEATER AS SCHEDULED. COMPLY WITH ANSI Z21.10.3 · CSA 4.3 STANDARD.

THE HEATER SHALL HAVE ¾ IN. MALE NPT WATER AND GAS CONNECTIONS. THE INLET GAS SUPPLY PRESSURES SHALL BE 4.0 IN. WC (MIN.) UP TO 10.5 IN. WC (MAX) FOR NG AND 8.0 IN. WC (MIN.) UP TO 14 IN. WC (MAX.) FOR LP. THE HEATER SHALL INCORPORATE AN INTEGRATED TEMPERATURE CONTROLLER THAT WILL PROVIDE DIAGNOSTIC INFORMATION, FAULT HISTORY, AND HEATER SET TEMPERATURE. THE HEATER SHALL OPERATE USING 120 V / 60 HZ POWER SOURCE. THE HEATER WILL INCORPORATE A FACTORY INSTALLED POWER CORD.

THE HEATER SHALL BE VENTED WITH 3” OR 4” DIAMETER SCHEDULE 40 PVC, CPVC, ABS, OR CATEGORY IV VENT PIPE WITH A LENGTH NOT TO EXCEED 70 FT. (EQUIVALENT) FOR 3” VENT OR 100 FT. (EQUIVALENT) FOR 4” VENT, TERMINATING HORIZONTALLY OR VERTICALLY. THE INTAKE PIPE MAY USE MATERIAL SUCH AS PVC, ABS, ALUMINUM, OR CATEGORY IV PIPE AND CANNOT EXCEED 70 FT. (EQUIVALENT) FOR 3” VENT OR 100 FT. (EQUIVALENT) FOR 4” VENT.

THE HEATER SHALL USE A COMMERCIAL-GRADE COPPER, FIN TUBE PRIMARY HEAT EXCHANGER WITH QUICK RELEASE BRASS OR BRONZE WATERWAYS. THE SECONDARY HEAT EXCHANGER SHALL BE CONSTRUCTED FROM STAINLESS STEEL 316L. THE HEATER SHALL BE CONTROLLED BY AN ON-BOARD SOLID-STATE PRINTED CIRCUIT BOARD WHICH USES THE FOLLOWING FACTORY INSTALLED COMPONENTS: THERMISTORS TO MONITOR WATER TEMPERATURE AND EXHAUST TEMPERATURE; A FLOW SENSOR TO MEASURE FLOW RATE; A FLAME SENSOR TO MONITOR COMBUSTION; AN AIR-FUEL RATIO ROD TO MEASURE AND ADJUST AIR INPUT IN ORDER TO MAINTAIN OPTIMAL COMBUSTION EFFICIENCY. THE HEATER ALSO CONSISTS OF IN-LINE FUSING AND SURGE ABSORBERS FOR ELECTRICAL SURGE PROTECTION, AN ELECTRONIC SPARK IGNITER, ALUMINIZED STAINLESS STEEL BURNERS, HI-LIMIT TEMPERATURE SWITCHES TO MONITOR WATER AND EXHAUST TEMPERATURES, MODULATING GAS VALVE, DUAL FREEZE PROTECTION THAT WILL AUTOMATICALLY FIRE THE HEATER AND USE HEATING BLOCKS TO PROTECT THE HEAT EXCHANGER, AND AN OVERHEAT CUTOFF FUSE.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
RINNAI.
LOCHINVAR CORPORATION.
SMITH, A. O. WATER PRODUCTS CO.; A DIVISION OF A. O. SMITH CORPORATION.

22 40 00 PLUMBING FIXTURES

GENERAL

REFER TO PLUMBING FIXTURE SCHEDULE.

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, AND ARE LIMITED TO, THE FOLLOWING:
AMERICAN STANDARD AMERICA.
CRANE PLUMBING, LLC.
KOHLER CO.
TOTO USA, INC.
ZURN INDUSTRIES, LLC; COMMERCIAL BRASS AND FIXTURES.
STERLING; A KOHLER COMPANY.
ELKAY.
SLOAN.
FIAT.

