GENERAL CONSTRUCTION NOTES

1. THE USE OF THESE DOCUMENTS IS RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED. REUSE OR REPRODUCTION OF THE DOCUMENTS, (WHOLE OR IN PART) FOR ANY OTHER PURPOSE IS PROHIBITED. CAVA RETAINS ALL RIGHTS OF OWNERSHIP.
2. THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS INCLUDING EMPLOYEES AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUB-CONTRACTORS TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.
3. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL WORK AND FOR THE MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE OF CONSTRUCTION.
4. GENERAL CONTRACTOR SHALL PROVIDE ALL REQUIRED PERMITS, FEES, AND INSPECTIONS AS MAY BE REQUIRED BY GOVERNING BODIES HAVING LEGAL JURISDICTION. BUILDING PERMIT TO BE REIMBURSED BY OWNER.
5. THE GENERAL CONTRACTOR IS TO GUARANTEE ALL WORK INCLUDING WORK DONE BY SUB-CONTRACTORS FOR A PERIOD OF A MINIMUM ONE (1) YEAR COMMENCING WITH THE DATE OF SUBSTANTIAL COMPLETION OF THE WORK, OR AS STATED IN CONTRACT WITH OWNER. WHICHEVER IS GREATER.
6. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SCHEDULING AND MONITORING OF ON-SITE TESTING AND INSPECTION SERVICES AS LISTED IN THE PROJECT MANUAL AND GENERAL CONDITIONS A201.
7. WHEN CONTRACTOR ACCEPTS DELIVERY OF ALL ITEMS NOTED ON PLANS EITHER IN CONTRACT OR NOT IN CONTRACT HE SHALL BE RESPONSIBLE FOR LOSS AND/ OR DAMAGE TO THESE ITEMS.
8. GENERAL CONTRACTOR TO HAVE JOB PHONE AND INTERNET ACCESS ON PREMISES DURING ENTIRE CONSTRUCTION PERIOD TO ENSURE OPEN COMMUNICATION CHANNELS.
9. THE GENERAL CONTRACTOR & EACH SUBCONTRACTOR IS TO HAVE A FULL TIME QUALIFIED SUPERVISOR ON THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED.
10. THE CONTRACTOR SHALL MAINTAIN FOR THE ENTIRE DURATION OF THE WORK ALL EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES, AND ALARMS IN CONFORMANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
11. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. ALL PARTITION LOCATIONS, ALL DOOR AND OPENING LOCATIONS SHALL BE SHOWN ON FLOOR PLAN. IN CASE OF CONFLICT NOTIFY THE ARCHITECT. FLOOR PLAN BY ARCHITECT SUPERSEDES ALL OTHER PLANS. ALL DIMENSIONS MARKED "CLEAR" SHALL BE MAINTAINED AND SHALL ALLOW FOR THICKNESS OF ALL FINISHES INCLUDING CARPET, PAD, CERAMIC TILE, V.C.T., SLATWALL, ETC.
12. ALL DIMENSIONS SHOWN ARE TO FACE OF EXISTING CONDITIONS OR SUBSTRATE UNLESS SPECIFICALLY NOTED OTHERWISE.
13. ALL DIMENSIONS ON ARCHITECTURAL DRAWINGS LOCATING STRUCTURAL ELEMENTS ARE TO CENTERLINE OF STEEL COLUMNS AND STEEL BEAMS UNLESS NOTED OTHERWISE.
14. ALL DIMENSIONS SHOWN ARE NOMINAL DIMENSIONS UNLESS SPECIFICALLY NOTED OTHERWISE.
15. EGRESS DOORS SHALL BE PROVIDED PER IBC SECTIONS 1014 THROUGH 1024.
16. ALL ACCESS PANELS SHALL BE 24" x 30" UNLESS OTHERWISE NOTED.
17. ALL GLASS UNITS LOCATED IN HAZARDOUS LOCATIONS AS INDICATED IN IBC 2406.3 SHALL COMPLY WITH TEST REQUIREMENTS OF CONSUMER PRODUCT SAFETY COMMISSION 16, CFR PART 1201 FOR HUMAN IMPACT LOADS.
18. ALL SAW CUTTING AND CORING LOCATIONS SHALL BE REVIEWED IN FIELD BY THE GENERAL CONTRACTOR PRIOR TO CUTTING/CORING.
19. ALL FASTENERS, CONNECTORS, OR OTHER HARDWARE IN DIRECT CONTACT WITH PRESERVATIVE TREATED OR FIRE RETARDANT TREATED WOOD SHALL BE STAINLESS STEEL TYPE 304 OR TYPE 316, OR HOT-DIPPED GALVANIZED STEEL ASTM A653, CLASS G-185 WITH 1.85 OUNCES OF ZINC PER SQUARE FOOT TO REDUCE THE CORROSION PROCESS .
20. FIREBLOCKING SHALL BE INSTALLED IN CONCEALED SPACES OF STUD WALL AND PARTITIONS, INCLUDING FURRED OR STUDDED-OFF SPACES OF MASONRY OR CONCRETE WALLS, AND AT THE CEILING AND FLOOR OR ROOF LEVELS. PER IBC SECTION 717.2.2.
21. FIREBLOCKING SHALL BE INSTALLED AT ALL INTERCONNECTIONS BETWEEN VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS OVER CABINETS, DROP CEILINGS, COVE CEILINGS AND SIMILAR LOCATIONS. PER IBC SECTION 717.2.3.
22. REQUIRED FLAME SPREAD RATING: INTERIOR FINISH OF WALLS AND CEILINGS SHALL HAVE A FLAME SPREAD RATING NOT GREATER THAN THAT DESIGNATED BY THE CLASS PRESCRIBED FOR THE VARIOUS GROUPS LISTED IN IBC TABLE 803.5, WHEN TESTED IN ACCORDANCE WITH OBC SECTION 803.2.
23. PROVIDE PORTABLE FIRE EXTINGUISHERS WITH U.L. LABEL AND A RATING OF NOT LESS THAN 4A 80B:C WITH 75 FT TRAVEL DISTANCE TO ALL POSITIONS OF BUILDING OR AS DIRECTED BY THE FIRE DEPARTMENT FIELD INSPECTOR.

ACCESSIBILITY INFORMATION

1. ACCESS TO THESE FACILITIES SHALL BE PROVIDED AT PRIMARY ENTRANCES.
2. THE SLOPE OF PUBLIC WALKS SHALL NOT EXCEED MAX. CROSS SLOPE 2%.
3. WALKING SURFACES SLOPING GREATER THAN 2% SHALL BE SLIP RESISTANT.
4. PROVIDE A 60" x 60" MIN. LANDING ON STRIKE SIDE OF DOOR WITH 44" MINIMUM WIDTH IN DIRECTION OF TRAVEL.
5. WALKS SHALL EXTEND 24" TO THE SIDE OF THE STRIKE EDGE OF DOOR OR GATE T HAT SWINGS TOWARD THE WALK.
6. EVERY REQUIRED EXIT DOORWAY SHALL BE SIZED FOR A DOOR NOT LESS THAN 3'-0" WIDE BY 6'-8" HIGH CAPABLE OF OPENING 90 DEGREES AND MOUNTED SO THAT THE CLEAR WIDTH OF THE EXIT SHALL BE A MINIMUM OF 32".
7. THRESHOLDS TO BE A MAXIMUM OF 1/2"ABOVE THE ADJACENT FINISHED FLOOR.
8. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 LBS FOR INTERIOR DOORS AND 15 LBS FOR EXTERIOR DOORS.
9. THE BOTTOM 10" OF ALL DOORS EXCEPT AUTOMATIC SLIDERS SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE.
10. THE BUILDING SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND ANSI A117.1-2009, INCLUDING BUT NOT LIMITED TO OBC CHAPTER 11.
11. CONTROLS AND OPERATING MECHANISMS SHALL BE ACCESSIBLE AND HAVE MOUNTING HEIGHTS COMPLYING WITH ANSI 4.27.
12. ALL ROOM, DIRECTIONAL, AND INFORMATION SIGNS SHALL BE ACECSSIBLE DESIGN COMPLYING WITH ANSI 4.13 AND 4.30.

PROJECT TEAM

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CAVA

STORE NO. 010446

NAPERVILLE

448 SOUTH ROUTE 59

NAPERVILLE, IL 60540

PROJECT DESCRIPTION

TENANT IMPROVEMENT IN AN EXISTING BUILDING FOR A FAST-CASUAL RESTAURANT USE. WORK INCLUDES KITCHEN EQUIPMENT, RESTROOMS, INCLUDING MECHANICAL, PLUMBING AND ELECTRICAL WORK .

SIGNAGE UNDER SEPARATE SUBMITTAL.

BUILDING CODE INFORMATION

BUILDING CODE	2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL EXISTING BUILDING CODE 2018 INTERNATIONAL PROPERTY MANAGEMENT CODE
ENERGY CODE	ILLINOIS ENERGY CONSERVATION CODE (CURRENT)
PLUMBING CODE	2018 INTERNATIONAL PLUMBING CODE ILLINOIS STATE PLUMBING CODE (CURRENT)
MECHANICAL CODE	2018 INTERNATIONAL MECHANICAL CODE
GAS CODE	2018 INTERNATIONAL FUEL GAS CODE
ELECTRICAL CODE	2017 NATIONAL ELECTRIC CODE (NFPA 70) 2006 IECC ELECTRICAL ADMINISTRATIVE PROVISIONS
FIRE/LIFE SAFETY CODE	2018 INTERNATIONAL FIRE CODE NFPA (CURRENT) NFPA 101 (2018),
ACCESSIBILITY CODE	ILLINOIS ACCESSIBILITY CODE (CURRENT) *LOCAL AMENDMENTS PER NAPERVILLE MUNICIPAL CODE

SHELL BUILDING CODE SUMMARY

FIRE SUPPRESSION:	SPRINKLERED	IBC SECTION 903
USE GROUPS:	A-2 ASSEMBLY	IBC SECTION 303
CONSTRUCTION TYPE:	II-B	IBC SECTION 304
TENANT LEASE AREA:	2,800 S.F.	IBC SECTION 602
FIRE PROTECTION:	1-HR DEMISING WALL	

1 G000 VICINITY PLAN
NTS

SHEET INDEX

		11.01.2024	12.06.2024	03.04.2025	04.04.2025	04.18.2025	06.23.2025
GENERAL							
G000	COVER SHEET		•	•	•	•	•
G001	ABBREVIATIONS & SYMBOLS		•	○	•	○	○
G002	ACCESSIBILITY DETAILS		•	•	•	•	•
G003	ACCESSIBILITY DETAILS		•	○	•	○	○
G100	LIFE SAFETY PLAN		•	•	•	•	•
G200	DEMISED PREMISE VERIFICATION PLAN		•	○	•	○	○
G600	RESPONSIBLITY MATRIX & SCHEDULES		•	○	•	○	○
G900	SPECIFICATIONS		•	○	•	○	○
G901	SPECIFICATIONS		•	○	•	○	○
G902	SPECIFICATIONS		•	○	•	○	○
G903	SPECIFICATIONS		•	○	•	○	○
G904	SPECIFICATIONS		•	○	•	○	○
G905	SPECIFICATIONS		•	○	•	○	○
G906	SPECIFICATIONS		•	○	•	○	○
G907	SPECIFICATIONS				•	○	○
ARCHITECTURAL							
A010	SITE PLAN	•	•	○	•	•	○
A100	SLAB PLAN		•	•	•	○	○
A111	ARCHITECTURAL FLOOR PLAN		•	•	•	•	•
A120	FINISH PLAN AND NOTES	•	•	•	•	○	○
A121	FINISH SCHEDULE		•	•	•	○	•
A130	FURNITURE, FIXTURE, AND EQUIPMENT PLANS	•	•	•	•	•	•
A131	FIXTURE, FURNITURE & EQUIPMENT SCHEDULE		•	○	•	○	○
A132	HEALTH AND HANGING PLAN		•	○	•	○	○
A140	REFLECTED CEILING PLAN - LIGHTING	•	•	○	•	○	•
A141	REFLECTED CEILING PLAN - FINISHES		•	•	•	○	•
A142	SOUND ATTENUATION PLAN		•	•	•	○	○
A150	ROOF PLAN		•	•	•	○	○
A210	EXTERIOR ELEVATIONS	•	•	•	•	○	○
A220	INTERIOR ELEVATIONS	•	•	•	•	○	○
A221	INTERIOR ELEVATIONS	•	•	○	•	○	•
A410	ENLARGED RESTROOM PLANS		•	•	•	•	○
A500	DETAILS		•	○	•	○	•
A501	DETAILS		•	○	•	○	○
A502	DETAILS		•	○	•	○	○
A503	DETAILS		•	○	•	○	○
A504	DETAILS		•	○	•	○	○
A600	WALL PARTITION SCHEDULE		•	•	•	○	○
A601	DOOR, HARDWARE, AND WINDOW SCHEDULE		•	•	•	○	○

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M201	MECHANICAL ROOF PLAN		•	○	•	•	•
M401	MECHANICAL DETAILS		•	○	•	○	○
M402	MECHANICAL DETAILS		•	○	•	○	○
M501	MECHANICAL SCHEDULES		•	○	•	•	•
M601	HOOD DETAIL PLAN		•	○	•	○	○
M602	HOOD DETAIL PLAN		•	○	•	○	○
M603	HOOD DETAIL PLAN		•	○	•	○	○
M604	HOOD DETAIL PLAN		•	○	•	○	○
M605	HOOD DETAIL PLAN		•	○	•	○	○
M606	HOOD DETAIL PLAN		•	○	•	○	○
M607	HOOD DETAIL PLAN		•	○	•	○	○
M608	HOOD DETAIL PLAN		•	○	•	○	○
M609	HOOD DETAIL PLAN		•	○	•	○	○
M610	HOOD DETAIL PLAN		•	○	•	○	○
M701	MECHANICAL SCHEDULE		•	○	•	○	○
M702	MECHANICAL DETAILS		•	○	•	○	○
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E200	POWER PLAN		•	•	•	○	○
E201	ROOF POWER PLAN		•	○	•	○	○
E202	LOW VOLTAGE PLAN		•	○	•	○	○
E301	SCHEDULES ELECTRICAL		•	•	•	○	○
E401	ELECTRICAL SCHEDULES & DETAILS		•	•	•	○	•
E701	SPECIFICATIONS ELECTRICAL		•	○	•	○	○
E702	SPECIFICATIONS ELECTRICAL		•	○	•	○	○
PLUMBING							
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P201	PLUMBING DOMESTIC AND GAS PLAN		•	•	•	•	•
P301	PLUMBING RISERS		•	○	•	•	•
P401	PLUMBING ROOF PLAN		•	○	•	○	○
P501	PLUMBING DETAILS		•	○	•	○	○
P502	PLUMBING DETAILS		•	○	•	○	○
P601	PLUMBING SCHEDULES		•	•	•	•	•
P701	PLUMBING SPECIFICATOINS		•	○	•	○	○
P702	PLUMBING SPECIFICATIONS		•	○	•	○	○
P703	PLUMBING SPECIFICATIONS		•	○	•	○	○
FIRE PROTECTION							
FP000	FIRE PROTECTION GENERAL NOTES, SYMBOLS AND LEGENDS		•	○	•	○	○
FP110	FIRE PROTECTION PLAN		•	○	•	○	○

TENANT SPACE CODE SUMMARY

FIRE SUPPRESSION:	SPRINKLERED	IBC SECTION 903
USE GROUPS:	MIXED OCCUPANCY (SEPARATED)	IBC SECTION 303
CONSTRUCTION TYPE:	II-B	IBC SECTION 602
OCCUPANCY TYPE:	A-2	IBC TABLE 1017.2
LENGTH OF TRAVEL:	250'	
FIRE PROTECTION:	EXISTING 1-HOUR RATED DEMISING WALL	
SUITE AREA:	2,500 SQ. FT.	
WALL/CEILING:		
VERTICAL EXITS	CLASS 'B'	
EXIT CORRIDORS	CLASS 'C'	
OTHER ROOMS	CLASS 'B'	
FLOORS:		
CORRIDORS/STAIRS	DOC FF-1	
ROOMS	DOC FF-1	
SMOKE DEVELOPED RATING	450 OR LESS	
TOTAL OCCUPANT LOAD:	129 OCCUPANTS	
PLUMBING FIXTURE COUNT:	2 WC'S (1 PER RESTROOM) 2 LAVS (1 PER RESTROOM) 1 SERVICE SINK 1 4-COMPARTMENT SINK	

2 G000 KEY PLAN
NTS

ferris+sloane
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CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE

SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

COVER SHEET

G000

6/23/2025 3:08:38 PM

STANDARD ABBREVIATIONS

@	AT
A/C	AIR CONDITIONING
AB	ANCHOR BOLT
ABV	ABOVE
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADA	AMERICAN'S W/ DISABILITIES ACT
ADJ	ADJACENT
ADJT	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFC	ABOVE FINISHED CEILING
AGG	AGGREGATE
AL	ALUMINUM
ALT	ALTERNATE
ANC	ANCHOR, ANCHORAGE
ANOD	ANODIZED
AP	ACCESS PANEL
ARCH	ARCHITECT, ARCHITECTURAL
ASPH	ASPHALT
BD	BOARD
BEL	BELOW
BL	BASE LINE
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BM	BENCH MARK
BO	BOTTOM OF
BPL	BEARING PLATE
BRG	BEARING
BRK	BRICK
BRKT	BRACKET
BRS	BRASS
BRZ	BRONZE
BS	BOTH SIDES
BUR	BUILT UP ROOFING
CB	CEMENTITIOUS BACKER BOARD
CEM	CEMENT
CG	CORNER GUARD
CL	CENTER LINE
CLG	HT CEILING HEIGHT
CLG	CEILING
CLR	CLEAR, CLEARANCE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUE, CONTINUOUS
CONTR	CONTRACT(OR)
CORR	CORRUGATED
CPT	CARPET
CSMT	CASEMENT
CTR	COUNTER
DFE	DESIGN FLOOD ELEVATION
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIV	DIVISION
DN	DOWN
DR	DOOR
DS	DENS SHIELD
DTL	DETAIL
DWG	DRAWING
(E) EXISTING	
EA	EACH
EIFS	EXTERIOR INSULATION & FINISHING SYSTEM
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXT	EXTERIOR
FA	FIRE ALARM
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF EL	FINISH FLOOR ELEVATION
FF	FINISH FLOOR
FIN	FINISH
FIXT	FIXTURE
FLR	FLOOR
FLUOR	FLUORESCENT
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOS	FACE OF STUD
FRT	FIRE RETARDANT TREATED
FT	FOOT (FEET)
FTG	FOOTING
FV	FIELD VERIFY
GA	GAGE, GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GCMU	GLAZED CONCRETE MASONRY
GD	GRADE, GRADING
GL	GLASS, GLAZING
GLAM	GLUED LAMINATE
GB	GYPSUM BOARD
GYP	GYPSUM

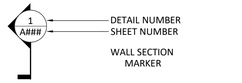
H.P.	HIGH POINT
HC	HOLLOW CORE
HCWD	HOLLOW CORE WOOD DOOR
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HMF	HOLLOW METAL FRAME
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING, VENTILATION & COOLING
HW	HOT WATER
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDE, (ED), (ING)
INSUL	INSULATION
INT	INTERIOR
JC	JANITOR'S CLOSET
JF	JOINT FILLER
JT	JOINT
KEC	KITCHEN EQUIPMENT CONTRACTOR
KIT	KITCHEN
KPL	KICK PLATE
L	LONG (LENGTH)
L.O.D.	LEASE OUTLINE DRAWING
L.P.	LOW POINT
L/T	LIGHT TRACK
LAM	LAMINATE
LAV	LAVATORY
LBS	POUNDS
LF	LINEAR FOOT
LGL	LAMINATED GLASS
LH	LEFT-HANDED
LL	LANDLORD
LT	LIGHT
LTL	LINTEL
MAT	MATERIAL
MAX	MAXIMUM
MBR	MEMBER
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MR	MOISTURE RESISTANT GYP. BOARD
MOD	MODIFIED
MTD	MOUNTED
MTL	METAL
NAT	NATURAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NR	NOISE REDUCTION
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
ORD	OVERFLOW ROOF DRAIN
PA	PAINT
PT	PRESSURE TREATED
PBD	PARTICLE BOARD
PERF	PERFORATE(D)
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PLT	PLATE
PLYWD	PLYWOOD
POS	POINT OF SALE
PR	PAIR
PTD	PAINTED
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
QT	QUARRY TILE
R	RISER
RAD	RADIUS
RB	RUBBER BASE
RD	ROOF DRAIN
REC	RECESSED
REF	REFERENCE
REQD	REQUIRED
RESIL	RESILIENT
REV	REVISION
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY

SC	SOLID CORE
SCHED	SCHEDULE
SCN	SCREEN
SD	SMOKE DETECTOR
SECT	SECTION
SF	SQUARE FOOT (FEET)
SHT	SHEET
SIM	SIMILAR
SIPS	STRUCTURAL INSULATED PANEL
SND	INS SOUND INSULATION
SPEC	SPECIFICATION
SPK	SPEAKER
SPL	SPECIAL
SQ	SQUARE
SS	STAINLESS STEELOUP
STD	STANDARD
STG	SEATING
STL	STEEL
STN	STAIN
STO	STONE TILE
SUSP	SUSPENDED
SYM	SYMMETRY, (ICAL)
SYS	SYSTEM
T	TREAD
T&G	TONGUE & GROOVE
THK	THICKNESS
THR	THRESHOLD
TO	TOP OF
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOJ	TOP OF JOIST
TOM	TOP OF MASONRY
TOS	TOP OF SLAB
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPG	TOPPING
TYP	TYPICAL
UC	UNDERCUT
UNF	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UTL	UTILITY
VCT	VINYL COMPOSITE TILE
VERT	VERTICAL
VF	VINYL FABRIC
VG	VERTICAL GRAIN
VIF	VERIFY IN FIELD
VT	VINYL TILE
W/	WITH
W/O	WITHOUT
WA	WALL ANCHOR
WC	WATER CLOSET
WD	WOOD
WF	WIDE FLANGE
WFAB	WALL FABRIC
WH	WATER HEATER
WIN	WINDOW
WP	WORKING POINT
WRB	WATER RESISTIVE BARRIER
WWF	WELDED WIRE FABRIC

SYMBOLS LEGEND

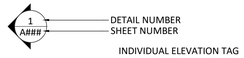
DETAIL NUMBER
SHEET NUMBER

DETAIL CALLOUT



DETAIL NUMBER
SHEET NUMBER

WALL SECTION MARKER



DETAIL NUMBER
SHEET NUMBER

INDIVIDUAL ELEVATION TAG MARKER

MULTI ELEVATION TAG

KEY NOTE REFERENCE

DOOR NUMBER

WINDOW NUMBER

WALL TYPE MARKER

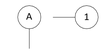
FINISH TYPE MARKER / FURNITURE TYPE

FIXTURE / EQUIPMENT / TYPE MARKER

ROOM NAME

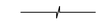
MATCH LINE

ELEVATION MARKER



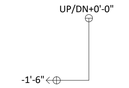
COLUMN REFERENCE GRIDS

CENTERLINE

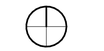


BREAK LINE

REVISION



STAIR / RAMP DIRECTION SYMBOL



NORTH SYMBOL

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CAVA

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448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE

SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

ABBREVIATIONS & SYMBOLS

G001

6/23/2025 3:08:39 PM

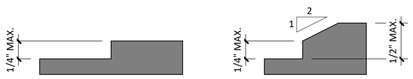


FIGURE 303.2
VERTICAL CHANGE IN LEVEL

FIGURE 303.3
BEVELED CHANGE IN LEVEL

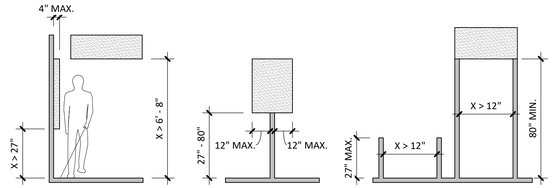


FIGURE 307.2
LIMITS OF PROTRUDING OBJECTS

FIGURE 307.3
POST-MOUNTED PROTRUDING OBJECTS

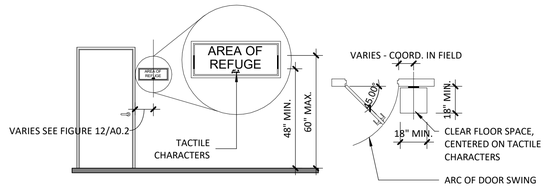
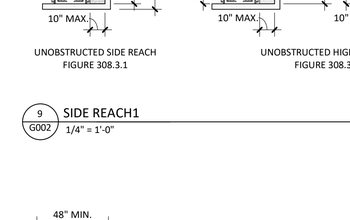


FIGURE 703.3.10
HEIGHT OF RAISED CHARACTERS ABOVE FLOOR

FIGURE 703.3.11
LOCATION OF SIGNS AT DOOR

1 G002 CHANGES IN LEVEL1
1/4" = 1'-0"

2 G002 PROTRUDING OBJECTS1
1/4" = 1'-0"



CIRCULAR
FIGURE 304.3 (a)

T-SHAPED
FIGURE 304.3 (b)

3 G002 COMMUNICATION ELEMENTS AND FEATURES1
1/4" = 1'-0"

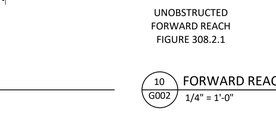
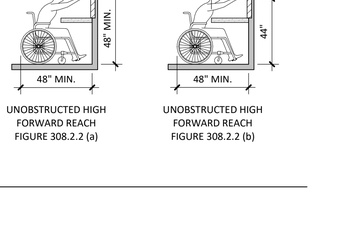


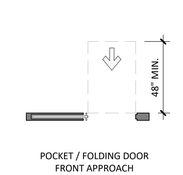
FIGURE 403.5



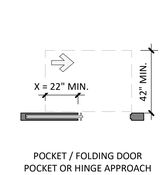
180 DEGREE TURN

180 DEGREE TURN (EXCEPTION)

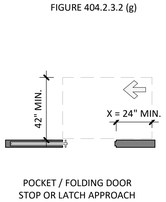
FIGURE 403.5.1
CLEAR WIDTH AT 180 DEGREE TURN



FRONT APPROACH, PULL SIDE
FIGURE 404.2.3.2 (a)

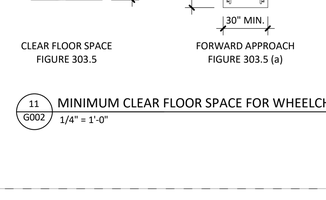


RECESSED DOOR
FRONT APPROACH, PULL SIDE
FIGURE 404.2.3.5 (a)



FRONT APPROACH, PUSH SIDE
FIGURE 404.2.3.2 (b)

4 G002 WHEELCHAIR TURNING1
1/4" = 1'-0"



HINGED DOOR
FIGURE 404.2.2 (a)

SLIDING DOOR
FIGURE 404.2.2 (b)

FOLDING DOOR
FIGURE 404.2.2 (c)

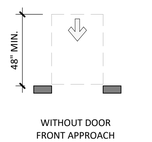
DOORWAYS WITHOUT DOORS
FIGURE 404.2.2 (d)

5 G002 CLEAR WIDTH OF AN ACCESSIBLE ROUTE1
1/4" = 1'-0"

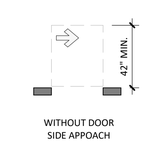
FIGURE 404.2.5 (a)

FIGURE 404.2.5 (b)

FIGURE 404.2.5 (c)



RECESSED DOOR
FRONT APPROACH, PUSH SIDE
FIGURE 404.2.3.5 (b)



RECESSED DOOR
FRONT APPROACH, PUSH SIDE
WITH BOTH CLOSER AND LATCH
FIGURE 404.2.3.2 (c)

HINGE APPROACH, PULL SIDE
FIGURE 404.2.3.2 (c & d)

6 G002 ADA SIGNAGE1
1/4" = 1'-0"

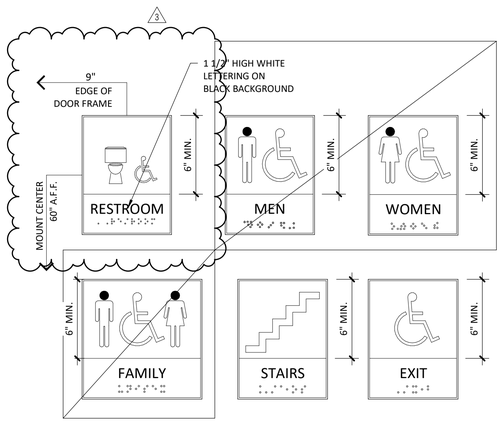
OCCUPANCY LOAD MUST BE POSTED NEAR THE MAIN ENTRY.
G.C. TO PROVIDE SIGN WITH THE FOLLOWING ON 8 1/2" x 11" MIN SIZED SIGN

MAXIMUM CAPACITY

54

1234 ADDRESS ST, UNIT ##
CITY, STATE
ZIP

3/8" 2" 3/8"



PROVIDE (1) SIGN PER TOILET COMPLYING WITH ANSI 2009, SECTION 703. SIGN TO HAVE RAISED AND BRAILLE CHARACTERS AND PICTORIAL SYMBOL OF ACCESSIBILITY. MOUNT 5'-0" TO CENTERLINE A.F.F.

BLACK PLASTIC (FIELD) BACKGROUND w/ WHITE RAISED OR DEPRESSED EMBLEMS (NOTE- EMBLEMS & LETTERING MUST BE RAISED OR DEPRESSED MIN. 1/32" TYPICAL)

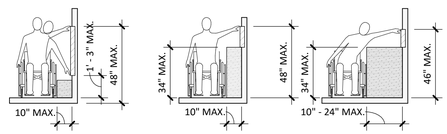
INTERNATIONAL SYMBOL OF ACCESSIBILITY
FIGURE 703.6.3.1

INTERNATIONAL TDD SYMBOL
FIGURE 703.6.3.2

INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS
FIGURE 703.6.3.3

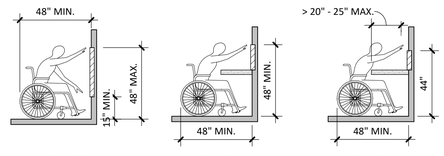
7 G002 CLEAR DOORWAY WIDTH & DEPTH1
1/4" = 1'-0"

8 G002 TWO HINGED DOORS IN SERIES1
1/4" = 1'-0"



UNOBSTRUCTED SIDE REACH
FIGURE 308.3.1

UNOBSTRUCTED HIGH SIDE REACH
FIGURE 308.3.2 (a)



UNOBSTRUCTED FORWARD REACH
FIGURE 308.2.1

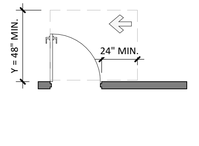
UNOBSTRUCTED HIGH FORWARD REACH
FIGURE 308.2.2 (a)

UNOBSTRUCTED HIGH FORWARD REACH
FIGURE 308.2.2 (b)

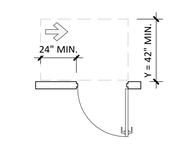
9 G002 SIDE REACH1
1/4" = 1'-0"

10 G002 FORWARD REACH1
1/4" = 1'-0"

HINGE APPROACH, PUSH SIDE
FIGURE 404.2.3.2 (e)



LATCH APPROACH, PULL SIDE
FIGURE 404.2.3.2 (f)



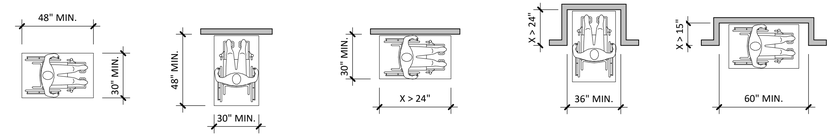
LATCH APPROACH, PUSH SIDE
FIGURE 404.2.3.2 (g)

POCKET / FOLDING DOOR
FRONT APPROACH
FIGURE 404.2.3.3 (a)

POCKET / FOLDING DOOR
POCKET OR HINGE APPROACH
FIGURE 404.2.3.3 (a)

POCKET / FOLDING DOOR
STOP OR LATCH APPROACH
FIGURE 404.2.3.3 (a)

11 G002 MINIMUM CLEAR FLOOR SPACE FOR WHEELCHAIRS1
1/4" = 1'-0"



CLEAR FLOOR SPACE
FIGURE 303.5

FORWARD APPROACH
FIGURE 303.5 (a)

PARALLEL APPROACH
FIGURE 303.5 (b)

FORWARD APPROACH
FIGURE 305.7 (a)

PARALLEL APPROACH
FIGURE 305.7 (b)

13 G002 MANEUVERING CLEARANCES AT DOORS1
1/4" = 1'-0"

WITHOUT DOOR
FRONT APPROACH
FIGURE 404.2.3.4 (a)

WITHOUT DOOR
SIDE APPOACH
FIGURE 404.2.3.4 (b)

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NAPERVILLE, IL 60540

PROJECT NUMBER:
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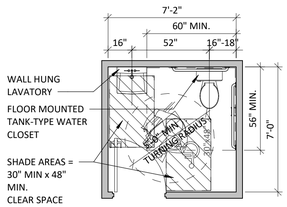
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

ACCESSIBILITY DETAILS

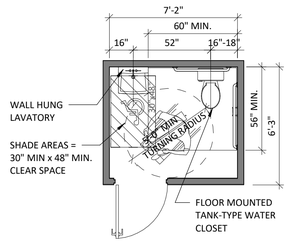
G002

6/23/2025 3:08:39 PM

NOTE :
30" X 48" OF CLEAR FLOOR SPACE IS REQUIRED IN EVERY RESTROOM. WHEN 30" X 48" CLEAR FLOOR SPACE IS PROVIDED BEYOND THE ARC OF THE DOOR SWING, THE DOOR IS PERMITTED TO SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE REQUIRED FOR ANY FIXTURE. DOOR MAY SWING INTO A REQUIRED WHEELCHAIR TURNING SPACE. PER 2009 ANSI SECTION 603.2.2, AN EXCEPTION IS MADE IN SINGLE OCCUPANCY TOILET ROOMS TO ALLOW DOOR TO SWING INTO THE REQUIRED FIXTURE CLEAR FLOOR OR GROUND SPACE \ WHEN ANOTHER CLEAR FLOOR OR GROUND SPACE IS PROVIDED OUTSIDE THE RADIUS OF THE DOOR SWING



(A)
MINIMUM CLEAR DIMENSIONAL REQUIREMENTS - INWARD DOOR SWING



(B)
MINIMUM CLEAR DIMENSIONAL REQUIREMENTS - OUTWARD DOOR SWING

1 G003 SINGLE OCCUPANT TOILET ROOM

1/4" = 1'-0"

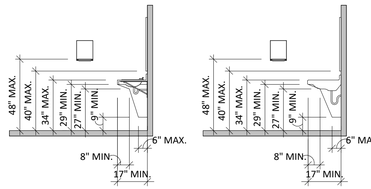
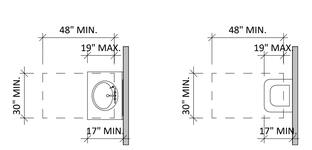


FIGURE 606.3

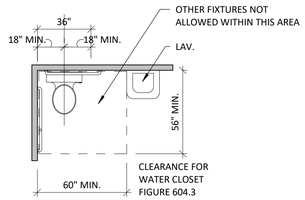
2 G003 LAV. CLEARANCES

1/4" = 1'-0"



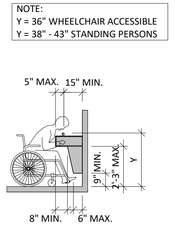
3 G003 LAV. CLEAR FLOOR SPACE

1/4" = 1'-0"



4 G003 W.C. CLEAR FLOOR SPACE

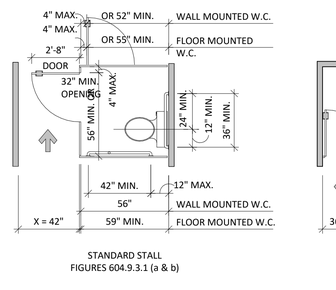
1/4" = 1'-0"



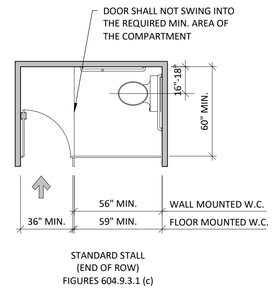
SPOUT HEIGHT AND KNEE CLEARANCE
FIGURE 602.5 (b)

5 G003 DRINKING FOUNTAINS

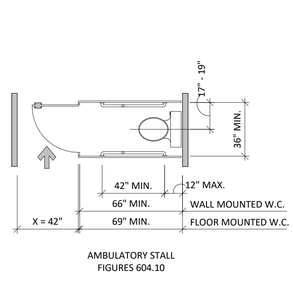
1/4" = 1'-0"



STANDARD STALL
FIGURES 604.9.3.1 (a & b)



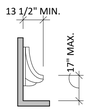
STANDARD STALL
(END OF ROW)
FIGURES 604.9.3.1 (c)



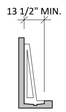
AMBULATORY STALL
FIGURES 604.10

6 G003 TOILET STALLS

1/4" = 1'-0"



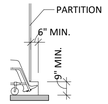
WALL HUNG TYPE
FIGURE 605.2 (a)



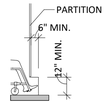
STALL TYPE
FIGURE 605.2 (b)

7 G003 URINAL CLEARANCES

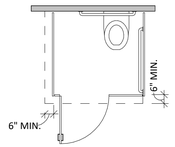
1/4" = 1'-0"



ELEVATION ADULT
FIGURE 604.9.5 (a)



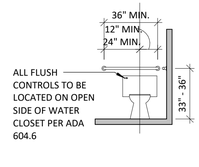
ELEVATION CHILDREN
FIGURE 604.9.5 (b)



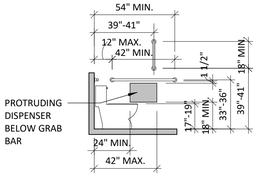
PLAN
FIGURE 604.9.5 (c)

8 G003 TOILET STALLS CLEAR HEIGHT

1/4" = 1'-0"



REAR WALL
FIGURE 604.5.2



SIDE WALL
FIGURE 604.4
FIGURE 604.5.1
FIGURE 604.7 (a)
FIGURE 604.11.4

9 G003 WATER CLOSET GRAB BARS & CONTROLS

1/4" = 1'-0"

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CAVA

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448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

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ISSUANCE

SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

ACCESSIBILITY DETAILS

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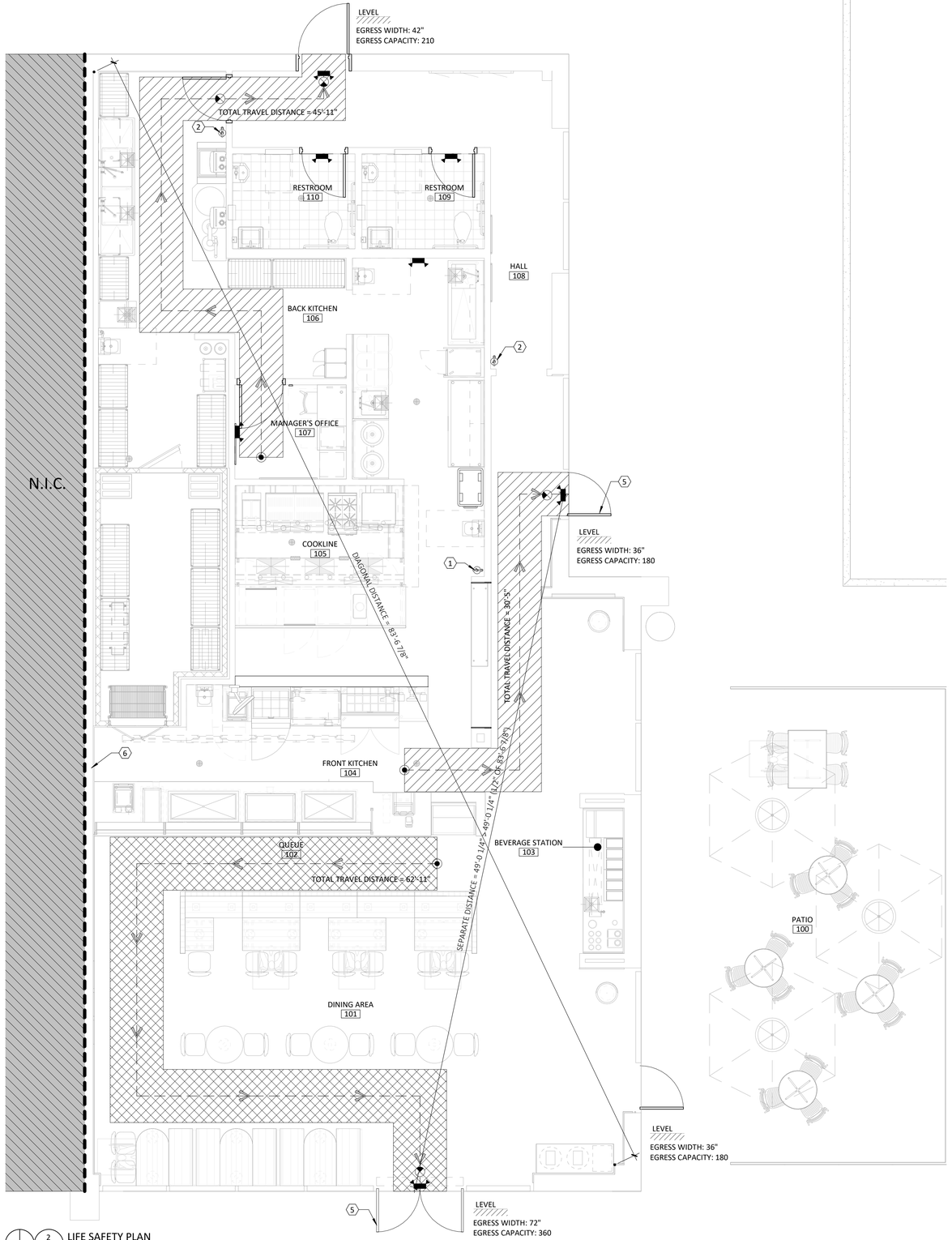

2 G100 LIFE SAFETY PLAN
1/4" = 1'-0"

PROJECT DATA

USE	AREA	S.F. / PERSON	OCCUPANT LOAD	FIXED OCCUPANT LOAD	EGRESS REQUIRED O.L. X .15" =	EXITS REQUIRED	EXITS PROVIDED	EGRESS WIDTH PROVIDED
KITCHEN AND UTILITY	1,022 SQ. FT.	200	5					
DINING AND CIRCULATION	1,110 SQ. FT.	15	75					
BOOTH SEATING	40 FT.	1 PER 18" OF SEAT LENGTH	27					
QUEUE AREA	100 SQ. FT.	5	20					
RESTROOMS	108 SQ. FT.			2				
TOTAL	2,340 SQ. FT.		145 OCCUPANTS (INCL. EXT. SEATING)		20"	2	3	150"
TENANT LEASE AREA - 2,800 SQ. FT.								

	INTERIOR	EXTERIOR	A.D.A. SEATS REQUIRED	A.D.A. SEATS PROVIDED
TOTAL SEAT COUNT	32	16	2 SEATS MIN. - INTERIOR 1 SEATS MIN. - EXTERIOR	2 SEATS - INTERIOR 1 SEATS - EXTERIOR

PLUMBING FIXTURES PROVIDED:

FIXTURE	REQUIRED	PROVIDED
WATER CLOSETS (MEN)	1 PER 100	2 GENDER NEUTRAL RESTROOMS PROVIDED
WATER CLOSETS (WOMEN)	1 PER 50	
URINAL	50% OF REQUIRED W.C.	2
LAVATORIES (MEN)	1 PER 100	2 GENDER NEUTRAL RESTROOMS PROVIDED
LAVATORIES (WOMEN)	1 PER 100	
SERVICE SINK	1	1
4-COMPARTMENT SINK	1	1

INTERIOR FINISHES (SPRINKLERED)	A-2
WALL / CEILING - VERTICAL EXITS	CLASS 'B'
EXIT CORRIDORS	CLASS 'B'
OTHER ROOMS	CLASS 'C'
FLOORS - CORRIDORS/STAIRS	DOC FF-1
ROOMS	DOC FF-1
SMOKE DEVELOPED RATING -	450 OR LESS

LIFE SAFETY GENERAL NOTES

1. 44 INCHES REQUIRED EGRESS WIDTH FOR OCCUPANCIES OVER 50. ILBC SEC 1023
2. NO DEAD END CORRIDORS OVER 20'-0" IN LENGTH. ILBC SEC 1018.4
3. MAXIMUM EGRESS TRAVEL DISTANCE TO AN EXIT IS 200'-0". MEASURED AT THE MOST REMOTE POINT ALONG THE NATURAL AND UNOBSTRUCTED PATH OF HORIZONTAL AND VERTICAL TRAVEL TO THE EXIT FOR A SPACE WITH MORE THAN 1 EGRESS. ILBC TABLE 1014.3
4. DOORS IN FULLY OPENED POSITION SHALL NOT REDUCE A REQUIRED DIMENSION BY MORE THAN 7 INCHES. ILBC SEC 1008.1.8
5. DOORS, WHEN FULLY OPENED, SHALL NOT REDUCE THE REQUIRED MEANS OF EGRESS WIDTH BY MORE THAN 7 INCHES. DOORS IN ANY POSITION SHALL NOT REDUCE THE REQUIRED WIDTH BY MORE THAN ONE HALF. ILBC SEC 1005.
6. MINIMUM DISTANCE BETWEEN SEATS IS 12 INCHES FOR A DISTANCE OF 12'-0" WITH AN ADDITIONAL 1/2" WIDTH FOR EACH 1'-0" OR FRACTION THEREOF BEYOND THE ORIGINAL 12'-0". ILBC SEC 1028.1.0.1.1
7. EGRESS ALONG SEATING IS MEASURED 19 INCHES FROM EDGE OF TABLE WHERE MOVEABLE CHAIRS ARE USED, OR FROM THE EDGE OF A FIXED SEAT.

LIFE SAFETY PLAN CODED NOTES ⟨#⟩

1. NEW SURFACE MOUNTED TYPE K FIRE EXTINGUISHER.
2. NEW SURFACE MOUNTED TYPE ABC FIRE EXTINGUISHER.
3. POST OCCUPANCY PLACARD IN A CONSPICUOUS PLACE NEAR THE MAIN EXIT DOOR FROM THE SPACE. COORDINATE FINAL LOCATION WITH FIRE MARSHAL.
4. NEW TACTILE EXIT SIGN.
5. PROVIDE SIGNAGE STATING "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED".
6. EXISTING 1-HOUR RATED DEMISING WALL.

FIRE EXTINGUISHER NOTES

1. PROVIDE MIN. OF 2 TYPE ABC AND 1 TYPE K FIRE EXTINGUISHERS. G.C. TO VERIFY AND COORDINATE LOCATIONS AND QUANTITIES WITH LOCAL FIRE MARSHAL.
2. PER OFC, THE MINIMUM IS A 2A10BC EXTINGUISHER WITHIN 75' OF TRAVEL DISTANCE OF ALL AREAS.
3. NFPA INSPECTION TAGS SHALL BE ATTACHED TO ALL FIRE EXTINGUISHERS.

LEGEND

- 36" CLEAR PATH
- 44" CLEAR PATH
- EMERGENCY LIGHT
- EXIT SIGN
- POINT OF DIVERGENCE
- DIRECTION OF EGRESS

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CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE

SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

LIFE SAFETY PLAN

G100

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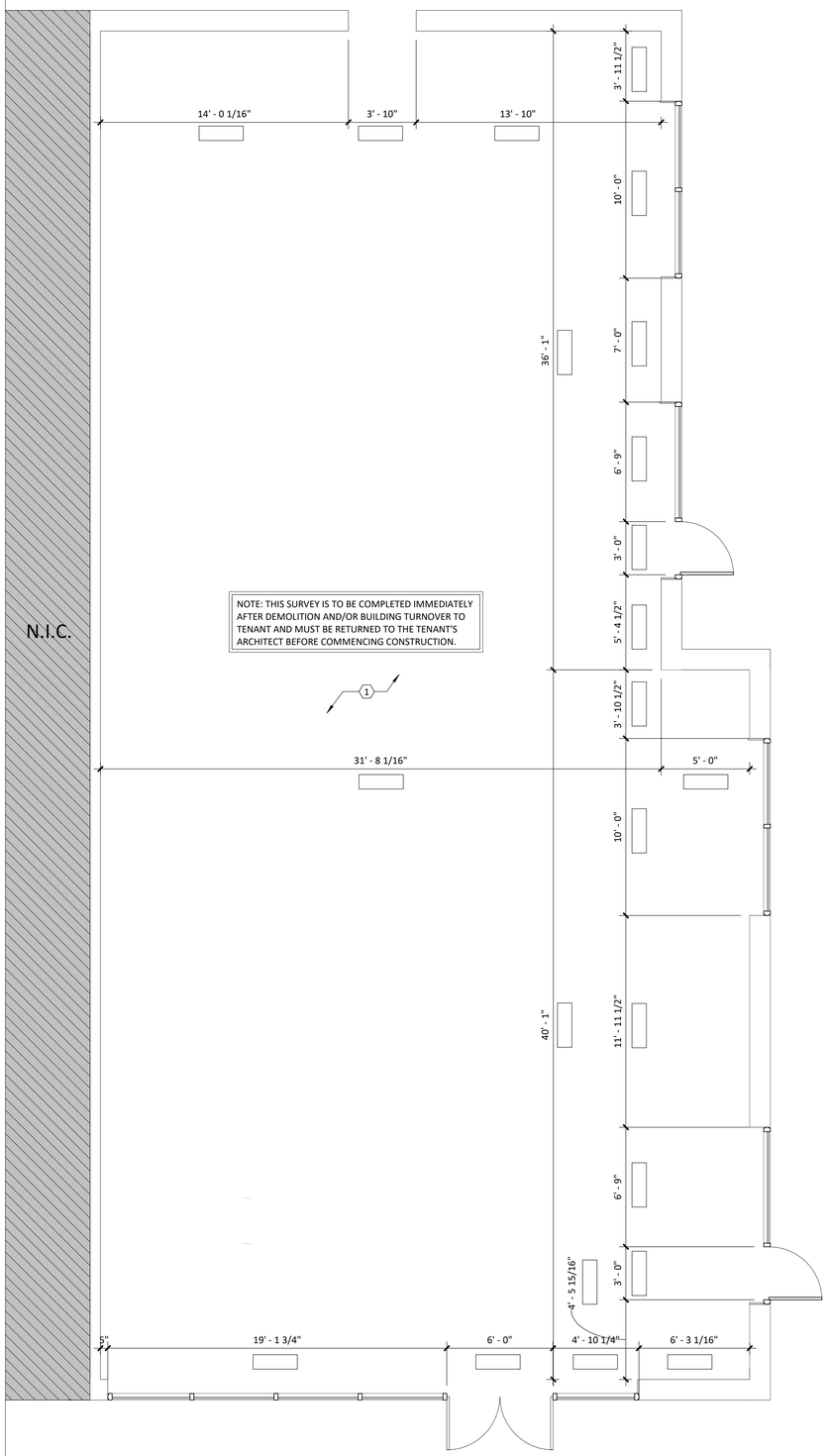

1 G200 DEMISED PREMISE VERIFICATION PLAN
1/4" = 1'-0"

PREMISES PLAN GENERAL NOTES

A. ALL DIMENSIONS TO BE FIELD VERIFIED. NOTIFY ARCHITECT IMMEDIATELY IF DISCREPANCIES ARISE.

B. ALL DIMENSIONS ARE TO FACE OF EXISTING WALLS AND CENTERLINE OF FIXTURES UNLESS OTHERWISE NOTED.

PREMISES PLAN CODED NOTES ⟨#⟩

1. REFER TO SLAB PLAN FOR SCOPE AND RESPONSIBILITY OF INTERIOR AND EXTERIOR SLAB WORK.

SURVEY CHECKLIST

THE FOLLOWING CHECKLIST AND PLAN SHALL BE COMPLETED BY THE GC AFTER TAKING POSSESSION OF AN EMPTY TENANT SPACE OR AFTER COMPLETING DEMOLITION. ALL ITEMS TO BE CHECKED OFF & SIGNED WITH NAME & DATE (COMPLETED BY), AND RETURNED TO THE ARCHITECT BEFORE COMMENCING CONSTRUCTION.

PLEASE COMPLETE ALL DIMENSIONS INDICATED. PLEASE NOTE THAT ALL DIMENSIONS SHOULD BE CLEAR DIMENSIONS (FROM THE INSIDE OF ONE WALL, OR COLUMN, TO THE INSIDE OF ANOTHER). IF CENTER TO CENTER DIMENSIONS ARE REQUIRED IT WILL BE NOTED. ALL DIMENSIONS SHOULD READ 0'-0" TO THE CLOSEST 1/8".

COMPLETED BY:_____

DATE:_____

- ☐ 1. INDICATE LOCATION & HEIGHT, UNDERSIDE OF EXISTING A/C UNIT & DUCTS.(IF APPLICABLE)
- ☐ 2. INDICATE LOCATION & HEIGHT, UNDERSIDE OF EXISTING WASTE PIPE & SIZE. (IF APPLICABLE)
- ☐ 3. INDICATE LOCATION & HEIGHT, UNDERSIDE OF EXISTING ROOF DRAIN & SIZE.
- ☐ 4. INDICATE LOCATION & HEIGHT, UNDERSIDE OF EXISTING MAIN SPRINKLER PIPE & SIZE
- ☐ 5. NOTE DIMENSIONS CORRESPONDING TO THE LETTERS A, B, C, D AND E, BELOW:
  - A - CLEAR HEIGHT UNDERSIDE OF ROOF/DECK.
  - B - CLEAR HEIGHT UNDERSIDE OF JOIST/BEAMS.
  - C - UNDERSIDE OF BULKHEAD
  - D - EXISTING CEILING HEIGHTS
  - E - BEAMS, LINTELS: LOCATE ON PLAN AND DIMENSION IN RELATION TO DEMISING WALL. SHOW CLEAR UNDERSIDE HEIGHTS.
  - F - EXISTING WALL CONDITION (PRECAST PANEL, STUD, GYP. BD. ETC.)
- ☐ 6. VERIFY IF ANY EXISTING COLUMNS OR ROOF DRAINS ARE HIDDEN IN INTERIOR OR DEMISING WALLS.
- ☐ 7. ELEC. PANEL MANUF. & MODEL #
- ☐ 8. PRIOR TO CONSTRUCTION START, GC TO VERIFY ALL EXISTING GLAZING IS INTACT. LANDLORD SHALL REPLACE BROKEN GLAZING WITH NEW TO MATCH EXISTING.
- ☐ 9. INDICATE LOCATION & HEIGHT OF EXISTING GAS PIPE & SIZE.
- ☐ 10. VERIFY IF DEMISING WALLS GO UP TO THE ROOF. VERIFY THAT DEMISING WALL IS PROPERLY SEALED.
- ☐ 11. VERIFY IF ANY EXISTING EXTERIOR LIGHTS TO REMAIN ARE FUNCTIONING.

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CAVA

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448 SOUTH ROUTE 59
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PROJECT NUMBER:
CAV029

ISSUANCE

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DEMISED PREMISE VERIFICATION PLAN

G200

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VENDOR LIST

KITCHEN EQUIPMENT
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- OR -

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RESPONSIBILITY MATRIX : WL 2024.04.01

PRE-CONSTRUCTION	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Building Permits and City Fees					●	●			GC to pull and Cava will reimburse
Trade / Subcontractor Permits							●	●	
Landlord Construction Fees							●	●	
Barricade/Scaffolding							●	●	if applicable
Coming Soon Vinyl / Banners					●	●			GC to remove vinyl prior to turnover

D1. GENERAL REQUIREMENTS	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Project Mngt, Supervision, General Labor							●	●	
GC Travel and Administrative Costs							●	●	
Temporary Facilities / Utilities							●	●	Inc. site storage, site office, bathroom, power, lighting, water and heating
Temporary Protection							●	●	Inc. protection for floors, millwork, furniture, equipment, tables, counters, etc
Layout and Pre-Construction Survey							●	●	
Equipment Rentals							●	●	Inc. barricades, fencing, heavy equipment
Testing and Inspections							●	●	Inc. any LL or 3rd party inspection fees
Trash Removal / Dumpsters							●	●	
Truck OSI Offloading							●	●	Inc. all lighting, millwork, furniture, misc. Ops items
Mall/Landlord Fees							●	●	
Final Cleaning (3 full cleaning visits)							●	●	1) punch, 2) health 3) Turnover. Inc. window cleaning, ceiling fixtures, walls, furniture, mirrors/glass, etc.
Surety, Completion, Performance Bonds							●	●	if required

D2. DEMO / SITE WORK	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Demolition							●	●	Inc. all temp heaters, lights and receptacles. Scrape fireproofing as required. Includes awning removal/disposal if its not being replaced.
Hazardous Material/Abatement		●							Inc. asbestos abatement and mold remediation, Geo-seal
Earthwork		●							
Parking / Sidewalk Improvements		●							Inc. curb inlet, curb, sidewalks, wheelstops, retaining walls, ramps, parking lot ligh...
Site Utilities		●							Inc. water, fire, gas, sanitary, grease and electrical services.
Sewer/Inlets		●							Inc. manholes, catch basins, sediment/pollutant silt fence, drain tile, etc
Paving		●							Inc. new asphalt paving, top coating, striping, concrete paving
Site Lighting & Misc Power		●							
Landscaping & Irrigation		●							Inc. hardscaping
Trash Enclosure		●							
Patio Improvements							●	●	repair cracks, fix lights, repaint existing rail

D3. CONCRETE	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Trenching/Coring/Sawcutting Concrete Slab							●	●	Inc. sawcut for car detector loop
Foundations		●							
New Slab	●								
Trench Infill / Patching / Repairs							●	●	Inc. footing for crash bar
Slab Barriers		●							Inc. vapor and soil barriers
GPR / X-Ray	●								
Concrete Pads							●	●	Inc water heater and large cash safe pads

D4. MASONRY	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
CMU		●							
Brick		●							
Stone		●							
Patio Breeze Block	●								

D5. METALS	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Structural Steel		●					●	●	
Metal Staircases (Egress/Convenience)	●								
Guard/Hand Rails (Patio, drive lane, ADA, etc)		●							
Roof Screening		●							
Roof Ladder		●							
Stainless Steel Trims, Panels, Fillers, Corners and Top					●	●			inc. SS panels around hood

D6. CARPENTRY	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Demising Walls - Framing		●							
Demising Walls - Gypsum Board		●							Taped, spackled and ready for prime paint
Outside Walls - Framing		●							
Outside Walls - Gypsum Board		●							Taped, spackled and ready for prime paint
Interior Walls - Framing/Gypsum Board							●	●	Inc. furring, insulation, taping, spackle
Ceiling - Framing							●	●	
Hard Ceiling - Gypsum Board							●	●	
Soft Ceiling - ACT Ceiling & Grid (AT-01)							●	●	
Rough Carpentry							●	●	Inc. all blocking for fixtures, signage, etc.
Finish Carpentry							●	●	Inc. half 1.5" thick wood walls and full height plank walls, managers desk
Millwork					●			●	Inc. assumbling and bolting down tables, chairs, counters, DO shelf, trash station, gallery grid, POS caddy, ceiling, clouds, queue railing
Access Panels							●	●	as required

D7. THERMAL & MOISTURE PROTECTION	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Roofing		●					●	●	Inc. flashing for any roof equipment or penetrations created by the GC
Damproofing & Waterproofing							●	●	only req. if space is above another space or if required by code
Wall Insulation							●	●	if required
Roof Insulation		●							
Sound Insulation							●	●	only if required in lease or by local code
Sound Attenuation Panels							●	●	
Fireproofing		●							any patching of existing fireproofing

D8. STOREFRONT / BUILDING	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Exterior Signage					●	●			GC to provide power, support backing and termination
Awnings	●								
Storefront Glass/Entrance System		●					●	●	Inc. door threshold
Entry Vestibule	●								Inc. doors and hardware
Rear Door		●							
Exterior Façade Improvements							●	●	Inc. any facade repair to damage done by previous tenant
Window UV Protection Film / Shades					●	●			
Window Shades					●	●			
Parking Signs	●								Sign and post by CAVA. Core drill and footing by GC
Drive Lane Clearance Bar	●								GC to F/I footing for clearance bar

D8. DOORS & WINDOWS / GLASS	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Interior Doors, Frames & Hardware							●	●	Inc. Eliason door, emergency push bar and audible alarm.
PBC Window	●								
Interior Glass	●								Inc. baffles, railings, etc.
Sneeze Guard Glass & Trim					●	●			at serve line. Includes SS serve line cap
Mirror							●	●	inc. bathroom mirror

D9. FINISHES	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Tectum Panels							●	●	
Floor Preparation							●	●	Inc. any ramping, floating, leveling and smoothing required
Floor Leveling							●	●	Inc. any ramping, floating, leveling and smoothing required
Epoxy Flooring (Kitchen area)							●	●	
Quarry Tile (Kitchen area alternate)	●								
Floor/Wall Tile							●	●	
FRP							●	●	
Plaster							●	●	
Thin Brick							●	●	
Concrete Sealing (Dining area)							●	●	
Cement Panels	●								
Vinyl Base							●	●	
Paints & Coatings							●	●	
Interior/Window Graphics					●	●			
Interior Signage, Vinyl, Braille Signage					●			●	
Framed Art and Foux Indoor Plants					●			●	

D10. SPECIALTIES	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Toilet Partitions	●								
Bathroom Accessories / Dispensers							●	●	Furnish includes: grab bars, sanitary napkin, toilet paper dispenser, mirror, baby changing table, air freshner, coat hooks, bathroom male/female signage
Kitchen paper, soap and chemical dispensers							●	●	

D11. EQUIPMENT	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Kitchen Cooking Equipment						●			Ovens, Grills, Fryers, Ranges, Panini Press, Rice Cooker, Shake Machine, Warmers, Ice Machine, Refrigeration/coolers
Stainless Steel Tables						●			inc. all prep tables and beverage counter. Inc. corner guards, wall caps, and...
Walk-in Cooler Box						●		●	GC to install trim around WIC. GC to connect lighting and to make walls, ceiling, an...
Walk-in Cooler Box Refrigeration						●		●	KES to hang evaporator, make final connections of drain lines, install refrigeration lines from evaporator to condenser on roof and start-up. GC to place condenser on...
Walk-in Cooler Box Display Doors						●		●	KES to install Styleline doors and shelving. GC to connect lighting.
Stainless Steel Sink (4-comp, prep/hand sink, mop sink)						●			
Kitchen Shelving						●			
Lockers						●			
Dishwasher						●			
CO2 Tank						●		●	GC to chain to wall
Soda Station and Soda Bag Rack						●			GC to provide and install water connection point
Soda Line Tubes from Rack to Soda Station						●		●	GC to provide and install 6" conduit
Smallware & Health & Hanging Items						●		●	
Water Softener						●		●	GC to make connections
Cash Safe						●		●	GC to bolt down, GC to install 4" pad
Brinks Smart Safe						●			GC to install 4" pad

D12. FURNITURE / FURNISHINGS	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Tables, Benches & Chairs					●			●	Inc. Clocks, Punch Clock, Aroma Disp, Mop Holders, Wire Shelves, Key Box, Chem Disp, menu holder, first aid kit,
Ops Health & Hanging Items					●			●	Inc. Clocks, Punch Clock, Aroma Disp, Mop Holders, Wire Shelves, Key Box, Chem Disp, menu holder, first aid kit,
Managers Desk							●	●	P-Lam desk with wall brackets. Includes shelf for printer
Outdoor Furniture, Trash Station and Umbrellas					●			●	
Patio Heaters, Fans							●	●	
Outdoor Planters & Plants							●	●	

D13. SPECIAL CONSTRUCTION	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Patio Improvements							●	●	Inc. planters, plants, partitions, built in seating, etc
Pergola	●								
Wood Canopy	●								
PBC Canopy	●								
Outdoor Sun Shade	●								

D14. CONVEYING SYSTEM	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Elevators / Escalator	●								
Handicap Lift	●								
Dumbwaiter	●								

D15. PLUMBING	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Plumbing Service (Domestic, Sanitary, Vent)		●							Valved, and capped to tenant space
Plumbing Rough-In (Domestic, Sanitary, Vent)							●	●	GC to include jetting the Sanitary lines once
Waste Ejector Pump	●								
Plumbing Fixtures							●	●	Furnish inc: toilet, bath sink and faucet, BOH mop sink and faucet, floor drains, sinks and any filters. Excludes SS kitchen sinks and faucets. Connections by GC.
Kitchen Equip. Water/Sanitary Connections							●	●	includes connections to beverage stations, island/rice/dish sinks, ice machine, WIC condensate drain and pump
Water Heater & Mop Sink/Facuet							●	●	
Grease Service / Stub		●							
Grease Interceptor		●							if required. interior and exterior
Gas Service		●							Valved and capped to Blink space
Gas Flue, Water Heater Fresh Air Intake, Roof Penetration and Gooseneck		●							Inc. CPVC interior rough-in and tie-in to water heater
Gas Rough-In							●	●	
Kitchen Equip. Gas Connections							●	●	includes connections to fryer, stove/range and grill.

D16. MECHANICAL	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
HVAC Units & Curbs		●					●	●	
HVAC Distribution		●					●	●	Inc. supply, return, make-up/fresh-air ductwork, insulation, dampers
HVAC Unit Start-Up							●	●	
Air Curtains							●	●	
Walk-In Cooler						●		●	excludes installing and starting up the refrigeration unit
Walk-in Cooler Box Refrigeration						●	●	●	
Kitchen Hood						●		●	installation includes SS panel to ceiling
PCU / ESP	●								
Grease & Fresh Air Ductwork							●	●	all ductwork by GC.
Kitchen Hood Exhaust Fan Unit						●		●	
ViroGuard System						●		●	
Kitchen Hood Fresh Air Intake Unit						●		●	
Bathroom Exhaust Fans & Curbs							●	●	Inc. any related roof work
Bathroom Exhaust Ductwork							●	●	
Temperature Control Wiring & Thermostats							●	●	
Diffusers, Registers & Grilles							●	●	GC to provide louvered opening at drink case and transfer grille at IT
Smoke Evacuation System	●								if required by code. Inc. ductwork
Air Test & Balance Report, Commissioning						●	●		

D17. FIRE & LIFE SAFETY	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Fire Detection Plan Engineering and Permits							●	●	
Fire Alarm Base Building Main Panel		●							
Fire Alarm System (Rough & Devices)		●					●	●	Any modifications of existing system by GC
Fire Detection Devices (Smoke/Heat)			●	●					
Fire Sprinkler Plan Engineering and Permits							●	●	if required
Fire Sprinkler System		●					●	●	Any modifications of existing system by GC
Ansul System						●	●		
Fire Extinguisher (EX-01, FE)							●	●	Inc. FE cabinet

D18. ELECTRICAL	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
Electrical Service into Space		●							
Electric Meter		●							
Main Disconnect Switch		●							
Transformers		●							
Main Distribution Panel		●							
Sub-Panels, Breakers, Switches, Transformers							●	●	includes main breakers from the MDP panel
Wiring, Conduit, Receptacle, Switches, Wiremold etc.							●	●	incl. 6" conduit for soda machine
Light Fixtures (Inc. EM, Exit, Tracks, Lamps)						●		●	
Lighting Control Panels & Switches						●		●	
Kitchen Equip. Electric Connections							●	●	includes internal hood/ansul wiring, gas shut off connection. Ice machine power cord to be hard wired, glass door light connection, WIC lights, etc
CO2 Detection							●	●	stand alone unit for CO2 tanks stored in BOH
Security Low Voltage Wiring						●	●		GC to provide all required conduit
Security Equipment						●	●		Inc. devices, cameras, panels
Audio Low Voltage Wiring						●	●		GC to provide all required conduit
Audio Equipment/Devices						●	●		Inc. speakers, rack, volume control
Digital Menu Boards Monitors, STB's & Brackets						●	●		GC to provide blocking and power
Pick Up By Car Technology	●								GC to cut into drive-thru and install wiring. Vendor to terminate and install rack
IT Low Voltage Phone/Data Wiring						●	●		GC to provide all required conduit
IT Rack, Switches & other Equip. for POS & Server						●	●		Inc. rack, phone, computers and printers

POST CONSTRUCTION	N/A	Existing	Landlord		CAVA		General Contractor		Remarks
			Furnished	Installed	Furnished	Installed	Furnished	Installed	
TCO/CO, Testing & Inspections							●	●	includes posting code required occupancy signage where inspector desires
Special or 3rd Party Inspections							●	●	
Certified MEP As-Built Submittals							●	●	
Warranties/Operation Manuals						●	●	●	

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CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE

SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

RESPONSIBLITY MATRIX & SCHEDULES

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DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OR WORK

1.1 CONTRACT

A. UNLESS OTHERWISE NOTED. "THE OWNER" OR "THE TENANT" REFERS TO THE PERSONS, ORGANIZATION AND/OR BUSINESS ENTERING INTO AN AGREEMENT WITH THE CONTRACTOR TO EXECUTE THE WORK INDICATED IN THE CONTRACT DOCUMENTS. "THE LANDLORD" REFERS TO THE PERSON, ORGANIZATION AND/OR BUSINESS THAT OWNS OR IS RESPONSIBLE FOR MANAGING THE PROPERTY ON WHICH THE WORK IS TO BE EXECUTED. THE CONTRACTOR'S RESPONSIBILITIES TO EACH PARTY IS DESCRIBED IN THE SPECIFICATIONS AND DOCUMENTS BELOW.

B. THE "WORK" INCLUDES OWNER IMPROVEMENTS TO AN EXISTING TENANT SPACE AND INCLUDES NEW PARTITIONS, FINISHES AND MODIFICATIONS TO HVAC, PLUMBING, ELECTRICAL, AND FIRE PROTECTION SYSTEMS AND ACCESS CONTROL SYSTEMS.

C. OWNER-FURNISHED ITEMS INCLUDE: FURNITURE, OFFICE EQUIPMENT, TELEPHONE AND AUDIO/VISUAL CABLING AND EQUIPMENT.

D. OWNER-FURNISHED/ CONTRACTOR-INSTALLED ITEMS AS INDICATED IN THE DRAWINGS SHALL BE RECEIVED, PROTECTED, AND INSTALLED AS PART OF THE CONTRACT.

E. PERMITS AND INSPECTIONS

1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK
2. THE CONTRACTOR IS RESPONSIBLE FOR INSPECTIONS REQUIRED FOR THE JURISDICTION IN WHICH THE WORK IS PERFORMED. VERIFY WITH LOCAL REGULATORY AGENCY EXACT NUMBER, TYPE AND SCHEDULE OR INSPECTIONS REQUIRED FOR THE WORK PRIOR TO COMMENCING WITH THE WORK.
3. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH DOCUMENTATION AND SCHEDULING NECESSARY FOR OCCUPANCY PERMIT.

F. CONTRACT DOCUMENTS

4. THE AIA "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" AIA DOCUMENT A201, 1997 EDITION, PUBLISHED BY THE AMERICAN INSTITUTE OF ARCHITECTS, HEREINAFTER REFERRED TO AS "GENERAL CONDITIONS", IS HEREBY MADE PART OF THE CONTRACT DOCUMENTS, THE SAME AS IF BOUND HEREIN.
5. THE CONTRACT DOCUMENT CONSIST OF THE FOLLOWING:

a. OWNER-CONTRACTOR AGREEMENT ("THE CONTRACT")
b. GENERAL CONDITIONS
c. DRAWINGS AS DATED IN AGREEMENT ("THE DRAWINGS")
d. ADDENDA
e. MODIFICATIONS

6. THE CONTRACT DOCUMENTS ARE INSTRUMENTS OF SERVICE AND SHALL REMAIN THE PROPERTY OF THE ARCHITECT WHETHER THE PROJECT FOR WHICH THEY ARE PREPARED IS EXECUTED OR NOT. THE CONTRACT DOCUMENTS ARE NOT TO BE USED BY THE OWNER, LANDLORD OR TENANT FOR OTHER PROJECTS OR EXTENSIONS TO THE PROJECT NOR ARE THEY TO BE MODIFIED IN ANY MANNER WHATSOEVER EXCEPT BY AGREEMENT IN WRITING AND WITH APPROPRIATE COMPENSATION TO THE ARCHITECT.

SECTION 01030 - ALTERNATES AND UNIT PRICES

1.1 GENERAL

A. THE CONTRACTOR SHALL PROVIDE PRICING FOR ALL ALTERNATIVES INDICATED IN THE BID FORM.
B. THE CONTRACTOR SHALL PROVIDE UNIT PRICING FOR ITEMS IDENTIFIED AS REQUESTED BY OWNER.
C. THE OWNER RESERVES THE RIGHT TO REDUCE OR INCREASE THE TOTAL SCOPE OF WORK BY ACCEPTING ANY OF THE ALTERNATIVES OR ADDED/DELETED UNIT PRICE ITEMS.

SECTION 01035 - SUBSTITUTIONS

1.1 GENERAL

A. THE CONTRACTOR'S BID SHALL BE BASED ON PROVIDING ALL SPECIFIED ITEMS. SUBSTITUTIONS SHALL BE CONSIDERED ONLY UNDER THE FOLLOWING CIRCUMSTANCES:

a. THE ITEM IS SHOWN TO HAVE A PROHIBITIVELY LONG LEAD TIME.
b. AN ITEM OF EQUAL APPEARANCE AND EQUAL OR GREATER QUALITY TO THE SPECIFIED ITEM CAN BE PROVIDED AT SUBSTANTIAL SAVINGS TO THE OWNER.

B. SUBSTITUTIONS SHALL BE CONSIDERED BY THE ARCHITECT FOR ACCEPTANCE UNDER THE FOLLOWING PROCEDURE:

a. THE ARCHITECT REQUIRES FIVE (5) DAYS FOR REVIEW OF THE CONTRACTOR'S REQUEST FOR SUBSTITUTION.
b. THE CONTRACTOR'S REQUEST FOR SUBSTITUTION SHALL INCLUDE PRODUCT INFORMATION AND SAMPLES AS DEEMED NECESSARY BY THE ARCHITECT OF BOTH THE SPECIFIED ITEM AND PROPOSED SUBSTITUTION. CHARACTERISTICS OF BOTH PRODUCTS SHALL BE CLEARLY IDENTIFIED BY THE ARCHITECT'S EVALUATION.

SECTION 01040 - COORDINATION

1.1 GENERAL COORDINATION

A. COORDINATION WITH BASE BUILDING AND OTHER BUILDING TENANTS:

1. EXERCISE EXTREME CARE AND PRECAUTION DURING CONSTRUCTION OF THE WORK. SCHEDULE WORK TO MINIMIZE DISTURBANCES TO ADJACENT SPACES AND/OR STRUCTURES AND THEIR OCCUPANTS, PROPERTY, PUBLIC THOROUGHFARES, ETC. THE CONTRACTOR SHALL TAKE PRECAUTIONS AND BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING OCCUPANTS FROM CONSTRUCTION PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY OVERTIME COSTS INCURRED THEREBY.
2. THE CONTRACTOR SHALL BE REQUIRED TO MEET ALL LANDLORD REQUIREMENTS FOR CONSTRUCTION.
3. THE CONTRACTOR SHALL COORDINATE WITH THE LANDLORD ALL WORK REQUIRED BY THE TENANT THAT OCCURS OUTSIDE THE TENANT SPACE AND IS ON OR WITHIN THE BASE BUILDING. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND INTEGRITY OF ALL PENETRATIONS REQUIRED TO THE EXISTING ROOF AND FOR MEETING ALL LANDLORD REQUIREMENTS.
4. THE CONTRACTOR SHALL REVIEW THE BASE BUILDING CONTRACT DOCUMENTS AND SHALL COMPLY WITH BASE BUILDING REQUIREMENTS AND DESIGN CRITERIA.
5. PRIOR TO DRILLING SLAB PENETRATIONS, THE CONTRACTOR SHALL DO THE FOLLOWING:

a. CLEARLY IDENTIFY THE LOCATION OF SLAB PENETRATIONS FOR ARCHITECT'S REVIEW.
b. COORDINATE WITH EXISTING CONDITIONS BELOW SLAB TO INSURE NO CONFLICTS WITH EXISTING DUCTWORK, SPRINKLER PIPING, CEILING CONDITIONS, ETC.
c. X-RAY PROPOSED SLAB PENETRATION LOCATIONS TO IDENTIFY STRUCTURAL CONFLICTS AS REQUIRED BY LANDLORD.

B. COORDINATION WITH TENANT IN OCCUPIED RENOVATION:

1. COORDINATE HOURS OF OPERATION WITH TENANT PRIOR TO CONSTRUCTION.
2. ALL LOUD CONSTRUCTION SHALL BE PREFORMED OUTSIDE OWNER'S NORMAL HOURS OF OPERATION. LOUD CONSTRUCTION SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING: DEMOLITION, FRAMING, GWB INSTALLATION, DUCTWORK INSTALLATION, PULLING OF ELECTRICAL WIRING.
3. ALL ODOR PRODUCING CONSTRUCTION SHALL BE PERFORMED OUTSIDE THE OWNER'S NORMAL HOURS OF OPERATION. VERIFY ODOR PRODUCING CONSTRUCTION AND REVIEW ALL ITEMS WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION. ODOR PRODUCING CONSTRUCTION SHALL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: APPLICATION OF ALKYD OR OIL BASED COATINGS, INSTALLATION OR ITEMS REQUIRING ADHESIVES
4. PROVIDE TEMPORARY DUST-PROOF PARTITIONS AS NECESSARY TO SEPARATE CONSTRUCTION ACTIVITIES FROM OWNERS OPERATIONS. REVIEW PROPOSED LOCATIONS OF TEMPORARY DUST-PROOF PARTITIONS WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION.

C. COORDINATION WITH OWNER-SUPPLIED ITEMS:

1. MAKE NECESSARY PROVISIONS FOR ITEMS TO BE FURNISHED OR INSTALLED BY OWNER AS INDICATED ON THE DRAWINGS. SUCH PROVISIONS INCLUDE, BUT ARE NOT LIMITED TO, PLUMBING & ELECTRICAL REQUIREMENTS.
2. PROVIDE PROJECTION FOR OWNER-SUPPLIED ITEMS UNTIL COMPLETION OF THE PROJECT.
3. THE CONTRACTOR IS TO INCLUDE THE INSTALLATION COST OF OWNER-SUPPLIED ITEMS UNLESS OTHERWISE NOTED.
4. ANY AMBIGUITY OR NEED FOR CLARIFICATION REGARDING SCOPE OF WORK RELATED TO OWNER-SUPPLIED ITEMS TO BE REVIEWED WITH THE ARCHITECT PRIOR TO COMMENCING WITH THE WORK.
5. TELEPHONE AND DATA WORK SHALL BE COORDINATED BY THE CONTRACTOR WITH OWNER'S REPRESENTATIVE.
6. SECURITY SYSTEM WORK SHALL BE COORDINATED BY THE CONTRACTOR WITH OWNER'S REPRESENTATIVE.

D. CUT AND FIT COMPONENTS FOR ALTERATION OF EXISTING WORK AND INSTALLATION OR NEW YORK. PATCH DISTURBED AREAS TO MATCH ADJACENT MATERIALS AND FINISHES.

E. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THAT NO CONFLICTS EXIST IN LOCATIONS OF ANY MECHANICAL, TELEPHONE, ELECTRICAL, PLUMBING AND SPRINKLER EQUIPMENT (TO INCLUDE PIPING, DUCT WORK, STRUCTURAL MEMBERS AND CONDUIT) AND THAT REQUIRED CLEARENCES FOR INSTALLATIONS AND MAINTENANCE OF ABOVE EQUIPMENT ARE PROVIDED. ELEMENTS IN CONFLICT SHALL BE DETERMINED AND REVIEWED WITH ARCHITECT FOR RESOLUTION PRIOR TO CONSTRUCTION.

F. CONTRACTOR SHALL ORDER AND SCHEDULE DELIVERY MATERIALS IN AMPLE TIME TO AVOID DELAYS IN CONSTRUCTION. IF AN ITEM IS FOUND TO BE UNAVAILABLE OR HAVE LONG A LONG LEAD TIME, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT WITHIN SEVEN (7) DAYS OF CONTRACT AWARD.

DIVISION 1 - GENERAL REQUIREMENTS - cont.

SECTION 01300 - SUBMITTALS

1.1 GENERAL

A. WITHIN SEVEN (7) DAYS OF THE CONTRACT AWARD, THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT A SCHEDULE OF ALL SUBMITTALS IDENTIFYING ESTIMATED DATE OF SUBMISSION. SUBMITTALS SHALL INCLUDE BUT ARE NOT LIMITED TO:

1. FINISHES
2. CARPET SEAMING DIAGRAM
3. DOORS, FRAMES, HARDWARE AND STOREFRONT
4. GLASS
5. METALS
6. MILLWORK
7. EQUIPMENT
8. APPLIANCES
9. MECHANICAL EQUIPMENT, DIFFUSERS, GRILLES, DEVICES, ETC.
10. ELECTRICAL EQUIPMENT, LIGHT FIXTURES, CONTROLS, DEVICES, ETC.
11. PLUMBING EQUIPMENT, FIXTURES, DEVICES, ETC.
12. SPRINKLER PLAN

B. PREPARATION OF SUBMITTALS SHALL BE AS FOLLOWS:

1. SUBMIT ONE (1) REPRODUCIBLE COPY AND TWO (2) PRINTS OF EACH SHOP DRAWING.
2. FOR CATALOG CUTS, BROCHURES, AND OTHER STANDARD PRINTED OR PUBLISHED PRODUCT DATA, SUBMIT NUMBER OF COPIES NEEDED BY CONTRACTOR, PLUS TWO (2) COPIES TO BE RETAINED BY ARCHITECT.
3. THE CONTRACTOR SHALL SUBMIT A MINIMUM OF THREE (3) SAMPLES OF FINISHES. THE ARCHITECT SHALL RETAIN TWO (2) SAMPLES OF FINISHES FOR RECORD AND RETURN A MINIMUM OF ONE SAMPLE TO CONTRACTOR.

C. THE CONTRACTOR SHALL PROVIDE MANUFACTURER'S SPECIFICATIONS, INSTALLATION INSTRUCTIONS, SHOP DRAWINGS AND SAMPLES FOR REVIEW AND APPROVAL PRIOR TO ORDERING OR PROCEEDING WITH THE WORK. NO CONSTRUCTION SHALL PROCEED UNTIL SUBMITTALS ARE APPROVED.

D. CONTRACTOR SHALL ALLOW FIVE (5) WORKING DAYS FOR THE ARCHITECT AND CONSULTANTS TO THE ARCHITECT TO REVIEW SUBMITTALS. ALL SUBMITTALS NOT REVIEWED DIRECTLY BY THE ARCHITECT, BUT RATHER CONSULTANTS TO THE ARCHITECTS, SHALL BE SUBMITTED SIMULTANEOUSLY TO BOTH THE ARCHITECT AND THE CONSULTANT AND SHALL BE NOTED AS SUCH. THE CONTRACTOR SHALL BOT PROCEED WITH WORK UNTIL BOTH THE ARCHITECT AND CONSULTANT HAVE APPROVED THE SUBMITTAL. NO EXTENSION OF THE CONTRACT TIME WILL BE GRANTED BECAUSE OF FAILURE TO PROVIDE SUBMITTALS FOR THE ARCHITECT'S REVIEW COORDINATION IN A TIMELY FASHION.

E. THE ARCHITECT RESERVES THE RIGHT TO REJECT AND AND ALL ITEMS INSTALLED WITHOUT PRIOR REVIEW AND APPROVAL BY THE ARCHITECT.

F. REFER TO SPECIFIED ITEMS FOR SPECIFIC SUBMITTAL REQUIREMENTS.

SECTION 01400 - QUALITY CONTROL

1.1 GENERAL

A. DIMENSIONS AND TOLERANCES:

1. DO NOT SCALE DRAWINGS GOVERN. VERIFY DIMENSIONS WITH FIELD CONDITIONS. IF DISCREPANCIES AND DISCOVERED BETWEEN FIELD CONDITIONS AND DRAWINGS OR BETWEEN DRAWINGS, CONTRACT THE ARCHITECT FOR RESOLUTION BEFORE PROCEEDING.
2. HORIZONTAL DIMENSIONS INDICATED ARE TO/FROM FINISHED FACE OF PARTITION, EXCEPT AS NOTED.
3. VERTICAL DIMENSIONS INDICATED ARE TO/FROM FINISHED FACE OF PARTITION, EXCEPT AS NOTED.
4. FLOOR TOLERANCE: THE CONTRACTOR IS TO IMMEDIATELY VERIFY SLOPE AND REPORT AND DEVIATION OVER A 1/4 INCH SLOPE IN 10 FEET TO THE ARCHITECT PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEVELING ALL AREAS TO ACHIEVE A SLOP DEVIATION AND SLIDING DOORS.
5. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT APPROVAL OF THE ARCHITECT UNLESS NOTED (+-).
6. DIMENSIONS INDICATED TO BE "CLEAR" OR "CLR" SHALL BE MAINTAINED. ANY DISCREPANCIES OR VARIATIONS IN THESE DIMENSIONS SHALL BE REVIEWED WITH THE ARCHITECT BEFORE BEGINNING CONSTRUCTION.
7. ANY DIMENSION NOTED "VERIFY" OR "VIF" MUST BE REVIEWED WITH THE ARCHITECT BEFORE BEGINNING CONSTRUCTION.
8. THE CONTRACTOR SHALL CONTINUOUSLY CHECK ARCHITECTURAL AND STRUCTURAL CLEARANCES FOR ACCESSIBILITY OF EQUIPMENT AND MECHANICAL AND ELECTRICAL SYSTEMS. NO ALLOWANCE OF ANY KIND WILL BE MADE FOR THE CONTRACTOR'S FAILURE TO FORESEE MEANS OF INSTALLING EQUIPMENT INTO POSITION INSIDE STRUCTURES.

B. OBSERVATION OF WORK

1. THE ARCHITECT, ACTING AS THE OWNER'S DESIGNATED AGENT FOR DESIGN OF THIS PROJECT, WILL EXERCISE SOLE AUTHORITY FOR DETERMINING CONFORMANCE OF MATERIALS, EQUIPMENT AND SYSTEMS WITH THE INTENT OF THE DESIGN. REVIEW AND ACCEPTANCE OF ITEMS PROPOSED BY CONTRACTOR FOR INCORPORATION INTO THE WORK WILL BE BY THE ARCHITECT. THIS FUNCTION OF THE ARCHITECT WILL APPLY BOTH TO CONTRACT AS INITIALLY SIGNED, AND TO THE CHANGES TO CONTRACT BY MODIFICATION DURING PROGRESS OF WORK.
2. IF AT ANY TIME BEFORE COMMENCEMENT OF WORK, OR DURING PROGRESS THEREOF, THE CONTRACTOR'S METHODS, EQUIPMENT OR APPLIANCES ARE INEFFICIENT OR INAPPROPRIATE FOR SECURING QUALITY OR WORK, OR RATE OF PROGRESS INTENDED BY CONTRACT DOCUMENTS, THE OWNER MAY ORDER THE CONTRACTOR TO IMPROVE THEIR QUALITY OR INCREASE THEIR EFFICIENCY. THIS WILL NOT RELIEVE THE CONTRACTOR OF HIS SURETIES FROM THEIR OBLIGATIONS TO SECURE QUALITY OF WORK AND RATE OF PROGRESS SPECIFIED IN CONTRACT.

C. REFERENCE TO STANDARDS:

1. MATERIALS AND WORKMANSHIP SPECIFIED BY REFERENCE TO NUMBER SYMBOL, TO TITLE OF A SPECIFICATION SUCH AS COMMERCIAL STANDARDS, FEDERAL SPECIFICATION, TRADE ASSOCIATION STANDARD, OR OTHER SIMILAR STANDARD, SHALL COMPLY WITH REQUIREMENTS IN LATEST EDITION OR REVISION THEREOF AND WITH ANY AMENDMENT OR SUPPLEMENT THERETO IN EFFECT ON DATE OF ORIGIN OF THIS PROJECT'S CONTRAST DOCUMENTS. SUCH STANDARD, EXCEPT AS MODIFIED HEREIN, SHALL HAVE FULL FORCE AND EFFECTS AS THOUGH PRINTED IN CONTRACT DOCUMENTS.
2. THE CONTRACTOR SHALL WAIVE "COMMON PRACTICE" AND "COMMON USAGE" AS CONSTRUCTION CRITERIA WHEREVER DETAILS AND CONTRACT DOCUMENTS OR GOVERNING CODES, ORDINANCES, ETC., REQUIRE GREATER QUANTITY OR BETTER QUALITY THAN COMMON PRACTICE OR COMMON USAGE WOULD REQUIRE.

D. EXISTING CONDITIONS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING CONTRACT DOCUMENTS, FIELD CONDITIONS, AND DIMENSIONS FOR ACCURACY AND CONFIRMING THAT WORK IS BUILDABLE AS SHOWN BEFORE PROCEEDING WITH CONSTRUCTION. CLARIFICATION REGARDING ANY CONFLICTS SHALL BE RECEIVED PRIOR TO RELATED WORK BEING STARTED.
2. THE CONTRACTOR'S SHALL NOTIFY THE OWNER IN WRITING OF ANY DEFICIENCIES IN BASE CONSTRUCTION PRIOR TO THE COMMENCEMENT OF THIS WORK. ANY UNREPORTED DEFICIENCIES WILL BECOME THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT.

E. IN THE EVENT OF CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. DETAIL DRAWINGS TAKE PRECEDENCE OVER DRAWINGS OF LARGER SCOPE. SHOULD THE CONTRACTOR AT ANY TIME DISCOVER AN ERROR IN A DRAWING OR SPECIFICATION, OR A DISCREPANCY OR VARIATION BETWEEN DRAWINGS, OR A DISCREPANCY OR VARIATION BETWEEN DIMENSIONS AND MEASUREMENTS AT SITE, OR LACK OF DIMENSIONS OR OTHER INFORMATION, THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK AFFECTED UNTIL CLARIFICATION HAS BEEN MADE.

F. THE CONTRACTOR SHALL COORDINATE AND REVIEW THE LAYOUT AND EXACT LOCATION OF THE ITEMS LISTED BELOW IN THE FIELD PRIOR TO CONSTRUCTION. ANY CONFLICTS THAT ARISE SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION IN WRITING FOR RESOLUTION PRIOR TO PROCEEDING WITH CONSTRUCTION:

1. PARTITIONS
2. DOORS
3. CORE DRILL LOCATIONS
4. ELECTRICAL/TELEPHONE OUTLETS
5. THERMOSTATS
6. LIGHTS SWITCHES
7. LIGHT FIXTURES
8. CHANGES UB CEILING PLACE, AND OTHER CEILING FEATURES
9. VAV BOXES, SUPPLEMENTAL AC UNITS AND OTHER MECHANICAL, ELECTRICAL, OR PLUMBINGS ITEMS REQUIRING CEILING ACCESS OR AFFECTING CEILING HEIGHT.

G. THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED SPECIFICATION & INSTALLATION PROCEDURES. IF THESE ARE CONTRARY TO THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT, IN WRITING IMMEDIATELY, TO RESOLVE DISCREPANCIES PRIOR TO PROCEEDING.

H. ONLY NEW ITEMS OF RECENT MANUFACTURE, OF THE HIGHEST QUALITY, FREE FROM DEFECTS, WILL BE PERMITTED ON THE WORK. REJECTED ITEMS SHALL BE REMOVED IMMEDIATELY FORM THE WORK AND REPLACED WITH ITEMS OF THE QUALITY SPECIFIED. FAILURE TO REMOVE REJECTED MATERIALS AND EQUIPMENT SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR QUALITY AND CHARACTER OF ITEMS USED NOR FROM ANY OTHER OBLIGATION IMPOSED BY THE CONTRACT.

DIVISION 1 - GENERAL REQUIREMENTS - cont.

SECTION 01400 - QUALITY CONTROL (CONT'D)

I. THE FINISHED WORK SHALL BE FIRM, WELL ANCHORED, IN TRUE ALIGNMENT, PLUMB, LEVEL, WITH SMOOTH, CLEAN, UNIFORM APPEARANCE WITHOUT WAVES, DISTORTIONS, HOLES, MARKS, CRACKS, STAINS, OR DISCOLORATION. JOINTINGS SHALL BE CLOSE FITTING, NEAT AND WELL SCRIBED. THE FINISHED WORK SHALL HAVE NO EXPOSED UNSIGHTLY ANCHORS OR FASTENERS AND SHALL NOT PRESENTS HAZARDOUS, UNSAFE CORNERS. WORK SHALL HAVE THE PROVISION FOR EXPANSION, CONTRACTION, AND SHRINKAGE AS NECESSARY TO PREVENT CRACKS, BUCKLING AND WARPING DUE TO TEMPERATURE AND HUMIDITY CONDITIONS.

J. ATTACHMENTS, CONNECTIONS, OR FASTENINGS OF ANY NATURE ARE TO BE PROPERLY AND PERMANENTLY SECURED IN CONFORMANCE WITH BEST PRACTICE AND THE CONTRACTOR IS RESPONSIBLE FOR IMPROVING THEM ACCORDINGLY. THE DRAWINGS SHOW ONLY SPECIAL CONDITIONS TO ASSIST THE CONTRACTOR. THEY DO NOT ILLUSTRATE EVERY SUCH DETAIL.

K. NO WORK DEFECTIVE IN CONSTRUCTION OR QUALITY OR DEFICIENT IN ANY REQUIREMENTS OF DRAWINGS AND SPECIFICATIONS WILL BE ACCEPTABLE IN CONSEQUENCE OF THE OWNER'S OR ARCHITECT'S FAILURE TO DISCOVER OR TO POINT OUT DEFECTS OR DEFICIENCIES DURING CONSTRUCTION; NOR WILL PRESENCE OF INSPECTORS ON WORK RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR SECURING QUALITY AND PROGRESS OR WORK AS REQUIRED BY THE CONTRACT. DEFECTIVE WORK REVEALED WITHIN REQUIRED TIME GUARANTEES, AS SPECIFIED IN THE CONTRACT, SHALL BE REPLACED BY WORK CONFORMING WITH THE INTENT OF THE CONTRACT. NO PAYMENT WHETHER PARTIAL OR FINAL. SHALL BE CONSTRUED AS AN ACCEPTANCE OF DEFECTIVE WORK OR IMPROPER MATERIALS.

SECTION 0150 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.1 GENERAL

A. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROVIDE PROTECTION FOR ANY EXISTING FINISHES INCLUDING ELEVATORS, LOBBIES, STAIRS, AND CORRIDORS OF THE BASE BUILDING.
B. THE CONTRACTOR SHALL PROTECT EXISTING BASE BUILDING WINDOW COVERINGS.
C. THE CONTRACTOR SHALL PATCH AND REPAIR FIREPROOFING DAMAGED OR REMOVED DURING PERFORMANCE OF THE WORK. FIREPROOF NEW PENETRATIONS REQUIRED BY THE WORK.
D. DEBRIS SHALL BE REMOVED FROM THE SITE ON A DAILY BASIS. UPON COMPLETION OF THE WORK, REMOVE DEBRIS FROM THE SITE CREATED BY THE WORK PROVIDED UNDER THE CONTRACT AND LEAVE AREAS CLEAN.
E. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN A JOB SITE TELEPHONE AND E-MAIL CONNECTION.

SECTION 01700 - CONTRACT CLOSEOUT

1.1 GENERAL

A. WHEN THE CONTRACTOR CONSIDERS THAT THE WORK IS SUBSTANTIALLY COMPLETE, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ARCHITECT A LIST OF ITEMS TO BE COMPLETED OR CORRECTED. THE ARCHITECT SHALL VISIT THE SITE TO DETERMINE THE STATUS OF COMPLETION AND AMEND THE CONTRACTOR'S LIST AS REQUIRED. UPON THE CONTRACTOR'S STATED COMPLETION OF THE ITEMS LISTED TO BE COMPLETED OR CORRECTED, AND PRIOR TO FINAL PAYMENT, THE ARCHITECT SHALL PERFORM A FINAL INSPECTION OF ALL ITEMS LISTED. FAILURE TO COMPLETE LISTED ITEMS, AS DETERMINED BY THE ARCHITECT, SHALL REQUIRE ADDITIONAL SITE VISITS AS NEEDED BY THE ARCHITECT TO DETERMINE FINAL COMPLETION. THE COST OF ANY ADDITIONAL SITE VISITS SHALL BE BILLED HOURLY BASED ON THE ARCHITECTS PUBLISHED HOURLY RATES AND SHALL BE DEDUCTED FROM THE CONTRACTOR'S FINAL PAYMENT.

B. THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE OWNER BY THE CONTRACTOR BEFORE REQUESTING FINAL PAYMENT:

1. COMPLETE RELEASE OR WAIVER OF LIENS - DOCUMENTATION SHALL BE NOTARIZED AND SIGNED.
2. CERTIFICATES OF INSPECTION APPROVALS FOR REQUIRED OCCUPANCY PERMIT AND SIMILAR APPROVALS OR CERTIFICATIONS BY GOVERNING AUTHORITIES, ASSURING THE OWNER'S FULL ACCESS AND USE OF COMPLETED WORK.
3. A NOTEBOOK CONTAINING WARRANTIES, BONDS, GUARANTEES, AFFIDAVITS AND CERTIFICATES REQUIRED BY THE CONTRACT DOCUMENTS INCLUDE ANY OPERATING AND CLEANING INSTRUCTIONS FOR APPLIANCES, MATERIALS, FINISHES, SYSTEMS AND EQUIPMENT INSTALLED AS PART OF THE WORK.

C. FINAL CLEANING: REMOVE PROTECTIVE COATINGS, COVERINGS, ANY TAGS, LABELS OR OTHER MARKINGS FROM MATERIALS FIXTURES AND EQUIPMENT. CLEAN WALL, FLOOR AND CEILING SURFACES INCLUDING TRIM, OUTLET AND SWITCH PLATES, WINDOWS, WINDOW SILLS, AND WINDOW TREATMENTS. CLEAN PLUMBING FIXTURES TO A SANITARY CONDITION.

4. GC TO PROVIDE AS-BUILT REDLINES TO AOR FOR FINAL CLOSE OUT DOCUMENTS.

DIVISION 2 - SITEWORK

SECTION 02070 - SELECTIVE DEMOLITION

1.1 FIELD CONDITIONS

A. NOTIFY ARCHITECT OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS BEFORE PROCEEDING WITH SELECTIVE DEMOLITION.
B. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL SCHEDULE A MEETING WITH THE OWNER AND THE ARCHITECT TO REVIEW ALL ITEMS TO BE SALVAGED. SALVAGED ITEMS MAY NOT NECESSARILY BE INDICATED FOR REUSE. SALVAGED ITEMS MAY INCLUDE:

1. MILLWORK
2. DOORS, FRAMES, AND HARDWARE
3. LAY-IN CEILING PANELS AND CEILING GRID
4. ALL GLASS ENTRANCE SYSTEMS COMPONENTS
5. HVAC DIFFUSERS, GRILLES, EQUIPMENT AND CONTROLS
6. ELECTRICAL EQUIPMENT, LIGHTING FIXTURES AND CONTROLS

1.2 EXECUTION

A. EXTENT OF DEMOLITION IS INDICATED IN THE DRAWINGS.
B. PROTECT FINISHES INDICATED TO REMAIN DURING DEMOLITION.
C. FOLLOWING DEMOLITION, BASE BUILDING PARTITIONS SHOULD BE CLEANED AND PREPARED FOR PROPOSED TENANT CONSTRUCTION PER REVIEW OF ARCHITECT AND THE CONTRACTOR. SURFACES INDICATED ARE EXISTING TO REMAIN SHALL BE RESTORED TO LIKE-NEW CONDITION. SURFACES INDICATED AS EXISTING TO REMAIN AND TO RECEIVE NEW FINISHES SHALL BE PROPERLY PREPARED TO RECEIVE INDICATED FINISHES.
D. EXTENT OF ITEMS TO BE REUSED IS INDICATED IN THE CONTRACT DOCUMENTS. DISPOSE OF REMAINING ITEMS DETERMINED NOT TO BE SALVAGED IN A SAFE, CLEAN, MANNER AND IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
E. MAKE SAFE ABANDONED ELECTRICAL CONDUITS.
F. TERMINATE ABANDONED PLUMBING AT ENTRY TO TENANT SPACE.

DIVISION 3 - CONCRETE

SECTION 03500 - CEMENTITIOUS DECKS AND TOPPINGS

1.1 GENERAL

A. WHERE LEVELING OR PATCHING OF EXISTING CONCRETE FLOOR IS REQUIRED EITHER BECAUSE SURFACE OF SLAB IS NOT WITHIN REQUIRED TOLERANCE OR BECAUSE RESURFACING IS REQUIRED FOR INSTALLATION OF SPECIFIED FINISH, USE A SELF-LEVELING CEMENTITIOUS TOPPING AS INDICATED BELOW.
B. ACCEPTABLE PRODUCTS:
   1. ARDEX INC. - K-15 SELF-LEVELING UNDERLAYMENT
   2. W.R. BONSAL CO. - SELF-LEVELING UNDERLAYMENT
C. SURFACE PREPARATION:
   1. SUBFLOORS SHALL BE SOLID, THOROUGHLY CLEANED, FREE FROM WAX, GREASE, LATEX COMPOUNDS, CURING COMPOUNDS, DUST, AND OTHER SIMILAR FOREIGN MATTER.

DIVISION 4 - MASONRY

2. CRACKS AND PENETRATIONS SHALL BE PATCHED TO PREVENT SEEPAGE OR LEAKING OF TOPPING.
3. TOPPINGS SHALL NOT BE APPLIED OVER GYPSUM, ASPHALT, HOT PATCHES, WATERBASE ADHESIVES, AND MOST KINDS OF LIGHTWEIGHT CONCRETE.
4. SURFACES SCHEDULED TO RECEIVE UNDERLAYMENT TOPPING SHALL BE PRIMED USING A SUITABLE PRIMER, AS

SECTION 04200 - UNIT MASONRY

1.1 DEFINITIONS

A. CMU(S): CONCRETE MASONRY UNIT(S).
B. REINFORCED MASONRY: MASONRY CONTAINING REINFORCING STEEL IN GROUTED CELLS.

1.2 PERFORMANCE REQUIREMENTS

A. PROVIDE STRUCTURAL UNIT MASONRY THAT DEVELOPS INDICATDE NET-AREA COMPRESSIVE STRENGTHS AT 28 DAYS.

1. DETERMINE NET-AREA COMPRESSIVE STRENGTH FROM AVERAGE NET-AREA COMPRESSIVE STRENGTHS OF MASONRY UNITS AND MORTAR TYPES (UNIT-STRENGTH METHOD) ACCORDING TO TABLES 1 AND 2 IN ACI 530.1/ASCE 6/TMS 602.
2. DETERMINE NER-AREA COMPRESSIVE STRENGTH OF MASONRY BY TESTING MASONRY PRISMS ACCORDING TO ASTM C 1314.

1.3 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. SHOP DRAWINGS: FOR THE FOLLOWING:

1. MASONRY UNITS: SHOW SIZES, PROFILES, PROFILES, COURSING, AND LOCATIONS OF SPECIAL SHAPES.
2. REINFORCING STEEL: DETAIL BENDING AND PLACEMENT OF UNIT MASONRY REINFORCING BARS. COMPLY WITH ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
3. FABRICATED FLASHING: DETAIL CORNER UNITS, END-DAM UNITS, AND OTHER SPECIAL APPLICATIONS.

1.4 INFORMATIONAL SUBMITTALS

A. MATERIAL CERTIFICATES: FOR EACH TYPE AND SIZE OF THE FOLLOWING:

1. MASONRY UNITS.

a. INCLUDE DATA ON MATERIAL PROPERTIES.
b. FOR MASONRY UNITS USED IN STRUCTURAL MASONRY , INCLUDE DATA AND CALCULATIONS ESTABLISHING AVERAGE NET-AREA COMPRESSIVE STRENGTH OF UNITS.

2. CEMENTITIOUS MATERIALS. INCLUDE BRAND, TYPE, AND NAME OF MANUFACTURER.
3. PREBLENDED, DRY MORTAR MIXES. INCLUDE DESCRIPTION OF TYPE AND PROPORTIONS OF INGREDIENTS.
4. GROUT MIXES. INCLUDE DESCRIPTION OF TYPE AND PRO

DIVISION 4 - MASONRY - cont.

SECTION 04200 - UNIT MASONRY (CONT'D)

2.5 MORTAR AND GROUT MATERIALS
- A. REGIONAL MATERIALS: AGGREGATE FOR MORTAR AND GROUT SHALL BE EXTRACTED, HARVESTED, OR RECOVERED, AS WELL AS MANUFACTURED, WITHIN 500 MILES (800 KM) OF PROJECT SITE.
- B. PORTLAND CEMENT: ASTM C 150, TYPE I OR II, EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION, PROVIDE NATURAL COLOR OR WHITE CEMENT AS REQUIRED TO PROVIDE MORTAR COLOR INDICATED.
- C. HYDRATED LIME: ASTM C 207, TYPE S.
- D. MORTAR CEMENT: ASTM C 207, 1329.
- E. COLD-WEATHER ADMIXTURE: NONCHLORIDE, NONCORROSIVE, ACCELERATING ADMIXTURE COMPLYING WITH ASTM C 494/C 494M, TYPE C, AND RECOMMENDED BY MANUFACTURER FOR USE IN MASONRY MORTAR OF COMPOSITION INDICATED.
- F. WATER-REPELLANT ADMIXTURE: LIQUID WATER-REPELLANT MORTAR ADMIXTURE INTENDED FOR USE WITH CMUS CONTAINING INTEGRAL WATER REPELLANT BY SAME MANUFACTURER.
- G. WATER: POTABLE

2.6 REINFORCEMENT
- A. UNCOATED STEEL REINFORCING BARS: ASTM A 615/A 614M OR ASTM A 996/A 996M, GRADE 60 (GRADE 420).
- B. MASONRY JOINT REINFORCEMENT, GENERAL: ASTM A 951/A 951M.
- 1. INTERIOR WALLS: HOT-DIP GALVANIZED, CARBON STEEL.
- 2. EXTERIOR WALLS: STAINLESS STEEL.
- 3. WIRE SIZE FOR SIDE RODS: 0.187-INCH (4.76-MM) DIAMETER.
- 4. WIRE SIZE FOR CROSS RODS: 0.187-INCH (4.76-MM) DIAMETER.
- 5. WIRE SIZE FOR VENEER TIES: 0.187-INCH (4.76-MM) DIAMETER.
- 6. SPACING OF CROSS RODS, TABS, AND CROSS TIES: NOT MORE THAN 16 INCHES (407 MM) O.C.
- 7. PROVIDE IN LENGTHS IF NOT LESS THAN 10 FEET (3 M), WITH PREFABRICATED CORNER AND TEE UNITS.
- C. MASONRY-JOINT REINFORCEMENT FOR SINGLE-WYTHE MASONRY: EITHER LADDER OR TRUSS TYPE WITH SINGLE PAIR OF SIDE RODS.

2.7 EMBEDDED FLASHING MATERIALS
- A. METAL FLASHING: PROVIDE METAL FLASHING COMPLYING WITH SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL") DIVISION 07 SECTION "SHEET METAL FLASHING AND TRIM" AND AS FOLLOWS:
- 1. METAL DRIP EDGE: FABRICATE FROM STAINLESS STEEL. EXTEND AT LEAST 3 INCHES (76 MM) INTO WALL AND 1/2 INCH (13 MM) OUT FORM WALL, WITH OUTER EDGE BENT DOWN 30 DEGREES AND HEMMED.
- 2. METAL SEALANT STOP: FABRICATE FROM STAINLESS STEEL. EXTEND AT LEAST 3 INCHES (76 MM) INTO WALL AND OUT TO EXTERIOR FACE OF WALL. AT EXTERIOR FACE OF WALL, BEND METAL BACK ON ITSELF FOR 3/4 INCH (19 MM) AND DOWN INTO JOINT 1/4 INCH (6 MM) TO FORM A STOP FOR RETAINING SEALANT BACKER ROD.
- 3. METAL EXPANSION-JOINT STRIPS: FABRICATE FROM STAINLESS STEEL TO SHAPES INDOCATED.
- B. FLEXIBLE FLASHING: USE ONE OF THE FOLLOWING UNLESS OTHERWISE INDICATED:
- 1. 7-OZ.SQ. FT. (2-KG/SQ. M) COPPER SHEET BONDED BETWEEN 2 LAYERS OF GLASS-FIBER CLOTH. USE ONLY WHERE FLASHING IS FULLY CONCEALED IN MASONRY.
- 2. RUBBERIZED-ASPHALT FLASHING: COMPOSITE FLASHING PRODUCT CONSISTING OF A PLIABLE, ADHESIVE RUBBERIZED-ASPHALT COMPOUND, BONDED TO A HIGH-DENSITY, CROSS-LAMINATED POLYETHYLENE FILM TO PRODUCE AN OVERALL THICKNESS OF NOT LESS THAN 0.040 INCH (1.02 MM).
- 3. ELASTOMERIC THERMOPLASTIC FLASHING: COMPOSITE FLASHING PRODUCT FLASHING PRODUCT CONSISTING OF A POLYESTER-REINFORCED ETHYLENE INTERPOLYMER ALLOY.
- 4. EPDM D 4637, 0.040 INCH (1.0 MM) THICK.
- C. ADHESIVES, PRIMERS, AND SEAM TAPES FOR FLASHING: FLASHING MANUFACTURER'S STANDARD PRODUCTS OR PRODUCTS RECOMMENDED BY FLASHING MANUFACTURER FOR BONDING FLASHING SHEETS TO EACH OTHER AND TO SUBSTRATES.

2.8 MISCELLANEOUS MASONRY ACCESSORIES
- A. COMPRESSIBLE FILLER: PREMOLDED FILLER STRIPS COMPLYING WITH ASTM D 1056, GRADE 2A1; COMPRESSIBLE UP TO 35 PERCENT; OF WIDTH AND THICKNESS INDICATED; FORMULATED FROM NEOPRENE, URETHANE OR PVC.
- B. PREFORMED CONTROL-JOINT GASKETS: MADE FROM STYRENE-BUTADIENE-RUBBER COMPOUND, COMPLYING WITH ASTM D 2000, DESIGNATION M2AA-805 OR PVC, COMPLYING WITH ASTM D 2287, TYPE PVC-65406 AND DESIGNED TO FOR STANDARD SASH BLOCH AND TO MAINTAIN LATERAL STABILITY IN MASONRY WALL; SIZE AND CONFIGURATION AS INDICATED.
- C. BOND-BREAKER STRIPS: ASPHALT-SATURATED, ORGANIC ROOFING FELT COMPLYING WITH ASTM D 226, TYPE A (NO. 15 ASPHALT FELT).

2.9 MASONRY-CELL INSULATION
- A. LOOSE-GRANULAR FILL INSULATION: PERLITE COMPLYING WITH ASTM C 549, TYPE II (SURFACE TREATED FOR WATER REPELLENCY AND LIMITED MOISTURE ABSORPTION) OR TYPE IV (SURFACE TREATED FOR WATER REPELLENCY AND TO LIMIT DUST GENERATION).
- B. MOLDED-POLYSTYRENE INSULATION UNITS: RIGID, CELLULAR THERMAL INSULATION FORMED BY THE EXPANSION OF POLYSTYRENE-RESIN BEADS OR GRANULES IN A CLOSED MOLD TO COMPLY WITH ASTM C 578, TYPE I. PROVIDE SPECIALLY SHAPED UNITS DESIGNED FOR INSTALLING IN CORES OF MASONRY UNITS.

DIVISION 5 - METALS

SECTION 05500 - METAL FABIRCATIONS

1.1 GENERAL
- A. SUBMITTALS
- 1. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION DETAILS FOR METAL FABRICATIONS.
- a. INCLUDE PLANS, ELEVATIONS, SECTIONS, AND DETAILS OF METAL FABRICATIONS AND THEIR CONNECTIONS. SHOW ANCHORAGE AND ACCESSORY ITEMS.
- 2. SAMPLES: FOR EACH TYPE AND FINISH.
- B. PRODUCTS
- 1. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES WITHOUT BLEMISHES.
- 2. FERROUS METALS
- a. STEEL TUBING: ASTM A 500, COLD-FORMED STEEL TUBING.
- b. STEEL PIPE: ASTM A 53/A 53M, STANDARD WEIGHT (SCHEDULE 40) UNLESS OTHERWISE INDICATED.
- c. SLOTTED CHANNEL FRAMING: COLD-FORMED METAL BOX CHANNELS (STRUTS) COMPLYING WITH MFMA-
  - I) SIZE OF CHANNELS: 1-5/8 BY 1-5/8 INCHES (41 BY 41 MM).
  - II) MATERIAL: GALVANIZED STEEL, ASTM A 653/A 653M, WITH G96 (Z275) COATING; 0.079-INCH (2-MM) NOMINAL THICKNESS
- C. FABRICATION
- 1. SHOP ASSEMBLY: PREASSEMBLE ITEMS IN THE SHOP TO GREATEST EXTENT POSSIBLE. USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES.
- 2. CUT, DRILL, AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES.
- 3. WELD CORNERS AND SEAMS CONTINUOUSLY TO COMPLY WITH THE FOLLOWING:
- a. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
- b. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
- c. REMOVE WELDING FLUX IMMEDIATELY.
- d. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED.
- 4. FORM EXPOSED CONNECTIONS WITH HAIRLINE JOINTS, FLUSH AND SMOOTH, USING CONCEALED FASTENERS OR WELDS WHERE POSSIBLE. LOCATE JOINTS WHERE LEAST CONSPICUOUS.
- 5. FABRICATE SEAMS AND OTHER CONNECTIONS THAT WILL BE EXPOSED TO WEATHER IN A MANNER TO EXCLUDE WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE.
- 6. WHERE UNITS ARE INDICATED TO BE CAST INTO CONCRETE OR BUILT INTO MASONRY, EQUIP WITH INTEGRALLY WELDED STEEL STRAP ANCHORS NOT LESS THAN 24 INCHES (600 MM) O.C.
- 7. MISCELLANEOUS FRAMING AND SUPPORTS
- a. GENERAL: PROVIDE STEEL FRAMING AND SUPPORTS NOT SPECIFIED IN OTHER SECTIONS AS NEEDED TO COMPLETE THE WORK.
- b. FABRICATE UNITS FROM STEEL SHAPES, PLATES, AND BARS OF WELDED CONSTRUCTION UNLESS OTHERWISE INDICATED. FABRICATE TO SIZES, SHAPES, AND PROFILES INDICATED AND AS NECESSARY TO RECEIVE ADJACENT CONSTRUCTION.
- c. WHERE WOOD NAILERS ARE ATTACHED TO GLIDERS WITH BOLTS OR LAG SCREWS, DRILL OR PUNCH HOLES AT 24 INCHES (600 MM) O.C.

DIVISION 5 - METALS - cont.

SECTION 05500 - METAL FABIRCATIONS (CONT'D)

1.1 GENERAL
- A. SUBMITTALS
- 1. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION DETAILS FOR METAL FABRICATIONS.
- a. INCLUDE PLANS, ELEVATIONS, SECTIONS, AND DETAILS OF METAL FABRICATIONS AND THEIR CONNECTIONS. SHOW ANCHORAGE AND ACCESSORY ITEMS.
- 2. SAMPLES: FOR EACH TYPE AND FINISH.
- B. PRODUCTS
- 1. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES WITHOUT BLEMISHES.
- 2. FERROUS METALS
- a. STEEL TUBING: ASTM A 500, COLD-FORMED STEEL TUBING.
- b. STEEL PIPE: ASTM A 53/A 53M, STANDARD WEIGHT (SCHEDULE 40) UNLESS OTHERWISE INDICATED.
- c. SLOTTED CHANNEL FRAMING: COLD-FORMED METAL BOX CHANNELS (STRUTS) COMPLYING WITH MFMA-
  - I) SIZE OF CHANNELS: 1-5/8 BY 1-5/8 INCHES (41 BY 41 MM).
  - II) MATERIAL: GALVANIZED STEEL, ASTM A 653/A 653M, WITH G96 (Z275) COATING; 0.079-INCH (2-MM) NOMINAL THICKNESS
- C. FABRICATION
- 1. SHOP ASSEMBLY: PREASSEMBLE ITEMS IN THE SHOP TO GREATEST EXTENT POSSIBLE. USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES.
- 2. CUT, DRILL, AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES.
- 3. WELD CORNERS AND SEAMS CONTINUOUSLY TO COMPLY WITH THE FOLLOWING:
- a. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
- b. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
- c. REMOVE WELDING FLUX IMMEDIATELY.
- d. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED.
- 4. FORM EXPOSED CONNECTIONS WITH HAIRLINE JOINTS, FLUSH AND SMOOTH, USING CONCEALED FASTENERS OR WELDS WHERE POSSIBLE. LOCATE JOINTS WHERE LEAST CONSPICUOUS.
- 5. FABRICATE SEAMS AND OTHER CONNECTIONS THAT WILL BE EXPOSED TO WEATHER IN A MANNER TO EXCLUDE WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE.
- 6. WHERE UNITS ARE INDICATED TO BE CAST INTO CONCRETE OR BUILT INTO MASONRY, EQUIP WITH INTEGRALLY WELDED STEEL STRAP ANCHORS NOT LESS THAN 24 INCHES (600 MM) O.C.
- 7. MISCELLANEOUS FRAMING AND SUPPORTS
- a. GENERAL: PROVIDE STEEL FRAMING AND SUPPORTS NOT SPECIFIED IN OTHER SECTIONS AS NEEDED TO COMPLETE THE WORK.
- b. FABRICATE UNITS FROM STEEL SHAPES, PLATES, AND BARS OF WELDED CONSTRUCTION UNLESS OTHERWISE INDICATED. FABRICATE TO SIZES, SHAPES, AND PROFILES INDICATED AND AS NECESSARY TO RECEIVE ADJACENT CONSTRUCTION.
- c. WHERE WOOD NAILERS ARE ATTACHED TO GLIDERS WITH BOLTS OR LAG SCREWS, DRILL OR PUNCH HOLES AT 24 INCHES (600 MM) O.C.
- 8. MISCELLANEOUS STEEL TRIM
- a. UNLESS OTHERWISE INDICATED, FABRICATE UNITS FROM STEEL SHAPES, PLATES, AND BARS OF PROFILES SHOWN WITH CONTINUOUSLY WELDED JOINTS AND SMOOTH EXPOSED EDGES. MITER CORNERS AND USE CONCEALED FIELD SPLICES WHERE POSSIBLE.
- b. PROVIDE CUTOUTS, FITTINGS, AND ANCHORAGES AS NEEDED TO COORDINATE ASSEMBLY AND INSTALLATION WITH OTHER WORK. PRIME EXTERIOR MISCELLANEOUS STEEL TRIM WITH ZINC-RICH PRIMER.
- D. STEEL AND IRON FINISHES
- 1. GALVANIZING: HOT-DIP GALVANIZE ITEMS AS INDICATED TO COMPLY ASTM A 153/A 153M FOR STEEL AND IRON HARDWARE WITH ASTM A 123/A 123M FOR OTHER STEEL AND IRON PRODUCTS.
- 2. SHOP PRIME IRON AND STEEL ITEMS NOT INDICATED TO BE GALVANIZED UNLESS THEY ARE TO BE EMBEDDED IN CONCRETE, SPRAYED-ON FIREPROOFING, OR MASONRY, OR UNLESS OTHERWISE INDICATED.
- E. EXECUTION
- 1. INSTALLATION, GENERAL
- a. CUTTING, FITTING, AND PLACEMENT: PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING METAL FABRICATIONS. SET METAL FABRICATIONS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION; WITH EDGES AND SURFACES LEVEL, PLUMB, TRUE, AND FREE OF RACK; AND MEASURED FORM ESTABLISHED LINES AND LEVELS.
- b. FIT EXPOSED CONNECTIONS ACCURATELY TOGETHER TO FORM HAIRLINE JOINTS. WELD CONNECTIONS THAT ARE NOT TO BE LEFT AS EXPOSED JOINTS BUT CANNOT BE SHOP WELDED BECAUSE OF SHIPPING SIZE LIMITATIONS. DO NOT WELD, CUT, OR ABRADE SURFACES OF EXTERIOR UNITS THAT HAVE BEEN HOT-DIP GALVANIZED AFTER FABRICATION AND ARE FOR BOLTED OR SCREWED FIELD CONNECTIONS.
- c. FIELD WELDING: COMPLY WITH THE FOLLOWING REQUIREMENTS:
  - I) USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE MATERIALS.
  - II) OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
  - III) REMOVE WELDING FLUX IMMEDIATELY.
  - IV) AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED.
- d. FASTENING TO IN-PLACE CONSTRUCTION: PROVIDE ANCHORAGE DEVICES AND FASTENERS WHERE METAL FABRICATIONS ARE REQUIRED TO BE FASTENED TO IN-PLACE CONSTRUCTION.
- 2. ADJUSTING AND CLEANING
- a. TOUCHUP PAINTING: IMMEDIATELY AFTER ERECTION, CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS. PAINT UNCOATED AND ABRADED AREAS WITH THE SAME MATERIAL AS USED FOR SHOP PAINTING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PAINTED SURFACES.
- b. GALVANIZED SURFACES: CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS AND REPAIR GALVANIZING TO COMPLY WITH ASTM A 780.

DIVISION 6 - WOODS AND PLASTICS

SECTION 06100 - ROUGH CARPENTRY

1.1 GENERAL
- A. SUBMITTALS: NONE REQ'D
- B. PRODUCTS
- 1. LUMBAR: DOC PS 20 AND APPLICABLE RULED OF GRADING AGENCIES INDICATED. IF NO GRADING AGENCY IS INDICATED, PROVIDE LUMBAR THAT COMPLIES WITH THE APPLICABLE RULES OF ANY RULES-WRITING AGENCY CERTIFIED BY THE ALSO BOARD OF REVIEW. PROVIDE LUMBAR GRADED BY AN AGENCY CERTIFIED BY THE ALSO BOARD REVIEW TO INSPECT AND GRADE LUMBAR UNDER THE RULES INDICATED.
- 2. USE INTERIOR TYPE A FIRE-RETARDANT-TREATED MATERIALS FOR CONCEALED BLOCKING IN WALLS, AND FRAMING FOR RAISED PLATFORMS, FOR EXPOSED ITEMS INDICATED TO RECEIVE A STAINED OR NATURAL FINISH, USE CHEMICAL FORMULATIONS THAT DO NOT BLEED THROUGH, CONTAIN COLORANTS, OR OTHERWISE ADVERSELY.
- 3. PROVIDE MISCELLANEOUS LUMBAR INDICATED AND LUMBAR FOR SUPPORT OR ATTACHMENT OF OTHER CONSTRUCTION, INCLUDING BLOCKING, NAILERS, GROUNDS.
- 4. PLYWOOD BACKING PANELS AT TELEPHONE AND ELECTRICAL EQUIPMENT BACKING PANELS: DOC PS 1, EXTERIOR, AC FIRE-RETARDANT TREATED, IN THICKNESS INDICATED OR, IF NOT INDICATED, NOT LESS THAN 3/4-INCH (19-MM) NOMINAL THICKNESS.
- C. INSTALLATION, GENERAL
- 1. PROVIDE BLOCKING AND FRAMING AS INDICATED AND AS REQUIRED TO SUPPORT FACING MATERIALS, FIXTURES AND SPECIALTY ITEMS.
- 2. PROVIDE FIRE BLOCKING IN FURRED SPACES, STUD SPACES, AND OTHER CONCEALED CAVITIES AS INDICATED AN AS REQUIRED BY CODE.

DIVISION 6 - WOODS AND PLASTICS - cont.

SECTION 06200 - FINISH CARPENTRY (CONT'D)

1.1 GENERAL
- A. SUBMITTALS:
- 1. SHOP DRAWINGS AND HARDWARE CATALOG CUTS OF ALL MILLWORK HARDWARE FOR REVIEW BY THE ARCHITECT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL SHOW THE DESIGN AND DIMENSIONS, AND CLEARLY INDICATE IN LARGE SCALE THE CONSTRUCTION OF THE VARIOUS COMPONENTS, REINFORCEMENTS, AND ALL OTHER PERTINENT DATA AND INFORMATION AS REQUIRED FOR CONSTRUCTION. ANY VARIATION FROM THE DRAWINGS MUST BE CLEARLY NOTED AS A VARIATION FROM THE REQUIREMENTS. FABRICATION OF MILLWORK SHALL NOT PROCEED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ARCHITECT.
- 2. THREE (3) 8" X 10" SAMPLES OF ALL MILLWORK FINISHES (INCLUDING SOLID SURFACES AND METAL) FOR APPROVAL. the ARCHITECT SHALL RETAIN TWO (2) SAMPLES OF FINISHES FOR RECORD AND RETURN A MINIMUM OF ONE SAMPLE TO CONTRACTOR. IN CIRCUMSTANCES AS APPROPRIATE SIZE OF SAMPLES MAY BE REDUCED IF REQUESTED IN WRITING BY CONTRACTOR AND APPROVED BY ARCHITECT PRIOR TO SUBMISSION. FINISHING OF MILLWORK SHALL NOT PROCEED UNTIL SAMPLES HAVE BEEN REVIEWED.
- 3. THE CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH ANTICIPATED DELIVERY DATE FOR ALL MILLWORK. THE CONTRACTOR SHALL CONTINUE TO MONITOR IN WRITING THE ANTICIPATED DELIVERY DATES UNTIL ALL FINISH MATERIALS HAVE BEEN RECEIVED.
- B. VERIFICATION OF EXISTING CONDITIONS:
- 1. BEFORE PROCEEDING WITH THE MILLWORK, THE CONTRACTOR IS TO OBTAIN FIELD MEASUREMENTS, VERIFY DIMENSIONS, AND PROVIDE SHOP DRAWINGS AND DETAILS TO ENSURE AN ACCURATE FIT. ANY VARIANCE FOUND IN THE FIELD MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO FABRICATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE MILLWORK SUBCONTRACTOR ANY REVISIONS OR CLARIFICATIONS ISSUED BY THE ARCHITECT.
- 2. THE CONTRACTOR SHALL PROVIDE FIELD LAYOUT OF ALL WORK AND REPORT AND DISCREPANCIES TO THE ARCHITECT.
- C. PRODUCTS:
- 1. FINISH MATERIALS:
- a. WOOD SPECIES AND CUT FOR TRANSPARENT FINISH AS INDICATED ON FINISH SCHEDULE.
- b. WOOD SPECIES FOR OPAQUE FINISH: ANY CLOSED-GRAIN HARDWOOD.
- c. HIGH-PRESSURE DECORATIVE LAMINATE AS INDICATED ON FINISH SCHEDULE.
- 2. WOOD PRODUCTS:
- a. RECYCLED CONTENT OF MEDIUM-DENSITY FIBERBOARD AND PARTICLEBOARD: PROVIDE PRODUCTS WITH AN AVERAGE RECYCLED CONTENT SO POSTCONSUMER RECYCLED CONTENT PLUS ONE-HALF OF PRECONSUMER RECYCLED CONTENT IS NOT LESS THAN 30 PERCENT.
- b. HARDBOARD: AHA A135.4.
- c. MEDIUM-DENSITY FIBERBOARD: ANSI A208.2, GRADE MD, MADE WITH BINDER CONTAINING NO UREA FORMALDEHYDE.
- 3. CABINET HARDWARE AND ACCESSORIES
- a. GENERAL: PROVIDE CABINET HARDWARE AND ACCESSORY MATERIALS ASSOCIATED WITH ARCHITECTURAL WOORDWORK, EXCEPT FOR ITEMS SPECIFIED IN DIVISION 8 SECTION "DOOR HARDWARE (SCHEDULED BY DESCRIBING PRODUCTS)."
- b. FRAMELESS CONCEALED HINGES (EUROPEAN TYPE): BHMA A156.9, B01602, 170 DEGREES OF OPENING, SELF-CLOSING.
- c. BLACK-MOUNTED PULLS: DOUG MOCKETT DP3B BLACK-MOUNTED PULLS OR APPROVED EQUAL
- d. DRAWER SLIDES: BHMA A156.9, B05091.
  - I) STANDARD DUTY (GRADE 1, GRADE 2, AND GRADE 3): SIDE MOUNTED AND EXTENDING UNDER BOTOTM EDGE DRAWER; FULL-EXTENSION TYPE; ZINC-PLATED STEEL WITH POLYMER ROLLERS
  - II) BOX DRAWER SLIDES: GRADE 1; FOR DRAWERS NOT MORE THAN 6 INCHES (150 MM) HIGH AND 24 INCHES (600 MM) WIDE.
  - III) PENCIL DRAWER SLIDES: GRADE 1; FOR DRAWERS NOT MORE THAN 3 INCHES (75 MM) HIGH AND 24 INCHES (600 MM) WIDE.
- e. DOOR LOCKS: BHMA A156.11, E07121.
- f. DRAWER LOCKS: BHMA A156.11, E07041.
- g. EXPOSED HARDWARE FINISHES: BRIGHT CHROMIUM PLATED (BHMA 625 OR BHMA 651) UNLESS NOTED OTHERWISE ON DRAWINGS.
- D. EXECUTION OF THE WORK:
- 1. THE METHOD MANUFACTURING, FABRICATING AND INSTALLING MILLWORK AND EQUIPMENT AND IT'S STRUCTURAL COMPONENTS DEFINED IN THE CONTRACT DOCUMENTS IS REPRESENTATIVE AND INDICATES DESIGN INTENT ONLY. IF THE MATERIALS, DETAILS OR DIMENSIONAL PROPERTIES ARE AT A VARIANCE WITH THE CONTRACTOR'S OR MANUFACTURER'S RECOMMENDATIONS, ALTERNATE DETAILS WILL BE CONSIDERED FOR REVIEW WHEN SHOP DRAWINGS ARE SUBMITTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO GUARANTEE THAT THE MILLWORK AND EQUIPMENT WILL HAVE PROPER SUPPORT, STABILITY, AND FAULT-FREE PERFORMANCE. ALL WORK SHALL CONFORM TO ARCHITECTURAL WOODWORK INSTITUTE (AWI) STANDARDS FOR PREMIUM CONSTRUCTION.
- 2. IT IS THE INTENT OF THE ARCHITECT THAT THEIR HARDWARE REPRESENT THE HIGHEST QUALITY AND LASTING DURABILITY FOR IT'S SPECIFIC FUNCTION. IF, THE THE OPINION OF THE CONTRACTOR, THE HARDWARE INDICATED ON THE DRAWINGS DOES NOT REPRESENT THE ABOVE-STATED INTENT, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING WITH STATED REASONS AND PROPOSED SUBSTITUTIONS.
- 3. MILLWORK INDICATED TO HAVE TRANSPARENT FINISHES SHALL BE CONSTRUCTED ACCORDING TO AWI STANDARDS FOR PREMIUM GRADE CONSTRUCTION.
- 4. MILLWORK COVERED IN WOOD VENEER OR PLASTIC LAMINATE SHALL BE FABRICATED AND ASSEMBLED BY SKILLED WORKMEN TO THE COMPLETE SATISFACTION OF THE ARCHITECT. REINFORCING AS REQUIRED TO ENSURE A RIGID AND SECURE ASSEMBLY SHALL BE PROVIDED, EVEN IF NOT DETAILED ON THE DRAWINGS. EXPOSED SURFACES SHALL BE FREE FROM DENTS, TOOL MARKS, WARPAGE, BUCKLE, GLUE AND OPEN JOINTS. ALL JOINT CORNERS AND MITER CONNECTIONS SHALL BE MADE TIGHTLY SO THAT THE THREADS ARE ENTIRELY CONCEALED. ALL EXPOSED LAMINATE JOINTS SHALL BE SHOWN ON SHOP DRAWINGS AND REVIEWED BY THE ARCHITECT.
- 5. FOR MILLWORK INDICATING PLASTIC LAMINATE EXTERIOR FINISHED SURFACES, PROVIDE GREY MELAMINE AS THE INTERIOR CABINET AND DRAWER SURFACE FINISH (UNLESS OTHERWISE NOTED IN THE DRAWINGS AND DETAILS).
- 6. INSTALL MILLWORK TO BE PLUMB, LEVEL, TRUE AND STRAIGHT WITH NO DISTORTIONS. SHIM AS REQUIRED USING CONCEALED SHIMS.
- 7. SCRIBE AND CUT WORK TO FIT ADJOINING WORK AND REFINISH CUT SURFACES OR REPAIR DAMAGED FINISH AT CUTS. PROVIDE CLEAR SEALANT AT ALL JOINTS.
- 8. ANCHOR MILLWORK TO BUILT-IN BLOCKING OR DIRECTLY ATTACH TO SUBSTRATE. SECURE TO GROUNDS, STRAPPING AND BLOCKING WITH COUNTER-SUNK, CONCEALED FASTENERS AND BLIND NAILING AS REQUIRED FOR A COMPLETE INSTALLATIONS.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING CERTAIN THAT MILLWORK ITEMS ARE NOT DELIVERED UNITL AREAS ARE SUFFICIENTLY DRY SO THAT THE MILLWORK WILL NOT BE DAMAGED BY EXCESSIVE CHANGES IN MOISTURE CONTENT. ALL DELIVERED UNITS SHALL MATCH THE FINAL APPROVED SHOP DRAWINGS AND SAMPLES. UNITS WHICH ARE MARRED, CHIPPED OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REPLACED AS DETERMINED BY THE ARCHITECT. UNITS SHALL BE PROTECTED DURING SHIPMENT AND INSTALLATION. AFTER INSTALLATION OF UNITS IN THEIR PROPER LOCATION, ALL PROTECTION SHALL BE REMOVED AND ALL SURFACES THOROUGHLY CLEANED TO THE COMPLETE SATISFACTION OF THE ARCHITECT. SURFACES SHALL THEN BE RECOVERED AND PROTECTED.
- 10. REPAIR OR REPLACE DAMAGED OR DEFECTIVE MILLWORK WHEREVER DEEMED NECESSARY. IF MILLWORK CANNOT BE ADEQUATELY REPAIRED, IT SHALL BE REPLACED TO THE SATISFACTION OF THE ARCHITECT.
- 11. ALL STANDING AND RUNNING TRIM PIECES SHALL BE PLAIN SAWN HARDWOOD GRADE I LUMBER TO MEET AWI REQUIREMENTS FOR PREMIUM GRADE.

SECTION 062013 - EXTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
- A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
- A. SECTION INCLUDES:
- 1. EXTERIOR DECKING.
- B. RELATED REQUIREMENTS:
- 1. SECTION 055000 "METAL FABRICATIONS" FOR METAL SUPPORTS OF EXTERIOR BENCH SLATS.
- 2. SECTION 064013 "EXTERIOR ARCHITECTURAL WOODWORK" FOR EXTERIOR WOOD VENEER COMPOSITE PANEL ASSEMBLIES.

1.3 ACTION SUBMITTALS

DIVISION 6 - WOODS AND PLASTICS - cont.

SECTION 062013 - EXTERIOR FINISH CARPENTRY CONT'D
- A. PRODUCT DATA: FOR EACH TYPE OF PROCESS AND FACTORY-FABRICATED PRODUCT. INDICATE COMPONENT MATERIALS, DIMENSIONS, PROFILES, TEXTURES, AND COLORS AND INCLUDE CONSTRUCTION AND APPLICATION DETAILS.
- 1. INCLUDE DATA FOR WOOD-PRESERVATIVE TREATMENT FROM CHEMICAL-TREATMENT MANUFACTURER AND CERTIFICATION BY TREATING PLANT THAT TREATED MATERIALS COMPLY WITH REQUIREMENTS. INDICATE TYPE OF PRESERVATIVE USED AND NET AMOUNT PF PRESERVATIVE RETAINED. INCLUDE CHEMICAL-TREATMENT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR FINISHING TREATED MATERIAL.
- 2. FOR PRODUCTS RECEIVING A WATERBORNE TREATMENT, INCLUDE STATEMENT THAT MOISTURE CONTENT OF
- 3. INCLUDE COPIES OF WARRANTIES FROM CHEMICAL-TREATMENT MANUFACTURERS FOR EACH TYPE OF TREATMENT.
- B. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF PRODUCT INVOLVING SELECTION OF COLORS, PROFILES, OR TEXTURES.
- C. SAMPLES FOR VERIFICATION:
- 1. FOR EACH SPECIES AND CUT OF LUMBER AND PANEL PRODUCTS, WITH 1/2 OF EXPOSED SURFACE FINISHED; 50 SQ. IN. FOR LUMBER AND 8 BY 10 INCHES FOR PANELS.

1.4 INFORMATIONAL SUBMITTALS
- A. COMPLIANCE CERTIFICATES:
- 1. FOR LUMBER THAT IS NOT MARKED WITH GRADE STAMP.
- 2. FOR PRESERVATIVE-TREATED WOOD THAT IS NOT MARKED WITH TREATMENT-QUALITY MARK.
- B. EVALUATION REPORTS: FOR THE FOLLOWING, FROM ICC-ES:

1.5 DELIVERY, STORAGE, AND HANDLING
- A. STACK LUMBER, PLYWOOD, AND OTHER PANELS FLAT WITH SPACERS BETWEEN EACH BUNDLE TO PROVIDE AIR CALCULATION. PROTECT MATERIALS FROM WEATHER BY COVERING WITH WATERPROOF SHEETING ANCHORED. PROVIDE THE AR CIRCULATION AROUND STACKS AND UNDER COVERINGS

1.6 FIELD CONDITIONS
- A. WEATHER LIMITATIONS: PROCEED WITH INSTALLATION ONLY WHEN EXISTING AND FORECAST WEATHER CONDITIONS PERMIT WORK TO BE PERFORMED AND AT LEAST ONE COAT PF SPECIFIED FINISH CAN BE APPLIED WITHOUT EXPOSURE TO RAIN, SNOW, OR DAMPNESS.
- B. DO NOT INSTALL FINISH CARPENTRY MATERIALS THAT ARE WET, MOISTURE DAMAGED, OR MOLD DAMAGED.
- 1. INDICATIONS THAT MATERIALS ARE WET OR MOISTURE DAMAGED INCLUDE, BUT ARE NOT LIMITED TO, DISCOLORATION, SAGGING, OR IRREGULAR SHAPE.
- 2. INDICATIONS THAT MATERIALS ARE MOLD DAMAGED INCLUDE, BUT ARE NOT LIMITED TO, FUZZY OR SPLOTCHY SURFACE CONTAMINATION AND DISCOLORATION.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL
- A. LUMBER: DOC PS 20.
- B. FACTORY MARK EACH PIECE OF LUMBER WITH GRADE STAMP OF INSPECTION AGENCY INDICATING GRADE, SPECIES, MOISTURE CONTENT AT TIME OF SURFACING, AND MILL.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 071416 - COLD FLUID-APPLIED WATERPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT =, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
B. SECTION INCLUDES:
1. SINGLE-COMPONENT POLYURETHANE WATERPROOFING.

1.3 PERFORMANCE REQUIREMENTS
C. PROVIDE WATERPROOFING MEMBRANE ASSEMBLY THAT PREVENTS THE PASSAGE OF WATER.

1.4 ACTION SUBMITTALS
D. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR EVALUATING, PREPARING, AND TREATING SUBSTRATE, TECHNICAL DATA, AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES OF WATERPROOFING.
E. SHOP DRAWINGS: SHOW LOCATIONS AND EXTENT OF WATERPROFING, INSULATION AND DRAINAGE PANEL. INCLUDE DETAILS FOR SUBSTRATE JOINTS AND CRACKS, SHEET FLASHINGS, PENETRATIONS, INSIDE AND OUTSIDE CORNERS, TIE-INS WITH ADJOINING WATERPROOFING, FLASHINGS AND OTHER TERMINATION CONDITIONS.
1. INCLUDE SETTING DRAWINGS SHOWING LAYOUT, SIZES, SECTIONS, PROFILES, AND JOINT DETAILS OF PEDESTAL-SUPPORTED CONCRETE PAVERS.
2. SHOW INSTALLATION DETAILS FOR TERMINATION CONDITIONS AT GRADE AND AT OTHER BARRIER ASSEMBLIES AND WATERPROOFING SYSTEMS.
C. SAMPLES: FOR THE FOLLOWING PRODUCTS:
1. FLASHING SHEET, 10 BY 8 INCHES.

1.5 INFORMATIONAL SUBMITTAL
D. QUALIFICATION DATA: FOR INSTALLER.
B. PRODUCT TEST REPORTS: FOR WATERPROOFING, BASED ON EVALUATION OF COMPREHENSIVE TESTS BY A QUALIFIES TESTING AGENCY.
C. FIELD QUALITYOCONTROL REPORTS.
D. WARRANTY: SAMPLE OF SPECIAL WARRANTY.

1.6 QUALITY ASSURANCE
E. INSTALLER QUALIFICATIONS: A FIRM THAT IS ACCEPTABLE TO WATERPROOFING MANUFACTURER FOR INSTALLATION OF WATERPROOFING REQUIRED FOR THIS PROJECT.

1.7 DELIVERY, STORAGE, AND HANDLING
F. DELIVER LIQUID MATERIALS TO PROJECT SITE IN ORIGINAL CONTAINERS WITH SEALS UNBROKEN, LABELED WITH MANUFACTURER'S NAME, PRODUCT BRAND NAME AND TYPE, DATE OF MANUFACTURE, SHELF LIFE, AND DIRECTIONS FOR STORING AND MIXING WITH OTHER COMPONENTS.
B. STORE LIQUID IN THEIR ORIGINAL UNDAMAGED CONTAINERS IN A CLEAN, DRY, PROTECTED LOCATION AND WITHIN THE TEMPERATURE RANGE REQUIRED BY WATERPROOFING MANUFACTURER.
C. REMOVE AND REPLACE LIQUID MATERIALS THAT CANNOT BE APPLIED WITHIN THEIR STATED SHELF LIFE.
D. PROTECT STORED MATERIALS FORM DIRECT SUNLIGHT.

1.8 PROJECT CONDITIONS
E. ENVIRONMENTAL LIMITATIONS: APPLY WATERPROOFING WITHIN THE RANGE OF AMBIENT AND SUBSTRATE TEMPERATURES RECOMMENDED BY WATERPROOFING MANUFACTURER. DO NOT APPLY WATERPROOFING TO A DAMP OR WET SUBSTRATE, WHEN RELATIVE HUMIDITY EXCEEDS 85 PERCENT, OR WHEN TEMPERATURES ARE LESS THAN 5 DEG F ABOVE DEW POINT.
1. DO NOT APPLY WATERPROOFING IN SNOW, RAIN, FOG, OR MIST, OR WHEN SUCH WEATHER CONDITIONS ARE IMMINENT DURING APPLICATION AND CURING PERIOD.
F. MAINTAIN ADEQUATE VENTILATION DURING APPLICATION AND CURING OF WATERPROOFING MATERIALS.

PART 2 - PRODUCTS

2.1 WATERPROOFING MATERIALS, GENERAL
G. PROVIDE WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER TO BE COMPATIBLE WITH ONE ANOTHER AND ABLE TO DEVELOP BOND TO SUBSTRATE UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY WATERPROOFING MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
1. PRODUCE WATERPROOFING MATERIALS SUITABLE FOR APPLICATION TO VERTICAL, HORIZONTAL, AND SLOPED SUBSTANCES, AS APPLICABLE.
2. PROVIDE WATERPROOFING MATERIALS WITH NOT LESS THAN 40 PERCENT SOLIDS.

2.2 SINGLE-COMPONENT POLYURETHANE WATERPROOFING
D. SINGLE-COMPONENT, MODIFIED POLYURETHANE WATERPROOFING: COMPLY WITH ASTM C 836 AND WITH MANUFACTURER'S WRITTEN PHYSICAL REQUIREMENTS.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a. CARLISLE COATINGS & WATERPROOFING INC.; CCW-525.
b. CETCO; LDC 60
c. TREMCO INCORPORATED; TREMPROOF 60.

2.3 AUXILIARY MATERIALS
E. GENERAL: PROVIDE AUXILIARY MATERIALS RECOMMENDED BY MANUFACTURER TO BE COMPATIBLE WITH ONE ANOTHER AND WITH WATERPROOFING, AS DEMONSTRATED BY WATERPROOFING MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
B. PRIMER: MANUFACTURER'S STANDARD, FACTORY-FORMULATED POLYURETHANE OR EPOXY PRIMER.
C. SHEET FLASHING: 50-MIL-MINIMUM, NONSTAINING, UNCURED SHEET NEOPRENE.
1. ADHESIVE: MANUFACTURER'S STANDARD, FACTORY-FORMULATED POLYURETHANE OR EPOXY PRIMER.
D. JOINT REINFORCING STRIP: MANUFACTURER'S RECOMMENDED FIBERGLASS MESH OR POLYESTER FABRIC.
E. JOINT SEALANT: MULTICOMPONENT POLYURETHANE SEALANT, COMPATIBLE WITH WATERPROOFING WITH WATERPROOFING, COMPLYING WITH ASTM C 920 TYPE M, CLASS 25; GRADE NS FOR SLOPING AND VERTICAL APPLICATIONS OR GRADE P FOR DECK APPLICATIONS; USE NT EXPOSURE; AND AS RECOMMENDED BY MANUFACTURER FOR SUBSTRATE AND JOINT CONDITIONS.
1. BACKER ROD: CLOSED-CELL POLYETHYLENE FOAM.

2.4 PROTECTION COURSE
F. PROTECTION COURSE: ASTM D 6506, SEMIRIGID SHEETS OF FIBERGLASS OR MINERAL-REINFORCED-ASPHALTIC CORE, PRESSURE LAMINATED BETWEEN TWO ASPHALT-SATURATED FIBROUS LINERS AND AS FOLLOWS:
1. THICKNESS: 1/8 INCH, NOMINAL, FOR VERTICAL APPLICATIONS; 1/4 INCH, NOMINAL, ELSEWHERE.
2. ADHESIVE: RUBBER-BASED SOLVENT TYPE RECOMMENDED BY WATERPROOFING MANUFACTURER FOR TYPE OF PROTECTION COURSE.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION
G. CLEAN AND PREPARE SUBSTRATE ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS. PROVIDE CLEAN, DUST-FREE, AND DRY SUBSTRATE FOR WATERPROOFING APPLICATION.
B. MASK OFF ADJOINING SURFACES NOT RECEIVING WATERPROOFING TO PREVENT SPILLAGE OR OVERSPRAY AFFECTING OTHER CONSTRUCTION.
C. CLOSE OFF DECK DRAINS AND OTHER DECK PENETRATIONS TO PREVENT SPILLAGE AND MIGRATION OF WATERPROOFING FLUIDS.
D. REMOVE GREASE, OIL, BITUMEN, FORM-RELEASE AGENTS, PAINTS, CURING COMPOUNDS, ACID RESIDUES, AND OTHER PENETRATING CONTAMINANTS OR FILM-FORMING COATINGS FROM CONCRETE.
E. REMOVE FINS, RIDGES, AND OTHER PROJECTIONS AND FILL HONEYCOMB, AGGREGATE POCKETS, AND OTHER VOIDS.

3.2 PREPARATION AT TERMINATIONS AND PENETRATIONS
F. PREPARE VERTICAL AND HORIZONTAL SURFACES AT TERMINATIONS AND PENETRATIONS THROUGH WATERPROOFING AND AT EXPANSION JOINTS, DRAINS, AND SLEEVES ACCORDING TO ASTM C 898, ASTM C 1471 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION cont.

SECTION 071416 - COLD FLUID-APPLIED WATERPROOFING (CONT'D)

B. PRIME SUBSTRATE UNLESS OTHERWISE INSTRUCTED BY WATERPROOFING MANUFACTURER.
C. APPLY WHEN WATERPROOFING IN TWO SEPARATE APPLICATIONS, EMBED A JOINT REINFORCING STRIP IN THE FIRST PREPARATION COAT WHEN RECOMMENDED BY WATERPROOFING MANUFACTURER.
1. PROVIDE SEALANT CANTS AROUND PENETRATIONS AND AT INSIDE CORNERS OF DECK-TO-WALL BUTT JOINTS WHEN RECOMMENDED BY WATERPROOFING MANUFACTURER.

3.3 JOINT AND CRACK TREATMENT
D. PREPARE, TREAT, ROUT, AND FILL JOINTS AND CRACKS IN SUBSTRATE ACCORDING TO ASTM C 898, ASTM C 1471 AND WATERPROOFING MANUFACTURER'S WRITTEN INSTRUCTIONS. REMOVE DUST AND DIRT FROM JOINTS AND CRACKS, COMPLYING WITH ASTM D 4258, BEFORE COATING SURFACES.
1. COMPLY WITH ASTM C 1193 FOR JOINT-SEALANT INSTALLATION.
2. APPLY BOND BREAKER BETWEEN SEALANT AND PREPARATION STRIP.
3. PRIME SUBSTRATE AND APPLY A SINGLE THICKNESS OF PREPARATION STRIP EXTENDING A MINIMUM OF 3 INCHES ALONG EACH SIDE OF JOINT. APPLY WATERPROOFING IN TWO SEPARATE APPLICATIONS AND EMBED A JOINT REINFORCING STRIP IN THE FIRST PREPARATION COAT.
B. INSTALL SHEET FLASHING AND BOND TO DECK AND WALL SUBSTRATES WHERE INDICATED OR REQUIRED ACCORDING TO WATERPROOFING MANUFACTURER'S WRITTEN INSTRUCTIONS.
1. EXTEND SHEET FLASHING ONTO PERPENDICULAR SURFACES AND OTHER WORK PENETRATING SUBSTRATE ACCORDING TO ASTM C 898.

3.4 WATERPROOFING APPLICATION
A. APPLY WATERPROOFING ACCORDING TO ASTM C 898, ASTEM C 1471 AND MANUFACTURER'S WRITTEN INSTRUCTIONS .
B. APPLY PRIMER OVER PREPARED SUBSTRATE.
C. UNREINFORCED WATERPROOFING APPLICATIONS: MIX MATERIALS AND APPLY WATERPROOFING BY SPRAY, ROLLER, NOTCHED, SQUEEGEE, TOWEL, OR OTHER APPLICATION METHOD SUITABLE TO SLOPE OF SUBSTRATE.
1. APPLY ONE OR MORE COATS OF WATERPROOFING TO OBTAIN A SEAMLESS MEMBRANE FREE OF ENTRAPPED GASES, WITH AN AVERAGE DRY FILM THICKNESS OF 60 MILS AND A MINIMUM DRY FILM THICKNESS OF 50 MILS AT ANY POINT.
2. APPLY WATERPROOFING TO PREPARED WALL TERMINATIONS AND VERTICAL SURFACES.
D. INSTALL PROTECTION COURSE WITH BUTTED JOINTS OVER NOMINALLY CURED MEMBRANE BEFORE STARTING SUBSEQUENT CONSTRUCTION OPERATIONS.

3.5 CURING, PROTECTION, AND CEILING
A. CURE WATERPROOFING ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS, TAKING CARE TO PREVENT CONTAMINATION AND DAMAGE DURING APPLICATION STAGES AND CURING.
3. DO NOT PERMIT FOOT OR VEHICULAR TRAFFIC ON UNPROTECTED MEMBRANE.
B. PROTECT WATERPROOFING FROM DAMAGE AND WEAR DURING REMAINDER OF CONSTRUCTION PERIOD.
C. CLEAN SPILLAGE AND SOILING FROM ADJACENT CONSTRUCTION USING CLEARING AGENTS AND PROCEDURES RECOMMENDED BY MANUFACTURER OF AFFECTED CONSTRUCTION.

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
A. SECTION INCLUDES:
1. SILICONE JOINT SEALANTS.
2. URETHANE JOINT SEALANTS.

1.3 PRECONSTRUCTION TESTING
A. PRECONSTRUCTION FIELD ADHESION TESTING: BEFORE INSTALLING SEALANTS, FIELD TEST THEIR ADHESION TO PROJECT JOINT SUBSTRATES AS FOLLOWS:
1. LOCATE TEST JOINTS WHERE INDICATED ON PROJECT OR, IF NOT INDICATED , AS DIRECTED BY ARCHITECT.
2. CONDUCT FIELD TESTS FOR EACH APPLICATION INDICATED BELOW:
a. EACH KIND OF SEALANT AND JOINT SUBSTRATE INDICATED.
3. NOTIFY ARCHITECT THREE DAYS IN ADVANCE OF DATES AND TIMES WHEN TEST JOINTS WILL BE ERECTED.
a. TEST METHOD: TEST JOINT SEALANTS ACCORDING TO METHOD A, FIELD-APPLIED SEALANT JOINT HAND PULL TAB, IN APPENDIX X1 IN ASTM C 1193 OR METHOD A, TAIL PROCEDURE, IN ASTM C 1521..
1) FOR JOINTS WITH DISSIMILAR SUBSTRATES, VERIFY ADHESION TO EACH SUBSTRATE SEPARATELY; EXTEND CUT ALONG ONE SIDE, VERIFYING ADHESION TO OPPOSITE SIDE. REPEAT PROCEDURE FOR OPPOSITE SIDE.
4. REPORT WHETHER SEALANT FAILED TO ADHERE TO JOINT SUBSTRATES OR TORE COHESIVELY. INCLUDE DATA ON PULL DISTANCE USED TO TEST EACH KIND OF PRODUCT AND JOINT SUBSTRATE. FOR SEALANTS THAT FAIL ADHESIVELY, RETEST UNTIL SATISFACTORY ADHESION IS OBTAINED.
5. EVALUATION OF PRECONSTRUCTION FIELD-ADHESION-TEST RESULTS: SEALANTS NOT EVIDENCING ADHESIVE FAILURE FROM TESTING, IN ABSENCE OF OTHER INDICATIONS OF NONCOMPLIANCE WITH REQUIREMENTS, WILL BE CONSIDERED SATISFACTORY. DO NOT USE SEALANTS THAT FAIL TO ADHERE TO JOINT SUBSTRATES DURING TESTING.

1.4 ACTION SUBMITTALS
A. PRODUCT DATE: FOR EACH JOINT-SEALANT PRODUCT INDICATED.
B. SAMPLES FOR INITIAL SELECTION: MANUFACTURER'S COLOR CHARTS CONSISTING OF STRIPS OF CURED SEALANTS SHOWING THE FULL RANGE OF COLORS AVAILABLE FOR EACH PRODUCT EXPOSED TO LAW.
C. SAMPLES FOR VERIFICATION: FOR EACH KIND AND COLOR OF JOINT SEALANT REQUIRED, PROVIDE SAMPLES WITH JOINT SEALANTS IN 1/2-INCH-WIDE JOINTS FORMED BETWEEN TWO 6-INCH-LONG STRIPS OF MATERIAL MATCHING THE APPEARANCE OF EXPOSED SURFACES ADJACENT TO JOINT SEALANTS.
D. JOINT-SEALANT SCHEDULE: INCLUDE THE FOLLOWING INFORMATION:
1. JOINT-SEALANT APPLICATION, JOINT LOCATION, AND DESIGNATION.
2. JOINT-SEALANT MANUFACTURER AND PRODUCT NAME.
3. JOINT-SEALANT FORMULATION.
4. JOINT-SEALANT COLOR.

1.5 INFORMATIONAL SUBMITTALS
A. QUALIFICATION DATA: FOR QUALIFIED INSTALLER.
B. PRODUCT CLASSIFICATION: FOR EACH KIND OF JOINT SEALANT AND ACCESSORY, FROM MANUFACTURER.
C. PRODUCT TEST REPORTS: BASED ON EVALUATION OF COMPREHENSIVE TESTS PERFORMED BY A QUALIFIED TESTING AGENCY, INDICATING THAT THE SEALANTS COMPLY WITH REQUIREMENTS.
D. PRECONSTRUCTION FIELD-ADHESION TEST REPORTS: INDICATE WHICH SEALANTS AND JOINT PREPARATION METHODS RESULTED IN OPTIMUM ADHESION TO JOINT SUBSTRATES BASED ON TESTING SPECIFIED IN "PRECONSTRUCTION TESTING" ARTICLE.
E. FIELD-ADHESION TEST REPORTS: FOR EACH SEALANT APPLICATION TESTED.

1.6 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: MANUFACTURER'S AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED FOR INSTALLATION OF UNITS REQUIRED FOR THIS PROJECT.
B. SOURCE LIMITATIONS: OBTAIN EACH KIND OF JOINT SEALANT FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
C. MOCKUPS: INSTALL SEALANT IN MOCKUPS OF ASSEMBLIES SPECIFIED IN OTHER SECTIONS THAT ARE INDICATED TO RECEIVE JOINT SEALANTS SPECIFIED IN THIS SOLUTION. USE MATERIALS AND INSTALLATION METHODS SPECIFIED IN THIS SECTION.

1.7 PROJECT CONDITIONS
A. DO NOT PROCEED WITH INSTALLATION OF JOINT SEALANTS UNDER THE FOLLOWING CONDITIONS:
1. WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE OUTSIDE LIMITS PERMITTED BY JOINT-SEALANT MANUFACTURER OR ARE BELOW 40 DEGREE F.
WHEN JOINT SUBSTRATES ARE WET.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION cont.

3. T WIDTHS ARE LESS THAN THOSE ALLOWED BY JOINT-SEALANT MANUFACTURER FOR APPLICATIONS INDICATED.
4. WHERE CONTAMINANTS CAPABLE OF INTERFERING WITH ADHESION HAVE NOT YET BEEN REMOVED FROM JOINT SUBSTANCES .

2.1 MATERIALS, GENERAL
A. COMPATIBILITY: PROVIDE JOINT SEALANTS, BACKINGS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY JOINT-SEALANT MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
B. STAIN-TEST-RESPONSE CHARACTERISTICS: WHERE SEALANTS ARE SPECIFIED TO BE NONSTAINING TO PORPUS SUBSTRATES INDICATED FOR PROJECT.
C. COLORS OF EXPOSED JOINT SEALANTS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE, FOR EACH APPLICATION AND SUBSTRATE.

2.2 SILICONE JOINT SEALANTS
A. SINGLE-COMPONENT, NONSAG, NON-STAINING, NEUTRAL-CURING SILICONE JOINT SEALANT: ASTM C 920, TYPE S, GRADE NS, CLASS 50, FOR USE NT.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a. DOW CORNING CORPORATION; 795.
b. GE SEALANTS; SILPRUF NB SCS9000.
c. PECORA CORPORATION; 895 NST.
d. TREMCO, SPECTRUM 3.

2.3 URETHANE JOINT SEALANTS
A. SINGLE-COMPONENT, POURABLE, TRAFFIC-GRADE, URETHANE JOINT SEALANT: ASTM C 920, TYPE S, GRADE P, CLASS 25, FOR USE T.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a. PECORA CORPORATION; OREXPAN NR-201.
b. TREMCO INCORPORATED; VULKEM 45.

2.4 JOINT SEALANT BACKING
A. GENERAL: PROVIDE SEALANT BACKINGS OF MATERIAL THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTANCES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS; AND ARE APPROVED FOR APPLICATIONS INDICATED BY SEALANT MANUFACTURER BASED ON FIELD EXPERIENCE AND LABORATORY TESTING.
B. CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, TYPE C (CLOSED-CELL MATERIAL WITH A SURFACE SKIN), AND OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE.
C. CORK JOINT FILLER: RESILIENT AND NONEXTRUDING, ASTM D1752, TYPE II AND AASHTO M 153, TYPE II.

PART 3 - EXECUTION

3.1 EXAMINATION
A. EXAMINE JOINTS INDICATED TO RECEIVE JOINT SEALANTS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR JOINT CONFIGURATION, INSTALLATION TOLERANCES, AND OTHER CONDITIONS AFFECTING JOINT-SEALANT PERFORMANCE.
B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 PREPARATION
A. SURFACE CLEANING OF JOINTS: CLEAN OUT JOINTS IMMEDIATELY BEFORE INSTALLING JOINT SEALANTS TO WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE FOLLOWING REQUIREMENTS:
1. REMOVE ALL FOREIGN MATERIAL FROM JOINT SUBSTANCES THAT COULD INTERFERE WITH ADHESION OF JOINT SEALANT, INCLUDING DUST, PAINTS (EXCEPT FOR PERMANENT, PROTECTIVE COATINGS TESTED AND APPROVED FOR SEALANT ADHESION AND COMPATIBILITY BY SEALANT MANUFACTURER), OLD JOINT SEALANTS, OIL, GREASE, WATERPROOFING, WATER REPELLENTS, WATER, SURFACE DIRT, AND FROST.
2. CLEAN POROUS JOINT SUBSTRATE SURFACES BY BRUSHING, GRINDING, MECHANICAL ABRADING, OR A COMBINATION OF THESE METHODS TO PRODUCE A CLEAN, SOUND SUBSTRATE CAPABLE OF DEVELOPING OPTIMUM BOND WITH JOINT SEALANTS. REMOVE LOOSE PARTICLES REMAINING AFTER CLEANING OPERATIONS ABOVE BY VACUUMING OR BLOWING OUT JOINTS WITH OIL-FREE COMPRESSED AIR. POROUS JOINT SUBSTRATES INCLUDE THE FOLLOWING:
a. CONCRETE
b. MASONRY
3. REMOVE LAITANCE AND FORM-RELEASE AGENTS FROM CONCRETE.
4. CLEAN NONPOROUS JOINT SUBSTRATE SURFACES WITH CHEMICAL CLEANERS OR OTHER MEANS THAT DO NOT STAIN, HARM SUBSTRATES, OR LEAVE RESIDUES CAPABLE OF INTERFERING WITH ADHESION OF JOINT SEALANTS. NONPOROUS JOINT SUBSTRATES INCLUDE THE FOLLOWING:
c. METAL.
B. JOINT PRIMING: PRIME JOINT SUBSTANCES WHERE RECOMMENDED BY JOINT-SEALANT MANUFACTURER OR AS INDICATED BY PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS OR PRIOR EXPERIENCE. APPLY PRIMER TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS. CONFINE PRIMERS TO AREAS OF JOINT-SEALANT BOND; DO NOT ALLOW SPILLAGE MIGRATION ONTO ADJOINING SURFACES.
C. MASKING TAPE: USE MASKING TAPE WHERE REQUIRED TO PREVENT CONTRACT OF SEALANT OR PRIMER WITH ADJOINING SURFACES THAT OTHERWISE WOULD BE PERMANENTLY STAINED OR DAMAGED BY SUCH CONTRACT OR BY CLEARING METHODS REQUIRED TO REMOVE SEALANT SMEARS. REMOVE TAPE IMMEDIATELY AFTER TOOLING WITHOUT DISTURBING JOINT SEAL.

3.3 INSTALLATION OF JOINT SEALANTS
A. GENERAL: COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PRODUCTS AND APPLICATIONS INDICATED, UNLESS MORE STRINGENT REQUIREMENTS APPLY.
B. SEALANT INSTALLATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED.
C. INSTALL SEALANT BACKINGS OF KIND INDICATED TO SUPPORT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE CROSS-SECTIONAL SHAPES OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
1. DO NOT LEAVE GAPS BETWEEN ENDS OF SEALANT BACKINGS.
2. DO NOT STRETCH, TWIST, PUNCTURE, OR TEAR SEALANT BACKINGS.
3. REMOVE ABSORBENT SEALANT BACKINGS THAT HAVE BECOME WET BEFORE SEALANT APPLICATION AND REPLACE THEM WITH DRY MATERIALS.
D. INSTALL SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH THE FOLLOWING AND AT THE SAME TIME BACKINGS ARE INSTALLED:
1. PLACE SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.
2. COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION.
3. PRODUCE UNIFORM, CROSS-SECTIONAL SHAPES AND DEPTHS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
E. TOOLING OF NONSAG" IMMEDIATELY AFTER SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO REQUIREMENTS SPECIFIED IN SUBPARAGRAPHS BELOW TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED; TO ELIMINATE AIR POCKETS; AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT.
1. REMOVE EXCESS SEALANT FROM SURFACES ADJACENT TO JOINTS.
2. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY SEALANT MANUFACTURER AND THAT DO NOT DISORDER SEALANTS OR ADJACENT SURFACES.
3. PROVIDE CONCAVE JOINT PROFILE PER FIGURE 8A IN ASTM C 1193, UNLESS OTHERWISE INDICATED.
d. USE MASKING TAPE TO PROTECT SURFACES ADJACENT TO RECESSED TOLLED JOINTS.

3.4 FIELD QUALITY CONTROL
FIELD-ADHESION TESTING: FIELD TEST JOINT-SEALANT ADHESION TO

SECTION 079200 - JOINT SEALANTS (CONT'D)

WHERE JOIN JOINT SUBSTRATES AS FOLLOWS:

DIVISION 7 - THERMAL AND MOISTURE PROTECTION cont.

1. EXTENT OF TESTING: TEST COMPLETED AND CURED SEALANT JOINTS AS FOLLOWS:
a. PERFORM 1 TEST FOR EACH 1000 FEET OF JOINT LENGTH THEREAFTER OR 1 TEST PER EACH FLOOR PER ELEVATION.
2. TEST METHOD: TEST JOINT SEALANTS ACCORDING TO METHOD A, FIELD-APPLIED SEALANT JOINT HAND PULL TAB, IN APPENDIX X1 IN ASTM C 1193 OR METHOD A, TAIL PROCEDURE, IN ASTM C 1521.
a. FOR JOINTS WITH DISSIMILAR SUBSTRATES, VERIFY ADHESION TO EACH SUBSTRATE SEPARATELY; EXTEND CUT ALONG ONE SIDE, VERIFYING ADHESION TO OPPOSITE SIDE. REPEAT PROCEDURE FOR OPPOSITE.
3. INSPECT TESTED JOINTS AND REPORT ON THE FOLLOWING:
a. WHETHER SEALANTS FILLED JOINTS CAVITIES AND ARE FREE OF VOIDS.
b. WHETHER SEALANTS DIMENSIONS AND CONFIGURATIONS COMPLY WITH SPECIFIED REQUIREMENTS.
c. WHETHER SEALANTS IN JOINTS CONNECTED TO PULLED-OUT PORTION FAILED TO ADHERE TO JOINT SUBSTANCES OR TORE COHESIVELY. INCLUDE DATE ON PULL DISTANCE USED TO TEST EACH KIND OF PRODUCT AND JOINT SUBSTRATE. COMPARE THESE RESULTS TO DETERMINE IF ADHESION PASSES SEALANT MANUFACTURER'S FIELD-ADHESION HAND-PULL TEST CRITERIA.
4. RECORD TEST RESULTS IN A FIELD-ADHESION-TEST LONG. INCLUDE DATES WHEN SEALANTS WERE INSTALLED, NAMES OF PERSONS WHO INSTALLED SEALANTS, TEST DATES, TEST LOCATIONS, WHETHER JOINTS WERE PRIMED, ADHESION RESULTS AND PERCENT ELONGATIONS, SEALANTS FILL, SEALANT CONFIGURATION, AND SEALANT DIMENSIONS.
5. REPAIR SEALANTS PULLED FROM TEST AREA BY APPLYING NEW SEALANTS FOLLOWING SAME PROCEDURES USED ORIGINALLY TO SEAL JOINTS. ENSURE THAT ORIGINAL SEALANT SURFACES ARE CLEAN AND THAT NEW SEALANT CONTACTS ORIGINAL SEALANT.
B. EVALUATION OF FIELD-ADHESION TEST RESULTS: SEALANTS NOT EVIDENCING ADHESIVE FAILURE FROM TESTING OR NONCOMPLIANCE WITH OTHER INDICATED REQUIREMENTS WILL BE CONSIDERED SATISFACTORY. REMOVE SEALANTS THAT FAIL ADHERE TO JOINT SUBSTRATES DURING TESTING OR TO COMPLY WITH OTHER REQUIREMENTS. RETEST FAILED APPLICATIONS UNTIL TEST RESULTS PROVE SEALANTS COMPLY WITH INDICATED REQUIREMENTS.

3.5 CLEANING
A. CLEAN OF EXCESS SEALANT OR SEALANT SMEARS ADJACENT TO JOINTS AS THE WORK PROGRESSES BY METHODS AND WITH CLEANING MATERIALS APPROVED IN WRITING BY MANUFACTURERS OF JOINT SEALANTS AND OF PRODUCTS IN WHICH JOINTS OCCUR.

3.6 PROTECTION
A. PROTECT JOINT SEALANTS DURING AND AFTER CURING PERIOD FROM CONTACT WITH CONTAMINATING SUBSTANCES AND FROM DAMAGE RESULTING FROM CONSTRUCTION OPERATIONS OR OTHER CAUSES SP SEALANTS ARE WITHOUT DETERIORATION OR DAMAGE AT TIME OF SUBSTANTIAL COMPLETION. IF, DESPITE SUCH PROTECTION, DAMAGE OR DETERIORATION OCCURS, CUT OUT AND REMOVE DAMAGED OR DETERIORATED JOINT SEALANTS IMMEDIATELY SO INSTALLATIONS WITH REPAIRED AREAS ARE INDISTINGUISHABLE FROM ORIGINAL WORK.

3.7 JOINT-SEALANT SCHEDULE
A. JOINT-SEALANT APPLICATION: EXTERIOR JOINTS IN HORIZONTAL TRAFFIC SURFACES.
1. JOINT LOCATIONS:
a. CONTROL AND EXPANSION JOINTS IN BRICK PAVERS
b. ISOLATION AND CONTRACTION JOINTS IN CAST-IN-PLACE CONCRETE PAVING AND SLABS.
c. ISOLATION JOINTS IN NON-METALLIC, NON-SHRINK GROUTING.
d. ISOLATION AND CONTRACTION JOINTS IN ASPHALT PAVING.
e. JOINTS BETWEEN DIFFERENT MATERIALS LISTED ABOVE.
f. OTHER JOINTS AS INDICATED.
2. URETHANE JOINT SEALANT: SINGLE COMPONENT, POURABLE, TRAFFIC-GRADE, CLASS 25.
B. JOINT-SEALANT APPLICATION: EXTERIOR JOINTS IN VERTICAL SURFACES AND HORIZONTAL NONTRAFFIC SURFACES.
1. JOINT LOCATIONS:
a. CONSTRUCTION JOINTS IN CAST-IN-PLACE CONCRETE.
b. CONTROL AND EXPANSION JOINTS IN UNIT MASONRY.
c. JOINTS BETWEEN DECORATIVE FORMED METAL PANELS.
d. JOINTS BETWEEN DIFFERENT MATERIALS LISTED ABOVE.
e. PERIMETER JOINTS BETWEEN MATERIALS LISTED ABOVE AND FRAMES OF DOORS.
f. CONTROL, EXPANSION AND PERIMETER JOINTS IN CEILINGS AND OTHER OVERHEAD SURFACES.
g. OTHER JOINTS AS INDICATED.
2. SILICONE JOINT SEALANT: SINGLE COMPONENT, NON-STAINING, NONSAG, NEUTRAL CURING, CLASS 50.

DIVISION 8 - DOORS AND WINDOWS

SECTION 08100 - STEEL DOORS AND FRAMES

1.1 GENERAL
A. SUBMITTALS
1. SHOP DRAWINGS:
a. SUBMIT SHOP DRAWINGS THAT SHOW ELEVATIONS OF EACH DOOR DESIGN, DOOR CONSTRUCTION DETAILS, AND METHODS OF ASSEMBLING SECTIONS, HARDWARE LOCATIONS, AND INSTALLATION METHODS, DIMENSIONS, AND SHAPES OF MATERIALS, ANCHORAGE AND FASTENING METHODS, DOOR FRAME TYPES AND DETAILS, WALL OPENING CONSTRUCTION DETAILS, AND FINISH REQUIREMENTS.
b. INDICATE LOCATION OF EACH UNIT IN PROJECT.
c. SHOP DRAWINGS SUBMITTAL SHALL BE COORDINATED WITH SHOP DRAWINGS SUBMISISON OR RELATED PORTIONS OF WORK, SU

DIVISION 8 - DOORS AND WINDOWS cont.

SECTION 08100 - STEEL DOORS AND FRAMES (CONT'D)

E. FINISHES
1. SHOP PRIMING:
a. DOORS AND FRAMES SHALL BE CHEMICALLY TREATED TO ENSURE MAXIMUM PAINT ADHESION AND COATED, ON EXPOSED SURFACES, WITH A RUST-INHIBITIVE PRIMER SUITABLE AS A BASE FOR FINISH PAINTS.
b. APPLY PRIMER OF EVEN CONSISTENCY TO PROVIDE A UNIFORM FINISHED SURFACE. ALLOW TO FULLY CARE BEFORE SHIPMENT.
F. FRAME TOLERANCES:
1. SQUARENESS: +/- 1/16" (1.5 MM)
a. MEASURED ON A LINE 90 DEGREES FROM ONE JAMB, AT UPPER CORNER OF FRAME AT OTHER JAMB.
2. ALIGNMENT: +/- 1/16" (1.5 MM)
a. MEASURED ON JAMBS ON A HORIZONTAL LINE PARALLEL TO PLANE OF WALL
3. TWIST: +/- 1/16" (1.5 MM)
a. MEASURED AT FACE CORNERS OF JAMBS ON PARALLEL LINE PERPENDICULAR TO PLANE OF WALL.
4. PLUMBNESS: +/- 1/16" (1.5 MM)
a. MEASURED ON JAMBS AT FLOOR
G. DOOR CLEARANCE SUBJECT TO +/- 1/32" (.08 MM) TOLERANCE:
1. HEAD AND JAMBS: 1/8" (3 MM)
2. UNDERCUT DOORS SUFFICIENTLY TO ALLOW CLEARANCE ABOVE FINISH FLOORS AND WHERE INDICATED ON DRAWINGS TO ALLOW FOR ADEQUATE AIR TRANSFER.
a. WHERE SCHEDULED FLOOR FINISHED MATERIAL IS LESS THAN 1/2" (12 MM) THICK, ALLOW NOT MORE THAN 5/8" (16 MM) ABOVE TOP OF SUBSTANCE TO WHICH IT IS APPLIED.
b. WHERE SCHEDULED FLOOR FINISH MATERIAL IS MORE THAN 1/2" (21 MM) THICK, ALLOW NOT MORE THAN 1/4" (6 MM) ABOVE FINISH MATERIAL.
c. WHERE A THRESHOLD IS USED, ALLOW NOT MORE THAN 1/4" (6 MM) ABOVE THRESHOLD.
H. ADJUSTMENTS
1. PRIME-COAT TOUCH-UP:
a. SAND SMOOTH ALL RUSTED OR DAMAGED AREAS OF PRIME COAT AND TOUCH-UP WITH COMPATIBLE AIR-DRYING PRIMER
b. TOUCH-UP AREAS SHALL NOT BE OBVIOUS.
2. FINAL ADJUSTMENTS:
a. CHECK AND RE-ADJUST OPERATING FINISH HARDWARE JUST PRIOR TO FINAL INSPECTION AND AFTER PAINTING HINGES IF HINGES AND INDICATED TO BE PAINTED.
b. REMOVE AND REPLACE DEFECTIVE WORK.