MARQUE
ENGINEERING
2230 PARK AVE., STE. 100, CINCINNATI, OH 45206
513.457.7131 - WWW.MARQUEENG.COM
OH COA #4715

John
W.
Quillen Jr.
79076
04/29/2021

GENKI
West Chester
7244 Outfitters Way
West Chester, Ohio 45069

Sheet P3.0
PLUMBING SPECIFICATIONS
19 May 2021 - Rev 2 - Plan Revisions

HOOD INFORMATION – JOB#4823876

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	MUA CFM	AC CFM	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	HD1L	5424 ND-2-ACPSP-F	CAPTIVEAIRE	9' 4"	600 DEG	I	HEAVY	220	2053			4"	16"	2053	1470	-0.437"	1725	600	430 SS WHERE EXPOSED	LEFT	ALONE
2	HD1R	5424 ND-2-ACPSP-F	CAPTIVEAIRE	8' 8"	450 DEG	I	MEDIUM	175	1517			4"	14"	1517	1419	-0.330"	1350	600	430 SS WHERE EXPOSED	RIGHT	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	HD1L	SS BAFFLE WITH HANDLES	7	16"	16"	30%	4	L55 SERIES E26	NO							YES	556 LBS
2	HD1R	SS BAFFLE WITH HANDLES	6	16"	16"	30%	4	L55 SERIES E26	NO							YES	500 LBS

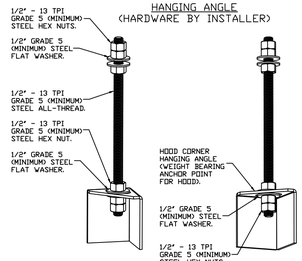
HOOD OPTIONS

HOOD NO	TAG	OPTION
1	HD1L	BACKSPLASH 80.00" HIGH X 216.00" LONG 430 SS VERTICAL.
		BACKSPLASH 82.00" HIGH X 4.00" LONG 430 SS VERTICAL.
		BACKSPLASH 82.00" HIGH X 4.00" LONG 430 SS VERTICAL.
		LEFT SIDESPLASH 80.00" HIGH X 54.00" LONG 430 SS VERTICAL.
		BACKSPLASH - INSIDE CORNER 80.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		BACKSPLASH - OUTSIDE CORNER 80.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		BACKSPLASH - OUTSIDE CORNER 82.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		BACKSPLASH - OUTSIDE CORNER 82.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		BACKSPLASH - OUTSIDE CORNER 82.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		BACKSPLASH - OUTSIDE CORNER 82.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		SENSOR-CV.
2	HD1R	SENSOR-CV.

PERFORMED SUPPLY PLENUM(S)

HOOD NO	TAG	PDS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S) WIDTH	LENG	DIA	CFM	SP
1	HD1L	Front	112"	26"	6"	MUA	12"	28"		862	0.237"
						MUA	12"	28"		862	0.237"
						AC	8"	16"		300	0.084"
						AC	8"	16"		300	0.084"
2	HD1R	Front	104"	26"	6"	MUA	12"	24"		675	0.202"
						MUA	12"	24"		675	0.202"
						AC	8"	16"		300	0.099"
						AC	8"	16"		300	0.099"

HOOD CORNER HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH UL 710 AND NFPA 96 AND ARE RECOGNIZED BY ONE OR MORE OF THE FOLLOWING:

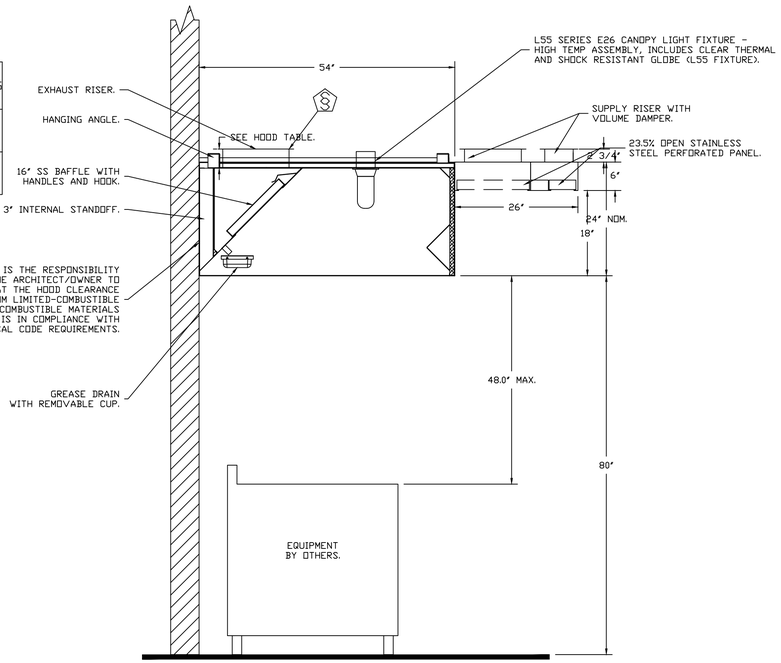
ETL SANITATION LISTED

ETL LISTED FILE# 3054804-001

HOOD SYSTEM IS FABRICATED & DESIGNED PER UL-710 STANDARDS

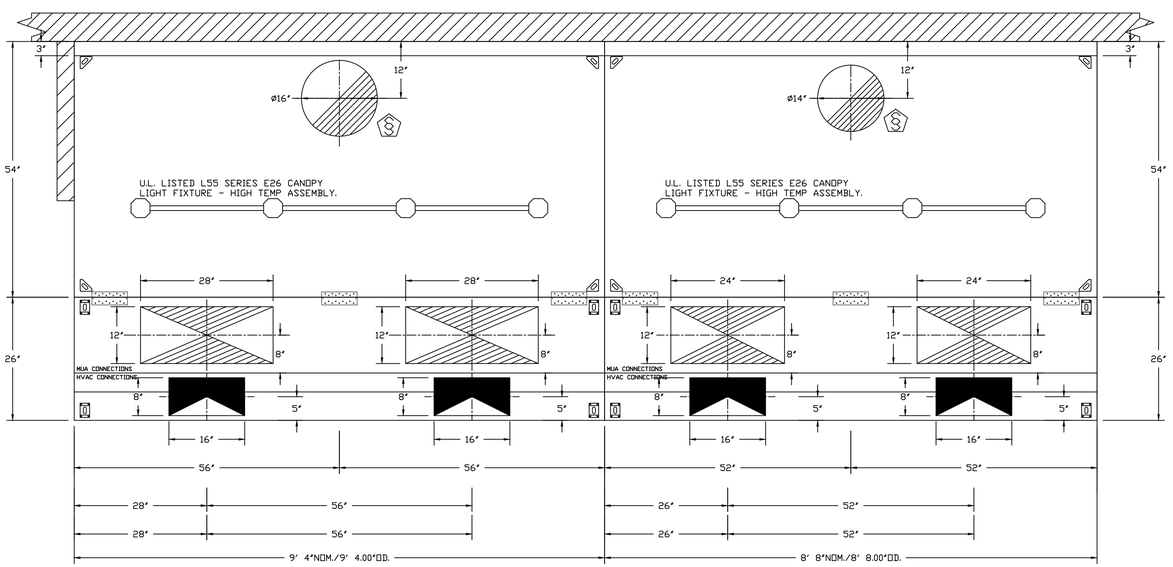
PATENT NUMBERS

AC-PSP (UNITED STATES) - US PATENT 7963830 B2.
AC-PSP WALL (CANADA) - CA PATENT 2820509.
AC-PSP ISLAND (CANADA) - CA PATENT 2520330.



SECTION VIEW – MODEL 5424ND-2-ACPSP-F
HOOD – #2 (HD1R)

Hoods, Fans, fire system, Controls, Exhaust & Supply Duct to be supplied by Owner direct. To include Installation of hood system.