SECTION 08411 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

1.1 GENERAL
A. PERFORMANCE REQUIREMENTS
1. DELEGATED DESIGN: DESIGN ALUMINUM-FRAMED, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.
2. WIND LOADS: 90 MPH (40 M/S).
3. DEFLECTION OF FRAMING MEMBERS:
a. DEFLECTION NORMAL TO WALL PLANE: LIMITED TO EDGE OF GLASS IN A DIRECTION PERPENDICULAR TO GLASS PLANE SHALL NOT EXCEED L/175 OF THE GLASS EDGE LENGTH FOR EACH INDIVIDUAL GLAZING LITE OR AN AMOUNT THAT RESTRICTS EDGE DEFLECTION OF INDIVIDUAL GLAZING LITES TO 3/4 INCH (19 MM), WHICHEVER IS LESS.
b. DEFLECTION PARALLEL TO GLAZING PLANE: LIMITED TO L/360 OF CLEAR SPAN OR 1/8 INCH (3.2 MM), WHICHEVER IS SMALLER.
B. SUBMITTALS
1. SHOP DRAWINGS: FOR ALUMINUM-FRAMED SYSTEMS. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
2. SAMPLES: FOR EACH TYPE OF EXPOSED FINISH REQUIRED.
3. ENTRANCE DOOR HARDWARE SCHEDULE: PREPARED BY OR UNDER THE SUPERVISION OF SUPPLIER, DETAILING FABRICATION AND ASSEMBLY OF ENTRANCE DOOR HARDWARE, AS WELL AS PROCEDURES AND DIAGRAMS.
4. DELEGATED-DESIGN SUBMITTAL: FOR ALUMINUM-FRAMES SYSTEMS INDICATED TO COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.
C. QUALITY ASSURANCE
1. ENGINEERING RESPONSIBILITY: PREPARE DATA FOR ALUMINUM-FRAMED SYSTEMS, INCLUDING SHOP DRAWINGS, BASED ON TESTING AND ENGINEERING ANALYSIS OF MANUFACTURER'S STANDARD UNITS IN SYSTEMS SIMILAR TO THOSE INDICATED FOR THIS PROJECT.
2. PRODUCT OPTIONS: INFORMATION ON DRAWINGS AND IN SPECIFICATIONS ESTABLISHES REQUIREMENTS FOR SYSTEMS' AESTHETIC EFFECTS AND PERFORMANCE CHARACTERISTICS. AESTHETIC EFFECTS ARE INDICATED BY DIMENSIONS, ARRANGEMENTS, ALIGNMENT, AND PROFILES OF COMPONENTS AND ASSEMBLIES AS THEY RELATE TO SIGHTLINES, TO ONE ANOTHER, AND TO ADJOINING CONSTRUCTION. PERFORMANCE CHARACTERISTICS ARE INDICATED BY CRITERIA SUBJECT TO VERIFICATION BY ONE OR MORE METHODS INCLUDING PERCONSTRUCTION TESTING, FIELD TESTING, AND IN-SERVICE PERFORMANCE.
3. ACCESSIBLE ENTRANCES" COMPLY WITH APPLICABLE PROVISIONS IN THE U.S. ARCHITECTURAL & TRANSPORTATION BARRIERS COMPLIANCE BOARD'S ADA-ABA ACCESSIBILITY GUIDELINES AND ICC/ANSI A117.1.
4. SOURCE LIMITATIONS FOR ALUMINUM-FRAMED SYSTEMS: OBTAIN FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
D. PRODUCTS
1. MANUFACTURERS
a. MANUFACTURER'S: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
ARCADIA, INC.
ARCH ALUMINUM & GLASS CO. INC.
CMI ARCHITECTURAL.
EFCO CORPORATION.
KAWNEER NORTH AMERICA; AN ALCOA COMPANY.
YKK AP AMERICA INC.
RACO INC.
2. FRAMING SYSTEMS
a. FRAMING MEMBERS: MANUFACTURER'S STANDARD EXTRUDED-ALUMINUM FRAMING MEMBERS OF THICKNESS REQUIRED AND REINFORCED TO SUPPORT IMPOSED LOADS.
b. CONSTRUCTION OF EXTERIOR: THERMALLY BROKEN.
GLAZING SYSTEM: RETAINED MECHANICALLY WITH GASKETS ON FOUR SIDES.
GLAZING PLANE: FRONT.
c. BRACKETS AND REINFORCEMENTS: MANUFACTURER'S STANDARD HIGH-STRENGTH ALUMINUM WITH NONSTANDING, NONFERROUS SHIMS FOR ALIGNING SYSTEM COMPONENTS.
d. FASTENERS AND ACCESSORIES: MANUFACTURER'S STANDARD CORROSION-RESISTANT, NONSTAINING, NONBLEEDING FASTENERS AND ACCESSORIES COMPATIBLE WITH ADJACENT MATERIALS.
e. FRAMING SYSTEM GASKETS AND SEALANTS: MANUFACTURER'S STANDARD, RECOMMENDED BY MANUFACTURER FOR JOINT TYPE.
3. GLAZING SYSTEMS
a. GLAZING GASKETS: MANUFACTURER'S STANDARD COMPRESSION TYPES; REPLACEABLE, MOLDED OR EXTRUDED, OF PROFILE AND HARDNESS REQUIRED TO MAINTAIN WATERTIGHT SEAL.
b. SPACERS AND SETTING BLOCKS: MANUFACTURER'S STANDARD ELASTOMERIC TYPE.
4. ENTRANCE DOORS SYSTEMS
a. ENTRANCE DOORS: MANUFACTURER'S STANDARD GLAZED ENTRANCE DOORS FOR MANUAL-SWING OPERATION. DOOR CONSTRUCTION: 1-3/4-INCH (44.5-MM) OVERALL THICKNESS, MINIMUM 0.125-INCH-(3.2-MM) THICK, EXTRUDED-ALUMINUM TUBULAR RAIL AND STILE MEMBERS. MECHANICALLY FASTEN CORNERS WITH REINFORCING BRACKETS THAT ARE DEEPLY PENETRATED AND FILLED WELDED OR THAT INCORPORATE CONCEALED TIE RODS.
b. GLAZING STOPS AND GASKETS: SQUARE EDGE, SNAP-ON, EXTRUDED-ALUMINUM STOPS AND PERFORMED GASKETS WITH NON-REMOVABLE GLAZING STOPS ON OUTSIDE OF DOORS.
c. ENTRANCE DOOR HARDWARE: AS INDICATED ON DRAWINGS AND AS SPECIFIED IN DIVISION 8 SECTION "DOOR HARDWARE."
E. FABRICATION
1. FORM OR EXTRUDE ALUMINUM SHAPES BEFORE FINISHING.
2. WELD IN CONCEALED LOCATIONS TO GREATEST EXTENT POSSIBLE TO MINIMIZE DISTORTION OR DISCOLORATION OF FINISH. REMOVE WELD SPATTER AND WELDING OXIDES FROM EXPOSED SURFACES BY DE-SCALING OR GRINDING.
3. FRAMING MEMBERS, GENERAL: FABRICATE COMPONENTS THAT, WHEN ASSEMBLED THAT THE FOLLOWING CHARACTERISTICS:

DIVISION 8 - DOORS AND WINDOWS cont.

SECTION 08411 - ALUMINUM FRAMED ENTRANCES AND STOREFRONTS (CONT'D)

a. PROFILES THAT ARE SHARP, STRAIGHT, AND FREE OF DEFECTS OR DEFORMATIONS.
b. ACCURATELY FITTED JOINTS WITH ENDS COPED OR MITERED.
c. MEANS TO DRAIN WATER PASSING JOINTS, CONDENSATION WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR.
d. PHYSICAL AND THERMAL ISOLATION OF GLAZING FORM FRAMING MEMBERS.
e. ACCOMMODATIONS FOR THERMAL AND MECHANICAL MOVEMENTS OF GLAZING AND FRAMING TO MAINTAIN REQUIRED GLAZING EDGE CLEARANCES.
f. PROVISIONS FOR FIELD REPLACEMENT OF GLAZING FROM INTERIOR FOR VISION GLASS AND EXTERIOR FOR SPANDREL GLAZING OR METAL PANELS.
g. FASTENERS, ANCHORS, AND CONNECTION DEVICES THAT ARE CONCEALED FROM VIEW TO GREATEST EXTENT POSSIBLE.

F. INSTALLATION
1. GENERAL:
a. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
b. DO NOT INSTALL DAMAGED COMPONENTS.
c. FIT JOINTS TO PRODUCE HAIRLINE JOINTS FREE OF BURRS AND DISTORTION.
d. RIGIDLY SECURE NON-MOVEMENT JOINTS.
e. INSTALL ANCHORS WITH SEPARATES AND ISOLATORS TO PREVENT METAL CORROSION AND ELECTROLYTIC DETERIORATION.
f. SEAL JOINTS WATERTIGHT UNLESS OTHERWISE INDICATED.
2. WHERE ALUMINUM AT EXTERIOR DOORS WILL CONTACT DISSIMILAR METALS, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTRACT SURFACES WITH PRIMER OR APPLYING SEALANT OR TAPE, OR BY INSTALLING NONCONDUCTIVE SPACERS AS RECOMMENDED BY MANUFACTURER FOR THIS PURPOSE. WHERE ALUMINUM WILL CONTACT CONCRETE OR MASONRY, PROTECT AGAINST CORROSION. BY PAINTING CONTRACT SURFACES WITH BITUMINOUS PAINT.
3. INSTALL COMPONENTS PLUMB AND TRUE IN ALIGNMENT WITH ESTABLISHED LINES AND GRADES, AND WITHOUT WARP OR RACK AND PRODUCE SMOOTH OPERATION AND TIGHT FIT AT CONTACT POINTS.
4. INSTALL EXTERIOR DOOR AND SOUND RATED INTERIOR DOORS TO PRODUCE WEATHERTIGHT ENCLOSURE AND TIGHT FIT AT WEATHER STRIPPING AND SOUNDPROOF GASKETING AND INSTALL COMPONENTS TO DRAIN WATER PASSING JOINTS, CONDENSATION OCCURRING WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR. SET CONTINUOUS SILL MEMBERS AND FLASHING IN FULL SEALANT BED.
5. SOUND RATED INTERIOR DOOR TO PRODUCE A TIGHT FIT AT SOUNDPROOF GASKETING AND INSTALL COMPONENTS.

SECTION 08450 - ALL-GLASS ENTRANCES

1.1 GENERAL
A. SUBMITTALS
1. SUBMIT MANUFACTURER'S LITERATURE DESCRIBING PRODUCTS TO BE PROVIDED.
2. SHOP DRAWINGS
a. SUBMIT SHOP DRAWINGS FOR SYSTEM. SHOW ANCHORAGE, FIELD CONNECTIONS, AND GLAZING FOR COMPONENT PARTS AND PREPARE COORDINATION DETAILS FOR ENTIRE SYSTEM INCLUDING FRAMING AND BRACING TO STRUCTURE.
3. SAMPLES:
a. EXTRUSIONS: 6" LENGTHS
b. SHEET OR PLATE MATERIALS: 6" SQUARES
c. SAMPLE SIZE" 8"X10"
B. QUALITY ASSURANCE
1. REGULATORY REQUIREMENTS:
a. PROVIDE GLAZING AT HAZARDOUS LOCATIONS AS DETERMINED BY CPSC 16 CFR 1201. GLAZING SHALL BE IN COMPLIANCE WITH CONSUMER PRODUCT SAFETY ACT AND SHALL HAVE BEEN TESTED AND LABELED.
b. SAFETY GLAZING SHALL CONFORM TO REQUIREMENTS OF ANSI Z97.1.
C. MATERIALS
1. GLASS: TEMPERED; ASTM C1048
a. CLASSIFICATIONS: ASTM C1036; TYPE 1, CLASS 1, QUALITY Q³
b. THICKNESS: 1/2 MIN"
c. COLOR: CLEAR
2. CONTINUOUS RAIL FITTINGS:
a. TOP RAIL: 1 3/4" X 4" NOMINAL
b. BOTTOM RAIL: 1 3/4" X 4" NOMINAL
c. FINISH: US26
d. ACCEPTABLE MANUFACTURERS:
BLUMCRAFT
BRITE VUE GLASS
GUARDIAN/FALCONER-
VIRGINIA GLASS
DORMA
3. PATCH FITTINGS:
a. SIZE AS INDICATED ON DRAWINGS
b. FINISH: US26
c. ACCEPTABLE MANUFACTURERS:
BLUMCRAFT
BRITE VUE GLASS
GUARDIAN/FALCONER-
VIRGINIA GLASS
DORMA
D. DOOR HARDWARE
1. SEE SECTION 08700 HARDWARE
E. INSTALLATION
1. ALL-GLASS ENTRANCE SYSTEMS:
a. INSTALL ALL-GLASS ENTRANCE SYSTEM IN COMPLIANCE WITH MANUFACTURER'S INSTRUCTIONS.
b. USE METHOD OF ATTACHMENT TO STRUCTURE TO PERMIT SUFFICIENT ADJUSTMENT TO ACCOMMODATE CONSTRUCTION TOLERANCES AND IRREGULARITIES.
c. FIT, ALIGN, AND ADJUST DOOR ASSEMBLIES PLUMB AND LEVEL, TO PROVIDE A SMOOTH OPERATION.
d. CLEARANCES:
I. DOOR HEAD AND JAMBS: 1/8"
II. DOOR SILLS: 1/4" .
III. BUTT GLAZING JOINT: 3/8", EXCEPT BETWEEN SIDELIGHTS AND GLASS TRANSOMS, WHICH SHALL BE 1/8"

SECTION 08700 - HARDWARE

1.1 GENERAL
A. SUBMITTALS:
1. SUBMIT MANUFACTURER'S LITERATURE DESCRIBING PRODUCTS TO BE PROVIDED.
2. SUBMIT A MINIMUM OF 3 COPIES OF HARDWARE SCHEDULE. INDICATE LOCATION OF HARDWARE SET, CROSS-REFERENCED TO INDICATIONS ON DRAWINGS, MANUFACTURER'S NAME AND PRODUCT NUMBER, FINISH, AND OTHER SIMILAR INFORMATION DESCRIBING HARDWARE TO BE PROVIDED.
B. REGULATORY REQUIREMENTS:
1. FEDERAL ACCESSIBILITY REGULATIONS:
a. AMERICANS WITH DISABILITIES ACT - ADA
b. UNIFORM FEDERAL ACCESSIBILITY STANDARDS - UFAS
2. NATIONAL FIRE PROTECTION ASSOCIATION:
a. NFPA 80 STANDARD FOR FIRE DOORS AND WINDOWS
b. NFPA 101 LIFE SAFETY CODE
c. NFPA 105 SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLIES.
C. GENERAL REQUIREMENTS:
1. ITEMS OF HARDWARE NOT DEFINITELY SPECIFIED, BUT NEEDED FOR SATISFACTORY INSTALLATION OF HARDWARE SHALL BE PROVIDED. SUCH ITEMS SHALL BE OF TYPE AND QUALITY SUITABLE FOR SERVICE NEEDED AND COMPARABLE TO ADJACENT HARDWARE.
2. SECURITY VENDOR AND COORDINATE INSTALLATION OF SECURITY DEVICES WITH GC AND SHALL BE ENSURE SYSTEM MEETS ALL SPECIAL LOCKING REQUIREMENTS REQUIRED BY CODE. SECURITY AND VEND SHALL INSTALL DEVICES AS SHOWN ON ARCHITECTURAL DRAWINGS AND WHERE A DEVICE IS OT SHOWN, SHALL CONSULT WITH ARCHITECT FOR LOCATION. ALL DEVICES INSTALLED IN LOCATION NOT APPROVES BY ARCHITECT SHALL BE RELOCATED. ALL WORK ASSOCIATED WITH RELOCATION OF DEVICES, INCLUDING PATCHING AND REPLACING WALL OR CEILING FINISHES, SHALL BE THE RESPONSIBILITY OF THE GC.

DIVISION 8 - DOORS AND WINDOWS cont.

SECTION 08700 - HARDWARE (CONT'D)

3. VERIFY KEYING REQUIREMENTS WITH OWNER AND TENANT. FURNISH 2 KEYS PER LOCK WITH A MAXIMUM OF 8 KEYS PER KEYED ALIKE.
D. PRODUCTS: AS INDICATED IN DOOR HARDWARE SETS.

1.2 EXECUTION

A. FABRICATION
1. BASE METALS: PRODUCE DOOR HARDWARE UNITS OF BASE METAL, FABRICATED BY FORMING METHODS INDICATED, USING ALUMINUM FASTENERS ARE NOT PERMITTED. PROVIDE PHILLIPS FLAT-HEAD SCREWS WITH FINISHED HEADS TO MATCH SURFACE OF DOOR HARDWARE, UNLESS OTHERWISE INDICATED.
2. FASTENERS: PROVIDE SCREWS ACCORDING TO COMMERCIALLY RECOGNIZED INDUSTRY STANDARDS FOR APPLICATION INTENDED, EXCEPT ALUMINUM FASTENERS ARE NOT PERMITTED. PROVIDE PHILIPS FLAT-HEAD SCREWS WITH FINISHED HEADS TO MATCH SURFACE OF DOOR HARDWARE, UNLESS OTHERWISE INDICATED. COMPLY WITH NFPA 80 FOR FASTENERS OF DOOR HARDWARE IN FIRE-RATED APPLICATIONS.
a. COMPLY WITH NFPA 80 FOR FASTENERS FOR DOORS HARDWARE IN FIRE RATED APPLICATIONS.
3. FINISHES: BHMA A156.18, AS INDICATED IN DOOR HARDWARE SETS.
B. INSTALLATION
1. STEEL DOORS AND FRAMES: COMPLY WITH DHI A115 SERIES. DRILL AND TAP DOORS AND FRAMES SURFACE-APPLIED DOOR HARDWARE ACCORDING TO ANSI A250.6.
2. WOOD DOORS: COMPLY WITH DHI A115-W SERIES.
3. MOUNTING HEIGHTS" MOUNT DOOR HARDWARE UNITS AT HEIGHTS INDICATED ON DRAWINGS AND AS FOLLOWS UNLESS OTHERWISE INDICATED OR REQUIRED TO COMPLY WITH GOVERNING REGULATION. - DHI'S "RECOMMENDED LOCATIONS FOR ARCHITECTURAL HARDWARE"
4. INSTALL EACH DOOR HARDWARE ITEM, TO COMPLY WITH MANUFACTURER'S WRITHEN INSTRUCTIONS. WHERE CUTTING AND FITTING ARE REQUIRED TO INSTALL DOOR HARDWARE ONTO OR INTO SURFACES THAT ARE LATER TO BE PAINTED OR FINISHED IN ANOTHER WAY, COORDINATE REMOVAL, STORAGE, AND REINSTALLATION OF SURFACE PROTECTIVE TRIM UNITS WITH FINISHING WORK SPECIFIED IN DIVISION 9 SECTIONS. DO NOT INSTALL SURFACE-MOUNTED ITEMS UNTIL FINISHES HAVE BEEN COMPLETED ON SUBSTANCES INVOLVED.
5. BOXED POWER SUPPLIES: LOCATE POWER SUPPLIES AS INDICATED OR, IF NOT INDICATED, ABOVE ACCESSIBLE CEILINGS OR IN ELECTRICAL EQUIPMENT ROOM(S). VERIFY LOCATION WITH ARCHITECT. PROVIDE THE LEAST NUMBER OF POWER SUPPLIES REQUIRED TO ADEQUATELY SERVE DOORS WITH ELECTRIFIED DOOR HARDWARE.
6. THRESHOLDS: SET THRESHOLDS FOR EXTERIOR AND ACOUSTICAL DOORS IN FULL BED OF SEALANT.
7. ADJUSTMENT: ADJUST AND CHECK LACK OPERATING ITEM OF DOOR HARDWARE AND EACH DOOR TO ENSURE PROPER OPERATION OR FUNCTION OF EVERY UNIT. REPLACE UNITS THAT CANNOT BE ADJUSTED TO OPERATE AS INTENDED. ADJUST DOOR CONTROL DEVISES TO COMPENSATE FOR FINAL OPERATION OF HEATING AND VENTILATING EQUIPMENT AND TO COMPLY WITH REFERENCED ACCESSIBILITY REQUIREMENTS.
8. DOOR CLOSERS: UNLESS OTHERWISE REQUIRED BY AUTHORITIES HAVING JURISDICTION, ADJUST SWEEP PERIOD SO THAT, FROM AN OPEN POSITION OF 70 DEGREES, THE DOOR WILL TAKE AT LEAST 3 SECONDS TO MOVE TO A POINT 3 INCHES (75 MM) FROM THE LATCH, MEASURED TO THE LEADING EDGE OF THE DOOR.

DIVISION 9 - FINISHES

SECTION 09000 - GENERAL FINISH NOTES

1.1 GENERAL
A. SUBMITTALS:
1. THE CONTRACTOR SHALL SUBMIT A MINIMUM OF THREE (3) 8"Z10" SQUARE SAMPLES OF EACH SCHEDULED FINISH FOR REVIEW BY THE ARCHITECT. THE ARCHITECT SHALL RETAIN TWO (2) SAMPLES OF FINISHES FOR RECORD AND RETURN A MINIMUM OF ONE SAMPLE TO CONTRACTOR.
2. THE CONTRACTOR SHALL ADVISE THE ARCHITECT OF LOCATIONS OF CHANGES IN DYE LOTS, BATCHES OR SIMILAR COLOR SHIFTS.
B. QUALITY ASSURANCE:
1. BEFORE PROCEEDING WITH PROCUREMENT OF FINISHES, THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS TO ASSURE THE SUFFICIENT QUANTITIES OF MATERIALS ARE ORDERED TO COMPLETE THE WORK.
2. THE CONTRACTOR SHALL REFER TO THE DRAWINGS FOR SPECIFIC LOCATIONS OF FINISHES. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES, OMISSIONS, AMBIGUITIES OR CONFLICTS ON THE PLANS, THE CONTRACTOR SHALL BRING THE ITEMS(S) TO THE ATTENTION OF THE ARCHITECT FOR DIRECTION, BEFORE ORDERING MATERIALS OR PROCEEDING WITH ANY WORK IN QUESTION.
3. FINISHES TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS AND IN A MANNER CONSISTENT WITH THE HIGHEST QUALITY STANDARDS OF WORKMANSHIP.
4. WHERE THERE IS A QUESTION AS TO THE ACCEPTABLE LEVEL OF QUALITY FOR THE INSTALLATION OF ANY MATERIALS, THE ARCHITECT SHALL ACT AS MEDIATOR.
5. UPON RECEIPT FROM THE MANUFACTURER, INSPECT MATERIALS FOR DEFECTS, FLAWS, SHIPPING DAMAGE, CORRECT COLOR AND PATTERN. PRIOR TO BEGINNING WORK, DAMAGED OR WRONG MATERIALS SHALL BE RETURNED TO THE MANUFACTURER FOR IMMEDIATE REPLACEMENT TO PREVENT DELAYS IN THE COMPLETION OF THE WORK.
6. COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS FOR HANDLING, STORAGE, INSTALLATION AND PROTECTION IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR.
7. FINISHES SHALL EXTEND OVER, AND/OR BEHIND ANY ITEM OF BUILT-IN MILLWORK, EQUIPMENT, MIRRORS, ETC., AS INDICATED ON THE DRAWINGS.

SECTION 09250 - GYPSUM BOARD

1.1 GENERAL
A. SUBMITTALS
1. PRODUCT DATA: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS WITH PROJECT CONDITIONS AND MATERIALS CLEARLY IDENTIFIED OR DETAILED FOR EACH REQUIRED SYSTEM.
B. GENERAL
1. FIRE RESISTANCE RATINGS: WHERE FIRE RESISTANCE CLASSIFICATIONS ARE INDICATED, PROVIDE MATERIALS AND APPLICATION PROCEDURES IDENTICAL TO THOSE LISTED BY UL OR TESTED ACCORDING TO ASTM E119 FOR TYPE OF CONSTRUCTION SHOWN.
2. ACOUSTICAL RATINGS: WHERE SOUNDS RATINGS ARE INDICATED, PROVIDE MATERIALS AND APPLICATION PROCEDURES IDENTICAL TO THOSE TESTED BY MANUFACTURER TO ACHIEVE SOUND TRANSMISSION CLASS (STC) SCHEDULED OR INDICATED IN ACCORDANCE WITH ASTM E90.
3. REFERENCE STANDARDS:
a. APPLICABLE REQUIREMENTS OF ASTM C754 FOR INSTALLATION OF STEEL FRAMING.
b. INSTALL GYPSUM BOARD IN ACCORDANCE WITH APPLICABLE REQUIREMENTS AND RECOMMENDATIONS OF GYPSUM ASSOCIATION GA 216, "RECOMMENDED SPECIFICATIONS FOR THE APPLICATION AND FINISHING OF GYPSUM BOARDS" EXCEPT FOR MORE STRINGENT REQUIREMENTS OF MANUFACTURER.
c. APPLY ACOUSTICAL SEALANT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF ASTM C919.
4. INSTALL INTERIOR GYPSUM BOARD IN THE FOLLOWING LOCATIONS:
a. REGULAR TYPE: VERTICAL SURFACES, UNLESS OTHERWISE INDICATED.
b. TYPE X: WHERE REQUIRED FOR FIRE-RESISTANCE-RATED ASSEMBLY.
c. TYPE C: WHERE REQUIRED FOR SPECIFIC FIRE-RESISTANCE-RATED ASSEMBLY INDICATED.
d. CEILING TYPE: CEILING SURFACES.
e. FOIL-BACKED TYPE: AS INDICATED ON DRAWINGS.
f. MOISTURE- AND MOLD-RESISTANT TYPE: AS INDICATED ON DRAWINGS.
g. IMPACT-RESISTANT TYPE: AS INDICATED ON DRAWINGS.
5. WHEN POSSIBLE, SOURCE GYPSUM BOARD AS MIN. 75% RECYCLED CONTENT.
C. PRODUCTS
1. GYPSUM BOARD:
a. ASTM C1396 (SECTION 5), REGULAR TYPE EXCEPT WHERE TYPE X FIRE RESISTANT TYPE IS INDICATED OR REQUIRED TO MEET UL ASSEMBLY TYPES.
b. EDGES: TAPERED.
c. THICKNESS: 5/8 INCH, UNLESS OTHERWISE INDICATED
d. WHERE CURVED GYPSUM BOARD CONSTRUCTION IS INDICATED, USE 1/4 INCH FLEXIBLE FACING BOARD.

DIVISION 9 - FINISHES cont.

SECTION 09250 - GYPSUM BOARD (CONT'D)

e. TYPICAL PARTITIONS AND CEILINGS: USG SHEETROCK® SW, FIRECODE® OR FIRECODE® "C" CORE OR EQUAL
f. FOR FIRE-RATED WALLS: USG ULTRACODE® OR EQUAL
g. USE GYPSUM BOARD AND JOINT COMPOUND WITH LITTLE OR NO VOCS AND FORMALDEHYDE EMISSIONS. GYPSUM BOARD SHALL HAVE A MINIMUM OF 5% POST-CONSUMER AND 20% POST-INDUSTRIAL (NATION-WIDE AVERAGE FOR COMPANY) AS DEFINED BY FTC (FEDERAL TRADE COMMISSION) BY USG
2. MOISTURE & MOLD RESISTANT
a. ASTM C1396 (SECTION 5), REGULAR TYPE EXCEPT WHERE TYPE X FILE RESISTANT TYPE IS INDICATED OR REQUIRED TO MEET UL ASSEMBLY TYPES.
b. EDGES: TAPERED.
c. 5/8 INCH. USG SHEETROCK® BRAND MOLD TOUGH™ FIRECODE (TYPE X), FIRECODE® C CORE OR ULTRACODE® CORE OR EQUAL.
3. CEMENT BACKER BOARD:
a. AGGREGATED PORTLAND CEMENT BOARD WITH WOVEN GLASS FIBER MESH FACING; COMPLYING WITH ANSI A118.9.
b. 1/2 INCH. USG DUROCK CEMENT BOARD OR EQUAL
4. METAL STUDS AND RUNNERS:
a. ASTM C645, "C" SHAPED WITH HOT-DIPPED GALVANIZED COATING.
b. PROVIDE 25 GAUGE STUDS, EXCEPT AS OTHERWISE INDICATED OR SPECIFIED, DEPTH AS INDICATED. PROVIDE HEAVIER GAUGE IF REQUIRED.
c. AT DOOR (AND BORROWED LIGHT) FRAMES, PROVIDE (2) 25 GAUGE MINIMUM STUDS AT EACH JAMB. WHERE WALL IS INDICATED OR SPECIFIED TO BE TYPICALLY FRAMED WITH 20 GAUGE STUDS, PROVIDE (2) 20 GAUGE STUDS AT EACH JAMB.
d. PROVIDE 20 GAUGE STUDS AT WALLS TO RECEIVE CEMENT BACKER BOARD, AND WATER RESISTANT GYPSUM BOARD WITH CERAMIC TILE FACING.
e. PROVIDE RUNNER GAUGE AS RECOMMENDED BY STUD MANUFACTURER.
5. METAL FURRING CHANNELS:
a. HAT SHAPED: ASTM C645, 7/8 INCH HIGH, 25 GAUGE, WITH G40 HOT-DIPPED GALVANIZED COATING PER ASTM A525.
b. PROVIDE 20 GAUGE AT FURRING TO RECEIVE TILE BACKER BOARD.
c. RESILIENT: MANUFACTURER'S STANDARD TYPE DESIGNED TO REDUCE SOUND TRANSMISSION; 1/2 INCH DEEP, 25 GAUGE STEEL WITH G40 HOT-DIPPED GALVANIZED COATING PER ASTM A525.
6. CEILING SOFFIT SUPPORT MATERIALS
a. HANGER ANCHORAGE DEVICES: SCREWS, CLIPS, BOLTS OR OTHER DEVICES COMPATIBLE WITH INDICATED STRUCTURAL ANCHORAGE FOR CEILING HANGERS AND WHOSE SUITABILITY HAS BEEN PROVEN THROUGH STANDARD CONSTRUCTION PRACTICES OR BY CERTIFIED TEST DATA.
b. POWDER-ACTUATED FASTENERS IN CONCRETE: FABRICATED FROM CORROSION-RESISTANT MATERIALS, WITH CLIPS OR OTHER ACCESSORY DEVICES FOR ATTACHING HANGERS
c. STEEL WIRE OR RODS, SIZES TO COMPLY WITH REQUIREMENTS OF ASTM C754 FOR CEILING OR SOFFIT AREA AND LOADS TO BE SUPPORTED.
7. PROPRIETARY CEILING FRAMING SYSTEMS:
a. ACCEPTABLE PRODUCT: EQUIVALENT TO DRYWALL SUSPENSION SYSTEM BY USG.
8. METAL TRIM FOR GYPSUM BOARD:
a. CORNER BEADS: EQUIVALENT TO DURABEAD NO. 103 BY USG.
b. CASING BEADS (EDGE BEADS): EQUIVALENT TO 200A BY USG.
c. L SHAPE: B4 SERIES BY USG; J SHAPE: B9 SERIES BY USG.
9. SPECIAL TRIM AND REVEALS: EXTRUDED ALUMINUM ALLOY 6063-T5, PROFILES AS INDICATED. PROFILES CALLED OUT IN DRAWINGS AS BASIS OF DESIGN FROM PITCON. OTHER ACCEPTABLE MANUFACTURERS INCLUDE: FRY REGLET AND GORDON.
D. METAL FRAMING INSTALLATION
1. ALIGN AND SECURE METAL RUNNER TRACKS ACCURATELY TO PARTITION LAYOUT AT BOTH FLOOR AND CEILING AND PROVIDE FASTENERS APPROPRIATE TO SUBSTRATE CONSTRUCTION AS RECOMMENDED BY MANUFACTURER.
2. METAL STUD FRAMING SHALL CONFORM TO ASTM C754 AS FOLLOWERS:

STUD DEPTH	GWB LAYERS	MAX HEIGHT*	STUD SPACING
2 1/2"	ONE	11'-8"	16"
2 1/2"	ONE	10'-8"	24"
2 1/2"	TWO	12'-7"	24"
3 5/8"	ONE	15'-5"	16"
3 5/8"	ONE	13'-8"	24"
3 5/8"	TWO	15'-5"	24"

*EACH SIDE L/240 @ 5LBS/SF ON CENTER

3. PLACE STUDS SO THAT FLANGES FACE IN SAME DIRECTION. CUT STUDS 1/2 INCH SHORT OF FULL HEIGHT TO PROVIDE PERIMETER RELIEF, AND ALIGN AND PLUMB PARTITION FRAMING ACCURATELY.
4. WHERE PARTITIONS ABUT TO CEILING OR DECK CONSTRUCTION OR VERTICAL STRUCTURAL ELEMENTS, PROVIDE SLIP OR CUSHION TYPE JOINT BETWEEN PARTITION AND STRUCTURE AS RECOMMENDED BY STUD MANUFACTURER TO PREVENT TRANSFER OF STRUCTURAL LOADS MOVEMENTS TO PARTITIONS, AND TO PROVIDE LATERAL SUPPORT.
5. PROVIDE HORIZONTAL BRACING WHERE NECESSARY FOR LATERAL SUPPORT.
6. FOR CHASE WALLS POSITION STEEL STUDS ON OPPOSITE SIDES OF CHASE DIRECTLY ACROSS FROM EACH OTHER, AND CROSS BRAC

DIVISION 9 - FINISHES CONT.

SECTION 09250 - GYPSUM BOARD (CONT'D)

6. SOUND RATED CONSTRUCTION
   a. INSTALL SOUND ATTENUATION BLANKETS IN SOUND RATED PARTITIONS AND CEILINGS WHERE INDICATED.
   b. COMPLETELY FILL SPACE BETWEEN STUDS AND FRAMING TO FULL HEIGHT OF PARTITION WALL OR FULL AREA OF CEILING.
   c. FIT CAREFULLY BEHIND ELECTRICAL OUTLETS AND OTHER WORK PENETRATING SOUND RATED CONSTRUCTION.
   d. AT PARTITION WALLS, PROVIDE CONTINUOUS BEADS OF ACOUSTIC SEALANT AT JUNCTURE OF BOTH FACES OF RUNNERS WITH FLOOR AND CEILING CONSTRUCTION, AND WHEREVER GYPSUM BOARD ABUTS DISSIMILAR MATERIALS, PRIOR TO INSTALLATION OF GYPSUM BOARD.
   e. AT CEILINGS, PROVIDE CONTINUOUS BEADS OF SEALANT WHEREVER GYPSUM BOARD ABUTS DISSIMILAR MATERIALS.
   f. PROVIDE CONTINUOUS BEAD OF SEALANT BEHIND FACES OF CONTROL JOINTS PRIOR TO INSTALLATION OF CONTROL JOINT ACCESSORIES.
   g. AFTER INSTALLATION OF GYPSUM BOARD BASE LAYERS, CUT FACE LAYER SHEETS 1/2 INCH LESS THAN FLOOR TO CEILING HEIGHT AND POSITION WITH 1/2 INCH OPEN SPACE BETWEEN GYPSUM BOARD AND FLOOR, CEILING AND DISSIMILAR VERTICAL CONSTRUCTION. FILL 1/4 INCH OPEN SPACE WITH CONTINUOUS SEALANT BEADS AFTER INSTALLATION OF FACE LAYER.
   h. AT OPENINGS AND CUTOUTS, FILL OPEN SPACES BETWEEN GYPSUM BOARD AND FIXTURES, CABINETS, DUCTS AND OTHER FLUSH OR PENETRATING ITEMS, WITH CONTINUOUS BEAD OF SEALANT.
   i. SEAL SIDES AND BACKS OF ELECTRICAL BOXES TO COMPLETELY CLOSE OFF OPENINGS AND JOINTS.
   j. WHERE SOUND RATED PARTITION WALLS INTERSECT NON-RATED GYPSUM BOARD PARTITION WALLS, EXTEND SOUND-RATED CONSTRUCTION TO COMPLETELY CLOSE SOUND FLANKING PATHS THROUGH NON-RATED CONSTRUCTION AND SEAL JOINTS BETWEEN FACE LAYERS AT VERTICAL INTERIOR ANGLES OF INTERESTING PARTITIONS.
7. USE SAME FASTENERS TO ANCHOR TRIM ACCESSORY FLANGES AS REQUIRED TO FASTEN GYPSUM BOARD TO SUPPORTS, UNLESS OTHERWISE RECOMMENDED BY TRIM MANUFACTURER. INSTALL METAL CORNER BEADS AT EXTERNAL CORNERS AND METAL CASING BEAD TRIM WHENEVER EDGE OF GYPSUM BOARD WOULD OTHERWISE BE EXPOSED OR SEMI-EXPOSED.
8. INSTALL CONTROL JOINTS WITHIN LONG RUNS OR PARTITIONS, CEILINGS OR SOFFITS AT APPROXIMATELY 30'0" ON CENTER OR AS INDICATED. WHERE GYPSUM BOARD IS VERTICALLY CONTINUOUS, AS A STAIRWELLS, PROVIDE HORIZONTAL CONTROL JOINTS AT EACH FLOOR LEVEL.
9. SPECIAL TRIM: INSTALL AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

F. FINISHING
1. PROVIDE LEVELS OF GYPSUM BOARD FINISH FOR LOCATIONS AS FOLLOWS IN ACCORDANCE WITH GYPSUM ASSOCIATION GA 214, "RECOMMENDED SPECIFICATION: LEVELS OF GYPSUM BOARD FINISH".
   a. LEVEL 1: CEILING PLENUM AREAS AND CONCEALED AREAS, EXCEPT PROVIDE HIGHER LEVEL OF FINISH AS REQUIRED TO COMPLY WITH FIRE RESISTANCE RATINGS AND ACOUSTICAL RATINGS.
   b. LEVEL 2: GYPSUM BOARD SUBSTRATE AT TILE STONE, EXCEPT REMOVE TOOL MARKS AND RIDGES.
   c. LEVEL 3: GYPSUM BOARD SURFACES, WHERE TEXTURED FINISHES OR HEAVY VINYL WALL PAPERING WILL BE USED.
   d. LEVEL 4: GYPSUM BOARD SURFACES, EXCEPT WHERE ANOTHER FINISH LEVEL IS INDICATED
   e. LEVEL 5: GYPSUM BOARD SURFACES REQUIRING EXTRA SMOOTH SURFACE FOR CRITICAL LIGHT, WHERE INDICATED USING SPRAY-APPLIED PRIMER-SURFACER, TUFF-HIDE OR WATERED-DOWN JOINT COMPOUND SKIM COAT OVER WHOLE SURFACE.
2. CEMENTITIOUS BACKER BOARD: PREPARE AND FINISH JOINTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. WOOD BLOCKING SHALL BE FIRE RETARDANT TREATED (FRT). INSTALL WOOD BLOCKING AS REQUIRED IN PARTITIONS AT WALL HUNG SHELVING, CABINETS, ARTWORK, TOILET PARTITIONS AND ACCESSORIES, ETC. VERIFY BLOCKING REQUIREMENTS WITH MILLWORK SUBCONTRACTOR AND REVIEW WITH THE ARCHITECT FOR ACCEPTANCE PRIOR INSTALLATION.

SECTION 09300 - TILE

1.1 REFERENCES
A. ANSI A108 1999 - SPECIFICATIONS FOR INSTALLATION OF CERAMIC TILE
B. ANSI A118 1999 - STANDARD SPECIFICATION FOR MORTAR AND GROUT
C. ANSI A136.1, 1999 - ORGANIC ADHESIVES FOR INSTALLATION OF CERAMIC TIME
D. ANSI A137.1, 1998 - SPECIFICATIONS FOR CERAMIC TILE
E. ASTM C50 - STANDARD SPECIFICATION FOR PORTLAND CEMENT
F. ASTM C241 - TEST METHOD FOR ABRASION RESISTANCE OF STONE SUBJECTED TO FOOT TRAFFIC
G. ASTM C615 - SPECIFICATION FOR GRANITE DIMENSION STONE
H. ASTM C629 - SPECIFICATION FOR SLATE DIMENSION STONE
I. ASTM C1028 - TEST METHOD FOR DETERMINING THE STATIC COEFFICIENT OF FRICTION OR CERAMIC TILE AND OTHER LIKE SURFACES BY THE HORIZONTAL DYNAMOMETER PULL METER METHOD.
J. ASTM D4397 - SPECIFICATION POLYETHYLENE SHEETING FOR CONSTRUCTION, INDUSTRIAL, AND AGRICULTURAL APPLICATIONS
K. TCA (HB) - HANDBOOK FOR CERAMIC TILE INSTALLATION; TILE COUNCIL PF AMERICA, INC.

1.2 PERFORMANCE REQUIREMENTS
A. STATIC COEFFICIENT OF FRICTION: TILE ON WALKWAY SURFACES SHALL BE PROVIDED WITH THE FOLLOWING VALUES AS DETERMINED BY TESTING IN CONFORMANCE WITH ASTM C 1028.
1. LEVEL SURFACES: MINIMUM OF 0.6 (WET).
2. STEP TREADS: MINIMUM OF 0.6 (WET).
3. RAMP SURFACES: MINIMUM OF 0.8 (WEST)

1.5 SUBMITTALS
A. SUBMIT UNDER PROVISIONS OF SECTION 01300.
B. MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:
1. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
3. INSTALLATION METHODS.
C. SHOP DRAWINGS: INDICATE TILE LAYOUT, PATTERNS, COLOR ARRANGEMENT, PERIMETER CONDITIONS, CORNER CONDITIONS, JUNCTIONS WITH DISSIMILAR MATERIALS, CONTROL AND EXPANSION JOINTS, THRESHOLDS, CERAMIC ACCESSORIES, AND SETTING DETAILS.
D. SELECTION SAMPLES: SAMPLES OF ACTUAL TILES FOR SELECTION .
E. SAMPLES: MOUNT TILE AND APPLY GROUT ON TWO PLYWOOD PANELS, MINIMUM 24 BY 24 INCH IN SIZE ILLUSTRATING PATTERN, COLOR VARIATIONS, AND GROUT JOINT SIZE VARIATIONS.
F. MANUFACTURER'S CERTIFICATE:
1. CERTIFY THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS.
2. FOR EACH SHIPMENT, TYPE AND COMPOSITION OF TILE PROVIDE A MASTER GRADE CERTIFICATE SIGNED BY THE MANUFACTURER AND THE INSTALLER CERTIFYING THAT PRODUCTS MEET OR EXCEED THE SPECIFIED REQUIREMENTS OF ANSI A137.1.
G. MAINTENANCE STAT: INCLUDE RECOMMENDED CLEANING METHODS, CLEANING MATERIALS, STAIN REMOVAL METHODS, AND POLISHES AND WAXES.

1.6 QUALITY ASSURANCE
A. MAINTAIN ONE COPY EACH OF ALL REFERENCED STANDARDS AND SPECIFICATIONS ON SITE. INCLUDE THE TCA HANDBOOK, ANSI A108 SERIES, ANSI A118 SERIES ANSI A136.1 AND ANSI A137.1 AND OTHERS AS SPECIFIED UNDER PARAGRAPH REFERENCES.
B. INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN PERFORMING THE WORK OF THIS SECTION WITH MINIMUM 10 YEARS EXPERIENCE.
C. SINGLE SOURCE RESPONSIBILITY:
1. OBTAIN EACH TYPE AND COLOR OF TILE FROM A SINGLE SOURCE.
2. OBTAIN EACH TYPE AND COLOR OF MORTAR, ADHESIVE AND GROUT FROM HE SAME SOURCE.

1.7 DELIVERY, STORAGE, AND HANDLING
A. DELIVER AND STORE PRODUCTS IN MANUFACTURER'S UNOPENED PACKAGING UNTIL READY FOR INSTALLATION.
B. PROTECT ADHESIVES AND LIQUID ADDITIVES FROM FREEZING OR OVERHEATING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
C. STORE TILE AND SETTING MATERIALS ON ELEVATED PLATFORMS, UNDER COVER AND IN A DRY LOCATION AND PROTECT FROM CONTAMINATION, DAMPNESS, FREEZING OR OVERHEATING.

1.8 ENVIRONMENTAL REQUIREMENTS
A. DO NOT INSTALL ADHESIVES TO AN UNVENTILATED ENVIRONMENT.
B. MAINTAIN AMBIENT AND SUBSTRATE TEMPERATURE OF 50 DEGREES F (10 DEGREES C) DURING INSTALLATION OF MORTAR MATERIALS.

DIVISION 9 FINISHES cont.

SECTION 09300 - TILE (CONT'D)

1.8 ENVIRONMENTAL REQUIREMENTS
A. DO NOT INSTALL ADHESIVES IN AN UNVENTILATED ENVIRONMENT.
B. MAINTAIN AMBIENT AND SUBSTRATE TEMPERATURE OF 50 DEGREES F (10 DEGREES C) DURING INSTALLATION OR MORTAR MATERIALS.

1.9 EXTRA MATERIALS
A. BEYOND MATERIAL REQUIRED FOR COMPLETION OF THE JOB USING SINGLE SOURCE MATERIAL, EXTRA MATERIAL SHALL BE PROVIDED TO OWNER AT COMPLETION OF JOB. PROVIDE MIN. 5 SQ FT OF EACH SIDE, COLOR, AND SURFACE FINISH OF FIELD TILE SPECIFIED AND MINIMUM 10 PIECES OF TRIM, CORNER, COVE OR SPECIALTY TILE.

2.1 MANUFACTURES
A. ACCEPTABLE MANUFACTURER: SEE FINISH SCHEDULE FOR SPECIFIED MANUFACTURERS REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED IN ACCORDANCE WITH PROVISIONS OF SECTION 01600.

2.2 TILE
A. GENERAL: PROVIDE TILE THAT COMPLIES WITH ANSI A137.1 FOR TYPES, COMPOSITIONS AND CHARACTERISTICS INDICATED. PROVIDE TILE IN THE LOCATIONS AND OF THE TYPES COLORS AND PATTERN ON THE DRAWINGS AND IDENTIFIED IN THE SCHEDULE AND THE END OF THIS SECTION. TILE SHALL ALSO BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING.
1. FACTORY BLENDING: FOR TILE EXHIBITING COLOR VARIATIONS WITHIN THE RANGES SELECTED UNDER SUBMITTAL OD SAMPLES, BLEND TILE IN THE FACTORY AND PACKAGE SO TILE TAKEN FROM ONE PACKAGE SHOWS THE SAME RANGE OF COLORS AS THOSE TAKEN FROM OTHER PACKAGES.
2. MOUNTING: FOR FACTORY MOUNTED TILE, PROVIDE BACK OR EDGE MOUNTED TILE ASSEMBLIES AS STANDARD WITH THE MANUFACTURER, UNLESS OTHERWISE SPECIFIED.
3. FACTORY APPLIED TEMPORARY PROTECTIVE COATINGS: WHERE INDICATED UNDER TILE TYPE, PROTECT EXPOSED SURFACES OF TILE AGAINST ADHERENCE OR MORTAR AND GROUT BY PRE-COATING WITH A CONTINUOUS FILM OF PETROLEUM PARAFFIN WAX APPLIED HOT. DO NOT COAT UNEXPOSED TILE SURFACES.
B. FIELD TILE: AS PER SPECIFIED IN FINISH SCHEDULE.
C. TRIM UNITS: MATCHING BULLNOSE, COVE, COVE BASE, AND WINDOW SILL OR STEP NOSING SHAPES IN SIZES COORDINATED WITH FIELD TILE, UNLESS OTHERWISE SPECIFIED IN FINISH SCHEDULE.

2.3 TRIM AND ACCESSORIES
A. NON-CERAMIC TRIM: SATIN NATURAL ANODIZED EXTRUDED ALUMINUM, STAINLESS STEEL, BRASS, ETC, STYLE AND DIMENSIONS TO SUIT APPLICATION, FOR SETTING USING TILE MORTAR OR ADHESIVE; USE IN THE FOLLOWING LOCATIONS:
1. OPEN EDGES OF FLOOR TILE.
2. TRANSITION BETWEEN FLOOR FINISHES OF DIFFERENT HEIGHTS.
3. THRESHOLDS AT DOOR OPENINGS
4. EXPANSION AND CONTROL JOINTS, FLOOR AND WALL
B. STONE THRESHOLDS: PROVIDE STONE THRESHOLDS UNIFORM IN COLOR AND FINISH AND FABRICATED AS FOLLOWS:
1. MATERIALS: AS SPECIFIED IN FINISH SCHEDULE
a. MARBLE, COMPLYING WITH ASTM C 503 FOR EXTERIOR USE AND WITH A MINIMUM ABRASIVE HARDNESS OF 10 WHEN TESTED IN ACCORDANCE WITH ASTM C 241.
b. GRANITE COMPLYING WITH ASTM C 614.
c. STATE COMPLYING WITH ASTM C 629, ABRASION RESISTANT, NON-FADING FOR INTERIOR USE WITH A HONED FINISH.
2. COLOR/FINISH:
a. AS SELECTED FROM THE MANUFACTURERS STANDARD RANGE.
3. SIZE:
a. FABRICATE: FULL DEPTH OF JAMB BY FULL WIDTH OF WALL OR FRAME OPENING; 1/2 INCH (12 MM) THICK; BEVELED ONE LONG EDGE WITH RADIUSED CORNER ON TOP SIDE; WITHOUT HOLES, CRACKS, OR OPEN SEAMS. UNLESS OTHERWISE DETAILED
4. PROVIDE TRANSITION BETWEEN TILE SURFACE AND ADJOINING FINISHES AND AT THE FOLLOWING LOCATIONS"
a. AT DOORWAYS WHERE TILE TERMINATES.
b. AT OPEN EDGES OF FLOOR TILE WHERE ADJACENT FINISH IS A DIFFERENT HEIGHT.

2.4 SETTING MATERIALS
A. ORGANIC ADHESIVE: ANSI A136.1, THINSET BOND TYPE; USE TYPE I IN AREAS SUBJECT TO PROLONGED MOISTURE EXPOSURE.
B. EPOXY ADHESIVE: ANSI A118.3, THINSET BOND TYPE.
C. MORTAR BED MATERIALS:
1. PORTLAND CEMENT: ASTM C150, TYPE 1, GRAY OR WHITE
2. HYDRATED LIME: ASTM C207, TYPE S.
3. STAND: ASTM C144, FINE.
4. LATEX ADDITIVE: AS APPROVED.
5. WATER: CLEAN AND POTABLE.
D. MORTAR BOND COAT MATERIALS:
1. DRY-SET PORTLAND CEMENT TYPE: ANSI A118.1.
2. LATEX-PORTLAND CEMENT TYPE: ANSI A118.4.
3. EPOXY: ANSI A118.3, 100 PERCENT SOLIDS.
E. STANDARD GROUT: CEMENT GROUT, SANDED OR UNSANDED, AS SPECIFIED IN ANSI A118.6; COLOR AS SELECTED.
F. POLYMER MODIFIED CEMENT GROUT, SANDED OR UNSANDED, AS SPECIFIED IN ANSI A118.7; COLOR AS SELECTED.
G. EPOXY GROUT: ANSI A118.8, 100 PERCENT SOLIDS EPOXY GROUT; COLOR AS SELECTED.
H. SILICONE SEALANT: SILICONE SEALANT, MOISTURE AND MILDEW RESISTANT TYPE; USE FOR SHOWER FLOORS AND SHOWER WALLS.
I. WATERPROOFING/ISOLATION MEMBRANE AT FLOORS: MEMBRANE IN ACCORDANCE WITH ANSI A118.10 AND AS FOLLOWS: UN-REINFORCED, FLUID-APPLIED ELASTOMERIC MEMBRANE.
1. GBP: REDGARD OR EQUAL.
J. MEMBRANE AT WALLS: UN-REINFORCED, FLUID-APPLIED EALSTOMERIC MEMBRANE.
K. MEMBRANE AT WALLS: 4 MIL (0.1 MM) THICK POLYETHYLENE FILM, ASTM D4397.
L. CEMENTITIOUS BACKER BOARD: ANSI A118.9; HIGH DENSITY, CEMENTITIOUS, GLASS FIBER REINFORCED WITH 2 INCH (50 MM) WITH COATED GLASS FIBER TAPE FOR JOINTS AND CORNERS:
1. THICKNESS: 1/4 INCH (6 MM).
2. THICKNESS: 1/2 INCH (13 MM).
3. THICKNESS: 5/8 INCH (16 MM).

3.1 EXAMINATION
A. VERIFY THAT WALL SURFACES ARE FREE OF SUBSTANCES WHICH WOULD IMPAIR BONDING OF SETTING MATERIALS, SMOOTH AND FLAT WITHIN TOLERANCES SPECIFIED IN ANSI A137.1, AND ARE READY TO RECEIVE TILE.
B. VERIFY THE SUB-FLOOR SURFACES ARE DUST-FREE, AND FREE OF SUBSTANCES WHICH WOULD IMPAIR BONDING IF SETTING MATERIALS TO SUB-FLOOR SURFACES, AND ARE SMOOTH AND FLAT WITHIN TOLERANCES SPECIFIED IN ANSI A137.1.
C. VERIFY THAT CONCRETE SUB-FLOOR SURFACES ARE READY TO TILE INSTALLATION BY TESTING FOR MOISTURE EMISSION RATE AND ALKALINITY; OBTAIN INSTRUCTIONS IF TEST RESULTS ARE NOT WITHIN LIMITS RECOMMENDED BY TILE MANUFACTURER AND SETTING MATERIALS MANUFACTURER.
D. VERIFY THAT REQUIRED FLOOR-MOUNTED UTILITIES ARE IN CORRECT LOCATION.

3.2 PREPARATION
A. PROTECT SURROUNDING WORK FROM DAMAGE.
B. REMOVE ANY CURING COMPOUNDS OR OTHER CONTAMINATES.
C. VACUUM CLEAN SURFACES AND DAMP CLEAN.
D. SEAL SUBSTRATE SURFACE CRACKS WITH FILLER. LEVEL EXISTING SUBSTRATE SURFACES TO ACCEPTABLE FLATNESS TOLERANCES.
E. INSTALL CEMENTITIOUS BACKER BOARD IN ACCORDANCE WITH ANSI A108.11 AND BOARD MANUFACTURER'S INSTRUCTIONS. TAPE JOINTS AND CORNERS, COVER WITH SKIM COAT OF DRY-SET MORTAR TO A FEATHER EDGE.
F. PREPARE SUBSTRATE SURFACES FOR ADHESIVE INSTALLATION IN ACCORDANCE WITH ADHESIVE MANUFACTURER'S INSTRUCTIONS.

3.3 INSTALLATION - GENERAL
A. INSTALL TILE AND GROUT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF ANSI A108.1 THROUGH A108.13, MANUFACTURER'S INSTRUCTIONS, AND TCA HANDBOOK RECOMMENDATIONS.
B. LAY TILE TO PATTERN INDICATED. ARRANGE PATTERN SO THAT A FULL TILE OR JOINT IS CENTERED ON EACH WALL AND THAT NO TILE LESS THAN 1/2 WIDTH IS USED. DO NOT INTERRUPT TILE PATTERN THROUGH OPENINGS.

DIVISION 9 FINISHES cont.

SECTION 09300 - TILE (CONT'D)

C. CUT AND FIT TILE TO PENETRATIONS THROUGH TILE, LEAVING SEALANT JOINT SPACE. FROM CORNERS AND BASES NEATLY. ALIGN FLOOR JOINTS.
D. PLACE TILE JOINTS UNIFORM IN WIDTH. SUBJECT TO VARIANCE IN TOLERANCE ALLOWED IN TILE SIZE. MAKE JOINTS WATERTIGHT, WITHOUT VOIDS, CRACKS, EXCESS MORTAR, OR EXCESS GROUT.
E. FORM INTERNAL ANGLES SQUARE AND EXTERNAL ANGLES BULLNOSED OR CORNER TRIM PIECES AS INDICATED IN DRAWINGS. STAGGER DIRECTION OF BLUENOSED EXTERNAL ANGLES AS INDICATED IN DRAWINGS.
F. INSTALL CERAMIC ACCESSORIES RIGIDLY IN PREPARED OPENINGS.
G. INSTALL NON-CERAMIC TRIM IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
H. INSTALL THRESHOLDS WHERE INDICATED.
I. SOUND TILE AFTER SETTING. REPLACE HOLLOW SOUNDING UNITS.
J. KEEP EXPANSION JOINTS FREE OF ADHESIVE OR GROUT. APPLY SEALANT TO JOINTS.
K. ALLOW TILE TO SET FOR A MINIMUM OF 48 HOURS PRIOR TO GROUTING.
L. GROUT TILE JOINTS. USE STANDARD GROUT UNLESS OTHERWISE INDICATED.
M. APPLY SEALANT TO JUNCTION OF TILE AND DISSIMILAR MATERIALS AND JUNCTION OF DISSIMILAR PLANES.

3.4 INSTALLATION - FLOORS - THIN-SET METHODS
A. OVER EXTERIOR CONCRETE SUBSTANCES, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F102,WITH STANDARD GROUT.
B. OVER INTERIOR CONCRETE SUBSTRATES, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHODS F113, DRY-SET OR LATEX-PORTLAND CEMENT BOND COAT, WITH STANDARD GROUT, UNLESS OTHERWISE INDICATED.
1. WHERE WATERPROOFING MEMBRANE IS INDICATED, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F122, WITH LATEX-PORTLAND CEMENT GROUT.
2. WHERE EPOXY BOND COAT AND GROUT ARE INDICATED, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F131.
C. OVER WOOD SUBSTRATES, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F142, WITH STANDARD GROUT, UNLESS OTHERWISE INDICATED.
1. WHERE EPOXY BOND COAT AND GROUT ARE INDICATED, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F143.

3.5 INSTALLATION - FLOOR - MORTAR BED METHODS
A. OVER EXTERIOR CONCRETE SUBSTANCES, INSTALL IN ACCORDANCE WITH TCA F101, BONDED, WITH STANDARD GROUT.
B. OVER INTERIOR CONCRETE SUBSTRATES, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F111, WITH CLEAVAGE MEMBRANE, UNLESS OTHERWISE INDICATED.
1. WHERE WATERPROOFING MEMBRANE IS INDICATED, WITH STANDARD GROUT OR NO MENTION OF GROUT TYPE, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F121.
2. WHERE EPOXY BOND COAT AND GROUT ARE INDICATED, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F132, BONDED.
3. WHERE EPOXY OR FURAN GROUT IS INDICATED, BUT NOT EPOXY OR FURAN BOND COAT, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F114, WITH CLEAVAGE MEMBRANE.
C. OVER WOOD SUBSTRATES, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F141, WITH STANDARD GROUT, UNLESS OTHERWISE INDICATED.
D. CLEAVAGE MEMBRANE: LAP EDGES AND ENDS.
E. WATERPROOFING MEMBRANE: INSTALL AS SPECIFIED IN ANSI A108.13.
F. MORTAR BED THICKNESS: 1-1/4 TO 2 INCH (32 TO 51 MM) MAXIMUM, UNLESS OTHERWISE INDICATED.

3.6 INSTALLATION - KITCHEN AND BAR DIE WALLS
A. AT TILED KITCHEN AND BAR INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD B415, MORTAR BED FLOOR, AND W244, THIN-SET OVER CEMENTITIOUS BACKER UNIT WALLS.
B. INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD B412, OVER CEMENTITIOUS BACKER UNITS WITH WATERPROOFING MEMBRANE EXTENDING UP WALLS 6" MIN.
C. GROUT WITH STANDARD GROUT AS SPECIFIED ABOVE.
D. SEAL JOINTS BETWEEN TILE WORK AND OTHER WORK WITH SEALANT.

3.7 INSTALLATION - WALL TILE
A. OVER CEMENTITIOUS BACKER UNITS ON STUDS, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W244, USING MEMBRANE AT TOILET ROOMS.
B. OVER CEMENTITIOUS BACKER UNITS INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W223, ORGANIC ADHESIVE.
C. OVER GYPSUM WALLBOARD ON WOOD OR METAL STUDS INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W243, THIN-SET WITH DRY-SET OR LATEX-PORTLAND CEMENT BOND COAT, UNLESS OTHERWISE INDICATED.
1. WHERE MORTAR BOARD IS INDICATED, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W222, ONE COAT METHOD.
2. WHERE WATERPROOFING MEMBRANE IS INDICATED OTHER THAN AT KITCHEN AND BAR WALLS, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W222, ONE COAT METHOD.
D. OVER INTERIOR CONCRETE AND MASONRY INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W202, THIN-SET WITH DRY-SET OR LATEX-PORTLAND CEMENT BOND COAT.
E. OVER WOOD STUDS WITHOUT BACKER INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W231, MORTAR BED, WITH MEMBRANE WHERE INDICATED.
F. OVER METAL STUDS WITHOUT BACKER INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W241, MORTAR BED, MEMBRANE WHERE INDICATED.

3.8 CLEANING
A. CLEAN TILE AND GROUT SURFACES

3.9 PROTECTION OF FINISHED WORK
A. DO NOT PERMIT TRAFFIC OVER FINISHED FLOOR SURFACE FOR 72 HOURS AFTER INSTALLATION.
B. COVER FLOOR WITH KRAFT PAPER AND PROTECT FROM DIRT AND RESIDUE FROM OTHER TRADES.
C. WHERE FLOOR WILL BE EXPOSED FOR PROLONGED PERIODS COVER WITH PLYWOOD OR OTHER SIMILAR TYPE WALKWAYS.

SECTION 09510 - ACOUSTICAL CEILING TILE

1.1 GENERAL
A. SUBMITTALS
1. SUBMITTALS
a. ACOUSTICAL CEILING PANELS: 6" X 6" MINIMUM
b. SUSPENSION SYSTEM COMPONENTS: 12" IN LENGTH
B. QUALITY ASSURANCE
1. TO THE GREATEST EXTENT POSSIBLE, MATERIALS, INCLUDING EXPOSED WALL MOLDING, SUSPENSIONS SYSTEMS, AND ACCESSORIES, SHALL BE PRODUCTS OF A SINGLE MANUFACTURER OR ITEMS STANDARD WITH MANUFACTURER OF ACOUSTICAL CEILING PANEL UNITS.
C. MATERIALS
1. ACOUSTICAL TILES AND SUSPENSION SYSTEM AS SCHEDULED IN DRAWINGS. PROVIDE MANUFACTURER STANDARD COMPONENTS AS SHOWN IN DETAILS.
D. INSTALLATION
1. GRID SYSTEM:
a. INSTALL GRID SYSTEM IN COMPLIANCE WITH ASTM C636, MANUFACTURER'S INSTRUCTIONS, AND AS SUPPLEMENTED IN THIS SECTION.
b. INSTALL GRID SYSTEM IN A TRUE, EVEN PLANE AND IN STRAIGHT COURSES AS INDICATED ON DRAWINGS AND ACCEPTED SHOP DRAWINGS.
c. COORDINATE AND FIT CEILING COMPONENTS TO GRILLES, LIGHTING FIXTURES, AND OTHER RELATED ITEMS. IN DETERMINING LOCATION AND SPACING OF HANGERS AND PRIMARY RUNNERS, TAKE INTO CONSIDERATION WEIGHT OF GRILLES, LIGHT FIXTURES, ETC., THAT ARE TO BE INSTALLED IN CONJUNCTION WITH ACOUSTICAL CEILINGS.
d. PROVIDE STABILIZER BARS, CLIPS, SPLICES, AND EDGE MOLDINGS NEEDED FOR A COMPLETE INSTALLATION.
e. HANG GRID SYSTEM INDEPENDENT OF WALLS, COLUMNS, DUCTS, PIPES AND CONDUIT. WHERE CARRYING MEMBERS ARE SPLICED, AVOID VISIBLE DISPLACEMENT OF FACE PLANE OF ADJACENT MEMBERS.
f. WHERE DUCTS OF OTHER EQUIPMENT PREVENT REGULAR SPACING IF HANGERS, REINFORCE NEAREST AFFECTED HANGERS AND RELATED CARRYING CHANNELS TO SPACE EXTRA DISTANCE.
g. DO NOT SUPPORT COMPONENTS ON MAIN RUNNERS OR CROSS RUNNERS IF WEIGHT CAUSES TOTAL DEAD LOAD TO EXCEED MAXIMUM DEFLECTION LIMITATIONS. SUPPORT FIXTURE LOADS BY SUPPLEMENTARY HANGERS LOCATED WITHIN 6" (150 MM) OF EACH CORNER; OR SUPPORT COMPONENTS INDEPENDENTLY.
h. DO NOT ECCENTRICALLY LOAD SYSTEM, OR PRODUCE ROTATION OF RUNNERS.

2. MOLDINGS AND TRIM

DIVISION 9 FINISHES cont.

SECTION 09510 - ACOUSTICAL CEILING TILE (CONT'D)

a. INSTALL WALL MOLDINGS AT INTERSECTION OF SUSPENDED CEILING AND VERTICAL SURFACES, USING LONGEST PRACTICAL LENGTHSS. PROVIDE MOLDINGS AT JUNCTIONS WITH OTHER INTERRUPTIONS AND AS NEEDED TO COVER EDGES OF ACOUSTICAL CEILING PANELS.
b. ATTACH MOLDINGS AND TRIMS WITH SCREWS SPACED NOT MORE THAT 16"(400 MM) ON CENTER AND WITHIN 3" (75MM) OF ENDS OF EACH PIECE BEING INSTALLED.
c. MOLDINGS AND TRIM SHALL BE LEVEL WITH SUSPENSION SYSTEM AND WITHIN TOLERANCE SPECIFIED FOR SUSPENSION SYSTEM.
d. MITER CORNERS AND ALIGN BUTT JOINTS WHERE WALL MOLDINGS INTERSECT TO FORM TIGHT, HAIRLINE JOINTS.
e. FACE RIVETING OF MOULDINGS AND TRIM SHALL NOT BE ACCEPTABLE.
3. TOLERANCE
a. DEFLECTION OF GRID COMPONENTS SHALL NOT EXCEED 1/360 OF SPAN.
b. VARIATION FROM FLAT AND LEVEL SURFACE: 1/8" (3 MM) IN 10 FEET (3000 MM) MAXIMUM.
c. VARIATION FROM PLUMB OF GRID MEMBERS: 2 DEGREES MAXIMUM; CAUSED BY ECCENTRIC LOADS.

E. ADJUSTING AND CLEANING
1. FOLLOW GRID SYSTEM MANUFACTURER'S RECOMMENDATIONS FOR METHODS AND MATERIALS TO CLEAN AND TOUCH-UP EXPOSED COMPONENTS
2. REPLACE COMPONENTS WHICH ARE DISCOLORED OR DAMAGED IN ANY WAY, IN A MANNER WHICH RESULTS IN GRID SYSTEM SHOWING NO EVIDENCE OF REPLACEMENT WORK.

SECTION 09650 - RESILIENT FLOORING

1.1 GENERAL
A. SUBMITTALS:
1. VINYL COMPOSITION TILE SAMPLE
2. BLACK RESILIENT TRANSITION/ REDUCER STRIP (PROVIDED AT CHANGES IN FLOORING).
3. VINYL COVE AND STRAIGHT BASE.
B. PREPARE THE EXISTING, BASE BUILDING SLAB PRIOR TO INSTALLATION OF THE SCHEDULED FLOORING. ALL SURFACES SHALL BE SEALED, SIZED OR PROPERLY PREPARED PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. THE CONTRACTOR SHALL FLASH PATCH ALL UNEVEN FLOOR SLAB SURFACES IN ORDER TO PROVIDE A FLAT, SMOOTH AND CONTINUOUS FLOOR SURFACE.
C. VCT SHALL BE LAID IN STRAIGHT (NOT BASKET WEAVE) DIRECTION. REFER TO DRAWINGS FOR COLOR PATTERNS AND DIRECTION.
D. 2 1/2" COVE BASED SHALL BE USED AT ALL VCT LOCATIONS. 2 1/2" STRAIGHT BASE SHALL BE USED AT CARPET LOCATIONS UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL USE INSIDE AND OUTSIDE CORNERS AND END STOPS FOR ALL AREAS SPECIFIED. USE ROLL GOODS ONLY ONE SEAM SHALL OCCUR WITHIN 6" OF AN OUTSIDE CORNER.
E. INSTALL BLACK RESILIENT TRANSITION/ REDUCER STRIP BETWEEN VCT AND OTHER FLOOR FINISHES.

SECTION 09513 - RESILIENT WALL BASE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
A. SECTION INCLUDES:
1. RESILIENT WALL BASE.

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. LEED SUBMITTALS:
1. PRODUCT DATA FOR CREDIT EQ 4.1: FOR ADHESIVES INCLUDE PRINTED STATEMENT OF VOC CONTENT AND CHEMICAL COMPONENTS.
C. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF PRODUCT INDICATED.
D. SAM

DIVISION 9 - FINISHES cont.

3.5 INSTALLATION - FLOOR - MORTAR BED METHODS
- A. OVER EXTERIOR CONCRETE SUBSTANCES, INSTALL IN ACCORDANCE WITH TCA F101, BONDED, WITH STANDARD GROUT.
- B. OVER INTERIOR CONCRETE SUBSTRATES, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F111, WITH CLEAVAGE MEMBRANE, UNLESS OTHERWISE INDICATED.

1. WHERE WATERPROOFING MEMBRANE IS INDICATED, WITH STANDARD GROUT OR NO MENTION OF GROUT TYPE, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F121.
2. WHERE EPOXY BOND COAT AND GROUT ARE INDICATED, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F132, BONDED.
3. WHERE EPOXY OR FURAN GROUT IS INDICATED, BUT NOT EPOXY OR FURAN BOND COAT, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F114, WITH CLEAVAGE MEMBRANE.

- C. OVER WOOD SUBSTRATES, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F141, WITH STANDARD GROUT, UNLESS OTHERWISE INDICATED.
- D. CLEAVAGE MEMBRANE: LAP EDGES AND ENDS.
- E. WATERPROOFING MEMBRANE: INSTALL AS SPECIFIED IN ANSI A108.13.
- F. MORTAR BED THICKNESS: 1-1/4 TO 2 INCH (32 TO 51 MM) MAXIMUM, UNLESS OTHERWISE INDICATED.

3.6 INSTALLATION - KITCHEN AND BAR DIE WALLS
- A. AT TILED KITCHEN AND BAR INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD B415, MORTAR BED FLOOR, AND W244, THIN-SET OVER CEMENTITIOUS BACKER UNIT WALLS.
- B. INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD B412, OVER CEMENTITIOUS BACKER UNITS WITH WATERPROOFING MEMBRANE EXTENDING UP WALLS 6" MIN.
- C. GROUT WITH STANDARD GROUT AS SPECIFIED ABOVE.
- D. SEAL JOINTS BETWEEN TILE WORK AND OTHER WORK WITH SEALANT.

3.7 INSTALLATION - WALL TILE
- A. OVER CEMENTITIOUS BACKER UNITS ON STUDS, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W244, USING MEMBRANE AT TOILET ROOMS.
- B. OVER CEMENTITIOUS BACKER UNITS INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W223, ORGANIC ADHESIVE.
- C. OVER GYPSUM WALLBOARD ON WOOD OR METAL STUDS INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W243, THIN-SET WITH DRY-SET OR LATEX-PORTLAND CEMENT BOND COAT, UNLESS OTHERWISE INDICATED.

1. WHERE MORTAR BOARD IS INDICATED, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W222, ONE COAT METHOD.
2. WHERE WATERPROOFING MEMBRANE IS INDICATED OTHER THAN AT KITCHEN AND BAR WALLS, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W222, ONE COAT METHOD.

- D. OVER INTERIOR CONCRETE AND MASONRY INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W202, THIN-SET WITH DRY-SET OR LATEX-PORTLAND CEMENT BOND COAT.
- E. OVER WOOD STUDS WITHOUT BACKER INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W231, MORTAR BED, WITH MEMBRANE WHERE INDICATED.
- F. OVER METAL STUDS WITHOUT BACKER INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W241, MORTAR BED, MEMBRANE WHERE INDICATED.

3.8 CLEANING
- A. CLEAN TILE AND GROUT SURFACES

3.9 PROTECTION OF FINISHED WORK
- A. DO NOT PERMIT TRAFFIC OVER FINISHED FLOOR SURFACE FOR 72 HOURS AFTER INSTALLATION.
- B. COVER FLOOR WITH KRAFT PAPER AND PROTECT FROM DIRT AND RESIDUE FROM OTHER TRADES.
- C. WHERE FLOOR WILL BE EXPOSED FOR PROLONGED PERIODS COVER WITH PLYWOOD OR OTHER SIMILAR TYPE WALKWAYS.

SECTION 09510 - ACOUSTICAL CEILING TILE

1.1 GENERAL
- A. SUBMITTALS

1. SUBMITTALS
   - a. ACOUSTICAL CEILING PANELS: 6" X 6" MINIMUM
   - b. SUSPENSION SYSTEM COMPONENTS: 12" IN LENGTH

- B. QUALITY ASSURANCE

1. TO THE GREATEST EXTENT POSSIBLE, MATERIALS, INCLUDING EXPOSED WALL MOLDING, SUSPENSIONS SYSTEMS, AND ACCESSORIES, SHALL BE PRODUCTS OF A SINGLE MANUFACTURER OR ITEMS STANDARD WITH MANUFACTURER OF ACOUSTICAL CEILING PANEL UNITS.

- C. MATERIALS

1. ACOUSTICAL TILES AND SUSPENSION SYSTEM AS SCHEDULED IN DRAWINGS. PROVIDE MANUFACTURER STANDARD COMPONENTS AS SHOWN IN DETAILS.

- D. INSTALLATION

1. GRID SYSTEM:
   - a. INSTALL GRID SYSTEM IN COMPLIANCE WITH ASTM C636, MANUFACTURER'S INSTRUCTIONS, AND AS SUPPLEMENTED IN THIS SECTION.
   - b. INSTALL GRID SYSTEM IN A TRUE, EVEN PLANE AND IN STRAIGHT COURSES AS INDICATED ON DRAWINGS AND ACCEPTED SHOP DRAWINGS.
   - c. COORDINATE AND FIT CEILING COMPONENTS TO GRILLES, LIGHTING FIXTURES, AND OTHER RELATED ITEMS. IN DETERMINING LOCATION AND SPACING OF HANGERS AND PRIMARY RUNNERS, TAKE INTO CONSIDERATION WEIGHT OF GRILLES, LIGHT FIXTURES, ETC., THAT ARE TO BE INSTALLED IN CONJUNCTION WITH ACOUSTICAL CEILINGS.
   - d. PROVIDE STABILIZER BARS, CLIPS, SPLICES, AND EDGE MOLDINGS NEEDED FOR A COMPLETE INSTALLATION.
   - e. HANG GRID SYSTEM INDEPENDENT OF WALLS, COLUMNS, DUCTS, PIPES AND CONDUIT. WHERE CARRYING MEMBERS ARE SPLICED, AVOID VISIBLE DISPLACEMENT OF FACE PLANE OF ADJACENT MEMBERS.
   - f. WHERE DUCTS OF OTHER EQUIPMENT PREVENT REGULAR SPACING IF HANGERS, REINFORCE NEAREST AFFECTED HANGERS AND RELATED CARRYING CHANNELS TO SPACE EXTRA DISTANCE.
   - g. DO NOT SUPPORT COMPONENTS ON MAIN RUNNERS OR CROSS RUNNERS IF WEIGHT CAUSES TOTAL DEAD LOAD TO EXCEED MAXIMUM DEFLECTION LIMITATIONS. SUPPORT FIXTURE LOADS BY SUPPLEMENTARY HANGERS LOCATED WITHIN 6" (150 MM) OF EACH CORNER; OR SUPPORT COMPONENTS INDEPENDENTLY.
   - h. DO NOT ECCENTRICALLY LOAD SYSTEM, OR PRODUCE ROTATION OF RUNNERS.

2. MOLDINGS AND TRIM

SECTION 09510 - ACOUSTICAL CEILING TILE (CONT'D)

   - a. INSTALL WALL MOLDINGS AT INTERSECTION OF SUSPENDED CEILING AND VERTICAL SURFACES, USING LONGEST PRACTICAL LENGTHS. PROVIDE MOLDINGS AT JUNCTIONS WITH OTHER INTERRUPTIONS AND AS NEEDED TO COVER EDGES OF ACOUSTICAL CEILING PANELS.
   - b. ATTACH MOLDINGS AND TRIMS WITH SCREWS SPACED NOT MORE THAT 16" (400 MM) ON CENTER AND WITHIN 3" (75MM) OF ENDS OF EACH PIECE BEING INSTALLED.
   - c. MOLDINGS AND TRIM SHALL BE LEVEL WITH SUSPENSION SYSTEM AND WITHIN TOLERANCES SPECIFIED FOR SUSPENSION SYSTEM.
   - d. MITER CORNERS AND ALIGN BUTT JOINTS WHERE WALL MOLDINGS INTERSECT TO FORM TIGHT, HAIRLINE JOINTS.
   - e. FACE RIVETING OF MOLDINGS AND TRIM SHALL NOT BE ACCEPTABLE.

3. TOLERANCES
   - a. DEFLECTION OF GRID COMPONENTS SHALL NOT EXCEED 1/360 OF SPAN.
   - b. VARIATION FROM FLAT AND LEVEL SURFACE: 1/8" (3 MM) IN 10 FEET (3000 MM) MAXIMUM.
   - c. VARIATION FROM PLUMB OF GRID MEMBERS: 2 DEGREES MAXIMUM; CAUSED BY ECCENTRIC LOADS.

- E. ADJUSTING AND CLEANING

1. FOLLOW GRID SYSTEM MANUFACTURER'S RECOMMENDATIONS FOR METHODS AND MATERIALS TO CLEAN AND TOUCH-UP EXPOSED COMPONENTS.
2. REPLACE COMPONENTS WHICH ARE DISCOLORED OR DAMAGED IN ANY WAY, IN A MANNER WHICH RESULTS IN GRID SYSTEM SHOWING NO EVIDENCE OF REPLACEMENT WORK.

DIVISION 9 FINISHES cont.

SECTION 09650 - RESILIENT FLOORING

1.1 GENERAL
- A. SUBMITTALS:

1. VINYL COMPOSITION TILE SAMPLE
2. BLACK RESILIENT TRANSITION/REDUCER STRIP (PROVIDED AT CHANGES IN FLOORING).
3. VINYL COVE AND STRAIGHT BASE.

- B. PREPARE THE EXISTING, BASE BUILDING SLAB PRIOR TO INSTALLATION OF THE SCHEDULED FLOORING. ALL SURFACES SHALL BE SEALED, SIZED OR PROPERLY PREPARED PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. THE CONTRACTOR SHALL FLASH PATCH ALL UNEVEN FLOOR SLAB SURFACES IN ORDER TO PROVIDE A FLAT, SMOOTH AND CONTINUOUS FLOOR SURFACE.
- C. VCT SHALL BE LAID IN STRAIGHT (NOT BASKET WEAVE) DIRECTION. REFER TO DRAWINGS FOR DOLOR PATTERNS AND DIRECTION.
- D. 2 1/2" COVE BASED SHALL BE USED AT ALL VCT LOCATIONS. 2 1/2" STRAIGHT BASE SHALL BE USED AT CARPET LOCATIONS UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL USE INSIDE AND OUTSIDE CORNERS AND END STOPS FOR ALL AREAS SPECIFIED. USE ROLL GOODS ONLY. NO SEAM SHALL OCCUR WITHIN 6" OF AN OUTSIDE CORNER.
- E. INSTALL BLACK RESILIENT TRANSITION/REDUCER STRIP BETWEEN VCT AND OTHER FLOOR FINISHES.

SECTION 096513 - RESILIENT WALL BASE

PART 1 - GENERAL

1.1. RELATED DOCUMENTS
- A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
- A. SECTION INCLUDES:

1. RESILIENT WALL BASE

1.3 SUBMITTALS
- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- B. LEED SUBMITTALS:

1. PRODUCT DATA FOR CREDIT EQ 4.1: FOR ADHESIVES, INCLUDE PRINTED STATEMENT OF VOC CONTENT AND CHEMICAL COMPONENTS.

- C. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF PRODUCT INDICATED.
- D. SAMPLES OF VERIFICATION: FOR EACH TYPE OF PRODUCT INDICATED, IN MANUFACTURER'S STANDARD-SIZE SAMPLES OF EACH RESILIENT PRODUCT COLOR, TEXTURE, AND PATTERN REQUIRED.
- E. PRODUCT SCHEDULE: FOR RESILIENT PRODUCTS. USE SAME DESIGNATIONS INDICATED ON DRAWINGS.

1.4 QUALITY ASSURANCE
- A. INSTALLATION QUALIFICATION: CONTRACTORS FOR FLOOR COVERING INSTALLATION SHOULD BE EXPERIENCED IN MANAGING COMMERCIAL FLOORING PROJECTS AND PROVIDE PROFESSIONAL INSTALLERS, QUALIFIED TO INSTALL THE VARIOUS FLOORING MATERIALS SPECIFIED. AN INSTALLER IS "QUALIFIED" IF TRAINED BY TARKETT OR A CERTIFIED INSTALL (INTERNATIONAL STANDARDS & TRAINING ALLIANCE) RESILIENT FLOOR COVERING INSTALLER.
- B. MOCKUPS: PROVIDE RESILIENT PRODUCTS WITH MOCKUPS SPECIFIED IN OTHER SECTIONS.

1.5 DELIVERY, STORAGE, AND HANDLING
- A. STORE RESILIENT PRODUCTS AMD INSTALLATION MATERIALS IN DRY SPACES PROTECTED FROM THE WEATHER, WITH AMBIENT TEMPERATURES MAINTAINED WITHIN RANGE RECOMMENDED BY TARKETT, BUT NOT LESS THAN 55 DEG F (13 DEG C) OR MORE THAN 85 DEG F (29 DEG C).

1.6 PROJECT CONDITIONS
- A. INSTALL RESILIENT PRODUCTS AFTER OTHER FINISHING OPERATIONS, INCLUDING PAINTING, HAVE BEEN COMPLETED.
- B. MAINTAIN AMBIENT TEMPERATURES WITHIN RANGE RECOMMENDED BY TARKET, BUT NOT LESS THAN 65 DEG F (A8 DEG C) OR MORE THAN 85 DEG F (29 DEG C) IN SPACES TO RECEIVE RESILIENT PRODUCTS DURING THE FOLLOWING TIME PERIODS:

1. 48 HOURS AFTER INSTALLATION
2. DURING INSTALLATION
3. 48 HOURS AFTER INSTALLATION

- C. MAINTAIN THE AMBIENT RELATIVE HUMIDITY BETWEEN 40% AND 60% DURING INSTALLATION.
- D. UNTIL SUBSTANTIAL COMPLETION, MAINTAIN AMBIENT TEMPERATURES WITHIN RANGE RECOMMENDED BY TARKETT, BUT NOT LESS THAN 55 DEG F (13 DEG C) OR MORE THAN 85 DEG F (29 DEG C).

PART 2 - PRODUCTS

2.1 RESILIENT SHEET FLOORING

MANUFACTURER: TARKETT NORTH AMERICAPHONE: (800) 899-891630000 AURORA RD. SOLON, OHIO 44139WEB: WWW.TARKETTNA.COMEMAIL:INFO@TARKETT.COM

2.2 PERFORMANCE REQUIREMENTS
- A. FIRE-TESTED RESPONSE CHARACTERISTICS: FOR RESILIENT TILE FLOORING, AS DETERMINED BY TESTING IDENTICAL PRODUCTS ACCORDING TO ASTM E 648 OR NFPA 253 BY QUALIFIED TESTING AGENCY.

1. CRITICAL RADIANT FLUX CLASSIFICATION: CLASS I, NOT LESS THAN 0.45 W/SQ.CM.

- B. FLOORING PRODUCTS SHALL COMPLY WITH THE REQUIREMENTS IF THE CALIFORNIA DEPARTMENT PUBLIC HEALTH'S "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FORM INDOOR SOURCES USING ENVIRONMENTAL CHARACTERISTICS."

2.8 RESILIENT **MILLWORK** CONTOURABLE WALL BASE
- A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE JOHNSONITE; A TARKETT COMPANY; MILLWORK **(ATTACHE) (AMBASSADOR) (DIPLOMAT) (DELLNEATE) (EQULNOX) (INFLECTION) (MANDALAY) (MONUMENT) (MONARCH) (OBLIQUE) (OUTLINE) (REVEAL) (SILHOUETTE)**OR COMPARABLE PRODUCT.
- B. PRODUCT STANDARD: MEETS PERFORMANCE REQUIREMENTS FOR ASTM F 1861 STANDARDS SPECIFICATION FOR RESILIENT WALL BASE, TYPE TP, GROUP 1.
- C. FOR **MANDALAY** SPECIFY HEIGHT: 6" (15.24 CM)
- D. SPECIFY LENGTH: 8 FEET (2.4 M)
- E. COLORS AND PATTERNS: 63 BURNT UMBER
- F. TEST DATA:

1. RESISTANCE TO LIGHT, ASTM F1515: PASSES
2. RESISTANCE TO CHEMICALS, ASTM F925: PASSES ASTM E 648, STANDARD TEST METHOD FOR CRITICAL RADIANT FLUX OF 0.45 WATTS/CM²

SECTION 096513 - RESILIENT WALL BASE (CONT'D)

2.10 INSTALLATION MATERIALS
- A. ADHESIVES: AS RECOMMENDED BY TARKETT TO MEET SITE CONDITIONS

1. TARKETT 960 COVE BASE ADHESIVE (POROUS APPLICATIONS)
2. TARKETT 946 PREMIUM CONTACT BOND ADHESIVE (NON-POROUS APPLICATIONS)

PART 3 - EXECUTION

3.1 EXAMINATION
- A. EXAMINE SUBSTRATES, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR MAXIMUM MOISTURE CONTENT AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
- B. VERIFY THE FINISHES OF SUBSTRATES COMPLY WITH TOLERANCES AND OTHER REQUIREMENTS SPECIFIED IN OTHER SECTIONS AND THAT SUBSTRATES ARE FREE OF CRACKS, RIDGES, DEPRESSIONS, SCALE, AND OTHER SECTIONS AND THAT SUBSTRATES ARE FREE OF CRACKS, RIDGES, DEPRESSIONS, SCALE, AND FOREIGN DEPOSITS THAT MIGHT INTERFERE WITH ADHESION OF RESILIENT PRODUCTS.
- C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

DIVISION 9 FINISHES cont.

3.2 PREPARATION
- A. PREPARE SUBSTRATES ACCORDING TO TARKETT'S WRITTEN INSTRUCTIONS TO ENSURE ADHESION OF RESILIENT WALL BASE.
- B. FILL CRACKS, HOLES, AND DEPRESSIONS IN SUBSTRATES WITH TROWELABLE LEVELING AND PATCHING COMPOUND AND REMOVE BUMPS AND RIDGES TO PRODUCE A UNIFORM AND SMOOTH SUBSTRATE.
- C. MOVE RESILIENT PRODUCTS AND INSTALLATION MATERIALS INTO SPACES WHERE THEY WILL BE INSTALLED AT LEAST 48 HOURS IN ADVANCE OF INSTALLATION.
- D. VACUUM CLEAN SUBSTRATES TO BE COVERED BY RESILIENT PRODUCTS IMMEDIATELY BEFORE INSTALLATION.

3.3 RESILIENT BASE INSTALLATION
- A. COMPLY WITH TARKETT'S WRITTEN INSTRUCTIONS FOR INSTALLING RESILIENT BASE.
- B. APPLY RESILIENT BASE TO WALLS, COLUMNS, PILASTERS, CASEWORK AND CABINETS IN TOE SPACES, AND OTHER PERMANENT FIXTURES IN ROOMS AND AREAS WHERE BASE IS REQUIRED.
- C. INSTALL RESILIENT BASE IN LENGTHS AS LONG AS PRACTICABLE WITHOUT GAPS AT SEAMS AND WITH TOPS OF ADJACENT PIECES ALIGNED.
- D. TIGHTLY ADHERE RESILIENT WALL BASE TO SUBSTRATE THROUGHOUT LENGTH OF EACH PIECE, WITH BASE IN CONTINUOUS CONTACT WITH HORIZONTAL AND VERTICAL SUBSTANCES.
- E. DO NOT STRETCH RESILIENT BASE DURING INSTALLATION.

3.4 CLEANING AND PROTECTION
- A. COMPLY WITH TARKETT'S WRITTEN INSTRUCTIONS FOR CLEANING AND PROTECTION OF RESILIENT PRODUCTS.
- B. PERFORM THE FOLLOWING OPERATIONS IMMEDIATELY AFTER COMPLETING RESILIENT PRODUCT INSTALLATION:

1. REMOVE ADHESIVE AND OTHER BLEMISHES FROM EXPOSED SURFACES.

- C. PROTECT RESILIENT PRODUCTS FROM MARS, MARKS, INDENTATIONS, AND OTHER DAMAGE FROM OPERATIONS AND PLACEMENT OF EQUIPMENT AND FIXTURES DURING REMAINDER OF CONSTRUCTION PERIOD.
- D. END OF SECTION 09.65.13

SECTION 096726 - SEAMLESS EPOXY-QUARTZ FLOORING - SILIKAL 61-CQ

PART 1 - GENERAL

1.1 WORK INCLUDED
1. WORK DESCRIBED IN THIS SECTION INCLUDES SURFACE PREPARATION AND INSTALLATION OF SILIKAL REACTIVE RESIN INDUSTRIAL FLOOR SYSTEM. SILIKAL 61 CQ IS A FAST CURING, 100% REACTIVE, DECORATIVE QUARTZ FLOORING SYSTEM, FREE OF ISOCYANATES.
   SEE DRAWINGS FOR LOCATIONS AND QUANTITIES.

1.2 RELATED WORK - SPECIFIED ELSEWHERE
1. DIVISION 3 - CONCRETE

1.3 SYSTEM DESCRIPTION
1. THE SILIKAL 61 CQ IS A 4-6MM (3/16"-1/4") THICK TROWELED SURFACING COMPOSITE OF SILIKAL 100% REACTIVE BINDER RESIN AND SILIKAL COLORED QUARTZ AGGREGATE WITH SPECIFIED SILIKAL PRIMER AND TOPCOAT.
2. THE SILIKAL COATING SYSTEM SHALL CURE COMPLETELY AND BE AVAILABLE TO NORMAL OPERATIONS IN NO MORE THAN 90 MINUTES ATTEMPERATURES AS LOW AS 0 °C. AFTER APPLICATION OF THE FINAL COAT.
3. THE FINISHED SILIKAL FLOOR COATING SYSTEM SHALL BE UNIFORM IN COLOR COMBINATIONS, TEXTURE, AND APPEARANCE. ALL EDGES THAT TERMINATE AT WALLS, FLOOR DISCONTINUITIES, AND OTHER EMBEDDED ITEMS SHALL BE SHARP, UNIFORM, AND COSMETICALLY ACCEPTABLE WITH NO THICK OR RAGGED EDGES. THE CONTRACTOR SHALL WORK OUT AN ACCEPTABLE MASKING TECHNIQUE TO ENSURE THE ACCEPTABLE FINISH OF ALL EDGES.
4. SEE PARAGRAPH 3.04 AND/OR 3.07 FOR NUMBER AND THICKNESSES OF EACH COAT/LAYER IN EACH SYSTEM.
5. ALL RESINS MUST BE MANUFACTURED AND TESTED UNDER AN ISO 9001 REGISTERED QUALITY SYSTEM AND ISO 14001 ECOLOGY

1.4 QUALITY ASSURANCE
1. MANUFACTURER QUALIFICATIONS:
   - A. ACCEPTABLE MANUFACTURER: SILIKAL GMBH, GERMANY.
2. APPLICATOR QUALIFICATIONS:
   - A. PRE-QUALIFICATION REQUIREMENTS: ONLY APPROVED APPLICATORS, LICENSED BY SILIKAL SHALL BE CONSIDERED FOR QUALIFICATION. IN NO CASE WILL SILIKAL PERMIT THE APPLICATION OF ANY OF ITS MATERIALS BY UNTRAINED, NON-APPROVED CONTRACTOR OR PERSONNEL.
   - B. EACH APPROVED APPLICATOR SHALL HAVE BEEN QUALIFIED BY THE MANUFACTURER AS KNOWLEDGEABLE IN ALL PHASES OF SURFACE PREPARATION.
   - C. EACH APPROVED APPLICATOR MUST HAVE THREE (3) YEARS EXPERIENCE OF INSTALLING RESINOUS FLOORING SYSTEMS AND SUBMIT A LIST OF FIVE PROJECTS/REFERENCES AS A PREQUALIFICATION REQUIREMENT. AT LEAST ONE OF THE FIVE PROJECTS/ REFERENCES MUST BE OF EQUAL SIZE, QUANTITY, AND MAGNITUDE TO THIS PROJECT AS A PREQUALIFICATION REQUIREMENT. OWNER HAS THE OPTION TO PERSONALLY INSPECT THE PROJECTS/REFERENCES TO ACCEPT OR REJECT ANY OF THE CONTRACTORS PRIOR TO BID TIME AS A PREQUALIFICATION REQUIREMENT.
3. SUBCONTRACTOR QUALIFICATIONS
   - A. THE ONLY APPROVED AND SPECIFIED SUBCONTRACTORS FOR THIS RESURFACING WORK SHALL BE FOR SHOT-BLAST CLEANING OF THE CONCRETE SUBSTRATE.
4. ACCEPTANCE SAMPLE:
   - A. REPRESENTATIVE SAMPLE OF THE SPECIFIED FLOORING SYSTEM SHALL BE SUBMITTED TO THE OWNER PRIOR TO THE BIDDING PHASE OF THE PROJECT. ALL BIDDERS SHALL INSPECT THE "ACCEPTANCE SAMPLE" BEFORE SUBMITTING THEIR BIDS.
   - B. THE INSTALLED FLOORING SYSTEM SHALL BE SIMILAR TO THE ACCEPTANCE SAMPLE IN THICKNESSES OF RESPECTIVE FILMLAYERS, COLOR, TEXTURE, OVERALL APPEARANCE AND FINISH.
5. BOND TESTING:
   - A. SURFACE PREPARATION EFFORTS SHALL BE EVALUATED BY CONDUCTING BOND TESTS AT THE SITE PRIOR TO APPLICATION OF THE FLOORING SYSTEM(S).
   - B. SEE PARAGRAPH 3.03 - B OR CONSULT WITH MATERIAL MANUFACTURER FOR SPECIFIC PROCEDURE.
6. PRE-JOB MEETING
   - A. OWNER REQUIRES A PRE-JOB MEETING WITH REPRESENTATIVES OF OWNER, CONTRACTOR/APPLICATOR, AND MATERIAL MANUFACTURER IN ATTENDANCE. THE AGENDA SHALL INCLUDE A REVIEW AND CLARIFICATION OF THIS SPECIFICATION, APPLICATION PROCEDURES, QUALITY CONTROL, INSPECTION AND ACCEPTANCE CRITERIA, AND PRODUCTION SCHEDULES. APPLICATOR IS NOT AUTHORIZED TO PROCEED UNTIL THIS MEETING IS HELD OR WAIVED BY OWNER.

1.5 REFERENCE STANDARDS
1. ACI 308 - STANDARD PRACTICE FOR CURING CONCRETE
2. ACI 302.1R-80 - GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION
3. HACCP INTERNATIONAL FOOD SAFETY CERTIFICATION SYSTEM. CERTIFIED AS FOOD SAFE AND SUITABLE FOR FOOD FACILITIES THATOPERATE A HACCP BASED FOOD SAFETY PROGRAM. FOOD ZONE CLASSIFICATION: SSZ.
4. SCAQMD RULE 1113 LESS THAN 100 GRAMS PER LITER VOC. ASTM D 2369-07 ACTUAL VOC LESS THAN 15 GRAMS PER LITER.
5. ISO 9001: 2000 AND ISO 14001: 2005 CERTIFIED.

1.6 SUBMITTALS
1. ACCEPTANCE SAMPLE: AS REQUIRED BY OWNER, ONE FOOT SQUARE (1 FT. BY 1 FT.) SAMPLE OF THE SPECIFIED ACRYLIC FLOORING SYSTEM APPLIED TO HARDBOARD OR SIMILAR BACKING FOR RIGIDITY AND EASE OF HANDLING.
2. MANUFACTURER'S LITERATURE: DESCRIPTIVE DATA AND SPECIFIC RECOMMENDATIONS FOR SURFACE PREPARATION, MIXING, AND APPLICATION OF MATERIALS.
3. MANUFACTURER'S MATERIAL SAFETY DATA SHEETS (MSDS) FOR EACH RESPECTIVE PRODUCT TO BE USED. CLEANING AND MAINTENANCE

1.7 DELIVERY, STORAGE, AND HANDLING
1. ALL MATERIAL SHALL BE DELIVERED IN ORIGINAL MANUFACTURER'S SEALED CONTAINERS WITH ALL C PERTINENT LABELS INTACT AND LEGIBLE.
2. STORE MATERIALS IN DRY PROTECTED AREA BETWEEN 25° AND 80° FAHRENHEIT. KEEP OUT OF DIRECT SUNLIGHT. PROTECT FROM OPEN FLAME; KEEP ALL CONTAINERS GROUNDED.
3. FOLLOW ALL MANUFACTURER'S SPECIFIC LABEL INSTRUCTIONS AND PRUDENT SAFETY PRACTICES FOR STORAGE AND HANDLING.

DIVISION 9 FINISHES cont.

1.8 PROJECT/SITE CONDITIONS
1. MATERIAL, AIR, AND SURFACE TEMPERATURES SHALL BE IN THE RANGE OF 32° TO 85° FAHRENHEIT DURING APPLICATION AND CURE, UNLESS A SPECIAL FORMULATION IS BEING USED AND MANUFACTURER HAS BEEN CONSULTED.
2. RELATIVE HUMIDITY IN THE SPECIFIC LOCATION OF THE APPLICATION SHALL BE LESS THAN 85 PERCENT AND THE SURFACE TEMPERATURE SHALL BE AT LEAST 5 DEGREES ABOVE THE DEW POINT.
3. CONDITIONS REQUIRED OF NEW CONCRETE TO BE COATED.
   - A. CONCRETE SHALL BE MOISTURE CURED FOR A MINIMUM OF 7 DAYS AT 70° F. THE CONCRETE MUST BE FULLY CURED FOR A MINIMUM OF 28 DAYS PRIOR TO APPLICATION OF THE COATING SYSTEM PENDING MOISTURE TESTING.
   - B. SURFACE CONTAMINANTS SUCH AS CURING AGENTS, MEMBRANES, OR OTHER BOND BREAKERS SHOULD NOT BE USED.
   - C. CONCRETE SHALL HAVE A "RUBBED" FINISH; FLOAT OR DARBY FINISH THE CONCRETE (A HARD STEEL TROWEL IS NEITHER NECESSARY NOR DESIRABLE).
   - D. DRAINS SHOULD BE SET TO THE CONCRETE GRADE RATHER THAN RAISED TO THE FINISHED GRADE OF THE TOPPING.
4. CONCRETE SHALL HAVE A MOISTURE EMISSION RATE OF NO MORE THAN 5 LBS. PER 1000 SQ. FT. PER 24 HOUR PERIOD AS DETERMINED BY PROPER CALCIUM CHLORIDE TESTING. CONCRETE R/H MUST BE 85% OR LESS AS MEASURED BY PROTIMETER. READINGS GREATER THAN 5 BY THE CALCIUM CHLORIDE METHOD OR 85% BY PROTIMETER, MAY REQUIRE A PRELIMINARY TREATMENT WITH SILIKAL RE42.
5. FOODSTUFFS ARE THE RESPONSIBILITY OF THE OWNER AND SHALL HAVE BEEN REMOVED FROM THE AREA OF APPLICATION BY THE OWNER OR HIS REPRESENTATIVES.
6. VAPOR BARRIERS AND/OR SUITABLE MEANS SHALL HAVE BEEN INSTALLED BENEATH GRADE SLABS TO PREVENT VAPOR TRANSMISSION. CONSULT TECHNICAL DEPT.
7. LIGHTING: PROVIDE PERMANENT LIGHTING OR, IF PERMANENT LIGHTING IS NOT IN PLACE, OWNER SHALL SIMULATE PERMANENT LIGHTING CONDITIONS DURING FLOORING APPLICATION.

1.9 WARRANTY
1. SILIKAL WARRANTS THAT MATERIALS SHIPPED TO BUYERS ARE AT THE TIME OF SHIPMENT SUBSTANTIALLY FREE FROM MATERIAL DEFECTS AND WILL PERFORM SUBSTANTIALLY ACCORDING TO SILIKAL PUBLISHED LITERATURE IF USED STRICTLY IN ACCORDANCE WITH SILIKAL'S PRESCRIBED PROCEDURES AND PRIOR TO EXPIRATION DATE.
2. SILIKAL'S LIABILITY WITH RESPECT TO THIS WARRANTY IS STRICTLY LIMITED TO THE VALUE OF THE MATERIAL PURCHASED.
3. SILIKAL HAS NO RESPONSIBILITY FOR THE APPLICATION AND PROCESSING OF PRODUCTS AND IS UNDER NO CIRCUMSTANCES LIABLE TO ANY THIRD PARTY WHATSOEVER.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS
1. SILIKAL GMBH, GERMANY

2.2 MATERIALS
1. SILIKAL 61 CQ DECORATIVE QUARTZ FLOORING
   - A. MOISTURE VAPOR TREATMENT (IF REQUIRED): SILIKAL RE42
   - B. SATURATING PRIMER/SILIKAL COAT: SILIKAL RU380
   - C. PATCHING/SLOPING (IF REQUIRED)
   - D. SILIKAL R17 POLYMER CONCRETE
   - E. COVING (IF REQUIRED): SILIKAL HK31 WITH SILIKAL FILLER CQ
   - F. TOPPING: SILIKAL R61 QUARTZ, CONSISTING OF SILIKAL R61 RESIN AND SILIKAL FILLER
   - G. TOPCOAT(S): SILIKAL R71 COLORLESS SILIKAL TOPCOAT RESIN.
   - H. SILIKAL CQ FOR BROADCASTING: COLOR/S TO BE CHOSEN BY OWNER.
   - I. ALUMINIUM OXIDE (IF REQUIRED)

2.201 PRODUCT PERFORMANCE CRITERIA
1. SILIKAL RE42
   - A. PERCENTAGE REACTIVE RESIN 100%
   - B. PERCENTAGE SOLIDS 100%
   - C. WATER PRESSURE RESISTANCE (3 DAYS AT 72 PSI) ..... PASSED
   - D. RESISTANCE TO DIFFUSION AGAINST H20 ..... 0.3G/M² DAY
   - E. TENSILE BOND STRENGTH ..... 475 PSI
2. SILIKAL RU380
   - A. PERCENTAGE REACTIVE RESIN 100%
   - B. PERCENTAGE SOLIDS 100%
   - C. WATER ABSORPTION, WT. % (ASTM D570): ..... LESS THAN 0.06
   - D. TENSILE STRENGTH, PSI (ASTM D638): ..... 3,550 PSI.
   - E. TENSILE MODULUS, PSI X 10 TO THE 5TH (ASTM D638): 2.1
   - F. COEFFICIENT OF THERMAL EXPANSION, IN./IN./DEG. F (ASTM D696): 0.000035
   - G. ELECTRICAL RESISTIVITY (ASTM D257):
     - G.A. VOLUME RESISTANCE, OHM-CM: ..... 10^15
     - G.B. SURFACE RESISTANCE, OHM: ..... 10^12
   - H. WATER VAPOR TRANSMISSION (DIN 53122), G/CM-HR-MM HG X 1^0-9: 1.4
3. SILIKAL R17 POLYMER CONCRETE
   - A. PERCENTAGE OF REACTIVE RESIN 100%
   - B. WATER ABSORPTION, WT. % (ASTM D570): 0.02
   - C. TENSILE STRENGTH, PSI (ASTM D638): ..... 4,000 PSI.
   - D. TENSILE MODULUS, PSI X 10 TO THE 5TH (ASTM D638): 1.2
   - E. COEFFICIENT OF THERMAL EXPANSION, IN./IN./DEG. F (ASTM D696) PSI X10-6: 18
   - F. COMPRESSIVE STRENGTH, PSI (ASTM C39): ..... 9,200 PSI.
   - G. (ASTM C109): ..... 11,000 PSI.
4. SILIKAL R61CQ TOPPING
   - A. PERCENTAGE OF REACTIVE RESIN: 100%
   - B. PERCENTAGE OF SOLIDS: 100%
   - C. WATER ABSORPTION, WT. % (ASTM D570): 0.04
   - D. COMPRESSIVE STRENGTH, PSI (ASTM C109): ..... 6,000-8,000 PSI.

DIVISION 9 - FINISHES CONTD.

2.2.2 PRODUCT INSTALLATION & APPLICATION CRITERIA
1. ALL SILIKAL MATERIAL SYSTEMS EXCEPTING MOISTURE VAPOR TREATMENT:
A. POT LIFE AT 68° F.:.....10-15 MINUTES
B. CURE TIME AT 68° F.:..... 60 MINUTES
C. RECOAT TIME AT 68° F.:.....60-90 MINUTES

2.3 MIXES
A. FOLLOW MANUFACTURER'S PRESCRIBED PROCEDURES AND RECOMMENDATIONS.

PART 3 - EXECUTION

3.1 PREWORK INSPECTION
1. EXAMINE ALL SURFACES TO BE COATED WITH SILIKAL MATERIAL SYSTEMS AND REPORT TO THE OWNER AND/OR ENGINEER ANY CONDITIONS THAT WILL ADVERSELY AFFECT THE APPEARANCE OR PERFORMANCE OF THESE COATING SYSTEMS AND THAT CANNOT BE PUT INTO ACCEPTABLE CONDITION BY THE PREPARATORY WORK SPECIFIED IN PARAGRAPH 3.03.
2. DO NOT PROCEED WITH APPLICATION UNTIL THE SURFACE IS ACCEPTABLE OR AUTHORIZATION TO PROCEED IS GIVEN BY THE ENGINEER.
3. IN THE EVENT THAT APPLICATOR HAS EMPLOYED ALL ACCEPTABLE METHODS OF SURFACE PREPARATION AND CANNOT REMEDY ADVERSE CONDITIONS THAT WOULD LEAD TO FAILURE OF THE INSTALLATION, APPLICATOR SHALL WITHDRAW FROM THE CONTRACT AND OWNER WILL BE FINANCIALLY RESPONSIBLE ONLY FOR PREPARATION EFFORTS.

3.2 GENERAL
1. MATERIAL STORAGE AREA MUST BE SELECTED AND APPROVED BY APPLICATOR AND OWNER OR HIS REPRESENTATIVE.
2. OWNER WILL FURNISH ____ V ____ PHASE ELECTRICITY AND WATER FOR USE BY APPLICATOR.
3. IF EXISTING VENTILATION IS INADEQUATE, APPLICATOR WILL PROVIDE SUFFICIENT VENTILATION TO ALLOW COMPLETE AIR EXCHANGE EVERY FIVE (5) MINUTES.
4. OWNER SHALL PROVIDE MEANS FOR DISPOSAL OF CONSTRUCTION WASTE.
5. APPLICATOR WILL PROTECT ADJACENT SURFACES NOT TO BE COATED WITH MASKING AND/OR COVERS. OWNER'S EQUIPMENT SHALL BE PROTECTED FROM DUST, CLEANING SOLUTIONS, AND FLOORING MATERIALS.

3.3 PREPARATION
1. SURFACE PREPARATION - GENERAL
A. CONCRETE SUBSTRATE MUST BE CLEAN AND DRY. DISLODGE DIRT, MORTAR SPATTER, PAINT OVERSPRAY, AND OTHER DRY SURFACE ACCUMULATIONS AND CONTAMINATION BY SCRAPING, BRUSHING, SWEEPING, VACUUMING, AND/OR COMPRESSED AIR BLOWDOWN.
B. NEW CONCRETE: SEE 1.08 - C FOR REQUIREMENTS.
C. SURFACES THAT ARE HEAVILY CONTAMINATED SHALL BE CLEANED WITH THE APPROPRIATE DEGREASER, DETERGENT, OR OTHER APPROPRIATE CLEANER/SURFACTANT FOLLOWED BY THOROUGHLY RINSING WITH FRESH WATER TO REMOVE THE ACCUMULATION PRIOR TO MECHANICAL CLEANING EFFORTS. MECHANICAL CLEANING WILL NOT REMOVE SUCH DEPOSITS, BUT ONLY DRIVE THEM DEEPER.
D. CONCRETE SHALL HAVE A MOISTURE EMISSION RATE OF NO MORE THAN 5 LBS. PER 1000 SQ. FT. PER 24 HOUR PERIOD AS DETERMINED BY PROPER CALCIUM CHLORIDE TESTING AND NO MORE THAN 85% R/H AS MEASURED BY PROTIMETER
2. BOND TESTING
A. THE APPLICATOR SHALL EVALUATE ALL SURFACE PREPARATION BY CONDUCTING BOND TESTS AT STRATEGIC LOCATIONS.
B. MIX SIX (6) OUNCES OF THE PRIMER TO BE USED IN THE APPLICATION WITH 5% BY VOLUME SILIKAL POWDER HARDENER. ADD #10-#12 MESH, DRY QUARTZ SAND UNTIL AN EASILY TROWELABLE MIXTURE IS OBTAINED. APPLY PALMSIZED PATTIES 1/8" TO 1/4" THICK.
C. AFTER ONE (1) HOUR AT (68° F.), PATTIES MUST BE CURED TACK-FREE AND COOLED TO AMBIENT TEMPERATURE OF CONCRETE. REMOVE PATTIES WITH HAMMER AND CHISEL AND EXAMINE FRACTURE/DELAMINATION PLANE. CONCRETE WITH FRACTURED AGGREGATE MUST BE ATTACHED TO THE ENTIRE UNDERSIDE OF THE PATTY.
D. IF ONLY LAITANCE OR A SMALL AMOUNT OF CONCRETE IS ATTACHED OR IF INTERFACE BETWEEN PATTY AND SUBSTRATE IS TACKY, FURTHER SUBSTRATE PREPARATION IS REQUIRED.
E. IF FURTHER SURFACE PREPARATION IS REQUIRED, BOND TESTS SHALL BE CONDUCTED AGAIN WHEN THIS HAS BEEN COMPLETED.
F. IF NO AMOUNT OR KIND OF SURFACE PREPARATION PRODUCES SATISFACTORY BOND TESTS, THE APPLICATOR SHALL REPORT THAT TO THE OWNER, ENGINEER, AND MANUFACTURER.
3. MECHANICAL SURFACE PREPARATION AND CLEANING
A. ALL ACCESSIBLE CONCRETE FLOOR SURFACES SHALL BE MECHANICALLY BLAST CLEANED USING A MOBILE STEEL SHOT, DUST RECYCLING MACHINE SUCH AS BLASTRAC®, OR APPROVED EQUIVALENT. ALL SURFACE AND EMBEDDED ACCUMULATIONS OF PAINT, TOPPINGS, HARDENED CONCRETE LAYERS, LAITANCE, POWER TROWEL FINISHES, AND OTHER SIMILAR SURFACE CHARACTERISTICS SHALL BE COMPLETELY REMOVED LEAVING A BARE CONCRETE SURFACE HAVING A PROFILE SIMILAR TO 40 GRIT SANDPAPER AND EXPOSING THE UPPER FASCIA OF CONCRETE AGGREGATE.
B. FLOOR AREAS INACCESSIBLE TO THE MOBILE BLAST CLEANING MACHINES SHALL BE MECHANICALLY ABRADED TO THE SAME DEGREE OF CLEANLINESS, SOUNDNESS, AND PROFILE USING VERTICAL DISC SCARIFIERS, STARWHEEL SCARIFIERS, NEEDLE GUNS, SCABBLERS, OR OTHER SUITABLY EFFECTIVE EQUIPMENT.
C. AFTER BLASTING, TRACES OR ACCUMULATIONS OF SPENT ABRASIVE, LAITANCE, REMOVED TOPPINGS, AND OTHER DEBRIS SHALL BE REMOVED WITH BRUSH OR VACUUM.
D. CONDUCT BOND TESTS TO CHECK ADEQUACY OF SURFACE PREPARATION. SEE PARAGRAPH 3.03 - B (BOND TESTING).
E. APPLICATION OF THE RESPECTIVE SPECIFIED MATERIAL SYSTEM(S) MUST BE COMPLETED BEFORE ANY WATER OR OTHER CONTAMINATION OF THE SURFACE OCCURS.

3.4 INSTALLATION
1. APPLICATION OF SILIKAL 61 CQ FLOORING SYSTEM CONSISTS OF:
1.1. APPLYING MOISTURE VAPOR TREATMENT (IF REQUIRED)
1.2. APPLYING THE PRIMER,
1.3. APPLYING COVING (IF REQUIRED),
1.4. PERFORMING PATCHING AND SLOPING WITH POLYMER CONCRETE (IF REQUIRED),
1.5. RE-PRIMING POLYMER CONCRETE AREAS
1.6. APPLYING THE TOPPING, BROADCASTING THE QUARTZ
1.7. APPLYING THE TOPCOAT(S),
TIME FOR CURING (45 - 60 MINUTES) SHALL BE ALLOWED BETWEEN EACH COAT.
THICKNESSES ARE SPECIFIED BELOW AND/OR IN PARAGRAPH 3.07.
2. OPEN ONLY THE CONTAINERS OF COMPONENT MATERIALS TO BE USE IN EACH SPECIFIC APPLICATION AS NEEDED. REFER TO MANUFACTURER'S DATA SHEETS FOR POT-LIFE/TEMPERATURE RELATIONSHIP TO DETERMINE SIZE OF BATCHES TO MIX AND MIX RATIOS FOR EACH RESPECTIVE COAT OF THE SYSTEM.
3. MEASURE, ADD, AND MIX THE SILIKAL BP-POWDER HARDENER INTO THE RESPECTIVE RESIN COMPONENTS IN THE PROPORTIONS RECOMMENDED BY THE MATERIAL MANUFACTURER. POT LIFE IS SHORT, SO MIX ONLY AS MUCH MATERIAL AT A TIME AS CAN BE EASILY AND EFFICIENTLY APPLIED.

3.4.1 MOISTURE VAPOR TREATMENT (IF REQUIRED)
1. MIX MOISTURE VAPOR TREATMENT PRODUCTS AS RECOMMENDED BY MANUFACTURER.
2. POUR OUT ALL RESIN ONTO THE CONCRETE SURFACE AND SPREAD IT WITH A SQUEEGEE. AFTER A SHORT OPERATING TIME 10 MINUTES) THE EXCESS MUST BE REMOVED WITH THE SQUEEGEE. THE REMAINING RESIN CAN BE ROLLED OUT WITH A LINT FREE RESIN PROOF ROLLER. RESIN FILMS AS WELL AS THE BUILDING OF PUDDLES HAVE TO BE AVOIDED! THE WAITING TIME BETWEEN THE COATS DEPENDS ON THE ABSORBENCY OF THE SUBSTRATE AND IS NORMALLY BETWEEN ONE AND THREE HOURS. BEFORE APPLYING THE SECOND COAT IF REQUIRED, THE IMPREGNATION OF THE FIRST COAT INTO THE SUBSTRATE SHOULD BE EVIDENT.
3. IF REQUIRED, REPEAT THE ABOVE PROCESS. DURING APPLICATION OF THE TREATMENT TAKE CARE THAT THERE IS NO FILM BUILDING AT THE SURFACE. THE SURFACE TEXTURE HAS TO BE MAINTAINED AFTER EVERY STEP.

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3.4.2 PRIME COAT
1. MIX PRIMER COMPONENTS ACCORDING TO MANUFACTURERS INSTRUCTIONS.
2. POUR THE MIXTURE BATCHES ONTO THE FLOOR SURFACE AND USE 9" OR 18" WIDE, 1/2" - 3/4" THICK-NAPPED, SOLVENT RESISTANT PAINT ROLLER TO ROLL OUT THE MATERIAL AT A RATE OF 100 SQ. FT./ GAL. TO FORM A UNIFORM, CONTINUOUS FILM, ENSURING THAT ALL CREVICES, CRACKS, OTHER SURFACE DISCONTINUITIES HAVE BEEN SATURATED AND COATED. USE A PAINT BRUSH TO REACH AREAS INACCESSIBLE TO THE ROLLER. WORK QUICKLY AND DELIBERATELY; THE POT LIFE IS SHORT (10 -15 MINUTES). DO NOT LEAVE ANY "PUDDLES"; ROLL OUT ANY SUCH ACCUMULATIONS.
3. ALLOW THE PRIMER COAT TO CURE.
4. IF ANY OF THE CONCRETE HAS ABSORBED ALL OF THE PRIMER OR IF THE CONCRETE STILL HAS A DRY LOOK, REPRIME THESE AREAS BEFORE APPLYING THE NEXT LAYER.

3.4.3 COVING (IF REQUIRED)
1. SURFACE PREPARATION
A. IF CONCRETE WALLS ARE TO BE PAINTED PRIOR TO INSTALLATION OF COVE BASE, THE BOTTOM PORTION OF THE WALLS SHALL REMAIN UNCOATED TO THE HEIGHT OF THE COVE BASE TO INSURE A PROPER BOND TO THE CONCRETE WALL.
B. IF WALLS ARE CONSTRUCTED OF A NON-COMPATIBLE MATERIAL OR IF A COATING EXISTS, A BACKER BOARD OF ½" CEMENT BOARD CUT TO THE DESIRED HEIGHT OF THE COVE BASE NEEDS TO BE INSTALLED. THE TOP OF THE BACKER BOARD SHOULD BE CUT AT A 45° ANGLE TO CREATE A "BEVELED" EDGE.
C. IF A BACKER BOARD NEEDS TO BE INSTALLED IT SHALL BE FASTENED USING A HIGH GRADE CONSTRUCTION ADHESIVE AS WELL AS COUNTER SUNK SCREWS OR CONCRETE MASONRY ANCHORS.
2. SYSTEM DESCRIPTION
A. COVE BASE SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND SHALL BE:
a. APPLICATION AREA REQUIRES PRIME COAT ACCORDING TO 3.04.02
b. TROWEL-ON COVE BASE CONSISTING OF A TROWEL APPLIED RADIUS/BASE MIX WITH A TERMINATION STRIP INSTALLED AT THETOP OF THE BASE.
B. COVE BASE WILL RECEIVE A BROADCAST AND TOP COAT CONSISTENT WITH FLOORING SYSTEM.

3.4.4 PATCHING/SLOPING (IF REQUIRED)
1. MIX POLYMER CONCRETE COMPONENTS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.
2. USE MIXTURE TO REPAIR ANY DAMAGED CONCRETE, OR TO SLOPE ANY AREAS AS NEEDED.
3. ONCE CURED, MATERIAL MUST BE RE-PRIMED BEFORE NEXT LAYER IS APPLIED.

3.4.5 TOPPING
1. SIZE THE BATCHES, AND MIX ACCORDING TO MANUFACTURER'S INSTRUCTIONS. THE ENTIRE BATCH SHOULD BE POURED AND SPREAD AT ONCE, I.E., DO NOT LET MATERIAL SET IN PAIL.
2. SPREAD THE TOPPING MATERIAL WITH A GAUGE RAKE SET TO A DEPTH OF 1/8". LIGHTLY TROWEL TO A UNIFORM THICKNESS OF 1/8" AS NECESSARY.
3. IF NECESSARY, ROLL WITH A PORCUPINE ROLLER TO RELEASE TRAPPED AIR.
4. BROADCAST COLORED QUARTZ INTO THE FRESH MATERIAL BEFORE IT BEGINS TO CURE. BROADCAST BY HAND, OR USE A BACKPACK TYPE BLOWER OR SAND BLAST POT TO ACHIEVE AN EVEN BROADCAST. THE QUARTZ MUST 'RAIN' DOWN AND NOT BE THROWN INTO THE WET BASE COAT.
5. ALLOW THE TOPPING TO CURE.
6. REMOVE EXCESS QUARTZ BY SWEEPING, "BLOW-DOWN", AND/OR VACUUMING.

3.4.6 TOP COAT
1. APPLY WITH CLEAN ROLLERS AT A RATE OF 80 - 90 SQ. FT./GAL. IN THE SAME WAY AS THE SILIKAL PRIMER WAS APPLIED AS DESCRIBED IN PARAGRAPH 3.04.02.
2. (IF REQUIRED) BROADCAST ALUMINIUM OXIDE, OR OTHER SUITABLE MATERIAL INTO WET TOPCOAT RESIN; SIZE AND RATE AS DETERMINED BY OWNER.
3. ALLOW TOPCOAT TO CURE. FLOORS WITHOUT ALUMINIUM OXIDE BROADCAST MAY BE LIGHTLY SANDED IF REQUIRED. VACUUM ALL DUST, PAYING PARTICULAR ATTENTION TO EDGES AND CORNERS.

3.4.7 SECOND TOP COAT
1. APPLY WITH CLEAN ROLLERS AT A RATE OF 100 - 125 SQ. FT./GAL. IN THE SAME WAY AS THE SILIKAL PRIMER WAS APPLIED AS DESCRIBED IN PARAGRAPH 3.04.02.
2. ALLOW TOPCOAT TO CURE.

3.5 FIELD QUALITY CONTROL/INSPECTION
1. APPLICATOR SHALL REQUEST ACCEPTANCE OF SURFACE PREPARATION FROM THE ENGINEER BEFORE APPLICATION OF THE PRIME/SEAL COAT.
2. APPLICATOR SHALL REQUEST ACCEPTANCE OF THE PRIME COAT FROM THE ENGINEER BEFORE APPLICATION OF SUBSEQUENT SPECIFIED MATERIALS.

3.6 CLEANING
1. APPLICATOR SHALL REMOVE ANY MATERIAL SPATTERS AND OTHER MATERIAL THAT IS NOT WHERE IT SHOULD BE. REMOVE MASKING AND COVERS TAKING CARE NOT TO CONTAMINATE SURROUNDING AREA.
2. APPLICATOR SHALL REPAIR ANY DAMAGE THAT SHOULD ARISE FROM EITHER THE APPLICATION OR CLEAN-UP EFFORT.

3.7 COATING SCHEDULE
1. MOISTURE VAPOR TREATMENT SHALL BE SILIKAL RE42 APPLICATION RATE SHALL BE APPROXIMATELY 220 SQ. FT. PER GALLON (APPROX. 7 MILS)
2. PRIMER SHALL BE SILIKAL RU380 APPLICATION RATE SHALL BE APPROX. 100 SQ.FT. PER GALLON (APPROX. 16 MILS).
3. PATCHING/SLOPING MATERIAL SHALL BE SILIKAL R17.
4. COVING SHALL BE SILIKAL HK31 PER MANUFACTURER'S RECOMMENDATIONS.
5. BODY COAT SHALL BE SILIKAL R61CQ, APPLIED WITH A GAUGE RAKE SET AT 1/8" FOR A RATE OF 40 SQ. FT. PER BATCH. COLORED QUARTZ TO BE BROADCAST INTO THE UNCURED TOPPING (OPTIONAL). BROADCAST THE QUARTZ AT THE RATE OF 0.5 – 0.75 POUNDS PER SQ. FT.
6. CLEAR TOPCOAT SHALL BE SILIKAL R71; APPLY AT THE RATE OF 80 - 90 SQ. FT. PER GALLON FOR THE FIRST COAT AND 90 - 120 SQ. FT. PER GALLON FOR THE SECOND APPLICATION.

SECTION 09900 - PAINTING

1.1 GENERAL
A. SUBMITTALS
1. PROVIDE A MINIMUM OF THREE 8" X 10" SAMPLES FOR EACH COLOR AND EACH FINISH INDICATED IN THE FINISH SCHEDULE.
B. PRODUCTS
1. SEE FINISH SCHEDULE FOR MANUFACTURERS, COLOR AND FINISHES.
C. EXECUTION
1. GENERAL:
a. PRIOR TO PAINT APPLICATION, THE CONTRACTOR SHALL SCHEDULE A REVIEW OF FINAL PAINT COLOR LOCATIONS WITH THE ARCHITECT IN THE FIELD.
b. SEE FINISH PLAN AND INTERIOR ELEVATIONS FOR SPECIFIC LOCATIONS OF PAINT COLORS AND FINISHES.
c. WHERE PAINTS OF TWO DIFFERENT TYPES OR COLOR ABUT, THE SEAM SHALL BE ON AN INSIDE CORNER ONLY.
d. FINAL COAT OF PAINT SHALL BE ROLL APPLIED AT ALL GWB SURFACES.
2. PREPARATION:
a. REMOVE BLISTERED, PEELING AND SCALING PAINT OR CHALK DEPOSITS TO SOUND SUBSTRATES.
b. COMPLETELY REMOVE SEALANTS OR CAULKING.
c. DULL GLOSSY SURFACES.
d. AT METAL SURFACES, REMOVE RUST, OIL, GREASE AND OTHER CONTAMINANTS HARMFUL TO PAINTING. SAND CLEAN AND SPOT PRIME.
e. AT GWB SURFACES; REPAIR SURFACE DEFECTS WITH JOINT COMPOUND, FILL FLUSH AND SAND SMOOTH. CLEAN SURFACES OF DUST. GREASE AND DIRT.
f. AT WOOD SURFACES; SAND SMOOTH AND REMOVE DUST. COUNTERSINK NAILS AND FILL NAIL HOLES, CRACKS AND OPEN JOINTS WITH PUTTY OR WOOD FILLER.
3. APPLICATION (UNLESS NOTED OTHERWISE):
a. AT GWB SURFACES:
ONE (1) PRIMER COAT: VINYL ACRYLIC PRIMER SEALER.
WO (2) FINISH COATS: VINYL ACRYLIC LATEX; EGGSHELL FINISH @ WALLS, FLAT @ CEILINGS.

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b. AT INTERIOR WOOD SURFACES TO BE PAINTED:
ONE (1) TINTED PRIMER COAT TO MATCH FINISH COAT FOLOR: ALKYD ENAMEL UNDERBODY. TWO (2) FINISH COATS: VINYL ACRYLIC LATEX SEMI-GLOSS ENAMEL.
c. AT INTERIOR METAL SURFACES TO BE PAINTED:
ONE (1) PRIMER COAT: RUST-INHIBITING ALKYD PRIMER.
TWO (2) FINISH COATS: ALKYD GLASS ENAMEL.
4. CLEAN-UP:
a. THE CONTRACTOR SHALL PROVIDE ONE FINAL TOUCH-UP OF PAINT SURFACES AFTER THE OWNER HAS MOVED INTO THE SPACE.

SECTION 09900 - PAINTING

1.1 GENERAL
A. SUBMITTALS
1. PROVIDE A MINIMUM OF THREE 8" X 10" SAMPLES FOR EACH COLOR AND EACH FINISH INDICATED IN THE FINISH SCHEDULE.
B. PRODUCTS
1. SEE FINISH SCHEDULE FOR MANUFACTURERS, COLOR AND FINISHES.
C. EXECUTION
1. GENERAL:
a. PRIOR TO PAINT APPLICATION, THE CONTRACTOR SHALL SCHEDULE A REVIEW OF FINAL PAINT COLOR LOCATIONS WITH THE ARCHITECT IN THE FIELD.
b. SEE FINISH PLAN AND INTERIOR ELEVATIONS FOR SPECIFIC LOCATIONS OF PAINT COLORS AND FINISHES.
c. WHERE PAINTS OF TWO DIFFERENT TYPES OR COLOR ABUT, THE SEAM SHALL BE ON AN INSIDE CORNER ONLY.
d. FINAL COAT OF PAINT SHALL BE ROLL APPLIED AT ALL GWB SURFACES.
2. PREPARATION:
a. REMOVE BLISTERED, PEELING AND SCALING PAINT OR CHALK DEPOSITS TO SOUND SUBSTRATES.
b. COMPLETELY REMOVE SEALANTS OR CAULKING.
c. DULL GLOSSY SURFACES.
d. AT METAL SURFACES, REMOVE RUST, OIL, GREASE AND OTHER CONTAMINANTS HARMFUL TO PAINTING. SAND CLEAN AND SPOT PRIME.
e. AT GWB SURFACES; REPAIR SURFACE DEFECTS WITH JOINT COMPOUND, FILL FLUSH AND SAND SMOOTH. CLEAN SURFACES OF DUST. GREASE AND DIRT.
f. AT WOOD SURFACES; SAND SMOOTH AND REMOVE DUST. COUNTERSINK NAILS AND FILL NAIL HOLES, CRACKS AND OPEN JOINTS WITH PUTTY OR WOOD FILLER.
3. APPLICATION (UNLESS NOTED OTHERWISE):
a. AT GWB SURFACES:
ONE (1) PRIMER COAT: VINYL ACRYLIC PRIMER SEALER.
WO (2) FINISH COATS: VINYL ACRYLIC LATEX; EGGSHELL FINISH @ WALLS, FLAT @ CEILINGS.
b. AT INTERIOR WOOD SURFACES TO BE PAINTED:
ONE (1) TINTED PRIMER COAT TO MATCH FINISH COAT FOLOR: ALKYD ENAMEL UNDERBODY. TWO (2) FINISH COATS: VINYL ACRYLIC LATEX SEMI-GLOSS ENAMEL.
c. AT INTERIOR METAL SURFACES TO BE PAINTED:
ONE (1) PRIMER COAT: RUST-INHIBITING ALKYD PRIMER.
TWO (2) FINISH COATS: ALKYD GLASS ENAMEL.
4. CLEAN-UP:
a. THE CONTRACTOR SHALL PROVIDE ONE FINAL TOUCH-UP OF PAINT SURFACES AFTER THE OWNER HAS MOVED INTO THE SPACE.

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
A. SECTION INCLUDES SURFACE PREPARATION AND THE APPLICATION OF PAINT SYSTEMS ON THE FOLLOWING EXTERIOR SUBSTRATES:
1. CONCRETE
2. CLAY MASONRY
3. STEEL
4. GALVANIZED METAL
5. WOOD
6. EXTERIOR PORTLAND CEMENT PLASTER (STUCCO)
7. EXTERIOR GYPSUM BOARD
B. RELATED REQUIREMENTS:
1. SECTION 099316 "DECORATIVE CONCRETE STAINING" FOR SURFACE PREPARATION AND THE APPLICATION OF STAINS AND SEALERS ON EXTERIOR CONCRETE PAVING SUBSTRATES.

SECTION 099113 - EXTERIOR PAINTING (CONT'D)

1.3 DEFINITIONS
A. GLOSS LEVEL 1: NOT MORE THAN 5 UNITS AT 60 DEGREES AND 10 UNITS AT 85 DEGRESS, ACCORDING TO ASTM D 523.
B. GLOSS LEVEL 3: 10 TO 25 UNITS AT 60 DEGREES AND 10 TO 35 UNITS TO 85 DEGRESS, ACCORDING TO ASTM D 523.
C. GLOSS LEVEL 4: 20 TO 35 UNITS AT 60 DEGREES AND NOT LESS THAN 35 UNITS AT 85 DEGREES, ACCORDING TO ASTM D 523.
D. GLOSS LEVEL 5: 35 TO 70 UNITS AT 60 DEGREES, ACCORDING TO ASTM D 523.
E. GLOSS LEVEL 6: 70 TO 85 UNITS AT 60 DEGREES, ACCORDING TO ASTM D 523.
F. GLOSS LEVEL 7: MORE THAN 85 UNITS AT 60 DEGREES, ACCORDING TO ASTM D 523.

1.4 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT, INCLUDE PREPARATION REQUIREMENTS AND APPLICATION INSTRUCTIONS.
B. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF TOPCOAT PRODUCT.
C. SAMPLES FOR VERIFICATION: FOR EACH TYPE OF PAINT SYSTEM AND EACH COLOR AND GLOSS OF TOPCOAT.
1. SUBMIT SAMPLES ON RIGID BACKING, 8 INCHES SQUARE.
2. STEP COATS ON SAMPLES TO SHOW EACH COAT REQUIRED FOR SYSTEM.
3. LABEL EACH COAT OF EACH SAMPLE.
4. LABEL EACH SAMPLE FOR LOCATION AND APPLICATION AREA.
D. PRODUCT LISTS: FOR EACH PRODUCT INDICATED, INCLUDE THE FOLLOWING.
1. CROSS-REFERENCE TO PAINT SYSTEM AND LOCATIONS PF APPLICATION AREAS. USE SAME DESIGNATIONS INDICATED ON DRAWINGS AND IN SCHEDULES.
2. PRINTOUT OF CURRENT "MPI APPROVED PRODUCTS LIST" FOR EACH PRODUCT CATEGORY SPECIFIED, WITH THE PROPOSED PRODUCT HIGHLIGHTED.
3. VOC CONTENT.

1.5 MAINTENANCE MATERIAL SUBMITTALS
A. FURNISH EXTRA MATERIALS, FROM THE SAME PRODUCT RUN, THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. PAINT: 5 PERCENT, BUT NOT LESS THAN 1 GAL. OF EACH MATERIAL AND COLOR APPLIED

1.6 QUALITY ASSURANCE
A. MOCKUPS: APPLY MOCKUPS OF EACH PAINT SYSTEM INDICATED AND EACH COLOR AND FINISH SELECTED TO VERIFY PRELIMINARY SELECTIONS MADE UNDER SAMPLE SUBMITTALS AND TO DEMONSTRATE AESTHETIC EFFECTS AND SET QUALITY STANDARDS FOR MATERIALS AND EXECUTION.
1. ARCHITECT WILL SELECT ONE SURFACE TO REPRESENTS SURFACES AND CONDITIONS FOR APPLICATIONS OF EACH PAINT SYSTEM SPECIFIED IN PART 3.
a. VERTICAL AND HORIZONTAL SURFACES: PROVIDE SAMPLES OF AT LEAST 100 SQ. FT.
b. OTHER ITEMS: ARCHITECT WILL DESIGNATE ITEMS OR AREAS REQUIRED.

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2. FINAL APPROVAL OF COLOR SELECTIONS WILL BE BASED ON MOCKUPS.
a. IF PRELIMINARY COLOR SELECTIONS ARE NOT APPROVED, APPLY ADDITIONAL MOCKUPS OF ADDITIONAL COLORS SELECTED BY ARCHITECT AT NO ADDED COST TO OWNER.
3. APPROVAL OF MOCKUPS DOES NOT CONSTITUTE APPROVAL OF DEVIATIONS FROM THE CONTRACT DOCUMENTS CONTAINED IN MOCKUPS UNLESS ARCHITECT SPECIFICALLY APPROVES SUCH DEVIATIONS IN WRITING.
4. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, APPROVED MOCKUPS MAY BECOME PART OF THE COMPLETED WORK IN UNDISTURBED AT TIME OF SUBSTANTIAL COMPLETION.

1.7 DELIVERY, STORAGE, AND HANDLING
A. STORE MATERIALS NOT IN USE IN TIGHTLY COVERED CONTAINERS IN WELL-VENTILATED AREAS WITH AMBIENT TEMPERATURES CONTINUOUSLY MAINTAINED AT NOT LESS THAN 45 DEG F.
1. MAINTAIN CONTAINERS IN CLEAN CONDITION, FREE OF FOREIGN MATERIALS AND RESIDUE.
2. REMOVE RAGS AND WASTE FROM STORAGE AREAS DAILY.

1.8 FIELD CONDITIONS
A. APPLY PAINTS ONLY WHEN TEMPERATURE OF SURFACES TO BE PAINTED AND AMBIENT AIR TEMPERATURES ARE BETWEEN 50 AND 95 DEG F.
B. DO NOT APPLY PAINTS IN SNOW, RAIN, FOG, OR MIST; WHEN RELATIVE HUMIDITY EXCEEDS 85 PERCENT; AT TEMPERATURES LESS THAN 5 DEG F ABOVE THE DEW POINT; OR TO DAMP OR WET SURFACES.

PART 2 - PRODUCTS

2.1 MANUFACTURERS
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE. BUT ARE LIMITED TO, THE FOLLOWING:
1. BENJAMIN MOORE & CO.
2. CLOVERDALE PAINT.
3. DURON, INC.
4. ICI PAINTS.
5. KELLEY-MOORE PAINTS.
6. PPG ARCHITECTURAL FINISHES, INC.
7. SHERWIN-WILLIAMS COMPANY (THE).

2.2 PAINT, GENERAL
A. MPI STANDARDS: PROVIDE PRODUCTS THAT COMPLY WITH MPI STANDARDS INDICATED AND THAT ARE LISTED IN ITS "MPI APPROVED PRODUCTS LIST."
B. MATERIAL COMPATIBILITY:
1. PROVIDE MATERIALS FOR USE WITHIN EACH PAINT SYSTEM THAT ARE COMPATIBLE WITH ONE ANOTHER AND SUBSTANCES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
2. FOR EACH COAT IN A PAINT SYSTEM, PROVIDE PRODUCTS RECOMMENDED IN WRITING BY MANUFACTURERS OF TOPCOAT FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED.
C. VOC CONTENT: PROVIDE MATERIALS THAT COMPLY WITH VOC LIMITS OF AUTHORITIES HAVING JURISDICTION.
D. COLORS: MATCH ARCHITECT'S SAMPLES.

PART 3 - EXECUTION

3.1 EXAMINATION
A. EXAMINE SUBSTRATES AND CONDITIONS, WITH APPLICATOR PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR MAXIMUM MOISTURE CONTENT AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
B. MAXIMUM MOISTURE CONTENT OF SUBSTRATES: WHEN MEASURED WITH AN ELECTRONIC MOISTURE METER AS FOLLOWS:
1. CONCRETE: 12 PERCENT
2. MASONRY (CLAY AND CMU): 12 PERCENT
3. WOOD: 15 PERCENT
4. PORTLAND CEMENT PLASTER: 12 PERCENT
5. GYPSUM BOARD: 12 PERCENT
C. PORTLAND CEMENT PLASTER SUBSTRATES: VERIFY THAT PLASTER IS FULLY CURED.
D. EXTERIOR GYPSUM BOARD SUBSTRATES: VERIFY THAT FINISHING COMPOUND IS SANDED SMOOTH.
E. VERIFY SUITABILITY OF SUBSTRATES, INCLUDING SURFACE CONDITIONS AND COMPATIBILITY WITH EXISTING FINISHES AND PRIMERS.
F. PROCEED WITH COATING APPLICATION ONLY AFTER SATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
1. APPLICATION WITH COATING INDICATES ACCEPTANCE OF SURFACES AND CONDITIONS.

3.2 PREPARATION
A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI MANUAL" AND "MPI MAINTENANCE REPAINTING MANUAL" APPLICABLE TO SUBSTRATES AND PAINT SYSTEMS INDICATED.
B. REMOVE HARDWARE, COVERS, PLATES, AND SIMILAR ITEMS ALREADY IN PLACE THAT ARE REMOVABLE AND ARE NOT TO BE PAINTED. IF REMOVAL IS IMPRACTICAL OR IMPOSSIBLE BECAUSE OF SIZE OR WRIGHT OF ITEM, PROVIDE SURFACE-APPLIED PROTECTION BEFORE SURFACE PREPARATION AND PAINTING.
1. AFTER COMPLETING PAINTING OPERATIONS, USE WORKERS SKILLED IN THE TRADES INVOLVED TO REINSTALL ITEMS THAT WERE REMOVED. REMOVE SURFACE-APPLIED PROTECTION
C. CLEAN SUBSTRATES OF SUBSTRATES THAT COULD IMPAIR BOND OF PAINTS, INCLUDING DUST, DIRT, OIL, GREASE, AND INCOMPATIBLE PAINTS AND ENCAPSULANTS.
1. REMOVE INCOMPATIBLE PRIMERS AND RE-PRIME SUBSTRATE WITH COMPATIBLE PRIMERS OR APPLY TIE COAT AS REQUIRED TO PRODUCE PAINT SYSTEMS INDICATED.
D. CONCRETE SUBSTRATES: REMOVE RELEASE AGENTS, CURING COMPOUNDS, EFFLORESCENCE, AND CHALK. DO NOT PAINT SURFACES IF MOISTURE CONTENT OR ALKALINITY OF SURFACES TO BE PAINTED EXCEEDS THAT PERMITTED IN MANUFACTURER'S WRITTEN INSTRUCTIONS.
E. MASONRY SUBSTRATES: REMOVE EFFLORESCENCE AND CHALK. DO NOT PAINT SURFACES IF MOISTURE CONTENT OR ALKALINITY OF SURFACES OR MORTAR JOINTS EXCEEDS THAT PERMITTED IN MANUFACTURER'S WRITTEN INSTRUCTIONS.
F. STEEL SUBSTRATES: REMOVE RUST, LOOSE MILL SCALE, AND SHOP PRIMER IF ANY. CLEAN USING METHODS RECOMMENDED IN WRITING BY PAINT MANUFACTURER, BUT NOT LESS THAN THE FOLLOWING:
1. SSPC-SP 3, "POWER TOOL CLEANING."
G. GALVANIZED-METAL SUBSTRATES: REMOVE GREASE AND OIL RESIDUE FROM GALVANIZED SHEET METAL BY MECHANICAL METHODS TO PRODUCE CLEAN, LIGHTLY ETCHED SURFACES THAT PROMOTE ADHESION OF SUBSEQUENTLY APPLIED PAINTS.
H. WOOD SUBSTRATES:
1. SCRAPE A

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C. APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING , RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.

D. PAINTING FIRE SUPPRESSION, PLUMBING, HVAC, ELECTRICAL, COMMUNICATION, AND ELECTRONIC SAFETY AND SECURITY WORK:

1. PAINT THE FOLLOWING WORK WHERE EXPOSED TO VIEW:
   a. EQUIPMENT, INCLUDING PANELBOARDS AND SWITCH GEAR
   b. UN-INSULATED METAL PIPING
   c. UN-INSULATED PLASTIC PIPING
   d. PIPE HANGERS AND SUPPORTS
   e. METAL CONDUIT
   f. PLASTIC CONDUIT
   g. TANKS THAT DO NOT HAVE FACTORY-APPLIED FINAL FINISHES

3.4 CLEANING AND PROTECTION

A. AT END OF EACH WORKDAY, REMOVE RUBBISH, EMPTY CANS, RAGS, AND OTHER DISCARDED MATERIALS FROM PROJECT SITE.

B. AFTER COMPLETING PAINT APPLICATION, CLEAN SPATTERED SURFACES. REMOVE SPATTERED PAINTS BY WASHING, SCRAPING, OR OTHER METHODS. DO NOT SCRATCH OR DAMAGE ADJACENT FINISHED SURFACES.

C. PROTECT WORK OF OTHER TRADES AGAINST DAMAGE FROM PAINT APPLICATION. CORRECT DAMAGE TO WORK OF OTHER TRADES BY CLEANING, REPAIRING, REPLACING, AND REFINISHING, AS APPROVED BY ARCHITECT, AND LEAVE IN AN UNDAMAGED CONDITION.

D. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

3.5 EXTERIOR PAINTING SCHEDULE

A. CONCRETE SUBSTRATES, NON-TRAFFIC SURFACES:

1. LATEX SYSTEM:
   a. PRIME COAT: LATEX, EXTERIOR, MATCHING TOPCOAT.
   b. INTERMEDIATE COAT: LATEX, EXTERIOR, MATCHING TOPCOAT.
   c. TOPCOAT: LATEX, EXTERIOR SEMI-GLOSS (GLOSS LEVEL 5), MPI #11.

B. CLAY-MASONRY SUBSTRATES:

1. HIGH-BUILD LATEX SYSTEM: DRY FILM THICKNESS NOT LESS THAN 10 MILS.
   a. PRIME COAT: AS RECOMMENDED IN WRITING BY TOPCOAT MANUFACTURER.
   b. INTERMEDIATE COAT: AS RECOMMENDED IN WRITING BY TOPCOAT MANUFACTURER.
   . TOPCOAT: LATEX, EXTERIOR, HIGH BUILD, MPI #40.

C. STEEL SUBSTRATES;

1. WATER-BASED LIGHT INDUSTRIAL COATING SYSTEM:
   a. PRIME COAT: PRIMER, ALKYD, ANTI-CORROSIVE FOR METAL, MPI #79.
   b. INTERMEDIATE COAT: LIGHT INDUSTRIAL COATING, EXTERIOR, WATER BASED, MATCHING TOPCOAT.
   c. TOPCOAT: LIGHT INDUSTRIAL COATING, EXTERIOR, WATER-BASED, SEMI-GLOSS (GLOSS LEVEL 5), MPI #163.

D. GALVANIZED-METAL SUBSTRATES:

1. WATER-BASED LIGHT INDUSTRIAL COATING SYSTEM:
   a. PRIME COAT: PRIMER, GALVANIZED METAL, AS RECOMMENDED IN WRITING BY TOPCOAT MANUFACTURER FOR EXTERIOR USE ON GALVANIZED-METAL SUBSTRATES WITH TOPCOAT INDICATED.
   b. INTERMEDIATE COAT: LIGHT INDUSTRIAL COATING, EXTERIOR, WATER BASED, MATCHING TOPCOAT.
   c. TOPCOAT: LIGHT INDUSTRIAL COATING, EXTERIOR, WATER BASED, SEMI-GLOSS (GLOSS LEVEL 5), MPI #163.

E. WOOD SUBSTRATES: INCLUDING PLYWOOD SOFFITS.

1. LATEX OVER ALKYD PRIMER SYSTEM:
   a. PRIME COAT: PRIMER, ALKYD FOR EXTERIOR WOOD, MPI #5.
   b. INTERMEDIATE COAT: LATEX, EXTERIOR, MATCHING TOPCOAT.
   c. TOPCOAT: LATEX, EXTERIOR FLAT (GLOSS LEVEL 1), MPI #10.

F. PORTLAND CEMENT PLASTER SUBSTRATES:

2. LATEX OVER ALKALI-RESISTANT PRIMER SYSTEM:
   a. PRIME COAT: PRIMER, ALKALI RESISTANT, WATER BASED, MPI #3.
   b. INTERMEDIATE COAT: LATEX, EXTERIOR, MATCHING TOPCOAT.
   c. TOPCOAT: LATEX, EXTERIOR FLAT (GLOSS LEVEL 1), MPI #10.

G. EXTERIOR GYPSUM BOARD SUBSTRATES:

1. LATEX SYSTEM:
   a. PRIME COAT: LATEX, EXTERIOR, MATCHING TOPCOAT.
   b. INTERMEDIATE COAT: LATEX, EXTERIOR, MATCHING TOPCOAT.
   c. TOPCOAT: LATEX, EXTERIOR FLAT (GLOSS LEVEL 1), MPI #10.

<u>GENERAL SPECIFICATION BOOTH / BANQUETTE</u>

ALL UPHOLSTERED AND CHAIR SEATING TO BE CONTRACT QUALITY AND SUITABLE FOR COMMERCIAL USE.

ALL METHOD PF FABRIC TREATMENT SHALL NOT AFFECT FABRIC COLOR, TEXTURE, OR FABRIC MANUFACTURER'S GUARANTEES. SHOULD FABRIC TREATMENT PROCESS CAUSE CHANGE IN COLOR AND EFFECT ON FINISH MATERIAL, THE ARCHITECT TO BE PROVIDED WITH A SAMPLE FOR REVIEW PRIOR TO PROCEEDING.

URETHANE FOAM CUSHIONING: MUST BE COMBUSTION MODIFIED HIGH RESILIENCY (ICMR) FOAM. SEAT CUSHIONS IN EXCESS OF 1-1/2" (40 MM) THICKNESS MAST HAVE AN ILD OF 25. SEAT CUSHIONS 1-1/1" (40MM) THICKNESS OR LESS MUST HAVE AN ILD 35 OR GREATER.

SEAT SPRINGING: UNLESS OTHERWISE SPECIFIED OR APPROVED SPRINGS BENEATH SEATS OF FULLY UPHOLSTERED SEATING SHALL BE 8 WAY HAND TIED SPRINGS WITH 12 OZ BONDED POLYESTER DECK INSULATOR.

<u>GENERAL SPECIFICATION BOOTH / BANQUETTE CONT'D</u>

WHERE SINUOUS (NO SAG) SPRINGS ARE SPECIFIED OR OTHERWISE APPROVED BY THE DESIGNER, SPRINGS SHALL BE CONSTRUCTED OF 8 GAUGE SPRING WIRE AT 5 INCHES OR LESS ON CENTER. MANUFACTURER SHALL PROVIDE NOISE COATED SPRING CLIPS AND LATERAL STABILIZING WRAPPED EDGE WIRE. MANUFACTURER SHALL PROVIDE 2 OZ BONDED POLYESTER DECK INSULATOR.

BACK SPRINGING: SINUOUS (NO-SAG) CONSTRUCTION USING 11 OR 12 GAUGE WIRE WITH LATERAL STABILIZING WRAPPED EDGE WIRE.

MANUFACTURER TO SUBMIT REPRODUCIBLE SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO PRODUCTION.

DO SUBSTITUTIONS OR CHANGES OF EXPLICITLY SPECIFIED MATERIALS ARE TO BE MADE UNLESS APPROVED BY THE ARCHITECT.

MANUFACTURER TO MAKE ALTERNATE SIZE RECOMMENDATIONS TO ARCHITECT IF SCALE AND PROPORTION ARE NOT APPROPRIATE.

ALL UPHOLSTERED AND CHAIR SEATING MUST MEET APPLICABLE CODES.

CONSTRUCTION: FRAME TO BE CONSTRUCTED OF FIVE QUARTER KILN-DRIED HARDWOOD, REINFORCED WITH CORNER BLOCKS, GLUED AND SCREWED TO RAIL. ALL RAILS AND POSTS TO BE DOUBLE DOWELED, SCREWED AND GLUED IN PLACE. COMPONENTS TO BE FIRE-RETARDANT.

MANUFACTURER TO USE CONTRACT FIRM, FIRE-RETARDANT FOAM. STANDARD FOAM TO BE POLYDACRON WRAP WITH MUSLIN COVER OTHERWISE NOTED. FORM CORE AND WRAP MUST PASS CAL 117.

CUSHIONS TO BE FABRICATED USING POLYESTER WRAPPED IN HIGH RESILIENT POLYURETHANE UNLESS OTHERWISE NOTED.

MANUFACTURER AND/OR PA TO CONFIRM YARDAGE OR SQUARE FOOTAGE UPHOLSTERY REQUIREMENTS PRIOR TO FABRICATION.

MANUFACTURER TO SUBMIT FINISH SAMPLES, EITHER STANDARD OR CUSTOM, TO ARCHITECT FOR APPROVAL PRIOR FABRICATION.

FABRICS FOR A SINGLE PIECE OF UPHOLSTERED FURNITURE SHOULD BE FROM THE SAME DYE LOT.

ALL INTERNAL (HINGES, SCREWS, BOLTS, ETC.) TO BE CORROSION PROOF.

DIVISION 9 - FINISHES CONTD.

ALL WOOD LEGS TO BE SEALED ON THE UNDERSIDE.

MANUFACTURER TO PROVIDE HEAVY-DUTY CARPET GLIDES OR LEVELERS FOR LEGS AS SPECIFIED.

DEALER/MANUFACTURER TO PROVIDE DELIVERY OF SEATING TO INSIDE OF SPACE, UN-CRAFTING AND REMOVAL OF DEBRIS FOR CONTRACTOR INSTALLATION, UNLESS OTHERWISE NOTED.

WOOD SPECIES ON ALL EXPOSED SOLIDS AND/OR VENEERS TO BE PREMIUM GRADE HARDWOOD UNLESS OTHERWISE NOTED.

ALL DIMENSIONS ARE TO BE COORDINATED WITH THE ARCHITECT PRIOR TO ORDERING.

MANUFACTURER TO FOLLOW WOOD GRAIN DIRECTION PER ARCHITECT'S DRAWINGS.

IN THE EVENT THAT LOCAL CODES EXCEED THE REQUIREMENTS CONTAINED HEREIN, THE LOCAL CODES MUST BE INTERPRETED AS MINIMUM REQUIREMENTS.

<u>16050 BASIC MATERIALS</u>
(NOTE: REFER TO ENGINEERING DRAWINGS FOR COMPLETE ELECTRICAL SPECIFICATIONS.)

A. ELECTRICAL RECEPTACLES SHALL BE DECORA BY LEVITON (800-323-8920) THE FOLLOWING:
   A.A. PLATES ON TILE TO BE STAINLESS AND RECEPTACLES TO BE WHITE
   A.B. PLATES AND RECEPTACLES ON PT-106 WHITE PAINTED WALLS TO BE WHITE
   A.C. PLATES AND RECEPTACLES ON PT-106 RED OR DARKER WALLS TO BE BLACK
   A.D. PLATES AND RECEPTACLES IN RESTROOMS TO BE BLACK
   A.E. DEDICATED KITCHEN EQUIPMENT CIRCUITS WHICH SHALL BE GRAY AND ISOLATED GROUND RECEPTACLES WHICH SHALL BE ORANGE. RECEPTACLE FACEPLATES SHALL BE STEEL WITH A SATIN OR BRUSHED FINISH.
   A.F DEDICATED KITCHEN EQUIPMENT CIRCUITS WHICH SHALL BE GRAY AND ISOLATED GROUND RECEPTACLES WHICH SHALL BE ORANGE. RECEPTACLE FACEPLATES SHALL BE STEEL WITH A SATIN OR BRUSHED FINISH.

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CAVA

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NAPERVILLE, IL 60540

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ISSUANCE

SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

SPECIFICATIONS

G907

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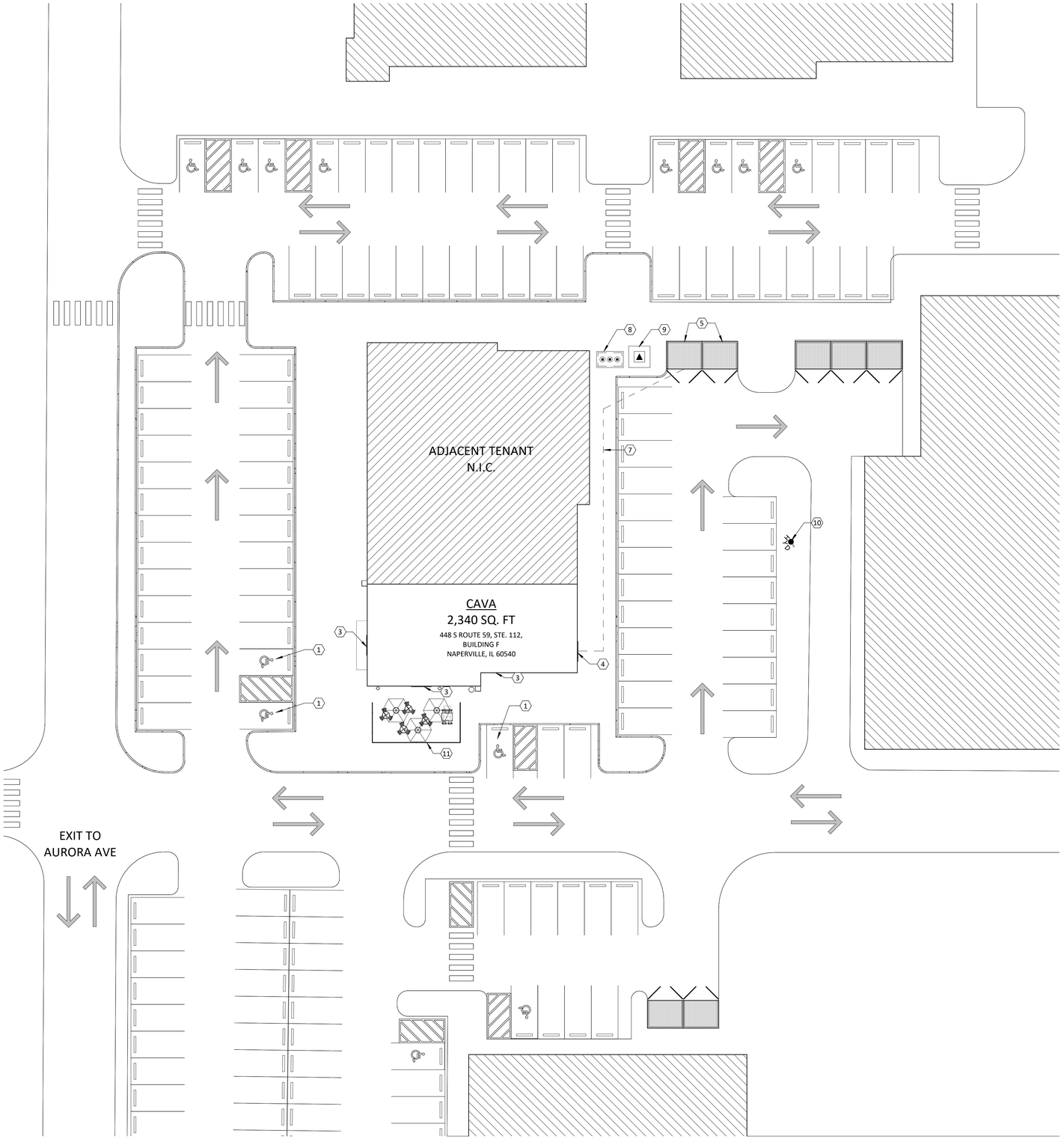

1 A010 SITE PLAN
1" = 20'-0"

SITE PLAN CODED NOTES

1. ADA PARKING.
2. ~~MOBILE PARKINGS STANDS BY CAVA, REFER TO 2/A010.~~
3. MAIN AND SECONDARY POINT ENTRY.
4. REAR EGRESS LOCATION.
5. TRASH ENCLOSURES.
6. ~~NEW CONCRETE RAMP BY GC.~~
7. PATH OF TRAVEL TO TRASH VIA RAMP.
8. EXISTING GREASE INTERCEPTOR.
9. TRANSFORMER.
10. FIRE HYDRANT.
11. EXISTING RAILINGS.

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SITE PLAN

A010

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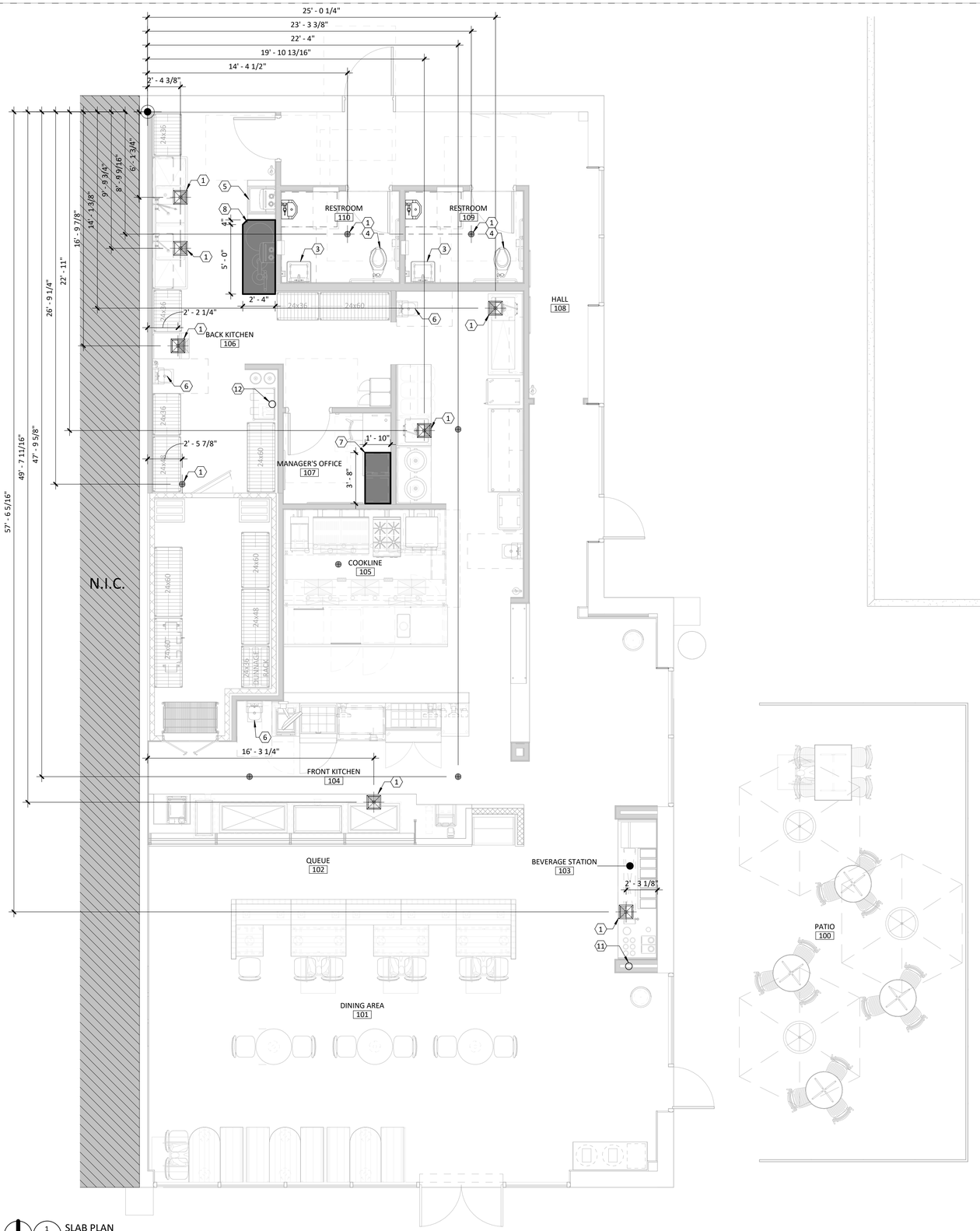


1 A100 SLAB PLAN
1/4" = 1'-0"

SLAB PLAN GENERAL NOTES

A. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS.

B. DRAWINGS AND DIMENSIONS OF THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM OWNER'S PERMIT DRAWINGS. BE ALERT TO DIMENSIONAL DISCREPANCIES, STRUCTURAL SUPPORTS AND OTHER ELEMENTS CONCEALED IN WALLS, NOT SHOWN. REPORT DISCREPANCIES PRIOR TO PROCEEDING.

C. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS CONTACT ARCHITECT TO REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.

D. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.

E. DIMENSIONS ARE TO FACE OF FINISH UNLESS NOTED OTHERWISE.

F. DIMENSIONS AND CLEARANCES SHOWN ON DRAWINGS RELATING TO ACCESSIBILITY OR EGRESS ARE FROM FACE OF FINISH MATERIAL. ALLOW FOR FINISHES IN FABRICATING AND/OR INSTALLING ITEMS. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED ITEMS.

G. COORDINATE DIMENSIONS ON PLANS AND FIELD VERIFY PRIOR TO CONSTRUCTION. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.

H. EXISTING CONDITIONS ARE TO REMAIN AND BE PROTECTED IN PLACE DURING THE COURSE OF CONSTRUCTION UNLESS SPECIFICALLY NOTED OTHERWISE.

I. FLOOR SINKS TO BE INSTALLED FLUSH WITH FINISH FLOOR ELEVATION.

J. WITHIN 2'-0" OF ALL FLOOR DRAINS, PROVIDE 1/8" ON 12" SLOPE TO FLOOR DRAINS.

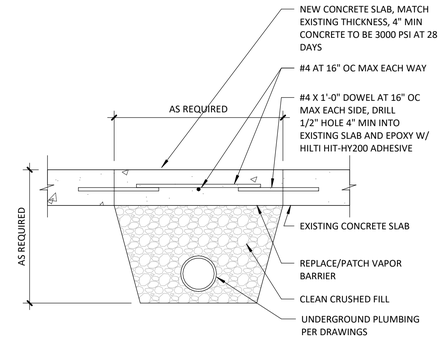
K. PROVIDE 10 MIL VAPOR BARRIER UNDER NEW SLAB POUR.

SLAB PLAN CODED NOTES (#)

1. NEW FLOOR SINK/DRAIN - REFER TO PLUMBING DRAWINGS.
2. ~~EXISTING COLUMN, VERIFY FOOTER DOES NOT IMPACT UNDERGROUND UTILITIES.~~
3. NEW LAVATORY, REFER TO PLUMBING DRAWINGS.
4. NEW WATERCLOSET, REFER TO PLUMBING DRAWINGS.
5. NEW MOP SINK, REFER TO PLUMBING DRAWINGS.
6. NEW KITCHEN HAND SINK, REFER TO PLUMBING DRAWINGS.
7. NEW 4" CONCRETE CURB. NEW BRINKS SAFE TO BE MOUNTED ON CURB. REFER TO DETAIL 7/A501
8. 4" CONCRETE CURB FOR WATER SOFTENER.
9. ~~BREEZE BLOCK WALL. REFER TO STRUCTURAL DRAWINGS FOR FOOTER DETAILS.~~
10. ~~SUNKEN PLANTER LOCATION.~~
11. ROUTE 6" PVC SODA CONDUIT DOWN FROM THE CEILING SPACE IN CHASE TO BEVERAGE STATION. USE ONLY LONG SWEEP ELBOWS FOR DIRECTION CHANGES (ELBOWS AVAILABLE IN 45°, 22.5°, AND 11.25° RADII AS REQUIRED). INSTALL PER VENDOR'S RECOMMENDATIONS.
12. ROUTE 6" PVC SODA CONDUIT UP TO CEILING SPACE. PROVIDE STUB AND SEAL END OF CONDUIT. COORDINATE EXACT REQUIREMENTS WITH SODA VENDOR.
13. ~~LINE OF GREASE INTERCEPTOR.~~

SYMBOLS

	FLOOR SINK, REFER TO PLUMBING DRAWINGS
	FLOOR DRAINS, REFER TO PLUMBING DRAWINGS



2 A100 TYP. SLAB TRENCH DETAIL
1 1/2" = 1'-0"

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SLAB PLAN

A100

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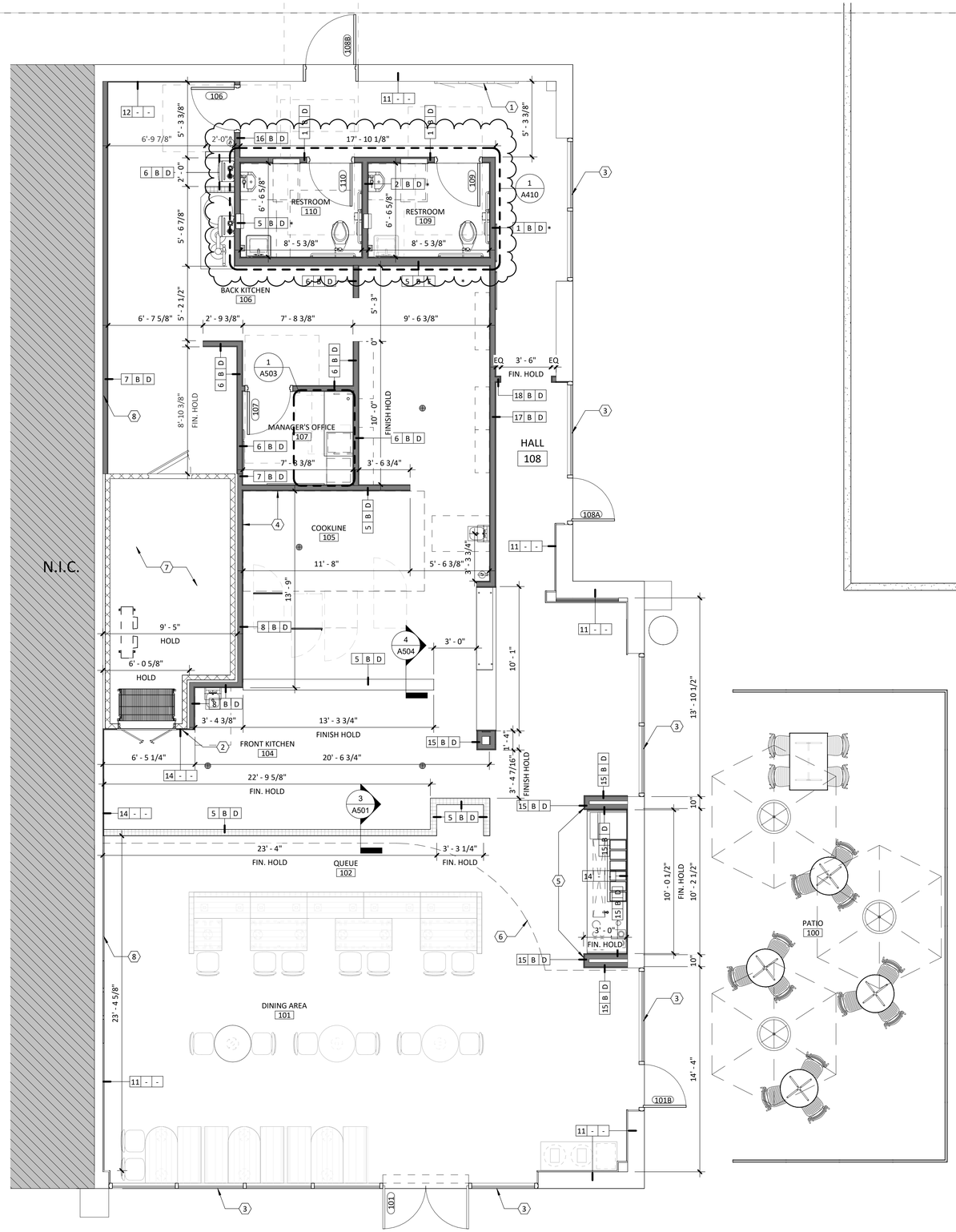

FLOOR PLAN CODED NOTES

1. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL PANEL INFORMATION.
2. OPENING FOR WALK IN COOLER. APPLY GYP. BOARD AND TILE DIRECTLY TO FACE OF COOLER ON FRONT OF COOLER.
3. STOREFRONT WINDOWS ARE FIXED AND NON-OPERABLE.
4. PROVIDE 24 GA. GALVANIZED METAL BEHIND SHEATHING 18" BEYOND EDGE OF HOOD IN ALL DIRECTIONS
5. WALLS TO ALIGN.
6. LINE OF SOFFIT AND CEILING ELEMENTS ABOVE (SHOWN DASHED), REFER TO RCP.
7. NEW WALK-IN COOLER BY KITCHEN EQUIPMENT VENDOR.
8. DEMISING WALL SHALL MAINTAIN A CONTINGUOUS VERTICAL FIRE RATING (1 HOUR) BETWEEN TENANTS. THE GC SHALL REPAIR THE FULL EXTENTS OF THE EXISTING DEMISING WALL TO MAINTAIN A CONTIGUOUS UL U 419 RATED ASSEMBLY, AS REQUIRED BY IBC AND NFPA.

WALL LEGEND

	EXISTING WALL/PARTITION
	NEW WALL/PARTITION
	LOW SERVICE COUNTER/WALL (NEW)
	EXISTING EXTERIOR WALL

SYMBOL LEGEND

(###)	DOOR TYPE TAG, REFER TO DOOR/HARDWARE SCHEDULE
	WALL PARTITION TAG, REFER TO A111 (TAG WITH "*" DENOTES BATT INSUL. TO BE PROVIDED

FLOOR PLAN GENERAL NOTES

A. BASE BUILDING PARTITIONS SHOULD BE CLEAN AND REPAIRED/PREPARED AS REQUIRED FOR PROPOSED TENANT CONSTRUCTION. AREAS THAT ARE SCHEDULED AS GYPSUM BOARD SHOULD BE PAINT READY.

B. ALIGNMENT OF DOOR HEADS AND OTHER CRITICAL HORIZONTAL ELEMENTS SHALL BE MAINTAINED AT A CONSTANT LEVEL RELATIVE TO THE CEILING PLANE, AND SHALL NOT FOLLOW VARIATIONS IN THE FLOOR PLANE.

C. PARTITION TYPES ABOVE DOORS ARE TO BE SAME AS THE ADJACENT PARTITIONS, U.N.O.

D. ALL DIMENSIONS ARE TO FACE OF FINISHED FACE.

E. ANY DIMENSION NOTED "VERIFY" OR "V.I.F." MUST BE CONFIRMED WITH ARCHITECT BEFORE BEGINNING CONSTRUCTION OF PARTITIONS.

F. PROVIDE BLOCKING AS REQUIRED IN PARTITIONS AND CEILINGS AT WALL AND CEILING MOUNTED SHELVING, MILLWORK, LIGHTING, ETC. IN DAMP AND WET AREAS BLOCKING SHALL BE MOISTURE RESISTANT. IN FIRE RATED ASSEMBLIES AND 4'-0" HORIZONTALLY OF ALL COOKING EQUIPMENT BLOCKING SHALL BE NON-COMBUSTIBLE. COORDINATE LOCATIONS OF BLOCKING WITH ALL PLANS, ELEVATIONS, AND DETAILS. VERIFY SHOP STANDARDS WITH SUBCONTRACTORS AND SUPPLIERS AND REVIEW WITH ARCHITECT PRIOR TO INSTALLATION.

G. WHERE NEW CONSTRUCTION APPEARS TO ABUT EXISTING CONDITIONS AND THE FINISHED SURFACES APPEAR TO ALIGN, SURFACES SHALL BE CONSTRUCTED WITHOUT A VISIBLE JOINT, U.N.O.