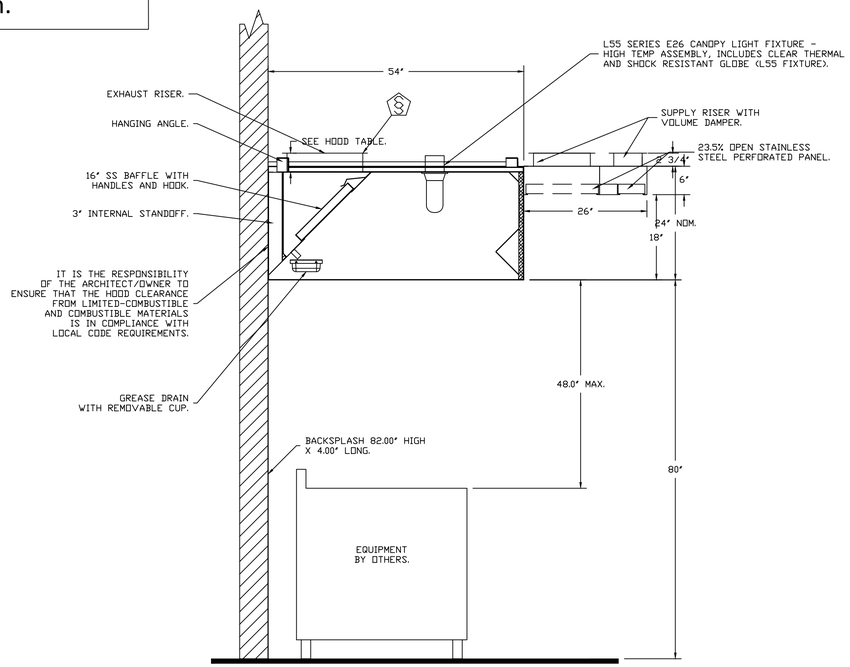


PLAN VIEW – HOOD #1 (HD1L)
9' 4.00" LONG 5424ND-2-ACPSP-F

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION

PLAN VIEW – HOOD #2 (HD1R)
8' 8.00" LONG 5424ND-2-ACPSP-F

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION



SECTION VIEW – MODEL 5424ND-2-ACPSP-F
HOOD – #1 (HD1L)

REVISIONS

DESCRIPTION	DATE:

CAPTIVE-AIRE
Air Solutions
www.captiveaire.com
1329 East Kemper Rd., Ste. 4210, Cincinnati, OH, 45246 PHONE: (513) 860-5555 EMAIL: reg120@captiveaire.com

Genki 2 (W Chester, OH)
WEST CHESTER, OH, 45069

DATE: 5/17/2021

DWG.#: 4823876

DRAWN BY: jcirilli

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

MASTER DRAWING

SHEET NO. 1

EXHAUST FAN INFORMATION – JOB#4823876

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF1	1	DU240HFA	CAPTIVEAIRE	3570	1.300	825	ODP,PREMIUM	3.000	1.5480	3	208	10.2	811 FPM	304	15.6

MUA FAN INFORMATION – JOB#4823876

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	WEIGHT (LBS)	SONES
2	KSF1	1	A2-D.250-20D	20MF-2-MOD	A2-D.250	2000	3312	0.421	1305	ODP,PREMIUM	2.000	1.2750	3	208	6.1	7.7A	15A	625	11.7

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
2	KSF1	209138	192407	55°F	7 IN. W.C. – 14 IN. W.C.	NATURAL	92

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF1	1	GREASE BOX.
		1	EXHAUST FAN HEAT BAFFLE.
		1	FAN BASE CERAMIC SEAL – INSTALLED AT PLANT – FOR GREASE DUCTS.
		1	2 YEAR PARTS WARRANTY.
2	KSF1	1	LOW FIRE START.
		1	MOTORIZED BACKDRAFT DISCHARGE DAMPER FOR SIZE 2 HOUSING– SHIPPED LOOSE TO BE FIELD INSTALLED.
		1	INLET PRESSURE GAUGE, 0–35".
		1	MANIFOLD PRESSURE GAUGE, –5 TO 15" WC.
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) – THREE PHASE ONLY.
		1	SIZE 2 DIRECT FIRED HEATER LOW CFM PROFILE PACKAGE. USED ON HEATERS UNDER 2500 CFM.
		1	2 YEAR PARTS WARRANTY.

FAN ACCESSORIES

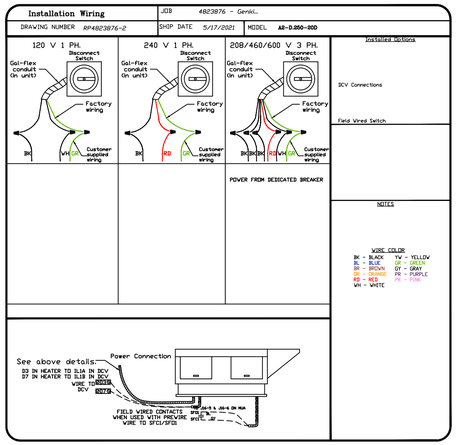
FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF1	YES						
2	KSF1						YES	