H. PROVIDE ADDITIONAL STUDS AS REQUIRED WITHIN PARTITIONS TO ACHIEVE OUTLET GROUPINGS AS SPECIFIED IN ELECTRICAL DRAWINGS.

I. G.C. TO IDENTIFY AREAS TO REQUIRE ACCESS PANELS AND COORDINATE EXACT LOCATIONS.

J. G.C. TO REVIEW CONDITION OF EXISTING FLOOR SLAB AND DETERMINE BEST METHOD FOR PATCHING/REPAIRING, FILLING, AND SEALING OF SLAB IN ORDER TO PREPARE IT TO RECEIVE NEW SCHEDULED FINISHES. (THIS MAY REQUIRE ALLOWANCE PRICING FOR UNKNOWNS WHEN BIDDING)

K. G.C. IS RESPONSIBLE FOR MAINTAINING DIMENSIONS AS INDICATED ON THE DRAWINGS. DIMENSIONS INDICATED AS "HOLD" SHALL NOT VARY MORE THAN 1/16". WHERE THIS TOLERANCE IS NOT OBTAINABLE THE ARCHITECT SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF THE WORK.

L. DIMENSIONS INDICATED AS "CLEAR" OR "CLR" SHALL BE MAINTAINED. ANY DISCREPANCIES OR VARIATIONS IN THESE DIMENSIONS SHALL BE REVIEWED WITH THE ARCHITECT BEFORE BEGINNING CONSTRUCTION.

M. THE DIMENSIONS AND WORK NOTED ON THESE DRAWINGS ARE INDICATED FOR DESIGN INTENT. IF THE INSTALLATION OF ELECTRICAL, MECHANICAL, PLUMBING, OR FIRE PROTECTION WORK INTERFERES WITH THIS INTENT, THE ARCHITECT SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH CONSTRUCTION.

N. THE G.C. IS RESPONSIBLE FOR BRACING TO DECK OF PARTITIONS AT DOORS AND WINDOWS.

O. G.C. TO COORDINATE LOCATIONS OF ALL MEP (INCLUDING THERMOSTATS, OUTLETS, ACCESS PANELS, EMERGENCY FIXTURES, SMOKE DETECTION FIXTURES, ETC) WITH EXISTING CONDITIONS, ARCHITECTURAL DRAWINGS, MILLWORK, FURNITURE, INTERIOR FINISHES, ETC AND NOTIFY ARCHITECT OF ANY DISCREPANCIES OF CONFLICTS PRIOR TO INSTALLATION OF EQUIPMENT OR SERVICES.

P. G.C. TO COORDINATE ALL WALL HEIGHTS WITH THE INTERIOR ELEVATIONS.

Q. COORDINATE WITH INTERIOR ELEVATIONS FOR IN-WALL BLOCKING REQUIRED FOR KITCHEN EQUIPMENT.

R. G.C. TO COORDINATE POSITION OF KITCHEN PARTITIONS (FOH & BOH) WITH FOOD SERVICE SHOP DRAWINGS TO ENSURE ALL EQUIPMENT CLEARANCES ARE MAINTAINED.

S. PER IBC 2018 IBC 3302.1 ALTERATIONS, REPAIRS AND ADDITIONS. REQUIRED EXITS, EXISTING STRUCTURAL ELEMENTS, FIRE PROTECTION DEVICES AND SANITARY SAFEGUARDS SHALL BE MAINTAINED AT ALL TIMES DURING ALTERATIONS, REPAIRS OR ADDITIONS TO ANY BUILDING OR STRUCTURE.

T. PER 2018 IBC 3302.1 ALTERATIONS, REPAIRS AND ADDITIONS. REQUIRED EXITS, EXISTING STRUCTURAL ELEMENTS, FIRE PROTECTION DEVICES AND SANITARY SAFEGUARDS SHALL BE MAINTAINED AT ALL TIMES DURING ALTERATIONS, REPAIRS OR ADDITIONS TO ANY BUILDING OR STRUCTURE.

U. PER 2018 IFC 3311.2 MAINTENANCE: REQUIRED MEANS OF EGRESS AND REQUIRED ACCESSIBLE MEANS OF EGRESS SHALL BE MAINTAINED DURING CONSTRUCTION AND DEMOLITION, REMODELING OR ALTERATIONS AND ADDITIONS TO ANY BUILDING.

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ARCHITECTURAL FLOOR PLAN

A111

1/A111 ARCHITECTURAL FLOOR PLAN
1/4" = 1'-0"

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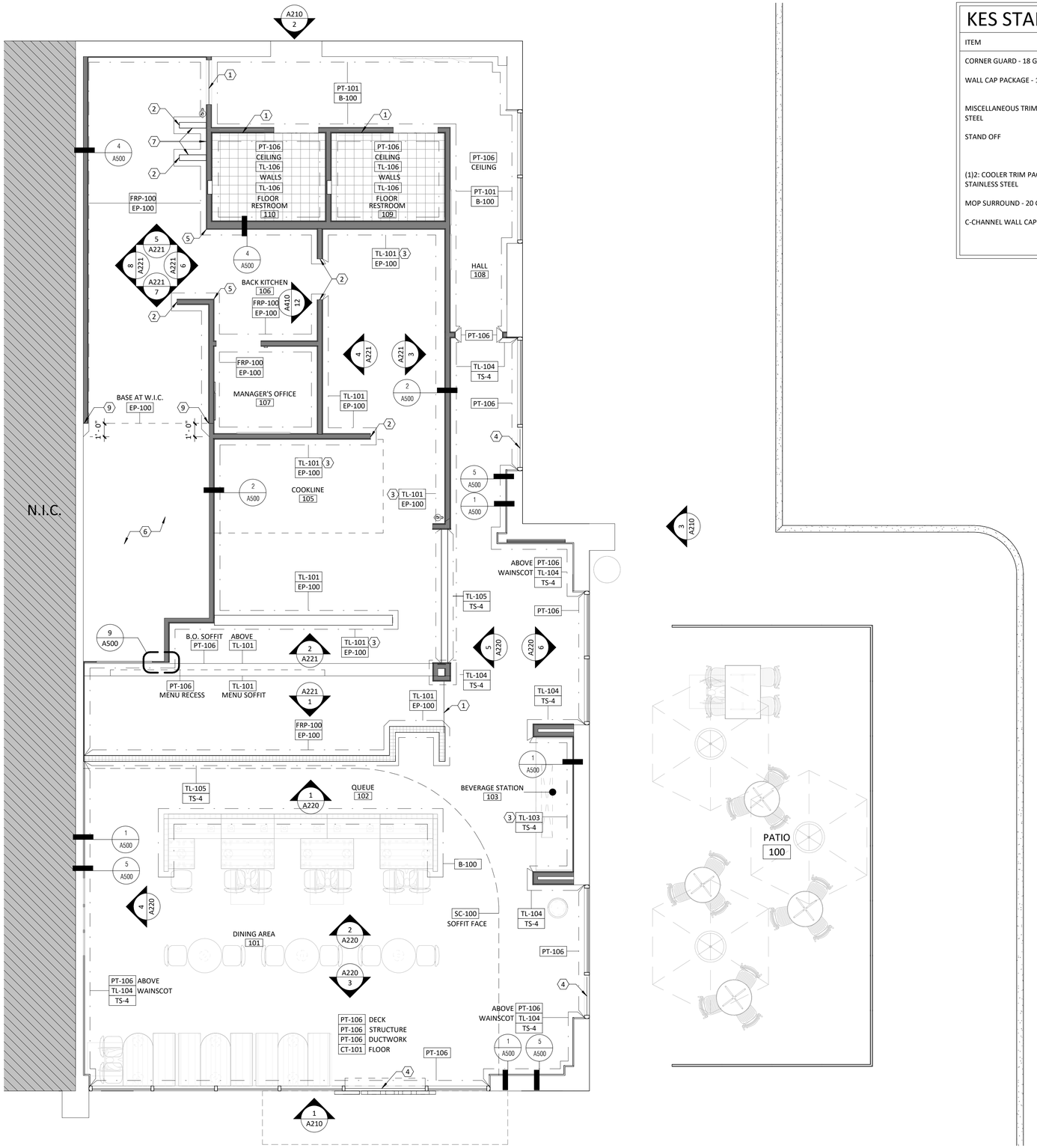

KES STAINLESS

ITEM	DESCRIPTION	GC	KES	QTY
CORNER GUARD - 18 GAUGE STAINLESS STEEL	2"X2"X120" HIGH	●		2
WALL CAP PACKAGE - 16 GAUGE STAINLESS STEEL	U-SHAPE 9"W W/ (2) 2" TURNDOWNS		●	
MISCELLANEOUS TRIM - 20 GAUGE STAINLESS STEEL	34-5/8" X 6"		●	
STAND OFF	4"W X 6"D X 2"H W 1" FLANGES, 20 GAUGE S/S CONSTRUCTION		●	2
(1)2: COOLER TRIM PACKAGE - 14" GAUGE STAINLESS STEEL	(1)2: x2" x120"H LONG 90 DEGREE BEND	●		1
MOP SURROUND - 20 GAUGE STAINLESS STEEL	(3) 48x24"	●		1
C-CHANNEL WALL CAP - STAINLESS STEEL	120" TALL	●		4

FINISH PLAN GENERAL NOTES

A. UPON RECEIPT FROM THE MANUFACTURER, SUB-CONTRACTORS SHALL INSPECT MATERIALS FOR DEFECTS, FLAWS, SHIPPING DAMAGE, CORRECT COLOR AND PATTERN PRIOR TO BEGINNING WORK. DAMAGED OR WRONG MATERIALS SHALL BE RETURNED TO THE MANUFACTURER FOR IMMEDIATE REPLACEMENT TO PREVENT DELAYS IN THE COMPLETION OF WORK.

B. COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS FOR HANDLING, STORAGE, INSTALLATION, AND PROTECTION OF MATERIALS IS THE EXCLUSIVE RESPONSIBILITY OF THE GC AND THEIR RESPECTIVE INSTALLERS.

C. GC TO NOTIFY THE ARCHITECT OF LOCATIONS OF CHANGES IN DYE LOTS, BATCHES, OR SIMILAR COLOR SHIFTS.

D. GC TO PROVIDE ONE FINAL TOUCH-UP OF PAINT SURFACES AFTER THE TENANT HAS TAKEN OCCUPANCY OF THE SPACE.

E. OPEN

F. FINISHES SHALL EXTEND OVER, UNDER AND/OR BEHIND ANY ITEM OF BUILT-IN MILLWORK, EQUIPMENT, MIRRORS, ETC.

G. SUB-CONTRACTORS SHALL REFER TO THE ELEVATION AND DETAIL SHEETS FOR SPECIFIC LOCATIONS OF ALL FINISHES. SHOULD THE INSTALLER FIND ANY DISCREPANCIES, OMISSIONS, AMBIGUITIES, OR CONFLICTS WITH THE PLANS, THE ARCHITECT SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH ANY WORK IN QUESTIONS.

H. PARTITIONS CONCEALED BY MILLWORK CABINETRY ARE TO BE TAPED, MUDDED, SANDED SMOOTH, PRIMED, AND PAINTED WITH ONE COAT OF FINISH PAINT.

I. TRANSITIONS BETWEEN DISSIMILAR FLOOR FINISHES ARE TO ALIGN, U.N.O. REFER TO FLOOR TRANSITION DETAILS.

J. FLOOR FINISH TRANSITIONS OCCURRING IN A DOOR OPENING SHALL BE INSTALLED SO THE TRANSITION OCCURS UNDER THE CENTERLINE OF THE DOOR IN THE CLOSED POSITION.

K. PAINT ALL ACCESS PLATES, PANELS, BOXES, ETC. TO MATCH THE WALL IN WHICH THEY OCCUR.

L. ALL PAINTED SURFACES TO RECEIVE (3) COATS OF PAINT; (1) BASE COAT, (1) COLOR COAT, (1) TOPCOAT AS PER MANUFACTURER'S RECOMMENDATIONS.

M. ALL FINISHES INSIDE CLOSETS SHALL BE CONSISTENT WITH THE FINISHES OF THE ROOM TO WHICH THEY ARE ADJACENT, U.N.O.

N. BASE CORNER SECTIONS SHALL NOT BE LESS THAN 6" IN LENGTH, MEASURED FROM THE CORNER PROPER.

O. PROVIDE CLEAR CAULKING BETWEEN WALL BASE AND FINISHED FLOOR AT ALL MOP-ABLE FLOORING SURFACES.

P. FOR ALL WALL COVERINGS AND WALL PANELS, NO SEAM SHALL BE LOCATED WITHIN 12" OF CORNERS.

Q. GC TO COORDINATE ALL FINISH INTERIOR AND EXTERIOR TRANSITIONS AND THRESHOLDS TO PROVIDE FOR LEVEL AND EVEN SURFACE FROM ONE FLOORING TO ANOTHER WITHOUT NEED TO RAMP OR FEATHER UP OR DOWN BETWEEN FLOORINGS. SUBMIT NECESSARY DETAILS TO ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF FLOORING.

R. GC TO SUBMIT TILE LAYOUT FOR ALL FLOORING AND WALL TILE TO ARCHITECT FOR REVIEW PRIOR TO INSTALLATION.

S. REFER TO A500 & A501 FOR MATERIAL TRANSITION DETAILS TS-1, TS-2, & TS-3.

T. REFER TO SHEET A602 FOR FINISH SCHEDULE.

U. ALL WINDOWS ARE FIXED AND NOT OPERABLE.

V. REFER TO INTERIOR ELEVATIONS SHEETS A220 AND A221 FOR LOCATION OF FINISHES.

W. PAINT EXPOSED DECK AND STRUCTURE PT-106.

X. SEE FINISH SCHEDULE A602 FOR PAINT FINISH TYPES PER AREA AND/OR USE.

Y. GC TO COORDINATE FINISH AROUND EXISTING COLUMNS WITH CAVA FOR FINISH DIRECTION.

FINISH PLAN CODED NOTES

1. LINE OF EPOXY TO CONCRETE FLOOR FINISH. REFER TO 5/A501. TRANSITION NOT TO EXCEED 1/4" VERTICAL.
2. KEC TO PROVIDE 2X2 18 GA. STAINLESS STEEL CHANNEL WALL CAP. 1-1/2" DEEP X WALL THICKNESS FORM TOP OF BASE TO BOTTOM OF CEILING. REFER TO 6/A500.
3. CONTRACTOR TO TILE WALLS FROM TOP, WITH FULL COURSING, DOWN TO THE BOTTOM.
4. G.C. TO ENSURE TRANSITION FROM EXTERIOR / INTERIOR OF SPACE COMPLIES WITH THE ADA REQUIREMENT OF 1/2" AFF MAX TRANSITION ABOVE FLOOR FINISH. REFER TO 6/A501.
5. PROVIDE 18 GA. STAINLESS STEEL CHANNEL 2" X 2" CORNER GUARD FROM TOP OF BASE TO BOTTOM OF CEILING.
6. WALK-IN COOLER BY KITCHEN EQUIPMENT SUPPLIER TO HAVE EPOXY FLOOR AND BASE. GC TO COORDINATE WITH K.E.S. TO ENSURE FINISHED WALK-IN ALIGNS WITH NEW PARTITIONS.
7. APPLY STAINLESS STEEL PANEL AROUND MOP SINK TO 48" A.F.F.
8. APPLY MIRRORED FILM ON THE STOREFRONT WHERE WALL OCCURS.
9. GC TO APPLY 14"' GAUGE STAINLESS STEEL TRIM TO CLOSE OFF THE WIC AND WALLS AROUND IT.

1 A120 FINISH PLAN
1/4" = 1'-0"

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PROJECT NUMBER:
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FINISH PLAN AND NOTES

A120

REFER TO A120 FINISH PLAN, AND A220 INTERIOR ELEVATIONS FOR FINISH LOCATIONS

FINISH SCHEDULE

MARK	MANUFACTURER DESCRIPTION	REMARKS
FLOOR		
CT-101	SHERWIN WILLIAMS - ARMORSEAL 1000HS B67C02000 (HIGH GLOSS) - H&C SHARKGRIP SLIP-RESISTANT ADDITIVE	- EXT'G FLOOR GROUND TO REMOVE EXT'G MASTIC, IMPERFECTIONS, ETC AFTER PATCHING. - CLEAR EXPANSION JOINTS OF DEBRIS, FILL ALL VOIDS, DIVETS (W/ ARDEX K520 OR SIMILAR CEMENTITIOUS PRODUCT TO MATCH EXISTING CONCRETE CONDITIONS) AND JOINTS (METZGER MCGUIRE RS OR SIM REMI-RIGID PRODUCT TO MATCH EXISTING CONCRETE FLOOR). - APPLY PRIMER. SEAL WITH BASE COAT. - PROVIDE SUFFICIENT SLIP RESISTANCE ADDITIVE AND CAST EVENLY ACROSS SURFACE.
EPOXY FLOORING AND BASE	EPOXY INSTALLATION TO BE COMPLETED BY SILIKAL CERTIFIED INSTALLER ONLY. APPROVED CONTRACTOR LETTER TO BE PROVIDED AT TIME OF SUBMITTAL TO CAVA CONSTRUCTION MANAGER.	
EP-100	SILIKAL 61 CQ RESIN - SLURRY 61 BUILD COAT - R71 TOPCOAT - COLOR: BLEND CQ #4 - 6" HIGH INTEGRATED COVED BASE	- FOH/BOH KITCHEN FLOORING - GROUND TO BE CLEANED, DRY AND REMOVED OF ALL DEBRIS. - MOISTURE TREATMENT (IF REQURIED) - SILIKAL RE42. - PATCH REPAIR WITH SILIKAL R17 POLYMER CONCRETE AAS NEEDED. - PRIME WITH SILIKAL HK31 FILLER. - CLEAR EXPANSION JOINTS OF DEBRIS AND FILL ALL VOIDS AND DIVOTS PER SILIKAL SPECS ABOVE. -PROVIDE SUFFICIENT SLIP RESISTANCE ADDITIVE AND CAST EVENLY ACROSS SURFACE.
BASES		
B-100	CREATIVE MATERIALS - RUBBER VINYL WALL BASE COLOR BLACK	- INSTALL WITH MR 101 RUBBER BASE ADHESIVE. REMOVE ALL PAINT, VARNISH, OILS, RELEASE AGENTS, SEALERS AND WAXES. REMOVE RESIDUAL ADHESIVES AS REC'D BY FLOORING MANUFACTURER. REMOVE CURING AND HARDENING COMPOUNDS NOT COMPATIBLE WITH ADHESIVES USED, AS INDICATED BY A BOND TEST. DO NOT USE ORGANIC SOLVENTS. - SCRIBE TO FINISHED FLOOR - SIZE : 6"H X 3/8" D
		FINISHES · VERTICAL SURFACES - EGGSHELL (LOW SHEEN) · CORRIDOR, DINING ROOM, RESTROOM CEILINGS - FLAT · KITCHEN CEILINGS - SEMIGLOSS · EXTERIOR MASONRY - SEMIGLOSS · DOORS AND RAILINGS - SATIN FINISH · METALS, CEILING REGISTERS, VENTS, GRILLS, DIFFUSERS, SPEAKERS, - SEMI-GLOSS
PAINT		
PT-101	SHERWIN WILLIAMS - INTERIOR PAINT SW 6347 : CHRYSANTHEMUM	- HALLWAY WALLS AS NOTED - RESTROOM DOORS AND DOOR FRAMES - KITCHEN DOOR AND DOOR FRAME (HALL SIDE ONLY)
PT-102	SHERWIN WILLIAMS - INTERIOR PAINT SW 7701 : CAVERN CLAY	- TAMBOUR WOOD AT QUEUE LINE - BRICK AT QUEUE LINE
PT-105	SHERWIN WILLIAMS - INTERIOR PAINT SW 7720 : DEER VALLEY	- DINING ROOM BRICK WAINSCOT. APPLY 2 COATS TO COMPLETELY COVER BRICK FINISH ENTIRELY. SEMI GLOSS FINISH
PT-106	SHERWIN WILLIAMS - INTERIOR PAINT SW 7005 : PURE WHITE	- DINING ROOM WALLS - DINING ROOM OPEN DECK (DRYFALL) - RESTROOM & CORRIDOR CEILINGS - DUCTWORK, DECK AND EXPOSED STRUCTURE - SC-100 SOFFIT STUCCO
PT-108	SHERWIN WILLIAMS - INTERIOR & EXTERIOR PAINT SW 6993: BLACK OF NIGHT	- TRASH ENCLOSURE WALLS, BOLLARDS, AND METAL DOOR FRAME.
PT-109	SHERWIN WILLIAMS - INTERIOR & EXTERIOR PAINT SW 7673: PEWTER CAST	- KITCHEN DOOR AND DOOR FRAME - KITCHEN SIDE ONLY - OFFICE DOOR AND FRAME - BOTH SIDES
PT-110	SHERWIN WILLIAMS - INTERIOR PAINT SW 7598: SIERRA REDWOOD	- RESTROOMS DOORS AND DOOR FRAMES (RESTROOM SIDE ONLY)
WALL TILE		
TL-101	CREATIVE MATERIALS - WALL TILE 'INFINITY' SERIES - COLOR 'WHITE' - TILE SIZE: 4" X 8"	- KITCHEN - INTERIOR - PATTERN : HORIZONTAL STACKED BOND - 1/8" GROUT LINE (GT-101) - U.N.O. VERTICAL OUTSIDE CORNERS SHALL RECEIVE SCHLUTER(S) AS REQ. - 1ST TOP ROW TO FEATURE FULL TILE. TILE TO BE CENTERED ON WALL, EITHER FULL TILE OR HALF, IN ORDER TO AVOID SMALL TILE CUTS.
TL-102	CREATIVE MATERIALS - WALL TILE 'OMNI' SERIES - COLOR 'GREY MATTE' - TILE SIZE 1X1 PENNY ROUND	- RESTROOMS - SPEC W/ TRANSITION STRIP AT BASE AND TOP - (GT-102)
TL-103	CREATIVE MATERIALS - WALL TILE 'HARMONIX' SERIES - COLOR "DUSTY ROSE" TILE SIZE: 2" X 12"	- BEVERAGE STATION ALCOVE - PATTERN : VERTICAL STACKED BOND - GROUT : 1/16" GROUT LINE BETWEEN TILES (GT-104) - U.N.O., VERTICAL OUTSIDE CORNERS SHALL RECEIVE TS-3 SCHLUTER
TL-104	CREATIVE MATERIALS - WALL TILE 'CANDIED' SERIES - COLOR "WHITE STRIPED" GLOSSY TILE SIZE: 3" X 8"	- DINING ROOM - PATTERN : HORIZONTAL STACKED BOND - GROUT : 1/16" GROUT LINE BETWEEN TILES (GT-105) - U.N.O., VERTICAL OUTSIDE CORNERS SHALL RECEIVE TS-3 SCHLUTER
TL-105	FORGED OLIVE GREEN GLOSSY TILE SIZE: 2.5" X 9.5"	- SERVE LINE ROOM - PATTERN : VERTICAL STACKED BOND - GROUT : 1/16" GROUT LINE BETWEEN TILES (GT-106) - U.N.O., VERTICAL OUTSIDE CORNERS SHALL RECEIVE TS-3 SCHLUTER
TL-106	CREATIVE MATERIALS - WALL TILE 'SOLID AND VOID'- MATTE FINISH - COLOR "TERRACOTTA" TILE SIZE: 8" X 8"	- RESTROOMS - GROUT: 1/8" GROUT LINE BETWEEN TILES (GT-108) - U.N.O., VERTICAL OUTSIDE CORNERS SHALL RECEIVE TS-3 SCHLUTER
OTHER		
SC-100	-PAREX - DPR STANDARD ACRYLIC FINISHES - 534 "SAND FINE"	- COLOR: TO MACH PT-106 SW 7005 "PURE WHITE" - FINISH: ACRYLIC GLAZE - SUBSTRATE: GYP. BD. - NOTES: TO BE APPLIED IN A STRAIGHT TOOTHED TROWEL PATTERN WITH CLEAN, VERTICAL LINES 1/2" PROFILE. CARE SHOULD BE TAKEN NOT APPLY FINISH TOO THICK ONTO SUBSTRATE. - GC TO SEND SAMPLE TO CAVA DM AND CM FOR APPROVAL PRIOR TO FINAL APPLICATION - GC TO APPLY WITH SCRATCHER TROWEL V NOTCH 16"
MF-1	3M SUN CONTROL WINDOW FILM SILVER 15 EXTERIOR (RE15SIARXL)	- WINDOW FILM : APPLY AS NOTED ON ELEVATIONS
WS-1	ROLL-A-SHADE PLUS + SHADE 4" BOTTOM	- WINDOW SHADES - MATERIAL: PHIFER SHEER WEAVE 2000 COLOR: CHARCOAL - 5% OPENNESS - FASCIA AND BRACKETS TO BE POWDER COATED BLACK. - SHADES WITH INTERNAL HEM BAR. - BLACK CLUTCHES WITH STAINLESS STEEL CHAIN AND BLACK TENSION DEVICES
ROK-1	LANDSCAPE RIVER ROCKS MSI NILA GRAY ROCK SIZE 1" - 3"	- FOR EXTERIOR OR INTERIOR PLANTERS - GC TO SUPPLY THIS SPEC OR SIMILAR GRAY ROUND RIVER ROCKS TO COVER TOP TWO LAYERS OF PLANTERS.

MARK	MANUFACTURER DESCRIPTION	REMARKS
WOOD		
WD-101	COMPOSITE METAL PANEL	- EXTERIOR VERTICAL SLATS
BRICK VENEER		
BK-100	CREATIVE MATERIALS - WAINSCOT - 'THIN BRICK' SERIES - COLOR 'TERRACOTA' BRICK SIZE: 2 1/4" X 7 5/8" X 9/16"	- WAINSCOT IN DINING ROOM - PATTERN : VERTICAL STACKED BOND, TIGHT WITH NO SPACERS - PAINT BRICK PT-### WITH (2) SOLID COATS. - THIN-SET CUSTOM VERSABOND MORTAR : WHITE - 1/16" GROUT LINES - TS-1 APPLICATION ON TOP AND BOTTOM OF BRICK ONLY. - FULL 4 ROWS OF BRICK AROUND THE DINING WALL. TOP ROW OF BRICK WILL BE CUT AT SERVING LINE TO MEET REQUIRED HEIGHT.
FIBER REINFORCED PLASTIC		
FRP-100	PANOLAM INDUSTRIES CLASSIC COLLECTION - PEBBLED WHITE	- KITCHEN AND BOH - INTERIOR - FIBER REINFORCED PLASTIC
EIFS		
EIFS-101	MANUFACTURER: FINESTONE TEXTURE: F1.0 LIMESTONE FINISH FINISH COLOR MATCH: SHERWIN WILLIAMS DIVINE WHITE SW 6105	EXTERIOR FACADE : 3'-1" AFF AND ABOVE
EIFS-102	MANUFACTURER: FINESTONE TEXTURE: M1.5 MOJAVE FINISH FINISH COLOR MATCH: SHERWIN WILLIAMS DIVINE WHITE SW 6105	EXTERIOR FACADE : 3'-1" AFF AND BELOW
BREEZE BLOCK		
BBK-01	ORCO MASONRY CORDOVA 4X12X12 WHITE	EXTERIOR SCREEN WALL
ACOUSTICAL TILE		
ACT-100	CELOTEX - SMOOTH ACOUSTIC CEILING TILE VINYLSHIELD A	- SIZE: 2'-0" X 2'-0" - COLOR: CRF WHITE - KITCHEN CEILING - USE 15/16" FLAT T-GRID SYSTEM. WASHABLE, SCRUBBABLE, SOIL RESISTANT, HUMIDITY RESISTANT, CLASS A
GROUT		
GT-101	CREATIVE MATERIALS - MAPEI - ULTRACOLOR PLUS FA #15 BONE	- GROUT FOR TL-101 INFINITY WHITE LOCATIONS - REFER TO TILE FINISH FOR GROUT LINE THICKNESS - ALL GROUT TO BE ENZYME RESISTANT
GT-102	CREATIVE MATERIALS - MAPEI - ULTRACOLOR PLUS FA #02 PEWTER	- GROUT FOR TL-102 OMNI GREY MATTE LOCATIONS - REFER TO TILE FINISH FOR GROUT LINE THICKNESS - ALL GROUT TO BE ENZYME RESISTANT
GT-103	CREATIVE MATERIALS - MAPEI - ULTRACOLOR PLUS FA #06 HARVEST	- GROUT FOR TL-103 MEKNES YELLOW LOCATIONS - REFER TO TILE FINISH FOR GROUT LINE THICKNESS - ALL GROUT TO BE ENZYME RESISTANT
GT-104	CREATIVE MATERIALS - MAPEI - ULTRACOLOR PLUS FA #49 LIGHT ALMOND	- GROUT FOR TL-103 HARMONIX DUSTY ROSE LOCATIONS - REFER TO TILE FINISH FOR GROUT LINE THICKNESS - ALL GROUT TO BE ENZYME RESISTANT
GT-105	CREATIVE MATERIALS - MAPEI - ULTRACOLOR PLUS FA #38 AVALANCHE	- GROUT FOR TL-104 CANDIED WHITE TILE LOCATIONS - REFER TO TILE FINISH FOR GROUT LINE THICKNESS - ALL GROUT TO BE ENZYME RESISTANT
GT-106	CREATIVE MATERIALS - MAPEI - ULTRACOLOR PLUS FA #11 SAHARA BEIGE	- GROUT FOR TL-105 OLIVE GREEN TILE LOCATIONS - REFER TO TILE FINISH FOR GROUT LINE THICKNESS - ALL GROUT TO BE ENZYME RESISTANT
GT-108	CREATIVE MATERIALS - MAPEI - ULTRACOLOR PLUS FA #5226 NUTMEG	-GROUT FOR TL-106 TERRACOTTA -REFER TOTILE FINISH FOR GROUT LINE THICKNESS -ALL GROUT TO BE ENZYME RESISTANT
METAL		
MT-101	KITCHEN EQUIPMENT - BRUSH STAINLESS STEEL - 7 GAUGE SHEET STOCK (3/16")	- MISC. TRIM, DETAILS & CORNER GUARDS INTERIOR - WALL CAP IN BACK KITCHEN - BRUSHED NO.4 FINISH - REFER TO DRAWINGS FOR DIRECTION ON SIZE AND APPLICATION - TRIM CAPS ARE KES. AOR TO HIGHLIGHT IN THE DRAWINGS WHERE CAPS ARE NEEDED. REFER TO FINISH PLAN FOR LOCATION.
MT-102	FULL HEIGHT WALL CAP	- WALL CAP AT MOP SINK
MT-104	CONTRACTOR - 4" PRE-FINISHING METAL COPING	- REFER TO EXTERIOR ELEVATIONS FOR LOCATION - COLOR: WHITE
TRANSITIONS		
TS-1	CREATIVE MATERIALS - SCHLUTER SYSTEMS L.P. - SCHLUTER "JOLLY" - ALUMINUM CREAM - J80TSC	- OUTSIDE WALL CORNERS - INTERIOR - TL-101 INFINITY WHITE LOCATIONS : 5/16"
TS-2	CREATIVE MATERIALS - SCHLUTER SYSTEMS L.P. - SCHLUTER "JOLLY" - SATIN NICKEL - J80AT	- BASE OF TILE TO EPOXY BASE - INTERIOR - TL-101 INFINITY WHITE LOCATIONS : 5/16" - ABOVE AND BELOW TL-102
TS-3	CREATIVE MATERIALS - SCHLUTER SYSTEMS L.P. - SCHLUTER "JOLLY" - ALUMINUM CREAM J80TSC	- OUTSIDE CORNERS - INTERIOR - TL-103, TL-104 & TL-105 LOCATIONS : 7/16"
TS-4	CREATIVE MATERIALS - SCHLUTER "DILEX" AHKA - SATIN NICKEL J80AT	- CONCRETE TO TILE BASE TRANSITION - INTERIOR - TL-103 DUSTY ROSE LOCATIONS : 3/8"
TS-5	CREATIVE MATERIALS - SCHLUTER SYSTEMS L.P. - SCHLUTER "JOLLY" - ALUMINUM CREAM J125TSC	- TOP & BOTTOM OF WAINSCOT - INTERIOR - BK-100 TERRACOTTA LOCATIONS : 1/2"
TS-6	CREATIVE MATERIALS - SCHLUTER "DILEX" AHKA - BRUSHED NICKEL AHKA80ATGB	- CONCRETE TO TILE BASE TRANSITION - INTERIOR - TL-102&4 RESTROOM LOCATIONS : 5/16"
TS-8	CREATIVE MATERIALS - SCHLUTER "DILEX" AHKA SATIN NICKEL - 100mm AHK1S100AT	- TL-106 COVE BASE TRANSITION FOR FLOOR TILE TO WALL TILE
TS-9	CREATIVE MATERIALS - SCHLUTER "RENO U" SATIN NICKEL - 100mm AU100AT	- TL-106 FLOOR TRANSITION FOR FLOOR TILE TO CONCRETE
ACOUSTICAL		
TECTUM	ARMSTRONG - TECTUM DIRECT-ATTACH CEILING ACOUSTICAL CEILING INSULATION BOARD	- VERIFY SIZE AND PLACEMENT ON RCP PRIOR TO PURCHASE - PAINT TO MATCH CEILING/DECK/STRUCTURE - SIZE: 24"x48"x1" THICK MOUNTING METHOD: MOUNTING D-20 PREFERRED - MOUNTING OPTION

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PROJECT NUMBER:
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FINISH SCHEDULE

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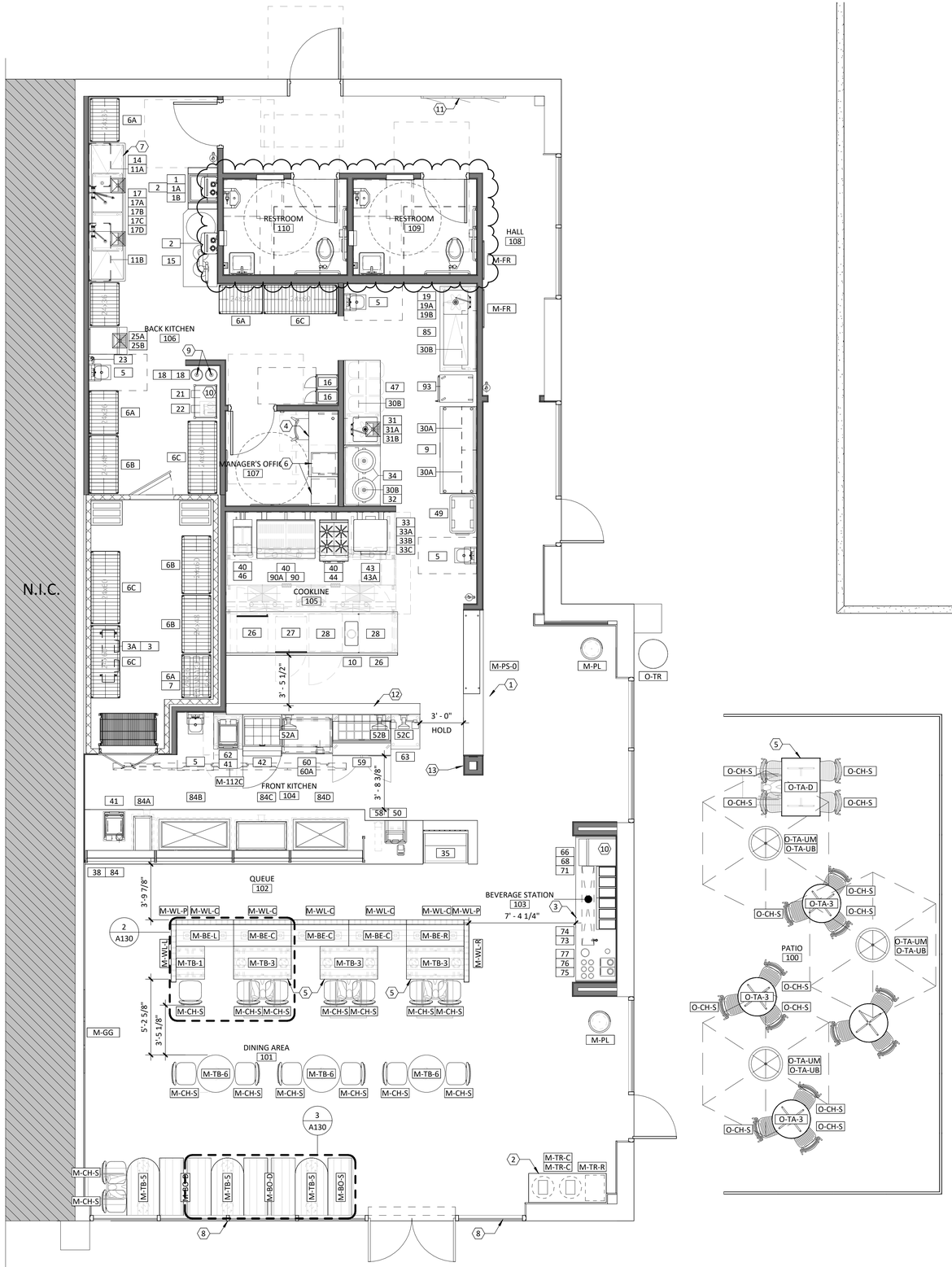


1 A130 FLOOR PLAN - FUNRNITURE, FIXTURE, AND EQUIPMENT
1/4" = 1'-0"

FF&E PLAN CODED NOTES

1. TO-GO PICK-UP SHELVING UNIT BY VENDOR, ONE SHELF MINIMUM TO BE AT ADA COMPLIANT HEIGHT (BETWEEN 9" MIN. TO 48" MAX. A.F.F.).
2. TRASH COUNTER BY MILLWORKER, MAX HEIGHT IS 34" A.F.F.
3. CONDIMENT STATION BY FOOD SERVICE CONSULTANT. MAX HEIGHT IS 34" A.F.F.
4. MANAGER'S DESK AND WALL SHELF. REFER TO DETAIL 1/A502 FOR ADDITIONAL INFORMATION.
5. ADA COMPLIANT TABLE OR COUNTER 34" MAX. TYP.
6. LOCATION OF NEW SAFE MOUNTED TO CONCRETE CURB BELOW.
7. PROVIDE 2" CASTER @ DISHWASHER. DISHWASHER CAN ROLL OUT FOR CLEANING.
8. ROLLER SHADE AT WINDOWS DEEMED REQUIRED BY AOR.
9. CO2 TANKS TO BE CHAINED TO WALL BY GC WITH VENDOR SUPPLIED BRACKET.
10. 6" PVC FROM BAG N BOX TO BEVERAGE STATION. REFER TO 1/A100 FOR LOCATIONS.
11. EXISTING ELECTRICAL PANELS.
12. 9" STAINLESS STEEL CAP.
13. ANSUL PULL STATION, REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

ADA SEATING

INDICATES ADA SEATING LOCATION

FF&E PLAN GENERAL NOTES

A. ALL FURNITURE AND FURNISHINGS SHALL BE OWNER FURNISHED AND INSTALLED PER RESPONSIBILITY MATRIX. G.C. TO COORDINATE BLOCKING LOCATIONS WITH FURNITURE AND MILLWORK

B. MEP-SHEETS FOR EQUIPMENT TYPES AND SCHEDULES.

C. ALL FURNITURE, FURNISHINGS, AND MILLWORK DIMENSIONS TO BE VERIFIED IN FIELD BY G.C. PRIOR TO PURCHASE OR CONSTRUCTION ESPECIALLY WHERE SUCH DIMENSIONS ARE SET OR INFLUENCED BY BUILT ELEMENTS SUCH AS WALLS, CEILINGS, COLUMNS, LIGHT FIXTURES, ETC.

D. THE METHOD OF MANUFACTURING, FABRICATING, AND INSTALLING MILLWORK AND ITS STRUCTURAL COMPONENTS DEFINED IN THE CONTRACT DOCUMENTS IS REPRESENTATIVE AND INDICATES DESIGN INTENT ONLY. IF THE MATERIALS, DETAILS, OR DIMENSIONAL PROPERTIES ARE AT VARIANCE WITH THE SUB-CONTRACTOR'S OR MANUFACTURER'S RECOMMENDATIONS, ALTERNATE DETAILS WILL BE CONSIDERED FOR REVIEW WHEN SHOP DRAWINGS ARE SUBMITTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THEG.C. TO GUARANTEE THAT THE MILLWORK WILL HAVE PROPER SUPPORT, STABILITY, AND FAULT-FREE PERFORMANCE.

E. SUB-CONTRACTOR TO SUBMIT SHOP DRAWINGS AND HARDWARE CATALOGUE CUT SHEETSOF MILLWORK FOR REVIEW BY ARCHITECT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL SHOW THE DESIGN AND DIMENSIONS AND CLEARLY INDICATE IN LARGE SCALE THE CONSTRUCTION OF THE VARIOUS COMPONENTS, REINFORCEMENTS, AND ALL OTHER PERTINENT INFORMATION REQUIRED FOR CONSTRUCTION. ANY VARIATION FROM THE DRAWINGS MUST BE CLEARLY NOTED AS A VARIATION FROM THE REQUIREMENTS. FABRICATION OF MILLWORK SHALL NOT PROCEED UNTIL THE ARCHITECT HAS APPROVED SHOP DRAWINGS.

F. G.C. TO BE RESPONSIBLE FOR MAKING CERTAIN THAT MILLWORK ITEMS ARE NOT DELIVERED UNTIL AREAS ARE SUFFICIENTLY DRY SO THAT THE MILLWORK WILL NOT BE DAMAGED BY EXCESSIVE CHANGES IN ATMOSPHERIC MOISTURE.

G. SUB-CONTRACTORS ARE RESPONSIBLE FOR OBTAINING FIELD MEASUREMENTS AND VERIFYING DIMENSIONS OF MILLWORK INSTALLATION LOCATIONS PRIOR TO PROCEEDING WITH MILLWORK FABRICATION. ARCHITECT SHALL BE NOTIFIED OF ANY VARIANCE FOUND BETWEEN FIELD AND SPECIFIED DIMENSIONS.

H. SCRIBE AND CUT MILLWORK TO FIT ADJOINING CONSTRUCTION. REFINISH CUT SURFACES OR REPAIR DAMAGED FINISH AT CUTS. PROVIDE SEALANT AT ALL JOINTS.

I. MILLWORK TO BE ANCHORED TO BUILT-IN BLOCKING OR DIRECTLY ATTACHED TO SUBSTRATE. SECURE TO GROUNDS. STRAPPING AND BLOCKING WITH COUNTER-SUNK, CONCEALED FASTENERS AND BLIND NAILING AS REQUIRED FOR A COMPLETE INSTALLATION.

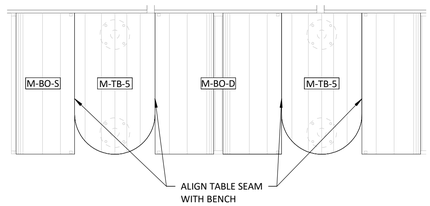
J. ALL DIMENSIONS ARE TO FACE OF FINISH SHEATHING OR CENTERLINE OF EQUIPMENT UNLESS NOTED OTHERWISE.

K. G.C. RESPONSIBLE FOR MOUNTING FIXED TABLES IN PLACE.

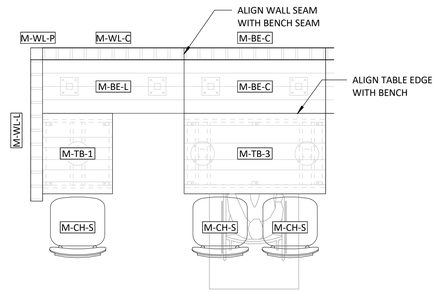
L. ALL TABLE SURFACES FOR BANQUETTE SEATING TO OVERLAP BENCHES BY 1". REFER TO DETAIL

M. REFER TO ELEVATION DRAWINGS FOR IN WALL BLOCKING.

N. ALL EQUIPMENT SUPPLIED WITH CASTERS OR SUBJECT TO PERIODIC MOVEMENT OR RELOCATION SHALL BE CONNECTED TO THE SUPPLY SYSTEM PIPING BY MEANS OF AN APPLIANCE CONNECTOR LISTED AS COMPLYING WITH ANSI Z21.69/CSA 6.16 OR BY MEANS OF AN ITEM 1 OF SECTION 411.1, INSTALLED AND PROTECTED IN ACCORADANCE WITH MANUFACTURER'S INSTRUCTIONS.



3 A130 TYP. ENLARGED BOOTH SEATING LAYOUT
1/2" = 1'-0"



2 A130 TYP. ENLARGED BANQUETTE SEATING LAYOUT
1/2" = 1'-0"

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CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE	
SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

FURNITURE, FIXTURE, AND EQUIPMENT PLANS

A130

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FURNITURE SCHEDULE

NO.	MANUFACTURER	SUPPLIED	REMARKS	COUNT
O-CH-S	OUTDOOR DINING CHAIR	KES		16
O-TA-S	OUTDOOR 2-TOP TABLE	KES		0
O-TA-D	OUTDOOR 4-TOP, ADA	KES		1
O-TA-3	OUTDOOR 3-TOP	KES		4
O-TA-UB	WEIGHTED UMBRELLA BASE (150LB)	CAVA		3
O-TA-UM	UMBRELLA (10')	CAVA		3
O-TR	OUTDOOR TRASH CAN	CAVA		1
M-PL	PLANTER	CAVA		2
M-CH-S	DINING CHAIR	MILLWORKER		15
M-BO-S	BOOTH SINGLE	MILLWORKER	OPTIONAL BOLSTER	1
M-BO-D	BOOTH DOUBLE	MILLWORKER	OPTIONAL BOLSTER	2
M-BOL	BOLSTER	MILLWORKER		10
M-BE-C	BENCH (CENTER-STANDARD 47 3/8")	MILLWORKER	COMES W/ BOLSTER	3
M-BE-R	BENCH (CENTER-RIGHT 46 3/8")	MILLWORKER		1
M-BE-L	BENCH (CENTER-LEFT 46 3/8")	MILLWORKER		1
M-TB-1	WOOD TABLE (27"W X 23 1/2"L X 30"H) ADA MATCH	MILLWORKER		1
M-TB-2	WOOD TABLE (27"W X 23 1/2"L X 30"H)	MILLWORKER		0
M-TB-3	WOOD TABLE (27"W X 47 1/2" X 30"H) ADA	MILLWORKER		3
M-TB-4	WOOD TABLE (27"W X 47 1/2" X 30"H)	MILLWORKER		0
M-TB-5	HALF ROUND TABLE (BANQUETTE 27"W X 47 1/2"	MILLWORKER		3
M-TB-6	2-TOP ROUND TABLE 27"Ø	MILLWORKER	TOP MATERIAL TBD	3
M-TB-7	4-TOP ROUND TABLE 36"Ø	MILLWORKER	TOP MATERIAL TBD	0
M-DC-1	DINING COUNTER 98"L X 19 1/2"W X 30"H (ADA)	MILLWORKER		0
M-WL-R	PARTITION WALL MODULE-RIGHT PANEL	MILLWORKER		1
M-WL-C	PARTITION WALL MODULE-CENTER PANEL	MILLWORKER	COMES WITH BOLSTER	5
M-WL-L	PARTITION WALL MODULE-LEFT PANEL	MILLWORKER		1
M-WL-P	PARTITION WALL MODULE-CORNER POST	MILLWORKER		2
M-TR-R	TRASH STATION (WASTE UNIT)	MILLWORKER		1
M-TR-C	WASTE DRUM & DOLLY	MILLWORKER		2
M-HC	HIGH CHAIRS KOALA KARE KB105-02	CAVA		0
M-QR	QUEUE RAIL	MILLWORKER		0
M-POS	POS CADDY	MILLWORKER		0
M-PS-0	PASS-THRU PICK UP SHELVES	MILLWORKER		1
M-PS-1	DO WALL MOUNTED PICKUP SHELVES	MILLWORKER		1
M-PS-2	FREESTANDING PICKUP SHELVES	MILLWORKER		0
M-GG	GALLERY GRID FRAME	MILLWORKER		2
M-FR	FRAMEBRIDGE	CAVA		2
M-CLD	CEILING GRID-CURVED FRAME 1 (A)	MILLWORKER		1
M-CLD	CEILING GRID-CURVED FRAME 2 (B)	MILLWORKER		1
M-CLD	CEILING GRID-1X3 FRAME (C)	MILLWORKER		10
M-CLD	CEILING GRID-3X1 FRAME (D)	MILLWORKER		0

EQUIPMENT SCHEDULE

						UTILITY			
NO.	DESCRIPTION	MANUFACTURER	MODEL	SUPPLIED BY	INSTALLED BY	ELEC	GAS	WATER	SEWER	
1	MOP SINK FAUCET	ELKAY	B940C	KES	GC			●		
1A	MOP SINK SHELF	ALL SOUTH FABRICATORS	CG-MOPWS1-WAL 7.87	KES	KES					
1B	MOP SINK	HYDROLOGIC	REFER TO PLUMBING DRAWINGS	GC	GC				●	
2	TANKLESS WATER HEATER	NAVIEN	REFER TO PLUMBING DRAWINGS	GC	GC	●	●	●		REFER TO PLUMBING DRAWINGS
3	WALK-IN COOLER	AMERICOOLER		KES	GC	●				
3A	EVAPORATOR COIL, COOLER	BY KES VENDOR		KES	GC	●				CONDENSING LINE BY GC TO NEAREST FLOOR DRAIN/FLOOR SINK
3B	CONDENSING UNIT	BY KES VENDOR		KES	GC	●				ON ROOF
5	HAND SINK	KROWNE	HS-30L	KES	KES/GC			●	●	
6A	SHELVING	METROMAX		KES	KES					BACK OF HOUSE SHELVING 24" X 36"
6B	SHELVING	METROMAX		KES	KES					BACK OF HOUSE SHELVING 24" X 48"
6C	SHELVING	METROMAX		KES	KES					BACK OF HOUSE SHELVING 24" X 60"
7	DUNNAGE RACK	METRO SHELVING		KES	KES					DUNNAGE RACK AT BOTTOM OF METRO RACK
9	STAINLESS STEEL TABLE	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES					
10	23 GALLON WASTE CAN	CARLISLE	34202303	KES	KES					
11A	WIRE SHELF, WALL MOUNT	METRO SUPER ERECTA	1836NK3	KES	KES					18x36 ABOVE 4-COMP SINK
11B	WIRE SHELF, WALL MOUNT	METRO SUPER ERECTA	1848NK3	KES	KES					18x48 ABOVE 4-COMP SINK
11C	WIRE SHELF, WALL MOUNT	METRO SUPER ERECTA	1860NK3	KES	KES					18X60 ABOVE PREP AREAS
14	WAREWASHER, UNDERCOUNTER, LOW-TEMP	ECOLAB	E-ULT	ECOLAB	ECOLAB	●		●	●	ALWAYS SUPPLIED WITH CASTERS
15	WATER SOFTENER		REFER TO PLUMBING DRAWINGS		GC	●		●		
16	LOCKER	GLOBAL INDUSTRIAL	WB269696GY - 6 TIERS	KES	GC					
17	4-COMP SINK	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES/GC				●	
17A	FAUCET ; ADD ON	DORMONT MANUFACTURING		KES	GC			●		
17B	PRE-RINSE FAUCET, WALL MOUNT	DORMONT MANUFACTURING	BKF-SMPR-WB-AF12-G	KES	GC			●		GC TO INSTALL SPRAYER WITH WATER DISPENSER AND TEMPERATURE ADAPTER PROVIDED BY ECOLAB
17C	FAUCET, WALL MOUNT	DORMONT MANUFACTURING	LFF-WST8-S12S-R	KES	GC			●		
17D	DRAIN LEVER	FISHER	22209	KES	GC					
18	CO2 TANK	AIRGAS	(2) 50LBS	AIRGAS	GC					GC TO INSTALL BRAKES ON WALL
19	PREP TABLE WITH DROP-IN	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES/GC				●	VEGETABLE WASH
19A	FAUCET, DECK MOUNT	DORMONT MANUFACTURING	LFF-DST4-G06S-R	KES	GC			●		
19B	LEVER WASTE	FISHER	22209	KES	GC					
21	BAG-N-BOX			KES	GC					
22	CARBONATOR			KES	GC	●				
23	WATER FILTRATION SYSTEM, FOR ICE MACHINE	3M	ICE190-S	KES	GC					
25A	ICE MAKER	HOSHIZAKI	F-801MAI-C	KES	GC			●		
25B	ICE BIN	HOSHIZAKI	B-300SF4-G06S-R	KES	GC					
26	PREP TABLE : CG-CTR26 W/ DROP-IN HAND SINK	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES/GC				●	
26A	FAUCET, DECK MOUNT	DORMONT MANUFACTURING	LFF-DST4-G06S-R	KES	KES/GC			●		
27	UNDERCOUNTER HOT HOLDING	ALTO-SHAM	750-S	KES	GC	●				
28	UNDERCOUNTER REFRIGERATOR	EVEREST	ETBR1	KES	GC	●				
29	REACH IN REFRIGERATOR	HOSHIZAKI	R2A-HG							
30A	STAINLESS STEEL SHELF 12"D X 36"W	BUYOUT BY KES		KES	KES					
30B	STAINLESS STEEL SHELF 12"D X 48"W	BUYOUT BY KES		KES	KES					
30C	STAINLESS STEEL SHELF 12"D X 60"W	BUYOUT BY KES		KES	KES					
30D	STAINLESS STEEL SHELF 12"D X 24"W	BUYOUT BY KES		KES	KES					
31	PREP TABLE W/ DROP-ON SINK	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES/GC				●	
31A	FAUCET, DECK-MOUNT	DORMONT MANUFACTURING	LFF-WST8-S12S-R	KES	GC			●		
31B	TWIST WASTE	FISHER	22209	KES	GC					
32	RICE TABLE	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES	●				
33	EXHAUST WOOD	CAPTIVE-AIRE	REFER TO MECHANICAL DRAWINGS	CAPTIVE AIRE	GC	●				
33A	FIRE SUPRESSION	CAPTIVE-AIRE	REFER TO MECHANICAL DRAWINGS	CAPTIVE AIRE	GC	●				
33B	EXHAUST FAN	CAPTIVE-AIRE	REFER TO MECHANICAL DRAWINGS	CAPTIVE AIRE	GC	●				
33C	SUPPLY FAN	CAPTIVE-AIRE	REFER TO MECHANICAL DRAWINGS	CAPTIVE AIRE	GC					
34	RICE COOKER	TOWN EQUIPMENT	5715S	CAVA	CAVA	●				
35	LOW GRAB N GO	OASIS	CO3324R-OR-C04324R	KES	KES	●				REFER TO DRAINAGE FOR SIZE
36	DISPLAY REFRIGERATED CASE (SALAD/BEVERAGE)	FEDERAL INDUSTRIES	RSSL3785C	KES	KES	●				NOT USED
37	TIMER	DARLING FOOD SERVIICE PRODUCTS LLC	5001401							
38	SNEEZE GUARD	PREMIER FOOD SHIELDS	CUSTOM	KES	KES		●			
40	BLUE GAS HOSE	DORMONT	1675KIT2S48	KES	KES	●				
41	PITA PRESS	STAR	PST14E	KES	KES	●				
42	REFRIGERATOR, SANDWICH/SALAD PREP	CONTINENTAL INDUSTRIES	SW32N12M	KES	KES	●				
43	CONVECTION OVEN, ELECTRIC	TURBOCHEF	HHD-9500	KES	KES/GC					KES TO ADD YELLOW WHEELS CHOCK FOR FRONT WHEELS ON ALL EQUIPMENT UNDER THE HOOD
43A	24" OVEN CART	TURBOCHEF	NGC-1217-1	KES	KES/GC		●			KES TO ADD YELLOW WHEELS CHOCK FOR FRONT WHEELS ON ALL EQUIPMENT UNDER THE HOOD
44	BURNER RANGE W/ HOSE	BUYOUT BY KES	EMHP4-HD	KES	KES/GC		●			KES TO ADD YELLOW WHEELS CHOCK FOR FRONT WHEELS ON ALL EQUIPMENT UNDER THE HOOD
45	36" GROOVED GRIDDLE, GAS	GARLAND	GTGG36-GT36M	KES	KES/GC					OPTIONAL 48" GRIDDLE STAND AVAILABLE FOR CATERING OR NYC LOCATION - SEE PLAN FOR SIZE. KES TO ADD YELLOW WHEELS CHOCK FOR FRONT WHEELS ON ALL EQUIPMENT UNDER THE HOOD.
45B	36" GRILL STAND WITH LOCKING CASTERS	EQUIPMENT STAND		KES	KES		●			OPTIONAL 48" GRIDDLE STAND AVAILABLE FOR CATERING LOCATION - SEE PLAN FOR SIZE
46	FRYER, GAS W/ CASTERS AND SPLASH	BUYOUT BY KES	EGF-45/55	KES	KES/GC					KES TO ADD YELLOW WHEELC CHOCK FOR FRONT WHEELS ON ALL EQUIPMENT UNDER THE HOOD
47	INGREDIENT BIN	WINCO	IB-21	CAVA	CAVA					
48	TOTER TWO WHEEL TRASH CART, 96 GALLON	GLOBAL INDUSTRIAL	ANA96-00GRAY DARK COOL GRAY							
49	TILT TRUCK, 1/2 CU.YD. CAP 850LBS GRAY	GLOBAL INDUSTRIAL								
50	POS 1	GRANITE		GRANITE	GRANITE	●				
51	POS 2	GRANITE		GRANITE	GRANITE	●				
52	KDS	GRANITE		GRANITE	GRANITE	●				
52A	MAKE 1	GRANITE		GRANITE	GRANITE	●				
52B	MAKE 2	GRANITE		GRANITE	GRANITE	●				
52C	EXPO	GRANITE		GRANITE	GRANITE	●				
53	SHAKE MACHINE (FUTURE)	TAYLOR	C708	KES	KES	○				
53A	SHAKE MACHINE TOPPINGS DECK (FUTURE)	VENDOR		KES	KES					
54	STAINLESS TABLE WITH DROP-IN SINK	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES				●	
54A	DECK MOUNT	DORMONT MANUFACTURING	LFF-DST4-G06S-R	KES	KES			●		
58	UC CUP DISPENSER	SAN JAMAR		KES	KES					
59	MEGA TOP SANDWICH / SALAD PREP REFRIGERATOR	EVEREST REFRIGERATION	EPBR2	KES	KES	●				
60	D.O. TABLE W/ HOT WELL	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES	●				
60A	DROP-IN HOT WELL	ALTO-SHAM	300-HW/D6	KES	KES/GC	●				
62	24"W X 30"D STAINLESS STEEL TABLE	CUSTOM FABRICATION		KES	KES/GC					
63	48"W X 32"D STAINLESS STEEL TABLE			KES	KES/GC					
65	PICK UP BY CAR BEVERAGE COUNTER	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES/GC				●	
66	ICE DISPENSER W/ BEVERAGE HEADS	MAINE ROOT		MAINE ROOT	MAINE ROOT/GC	●				
67	WATER FILTRATION SYSTEM	3M	HF160-CLS - 3M	KES	GC			●		
68	BEVERAGE COUNTER	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES/GC					
71	COLD BEVERAGE DISPENSER	GRINDMASTER-CECILWARE	D35-3	CAVA	CAVA	●				
72	COMPACT UNDERCOUNTER REFRIGERATOR	EVEREST	ETBR1	KES	KES	●				
73	GLASS WATER BEV COUNTER	T&S	5GF-12P	KES	KES					
74	DROP-IN TRASH BIN	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES					
75	FLATWARE HOLDER, CYLINDER	WINCO	WINCO-FC-SL	CAVA	CAVA	●		●		
76	DISPENSER, LID	SAN JAMAR	L3400	KES	KES/GC					
77	DISPENSER, NAPKIN	DISPENSE RITE	CT-MINI-BS	CAVA	CAVA					
78	TRASH RECEPTACLE			CAVA	CAVA					
84	STAINLESS STEEL COUNTERTOP	CUSTOM FABRICATION	REFER TO SHOP DRAWINGS	KES	KES/GC					
84A	DROP-IN HOT WELL	ALTO-SHAM	300-HW/D6	KES	KES	●				
84B	DROP-IN HOT WELL	ALTO-SHAM	100-HW/D643	KES	KES	●				
84C	DROP-IN COLD WELL	WELLS	RCP-400	KES	KES	●				
84D	DROP-IN COLD WELL	WELLS	RCO-300	KES	KES	●				
85	PREP N PRINT	ECOLAB	TD-2120N	KES	KES	●				
90	48" GROOVED GRIDDLE, GAS	GARLAND	GTGG48-GT48M	KES	KES		●			
90A	48" EQUIPMENT STAND W/ LOCKING CASTERS			KES	KES					

EQUIPMENT SCHEDULE SPACE NUMBERS - 8,13,20,64,70

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FIXTURE, FURNITURE & EQUIPMENT SCHEDULE

A131

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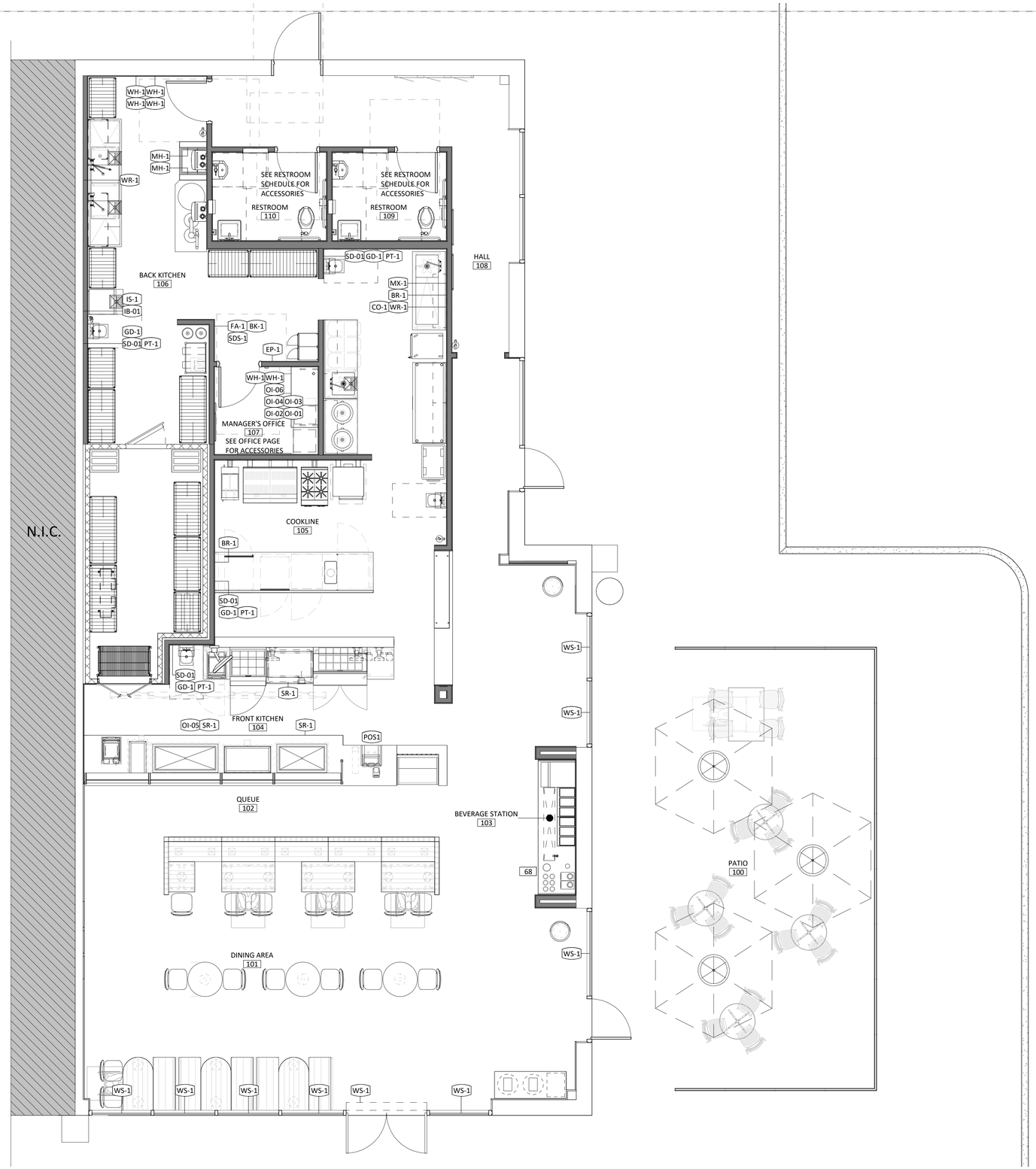

1 A132 HEALTH ANG HANGING PLAN
1/4" = 1'-0"

GENERAL NOTES

A. ITEMS PROVIDED BY OPERATIONS AND INSTALLED BY G.C

B. G.C. TO COORDINATE FINAL LOCATION WITH OPS TEAM OR CONSTRUCTION MANAGER ON SITE

HEALTH & HANGING

NO.	MANUFACTURER	MANUFACTURER	COUNT	HEIGHT
SR-1	SPEED RAIL, 22"W, CENTERED	TABLECRAFT 5122	3	
GD-1	GLOVE DISPENSER, WALL MOUNT	JOHN BOOS & CO. DS-3-X	4	
PT-1	PAPER TOWEL DISPENSER, WALL MOUNT	BOBBRICK DOME 2620	4	
SD-01	SOAP DISPENSER	ECOLAB	4	
CO-1	CAN OPENER, TABLE MOUNT	EDLUND 11300	1	
MH-1	MOP HOLDER : UNGER ENTERPRISES INC	HO350	2	
FA-1	FIRST AID KIT	DAY MARK SAFETY SYSTEMSIT117598	1	
BK-1	BIOHAZARD KIT	IMPACT ABSERBENTS, INC. BK607SW-E	1	
WR-1	24" WALL RACK W/ 8 HOOKS	H.A. SPARKE, INC. #SRK-2	2	
IS-1	ICE SCOOP	SAN JAMAR SI2000	1	
BR-1	18" MAGNETIC BAR RAIL, WALL MOUNT	TABLECRAFT PRODUCTS 2918P	2	
EP-1	EMPLOYEE REGULATIONS POSTER		1	
MX-1	MIXER	ROBOT COUPE USA INC. MP350VV	1	
WH-1	WALL HOOK, SOLID BRASS, DOUBLE	FRANKLIN MACHINE 1341040	6	
OI-01	CORK BULLETIN BOARD	SEE A502	1	
OI-02	WOOD CLIPBOARDS	SEE A502	1	
OI-03	DOCUMENT FRAMES	SEE A502	1	
OI-04	KEY RACK	SEE A502	1	
OI-05	WALL CLOCK	SEE A502	1	
OI-06	POCKET WALL FILE	SEE A502	1	
IB-01	ICE BUCKET	SAN JAMAR SI6000	1	
WS-1	WINDOW SHADES		9	

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HEALTH AND HANGING PLAN

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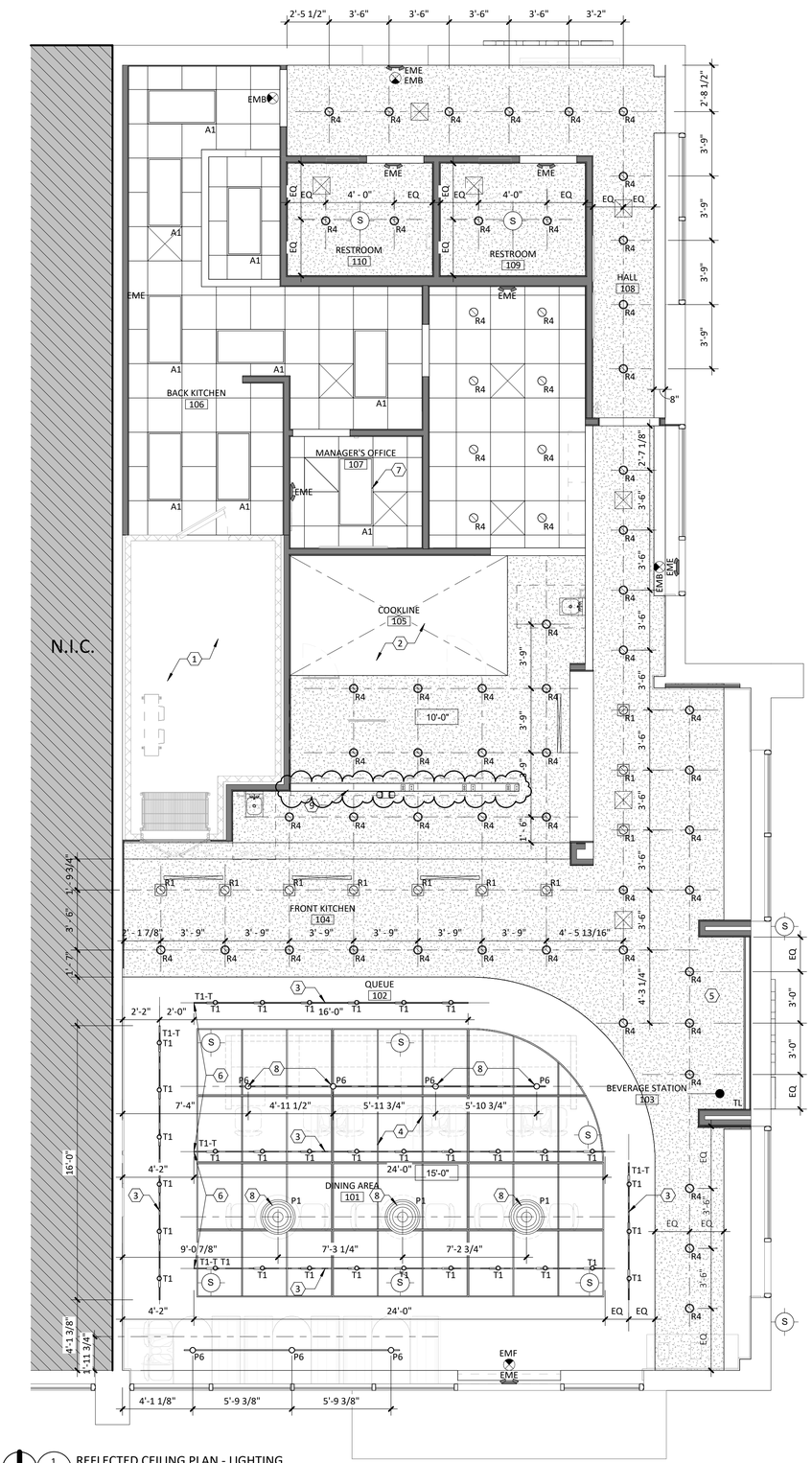


1 A140 REFLECTED CEILING PLAN - LIGHTING
1/4" = 1'-0"

REFLECTED CEILING PLAN LEGEND

	24"x 24" CEILING TILE
	GYPSUM BOARD CEILING REFER TO PLAN
	SOUND ATTENUATION PANEL TECTUM PANEL
	ACCESS PANEL CENDREX EDG-GYP FLUSH ACCESS DOOR W/ CONCEALED PUSH LATER
	SUPPLY AIR DIFFUSER (SEE MECHANICAL SHEETS)
	RETURN AIR GRILLE (SEE MECHANICAL SHEETS)
S	SPEAKERS (BY VENDOR)
	CAMERA (BY VENDOR)

NOTES:
1. SEE MECHANICAL AND ELECTRICAL SHEETS FOR ALL FIXTURE SPECIFICATIONS, WIRING, AND POWER REQUIREMENTS.
2. "*" WITHIN THE CEILING ELEVATION TAG DENOTES INSTALLATION OF R-13 SOUND BATT ABOVE CEILING

LIGHTING LEGEND

TAG	SYMBOL	DESCRIPTION	COUNT	MOUNTING HEIGHT
A1		RECESSED TROFFER (LAY-IN)	9	RECESSED
P1		DECORATIVE PENDANT	3	7'-8" AFF 6'-8" AFF IF ABOVE TABLE
P6		DECORATIVE PENDANT	7	7'-2 1/2" AFF
R1		ADJUSTABLE DOWNLIGHT	7	RECESSED
R4		RECESSED CAN	63	RECESSED
T1		TRACK HEAD (DIRECTIONAL)	33	TRACK
T1-T		TRACK	96'	11'-8" AFF
TL		LED TAPE LIGHT	1	
SL		STRING LIGHT	0	
EG		EXTERIOR EGRESS WALL SCONCE	0	CENTERED ABOVE DOOR
EME		EMERGENCY LIGHT	9	
EMF		EXIT SIGN (FOH)	3	
EMB		EXIT SIGN (BOH)	1	
EM2		EMERGENCY LIGHT	0	
WS3		WALL SCONCE	0	

NOTE-
1. MOUNTING HEIGHTS TO BOTTOM OF FIXTURE.
2. FIXTURES NOTED [E] ARE EXISTING TO REMAIN. CLEAN AND RELAMP AS REQUIRED.
3. ALL FRONT OF HOUSE LIGHTING TO BE 2700K

REFLECTED CEILING PLAN GENERAL NOTES

A. WHERE CEILINGS ARE INDICATED TO BE GYP. BD., PROVIDE 1/2" GYPSUM BOARD ON METAL STUD FRAMING OR SUSPENDED CEILING SYSTEM. PROVIDE CEILING GYP. BD. CONTROL JOINTS PER MANUFACTURER'S RECOMMENDATIONS U.N.O.

B. VERTICALLY STACK LIGHT SWITCHES, THERMOSTATS, AND LIFE SAFETY DEVICES TO THE GREATEST EXTENT POSSIBLE.

C. CEILING HEIGHTS NOTED ARE FROM TOP OF FINISHED FLOOR (A.F.F.) TO UNDERSIDE OF FINISHED CEILING, U.N.O.

D. THE DIMENSIONS AND WORK NOTED ON THESE DRAWINGS ARE INDICATED FOR DESIGN INTENT. IF THE INSTALLATION OF ELECTRICAL, MECHANICAL, PLUMBING, OR FIRE PROTECTION WORK INTERFERES WITH THIS INTENT, THE ARCHITECT SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH CONSTRUCTION.

E. SEE PARTITION TYPE DETAIL SHEET FOR TYPICAL DEVICE MOUNTING HEIGHT IN INFORMATION.

F. REFER TO ENGINEERING DRAWINGS FOR ALL CIRCUITING AND SWITCHING INFORMATION. ARCHITECTURAL DRAWINGS TO DICTATE QUANTITIES ONLY. IF DISCREPANCY OCCURS, NOTIFY ARCHITECT PRIOR TO PROCEEDING WITH CONSTRUCTION.

G. REFER TO FINISH SCHEDULE FOR FURTHER SPECIFICATION OF CEILING MATERIALS AND FINISHES.

H. G.C. TO VERIFY AND COORDINATE ALL CONDITIONS IN FIELD PRIOR TO START OF WORK, INCLUDING ELECTRICAL PANEL CAPACITY, LOCATIONS, AND CLEARANCES AT MECHANICAL DUCTS, ELECTRICAL ITEMS, SPRINKLERS, AND ASSOCIATED PIPING. ANY CONFLICTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER AT THE EARLIEST OPPORTUNITY.

I. REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR LOCATION OF SUPPLY AND RETURN AIR DIFFUSERS, THERMOSTATS, EXIT SIGNS, AND LIFE SAFETY EQUIPMENT.

J. ACT AND GRID TO BE CENTERED IN ROOMS U.N.O.

K. SPRINKLER HEADS, LIGHT FIXTURES, DIFFUSERS, AND ETC. TO BE CENTERED WITHIN ACT, U.N.O. G.C. TO VERIFY SECURITY CAMERA LOCATIONS WITH OWNER'S VENDOR AND COORDINATE WITH ARCHITECT.

L. HVAC DIFFUSERS, EQUIPMENT ACCESS PANELS & HATCHES, SPRINKLER HEAD ESCUTCHEON PLATES, EMERGENCY LIGHT FIXTURES, SMOKE DETECTORS, SECURITY FEATURES, AUDIO DEVICES, ETC TO MATCH ADJACENT CEILING FINISH U.N.O. SUBMIT LOCATIONS, FINISHES & STYLES OF ALL CEILING FIXTURES TO ARCHITECT FOR APPROVAL PRIOR TO PURCHASING OR CONSTRUCTION.

M. ALL SPRINKLER HEADS LOCATED IN CLOSED CEILING IN VIEW OF PUBLICS AREAS SHALL BE RECESSED AND CONCEALED WITH AN ESCUTCHEON PLATE.

N. G.C. TO COORDINATE LOCATION OF ALL EQUIPMENT ACCESS PANELS & HATCHES WITH NECESSARY EQUIPMENT. CEILING OR PARTITION FEATURES, LIGHTING, AND OTHER EQUIPMENT. SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO COMMENCING WITH WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS THAT INTERFERE WITH THE DESIGN INTENT PRIOR TO INSTALLATION OF EQUIPMENT OR SERVICES.

O. ALL ELECTRICAL CONDUIT, WIRING, PLUMBING LINES, AND OTHER SERVICES TO BE ROUTED THROUGH CLOSED CEILING, FRAMED WALLS, FAUX BEAMS, ETC. AS NECESSARY TO CONCEAL FROM VIEW.

P. G.C. TO COORDINATE THE CEILING FRAMING AROUND SUCH ITEMS AS THE HOOD AND WALK-IN COOLER BOX. THE G.C. TO COORDINATE THE CEILING FRAMING AROUND SUCH ITEMS AS THE HOOD AND WALK-IN COOLER BOX.

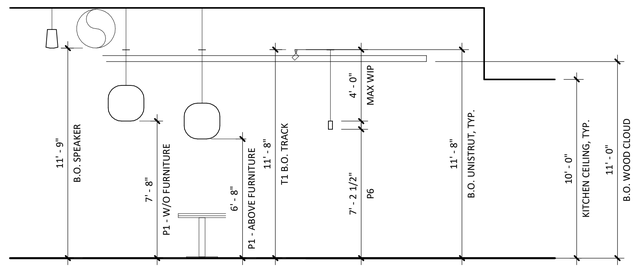
Q. SECURITY CAMERA SCOPE AND LOCATION BY SECURITY TEAM.

R. SPEAKER SCOPE AND LOCATION BY AUDIO VENDER.

S. CEILINGS TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C635 AND C636 PER 2018 IBC 808.1.1.1.

REFLECTED CEILING PLAN CODED NOTES

1. G.C. TO COORDINATE INSTALLATION OF WALK-IN, WALK-IN LIGHTS AND CEILING LAYOUT AROUND BOX WITH FOOD SERVICE CONSULTANT. LIGHTS BY AMERIKOOLER, INSTALLED BY GC.
2. LOCATION OF FOOD SERVICE PROVIDED EXHAUST/HOOD. COORDINATE CEILING WITH PARTITION FRAMERS. MAKE-UP AIR GRILL TO HAVE 1/4" MAX. REVEAL BENEATH FINISHED FACE OF DRYWALL CEILING. G.C. TO ENSURE ANCILLARY PANEL OPENS UNOBSTRUCTED.
3. HOLD TRACK LIGHTING 2" ABOVE WOOD GRID.
4. SUSPENDED WOOD GRID PANEL SYSTEM BY MILLWORKER. SEE MILLWORK DRAWINGS. SUSPENDED FROM CEILING WITH UNI-STRUT. PAINT UNISTRUT PT-106. UNISTRUT TO BE PLACED AS HIGH AS POSSIBLE.
5. PROVIDE CLEAN, SMOOTH, WASHABLE PTD. DRYWALL SURFACE ABOVE BEVERAGE COUNTER. INSTALL 2X STUDS FROM BOTTOM CHORD OF TRUSS TO ADJACENT BOTTOM CHORD OF TRUSS. PROVIDE EDGE BEADS AROUND PERIMETER OF DRYWALL. NEW SURFACE TO BE NO SMALLER THAN AREA OF BEVERAGE COUNTER.
6. ALIGN.
7. CENTER LIGHT.
8. MOUNT PENDANTS FROM UNISTRUT AND CENTER LIGHTING FIXTURE OVER TABLE. REFER TO DETAIL 4/AS01.
9. PROVIDE BLOCKING ABOVE D.O.LINE.



2 A140 TYPICAL LIGHTING HEIGHTS
NTS

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448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

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REFLECTED CEILING PLAN - LIGHTING

A140

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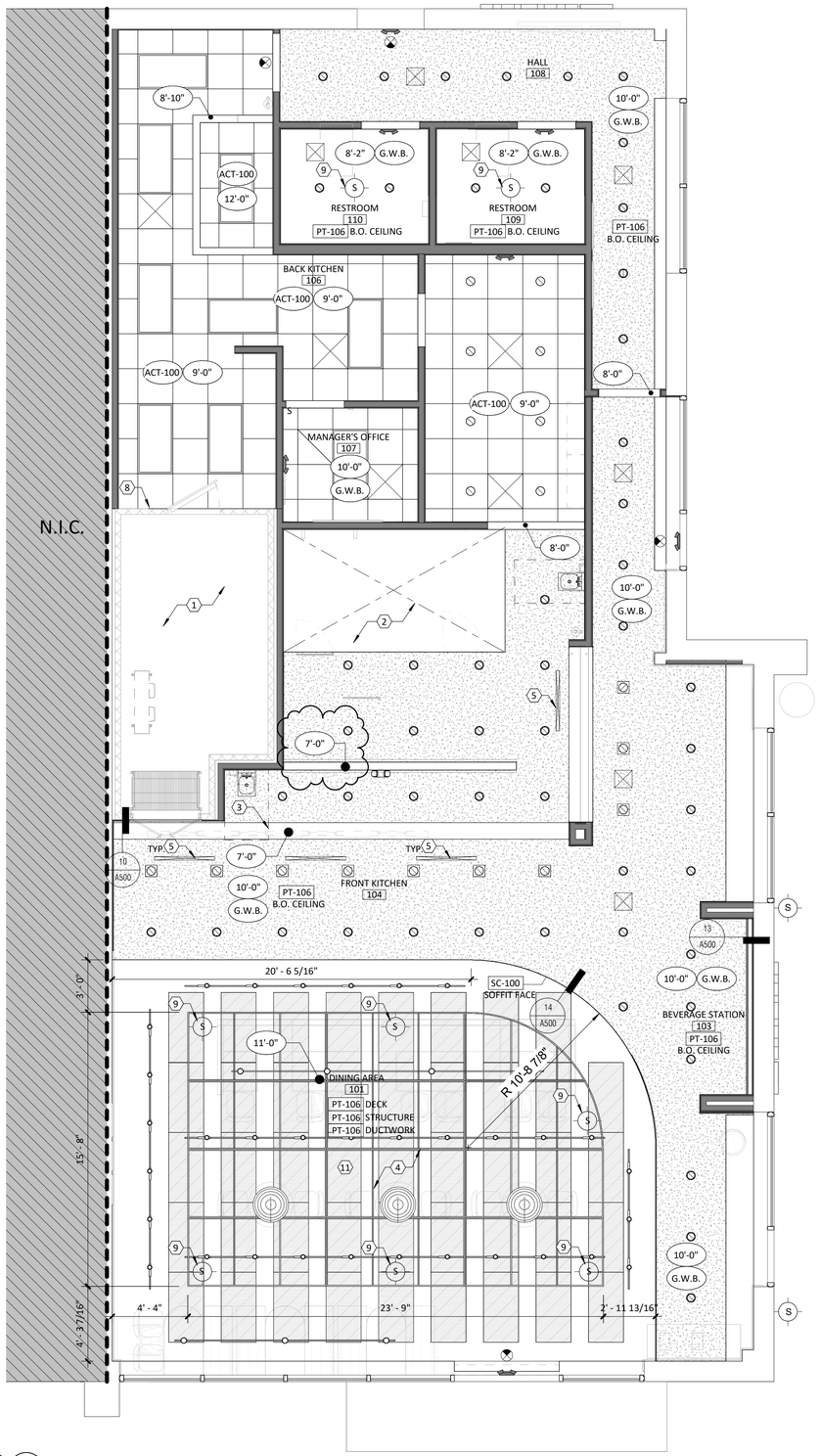

1 A141 REFLECTED CEILING PLAN - FINISHES
1/4" = 1'-0"

REFLECTED CEILING PLAN LEGEND

	24"x 24" CEILING TILE
	GYPSUM BOARD CEILING REFER TO PLAN
	SOUND ATTENUATION PANEL TECTUM PANEL
	ACCESS PANEL CENDREX EDG-GYP FLUSH ACCESS DOOR W/ CONCEALED PUSH LATER
	SUPPLY AIR DIFFUSER (SEE MECHANICAL SHEETS)
	RETURN AIR GRILLE (SEE MECHANICAL SHEETS)
S	SPEAKERS (BY VENDOR)
	CAMERA (BY VENDOR)

NOTES:
1. SEE MECHANICAL AND ELECTRICAL SHEETS FOR ALL FIXTURE SPECIFICATIONS, WIRING, AND POWER REQUIREMENTS.
2. "*" WITHIN THE CEILING ELEVATION TAG DENOTES INSTALLATION OF R-13 SOUND BATT ABOVE CEILING

REFLECTED CEILING PLAN GENERAL NOTES

A. WHERE CEILINGS ARE INDICATED TO BE GYP. BD., PROVIDE 1/2" GYPSUM BOARD ON METAL STUD FRAMING OR SUSPENDED CEILING SYSTEM. PROVIDE CEILING GYP. BD. CONTROL JOINTS PER MANUFACTURER'S RECOMMENDATIONS U.N.O.

B. VERTICALLY STACK LIGHT SWITCHES, THERMOSTATS, AND LIFE SAFETY DEVICES TO THE GREATEST EXTENT POSSIBLE.

C. CEILING HEIGHTS NOTED ARE FROM TOP OF FINISHED FLOOR (A.F.F.) TO UNDERSIDE OF FINISHED CEILING, U.N.O.

D. THE DIMENSIONS AND WORK NOTED ON THESE DRAWINGS ARE INDICATED FOR DESIGN INTENT. IF THE INSTALLATION OF ELECTRICAL, MECHANICAL, PLUMBING, OR FIRE PROTECTION WORK INTERFERES WITH THIS INTENT, THE ARCHITECT SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH CONSTRUCTION.

E. SEE PARTITION TYPE DETAIL SHEET FOR TYPICAL DEVICE MOUNTING HEIGHT IN INFORMATION.

F. REFER TO ENGINEERING DRAWINGS FOR ALL CIRCUITING AND SWITCHING INFORMATION. ARCHITECTURAL DRAWINGS TO DICTATE QUANTITIES ONLY. IF DISCREPANCY OCCURS, NOTIFY ARCHITECT PRIOR TO PROCEEDING WITH CONSTRUCTION.

G. REFER TO FINISH SCHEDULE FOR FURTHER SPECIFICATION OF CEILING MATERIALS AND FINISHES.

H. G.C. TO VERIFY AND COORDINATE ALL CONDITIONS IN FIELD PRIOR TO START OF WORK, INCLUDING ELECTRICAL PANEL CAPACITY, LOCATIONS, AND CLEARANCES AT MECHANICAL DUCTS, ELECTRICAL ITEMS, SPRINKLERS, AND ASSOCIATED PIPING. ANY CONFLICTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER AT THE EARLIEST OPPORTUNITY.

I. REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR LOCATION OF SUPPLY AND RETURN AIR DIFFUSERS, THERMOSTATS, EXIT SIGNS, AND LIFE SAFETY EQUIPMENT.

J. ACT AND GRID TO BE CENTERED IN ROOMS U.N.O.

K. SPRINKLER HEADS, LIGHT FIXTURES, DIFFUSERS, AND ETC. TO BE CENTERED WITHIN ACT, U.N.O. G.C. TO VERIFY SECURITY CAMERA LOCATIONS WITH OWNER'S VENDOR AND COORDINATE WITH ARCHITECT.

L. HVAC DIFFUSERS, EQUIPMENT ACCESS PANELS & HATCHES, SPRINKLER HEAD ESCUTCHEON PLATES, EMERGENCY LIGHT FIXTURES, SMOKE DETECTORS, SECURITY FEATURES, AUDIO DEVICES, ETC TO MATCH ADJACENT CEILING FINISH U.N.O. SUBMIT LOCATIONS, FINISHES & STYLES OF ALL CEILING FIXTURES TO ARCHITECT FOR APPROVAL PRIOR TO PURCHASING OR CONSTRUCTION.

M. ALL SPRINKLER HEADS LOCATED IN CLOSED CEILING IN VIEW OF PUBLICS AREAS SHALL BE RECESSED AND CONCEALED WITH AN ESCUTCHEON PLATE.

N. G.C. TO COORDINATE LOCATION OF ALL EQUIPMENT ACCESS PANELS & HATCHES WITH NECESSARY EQUIPMENT. CEILING OR PARTITION FEATURES, LIGHTING, AND OTHER EQUIPMENT. SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO COMMENCING WITH WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS THAT INTERFERE WITH THE DESIGN INTENT PRIOR TO INSTALLATION OF EQUIPMENT OR SERVICES.

O. ALL ELECTRICAL CONDUIT, WIRING, PLUMBING LINES, AND OTHER SERVICES TO BE ROUTED THROUGH CLOSED CEILING, FRAMED WALLS, FAUX BEAMS, ETC. AS NECESSARY TO CONCEAL FROM VIEW.

P. G.C. TO COORDINATE THE CEILING FRAMING AROUND SUCH ITEMS AS THE HOOD AND WALK-IN COOLER BOX. THE G.C. TO COORDINATE THE CEILING FRAMING AROUND SUCH ITEMS AS THE HOOD AND WALK-IN COOLER BOX.

Q. SECURITY CAMERA SCOPE AND LOCATION BY SECURITY TEAM.

R. SPEAKER SCOPE AND LOCATION BY AUDIO VENDER.

S. CEILINGS TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C635 AND C636 PER 2018 IBC 808.1.1.1.

REFLECTED CEILING PLAN CODED NOTES (#)

1. G.C. TO COORDINATE INSTALLATION OF WALK-IN, CEILING LAYOUT AROUND BOX WITH FOODSERVICE CONSULTANT.
2. LOCATION OF FOOD SERVICE PROVIDED EXHAUST/HOOD. COORDINATE CEILING WITH PARTITION FRAMERS. MAKE-UP AIR GRILL TO HAVE 1/4" MAX. REVEAL BENEATH FINISHED FACE OF DRYWALL CEILING. G.C. TO ENSURE ANCILLARY PANEL OPENS UNOBSTRUCTED.
3. PROVIDE BLOCKING IN CEILING FOR DIGITAL MENU BOARDS. REFER TO DETAIL 1/A501
4. SUSPENDED WOOD SLAT PANEL SYSTEM BY MILLWORKER. SEE MILLWORK DRAWINGS. SUSPENDED FROM CEILING WITH UNI-STRUT. PAINT UNISTRUT PT-106.
5. CENTER DIFFUSER BETWEEN LIGHTS.
6. ~~INSTALL ALUMINUM INFILL IN CANOPY OVER PICK UP WINDOW. REFER RO DETAIL 9/A502~~
7. LOCATION OF ACCESS PANEL. COORDINATE IN FIELD ACCESS REQUIREMENTS. ALIGN ACCESS PANELS WITH CENTERLINE OF LIGHTING FIXTURE, DIFFUSERS AND OTHER CEILING ELEMENTS WHERE POSSIBLE.
8. GC TO CLOSE GAP ABOVE WALK IN AND ACT TILE. GC TO CLOSE ANY GAP BETWEEN WALLS AND WALK-IN COOLER.
9. PROVIDE POWER FOR SPEAKER.
10. ~~SOFFIT EDGE TO ALIGN WITH MULLION.~~
11. LOCATION OF SOUND ATTENUATION PANELS.

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REFLECTED CEILING PLAN - FINISHES

A141

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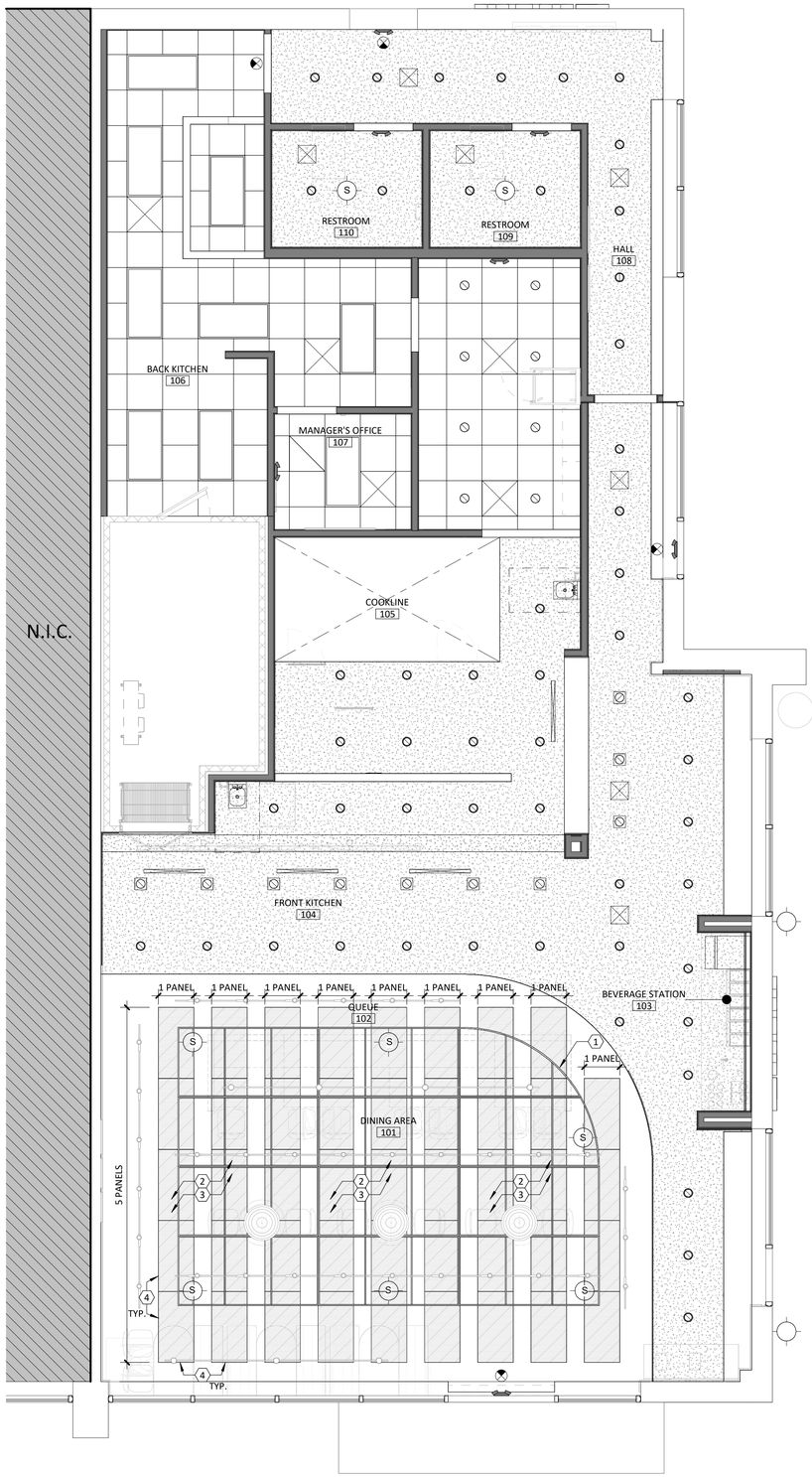

1 / A142 SOUND ATTENUATION PLAN
1/4" = 1'-0"

SOUND ATTENUATION PLAN LEGEND

	24"x 24" CEILING TILE
	GYPSUM BOARD CEILING REFER TO PLAN
	SUPPLY AIR DIFFUSER (SEE MECHANICAL SHEETS)
	RETURN AIR GRILLE (SEE MECHANICAL SHEETS)

NOTES:
1. SEE MECHANICAL AND ELECTRICAL SHEETS FOR ALL FIXTURE SPECIFICATIONS, WIRING, AND POWER REQUIREMENTS.
2. "*" WITHIN THE CEILING ELEVATION TAG DENOTES INSTALLATION OF R-13 SOUND BATT ABOVE CEILING

SOUND ATTENUATION PLAN GENERAL NOTES

A. G.C. SHALL FURNISH AND INSTALLATION SOUND ATTENUATION TECTUM PANELS ON OPEN CEILING DIRECT TO STRUCTURE AND/OR DECK ABOVE THE DINING ROOM. G.C. TO COVER AT LEAST 70% OF DINING ROOM OPEN DECK AREA. IF NOT POSSIBLE DUE TO CEILING OBSTRUCTION, G.C. TO COORDINATE WITH CAVA FOR LOCATIONS OF ADDITIONAL PANELS. TYPICAL INSTALLATION BETWEEN JOIST STRUCTURE IN A UNIFORM AND ORTHOGONAL PLACEMENT CONCENTRATED ABOVE THE SEATING AREA.

B. DIMENSIONS SHOWN ON DRAWINGS RELATED TO SOUND ATTENUATION PANELS ARE TO EXISTING WALLS OR CENTER OF JOIST.

C. SOUND ATTENUATION PANELS PROVIDED AND INSTALLED BY G.C.

D. G.C. SHALL FURNISH AND INSTALL SOUND ATTENUATION TECTUM PANELS ON OPEN CEILING DIRECT TO STRUCTURE AND/OR DECK ABOVE THE DINING ROOM. G.C. TO COVER AT LEAST 70% OF DINING ROOM OPEN DECK AREA. IF NOT POSSIBLE DUE TO CEILING OBSTRUCTION, G.C. TO COORDINATE WITH CAVA FOR LOCATIONSOF ADDITIONAL PANELS. TYPICAL INSTALLATION BETWEEN JOIST STRUCTURE, UNIFORM AND ORTHOGONAL PLACEMENT THROUGHOUT THE SPACE.

SOUND ATTENUATION PLAN CODED NOTES (#)

1. SUSPENDED WOOD SLAT PANEL SYSTEM BELOW. SEE MILLWORK DRAWINGS, SUSPENDED FORM CEILING WITH UNI-STRUT. PAINT UNISTRUT PT-106.
2. CENTER SOUND ATTENUATION PANEL BETWEEN JOISTS, TYP. REFER 4/A502.
3. G.C. TO SECURE SUSPENDED ELEMENTS THROUGH THE SOUND ATTENUATION PANELS AND TO UNISTRUT AS REQUIRED.
4. ALIGN.

SOUND ATTENUATION PANEL LEGEND

SYMBOL	DESCRIPTION	MANUF./MODEL	FINISH	COUNT	MOUNTING HEIGHT
	SOUND ATTENUATION PANEL TECTUM PANEL	#8182T10 ARMSTRONF TECTUM DIRECT-ATTACH HIGH NRC	NATURAL FINISH, PAINT PT-106	44	BOTTOM CHORD OF JOIST
	ALTERNATE SOUND ATTENUATION PANEL TECTUM PANEL	ACOUSTICAL SURFACES ENVIROCOUSTIC WOOD WOOL DIRECT ATTACH	WHITE	N/A	BOTTOM CHORD OF JOIST
	ADDITIONAL SOUND ATTENUATION PANEL TECTUM PANELS	CFAB CELLULOSE ABSORPTIVE ACOUSTICAL PANELS 1/2" THICK		N/A	BOTTOM OF CHAIRS, BENCHES, AND TABLES

NOTE:
1. MOUNTING HEIGHTS TO BOTTOM OF CHORD.
2. GC TO COORDINATE INSTALL OF ADDITIONAL 16 PANELS WITH CAVA

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SOUND ATTENUATION PLAN

A142

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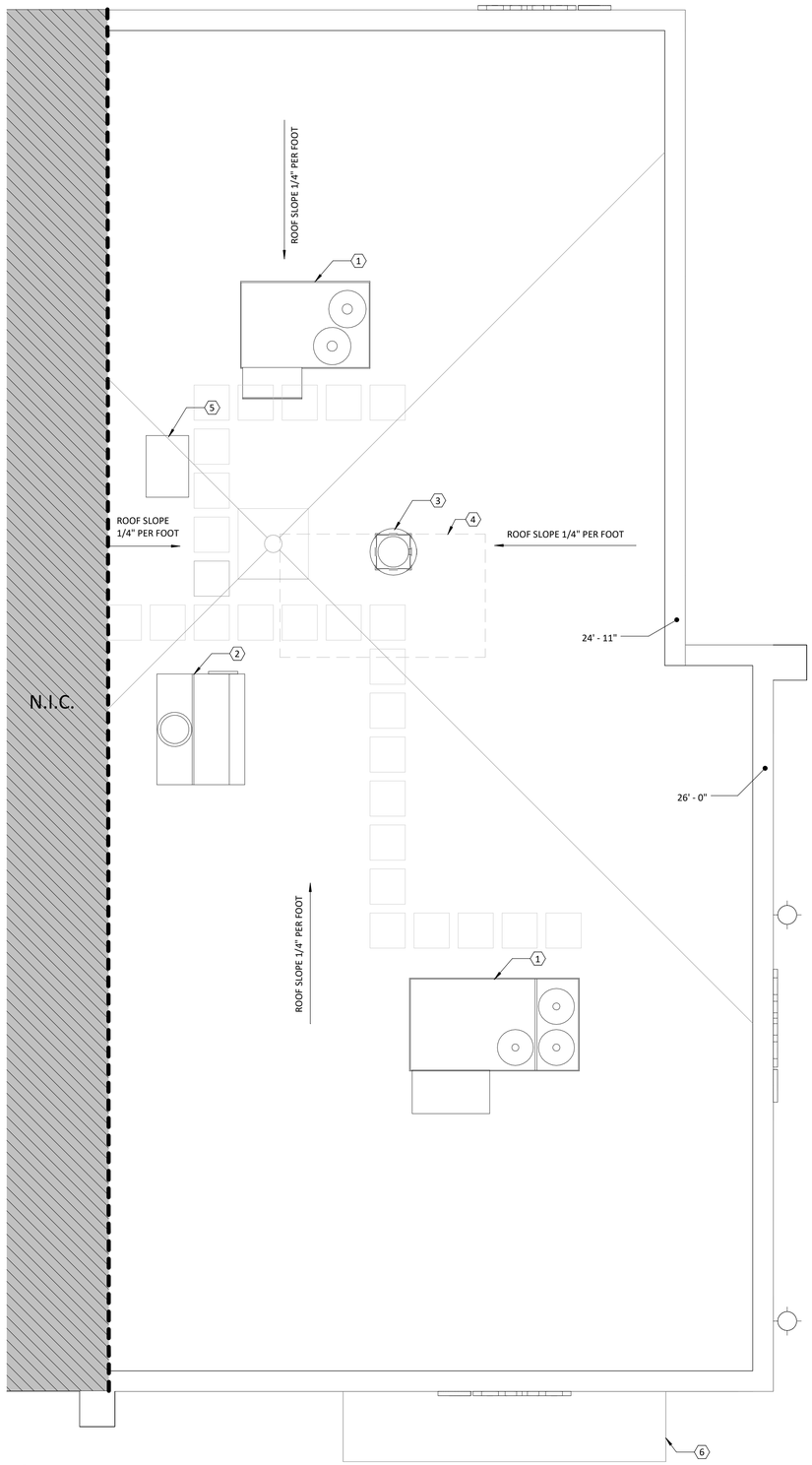

1 A150 ROOF PLAN
1/4" = 1'-0"

ROOF PLAN GENERAL NOTES

1. ROOF REINFORCEMENT FOR RTUS HAS BEEN DESIGNED AND INSTALLED BY THE PROPERTY OWNER UNDER A SEPARATE PERMIT. IF LOCATION OR ORIENTATION OF A UNIT MUST CHANGE, NOTIFY ARCHITECT IMMEDIATELY.
2. REFER TO MECHANICAL PLANS FOR ADDITIONAL ROOF TOP EQUIPMENT DETAILS AND NOTES.
3. CONTRACTOR TO ADJUST AS NECESSARY IN FIELD TO MAINTAIN WORKING CLEARANCES AND TO COORDINATE BEST WITH EXISTING STRUCTURAL REINFORCEMENTS MEMBERS. CONTACT ARCHITECT WITH AN DISCREPANCIES.
4. LANDLORD ROOFING CONTRACTOR TO PROVIDE ALL ROOF PENETRATIONS TO MAINTAIN WARRANTY. COORDINATE ALL ROOFTOP PENETRATIONS, FLASHING AND REPAIR WITH CAVA CONSTRUCTION MANAGER PRIOR TO COMMENCEMENT OF WORK.
5. DIMENSIONS ARE TO CENTER OF PENETRATION AND ARE FOR REFERENCE ONLY. ROOFING CONTRACTOR TO ADJUST AS NECESSARY IN FIELD. CONTACT ENGINEERING CONSULTANTS FOR ANY MAJOR MODIFICATIONS TO LAYOUT.
6. JOISTS FOR SHELL BUILDING WERE DESIGNED FOR THE RTU WEIGHTS AND PLACEMENT EXHIBITED. IF LOCATION OR ORIENTATION OF A UNIT MUST CHANGE, NOTIFY ARCHITECT IMMEDIATELY.

ROOF PLAN CODED NOTES (#)

1. ROOFTOP UNIT AND CURB BY LL.
2. MAKEUP AIR UNIT BY CAVA. CURB AND PENETRATION BY LL.
3. ROOF MOUNTED EXHAUST FAN. CURB AND PENETRATION BY LL.
4. OUTLINE OF HOOD BELOW.
5. ROOF MOUNTED EQUIPMENT SUPPORT RAIL AND INSTALL REMOTE CONDENSING UNIT FOR WALK-IN COOLER.
6. EXISTING CANOPY.

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ROOF PLAN

A150

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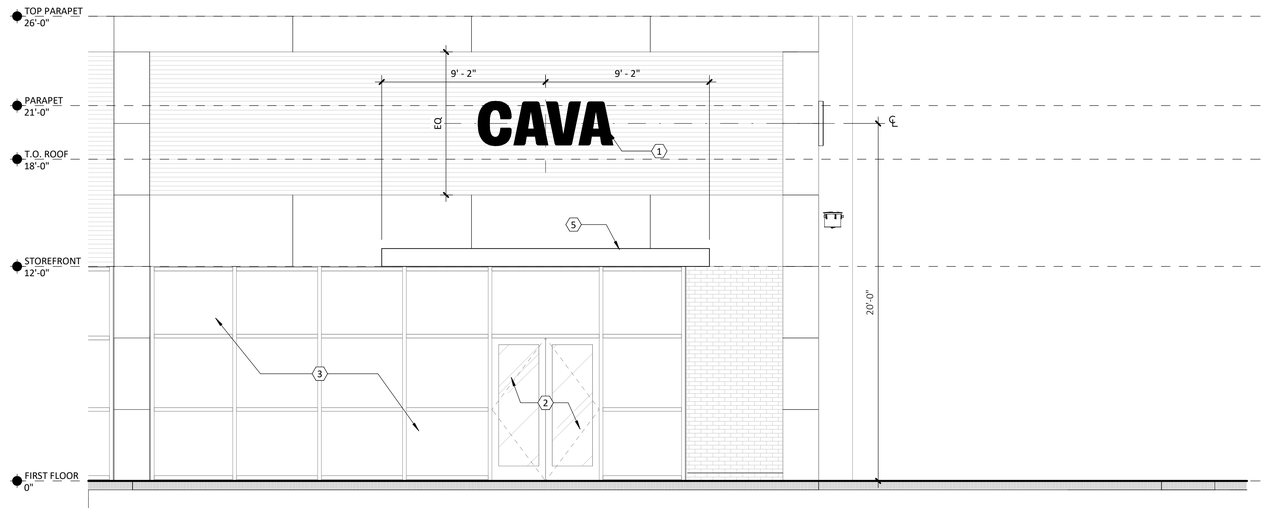
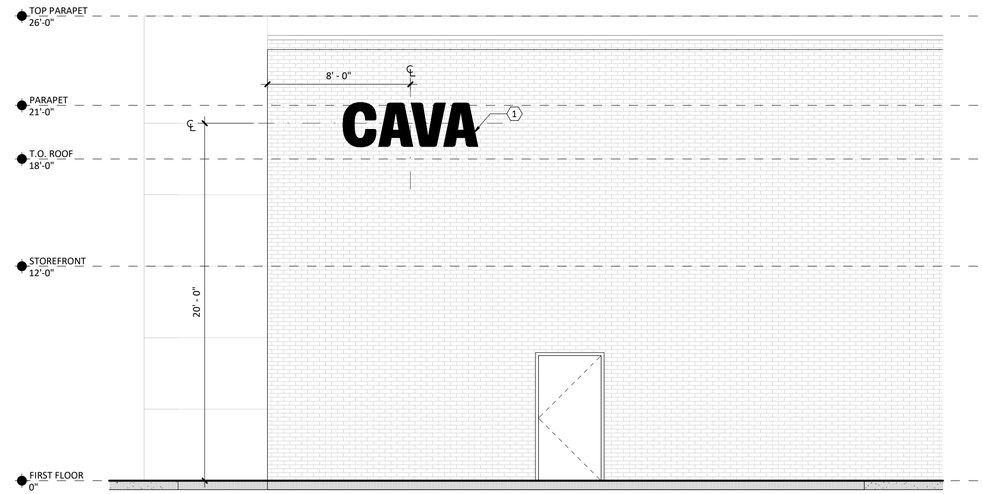
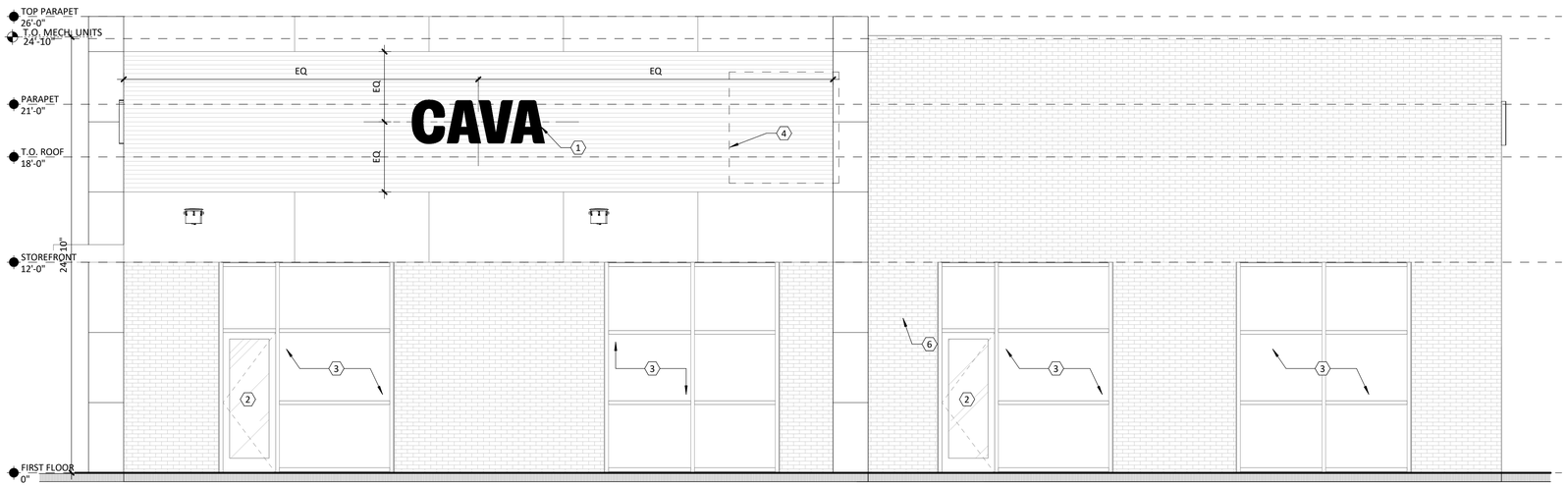


1 A210 EXTERIOR ELEVATION - WEST
1/4" = 1'-0"



2 A210 EXTERIOR ELEVATION - EAST
1/4" = 1'-0"



3 A210 EXTERIOR ELEVATION - SOUTH
1/4" = 1'-0"

EXT. ELEVATION CODED NOTES (#)

1. REFERENCE SIGN SHOP DRAWINGS FOR LOCATION AND SIZE OF NEW SIGN. SIGNAGE UNDER SEPARATE PERMIT, GC TO PROVIDE BLOCKING AS NEEDED AND PULL POWER.
2. NEW DOOR VINYL BY SIGN VENDOR.
3. EXISTING STOREFRONT SYSTEM.
4. OUTLINE OF NEW MECHANICAL EQUIPMENT.
5. EXISTING CANOPY.
6. CAVA ROUND BLADE SIGN.

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EXTERIOR ELEVATIONS

A210

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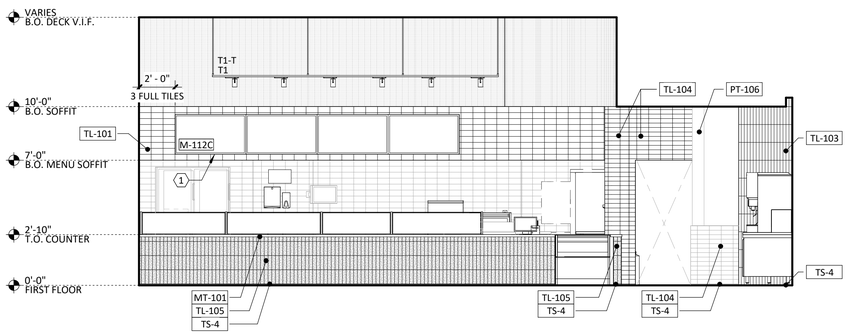
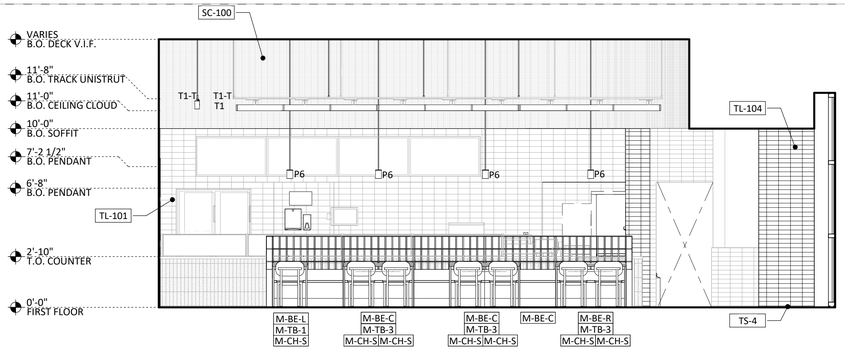


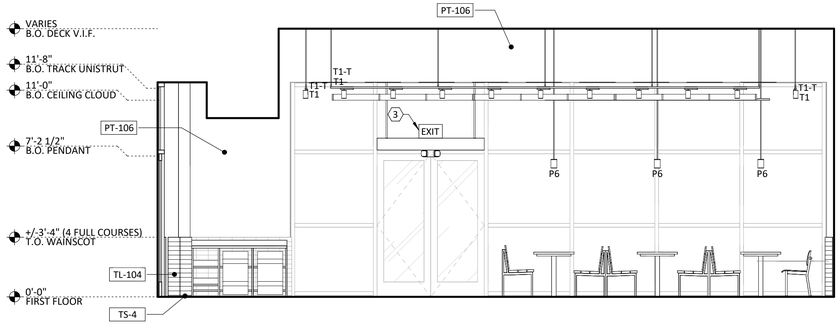
1 A220 INTERIOR ELEVATION
1/4" = 1'-0"



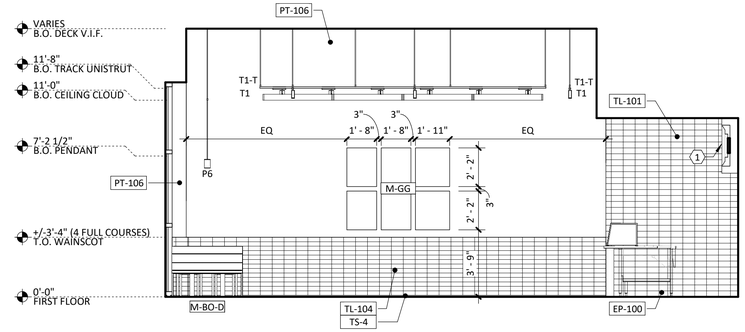
2 A220 INTERIOR ELEVATION
1/4" = 1'-0"

ELEVATION CODED NOTES

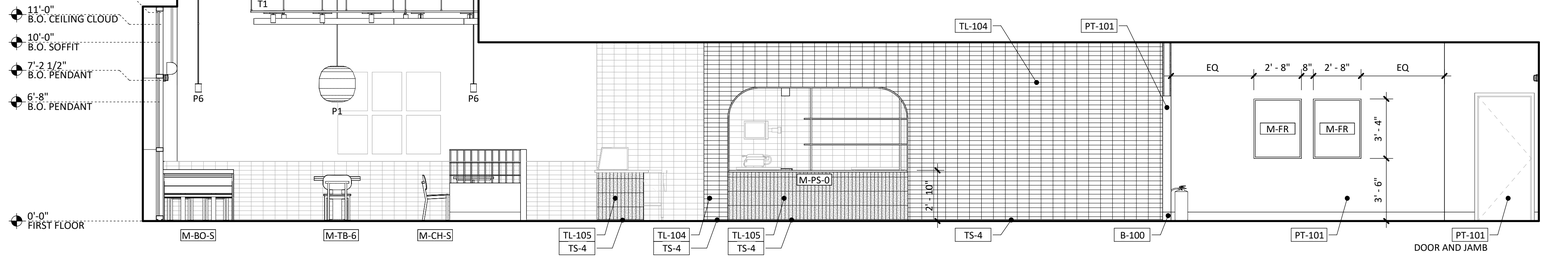
1. MENU BOARD. PROVIDE BLOCKING ABOVE THE CEILING. SHIM AS NEEDED TO LEVEL BOARDS.
2. ADA SIGNAGE PER G003 TYP.
3. EXIT SIGN PER RCP. MOUNTED TO J-BOX AND EXPOSED CONDUIT RUNNING FROM CEILING. VERIFY MOUNTING HEIGHT IN FIELD.
4. ~~PROVIDE BLOCKING FOR PICK UP SHELVES.~~



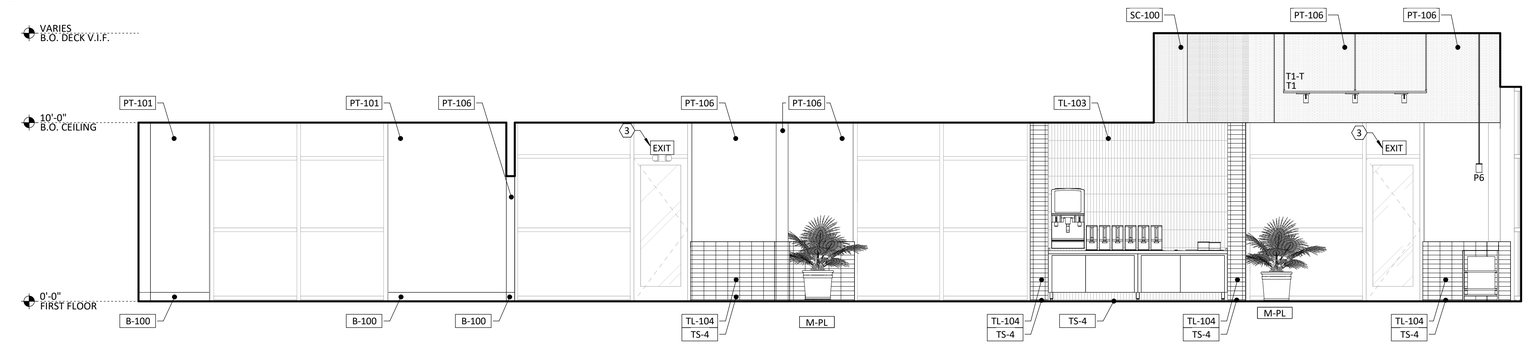
3 A220 INTERIOR ELEVATION
1/4" = 1'-0"



4 A220 INTERIOR ELEVATION
1/4" = 1'-0"



5 A220 INTERIOR ELEVATION
1/4" = 1'-0"



6 A220 INTERIOR ELEVATION
1/4" = 1'-0"

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INTERIOR ELEVATIONS

A220

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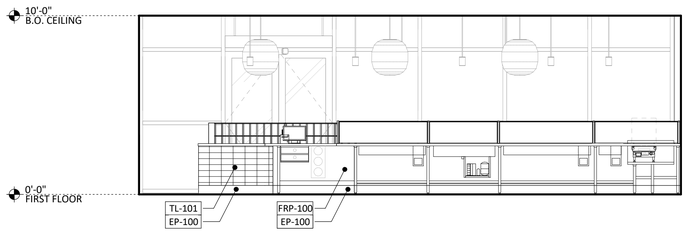
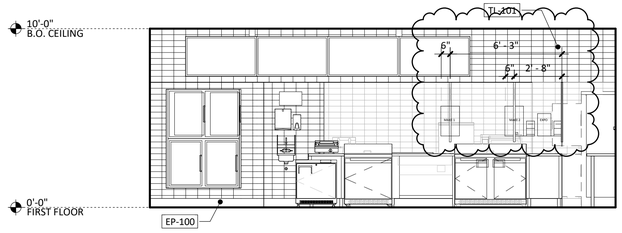
ELEVATION CODED NOTES

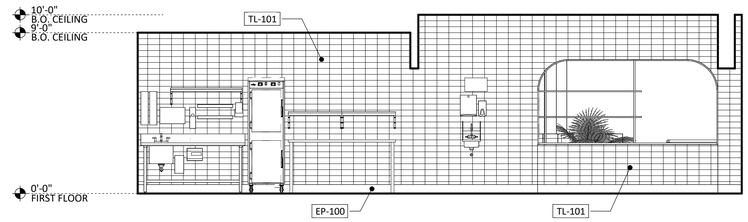
1. MENU BOARD. PROVIDE BLOCKING ABOVE THE CEILING. SHIM AS NEEDED TO LEVEL BOARDS.
2. ADA SIGNAGE PER G003 TYP.
3. EXIT SIGN PER RCP. MOUNTED TO J-BOX AND EXPOSED CONDUIT RUNNING FROM CEILING. VERIFY MOUNTING HEIGHT IN FIELD.
4. ~~PROVIDE BLOCKING FOR PICK UP SHELVES.~~



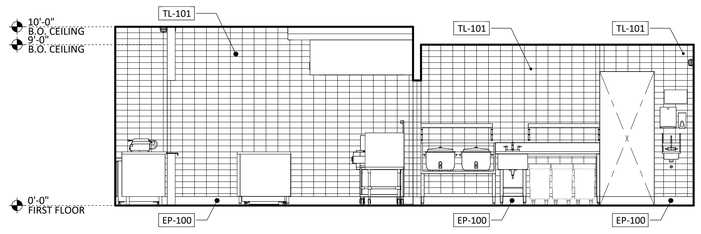
1 A221 INTERIOR ELEVATION
1/4" = 1'-0"



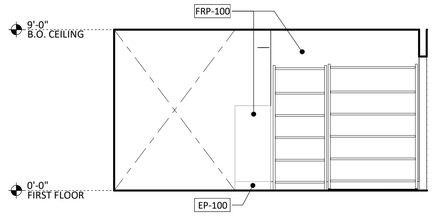
2 A221 INTERIOR ELEVATION
1/4" = 1'-0"



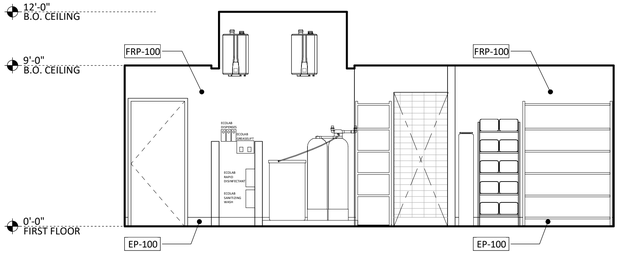
3 A221 INTERIOR ELEVATION
1/4" = 1'-0"



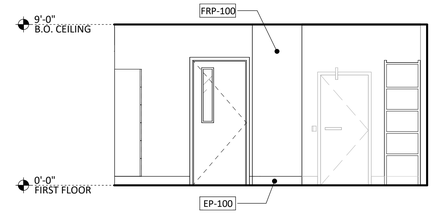
4 A221 INTERIOR ELEVATION
1/4" = 1'-0"



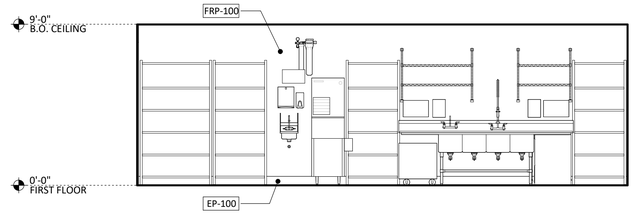
5 A221 INTERIOR ELEVATION
1/4" = 1'-0"



6 A221 INTERIOR ELEVATION
1/4" = 1'-0"



7 A221 INTERIOR ELEVATION
1/4" = 1'-0"



8 A221 INTERIOR ELEVATION
1/4" = 1'-0"

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CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE

SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

INTERIOR ELEVATIONS

A221

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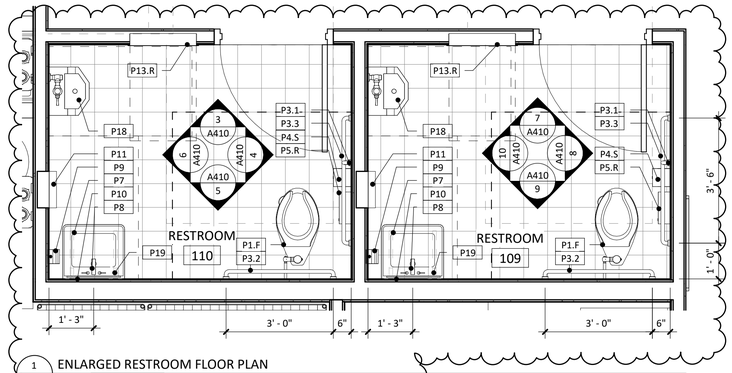
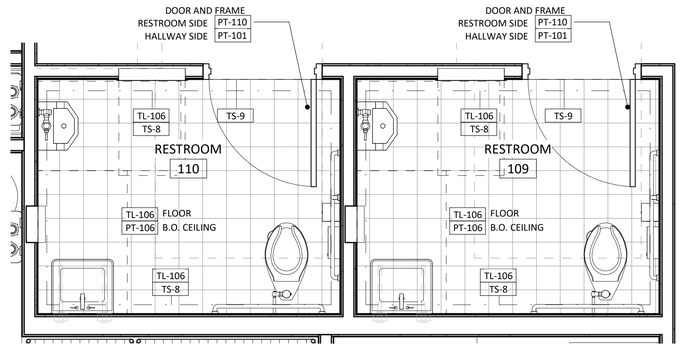
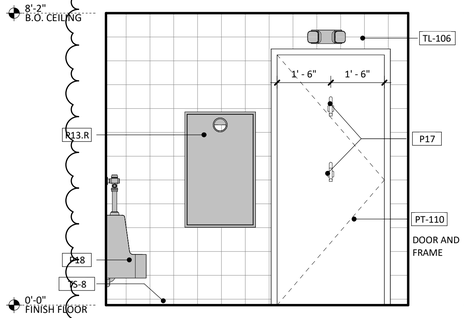
NOTE: REFER TO DETAIL 11/A410 FOR ADDITIONAL DIMENSIONAL INFORMATION.



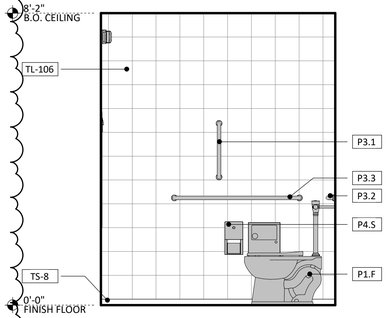
1 A410 ENLARGED RESTROOM FLOOR PLAN
1/2" = 1'-0"



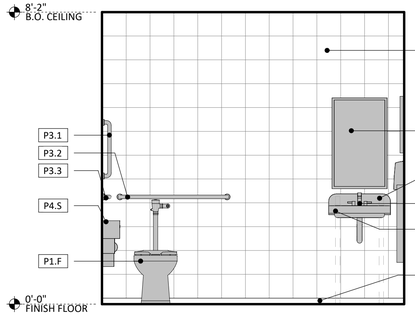
2 A410 ENLARGED RESTROOM FINISH PLAN
1/2" = 1'-0"



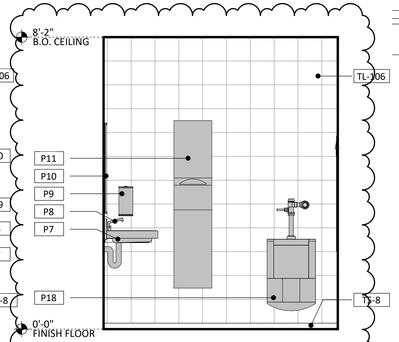
3 A410 INTERIOR ELEVATION
1/2" = 1'-0"



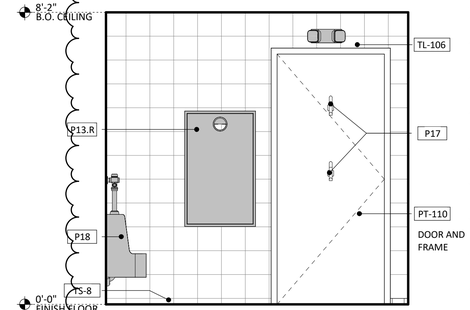
4 A410 INTERIOR ELEVATION
1/2" = 1'-0"



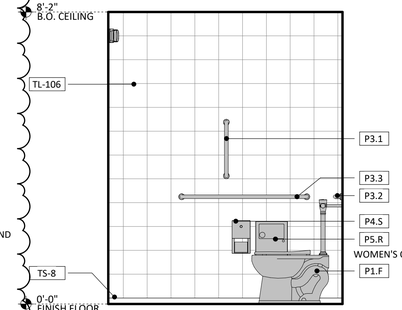
5 A410 INTERIOR ELEVATION
1/2" = 1'-0"



6 A410 INTERIOR ELEVATION
1/2" = 1'-0"



7 A410 INTERIOR ELEVATION
1/2" = 1'-0"



8 A410 INTERIOR ELEVATION
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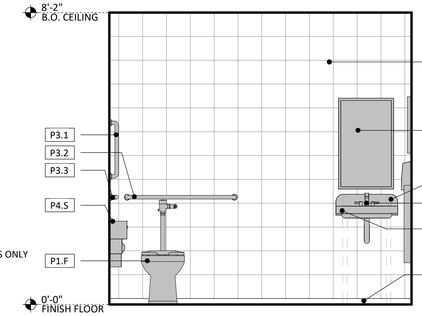
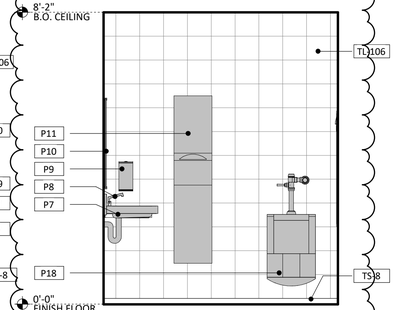
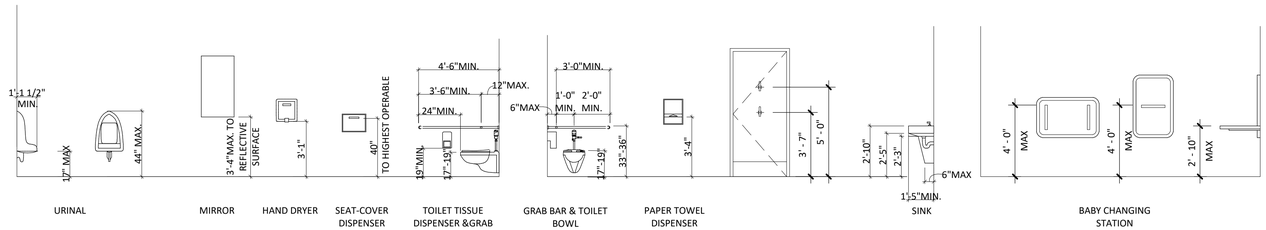


9 A410 INTERIOR ELEVATION
1/2" = 1'-0"



10 A410 INTERIOR ELEVATION
1/2" = 1'-0"



11 A410 ACCESSIBILITY DETAILS
1/4" = 1'-0"

RESTROOM ACCESSORIES

MARK	DESCRIPTION	MANUF./MODEL	FINISH	MOUNTING HEIGHT
P1.F	FLOOR MOUNTED TOILET	KOHLER HIGHCLIFF ULTRA BOWL K-96057		
P3.1	18" GRAB BAR	BOBRICK B-6806 x16		T.O. BAR 4'-9"
P3.2	36" GRAB BAR	BOBRICK B-6806 x36		SEE 11/A410
P3.3	42" GRAB BAR	BOBRICK B-6806 x42		SEE 11/A410
P4.S	DOUBLE SURFACE MOUNTED TOILET PAPER DISPENSER	BOBRICK B-2888		SEE 11/A410
P5.R	RECESSED SANITARY NAPKIN DISPOSAL	BOBRICK DOME 270		SEE 11/A410
P7	WALL MOUNTED SINK	KOHLER BRENHAM K-1997-1N		SEE 11/A410
P8	FAUCET	KOHLER K-7514		
P9	SOAP DISPENSER	ECOLAB NEXA CLASSIC TF DISPENSER	BLACK	SEE 11/A410
P10	WALL HUNG MIRROR	BREY-KRAUSE T-1018-36SS 18"x30"		SEE 11/A410
P11	PAPER TOWEL DISPENSER & TRASH	BOBRICK B-3944 CLASSIC SERIES	STAINLESS STEEL	SEE 11/A410
P13.R	BABY CHANGING STATION (VERTICAL)	KOALA KARE KB311-SSRE	STAINLESS STEEL	34" TO T.O. SHELF WHEN OPEN
~~P13.H~~	~~BABY CHANGING STATION (HORIZONTAL)~~	~~KOALA KARE KB310-SSRE~~	~~STAINLESS STEEL~~	~~34" TO T.O. SHELF WHEN OPEN~~
~~P16~~	~~AIR FRESHENER~~	~~TBD~~	~~BLACK~~	
P17	DOOR MOUNTED COAT HOOK	BOBRICK B-6827		60" TO CENTER OF HOOK 44" ADA CENTER OF HOOK
P18	URINAL	DEXTER ANTIMICROBIAL URINAL WITH MACH TRIPOINT FLUSHOMETER K-PR5452-T1DS		
P19	CONCEALED ARM LAVATORY CARRIER	ZURN - Z1231		29 1/8" FINISH FLOOR TO CENTER OF SINK

PROVIDE SOLID FRT WOOD BLOCKING AS NECESSARY FOR INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS. SEE SHEET G003 & G004 FOR ACCESSIBILITY GUIDELINES.

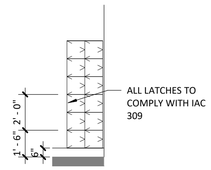
RESTROOM PLAN GENERAL NOTES

A. EXPOSED PIPES AND SURFACES, WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE PROTECTED AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRTASIVE SURFACES UNDER LAVATORIES AND SINKS.

B. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET.

C. CONTROLS FOR FAUCETS SHALL COMPLY WITH 309.

D. HAND-OPERATED METERING FAUCETS SHALL REMAIN OPEN FOR 10 SECONDS MINIMUM.



12 A410 LOCKER ELEVATION
1/4" = 1'-0"

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CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE

SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

ENLARGED RESTROOM PLANS

A410

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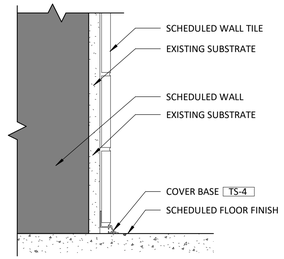
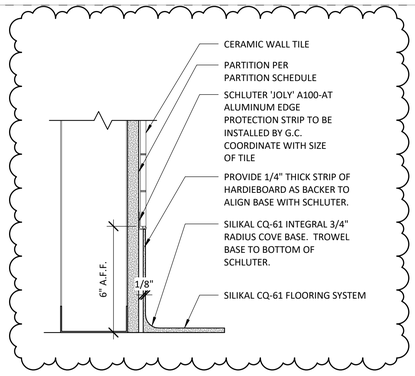
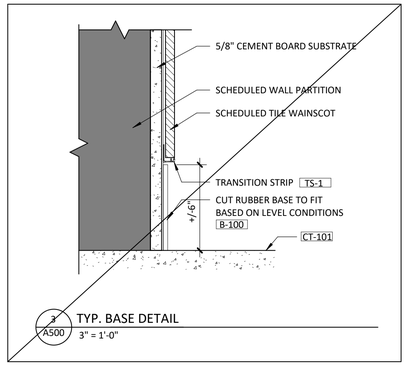


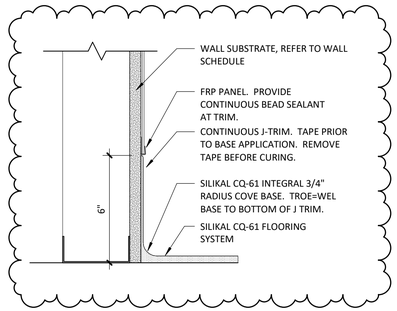
1 A500 SCHLUTER COVE BASE
3" = 1'-0"



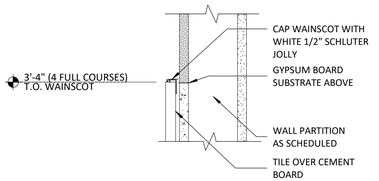
2 A500 EPOXY FLOOR AT WALL TILE
3" = 1'-0"



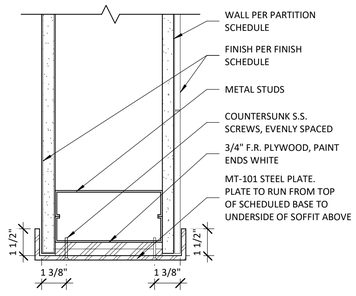
3 A500 TYP. BASE DETAIL
3" = 1'-0"



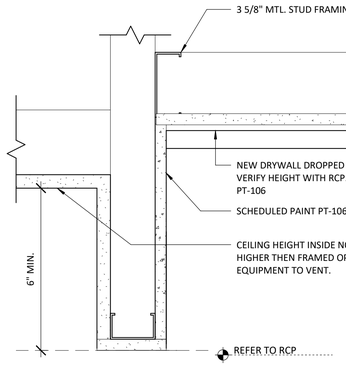
4 A500 EPOXY FLOOR AT FRP WALL
3" = 1'-0"



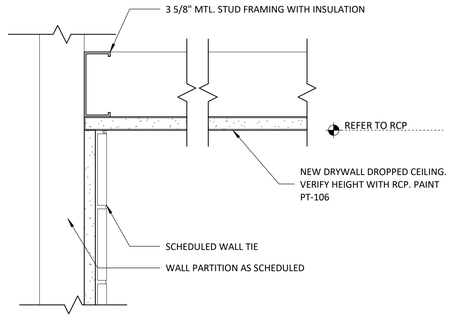
5 A500 TOP OF WAINSCOT
3" = 1'-0"



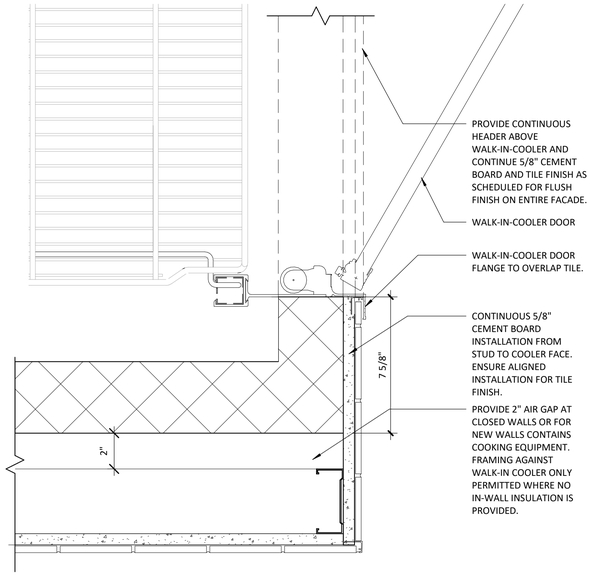
6 A500 WALL END CAP AT BOH
3" = 1'-0"



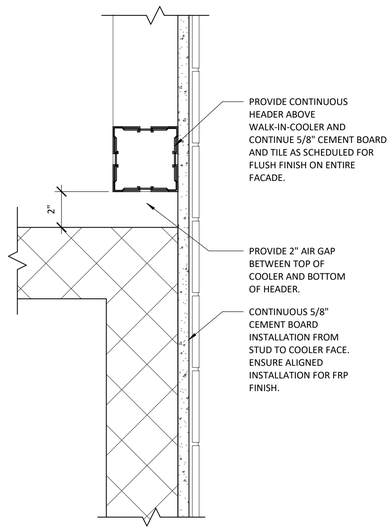
7 A500 KITCHEN OVERHEAD PARTITION
3" = 1'-0"



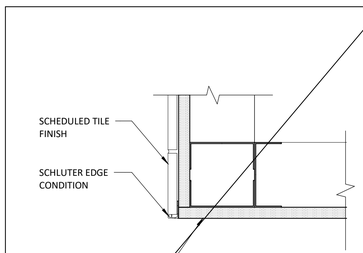
8 A500 CEILING FINISH TRANSITION DETAIL
3" = 1'-0"



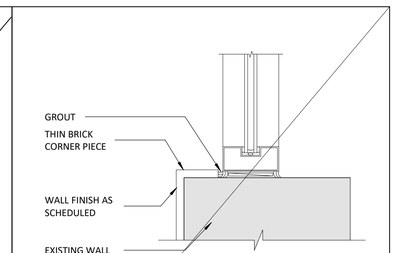
9 A500 WALK IN COOLER PLAN DETAIL
3" = 1'-0"



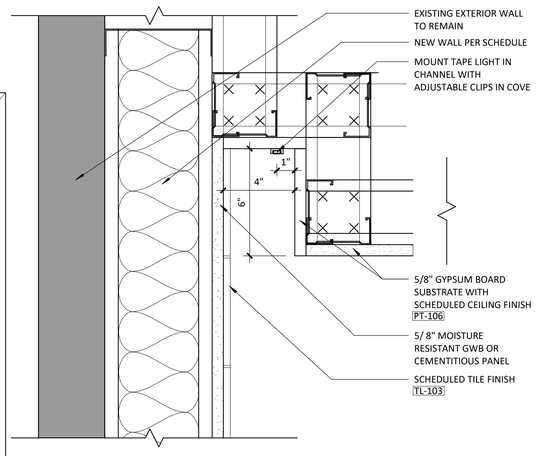
10 A500 DETAIL - WALK-IN COOLER (JAMB)
3" = 1'-0"



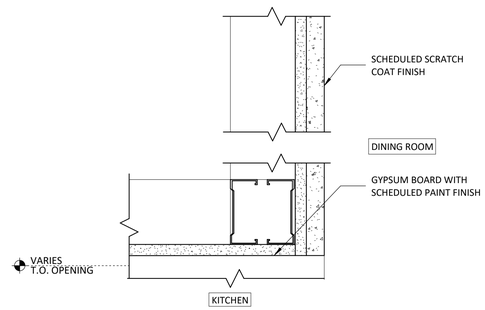
11 A500 TILE TO GYP. TRANSITION
3" = 1'-0"



12 A500 SILL DETAIL1
3" = 1'-0"



13 A500 DETAIL - LIGHT COVE
3" = 1'-0"



14 A500 SCRATCH COAT SOFFIT
3" = 1'-0"

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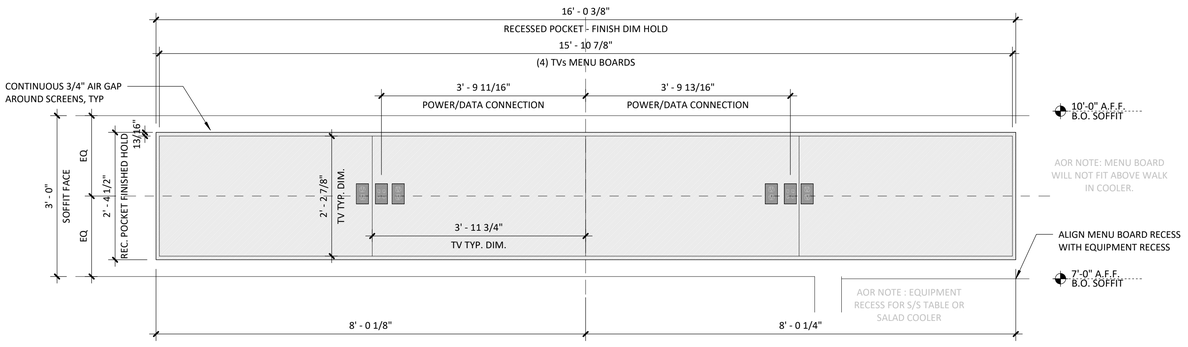
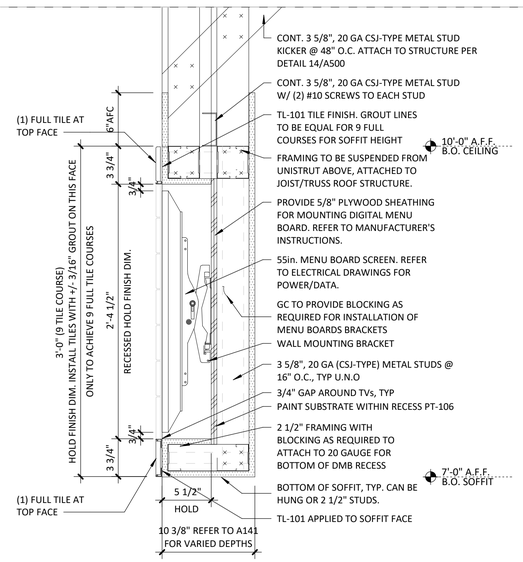
DETAILS

A500

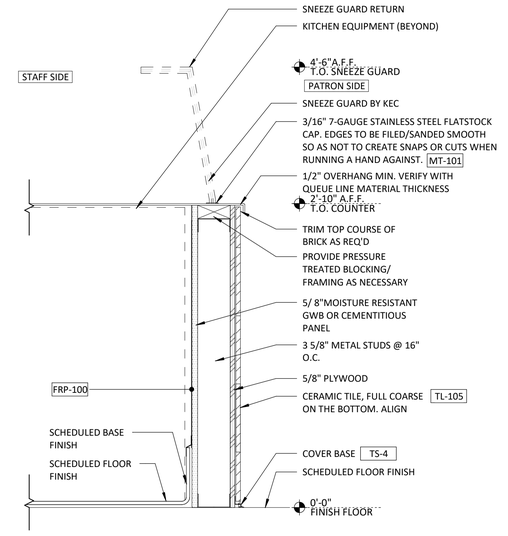
6/23/2025 3:09:06 PM



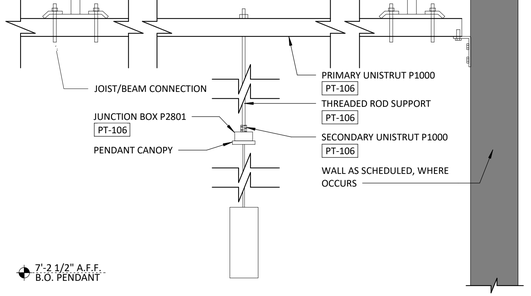
1 A501 DIGITAL MENU BOARD
3/4" = 1'-0"



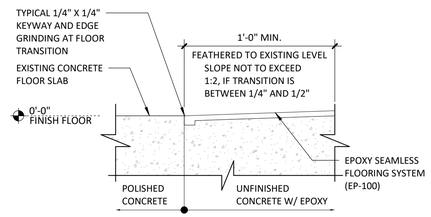
2 A501 DIGITAL MENU BOARD : SECTION
3/4" = 1'-0"



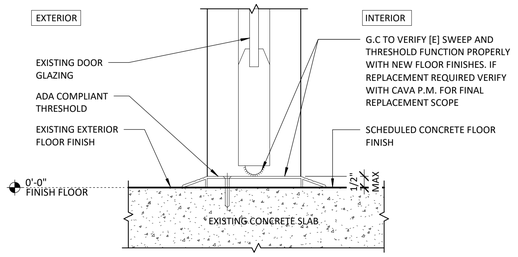
3 A501 FOOD LINE DETAILED SECTION
1 1/2" = 1'-0"



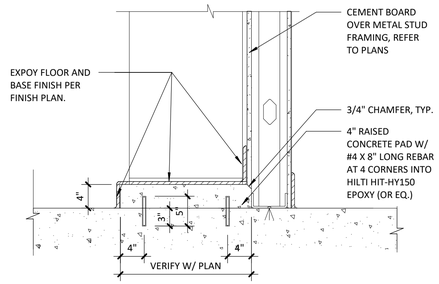
4 A501 SUSPENDED PENDANT LIGHT DETAIL
1 1/2" = 1'-0"



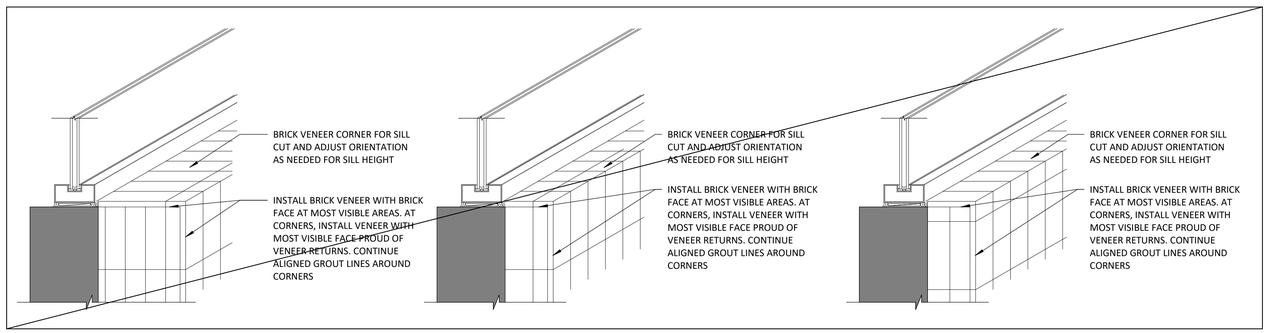
5 A501 EPOXY TO CONCRETE
3" = 1'-0"



6 A501 ENTRY DOOR THRESHOLD DETAIL
1 1/2" = 1'-0"



7 A501 CURB DETAIL
1" = 1'-0"



8 A501 BRICK DETAIL : SILL AND CORNERS
1 1/2" = 1'-0"

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CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE

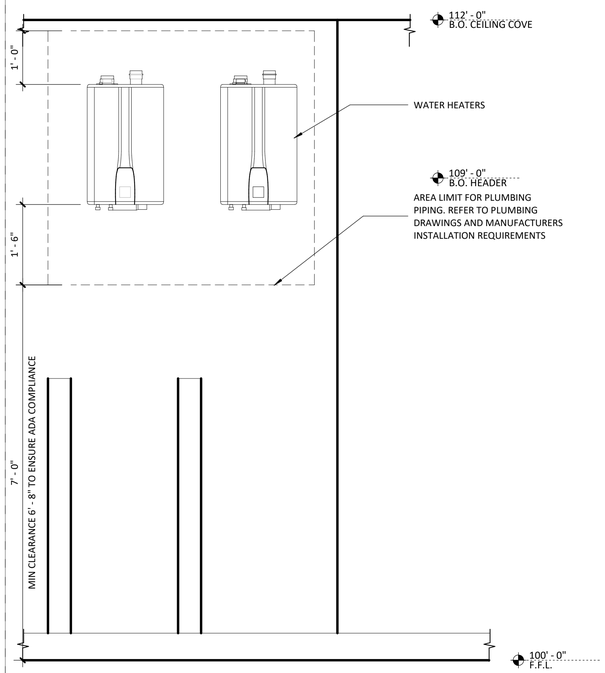
SD SET	11.01.24
PERMIT SET	12.06.24
BID SET	04.04.25
IFC SET	06.23.25

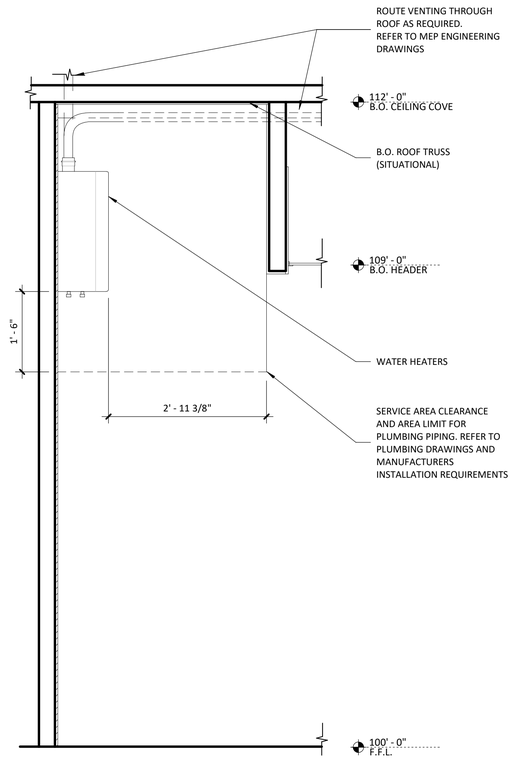
DETAILS

A501

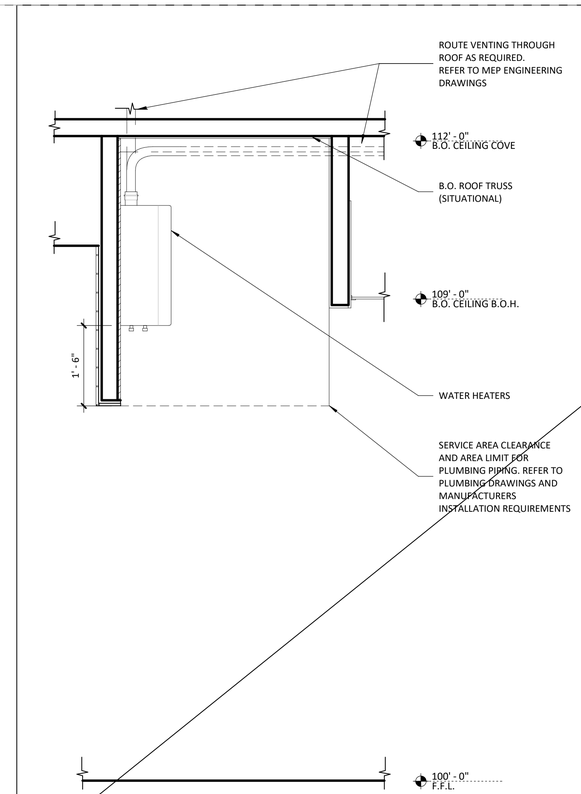
6/23/2025 3:09:06 PM

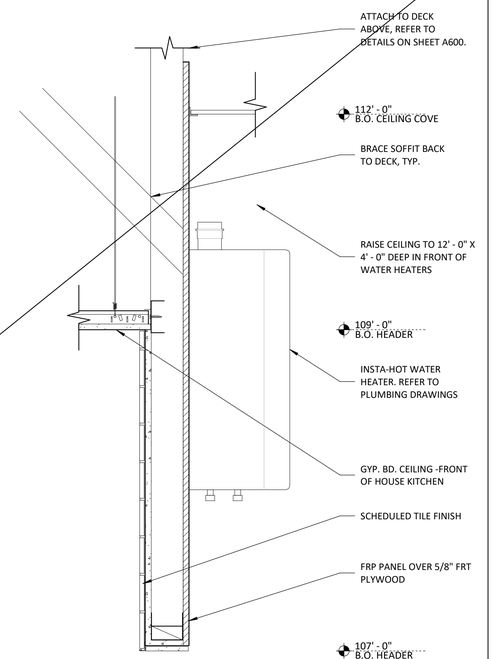
GENERAL NOTE:
ALL ROOF PENTRATIONS SHALL BE PERFORMED BY SHELL BUILDING SUBCONTRACTOR.



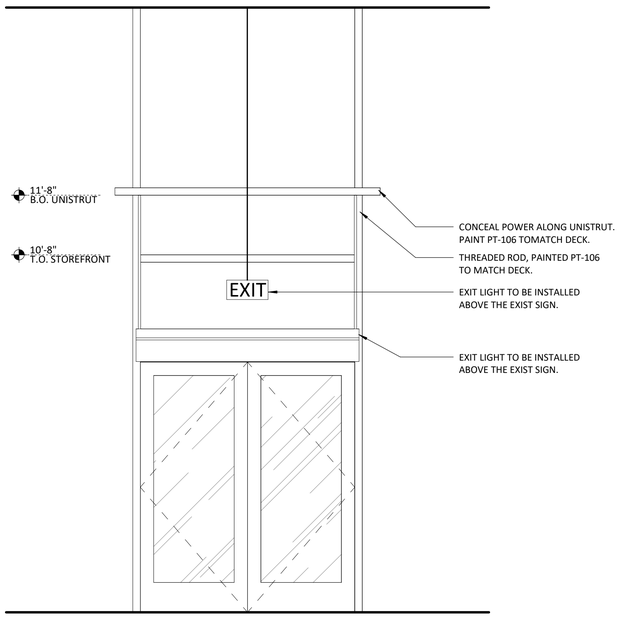


1 A502 WATER HEATER COVE ELEVATIONS1
3/4" = 1'-0"

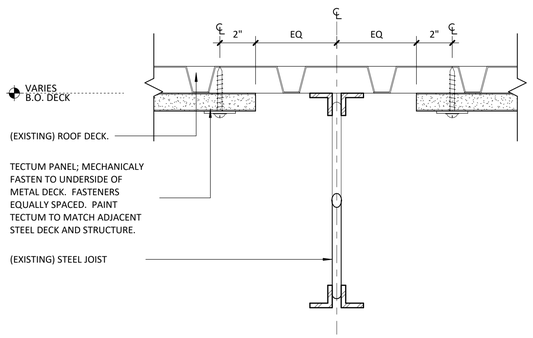




2 A502 WATER HEATER COVE DETAIL1
3/4" = 1'-0"



3 A502 AIR CURTAIN MOUNTING DETAIL
4" = 1'-0"



4 A502 TECTUM INSTALLATION DIRECT ATTACHED
3" = 1'-0"

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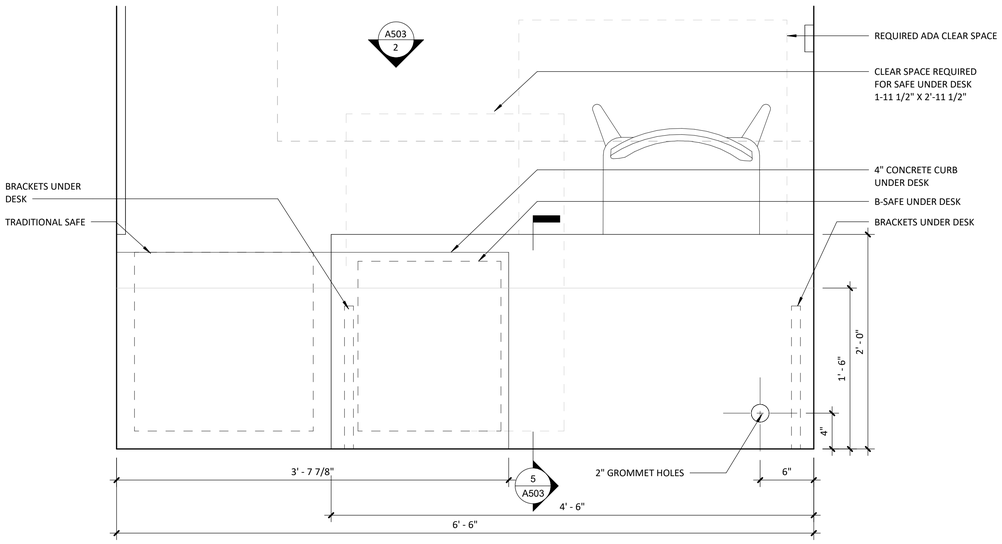
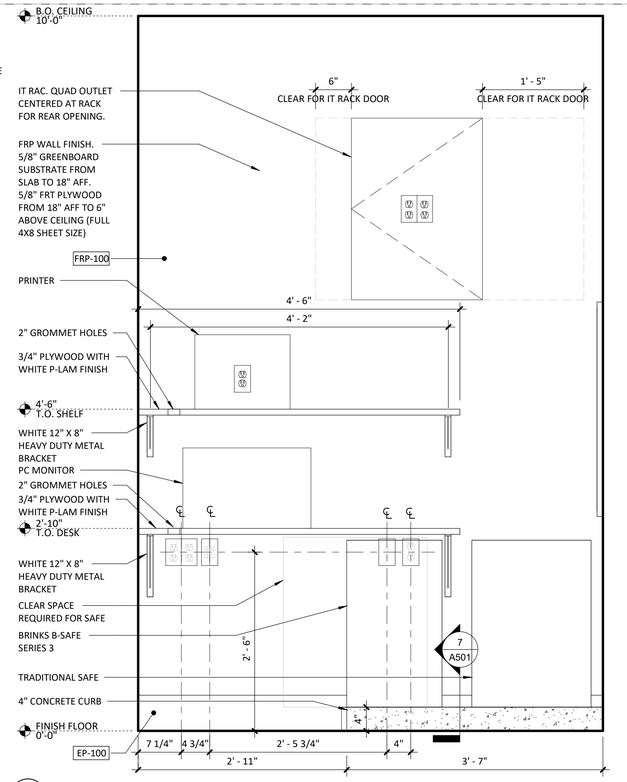
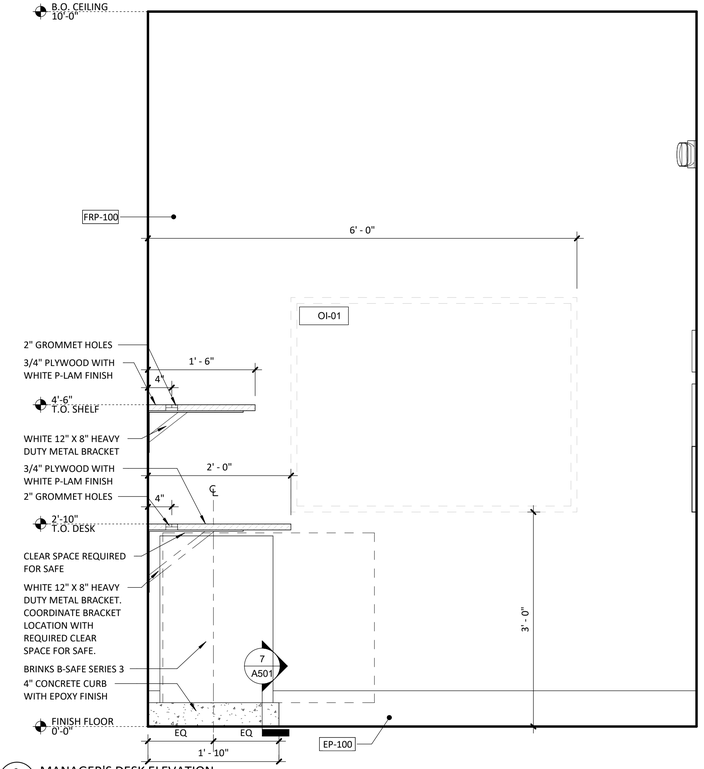


1 A503 MANAGER'S DESK PLAN
1 1/2" = 1'-0"

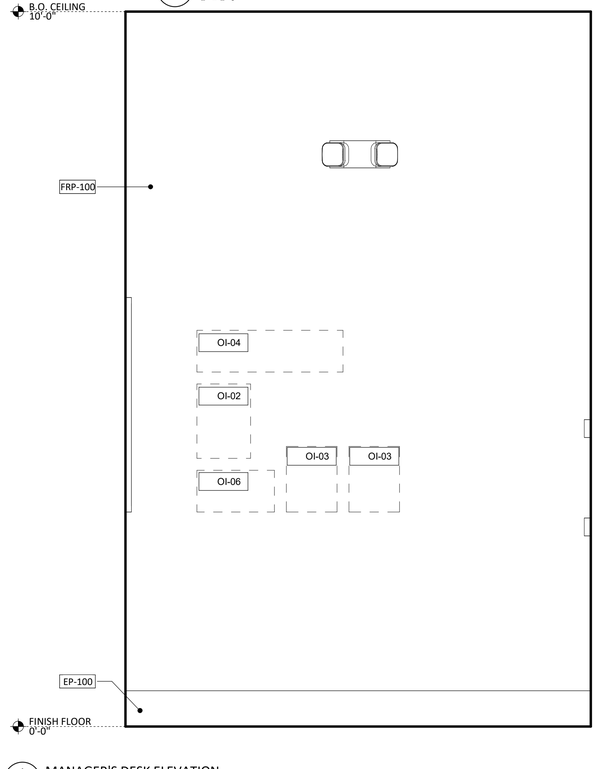


2 A503 MANAGER'S DESK ELEVATION
1" = 1'-0"

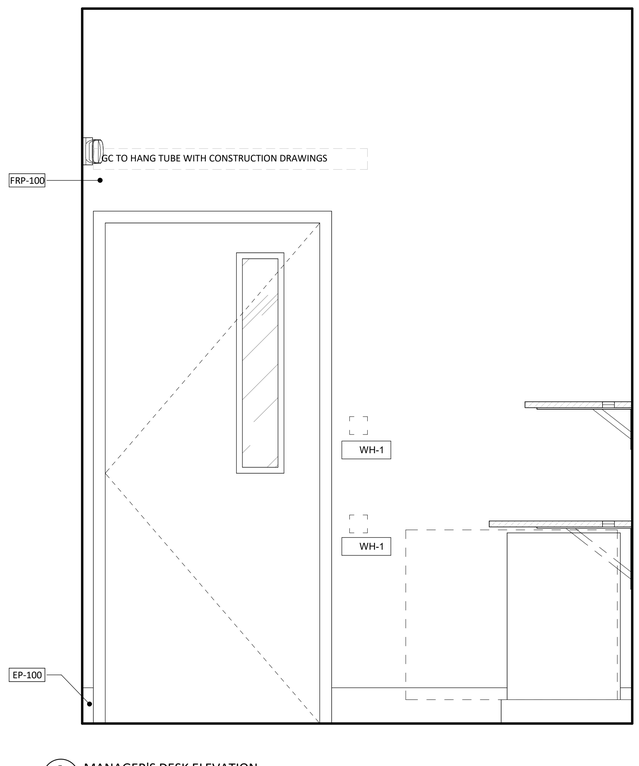
OFFICE ITEMS		FURNISH	INSTALL	
MARK	MANUFACTURER DESCRIPTION	FURNISH	INSTALL	REMARKS
ITEMS				
OI-01	CORK BULLETIN BOARD	CAVA	GC	QTY. 1. 36" X 48", WOOD FRAME WITH LIGHT OAK FINISH
OI-02	WOOD CLIPBOARD	CAVA	GC	QTY. 1. 9" X 12-1/2"
OI-03	DOCUMENT FRAMES	CAVA	GC	QTY. 3. 8-1/2" X 11"
OI-04	KEY RACK	CAVA	GC	QTY. 1. ASSORTED COLOR KEY CHAINS
OI-05	WALL CLOCK	CAVA	GC	QTY. 1. 12" FLAT-PANEL PLASTIC ROUND CLOCK
OI-06	POCKET WALL FILE	CAVA	GC	QTY. 1. 7"H X 13"W X 4"D
G.C. TO COORDINATE FINAL LOCATION WITH CM AND RESTAURANT MANAGER OR AREA LEADER				



3 A503 MANAGER'S DESK ELEVATION
1" = 1'-0"



4 A503 MANAGER'S DESK ELEVATION
1" = 1'-0"



5 A503 MANAGER'S DESK ELEVATION
1" = 1'-0"

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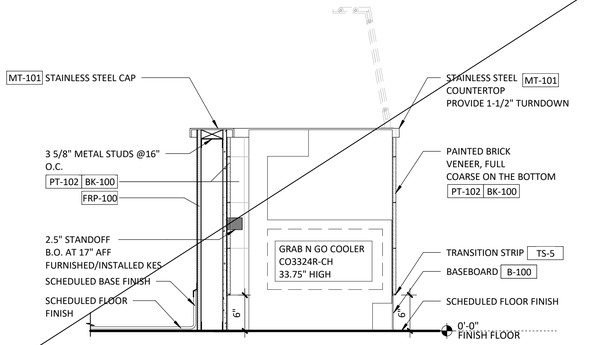
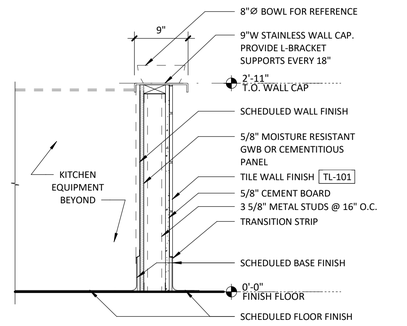
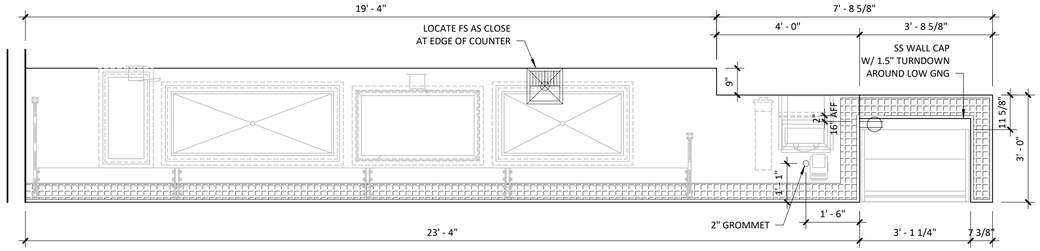


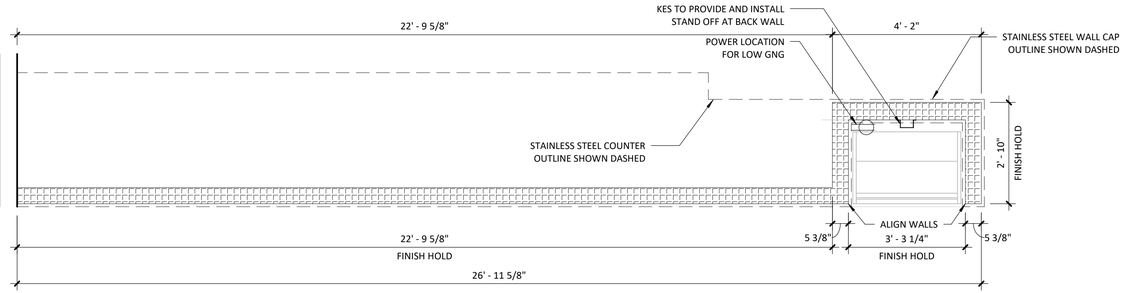
1 A504 SERVING LINE_GRAB N GO
1" = 1'-0"



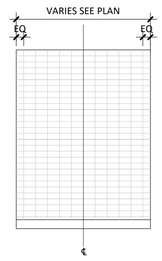
4 A504 DETAIL SECTION : DOUBLE SIDED D.O. LINE
1" = 1'-0"



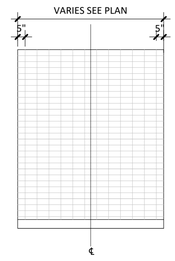
2 A504 ENLARGED PLAN : QUEUE LINE EQUIPMENT
1/2" = 1'-0"



3 A504 ENLARGED PLAN : QUEUE LINE - WALL ASSEMBLY
1/2" = 1'-0"



5 A504 TILE CENTERED LAYOUT
1/4" = 1'-0"



6 A504 TILE CENTERED LAYOUT
1/4" = 1'-0"

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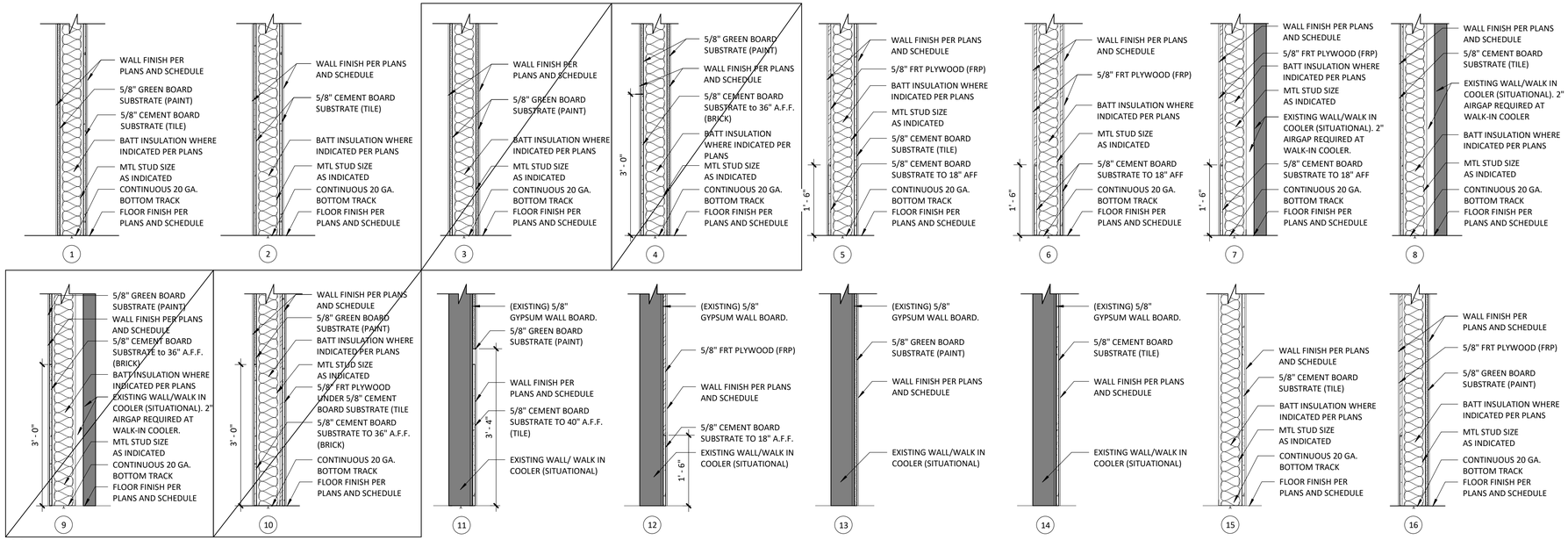
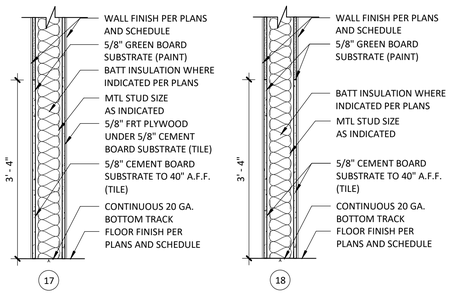


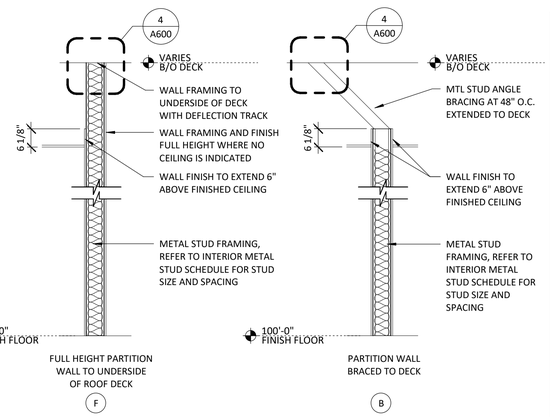
1 A600 WALL PARTITION CONSTRUCTION LEGEND

NTS



1A A600 WALL PARTITION CONSTRUCTION LEGEND

NTS



2 A600 FULL HEIGHT PARTITION WALL TO UNDERSIDE OF ROOF DECK1

NTS

MARK	SIZE	GA.	MAT. DESIGN THICK (MILS)	TYPE	MAXIMUM UNSUPPORTED HGT AT 12" O.C.	MAXIMUM UNSUPPORTED HGT AT 16" O.C.	MAXIMUM UNSUPPORTED HGT AT 24" O.C.
A	7/8"	20	30	DRY	---	---	---
B	1 5/8"	20	30	DRY	9'-3"	8'-5"	7'-4"
C	2 1/2"	20	30	DRY	12'-9"	11'-7"	10'-2"
D	3 5/8"	20	30	DRY	17'-0"	15'-6"	13'-6"
		20	33	STR	17'-7"	16'-0"	14'-0"
		18	43	STR	19'-2"	17'-5"	15'-3"
E	6"	20	30	DRY	25'-2"	22'-11"	18'-11"
		20	33	STR	26-2"	23'-9"	20'-6"
		18	43	STR	28'-9"	26'-1"	22'-10"
		16	54	STR	30'-9"	27'-11"	24'-5"
F	8"	18	43	STR	36'-1"	32'-9"	28'-8"
		16	54	STR	38'-9"	35'-2"	30'-9"
		14	68	STR	41'-11"	38'-1"	33'-4"

1. USE GAUGE & TYPE OF STUD AS SCHEDULED, UNLESS NOTED OTHERWISE ON DRAWINGS.
2. BASED ON INTERIOR NON-STRUCTURAL, NON-COMPOSITE LIMITING WALL HEIGHT TABLES. PARTITIONS w/ ONE LAYER GYPSUM BOARD EACH SIDE (L/240 DEFLECTION - 5 PSF LOAD) PER 2012 SSMA PRODUCT TECHNICAL INFORMATION BULLETIN (ICC ESR#3064P).
3. RUNNER TRACK GAUGE TO MATCH STUD.
4. WALLS OVER 12'-0" HIGH TO BE LATERALLY BRACED VERTICAL WITH 1 1/2" (16GA) COLD-ROLLED CHANNELS CLIP ANCHORED TO METAL STUDS.
5. STND = STANDARD STUD. DRY = DRYWALL STUD. STR = STRUCTURAL STUD.
6. METAL STUD NON-STRUCTURAL WALL SYSTEMS TO FOLLOW ASTM C754 & ASTM 645.
7. MATERIAL DESIGN THICKNESS IS THE BASE METAL THICKNESS IN MILS. MINIMUM ALLOWED
8. BASE METAL THICKNESS REPRESENTS 95% OF THE DESIGN THICKNESS.
9. DIAGONAL BRACING TO FOLLOW INTERIOR STUD SCHEDULE.
10. FRAMING THAT OCCURS BEHIND TILE AS A WALL FINISH TO BE SPACED NO MORE THAN 16" O.C.

3 A600 INTERIOR METAL STUD SCHEDULE

NTS

GENERAL WALL NOTES

1. ALL PARTITIONS THAT ARE TO BE BUILT TO DECK SHALL INCLUDE ANY STRUCTURE (JOISTS, BEAMS, ETC.) THAT MAY NEED TO BE FRAMED OUT IN ORDER TO PROVIDE DRYWALL TO DECK. ALL PENETRATIONS AND FLUTES IN DECK SHALL BE SEALED AS REQUIRED.
2. PROVIDE BRACING PER MANUFACTURER'S RECOMMENDATIONS IN ALL PARTITIONS THAT DO NOT EXTEND FULL HEIGHT TO THE UNDERSIDE OF THE STRUCTURE ABOVE.
3. PROVIDE A GALVANIZED STEEL SHEET DEEP LEG DEFLECTION TRACK (20 G.A.), 'SLP-TRK' BY SLIPTRACK SYSTEMS, INC. AT ALL FRAMING THAT EXTENDS FROM THE SLAB TO THE UNDERSIDE OF THE STRUCTURE ABOVE. SECURE DEFLECTION TRACK TO STRCUTURE WITH FASTENERS AT 2'-0" O.C. MAXIMUM. DO NOT SECURE TRACK TO VERTICAL STUDS. PROVIDE MINIMUM OF 5/8" TO TOP OF METAL STUD.
4. ALL BOTTOM TRACK RUNNERS ARE TO BE HELD IN PLACE WITH FASTENERS AT 2'-0": O.C. MAX WITH HILTI POWER DRIVER ANCHOR ICBO # 2388, .0145" DIAMETER SHANK WITH 1 1/8" MINIMUM PENETRATION
5. PROVIDE ACOUSTICAL SEALANT AT THE INTERSECTION OF ALL GYPSUM BOARD TO DECK OR CONCRETE SLAB CONDITIONS. HOLD GYPSUM BOARD 3/8" OFF OF STRUCTURE FOR SEALANT.
6. PROVIDE HORIZONTAL BRIDGING IN ALL PARTITION FRAMING AT A MINIMUM OF 6'-0" O.C. VERTICALLY. GENERAL CONTRACTOR TO COORDINATE WITH METAL STUD MANUFACTURER TO DETERMINE IF HORIZONTAL BRIDGING IS REQUIRED FOR METAL STUD PARTITION WALLS THAT HAVE GYPSUM BOARD ON BOTH SIDES THAT EXTEND FROM FINISHED FLOOR TO UNDERSIDE OF STRUCTURE ABOVE.
7. METAL STUD NON-STRUCTURAL WALL SYSTEMS ARE TO FOLLOW ASTM C754 & ASTM C645.
8. TAPE, MUD, AND SAND GYPSUM BOARD SMOOTH READY FOR NEW FINISHES AT INTERIOR FACE OF ALL GYPSUM BOARD SURFACES. PROVIDE ASTM C840 LEVEL 4 FINISH UNLESS NOTED OTHERWISE.
9. ALL PLYWOOD BLOCKING IS TO BE FIRE RETARDANT TREATED.
10. PROVIDE COMPRESSINLE FIRE STOPPING MATERIAL WITHIN THE DECK FLUTES AT ALL FIRE-RATED PARTITIONS.
11. PROVIDE COMPRESSIBLE FIRE STOPPING MATERIAL AT THE CEILING LEVEL OF ALL PARTITIONS WITH GYPSUM BOARD NOT EXTENDING FULL HEIGHT TO THE DECK ABOVE. HOLD FIRE STOPPING IN PLACE WITH 1" WIDE (25 GA.) 1 1/2" X 1 1/2" IMPALING ANGLE ON EACH STUD TO SECURE EACH END OF THE MATERIAL.
12. PROVIDE FIRE SAFING AT ALL PARTITION/FURRING CAVITIES AT CEILING LEVELS OPEN TO CEILING PLENUMS.
13. PROVIDE 5/8" WATER RESISTANT GYPSUM BOARD AT ALL WET AREAS AS INDICATED ON DRAWINGS. TAPE, SEAL AND PREP TO ACCEPT FINISH.
14. PROVIDE BLOCKING FOR ALL DOOR STOPS.
15. ALL WOOD IN CONTACT WITH CONCRETE AND AT EXTERIOR LOCATIONS MUST BE PRESSURE TREATED MOISTURE RESISTANT WOOD.
16. PENETRATIONS INTO OR THROUGH FIRE WALLS, FIRE BARRIES, SMOKE BARRIER WALLS, AND FIRE PARTITIONS SHALL COMPLY WITH CODE.
17. MEMBRANE PENETRATIONS SHALL COMPLY WITH CODE, WHERE WALLS OR PARTITIONS ARE REQUIRED TO HAVE A FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLE SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOOT BE REDUCED.

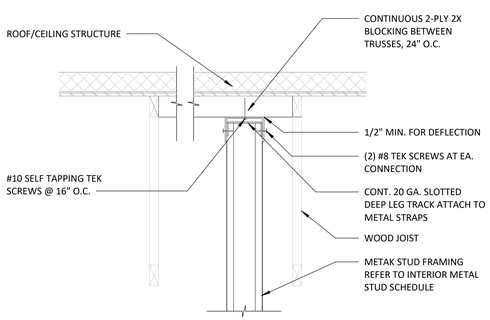
WALL PARTITION TAG LEGEND

1	B	D

REFER TO WALL PARTITION CONSTRUCTION LEGEND 1/A600 (DENOTES WALL CONSTRUCTION)	REFER TO WALL PARTITION BRACING LEGEND 2/A600 (DENOTES HEIGHT OF WALL AND T/WALL BRACING)	REFER TO INTERIOR METAL STUD SCHEDULE 3/A111 (DENOTES STUD SIZE, GAUGE, AND SPACING)

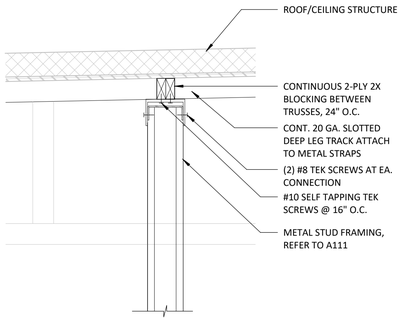
"*" DENOTES FULL HEIGHT BATT INSULATION

NOTE:
VERIFY THAT THE SHOWN METHOD OF ATTACHMENT IS ACCEPTABLE WITH THE ON-SITE COORDINATOR. IF NOT, CONTACT ARCHITECT FOR ALTERNATE DETAIL. METHOD SHOWN IS FOR FLOOR SUPPORTED FRAMING ONLY.



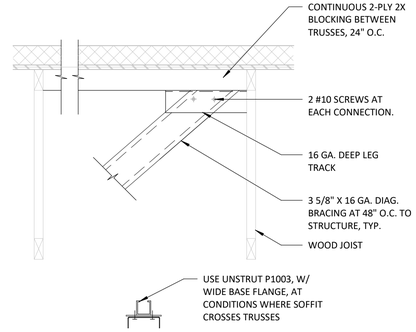
4 A600 TOP OF FULL HEIGHT WALL CONNECTION

1" = 1'-0"



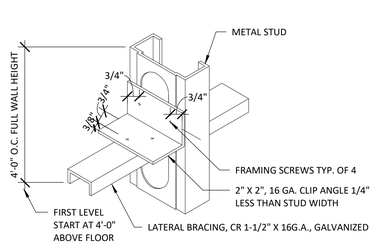
5 A600 TOP BRACED WALL CONNECTION_ORIG1

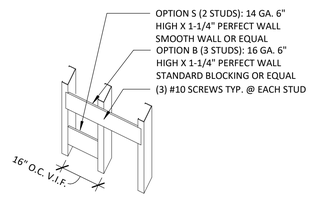
1" = 1'-0"



6 A600 LATERAL PARTITION BRACING

3" = 1'-0"





NOTE: BLOCKING TO BE PROVIDED @ WALL MTD. ITEMS INCLUDING GRAB BARS, SHELVES, LIGHTS, CABINETS, SINKS, TOILETS ETC.

7 A600 PARTITION BLOCKING DETAIL

3" = 1'-0"

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WALL PARTITION SCHEDULE

A600

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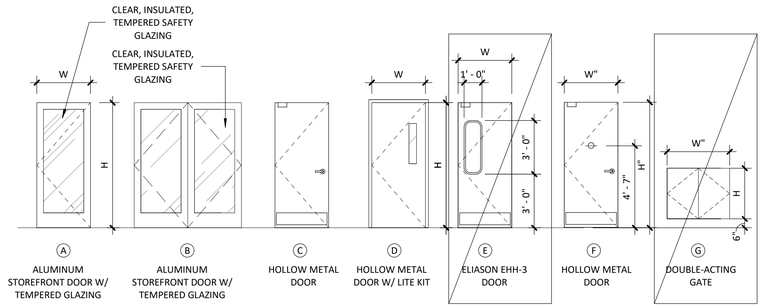
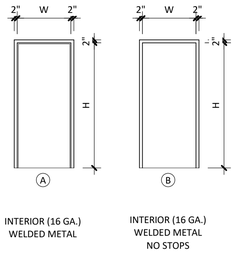
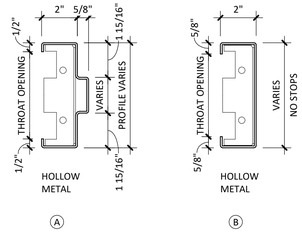


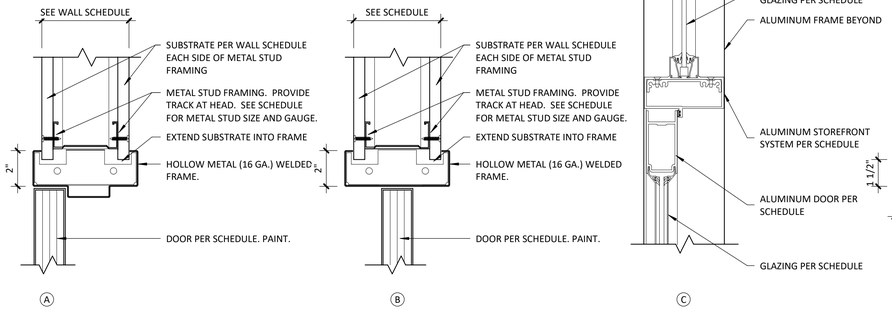
1 A601 DOOR ELEVATIONS
1/4" = 1'-0"



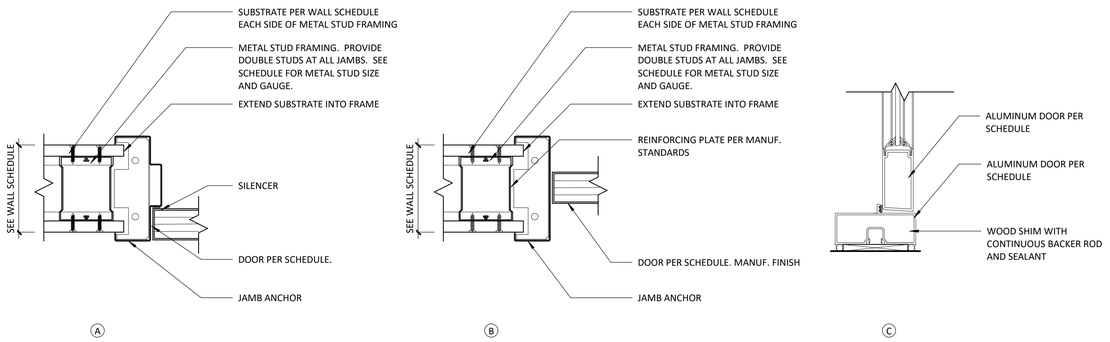
2 A601 FRAME ELEVATIONS
1/4" = 1'-0"



3 A601 FRAME PROFILES
3" = 1'-0"



4 A601 DOOR FRAME HEAD DETAIL
3" = 1'-0"



1 A601 DOOR JAMB DETAIL
3" = 1'-0"

DOOR AND FRAME SCHEDULE

NO.	LOCATION	DOOR SIZE WIDTH	HEIGHT	THK	MATERIAL	FINISH	ELEV.	HARDWARE	FRAME PROFILE	MATERIAL	FINISH	ELEV.	DETAILS HEAD	JAMB	SILL	RATING	REMARKS
101	ENTRY	6'-0"	8'-0"	1 3/4"	EXISTING	EXIST.	EXIST.	SET #1	EXIST.	EXIST.	EXIST.	---	---	---	---	---	1-6
101B	ENTRY	3'-0"	8'-0"	1 3/4"	EXISTING	EXIST.	EXIST.	SET #2	EXIST.	EXIST.	EXIST.	---	---	---	---	---	1-6
106	BACK KITCHEN	3'-0"	7'-0"	1 3/4"	H.M.	PT-101/PT-109	1C/A601	SET #6	3A/A601	H.M.	PT-101/PT-109	2A/A601	4A/A601	5A/A601	---	---	1-6
107	OFFICE	3'-0"	7'-0"	1 3/4"	H.M.	PT-109	1D/A601	SET #7	3A/A601	H.M.	PT-109	2A/A601	4A/A601	5A/A601			2-6
108A	HALL	3'-0"	8'-0"	1 3/4"	EXISTING	EXIST.	EXIST.	SET #2	EXIST.	EXIST.	EXIST.	---	---	---	---	---	1-6
108B	HALL	3'-6"	7'-0"	1 3/4"	H.M.	PT-101	1F/A601	SET #3	3A/A601	H.M.	PT-101	2A/A601	4A/A601	5A/A601	---	---	2-6,8
109	WOMEN'S RESTROOM	3'-0"	7'-0"	1 3/4"	H.M.	PT-101/PT-109	1C/A601	SET #4	3A/A601	H.M.	PT-101/PT-109	2A/A601	4A/A601	5A/A601	---	---	2-7
110	MEN'S RESTROOM	3'-0"	7'-0"	1 3/4"	H.M.	PT-101/PT-109	1C/A601	SET #4	3A/A601	H.M.	PT-101/PT-109	2A/A601	4A/A601	5A/A601	---	---	2-7

REMARKS:
1. VERIFY ALL EXISTING HARDWARE IS IN GOOD CONDITION FOR RE-USE. REPAIR/REPLACE DOOR HARDWARE AS REQUIRED.
2. DOOR LOCKSETS / PASSAGE SETS SHALL BE OF THE LEVER HANDLE TYPE. HARDWARE SHALL BE MOUNTED NO HIGHER THAN 48" ABOVE FINISHED FLOOR (MOUNTED BETWEEN 44" TO 48"). PROVIDE LEVER HANDLE AT ALL HANDICAPPED ACCESSIBLE DOORS. MAXIMUM PULL FORCES FOR INTERIOR DOORS TO BE 5.0 LBS FORCE. MAXIMUM PULL FORCES FOR EXTERIOR DOORS TO BE 8.5 LBS FORCE
3. ALL HARDWARE TO COMPLY W/ THE LATEST REQUIREMENTS OF ADAAG/ANSI.
4. KEYING SEQUENCE TO BE COORDINATED W/ TENANT.
5. G.C. TO PROVIDE FULL SUBMITTAL OF ALL DOORS AND HARDWARE PRIOR TO ORDER/PURCHASE.
6. VERIFY STOREFRONT DOOR KICKPLATE IS ADA COMPLIANT (10" MINIMUM HEIGHT). IF NONCOMPLIANT INSTALL CR LAURENCE / 10" BOTTOM DOOR RAIL ADAPTOR.
7. RESTROOM DOORS TO BE PAINTED PT-109 ON THE RESTROOM SIDE AND PT-101 ON THE HALLWAY
8. HALLWAY DOOR TO BE PAINTED PT-101 ON HALLWAY SIDE AND PT-109 ON THE KITCHEN SIDE.

NOTES:
A. ALL EGRESS DOORS SHALL BE READILY OPENABLE FROM TEH EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT
B. LATCHES, HANDLES, PANIC BARS AND ALL DOOR HARDWARE WILL COMPLY WITH SECTION 1008.1.10 OF THE IBC OR PER THE SPECIFICATIONS.
C. ALL DOORS TO REMAIN UNLOCKED DURING BUSINESS HOURS.
D. MAXIMUM EFFORT TO OPERATE EXTERIOR OR INTERIOR DOORS WITH CLOSERS SHALL NOT EXCEED 5 POUNDS. THIS MAY BE INCREASED TO 15 POUNDS FOR FIRE-RATED DOORS.
E. THE BOTTOM 10 INCHES OF ALL DOORS SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.
F. ALL LOCKABLE DOORS SHALL BE EQUIPPED WITH REMOVABLE CORE HARDWARE, MANUFACTURED BY "SCHLAGE". HARDWARE TO BE SUPPLIED FROM THE MANUFACTURER WITH "SCHLAGE" REMOVABLE CORE CYLINDERS WITH CONSTRUCTION MASTER-KEYING.

DOOR HARDWARE SCHEDULE

HARDWARE SET # 1 : DOUBLE STOREFRONT EXTERIOR DOOR	
QTY.	DESCRIPTION
(2) DECORATIVE PULL (2) OFFSET DECORATIVE DOOR PULL (2) PANIC EXIT BAR (2) DOOR CLOSER WITH INTEGRAL STOP (8) HINGE (1) METAL THRESHOLD (2) SWEEP AND SMOKE SEAL	ROCKWOOD, PLANTEK: RM5230 (60" CTC), 315/711 BLACK ANODIZED STRONGAR, 1 PER LEAF, OUTSIDE FACE ONLY, 316 BLACK POWDER COATED, PRO-LINE SERIES 45° OFFSET 1"x1" SQUARE PULL HANDLE, 25" TALL, ONLY TO BE USED IF KEYLOCK CYLINDER NEEDS TO BE AVOIDED. CRL JACKSON, 1095 RIM PANIC C-STRIKE CROSSBAR EXIT DEVICE TO MATCH STOREFRONT CONDITION, 1 PER LEAF - EGRESS SIDE, GC TO VERIFY SPECIFICATION WITH DOOR CRL, DC55A: SIZE 5 SURFACE MOUNT DOOR CLOSER, BLACK FINISH, MOUNT TO TOP RAIL ON EGRESS SIDE ONLY, 1 PER LEAF EMTEK/ASSA ABLOY. HEAVY DUTY BALL BEARING SQ CORNER HINGES #94014 4"X4", US26D BRUSHED S.S. OR EQUIVALENT, USE 4 HINGES PER DOOR, G.C. TO VERIFY HINGES SUPPORT WIGHT OF DOOR. KN CROWDER, CT-66, BLACK KN CROWDER, 6216 ADHESIVE BACKED NEOPRENE WEATHERSTRIP, BLACK, G.C. TO SPECIFY SWEEP, IN BLACK OR GREY COLOR

HARDWARE SET # 2 : SINGLE STOREFRONT EXTERIOR DOOR	
QTY.	DESCRIPTION
(1) DECORATIVE PULL (1) OFFSET DECORATIVE DOOR PULL (1) PANIC EXIT BAR (1) DOOR CLOSER WITH INTEGRAL STOP (4) HINGE (1) METAL THRESHOLD (2) SWEEP AND SMOKE SEAL	ROCKWOOD, PLANTEK: RM5230 (60" CTC), 315/711 BLACK ANODIZED ROCKWOOD, 1 PER LEAF, OUTSIDE FACE ONLY, 315/711 BLACK ANODIZED, ONLY TO BE USED IF KEYLOCK CYLINDER NEEDS TO BE AVOIDED. CRL JACKSON, 1095 RIM PANIC C-STRIKE CROSSBAR EXIT DEVICE TO MATCH STOREFRONT CONDITION, 1 PER LEAF - EGRESS SIDE, GC TO VERIFY SPECIFICATION WITH DOOR CRL, DC55A: SIZE 5 SURFACE MOUNT DOOR CLOSER, BLACK FINISH, MOUNT TO TOP RAIL ON EGRESS SIDE ONLY, 1 PER LEAF EMTEK/ASSA ABLOY. HEAVY DUTY BALL BEARING SQ CORNER HINGES #94014 4"X4", US26D BRUSHED S.S. OR EQUIVALENT, USE 4 HINGES PER DOOR, G.C. TO VERIFY HINGES SUPPORT WIGHT OF DOOR. KN CROWDER, CT-66, BLACK KN CROWDER, 6216 ADHESIVE BACKED NEOPRENE WEATHERSTRIP, BLACK, G.C. TO SPECIFY SWEEP, IN BLACK OR GREY COLOR

HARDWARE SET # 3 : REAR EXTERIOR DOOR	
QTY.	DESCRIPTION
(1) SECURITY VIEWER (1) CONTINUOUS HINGE (1) EXIT DEVICE W/ CONCEALED VERTICAL RODS (1) CLOSER - PARALLEL ARM (1) THRESHOLD (1) EXTERIOR DOOR SWEEP (1) DRIP CAP ON FRAME (1) KICKPLATE GASKETING	DOOR SCOPE DS1000 TBD, GC TO SUBMIT PROPOSAL, SATIN STAINLESS STEEL OR EQUAL ADAMS RITE 8500 SERIES EXIT DEVICE US32 TBD, GC TO SUBMIT PROPOSAL, SATIN STAINLESS STEEL OR EQUAL TBD, GC TO SUBMIT PROPOSAL, SATIN STAINLESS STEEL OR EQUAL TBD, GC TO SUBMIT PROPOSAL, SATIN STAINLESS STEEL OR EQUAL TBD, GC TO SUBMIT PROPOSAL, SATIN STAINLESS STEEL OR EQUAL IVSES, 8400 34" X 8", S32D SATIN STAINLESS STELL --

HARDWARE SET # 4 : RESTROOM	
QTY.	DESCRIPTION
(1) PRIVACY LOCKSET (1) CLOSER (1) LOCKSET (1) HINGE SET (1) FLOOR DOOR STOP (3) SILENCERS (2) KICKPLATE	YALE AU YPL02 626 (L/R) ADA PRIVACY DOOR LOCK LEVER HANDLE: CHROME DORMA, MODEL 7436-685 ALUM 689 SCHLAGE, MODEL BE365 (CAMELOT) US32D KEYPAD SET IVES, 5BB1HW, SATIN STAINLESS OR EQUAL, HEAVY WEIGHT FULL MORTISE IVES, FS436, SATIN STAINLESS OR EQUAL IVES, SR64, GREY IVSES, 8400 34" X 8", S32D SATIN STAINLESS STEEL

HARDWARE SET # 5 : DOUBLE ACTING	
QTY.	DESCRIPTION
(1) DOOR (1) HINGE (1) BUMPER STRIPS	ELIASON EHH-3 KITCHEN PASS THROUGH, STAINLESS STEEL W/ VISION WINDOW ELIASON "HIDDEN HINGE" TOP & BOTTOM ASSEMBLY ELIASON, BUMPER STRIPS FOR EHH-3 DOOR, GREY OR BLACK NOTE BOTTOM OF VIEWING PANEL/GLAZED SURFACE TO BE LOCATED 43" MAXIMUM FROM THE FINISH FLOOR.

HARDWARE SET # 6 : BACK KITCHEN (KEYPAD LOCKSET)	
QTY.	DESCRIPTION
(3) HINGE (1) CLOSER (1) LOCKSET (1) DOORSTOP (3) DOOR SILENCERS (1) KICKPLATE	HAGER, MODEL AB700 (SIZE 4-1/2" X 4-1/2") DORMA, MODEL 7436-685 ALUM 689 ALARM LOCK DL2700 TRILOGY T2 KEYPAD SET IVES, MODEL FS436, US32D IVES, MODEL SR64, GRAY (AS REQUIRED) IVES, 8400 34" X 8", S32D SATIN STAINLESS STEEL.

HARDWARE SET # 7 : OFFICE	
QTY.	DESCRIPTION
(1) OFFICE LOCKSET (1) HINGE SET (1) FLOOR DOOR STOP (3) SILENCERS (1) KICKPLATE (1) VISION WINDOW	SCHLAGE, L9453I-06A - SATIN CHROME IVES, 5BB1HW, SATIN STAINLESS OR EQUAL, HEAVY WEIGHT FULL MORTISE IVES, FS436, SATIN STAINLESS OR EQUAL IVES, SR64, GREY IVES, 8400 34" X 8", S32D SATIN STAINLESS STEEL BOTTOM OF VIEWING PANEL/GLAZING SURFACE TO BE RELOCATED 43" MAX FROM FINISH FLOOR, GLAZING TO BE TEMPERED GLASS

HARDWARE SET # 8 : CAFE / ELIASON GATE	
QTY.	DESCRIPTION
(1) GATE KIT	ELIASON CAGE GATE (DOUBLE LEAF) NO POST, STAINLESS STEEL FINISH. LWP SERIES 21" LEAF.

ferris+sloane
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CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59
NAPERVILLE, IL 60540

PROJECT NUMBER:
CAV029

ISSUANCE
SD SET 11.01.24
PERMIT SET 12.06.24
BID SET 04.04.25
IFC SET 06.23.25

DOOR, HARDWARE, AND WINDOW SCHEDULE

A601

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MECHANICAL SYMBOLS LEGEND

ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
DB	DRY BULB
EAT	ENTERING AIR TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
FOB	FLAT ON BOTTOM
HZ	FREQUENCY
NC	NOISE CRITERIA
PSI	POUNDS PER SQUARE INCH
RTU	ROOFTOP UNIT
TYP	TYPICAL
WC	WATER COLUMN
WB	WET BULB

GRILLES/DIFFUSERS:

- SUPPLY DIFFUSER
- SUPPLY DIFFUSER WITH 3-WAY THROW
- SUPPLY DIFFUSER WITH 2-WAY THROW
- SIDEWALL MOUNTED SUPPLY REGISTER
- RETURN GRILLE
- EXHAUST GRILLE
- ROUND DIFFUSER
- LINEAR DIFFUSER

EQUIPMENT:

- ROOF MOUNTED EXHAUST FAN
- CEILING MOUNTED EXHAUST FAN
- ROOFTOP UNIT
- MAKE-UP AIR UNIT
- TS — TEMPERATURE SENSOR - ELECTRIC
- T — THERMOSTAT
- CO_2 — CARBON DIOXIDE SENSOR
- D — DUCT SMOKE DETECTOR
- H — HUMIDITY SENSOR
- A — AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR

DOUBLE LINE DUCT SYMBOLS:

- NEW SHEET METAL DUCTWORK
- SUPPLY OR OUTSIDE AIR DUCT
- RETURN AIR DUCT
- EXHAUST AIR DUCT
- DUCTWORK TRANSITION
- DUCTWORK TRANSITION - RECTANGULAR TO ROUND
- SUPPLY DUCT ELBOW UP OR DOWN
- RETURN DUCT ELBOW UP OR DOWN
- EXHAUST DUCT ELBOW UP OR DOWN
- DUCT ELBOW WITH FIXED TURNING VANES
- DUCT BRANCH TAKE-OFF
- ROUND SPIN-IN WITH DAMPER
- SQUARE TO ROUND TAP WITH DAMPER
- FLEXIBLE DUCT CONNECTION
- VD — VOLUME DAMPER
- BD — BACKDRAFT DAMPER
- FLEXIBLE DUCTWORK

GENERAL REFERENCES/NOTATIONS:

- CONNECT TO EXISTING
- # — NOTE DESIGNATION
- # — REVISION DESIGNATION
- TYPE # — MECHANICAL EQUIPMENT DESIGNATION
- TAG / CFM — DIFFUSER DESIGNATION AND CFM

SYMBOLS LEGEND NOTES:

1. REFER TO SPECIFICATIONS AND PLAN NOTES FOR DETAILED DESCRIPTION OF ALL DEVICES SHOWN IN THIS SCHEDULE.
2. PROJECT MAY NOT USE EVERY SYMBOL OR DEVICE INDICATED ON THIS LEGEND.

SEQUENCE OF OPERATION

A. PROVIDE STAND ALONE OR APPLICATION SPECIFIC CONTROLLERS AS REQUIRED TO PERFORM THE FOLLOWING SEQUENCES OF OPERATIONS.

B. PACKAGED ROOFTOP UNITS

1. UNIT SHALL CONSIST OF SUPPLY AIR FAN, FILTERS, DX COOLING COIL, GAS-FIRED HEAT SECTION, AND A 7-DAY PROGRAMMABLE THERMOSTAT.
2. PROVIDE AN OVERRIDE SWITCH TO OPERATE THE UNIT DURING UNOCCUPIED HOURS. THIS SWITCH SHALL BE PART OF THE PROGRAMMABLE THERMOSTAT. OVERRIDE SWITCH ALLOWS THE UNIT TO OPERATE FOR TWO HOURS (ADJUSTABLE).
3. OCCUPIED MODE: BASED ON THE ROOFTOP UNIT'S HOURS OF OCCUPANCY, START THE UNIT AT THE BEGINNING OF OCCUPANCY AND SHUT DOWN THE UNIT AT THE END OF OCCUPANCY (NOTE: OUTSIDE AIR DAMPER WITHIN THE RTU SHALL OPEN AND THEN THE RTU SHALL START). THE UNIT SHALL START EARLIER AS DETERMINED BY THE PROGRAM FOR EARLY WARM-UP OR COOL DOWN. ON A SYSTEM STARTUP, THE RTU FAN SHALL START AND RUN CONTINUOUSLY AND THE INTERNAL FACTORY CONTROLS SHALL BE ENABLED. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT (COOLING 75 DEGREE F, HEATING 70 DEGREE F)
   - 3.1 ECONOMIZER MODE: WHEN ENTHALPY OF OA IS BELOW 28 BTU/LB, ECONOMIZER MODE SHALL BE ENABLED. ECONOMIZER MODE SHALL LINEARLY MODULATE OUTDOOR AIR CFM FROM MINIMUM OA CFM TO 100% BASED ON ENTHALPY READINGS.
   - 3.2 HUMIDITY CONTROL (WHEN NEEDED BASED ON CLIMATE): UPON DETECTION OF RELATIVE HUMIDITY ABOVE 55%, THE UNIT SHALL CYCLE INTO DEHUMIDIFICATION MODE IF NOT ALREADY IN COOLING.
4. UNOCCUPIED MODE: THE RTU INTERNAL OA DAMPERS SHALL REMAINED CLOSED WHEN THE BUILDING IS NOT OCCUPIED. THE RTU SHALL STOP HEATING/COOLING AND THE FAN SHALL STOP. IF THE SPACE TEMPERATURE FALLS BELOW 56 DEGREE F (ADJUSTABLE), THE UNIT SHALL START AND HEAT UNTIL THE SPACE TEMPERATURE IS 60 DEGREE F (ADJUSTABLE) AND THEN SHUTDOWN. IF THE SPACE TEMPERATURE RISES ABOVE 85 DEGREE F (ADJUSTABLE), THE UNIT SHALL START AND COOL UNTIL THE SPACE TEMPERATURE IS 80 DEGREE F (ADJUSTABLE) AND THEN SHUTDOWN.
5. UPON DETECTION OF SMOKE BY UNIT SMOKE DETECTOR BOTH RTUS SHALL SHUT DOWN AND AN ALARM SHALL BE SENT TO THE FIRE ALARM CONTROL PANEL (WHERE APPLICABLE). LOCAL REMOTE ANNUNCIATORS SHALL ALSO BE ACTIVATED.

C. KITCHEN HOOD EXHAUST FAN (KF-1)

1. THE KITCHEN HOOD EXHAUST FAN SHALL BE ENABLED WHEN ANY COOKING APPLIANCE LOCATED UNDER ITS RESPECTIVE HOOD, IS IN USE.

D. MAKE UP AIR UNIT

1. THE MAKE UP AIR UNIT SHALL BE ENABLED WHEN THE KITCHEN HOOD EXHAUST FAN (KF-1) IS ENERGIZED. THE INTERNAL MOTORIZED DAMPER WITHIN WITH MAU-1 SHALL OPEN AND THE FAN SHALL RUN. IF OA IS LESS THAN 65° (ADJ.), THE MAU-1 GAS-FIRED HEAT SECTION SHALL BE ENABLED TO MAINTAIN A MINIMUM OF 65°.
2. WHEN KF-1 IS OFF, MAU-1 SHALL BE DE-ENERGIZED AND THE INTERNAL MOTORIZED DAMPED SHALL CLOSE.

E. ANSUL SYSTEM ACTIVATION

1. UPON ACTIVATION OF ANSUL SYSTEM, SHUT DOWN MAU-1, AND RTUS. PROVIDE RELAYS CONTACTS, INTERLOCKS, TRANSFORMERS AND ALL ASSOCIATED WIRING TO ACCOMPLISH SEQUENCE. MAU-1 IS ALREADY PREWIRED TO SHUT DOWN IN HOOD CONTROL PANEL. MECHANICAL CONTRACTOR SHALL INTERLOCK RTUS TO ALSO SHUT DOWN.

GENERAL NOTES

A. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SET.

B. COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE DUCT RISES AND DROPS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES

C. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

D. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.

E. INSTALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE.

F. CONTACT LANDLORD APPROVED ROOFING CONTRACTOR TO FLASH AND SEAL RELATED ROOF PENETRATIONS TO MAINTAIN ROOFING WARRANTY.

G. INSTALL EXHAUST FAN A MINIMUM OF 10 FT FROM INTAKE AIR OPENINGS.

H. PER 2018 IMC 917.1 COOKING APPLIANCES: COOKING APPLIANCES THAT ARE DESIGNED FOR PERMANENT INSTALLATION, INCLUDING RANGES, OVENS, STOVES, BROILERS, GRILLS, FRYERS, GRIDDLES, AND BARBECUES SHALL BE LISTED, LABELED, AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COMMERCIAL ELECTRIC COOKING APPLIANCES SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 197.

ENERGY NOTES

1. MOTORIZED DAMPERS SHALL BE INSTALLED ON ALL INTAKES AND EXHAUST OPENINGS UNLESS NOTED OTHERWISE.

2. MAXIMUM FAN NAMEPLATE HORSEPOWER SHALL NOT EXCEED 1.1 HP/1000CFM.

3. LOAD CALCULATIONS WERE BASED ON ASHRAE 2021 FUNDAMENTALS

4. ALL PROGRAMMABLE THERMOSTATS SHALL HAVE 5 DEGREE DEADBAND AND SHALL HAVE 7-DAY CLOCK, 2-HOUR MANUAL OVERRIDE, 10 HOUR BACKUP AND SETBACK CAPABLE OF 55 DEGREES HEATING AND 85 DEGREES COOLING. (EXCEPT CONTINUOUS OPERATING ZONES)

5. DUCT INSULATION AS SPECIFIED WITH MINIMUM VALUES AS FOLLOWS:
a.R-6 SUPPLY AND RETURN DUCT INSULATION IN UNCONDITIONED SPACES.
b.R-12 SUPPLY AND RETURN DUCT INSULATION FOR EXTERIOR DUCTS.
c.R-3 SUPPLY AND RETURN DUCT INSULATION UNDERGROUND.
d.1" INTERNAL LINER ON DUCTS WITHIN INDIRECTLY CONDITIONED PLENUM SPACES.

6. ALL DUCTWORK SHALL BE SEALED PRESSURE SENSITIVE TAPE IS NOT USED AS THE PRIMARY SEALANT. LONGITUDINAL AND TRANSVERSE SEAMS FOR DUCTS IN UNCONDITIONED SPACES AND WALL PENETRATIONS. TRANSVERSE SEAMS ON BURIED DUCTS.

7. ALL MOTORS SHALL MEET THE REQUIREMENTS OF IECC C405.8.

8. PROVIDE COMMISSIONING PER IEEC C408.

9. PER 2021 IECC C403.11.1 COMMERCIAL REFRIGERATORS, REFRIGERATOR-FREEZERS, AND REFRIGERATION: REFRIGERATION EQUIPMENT, DEFINED IN DOE 10 CFR PART 431.62, SHALL HAVE ANY ENERGY USE IN KWH/DAY NOT GREATER THAN THE VALUES ON TABLE C403.11.1 WHEN TESTED AND RATED IN ACCORDANCE WITH AHRI STANDARD 1200.

10. PER 2021 IECC C403.12.3 PIPING INSULATION: PIPING SERVING AS A PART OF HEATING AND COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE C403.12.3.

INSULATION SCHEDULE

ALL EXPOSED DUCTWORK IN CONDITIONED SPACES	1" DUCT LINER
ALL EXTERIOR DUCTWORK	MIN. R-12
ALL CONCEALED SUPPLY AND RETURN DUCT	MIN. R-6
ALL EXHAUST UP TO 10'-0" FROM DISCHARGE	MIN. R-8

NOTE:

ALL SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION WHEN LOCATED IN UNCONDITIONED SPACES AND WITH A MINIMUM OF R-12 INSULATION WHEN LOCATED OUTSIDE THE BUILDING ENVELOPE. WHEN LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY A MINIMUM OF R-12 INSULATION. ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS, MASTIC-PLUS-EMBEDDED-FABRIC SYSTEMS OR TAPES. TAPES AND MASTICS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B. DUCT CONNECTIONS TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED. DUCT TAPE IS NOT PERMITTED AS A SEALANT ON ANY METAL DUCTS.

APPLICABLE CODES

AS ADOPTED BY THE CITY OF NAPERVILLE, IL :
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL FIRE CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE

DESIGN CRITERIA

BASED ON ASHRAE HANDBOOK - 2021 FUNDAMENTALS

NAPERVILLE, IL

OUTDOOR DESIGN CONDITION

1% COOLING: 87.9°/73.5°F DB/WB

99.6% HEATING: -3.8°F DB

INDOOR DESIGN CONDITION (ADJUSTABLE)

SUMMER: 75°F DB/50% RH

WINTER: 70°F DB

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100 N. Howard Street, Suite 4500 Spokane, WA 99201

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59 SUITE 112
NAPERVILLE, IL 60540
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CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER:
CAV029

ISSUE	DATE
PERMIT SET	12.06.24
PERMIT REV	02.24.25
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

MECHANICAL GENERAL NOTES, SYMBOLS, AND LEGEND

SHEET:
M000

rtm
engineering consultants
2800 156th Ave SE | Suite 115
Bellevue, WA 98007
rtmec.com | 847.756.4180

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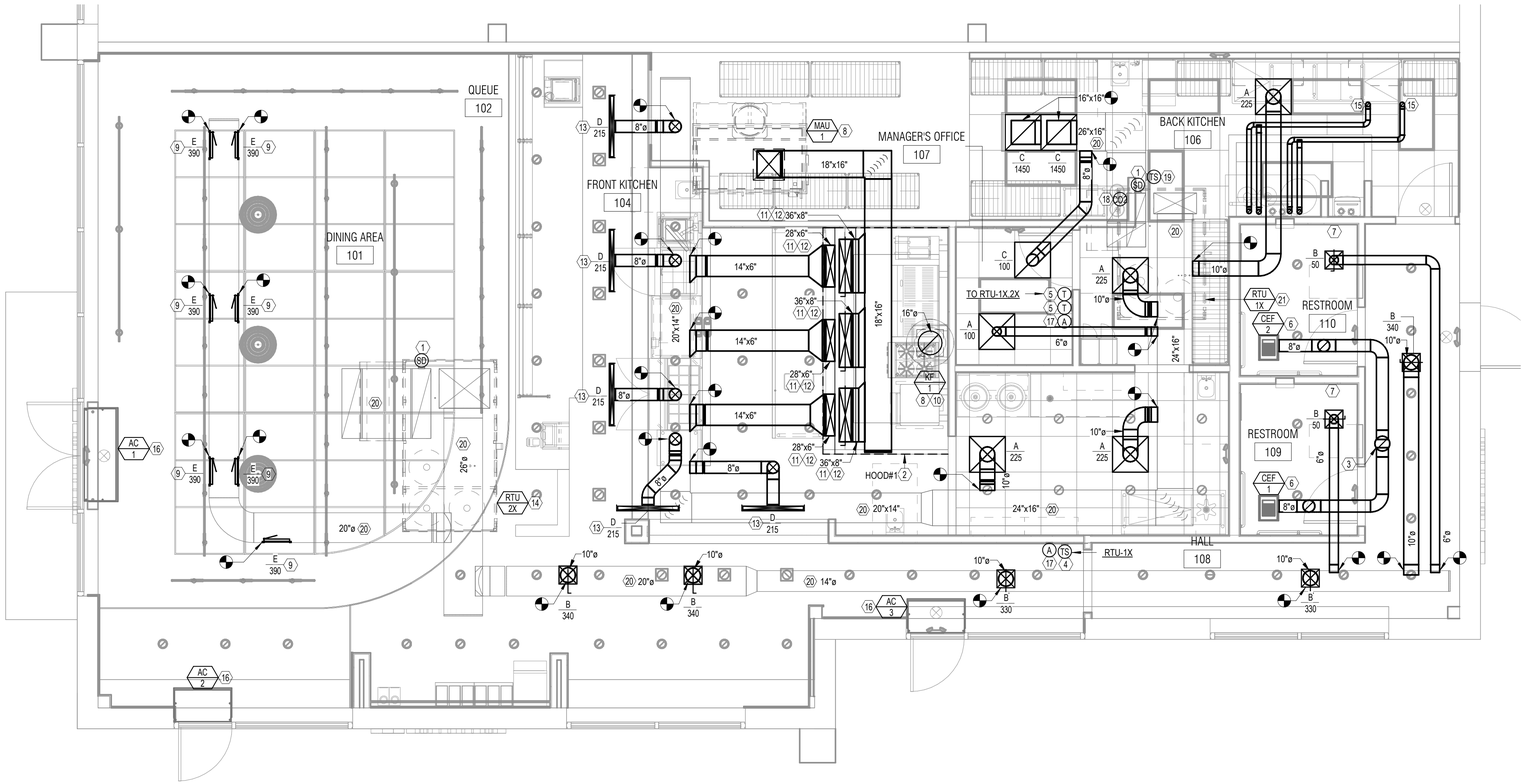

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1 M101 **MECHANICAL PLAN**

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

KEYED NOTES

1. DUCT MOUNTED SMOKE DETECTOR FURNISHED BY FIRE ALARM CONTRACTOR AND INSTALLED IN DUCT BY MECHANICAL CONTRACTOR. INTERLOCK WIRING BETWEEN FIRE ALARM SYSTEM RELAY AND ROOFTOP UNIT SHUTDOWN CONTACT SHALL BE PROVED BY MECHANICAL CONTRACTOR. ALL OTHER WIRING BY FIRE ALARM CONTRACTOR. UPON DETECTION OF SMOKE, ROOFTOP UNIT SHALL SHUT DOWN UPON SIGNAL FROM FIRE ALARM SYSTEM. COORDINATE INSTALLATION LOCATION WITH ACCESS REQUIREMENTS. PROVIDE 18"X18" ACCESS PANEL AS REQUIRED. COORDINATE ACCESS PANEL'S FINISH WITH ARCHITECT.
2. INSTALL OWNER FURNISHED TYPE I GREASE EXHAUST HOOD. SUPPORT HOOD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE TRAPEZE HANGERS AND MOUNTING BRACKETS FOR ALL THREAD SUPPORT UNDER DUCTWORK AS REQUIRED. REFER TO HOOD DRAWINGS IN FOOD SERVICE SET FOR HOOD SPECIFICATION AND ADDITIONAL INFORMATION INCLUDING BALANCE OF MAKEUP AND CONDITIONED SUPPLY AIR TO HOOD.
3. 10"Ø EXHAUST DUCT VENT THROUGH ROOF ABOVE.
4. PROVIDE REMOTE TEMPERATURE SENSOR COMPATIBLE WITH THERMOSTAT. MOUNT SENSOR 48" ABOVE FINISHED FLOOR. COORDINATE EXACT LOCATION WITH OWNER.
5. INSTALL LED TOUCHSCREEN 24/7 PROGRAMMABLE THERMOSTAT (WITH CONTROLS LOCKED BY CODE) MOUNTED AT 48" AFF. COORDINATE EXACT LOCATION WITH OWNER.
6. PROVIDE CEILING MOUNTED EXHAUST FAN. TRANSITION FROM FAN DISCHARGE TO DUCT SIZE SHOWN AND EXTEND UP THROUGH ROOF.
7. UNDERCUT RESTROOM DOOR 1" FOR TRANSFER AIR.
8. DUCT UP TO EQUIPMENT ON ROOF. REFER TO SHEET M201 FOR EQUIPMENT LOCATION.
9. MOUNT REGISTER AT 15° ANGLE ON SIDE OF DUCT. ADJUST DIFFUSER BLADES TO WASH WINDOWS AS APPLICABLE. BALANCE AIR SCOOP TO CFM INDICATED.
10. PROVIDE UL-2221 LISTED DOUBLE-WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL DW-3R OR 32 ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL. FROM HOOD COLLAR EXHAUST FAN ON ROOF. INSTALL EXHAUST DUCT PER MANUFACTURER'S INSTRUCTIONS. PROVIDE CLEANOUTS AT EVERY CHANGE OF DIRECTION IN THE DUCT AND/OR EVERY 10 FEET WITH A MINIMUM OF 3 FEET OF CLEARANCE IN FRONT OF CLEAN-OUT. COORDINATE ROUTING OF DUCTWORK WITH OWNER'S CAPTIVEAIRE REPRESENTATIVE.
11. REFER TO HOOD DRAWINGS FOR BALANCE OF MAKEUP AIR AND CONDITIONED SUPPLY AIR.
12. PROVIDE YOUNG REGULATOR MODEL 830ACC RECTANGULAR CABLE CONTROLLED OPPOSED BLADE BALANCING DAMPER, MODEL 270-301EZ BOWDEN CABLE CONTROL KIT, AND BCW CONTROL WIRE AND CASINGS. COORDINATE INSTALLATION LOCATION WITH ARCHITECT AND MOUNT CABLE CONTROLLER IN CEILING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
13. REMOTE CABLE OPERATED BALANCING DAMPER, TYPICAL FOR BALANCING DAMPERS IN HARD CEILING APPLICATIONS.
14. EXISTING 12.5-TON RTU (DINNING) & CURB PROVIDED BY LANDLORD.
15. EXTEND 3" COMBUSTION AIR AND FLUE IN CEILING SPACE. FIELD VERIFY EXACT ROUTING. EXTEND 3" COMBUSTION AIR AND FLUE UP TO CONCENTRIC VENT THROUGH ROOF ABOVE.
16. PROVIDE AIR CURTAIN ABOVE ENTRANCE DOOR. INSTALL PER MANUFACTURES RECOMMENDATIONS.
17. PROVIDE AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET FOR SMOKE DETECTOR MOUNTED AT 48" AFF. ALIGN ANNUNCIATOR WITH TEMPERATURE SENSOR WHERE APPLICABLE.
18. PROVIDE CO2 MEASUREMENT SPECIALISTS RAD-0102-6 REMOTE CO2 STORAGE SAFETY ALARM (OR EQUAL). INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
19. REMOTE TEMPERATURE SENSOR MOUNTED WITHIN RETURN DUCT FOR RTU-1X. WIRE BACK TO THERMOSTAT AT MANAGERS DESK.
20. EXISTING INSULATED SA & RA DUCT MAIN & BRANCHES PROVIDED BY THE LANDLORD. COORDINATE FINAL LOCATIONS/SIZES WITH ACTUAL SITE CONDITIONS.
21. EXISTING 7.5-TON RTU (KITCHEN) & CURB PROVIDED BY LANDLORD.

GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR AS REQUIRED TO INSTALL A COMPLETE AND OPERABLE HVAC SYSTEM PER THE NEW ARCHITECTURAL LAYOUT AND AS TO COMPLY WITH THE SPECIFICATIONS, DETAILS, THIS SCOPE OF WORK AND ALL APPLICABLE CODES.
2. ALL WORK PERFORMED SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND COORDINATE ALL NEW WORK WITH ALL TRADES PRIOR TO ANY WORK BEING DONE TO ENSURE CONFLICTS DO NOT OCCUR.
4. DISRUPTION OF ANY EXISTING SERVICE SHALL BE CLEARED WITH THE OWNER AND SHALL BE PERFORMED AT A TIME AND IN A MANNER SO AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE.
5. ALL DUCT SIZES INDICATED ON PLANS AND RISERS ARE CLEAR INSIDE DIMENSIONS. DUCT SIZES NOT SHOWN SHALL BE SIZED TO VELOCITIES NO GREATER THAN UPSTREAM SECTION USING SIMILAR ASPECT RATIOS.
6. ALL SUPPLY AIR TAKEOFFS FROM MAIN TRUNK DUCTS ARE TO BE INSTALLED WITH BELL MOUTH FITTINGS OR 45 DEGREE ENTRY TO PROVIDE THE SMOOTHEST AIR FLOW POSSIBLE.
7. PROVIDE TURNING VANES IN ALL LOW-PRESSURE 90-DEGREE DUCT TURNS.
8. ALL THERMOSTAT LOCATIONS SHALL BE APPROVED BY THE ARCHITECT.
9. ALL DUCTS LOCATED ABOVE INACCESSIBLE CEILINGS ARE TO BE BALANCED PRIOR TO CEILING INSTALLATIONS.
10. CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR SERVICE AND MAINTENANCE OF ALL EQUIPMENT LOCATED ABOVE INACCESSIBLE CEILINGS.
11. PROVIDE GUIDES, HANGERS, EXPANSION LOOPS AND SUPPLEMENTARY STEEL SUPPORT WHERE REQUIRED FOR ALL PIPING.
12. DO NOT PENETRATE KITCHEN EXHAUST HOODS OR DUCTWORK WITH ANY TYPE OF FASTENING ASSEMBLY (I.E. SCREWS, RIVETS).
13. IF NOT PAINTED, ALL DUCTWORK SHALL HAVE GASKET A SEAL.
14. EXPOSED DUCTWORK IN THE DINING AREA SHALL BE MADE OF ELECTRO -GALVANIZED STEEL (PAINTLOCK). SEE MECHANICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
15. COORDINATE ACCESS PANEL LOCATIONS WITH ARCHITECTURAL SHEETS.
16. PROVIDE GUARDS FOR ANY MECHANICAL EQUIPMENT THAT REQUIRES SERVICE ON ROOF THAT IS LOCATED WITHIN 10'-0" OF A ROOF EDGE. THE TOP OF THE GUARD SHALL BE LOCATED NOT LESS THAN 42" ABOVE THE ELEVATED SURFACE ADJACENT TO THE GUARD.

HVAC COMMISSIONING

GENERAL CONTRACTOR SHALL HIRE A THIRD PARTY REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY TO DEVELOP A COMMISSIONING PLAN THAT SHALL INCLUDE THE FOLLOWING ITEMS:

1. NARRATIVE DESCRIPTION OF ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING PERSONNEL INTENDED TO ACCOMPLISH EACH PHASE OF ACTIVITY.
2. LISTING OF SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND DESCRIPTION OF TESTS TO BE PERFORMED.
3. FUNCTIONS TO BE TESTED, INCLUDING, BUT NOT LIMITED TO CALIBRATIONS AND ECONOMIZER CONTROLS.
4. CONDITIONS UNDER WHICH TEST WILL BE PERFORMED. AT MINIMUM, TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.
5. MEASURABLE CRITERIA FOR PERFORMANCE.

A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY IN ACCORDANCE WITH REQUIREMENTS OF SECTION C408.2 OF THE INTERNATIONAL ENERGY CONSERVATION CODE AND PROVIDED TO PROJECT OWNER. A COPY OF THE REPORT SHALL BE MADE AVAILABLE TO CODE OFFICIAL IF REQUESTED.

FINAL COMMISSIONING REPORT SHALL BE DUE TO PROJECT OWNER WITHIN 90 DAYS OF RECEIPT OF CERTIFICATE OF OCCUPANCY.

REMODEL NOTES

THIS DRAWING IS BASED ON BEST AVAILABLE INFORMATION AT TIME OF DESIGN AND MAY NOT REFLECT AS-BUILT CONDITIONS. ALL MECHANICAL INSTALLATIONS INDICATED ON THIS SHEET SHALL BE FIELD VERIFIED PRIOR TO BID AND DEMOLITION.

EQUIPMENT CLEARANCE NOTES

VERIFY ALL EXISTING EXHAUST OUTLETS WITHIN 10'-0" OF OUTDOOR AIR INTAKES ARE MINIMUM 3'-0" HIGHER THAN OUTDOOR AIR INTAKES. CONTACT THE ARCHITECT AND ENGINEER IMMEDIATELY IF ANY EXISTING EXHAUST OUTLETS WITHIN 10'-0" OF OUTDOOR AIR INTAKES ARE OBSERVED TO BE LESS THAN 3'-0" HIGHER THAN OUTDOOR AIR INTAKES.

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AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

MECHANICAL PLAN

SHEET: **M101**

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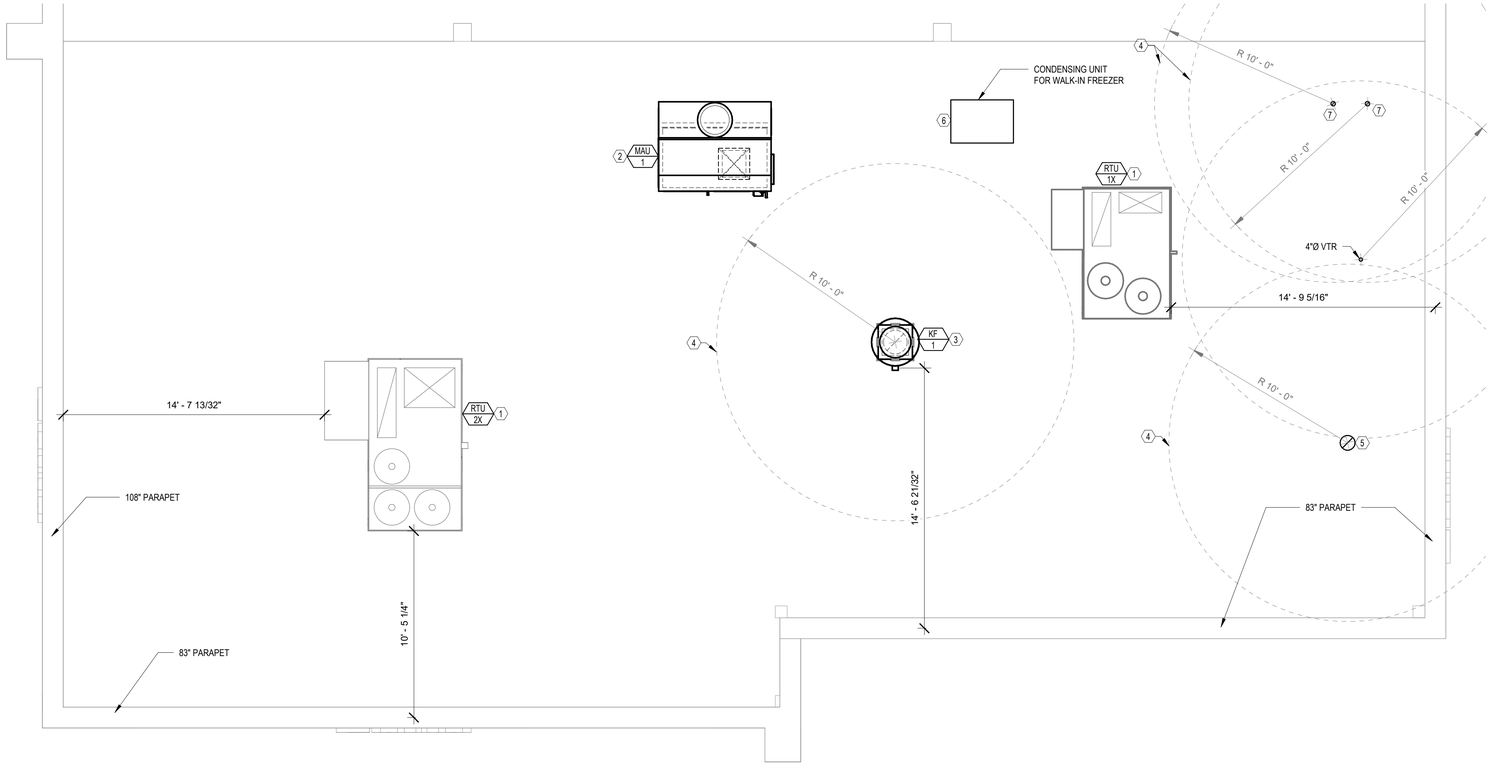

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1 M201 **MECHANICAL ROOF PLAN**

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

GENERAL NOTES

1. ALL ROOFTOP EQUIPMENT LOCATIONS SHALL BE COORDINATED WITH ROOF DRAINS. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT LOCATIONS OF EQUIPMENT.
2. THE INSTALLING CONTRACTOR SHALL PROVIDE ROOF CURBS AND LEVELING CURBS TO MATCH THE ROOF PITCH IF REQUIRED. THE ROOFING CONTRACTOR SHALL FLASH ALL CURBS INTO ROOF.
3. ALL ROOFTOP EQUIPMENT SHALL BE SET ON CURBS OR RAILS. ALL PIPE AND DUCT PENETRATIONS THROUGH THE ROOF SHALL HAVE A WEATHER PROOF CURB OR FLASHING. ALL ROOF FLASHING SHALL BE PERFORMED BY THE ROOFING CONTRACTOR.
4. ALL VENTS AND EXHAUSTS SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM FRESH AIR INTAKES PER LOCAL CODE.
5. VENT TERMINATIONS PROVIDED BY THE PLUMBING CONTRACTOR SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. EXTEND TERMINATION HEIGHT TO PROVIDE 12'-0" CROSS SECTION CLEARANCE WHERE NEEDED.
6. ANY PENETRATION THROUGH THE ROOF SHALL BE COORDINATED WITH THE ROOFING CONTRACTOR.
7. ALL STRUCTURAL DUCT OPENINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CUTTING. INDICATE ON 1/8" SHOP DRAWINGS EXACT LOCATION OF OPENINGS COORDINATED WITH STRUCTURAL TRADES. PROVIDE DUCT ROOF CURBS AT ALL DUCT PENETRATIONS THRU THE ROOF.
8. ALL EQUIPMENT SHALL BE A MINIMUM OF 10'-0" AWAY FROM ROOF EDGE IF PARAPET IS LOWER THAN 42" PER CODE.
9. ACCESS TO MECHANICAL APPLIANCES INSTALLED IN UNDER-FLOOR AREAS, IN ATTIC SPACES, AND ON ROOFS OR ELEVATED STRUCTURES SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE.
10. EXHAUST TERMINATION OF ENVIRONMENTAL AIR DUCTS SHALL TERMINATE NOT LESS THAN 3'-0" FROM A PROPERTY LINE, 10'-0" FROM A FORCED AIR INLET, AND 3'-0" FROM OPENINGS INTO BUILDINGS.
11. CONTRACTOR TO PROVIDE SIGNED AND SEALED WIND LOAD CALCULATIONS (AS APPLICABLE) PRIOR TO INSTALLATION OF ALL ROOF MOUNTED EQUIPMENT AND DUCTWORK.
12. PROVIDE ENGINEERED ROOF CURBS AS NEEDED. PROVIDE MINIMUM WIND LOAD CALCULATIONS WITH P.E CERTIFICATIONS (AS APPLICABLE).
13. PROVIDE GUARDS FOR ANY MECHANICAL EQUIPMENT THAT REQUIRES SERVICE ON ROOF THAT IS LOCATED WITHIN 10'-0" OF A ROOF EDGE. THE TOP OF THE GUARD SHALL BE LOCATED NOT LESS THAN 42" ABOVE THE ELEVATED SURFACE ADJACENT TO THE GUARD.

KEYED NOTES

1. EXISTING ROOFTOP UNIT BY LANDLORD TO REMAIN AND BE RE-USED. FIELD VERIFY EXACT LOCATION OF UNIT AND ADJUST DUCTWORK ROUTING ACCORDINGLY. CLEAN UNIT, GREASE ALL BEARINGS, LEAK-CHECK AND CHARGE REFRIGERANT SYSTEM, REPLACE FILTERS, AND CLEAN INDOOR AND OUTDOOR COILS. RESHEAVE MOTOR AS REQUIRED TO DELIVER SPECIFIED AIRFLOW.
2. INSTALL OWNER FURNISHED MAKEUP AIR UNIT AND ROOF CURB. SHIM UNIT AND CURB LEVEL. PROVIDE FLEXIBLE CONNECTORS ON THE SUPPLY AIR DUCT CONNECTION. TRANSITION TO DUCT SIZE SHOWN ON M101.
3. INSTALL OWNER FURNISHED ROOF MOUNTED EXHAUST FAN AND ROOF CURB.
4. MAINTAIN A MINIMUM 10'-0" CLEARANCE FROM EXHAUST DISCHARGE TO OUTSIDE AIR INTAKES.
5. EXTEND 10"Ø EXHAUST DUCT UP THROUGH ROOF. PROVIDE A ROOF JACK, STORM COLLAR, AND ALL-WEATHER CAP.
6. PROVIDE ROOF MOUNTED EQUIPMENT SUPPORT RAILS AND INSTALL OWNER FURNISHED REMOTE CONDENSING UNIT FOR WALK-IN COOLER. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, CRANKCASE HEATER, LOW AMBIENT CONTROLS, AND WEATHER PROOF HOUSING. PROVIDE ROOF RAILS TO SUPPORT CONDENSING UNIT ON ROOF. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE PIPE CURB ASSEMBLY FOR ROOF PENETRATIONS. SEAL PIPING PENETRATIONS THROUGH COOLER ROOF.
7. PROVIDE WITH NAVIAN GXXX000057 CONCENTRIC VENT AT TERMINATION.

EQUIPMENT CLEARANCE NOTE

VERIFY ALL EXISTING EXHAUST OUTLETS WITHIN 10'-0" OF OUTDOOR AIR INTAKES ARE MINIMUM 3'-0" HIGHER THAN OUTDOOR AIR INTAKES. CONTACT THE ARCHITECT AND ENGINEER IMMEDIATELY IF ANY EXISTING EXHAUST OUTLETS WITHIN 10'-0" OF OUTDOOR AIR INTAKES ARE OBSERVED TO BE LESS THAN 3'-0" HIGHER THAN OUTDOOR AIR INTAKES.

INSULATION NOTES

PER 2021 IECC C403.12.1, DUCT AND PLENUM INSULATION AND SEALING: SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH NOT LESS THAN R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND WHERE LOCATED OUTSIDE THE BUILDING WITH NOT LESS THAN R-12 INSULATION IN CLIMATE ZONES 5 THROUGH 8.

PER 2021 IECC C403.12.3 PIPING INSULATION: PIPING SERVING AS A PART OF HEATING AND COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE C403.12.3.

PER 2021 IECC 403.12.3.1 PROTECTION OF PIPING INSULATION: PIPING INSULATION EXPOSED TO THE WEATHER SHALL BE PROTECTED FROM DAMAGE INCLUDING THAT CAUSED BY SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE AND WIND, AND SHALL PROVIDE SHIELDING FROM SOLAR RADIATION THAT CAN CAUSE DEGRADATION OF THE MATERIAL. ADHESIVE TAPE SHALL NOT BE PERMITTED.

REFRIGERATION SYSTEM NOTES

PER 2021 IECC C403.11 REFRIGERATION SYSTEM: REFRIGERATED DISPLAY CASES, WALK-IN COOLERS OR WALK-IN FREEZERS THAT ARE SERVED BY REMOTE CONDENSERS NOT LOCATED IN A CONDENSING UNIT, SHALL COMPLY WITH SECTIONS C403.11.3.1.

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AOR PROJECT NUMBER:
CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

MECHANICAL ROOF PLAN

SHEET:
M201

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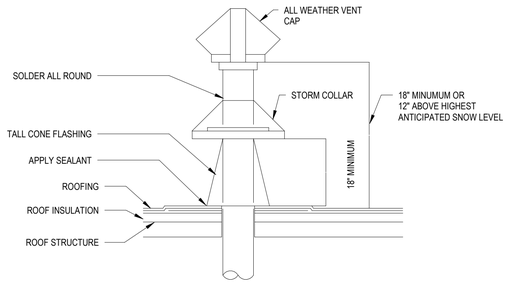

1 DUCT THRU ROOF DETAIL1
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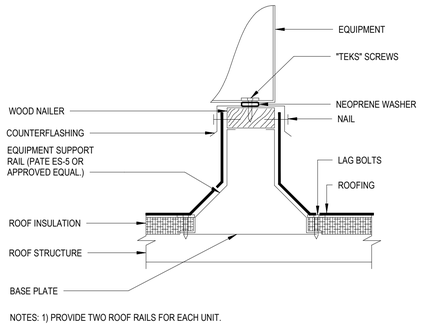

NOTES: 1) PROVIDE TWO ROOF RAILS FOR EACH UNIT.

2 EQUIPMENT SUPPORT RAIL DETAIL
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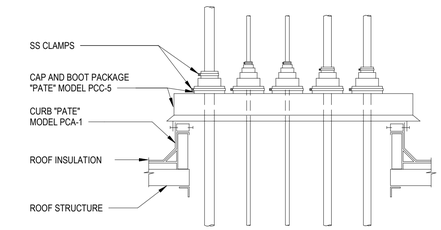
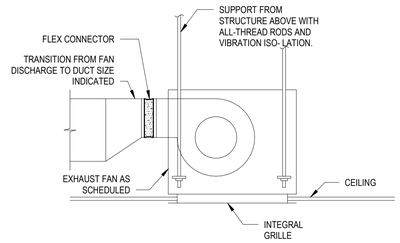


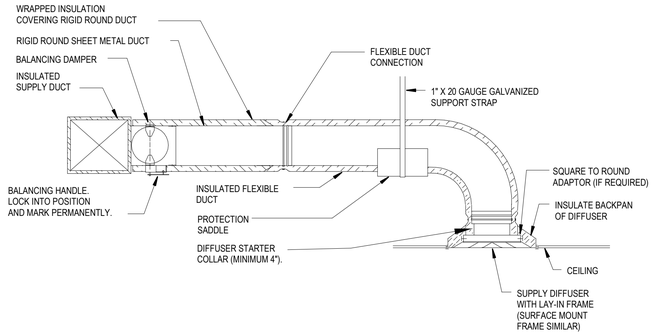
NOTES:

1. USE SINGLE ROOF PENETRATION FOR ALL CONTROL WIRING, POWER WIRING, AND REFRIGERANT LINES.
2. INSULATE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS.

3 PIPE ROOF PENETRATION DETAIL
SCALE: N.T.S.

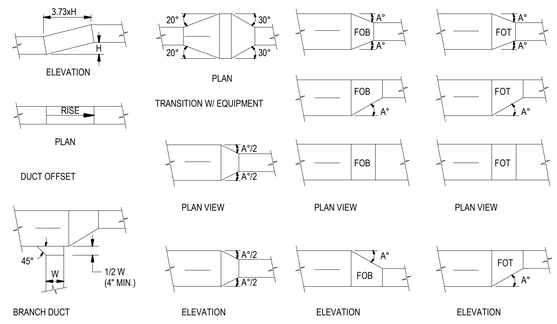


4 CABINET EXHAUST FAN DETAIL
SCALE: N.T.S.



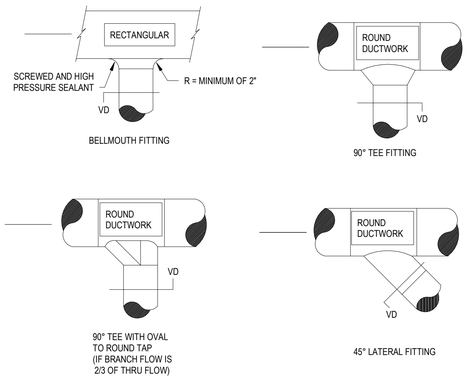
NOTES:
1) PROVIDE AT FLEXIBLE DUCT CONNECTION METAL OR "PANDUIT" DRAWBAND ON THE INTERIOR FLEXIBLE DUCT HELIX. SECURE THE INSULATION OVER THE DRAW BAND WITH AN ADDITIONAL DRAWBAND.
2) PROVIDE BEADING ON ROUND METAL DUCT 12" OR LARGER IN DIAMETER.
3) PROVIDE MINIMUM 4" COLLARS FOR ATTACHMENT OF THE FLEXIBLE DUCT TO ROUND DUCT, DAMPERS AND DIFFUSERS.
4) BAND RIGID ROUND DUCT INSULATION TO DUCT AND PROVIDE TAPE FOR INSULATION OVERLAP.

5 DIFFUSER CONNECTION DETAIL
SCALE: N.T.S.

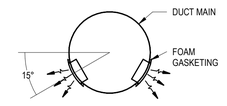


NOTES: 1) ANGLE A = 30° WHEN AIR FLOWS IN DIRECTION OF ARROW (SUPPLY AIR).
2) ANGLE A = 20° WHEN AIR FLOWS IN OPPOSITE DIRECTION OF ARROW (RETURN OR EXHAUST).

6 LOW VELOCITY DUCT FITTINGS DETAIL
SCALE: N.T.S.

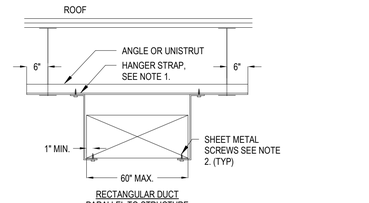


7 ROUND DUCTWORK FITTINGS
SCALE: N.T.S.



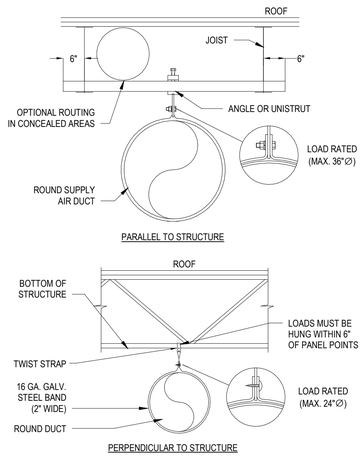
NOTE:
SUPPLY WITH OPTIONAL ASD-AIR SCOOP DAMPER/EXTRACTOR.

TYPICAL SUPPLY GRILLE MOUNTED ON SPIRAL DUCTWORK
SCALE: N.T.S.



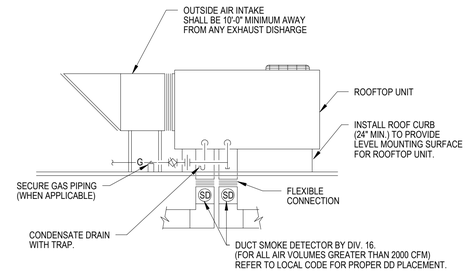
NOTE:
1. USE THREADED ROD FOR ALL DUCTS LARGER THAN 60" WIDE.
2. SHEET METAL SCREWS MAY BE OMITTED IF HANGER STRAP IS CONTINUOUS AND LOOPS UNDER ENTIRE DUCT.

RECTANGULAR DUCT SUPPORT FROM CEILING STRUCTURE/JOISTS DETAIL
9
SCALE: N.T.S.

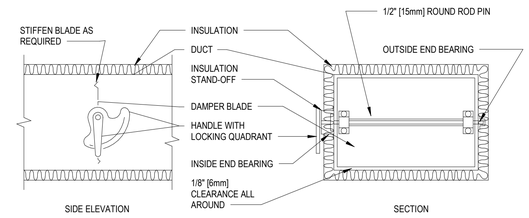


NOTE:
1. FOR DUCTS LARGER THAN 36"∅, USE TWO HANGER RODS, WIRES OR STRAPS TO SUPPORT DUCT FROM EACH SIDE.

10 TYPICAL ROUND DUCT SUPPORT DETAIL
SCALE: N.T.S.



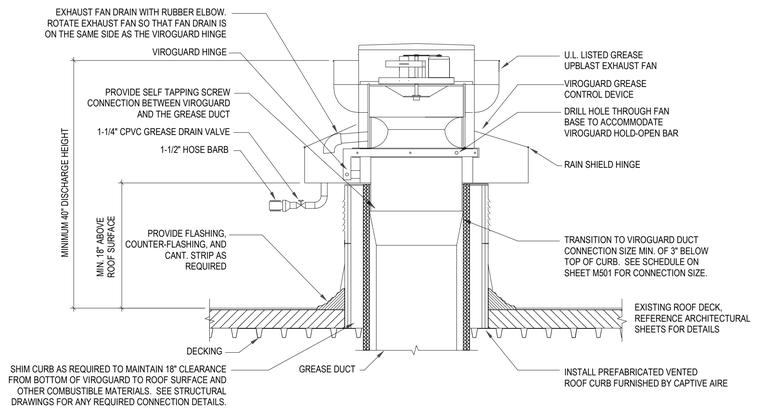
11 TYPICAL ROOF TOP UNIT DETAIL
SCALE: N.T.S.



NOTE:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

12 TYPICAL VOLUME DAMPER DETAIL
SCALE: N.T.S.



NOTES:

1. INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 96 REQUIREMENTS.
2. CUT AND PATCH EXISTING ROOFING AS REQUIRED FOR NEW CURB INSTALLATION (CONFIRM IF BY LL BASED ON WORK LETTER).
3. CURB SHALL BE TAPERED TYPE AND MATCH THE PITCH OF THE ROOF.
4. CONTRACTOR TO PROVIDE TREATED WOOD BLOCKINGS AND SHIM FLAT ROOF CURB TILL LEVEL FOR ALL EXHAUST FANS AND TO ACHIEVE ROOF CURB HEIGHTS. PROVIDE ROOF CURB EXTENSION IF REQUIRED.
5. HINGE FAN SO IT TIPS BACK TOWARD FAN DRAIN AND TOWARD VIROGUARD DRAIN.
6. INSTALL AND WATER LEAK TEST PER MANUFACTURER'S RECOMMENDATION. CONTACT VIROGUARD REP. FOR TESTING.

13 ROOF MOUNTED GREASE EXHAUST FAN DETAIL
SCALE: N.T.S.

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ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

MECHANICAL DETAILS

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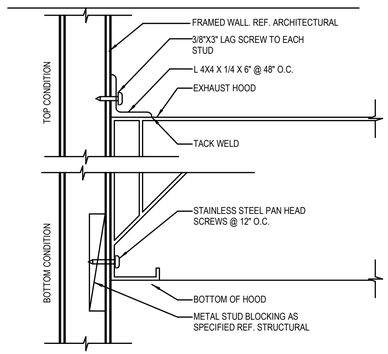
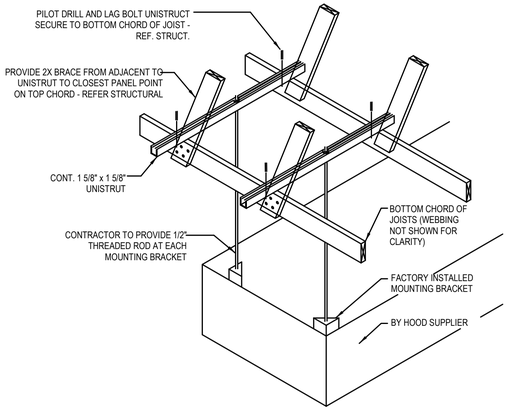


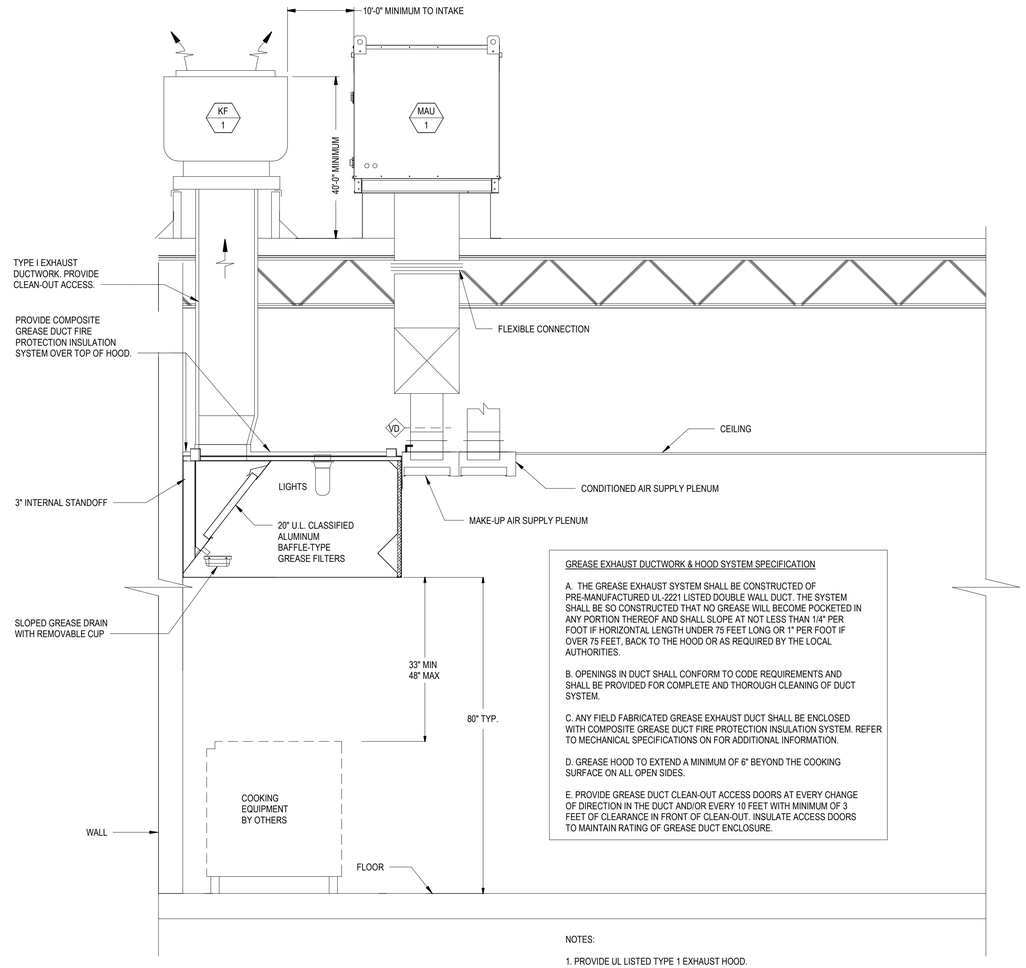
1 TYPICAL HOOD CLIP AT WALL

SCALE: N.T.S.



2 TYPICAL HOOD SUPPORT AT TRUSS

SCALE: N.T.S.



GREASE EXHAUST DUCTWORK & HOOD SYSTEM SPECIFICATION

A. THE GREASE EXHAUST SYSTEM SHALL BE CONSTRUCTED OF PRE-MANUFACTURED UL-2221 LISTED DOUBLE WALL DUCT. THE SYSTEM SHALL BE SO CONSTRUCTED THAT NO GREASE WILL BECOME POCKETED IN ANY PORTION THEREOF AND SHALL SLOPE AT NOT LESS THAN 1/4" PER FOOT IF HORIZONTAL LENGTH UNDER 75 FEET LONG OR 1" PER FOOT IF OVER 75 FEET, BACK TO THE HOOD OR AS REQUIRED BY THE LOCAL AUTHORITIES.

B. OPENINGS IN DUCT SHALL CONFORM TO CODE REQUIREMENTS AND SHALL BE PROVIDED FOR COMPLETE AND THOROUGH CLEANING OF DUCT SYSTEM.

C. ANY FIELD FABRICATED GREASE EXHAUST DUCT SHALL BE ENCLOSED WITH COMPOSITE GREASE DUCT FIRE PROTECTION INSULATION SYSTEM. REFER TO MECHANICAL SPECIFICATIONS ON FOR ADDITIONAL INFORMATION.

D. GREASE HOOD TO EXTEND A MINIMUM OF 6" BEYOND THE COOKING SURFACE ON ALL OPEN SIDES.

E. PROVIDE GREASE DUCT CLEAN-OUT ACCESS DOORS AT EVERY CHANGE OF DIRECTION IN THE DUCT AND/OR EVERY 10 FEET WITH MINIMUM OF 3 FEET OF CLEARANCE IN FRONT OF CLEAN-OUT. INSULATE ACCESS DOORS TO MAINTAIN RATING OF GREASE DUCT ENCLOSURE.

NOTES:

1. PROVIDE UL LISTED TYPE 1 EXHAUST HOOD.
2. THE GREASE HOOD SHALL MEET THE REQUIREMENTS OF THE MECHANICAL CODE, NSF AND NFPA FOR A TYPE I HOOD.
3. FIRE DEPARTMENT APPROVAL SHALL BE REQUIRED ON FIRE PROTECTION SYSTEM FOR GREASE HOODS AND DUCTS AS REQUIRED BY THE MECHANICAL CODE AND AS REQUIRED BY THE FIRE CODE.
4. PROVIDE CHEMICAL FIRE SUPPRESSION SYSTEM AS REQUIRED BY NFPA 17A.
5. PERFORM SMOKE TEST ON GREASE EXHAUST DUCTWORK AFTER DUCTWORK INSTALLATION IS COMPLETE BUT PRIOR TO DUCTWORK CONCEALMENT PER REQUIREMENTS OF LOCAL CODE AUTHORITIES.

3 KITCHEN HOOD SCHEMATIC

SCALE: N.T.S.

INFORMATIONAL GUIDE FOR COMMERCIAL COOKING HOODS

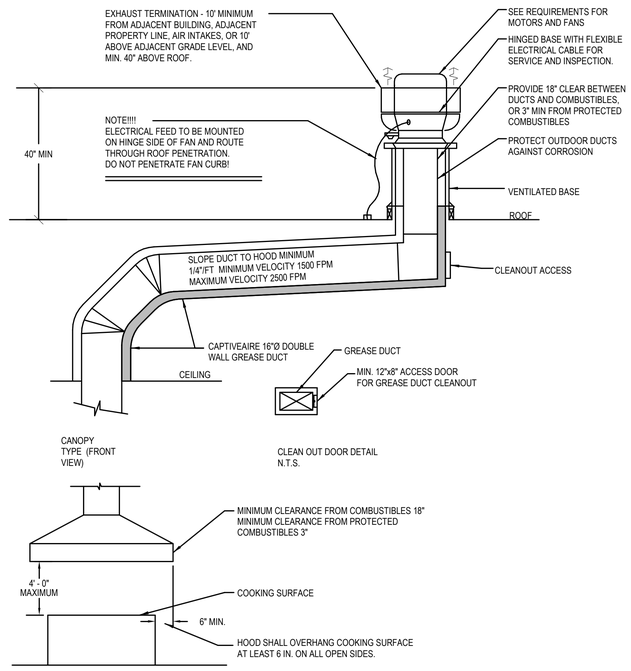
1. STAINLESS STEEL TO BE NO. 18 U.S. GAGE.
2. WHEN GUTTERS ARE PROVIDED THEY SHALL DRAIN TO A COLLECTING PAN WHICH IS READILY ACCESSIBLE FOR CLEANING
3. SEE TABLE 507.2.8 FOR MINIMUM DISTANCE BETWEEN LOWER EDGE OF GREASE FILTER AND THE COOKING OR HEATING SURFACE.
4. GREASE FILTERS SHALL BE OF STEEL CONSTRUCTION AND READILY ACCESSIBLE FOR CLEANING.
5. ALL JOINTS AND SEAMS SHALL BE GREASE TIGHT.
6. HOODS SHALL BE SECURELY FASTENED IN PLACE BY INCOMBUSTIBLE SUPPORTS.