CURB ASSEMBLIES

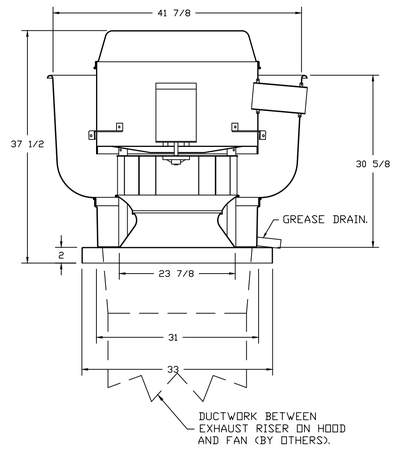
NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF1	48 LBS	CURB	31.500"W X 31.500"L X 24.000"H VENTED HINGED.
2	# 2	KSF1	76 LBS	CURB	31.000"W X 79.000"L X 16.000"H INSULATED.

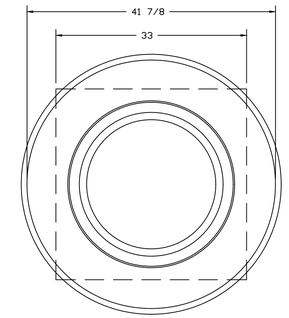
ELECTRICAL PACKAGE – JOB#4823876

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1	KEP1	SC-311110FP	WALL MOUNT IN SS BOX	01 – FACE MOUNT LEFT SIDE OF HOOD	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL	KEF1	EXHAUST	3	3.000	208	10.2
				HOOD # 1	1 FAN		KSF1	SUPPLY	3	2.000	208	6.1



FAN #1 DU240HFA – EXHAUST FAN (KEF1)





TOP VIEW

FEATURES:

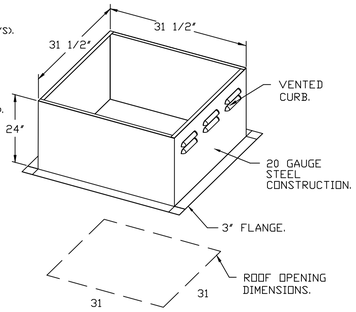
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

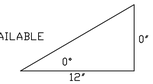
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

GREASE BOX.
EXHAUST FAN HEAT BAFFLE.
FAN BASE CERAMIC SEAL – INSTALLED AT PLANT – FOR GREASE DUCTS.
2 YEAR PARTS WARRANTY.

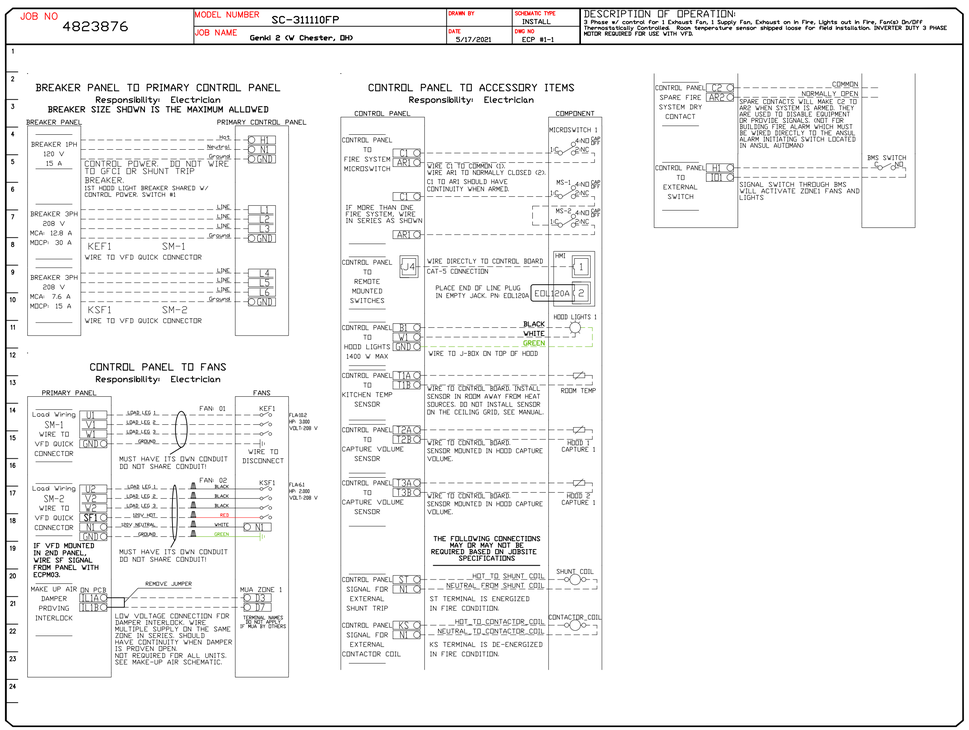


PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.



SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE.

Hoods, Fans, fire system, Controls, Exhaust & Supply Duct to be supplied by Owner direct. To include Installation of hood system.

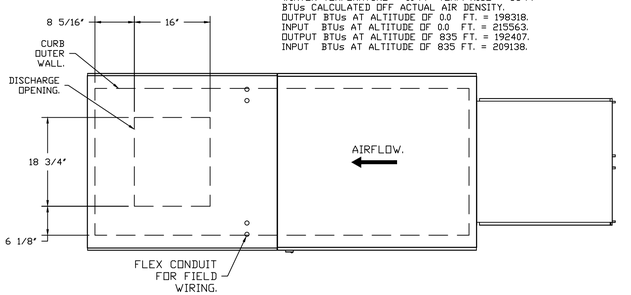


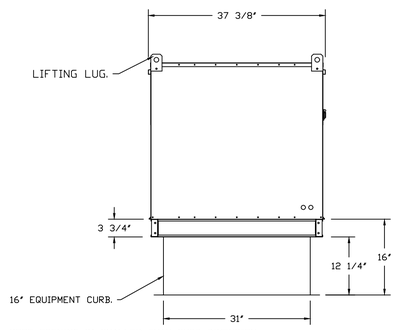
FAN #2 A2-D.250-20D – HEATER (KSF1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20' MIXED FLOW DIRECT DRIVE FAN.
2. INTAKE HOOD WITH EZ FILTERS–LOW CFM.
3. DOWN DISCHARGE – AIR FLOW RIGHT –> LEFT.
4. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
5. MOTORIZED BACK DRAFT DISCHARGE DAMPER SHIPPED LOOSE 30" X 30" FOR SIZE 2 UNITS W/EXTENDED SHAFT. STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, NFBUP–S ACTUATOR INCLUDED, FIELD INSTALLATION REQUIRED. DAMPER, ACTUATOR & ACTUATOR COVER (P/N AC1COVERMED) FACTORY ASSEMBLED.
6. GAS PRESSURE GAUGE, 0–35", 2.5" DIAMETER, 1/4" THREAD SIZE.
7. GAS PRESSURE GAUGE, –5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE.
8. SEPARATE 120VAC WIRING PACKAGE FOR MAKE–UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
9. PROFILE PLATE CONFIGURATION FOR SIZE 2 DIRECT FIRED UNIT FOR LOW CFM APPLICATIONS.
10. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER SECTION).
11. 2 YEAR PARTS WARRANTY.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20".

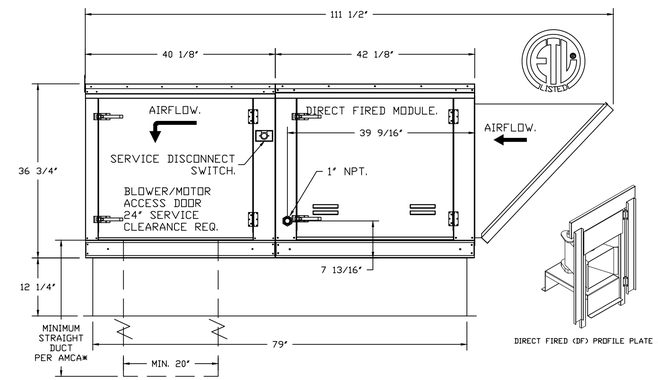
SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 10°F. TEMP. RISE = 55°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 198318.
INPUT BTUs AT ALTITUDE OF 0.0 FT. = 215963.
OUTPUT BTUs AT ALTITUDE OF 835 FT. = 192407.
INPUT BTUs AT ALTITUDE OF 835 FT. = 209138.





ROOF OPENING 2" SMALLER THAN CURB DIMENSION.



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVEAIRE
Air Solutions
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Genki 2 (W Chester, OH)
WEST CHESTER, OH, 45069

DATE: 5/17/2021

DWG.#: 4823876

DRAWN BY: jcirilli

SCALE: 3/4" = 1'–0"

MASTER DRAWING

SHEET NO. 2