NOTES

1. PROVIDE ADEQUATE CLEANOUT OPENINGS FOR THOROUGH CLEANING OF DUCT SYSTEM.
2. PROVIDE ADEQUATE MAKE-UP AIR FOR PROPER OPERATION.
3. PROVIDE A SEPARATE DUCT SYSTEM FOR EACH HOOD.
4. THICKNESS OF DUCTS SHALL BE:

DUCT AREA	U.S. GAGE STEEL
UP TO 4 SQ. FT.	16 GA
OVER 4 SQ. FT.	14 GA

5. SUPPORT THE DUCTS AS REQUIRED. DO NOT PENETRATE DUCT WALLS WITH SCREWS, NAILS, ETC.
6. SECTIONS OF DUCT SHALL NOT CONTAIN GREASE POCKETS.



(FOR REFERENCE ONLY)

4 TYPICAL HOOD VENTILATION AND SECTION

SCALE: N.T.S.

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AOR PROJECT NUMBER: CAV029

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PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

MECHANICAL DETAILS

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AIR DEVICE SCHEDULE

TAG	TYPE	MAKE / MODEL	AIR STREAM	MOUNTING TYPE	NECK SIZE	SIZE	REMARKS
A	SQUARE CONE DIFFUSER	TITUS / PAS	SUPPLY	LAY IN	SEE PLAN	24"X24"	3,4,8
B	SQUARE CONE DIFFUSER	TITUS / OMNI	SUPPLY	SURFACE	SEE PLAN	12"X12"	1-4,8
C	LOUVERED RETURN GRILLE	TITUS / 350RL	RETURN	SEE PLAN	SEE PLAN	24"X24"	2,3,4
D	LINEAR DIFFUSER	TITUS / FL-20	SUPPLY	SURFACE	SEE PLAN	48"X4.75"	2-5,7
E	DOUBLE DEFLECTION SUPPLY GRILLE	TITUS / S300FS	SUPPLY	DUCT MOUNTED	SEE PLAN	20"X6"	3,6

REMARKS:
1. PROVIDE WITH INTEGRAL OPPOSED BLADE BALANCING DAMPER FOR DIFFUSERS MOUNTED IN HARD/INACCESSIBLE CEILINGS UNLESS NOTED OTHERWISE.
2. PROVIDE WITH SURFACE MOUNTING FRAME WHERE APPLICABLE.
3. COORDINATE FINISH AND LOCATION WITH ARCHITECT.
4. SEE PLAN FOR INLET SIZE.
5. 1 SLOT, 2.0" SLOT WIDTH, 8" DIA. INLET. PROVIDE WITH 1" INSULATED DIFFUSER PLENUM.
6. PROVIDE WITH DOUBLE DEFLECTION CORE AND AN AIR SCOOP DAMPER AT NECK.
7. PROVIDE DIFFUSER WITH REMOTE CABLE OPERATED BALACING DAMPER.
8. SUPPLY DIFFUSERS TO BE INSULATED VIA FACTORY SYSTEM.

HEATED AIR CURTAIN SCHEDULE

MARK	AREA SERVED	MANUFACTURER	MODEL	UNIT SPECS					ELECTRICAL			WEIGHT (LBS)	NOTES
				LENGTH (IN)	MAX AIRFLOW (CFM)	HEATING CAPACITY (KW)	FAN QUANTITY	MOTOR HP	V/PH	MCA	MOCP		
AC-1	ENTRY	BERNER	AE08-E-1072EB	72	1,978	8	1.0	0.2	208/1/60	41	60	100	ALL
AC-2	ENTRY	BERNER	AE08-E-1036EB	36	904	5.6	1.0	0.2	208/1/60	29.4	40	57	ALL
AC-3	ENTRY	BERNER	AE08-E-1036EB	36	904	5.6	1.0	0.2	208/1/60	29.4	40	57	ALL

REMARKS:
1. EQUIPMENT PROVIDED BY MC.
2. PROVIDE UNITS WITH WALL MOUNTING BRACKET, INTEGRAL STARTER AND DISCONNECT SWITCH.
3. MOUNT UNIT PER MANUFACTURER'S RECOMMENDATIONS.
4. INTERLOCK AIR CURTAIN WITH DOOR LIMIT SWITCH TO ENERGIZE WHEN THE DOOR OPENS.
5. PROVIDE AIR CURTAIN WITH MAGNETIC NORMALLY CLOSED DOOR LIMIT SWITCH FOR INSTALLATION ON DOOR. PROVIDE 2 DOOR SWITCHES, ONE FOR EACH DOOR, AND NECESSARY RELAYS AS NEEDED WHEN 2 DOORS ARE PRESENT.
6. PROVIDE WITH INTEGRAL THERMOSTAT AND CONTROLLER. ADJUST CONTROL SET-UP WITH AIR CURTAIN USER MANUAL.
7. PROVIDE WITH TIME DELAY MICROSWITCH WITH ADJUSTABLE DELAY TIMERS PRE MOUNTED IN THE AIR CURTAIN CONTROL PANEL.
8. PROVIDE WITH POWDER COATED FINISH COLOR AS SELECTED BY THE ARCHITECT.
9. AIR CURTAIN WITH INTEGRAL HEATING SHALL BE PROVIDED WITH CONTROLS CONFIGURED TO SHUT OFF THE SOURCE OF HEATING WHEN THE OA TEMPERATURE IS GREATER THAN 45°F.

EXHAUST FAN SCHEDULE

ITEM TAG	TYPE	DRIVE	PERFORMANCE		ELECTRICAL			APPROX. WEIGHT (LBS)	SERVICE LOCATION	MANUFACTURER	OPERATION	MODEL	REMARKS
			AIR FLOW (CFM)	EXT. STATIC (IN W.C)	V/PH/HZ	FAN MOTOR HP	FAN MOTOR WATTS						
CEF-1	CEILING MOUNTED	DIRECT	125	0.3	120/1/60	-	83	30	WOMEN'S	GREENHECK	NOTE 1	SP-A250	2-4
CEF-2	CEILING MOUNTED	DIRECT	125	0.3	120/1/60	-	83	30	MEN'S	GREENHECK	NOTE 1	SP-A250	2-4

REMARKS:
1. FAN SHALL OPERATE ON RESTROOM OCCUPANCY SENSOR. FAN SHOULD TURN OFF 1 MINUTE AFTER RESTROOM IS UNOCCUPIED. ELECTRICAL CONTRACTOR TO WIRE.
2. PROVIDE BACKDRAFT DAMPER ON EXHAUST FAN.
3. PROVIDE DISCONNECT SWITCH AND VIBRATION ISOLATION.
4. PROVIDE MANUFACTURER'S OPTIONAL SPEED CONTROLLER. SPEED CONTROLLER SHALL BE MOUNTED WITHIN FAN HOUSING.

KITCHEN HOOD SCHEDULE - OWNER FURNISHED

ITEM TAG	MANUFACTURER	MODEL	HOOD LENGTH	MAX COOKING TEMP (°F)	TOTAL EXHAUST CFM	LIGHTS		MISC		REMARKS
						QTY.	TYPE	FIRE SUPP. SYSTEM	HANGING WEIGHT (LB)	
HOOD-1	CAPTIVEAIRE	6030 ND-2-ACPSP-F	11'-7"	600	2317	6	L55 SERIES E26	YES	1178	1

REMARKS:
1. REFER TO KES AND CAPTIVEAIRE DRAWINGS FOR ACCESSORY INFORMATION.

KITCHEN EXHAUST FAN SCHEDULE - OWNER FURNISHED

ITEM TAG	MANUFACTURER	MODEL	TYPE	AIR FLOW (CFM)	EXTERNAL STATIC (IN W.C)	ELECTRICAL		SERVICE	UNIT WEIGHT (LBS)	REMARKS
						V/PH/HZ	FAN MOTOR HP			
KF-1	CAPTIVEAIRE	DU88HFA	CENTRIFUGAL UPBLAST	2317	1.0	115/1/60	1	KITCHEN HOOD	94	ALL

REMARKS:
1. PROVIDE WITH MANUFACTURER RECOMMENDED 24" HIGH ROOF CURB.
2. FAN SHALL BE INTERLOCKED WITH HOOD CONTROLS, REFER TO CAPTIVEAIRE DRAWINGS FOR ADDITIONAL INFORMATION.
3. PROVIDE FAN WITH ENVIROMATIC VIROGUARD HOOD EXHAUST FAN ROOFTOP CONTAINMENT SYSTEM.

MAKE-UP AIR UNIT SCHEDULE - OWNER FURNISHED

ITEM TAG	MANUFACTURER	MODEL	CONFIGURATION	DRIVE	AIR FLOW (CFM)	EXTERNAL STATIC (IN W.C.)	DX COOLING				GAS HEATING			ELECTRICAL					REMARKS
							TOTAL (MBH)	SENSIBLE (MBH)	IEER	ISMRE	INPUT (MBH)	OUTPUT (MBH)	BURNER EFF.	V/PH/HZ	HP	MCA	MOCP	WEIGHT (LB)	
MAU-1	ECON-AIR	EARTU1-I.260-15-5T-MPU	ROOF MOUNTED	DIRECT	1854	0.5	64.0	37.8	17.9	6.1	220	178	81%	208/3/60	2	29.4	35	1302	ALL

NOTES:
1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL
2. DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. EC MOTOR CONDENSING FANS
6.ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
7. SUCTION LINE ACCUMULATOR
8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
10. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 6:1 TURNDOWN WITH NG AND 5:1 TURNDOWN WITH LP
11. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
12. 1" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-4.3 INSULATION-MINIMUM 24GA EXTERIOR W/ 18GA BASE
13. DOWN DISCHARGE/NO RETURN
14. MINIMUM ROOM AREA ASSUMED 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.
15. PROVIDE 28" HIGH MANUFACTURER RECOMMENDED ROOF CURB.
16. REFER TO CAPTIVEAIRE DRAWINGS FOR ADDITIONAL INFORMATION.

MAKE-UP AIR TEMPERATURE:
THE TEMPERATURE DIFFERENTIAL BETWEEN MAKE-UP AIR AND THE AIR IN THE CONDITIONED SPACE SHALL NOT EXCEED 10F (IMC 5081.).

MAU-1 LAT = 70F

EXISTING PACKAGED GAS HEATING / ELECTRIC COOLING ROOFTOP UNIT SCHEDULE (BY LANDLORD)

TAG	MANUFACTURER	MODEL #	AREA SERVED	TONS	BLOWER SECTION				COOLING			HEATING			ELECTRICAL DATA			UNIT WEIGHT (LBS)	REMARKS
					CFM	OA CFM	ESP (IN. W.C.)	FAN HP	EAT DB / WB°F	TOTAL (MBH)	SENSIBLE (MBH)	TYPE	INPUT (MBH)	OUTPUT (MBH)	VOLTAGE	MCA	MOP		
RTU-1X	CARRIER	48CEM	KITCHEN	7.5	3,000	330	1.00	2.0	80 / 67	90.0	66.0	NATURAL GAS	180	148	208/3	41	50	787	ALL
RTU-2X	CARRIER	48GCEM	DINING	12.5	4,500	900	1.00	2.2	80 / 67	155.0	115.0	NATURAL GAS	224	181	208/3	67	80	1,390	ALL

REMARKS:
1. MECHANICAL CONTRACTOR TO NOTIFY ENGINEER ON RECORD OF ANY DISCREPANCIES.
2. EXISTING UNIT SHALL BE BALANCED AS PER SCHEDULE.
3. SET MINIMUM AND MAXIMUM OUTSIDE AIR DAMPER POSITIONS IN FIELD IN ACCORDANCE WITH THE OUTSIDE AIRFLOW LISTED IN THIS SCHEDULE

VENTILATION SCHEDULE

ROOM NUMBER	ROOM NAME	OCCUPANCY CLASSIFICATION	ZONE FLOOR AREA	ZONE POPULATION	2018 INTERNATIONAL MECHANICAL CODE						ACTUAL			EQUIPMENT	
					PEOPLE OUTDOOR AIR RATE	AREA OUTDOOR AIR RATE	BREATHING ZONE OUTDOOR AIRFLOW	Ez	REQUIRED OUTDOOR AIRFLOW	E.A. CFM	MAX SUPPLY CFM	OA CFM	EXHAUST CFM	SUPPLY FAN	EXHAUST FAN
101	DINING	DINNING	920	64	7.5	0.18	649	0.8	839	-	3000	880	-	RTU-2X	-
102	QUEUEING	CORRIDOR	120	0	0.0	0.06	7	0.8		-	400		-	RTU-2X	-
108	HALL	CORRIDOR	255	0	0.0	0.06	15	0.8		-	1000		-	RTU-2X	-
109	WOMEN'S	PUBLIC BATHROOM	55	1	0.0	0.00	0	0.8	0	100	50	10	125.0	RTU-2X	CEF-1
110	MEN'S	PUBLIC BATHROOM	55	1	0.0	0.00	0	0.8	0	100	50	10	125.0	RTU-2X	CEF-2
104	FRONT KITCHEN	KITCHEN (COOKING)	605	12	7.5	0.12	163	0.8	204	424	2000	220	2317.0	RTU-1X	KF-1
106	BACK KITCHEN	KITCHEN (NO COOKING)	450	2	7.5	0.12	69	0.8	86	315	900	99		RTU-1X	KF-1
107	MANAGER OFFICE	OFFICE SPACES	50	1	5.0	0.06	8	0.8	10	-	100	11	-	RTU-1X	-
TOTAL			2510	81	-	-	903		1139	939	7500	1219	2567	-	-

AIR BALANCE SCHEDULE

	RTU-1X (KITCHEN)	RTU-2X (DINNING)	MAU-1	KF-1	CEF-1 (WOMEN'S)	CEF-2 (MEN'S)	TOTAL
OUTSIDE AIR FLOW (CFM)	330	900	1854	0	0	0	3084
RETURN AIR FLOW (CFM)	2670	3600	0	0	0	0	6270
SUPPLY AIR FLOW (CFM)	3000	4500	1854	0	0	0	9354
EXHAUST AIR FLOW (CFM)	0	0	0	2317	125.0	125.00	2567
BUILDING PRESSURE (CFM)	330	900	1854	-2317	-125	-125	517
RESULTING BUILDING PRESSURIZATION (CFM)							517

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ISSUE	DATE
PERMIT SET	12.06.24
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MECHANICAL SCHEDULES

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PATENT NUMBERS

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

HOOD INFORMATION – JOB#7168599

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		6030 ND-2-ACPSP-F	CAPTIVEAIRE	11' 7"	600 DEG	I	HEAVY	200	2317			4"	16"	2317	1659	-0.765"	1854	927	430 SS WHERE EXPOSED	ALONE	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		CAPTRATE SOLO FILTER	8	20"	16"	85% SEE FILTER SPEC	6	L55 SERIES E26	NO	RIGHT	12"x60"x30"	TANK FS	4.0/4.0	DCV-1111	1 LIGHT 1 FAN	YES	1178 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1		FIELD WRAPPER 10.00" HIGH FRONT, LEFT, RIGHT.
		LEFT END STANDOFF (FINISHED) 1" WIDE 60" LONG INSULATED.
		INSULATION FOR BACK OF HOOD.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		LEFT WALL AS END PANEL.

PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	PDS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S) WIDTH	LENG	DIA	CFM	SP
1		Front	152"	22"	6"	MUA	8"	36"		618	0.171"
						MUA	8"	36"		618	0.171"
						MUA	8"	36"		618	0.171"
						AC	6"	28"		309	0.080"
						AC	6"	28"		309	0.080"
						AC	6"	28"		309	0.080"

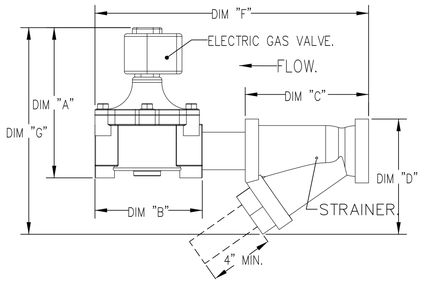
GAS VALVES AND STRAINERS

	GAS VALVE SIZING TYPE	SIZE	VOLTAGE	MIN. INLET PRESSURE	MAX. INLET PRESSURE	FLOW AT 1 IN.W.C. DROP NATURAL GAS	FLOW AT 1 IN.W.C. DROP PROPANE	GAS VALVE DIMENSIONS DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "F"	DIM "G"	INSTALLATION MOUNTING ORIENTATION	PART NUMBERS GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT
GAS VALVE FOR FS#1 →	ELECTRICAL	2"	120 VAC	0 PSI (0 IN.W.C.)	5 PSI (138 IN.W.C.)	2,940,500 BTU/HR	1,908,048 BTU/HR	7-5/8"	6-3/8"	7-1/4"	7-13-16"	15-5/8"	13-15/16"	HORIZONTAL	8214280	4417K68	(SC)EGVA2

ELECTRIC GAS VALVES ONLY:
3/4"-2" 120VAC GAS VALVES CAN BE MOUNTED WITH THE SOLENOID IN ANY POSITION ABOVE HORIZONTAL.
2 1/2"-3" 120VAC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.
24VDC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.

ALL GAS VALVES/STRAINERS
PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINERS A MINIMUM OF 4" CLEARANCE DISTANCE MUST BE PROVIDED AT THE BASE OF THE STRAINER CUSTOMER MUST VERIFY BTU CONSUMPTION AS WELL AS PRESSURE RATING SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

CALCULATIONS
TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP
NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP$^{0.5}$
TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY
NEW BTU/HR = (BTU/HR AT 0.64) X (0.64 / NEW SPECIFIC GRAVITY)$^{0.5}$.



GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

HVAC DISTRIBUTION NOTE

HIGH VELOCITY DIFFUSERS OR HVAC RETURNS SHOULD NOT BE PLACED WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

VERIFY CEILING HEIGHT

___' - ___"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE _____
YOUR TITLE _____ DATE _____ _____

SPECIFICATION: CAPTRATE® GREASE-STOP® SOLO FILTER

THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

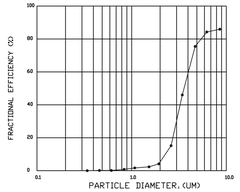
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNELS.

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

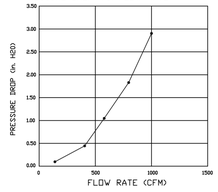
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.

DETAIL GENERAL NOTE

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REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

CAPTIVEAIRE
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Cava - Naperville, IL
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DATE: 11/14/2024
DWG.#: 7168599
DRAWN BY: ABS-76
SCALE: NTS
MASTER DRAWING

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FOR
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14 Ridge Square NW #500, WASHINGTON, DC 20016

DC 20016

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

HOOD DETAIL PLAN

SHEET: **M601**

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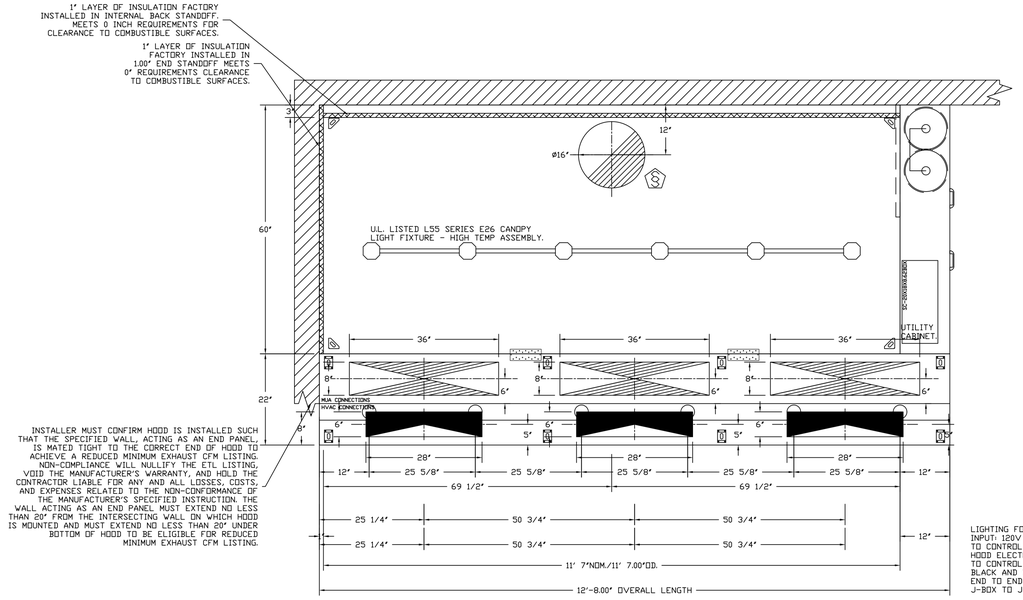
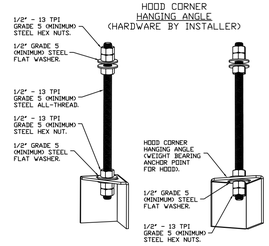


PLAN VIEW – HOOD #1
11' 7.00" LONG 6030ND-2-ACPSP-F

LIGHTING FOR ACPSP JOB # 7168599 - HOOD #1
INPUT: 120V AC, 1 PHASE, 50/60HZ, 3.5 WATTS PER LIGHT.
TO CONTROL LIGHTS WITH HOOD LIGHT SWITCH, WIRE PER HOOD ELECTRICAL CONTROL PANEL SCHEMATIC.
TO CONTROL LIGHTS WITH BUILDING LIGHT SWITCH, WIRE BLACK AND WHITE WIRE TO A 120VAC SERVICE.
END TO END ACPSPS REQUIRE 120VAC FIELD WIRING FROM J-BOX TO J-BOX. REPLACE LIGHTS WITH LED LIGHTS ONLY.

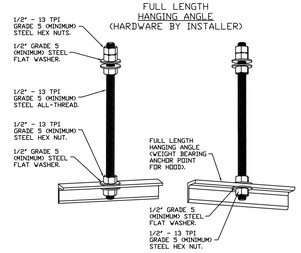
HOOD CORNER
HANGING ANGLE
(HARDWARE BY INSTALLER)



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.

FULL LENGTH
HANGING ANGLE
(HARDWARE BY INSTALLER)



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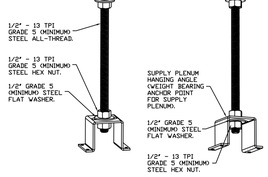
ACPSP SHIPS LOOSE FOR FIELD INSTALLATION

SUPPLY PLENUM
HANGING ANGLE
(HARDWARE BY INSTALLER)



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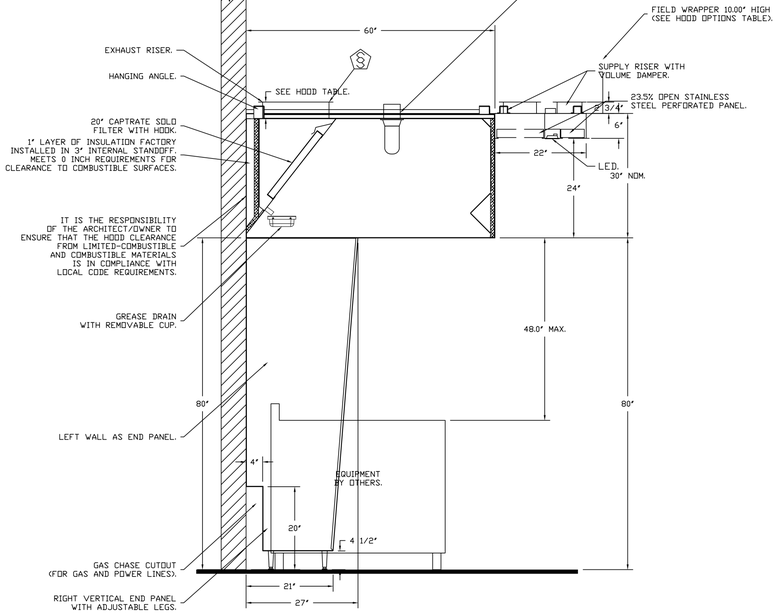
CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	*CLEARANCE
1	TOP	18"
	FRONT	0"
	BACK	0"
	LEFT	0"
	RIGHT	0"

- *0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.



SECTION VIEW – MODEL 6030ND-2-ACPSP-F HOOD – #1

DETAIL GENERAL NOTE

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www.captiveaire.com

Cava - Naperville, IL
460 Illinois Route 59,
Naperville, IL, 60540

DATE: 11/14/2024

DWG.#: 7168599

DRAWN BY: ABS-76

SCALE: NTS

MASTER DRAWING

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FOR
CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

HOOD DETAIL PLAN

SHEET: **M602**

rtm engineering consultants
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Bellevue, WA 98007
rtmec.com | 847.756.4180

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FIRE SYSTEM INFORMATION – JOB#7168599

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	37	FIRE CABINET RIGHT	RIGHT, HOOD 1

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER – PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 – 0 – TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 – 0 – TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 – 0 – 12-F28021-32144-OT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (A0034310).	1	0
		0 – 0 – 32-00002 QUIK SEAL – 1/2" (UL).	1	0
		0 – 0 – 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	2	0
		0 – 0 – 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	1	0
		0 – 0 – 79525 1/2" 90 PRD-PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	1	0
		0 – 0 – 79580 1/2" X 1/2" PRD-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	2	0
		0 – 0 – 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) – SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 – 0 – 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 – 0 – 87-300001-001 TANK – PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	2	0
		0 – 0 – 87-300030-001 PRIMARY ACTUATOR KIT (PAK) – ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 – 0 – 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	8	0
		0 – 0 – 9055455PC PRD PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	6	0
		0 – 0 – 9097200PC PRD PRESS PC611 1/2 PRESS TEE LD.	7	0
		0 – 0 – 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	4	0
		0 – 0 – A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 – 0 – A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	1	0
		0 – 0 – BI145 3/8" BLACK IRON 90 ELL.	3	0
		0 – 0 – DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 – 0 – TANK STRAP TANK STRAP – USED FOR TANK FIRE SUPPRESSION.	6	0
		0 – 0 – TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 – 0 – WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	2	0
		16 – 16 – 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	8	0
		16 – 16 – OL-F NOZZLE – TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	8	0
		26 – 26 – QSA-3/8 QUIK SEAL – 3/8" (UL).	8	0
		34 – 34 – A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT. RED COLOR.	1	0

NOTES
- FIELD PIPE DROPS AS SHOWN
  PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- OL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

JOB #: 7168599.
JOB NAME: CAVA – NAPERVILLE, IL.

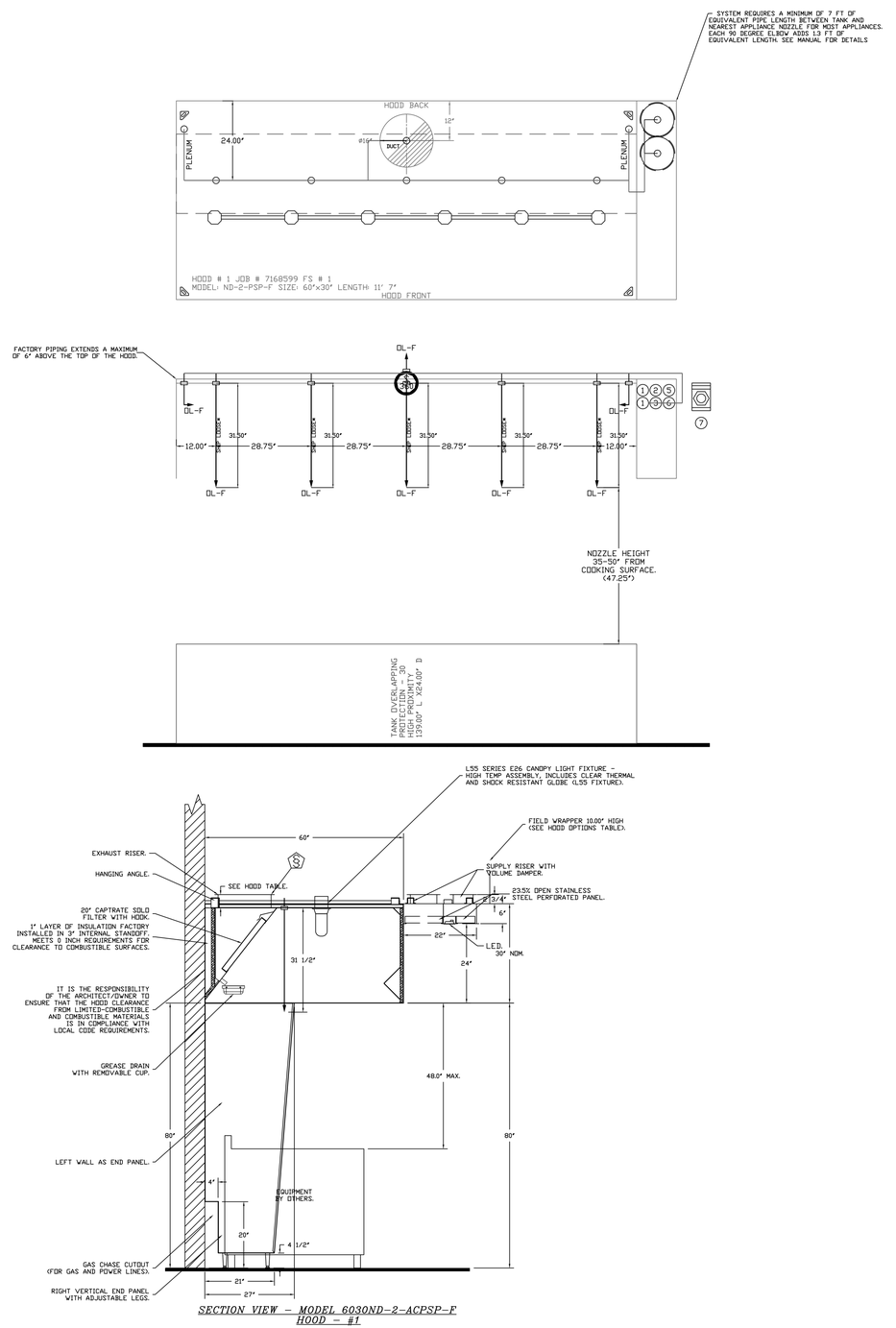
SYSTEM SIZE: TANK-SP-2 DESIGN FP: 37. MAXIMUM FP: 40.
HOOD # 1 11' 7.00" LONG x 60" WIDE x 30" HIGH.
RISER # 1 SIZE: 16" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND – FIRE CABINET TANK SYSTEM

1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.



SECTION VIEW – MODEL 6030ND-2-ACPSP-F HOOD – #1

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MASTER DRAWING
SHEET NO. 3

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PERMIT SET	12.06.24
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IFC SET	06.23.25

HOOD DETAIL PLAN

SHEET: **M603**

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EXHAUST FAN INFORMATION – JOB#7168599

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	KEF	1	DU85HFA	CAPTIVEAIRE	2317	1.000	1551	TEAO-ECM	1.000	0.6650	1	115	11.6	733 FPM	94	16.7

DOAS/RTU FAN SCHEDULE – JOB#7168599

FAN INFORMATION										ELECTRICAL INFORMATION					COOLING INFORMATION										GAS HEAT INFORMATION					A2L MINIMUM ROOM VOLUME			
FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	MCA	MOCP	OUTSIDE AIR		MIXED AIR		LEAVING AIR			CAPACITY		IEER	ISMRE	GAS TYPE	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	ROOM AREA (FT2)	AIRFLOW (CFM)	HEIGHT (FT)	NOTES
																DB	WB	DB	WB	DB	WB	DP	TOTAL	SENS.										
2		1	EARTU1-1260-15-5T-MPU	ECON-AIR	15P-1	0	1854	1854	1302	0.500	2.00	3	208	29.4A	35A	90.3°F	74.7°F	90.3°F	74.7°F	70.5°F	65.0°F	62.3°F	64.0 MBH	37.8 MBH	17.9	6.1	NATURAL	220940	178961	79°F	7 IN. W.C. – 14 IN. W.C.	235	423	7.2	1,2,3,4,5,6,7,8,9,10,11,12,13,14

NOTES:
1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL
2. DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. EC MOTOR CONDENSING FANS
6. ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
7. SUCTION LINE ACCUMULATOR
8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
10. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 6:1 TURNDOWN WITH NG AND 5:1 TURNDOWN WITH LP
11. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
12. 1" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-4.3 INSULATION-MINIMUM 24GA EXTERIOR W/ 18GA BASE
13. DOWN DISCHARGE/NO RETURN
14. MINIMUM ROOM AREA ASSUMED 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF	1	GREASE BOX
		1	ECM WIRING PACKAGE – PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
2		1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	SHIP LOOSE GAS STRAINER 3/4"
		1	CASLINK BUILDING MONITORING SYSTEM – INTERNET OR CELLULAR CONNECTION REQUIRED
		1	CONSTRUCTION MODE – MODIFIES START-UP SETTINGS TO ALLOW TEMPERING A BUILDING STILL UNDER CONSTRUCTION
		1	2" MERV 13 FILTERS FOR RTU1 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU1 (QTY. 4)
		1	TOTAL CFM MONITORING
		1	RTU1 DOWN DISCHARGE
		1	RTU FIXED 100% OA INTAKE CONTROL
		1	CONTROL PANEL ENCLOSURE HEATER 100W – RECOMMENDED FOR WINTER DESIGN TEMPERATURES LESS THAN 0°F
		1	RTU HEATED FURNACE CONDENSATE DRAIN KIT. REQUIRED FOR WINTER DESIGN TEMP OF 0 DEGREES F AND LOWER
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	FREEZESTAT
		1	INTAKE FIRESTAT SET TO 135°F
		1	RTU1 NO RETURN – 100% OA – MPU
		1	RTU1 CURB DUCT HANGER
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	R454B – 5 TON MODULATING COOLING OPTION, 208/230V. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, DL ECM CONDENSING FAN
		1	SIZE 1 MOISTURE ELIMINATOR FOR SIZE 1, 5 TON RTU. NO REHEAT
		1	UNIT MOUNTED VFD CONFIGURED FOR DCV
		1	LOAD REACTOR MOUNTED IN FAN
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, 'MA', OR 'E2' PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

FAN ACCESSORIES

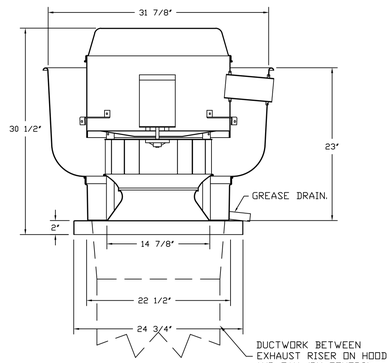
FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF	YES						

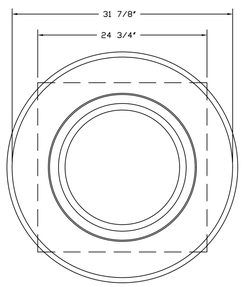
CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF	41 LBS	CURB	23.000"W X 23.000"L X 24.000"H VENTED HINGED.
2	# 2		123 LBS	CURB	41.000"W X 71.000"L X 28.000"H INSULATED.

HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #2	HMI #1 – UNIT	IN UNIT	NOT AVERAGED	55

FAN #1 DU85HFA – EXHAUST FAN (KEF)





TOP VIEW

FEATURES:

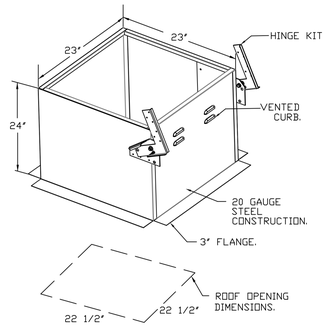
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT 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.
- ECM WIRING PACKAGE – PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.



DETAIL GENERAL NOTE

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REVISIONS

DESCRIPTION	DATE:

CAPTIVEAIRE
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8120 Woodmont Avenue, Suite 720, Bethesda, MD, 20814 PHONE: (800) 988 - 0881 FAX: 9192275931 EMAIL: reg76@captiveaire.com
Maryland Mechanical
Cava - Naperville, IL
460 Illinois Route 59,
Naperville, IL, 60540

DATE: 11/14/2024

DWG.#: 7168599

DRAWN BY: ABS-76

SCALE: NTS

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CAVA #010446 NAPERVILLE, IL
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FOR
CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

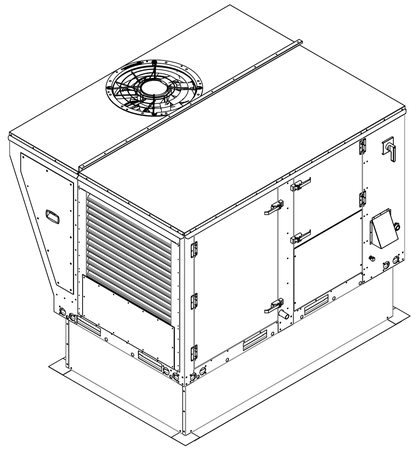
HOOD DETAIL PLAN

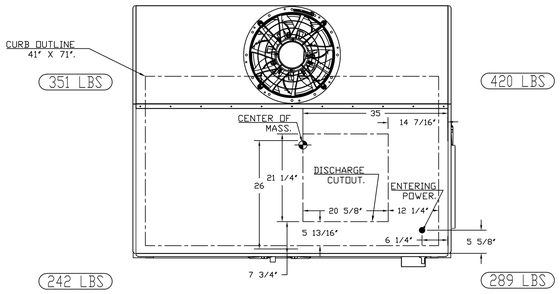
SHEET: **M604**

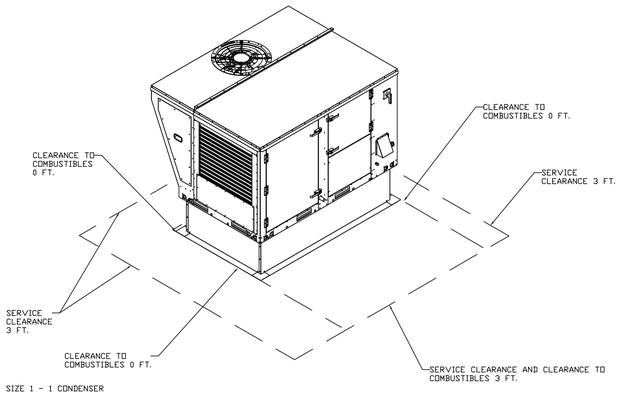
6/23/2025 12:14:43 PM

FAN #2 EARTU1-I.260-15-5T-MPU - HEATER

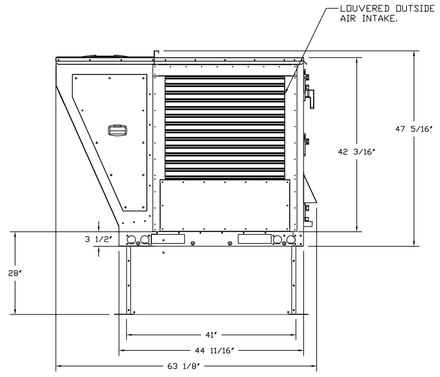
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
4. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
5. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.

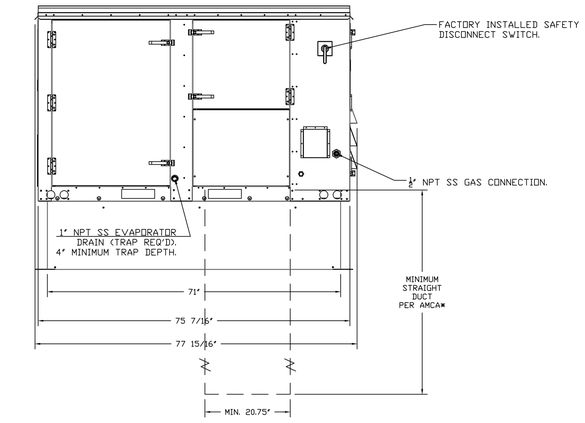






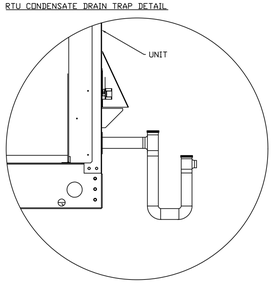
SIZE 1 - 1 CONDENSER

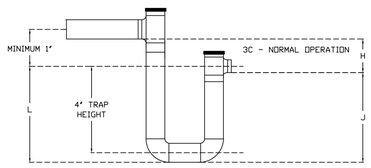




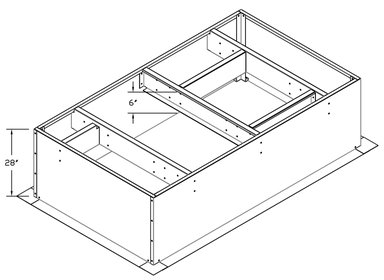
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE 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 20.75" x 21.5".

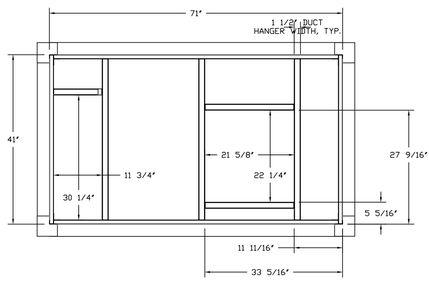
RTU CONDENSATE DRAIN TRAP DETAIL





H = (1" FOR EACH 1" OF MAXIMUM NEGATIVE STATIC PRESSURE) + 1"
J = HALF OF H
L = H + J + PIPE DIAMETER + INSULATION





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DATE: 11/14/2024

DWG.#: 7168599

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SCALE: NTS

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AOR PROJECT NUMBER: CAV029

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PERMIT REV	04.15.25
IFC SET	06.23.25

HOOD DETAIL PLAN

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6/23/2025 12:14:45 PM

GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

AIR DIFFUSION SUPPLY DUCT SPECIFICATIONS:
PROVIDE AIR DIFFUSION SUPPLY DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL DW-S0(HC), DW-S90(HC), & DW-S180(HC).
THREE DISTINCT HOLE PATTERN OPTIONS TO COVER A VARIETY OF CEILING HEIGHTS.
NO ADDITIONAL DIFFUSERS REQUIRED, AS THE DUCT ITSELF PROVIDES AIR DIFFUSION.
MADE OF HIGH QUALITY STAINLESS STEEL DESIGNED TO LAST 20+ YEARS.
HIGH INDUCTION SUPPLY DUCT IS CONSTRUCTED USING 24 GAUGE, 430 SS - 5" THRU 24".
HIGH INDUCTION SUPPLY DUCT IS CONSTRUCTED USING 20 GAUGE, 430 SS - 26" THRU 36".
QUICK ONSITE ASSEMBLY USING EPDM GASKETS & UNIVERSAL V-BANDS.
DOUBLE WALL SUPPLY DUCT AVAILABLE FOR INTERIOR AND EXTERIOR SPACES, EITHER CONDITIONED OR UNCONDITIONED.
DOUBLE WALL SUPPLY DUCT AVAILABLE IN DW-1S, DW-2S, & DW-3S TO MEET SPECIFIC REGIONAL "R" VALUE REQUIREMENTS.

Insulation R-Value Recommendations		
Supply Duct Type	Minimum R-value	Space Type
Single Wall - S & -HC	N/A	Conditioned Space Only
Double Wall - 1S	R-4	Unconditioned Interior Space Only
Double Wall - 2S	R-8	Unconditioned Space Climate Zones 1-4
Double Wall - 3S	R-12	Unconditioned Space Climate Zones 5-8

DOUBLE WALL SUPPLY DUCT IS INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.
AIR DIFFUSION SUPPLY DUCT COMPLIES WITH SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS) BEST PRACTICES.
POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTION TO DISCHARGE, SEE NFPA 13, TABLE 8.12.5.1.1.

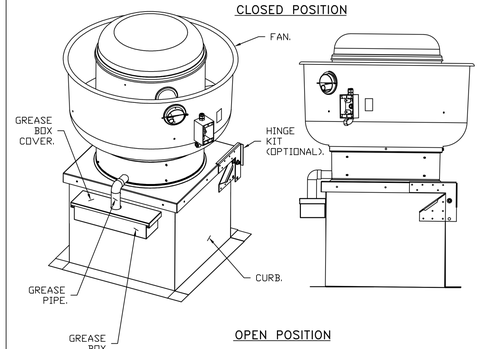
CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE _____
YOUR TITLE _____ DATE _____

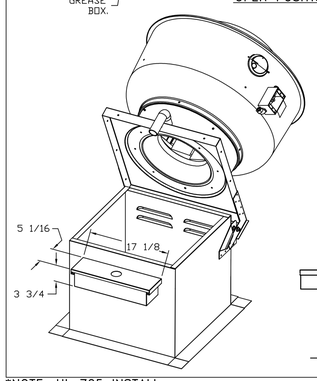
GREASE BOX INSTALLATION

GREASEBOX
REV.#2 08/15/02

CLOSED POSITION



OPEN POSITION



PARTS INCLUDED

GREASE BOX.
GREASE BOX COVER.
GREASE PIPE.

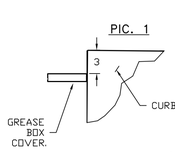
SHEET METAL SCREWS 3 - LONG (3/4" LG.).

GREASE BOX FIELD INSTALLATION

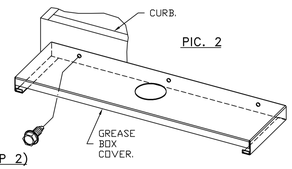
STEP 1)

ATTACH GREASE BOX COVER TO THE CURB, HOLD 3" DIMENSION AS SHOWN ON PIC. 1. SCREW GREASE BOX COVER TO CURB USING (3) LONG (3/4" LG.) SCREWS AS SHOWN ON PIC. 2.

PIC. 1



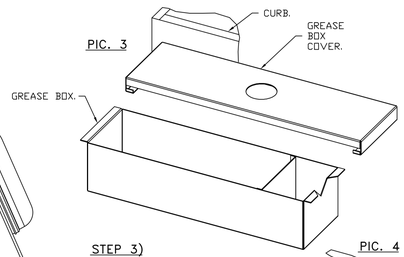
PIC. 2

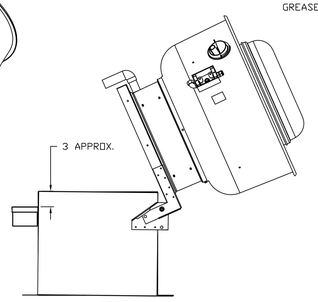


STEP 2)

ATTACH GREASE BOX TO GREASE BOX COVER, SLIDE AND DROP. AS SHOWN ON PIC. 3.

PIC. 3

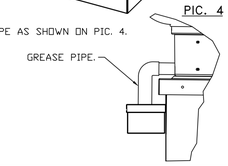




STEP 3)

INSTALL GREASE PIPE AS SHOWN ON PIC. 4.

PIC. 4

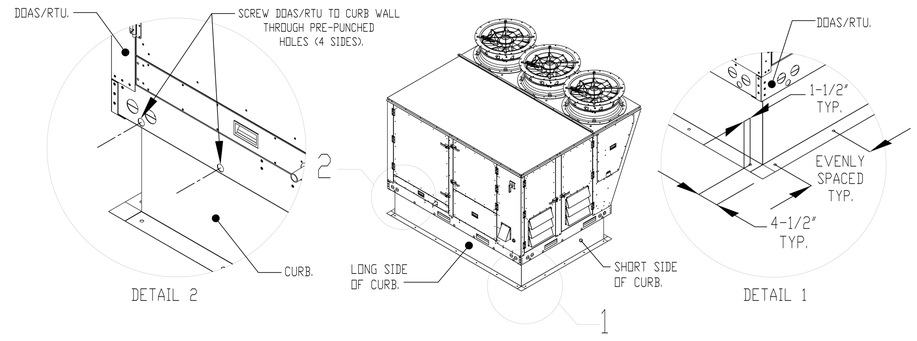


*NOTE: UL 705 INSTALL.

TYPICAL DOAS/RTU ROOF MOUNTING INSTALLATION INSTRUCTIONS

1. SECURE THE CURB TO THE ROOF FRAMING MEMBERS BY DRILLING 1/4" PILOT HOLES IN THE CURB FLANGES AT LOCATIONS SHOWN IN THE DIAGRAM BELOW. USING 3/8" X 2" ZINC PLATED STEEL LAG BOLTS, AND ZINC PLATED WASHERS, SCREW THROUGH THE CURB FLANGES AND INTO THE ROOF FRAMING MEMBERS. A MINIMUM OF (5) LAG BOLTS ON EACH SHORT SIDE, AND (7) LAG BOLTS ON EACH LONG SIDE IS REQUIRED.

2. SECURE THE UNIT BASE TO THE SIDE WALLS OF THE CURB USING (24) 1/4"-14 X 2" SELF-DRILLING, STEEL ZINC PLATED SCREWS. PRE-PUNCHED HOLES HAVE BEEN PROVIDED FOR EACH SCREW LOCATION.



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FOR
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14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

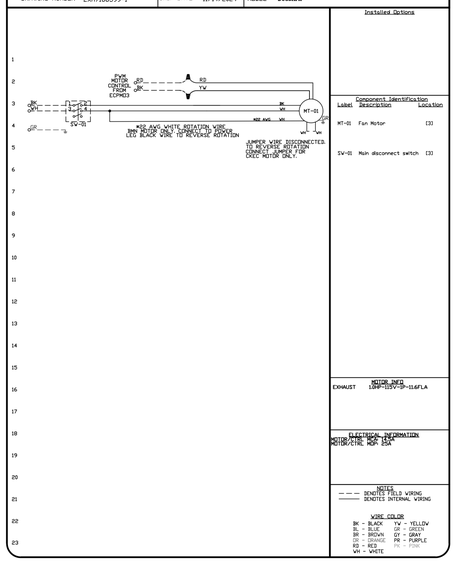
HOOD DETAIL PLAN

SHEET: **M606**

6/23/2025 12:14:47 PM

Exhaust Fan Wiring

JOB	7168599 - Cava - Naperville, IL
DRAWING NUMBER	EXH7168599-1
SHOP DATE	11/14/2024
MODEL	DUBSSIFA



Installed Options

Component Identification

Label	Description	Location
MT-01	Fan Motor	[3]
SV-01	Main disconnect switch	[3]

MOTOR INFO
EXHAUST 1SHP-115V-3P-1140FLA

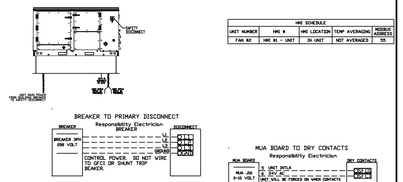
ELECTRICAL INFORMATION
MOTOR/CTRL MCA 25A
MOTOR/CTRL MOP 35A

NOTES
- - - - DENOTES FIELD WIRING
——— DENOTES INTERNAL WIRING

WIRE COLOR
BK = BLACK YV = YELLOW
BL = BLUE GN = GREEN
BR = BROWN GY = GRAY
OR = ORANGE PK = PURPLE
RD = RED PK = PINK
WH = WHITE

RTU Installation Wiring

JOB	Cava - Naperville, IL
DRAWING NUMBER	INST7168599-2
SHOP DATE	11/14/2024
MODEL	RARTU1-L060-15-07-MP0



HMC SCHEDULE

UNIT NUMBER	HMC #	HMC LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #2	HMC #1 - UNIT	IN UNIT	NOT AVERAGED	55

Installed Options

NOTES
——— Field Wiring

WIRE COLOR
BK = BLACK YV = YELLOW
BL = BLUE GN = GREEN
BR = BROWN GY = GRAY
OR = ORANGE PK = PURPLE
RD = RED PK - PINK
WH = WHITE

RTU VFD SCHEMATIC

COMPONENT LIST
LABEL DESCRIPTION
DTS-01 Blower Door Sw
MT-01 Supply Motor
PWS-01 24VDC Power Supply
SW-01 Main Disconnect Sw
VFD-1 Supply Motor VFD
VFD-2 Compressor VFD

LEGEND
FIELD WIRING
FACTORY WIRING
BK - BLACK YV - YELLOW
BL - BLUE GN - GREEN
BR - BROWN GY - GRAY
OR - ORANGE PK - PURPLE
WH - WHITE GN - GREEN
3P-BL 3P-BL STRIPE
4P-BL 4P-BL STRIPE
5P-BL 5P-BL STRIPE
VA-BL VA-BL STRIPE

JOB NAME
Cava - Naperville, IL
DESCRIPTION OF OPERATION
JOB NO. 7168599
DRAWN BY AUTO
FACTORY TEST 11/14/2024
DWG NO. RN/7168599-2

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MASTER DRAWING

SHEET NO. 7

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

HOOD DETAIL PLAN

SHEET: **M607**

rtm engineering consultants
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Bellevue, WA 98007
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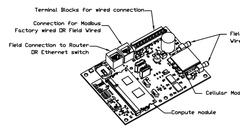
6/23/2025 12:14:48 PM

ELECTRICAL PACKAGE – JOB#7168599

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		DCV-1111	UTILITY CABINET RIGHT	UTILITY CABINET RIGHT	1 LIGHT	SMART CONTROLS DCV	KEF	EXHAUST	1	1.000	115	11.6
				HOOD # 1	1 FAN			SUPPLY	3	2.000	208	6.1



CASlink Monitor and Control

- *Hood control panel to support communications to cloud-based Building Management System.*
- *Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.*
- *Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.*
- *Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building Management.*

MONITORING AND CONTROL POINTS LIST

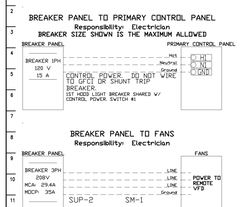
DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition.	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Prep Time Button.	MONITOR & CONTROL
Fana Button	MONITOR & CONTROL
Lights Button	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition.	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Fana Button(s)	MONITOR & CONTROL
Lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

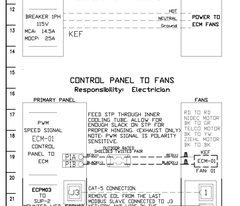
JOB NO 7168599 | MODEL NUMBER DCV-1111 | JOB NAME Cava – Naperville, IL | DRAWN BY | DATE 11/14/2024 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-1

DESCRIPTION OF OPERATION: Demand Control Ventilation, or control for Exhaust Fan, Supply Fan, Exhaust-on in Fire, Lights out in Fire, Fana makeAire based on duct temperature. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD. Room temperature sensor shipped loose for Field Installation.Verify distance between VFD and Motor, additional cost could apply if distance exceeds 30 feet.

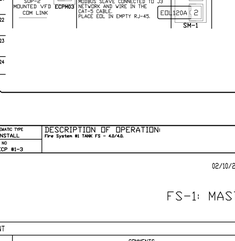
BREAKER PANEL TO PRIMARY CONTROL PANEL
Responsibility: Electrician
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED

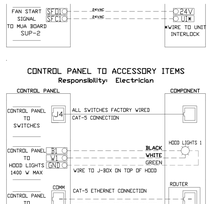


BREAKER PANEL TO FANS
Responsibility: Electrician

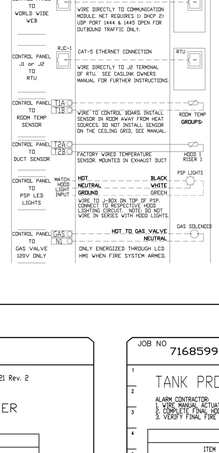


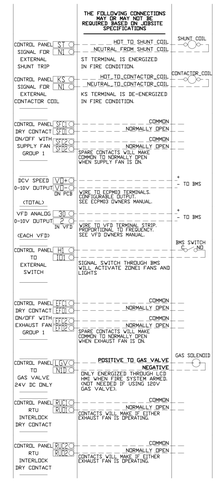
CONTROL PANEL TO FANS
Responsibility: Electrician





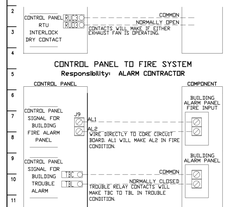
CONTROL PANEL TO ACCESSORY ITEMS
Responsibility: Electrician



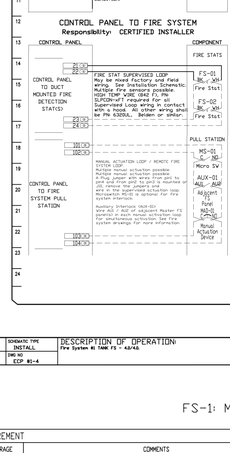


JOB NO 7168599 | MODEL NUMBER DCV-1111 | JOB NAME Cava – Naperville, IL | DRAWN BY | DATE 11/14/2024 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-2

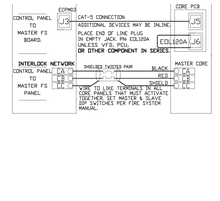
DESCRIPTION OF OPERATION: Demand Control Ventilation, or control for Exhaust Fan, Supply Fan, Exhaust-on in Fire, Lights out in Fire, Fana makeAire based on duct temperature. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD. Room temperature sensor shipped loose for Field Installation.Verify distance between VFD and Motor, additional cost could apply if distance exceeds 30 feet.



CONTROL PANEL TO FIRE SYSTEM
Responsibility: ALARM CONTRACTOR



CONTROL PANEL TO FIRE SYSTEM
Responsibility: CERTIFIED INSTALLER



JOB NO 7168599 | MODEL NUMBER DCV-1111 | JOB NAME Cava – Naperville, IL | DRAWN BY | DATE 11/14/2024 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-3

DESCRIPTION OF OPERATION: Fire System #1 TANK FS – 40/40.

TANK PROTECTION ELECTRICAL DETAIL

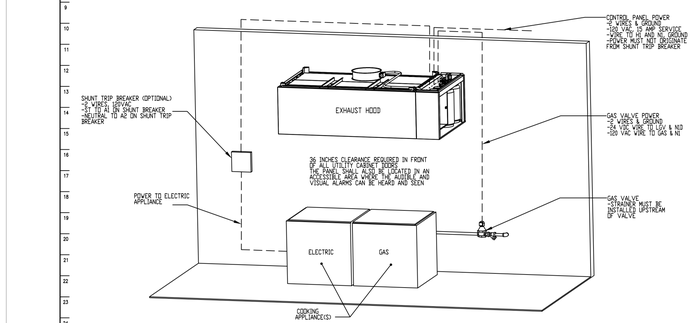
02/10/2021 Rev. 2

FS-1: MASTER

ELECTRICIAN
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE ALL FANS PER INCLUDED SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & N	BREAKER COIL (A1 & A2)	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & N1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS & N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AU1, AU2	SOLENOID	120 VAC	< 6 AMPS	120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	12V & N18 (IF 24 VDC) GAS & N1 (IF 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 10 AMPS	IF 24 VDC – 2 WIRES & GROUND N18 TO RED, 12V TO RED, AND GREEN TO GROUND IF 120 VAC – 2 WIRES & GROUND GAS TO RED, N1 TO RED, AND GREEN TO GROUND



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

JOB NO 7168599 | MODEL NUMBER DCV-1111 | JOB NAME Cava – Naperville, IL | DRAWN BY | DATE 11/14/2024 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-4

DESCRIPTION OF OPERATION: Fire System #1 TANK FS – 40/40.

TANK PROTECTION LOW-VOLTAGE DETAIL

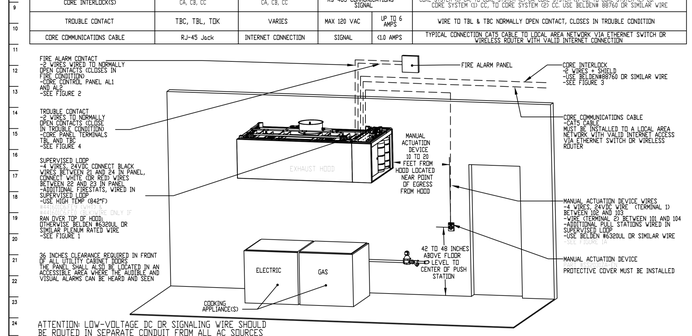
10/01/2023 Rev. 3

FS-1: MASTER

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. CONDUCT FINAL WALKDOWN OF SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

ALARM CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104, 102 AND 103	1 & 2	24 VDC	< 10 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103. WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104. JUMPER 101 TO 104 AND 102 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED TO PROVIDE MOUNTING FOR CORE EXTENSION STI-S5000
REMOTE FIRESTAT SENSOR(S)	S1 AND S4, S2 AND S3	BLACK AND WHITE	24 VDC	< 10 AMPS	WIRE FIRE SENSOR WHITE WIRES IN SERIES AND TERMINATE ON CORE PANEL TERMINALS S2 AND S3. WIRE FIRE SENSOR BLACK WIRES IN SERIES AND TERMINATE ON CORE PANEL TERMINALS S1 AND S4. HIGH TEMP SENSORS MUST BE WIRED DIRECTLY TO CORE PANEL. TERMINATE ON S1 AND S4 IF WIRE OTHERWISE WILSEN MASONRY OR SIMILAR HIGH TEMP WIRE. SEE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	50V MAX DC/PCI	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL
CORE INTERLOCK(S)	CA, CB, CC	CA, CB, CC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM CU-CA TO CORE SYSTEM GP-CA, CORE SYSTEM U-CB TO CORE SYSTEM GP-CB CORE SYSTEM YO-CC TO CORE SYSTEM GP-CC. USE BELDEN 9878 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TDK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<1.0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

DETAIL GENERAL NOTE

DETAILS PROVIDED ON THE PLAN ARE FOR REFERENCE ONLY. FINAL EQUIPMENT MOUNTING AND EQUIPMENT STANDS ARE TO BE PROVIDED BY THE EQUIPMENT VENDOR OR CONTRACTOR.

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVE-AIRE
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Maryland Mechanical
8120 Woodmont Avenue, Suite 720, Bethesda, MD, 20814 PHONE: (800) 988 - 0881 FAX: 9192275931 EMAIL: reg76@captiveaire.com

Cava – Naperville, IL
460 Illinois Route 59,
Naperville, IL, 60540

DATE: 11/14/2024
DWG.#: 7168599
DRAWN BY: ABS-76
SCALE: NTS
MASTER DRAWING
SHEET NO. 8

ferris+sloane
10 N. Howard Street, Suite 4563 Spokane, WA 99201

CAVA
CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59 SUITE 112
NAPERVILLE, IL 60540
FOR
CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

HOOD DETAIL PLAN

SHEET: **M608**

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Bellevue, WA 98007
rtmec.com | 847.756.4180

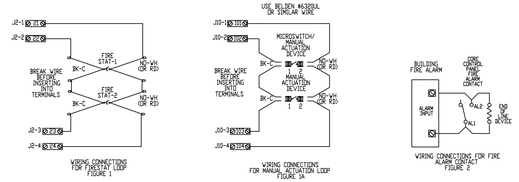
6/23/2025 12:14:50 PM

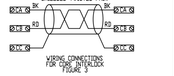
JOB NO	MODEL NUMBER	DRAWN BY	SCHEMATIC TYPE	DESCRIPTION OF OPERATION:
7168599	DCV-1111		INSTALL	Fire System 4: TANK FS = 4&4A.
	JOB NAME: Cava – Naperville, IL	DATE: 11/14/2024	DWG NO: ECP #1-4	

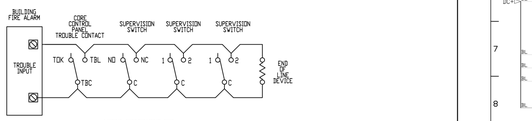
TANK PROTECTION LOW-VOLTAGE FIGURES

10/01/2023 Rev. 17

FS-1: MASTER

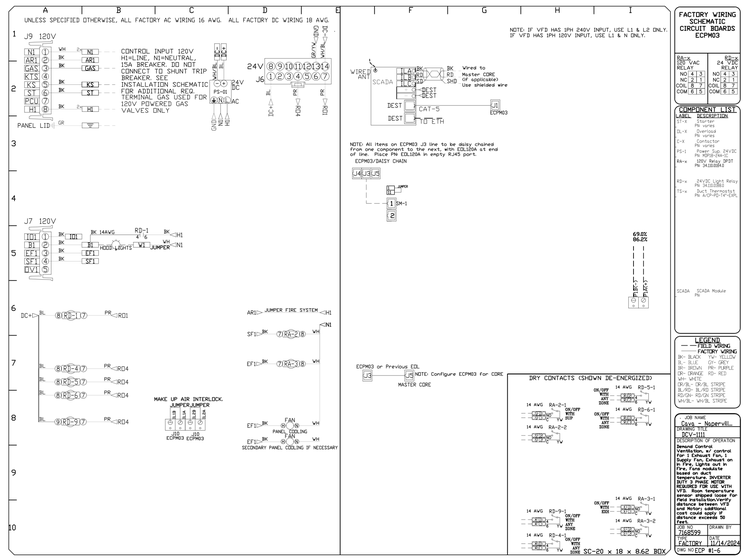




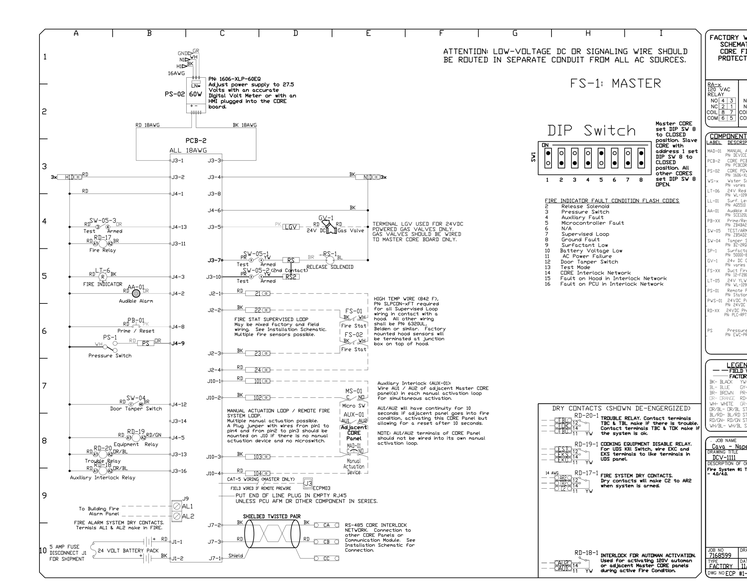


ATTENTION LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS



NOTE: IF VFD HAS 1PH 240V INPUT, USE L1 & L2 ONLY. IF VFD HAS 1PH 120V INPUT, USE L1 & N ONLY.



REVISIONS	
DESCRIPTION	DATE:

CAPTIVE AIRE
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Maryland Mechanical
8120 Woodmont Avenue, Suite 720, Bethesda, MD, 20814 PHONE: (800) 988 - 0881 FAX: 9192275931 EMAIL: reg76@captiveaire.com

ferris+sloane
100 N. Howard Street, Suite 4563 Spokane, WA 99201

Cava – Naperville, IL
460 Illinois Route 59,
Naperville, IL, 60540

DATE: 11/14/2024

DWG.#: 7168599

DRAWN BY: ABS-76

SCALE: NTS

MASTER DRAWING

SHEET NO. 9

CAVA

CAVA #010446 NAPERVILLE, IL
448 SOUTH ROUTE 59 SUITE 112
NAPERVILLE, IL 60540
FOR
CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

HOOD DETAIL PLAN

SHEET: **M609**

DETAIL GENERAL NOTE

DETAILS PROVIDED ON THE PLAN ARE FOR REFERENCE ONLY. FINAL EQUIPMENT MOUNTING AND EQUIPMENT STANDS ARE TO BE PROVIDED BY THE EQUIPMENT VENDOR OR CONTRACTOR.

rtm engineering consultants
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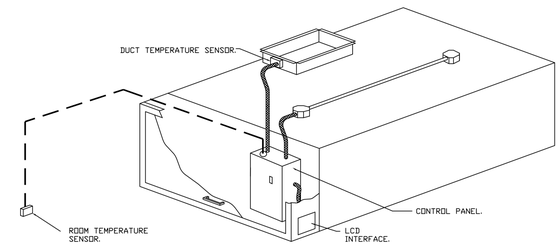
Bellevue, WA 98007
rtmec.com | 847.756.4180

6/23/2025 12:14:52 PM

DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).
- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURES SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.
- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.
- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.
- VARIABLE FREQUENCY DRIVES (VFDS) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.
- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.
- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.
- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.
- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).
- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
  A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
  B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
  C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  D. DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  E. MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
  G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.



TYPICAL HOOD CONTROL PANEL INSTALLATION

SEQUENCE OF OPERATIONS:

THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:

- AUTOMATIC: THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS 'DYNAMIC', THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS 'STATIC', FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).
- MANUAL: THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
- SCHEDULE: A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
- OTHER: THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

REVISIONS

	DESCRIPTION	DATE:
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DATE: 11/14/2024

DWG.#: 7168599

DRAWN BY: ABS-76

SCALE: NTS

MASTER DRAWING

SHEET NO. 10

DETAIL GENERAL NOTE

DETAILS PROVIDED ON THE PLAN ARE FOR REFERENCE ONLY. FINAL EQUIPMENT MOUNTING AND EQUIPMENT STANDS ARE TO BE PROVIDED BY THE EQUIPMENT VENDOR OR CONTRACTOR.

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AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

HOOD DETAIL PLAN

SHEET: **M610**

6/23/2025 12:14:54 PM

SPECIFICATIONS - DIVISION 23 - HVAC

SECTION 230500 - GENERAL MECHANICAL REQUIREMENTS:

HVAC SUBCONTRACTOR SHALL PROVIDE A BID OF PREVENTATIVE MAINTENANCE SERVICES FOR ONE YEAR AT TIME OF BID.

FURNISH TO THE OWNER ALL OPERATING & MAINTENANCE MANUALS, RECORD DRAWINGS, TEST & BALANCE REPORT. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER REPRESENTATIVES FOR EMPLOYEE TRAINING REQUIREMENTS FOR ALL EQUIPMENT.

MECHANICAL CONTRACTOR SHALL SUBMIT COMPLIANCE CHECKLIST TO BUILDING OFFICIAL UPON SUBSTANTIAL COMPLETION OF PROJECT.
PROVIDE EQUIPMENT INDICATED ON THE DRAWINGS, AND AS REQUIRED FOR A COMPLETE FUNCTIONING SYSTEM.

DEFINITIONS:
FURNISH MEANS TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR INSTALLATION.
INSTALL MEANS TO PLACE IN POSITION AND MAKE CONNECTIONS FOR SERVICE OR USE.
PROVIDE MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR INTENDED USE.

WARRANTY:
PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT. PROVIDE A SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT THE OWNER'S OPTION. CONTRACTOR SHALL INCLUDE ONE YEAR WARRANTY ON OWNER FURNISHED EQUIPMENT. CONTRACTOR SHALL INCLUDE COSTS FOR RECEIVING, HANDLING, STORAGE, AND HOISTING OF OWNER FURNISHED EQUIPMENT.

COORDINATION:
COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

DUCT DIMENSIONS:
UNLESS OTHERWISE NOTED, DUCT DIMENSIONS ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS.

MAKE-UP AIR UNIT:
UNIT SHALL HAVE AN INTEGRAL DISCHARGE THERMOSTAT LINKED TO THE INTERNAL CONTROLS. THE HEATER SHALL BE SET TO MAINTAIN DUCT SUPPLY TEMPERATURE AT NO LESS THAN 65 DEG. F. (ADJ.).
HIGH LIMIT SWITCH SET TO 180 DEG. F.
INTAKE AIR SENSOR SET TO 10 DEG. F. (ADJ.) LOWER THAN DISCHARGE AIR SENSOR.

TEMPERATURE CONTROLS:
PROVIDE PROGRAMMABLE THERMOSTATS WITH REMOTE TEMPERATURE SENSORS AND REMOTE HUMIDISTATS COMPATIBLE WITH ROOFTOP UNIT. CONTROL WIRING SHALL BE INSTALLED IN CONDUIT. THERMOSTAT SHALL MEET SETPOINT ADJUSTMENT FOR UNOCCUPIED MODE: HEATING DOWN TO 55 DEGREES AND COOLING UP TO 85 DEGREES. PROVIDE INTERLOCK CONTROL WIRING BETWEEN HOOD EXHAUST FANS AND ROOFTOP UNITS.

END OF SECTION

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. SUBMITTALS:

1. CERTIFIED TAB REPORTS.

B. TAB FIRM QUALIFICATIONS: NBC CERTIFIED.

C. TAB REPORT FORMS: STANDARD TAB CONTRACTOR'S FORMS APPROVED BY ARCHITECT.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXAMINATION

A. EXAMINE THE CONTRACT DOCUMENTS TO BECOME FAMILIAR WITH PROJECT REQUIREMENTS AND TO DISCOVER CONDITIONS IN SYSTEMS' DESIGNS THAT MAY PRECLUDE PROPER TAB OF SYSTEMS AND EQUIPMENT.

B. EXAMINE THE APPROVED SUBMITTALS FOR HVAC SYSTEMS AND EQUIPMENT.

C. EXAMINE SYSTEMS FOR INSTALLED BALANCING DEVICES, SUCH AS TEST PORTS, GAGE COCKS, THERMOMETER WELLS, FLOW-CONTROL DEVICES, BALANCING VALVES AND FITTINGS, AND MANUAL VOLUME DAMPERS. VERIFY THAT LOCATIONS OF THESE BALANCING DEVICES ARE ACCESSIBLE.

D. EXAMINE SYSTEM AND EQUIPMENT INSTALLATIONS AND VERIFY THAT FIELD QUALITY-CONTROL TESTING, CLEANING, AND ADJUSTING SPECIFIED IN INDIVIDUAL SECTIONS HAVE BEEN PERFORMED.

E. EXAMINE HVAC EQUIPMENT AND FILTERS AND VERIFY THAT BEARINGS ARE GREASED, BELTS ARE ALIGNED AND TIGHT, AND EQUIPMENT WITH FUNCTIONING CONTROLS IS READY FOR OPERATION.

F. EXAMINE TERMINAL UNITS, SUCH AS VARIABLE-AIR-VOLUME BOXES, AND VERIFY THAT THEY ARE ACCESSIBLE AND THEIR CONTROLS ARE CONNECTED AND FUNCTIONING.

G. EXAMINE AUTOMATIC TEMPERATURE SYSTEM COMPONENTS TO VERIFY THE FOLLOWING:

1. DAMPERS, VALVES, AND OTHER CONTROLLED DEVICES ARE OPERATED BY THE INTENDED CONTROLLER.
2. DAMPERS AND VALVES ARE IN THE POSITION INDICATED BY THE CONTROLLER.
3. INTEGRITY OF DAMPERS AND VALVES FOR FREE AND FULL OPERATION AND FOR TIGHTNESS OF FULLY CLOSED AND FULLY OPEN POSITIONS. THIS INCLUDES DAMPERS IN MULTIZONE UNITS, MIXING BOXES, AND VARIABLE-AIR-VOLUME TERMINALS.
4. AUTOMATIC MODULATING AND SHUTOFF VALVES, INCLUDING TWO-WAY VALVES AND THREE-WAY MIXING AND DIVERTING VALVES, ARE PROPERLY CONNECTED.
5. THERMOSTATS AND HUMIDISTATS ARE LOCATED TO AVOID ADVERSE EFFECTS OF SUNLIGHT, DRAFTS, AND COLD WALLS.
6. SENSORS ARE LOCATED TO SENSE ONLY THE INTENDED CONDITIONS.
7. SEQUENCE OF OPERATION FOR CONTROL MODES IS ACCORDING TO THE CONTRACT DOCUMENTS.
8. CONTROLLER SET POINTS ARE SET AT INDICATED VALUES.
9. INTERLOCKED SYSTEMS ARE OPERATING.
10. CHANGEOVER FROM HEATING TO COOLING MODE OCCURS ACCORDING TO INDICATED VALUES.

H. REPORT DEFICIENCIES DISCOVERED BEFORE AND DURING PERFORMANCE OF TEST AND BALANCE PROCEDURES.

3.2 GENERAL PROCEDURES FOR TESTING AND BALANCING

A. PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM ACCORDING TO THE PROCEDURES CONTAINED IN AABC'S "NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE", NBC, ASHRAE 111, NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS" OR SMACNA'S "HVAC SYSTEMS - TESTING, ADJUSTING, AND BALANCING" AND IN THIS SECTION.

B. CUT INSULATION, DUCTS, PIPES, AND EQUIPMENT CABINETS FOR INSTALLATION OF TEST PROBES TO THE MINIMUM EXTENT NECESSARY FOR TAB PROCEDURES. AFTER TESTING AND BALANCING, PATCH PROBE HOLES IN DUCTS WITH SAME MATERIAL AND THICKNESS AS USED TO CONSTRUCT DUCTS. INSTALL AND JOIN NEW INSULATION THAT MATCHES REMOVED MATERIALS. RESTORE INSULATION, COVERINGS, VAPOR BARRIER, AND FINISH.

C. MARK EQUIPMENT AND BALANCING DEVICES, INCLUDING DAMPER-CONTROL POSITIONS, VALVE POSITION INDICATORS, FAN-SPEED-CONTROL LEVERS, AND SIMILAR CONTROLS AND DEVICES, WITH PAINT OR OTHER SUITABLE, PERMANENT IDENTIFICATION MATERIAL TO SHOW FINAL SETTINGS.

3.3 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

A. PREPARE SCHEMATIC DIAGRAMS OF SYSTEMS' "AS-BUILT" DUCT LAYOUTS.

B. FOR VARIABLE-AIR-VOLUME SYSTEMS, DEVELOP A PLAN TO SIMULATE DIVERSITY.

C. DETERMINE THE BEST LOCATIONS IN MAIN AND BRANCH DUCTS FOR ACCURATE DUCT AIRFLOW MEASUREMENTS.

D. VERIFY THAT MOTOR STARTERS ARE EQUIPPED WITH PROPERLY SIZED THERMAL PROTECTION.

E. CHECK FOR AIRFLOW BLOCKAGES.

F. CHECK CONDENSATE DRAINS FOR PROPER CONNECTIONS AND FUNCTIONING.

G. CHECK FOR PROPER SEALING OF AIR-HANDLING UNIT COMPONENTS.

H. CHECK FOR PROPER SEALING OF AIR DUCT SYSTEM.

3.4 TOLERANCES

A. SET HVAC SYSTEM AIRFLOW AND WATER FLOW RATES WITHIN THE FOLLOWING TOLERANCES:

1. SUPPLY, RETURN, AND EXHAUST FANS AND EQUIPMENT WITH FANS: PLUS OR MINUS 5 PERCENT.
2. AIR OUTLETS AND INLETS: PLUS OR MINUS 10 PERCENT.

END OF SECTION

SECTION 230700 - HVAC INSULATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. QUALITY ASSURANCE: LABELED WITH MAXIMUM FLAME-SPREAD INDEX OF 25 AND MAXIMUM SMOKE-DEVELOPED INDEX OF 50 ACCORDING TO ASTM E 84.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. SURFACE-BURNING CHARACTERISTICS:

1. INDOOR INSULATION AND RELATED MATERIALS: TO BE FACTORY LABELED DESIGNATING MAXIMUM FLAME-SPREAD INDEX OF 25 OR LESS, AND SMOKE-DEVELOPED INDEX OF 50 OR LESS ACCORDING TO ASTM E 84.

2.2 INSULATION MATERIALS

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

B. MINERAL-FIBER BLANKET INSULATION: COMPLY WITH ASTM C 553, TYPE II AND ASTM C 1290, TYPE I.

1. FSK JACKET: ALUMINUM-FOIL, FIBERGLASS-REINFORCED SCRIM WITH KRAFT-PAPER BACKING; COMPLYING WITH ASTM C 1136, TYPE II.
2. FSK TAPE: FOIL-FACE, VAPOR-RETARDER TAPE MATCHING FACTORY-APPLIED JACKET WITH ACRYLIC ADHESIVE; COMPLYING WITH ASTM C 1136.

C. MINERAL-FIBER, PIPE AND TANK INSULATION: COMPLYING WITH ASTM C 1393, TYPE II OR TYPE IIIA CATEGORY 2, OR WITH PROPERTIES SIMILAR TO ASTM C 612, TYPE IB; AND HAVING FACTORY-APPLIED ASJ JACKET. NOMINAL DENSITY IS 2.5 LB/CU. FT. OR MORE. THERMAL CONDUCTIVITY (K-VALUE) AT 100 DEG F IS 0.29 BTU X IN./H X SQ. FT. X DEG F OR LESS.

1. ASJ: WHITE, KRAFT-PAPER, FIBERGLASS-REINFORCED SCRIM WITH ALUMINUM-FOIL BACKING; COMPLYING WITH ASTM C 1136, TYPE I.
2. ASJ TAPE: WHITE VAPOR-RETARDER TAPE MATCHING FACTORY-APPLIED JACKET WITH ACRYLIC ADHESIVE, COMPLYING WITH ASTM C 1136.

D. FLEXIBLE ELASTOMERIC ADHESIVE: COMPLY WITH MIL-A-24179A, TYPE II, CLASS I.

E. MINERAL-FIBER ADHESIVE: COMPLY WITH MIL-A-3316C, CLASS 2, GRADE A.

F. VAPOR-BARRIER MASTIC: WATER BASED; SUITABLE FOR INDOOR AND OUTDOOR USE ON BELOW AMBIENT SERVICES; COMPLY WITH MIL-PRF-19565C, TYPE II.

PART 3 - EXECUTION

3.1 INSULATION INSTALLATION

A. COMPLY WITH REQUIREMENTS OF THE MIDWEST INSULATION CONTRACTORS ASSOCIATION'S "NATIONAL COMMERCIAL & INDUSTRIAL INSULATION STANDARDS" FOR INSULATION INSTALLATION ON PIPES AND EQUIPMENT.

B. INSULATION INSTALLATION AT INTERIOR WALL AND PARTITION PENETRATIONS (THAT ARE NOT FIRE RATED): INSTALL INSULATION CONTINUOUSLY THROUGH WALLS AND PARTITIONS.

C. INSULATION INSTALLATION AT FIRE-RATED WALL, PARTITION, AND FLOOR PENETRATIONS: INSTALL INSULATION CONTINUOUSLY THROUGH PENETRATIONS. SEAL PENETRATIONS. COMPLY WITH REQUIREMENTS IN SECTION 078400.

D. FLEXIBLE ELASTOMERIC INSULATION INSTALLATION:

1. SEAL LONGITUDINAL SEAMS AND END JOINTS WITH ADHESIVE TO ELIMINATE OPENINGS IN INSULATION THAT ALLOW PASSAGE OF AIR TO SURFACE BEING INSULATED.
2. INSULATION INSTALLATION ON PIPE FITTINGS AND ELBOWS: INSTALL MITERED SECTIONS OF PIPE INSULATION. SECURE INSULATION MATERIALS AND SEAL SEAMS WITH ADHESIVE TO ELIMINATE OPENINGS IN INSULATION THAT ALLOW PASSAGE OF AIR TO SURFACE BEING INSULATED.

E. MINERAL-FIBER INSULATION INSTALLATION:

1. INSULATION INSTALLATION ON STRAIGHT PIPES AND TUBES: WHERE VAPOR BARRIERS ARE INDICATED, SEAL LONGITUDINAL SEAMS, END JOINTS, AND PROTRUSIONS WITH VAPOR-BARRIER MASTIC AND JOINT SEALANT.
2. FOR INSULATION WITH FACTORY-APPLIED JACKETS ON ABOVE AMBIENT SURFACES, SECURE LAPS WITH OUTWARD CLINCHED STAPLES AT 6 INCHES O.C.
3. FOR INSULATION WITH FACTORY-APPLIED JACKETS ON BELOW AMBIENT SURFACES, DO NOT STAPLE LONGITUDINAL TABS BUT SECURE TABS WITH ADDITIONAL ADHESIVE AS RECOMMENDED BY INSULATION MATERIAL MANUFACTURER AND SEAL WITH VAPOR-BARRIER MASTIC AND FLASHING SEALANT.
4. BLANKET INSULATION INSTALLATION ON DUCTS AND PLENUMS: SECURE WITH ADHESIVE AND INSULATION PINS.
5. FOR DUCTS AND PLENUMS WITH SURFACE TEMPERATURES BELOW AMBIENT, INSTALL A CONTINUOUS UNBROKEN VAPOR BARRIER.

F. PLENUMS AND DUCTS REQUIRING INSULATION:

1. CONCEALED SUPPLY AIR.
2. CONCEALED AND EXPOSED OUTDOOR AIR.
3. CONCEALED AND EXPOSED RETURN AIR LOCATED IN NONCONDITIONED SPACE.

3.2 DUCT AND PLENUM INSULATION SCHEDULE

A. CONCEALED DUCT INSULATION SHALL BE 1-1/2" THICK MINERAL-FIBER BLANKET WITH A 1.5-LB/CU. FT. NOMINAL DENSITY.

3.3 HVAC PIPING INSULATION SCHEDULE

A. CONDENSATE PIPING: INSULATION SHALL BE 1" THICK FLEXIBLE ELASTOMERIC.

B. REFRIGERANT PIPING: INSULATION SHALL BE 1" THICK FLEXIBLE ELASTOMERIC.

END OF SECTION

SECTION 232300 - REFRIGERANT PIPING

PART 2 - PRODUCTS

2.1 TUBES AND FITTINGS

A. COPPER TUBE: ASTM B 88, TYPE K OR TYPE L, ANNEALED OR DRAWN-TEMPER TUBING AND WROUGHT-COPPER FITTINGS WITH BRAZED OR SOLDERED JOINTS.

B. WROUGHT-COPPER FITTINGS AND UNIONS: ASME B16.22.

C. SOLDER FILLER METALS: ASTM B 32. USE 95-5 TIN ANTIMONY OR ALLOY HB SOLDER TO JOIN COPPER SOCKET FITTINGS ON COPPER PIPE.

D. BRAZING FILLER METALS: AWS A5.8.

2.2 VALVES AND SPECIALTIES

A. AS REQUIRED BY THE KITCHEN EQUIPMENT MANUFACTURER.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL REFRIGERANT PIPING AND CHARGE WITH REFRIGERANT ACCORDING TO ASHRAE 15.

B. INSTALL REFRIGERANT PIPING AS REQUIRED BY THE KITCHEN EQUIPMENT MANUFACTURER.

END OF SECTION

SECTION 233100 - HVAC DUCTS AND CASINGS

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE."

B. STRUCTURAL PERFORMANCE: DUCT HANGERS AND SUPPORTS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS DESCRIBED IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE".

C. COMPLY WITH NFPA 96 FOR DUCTS CONNECTED TO COMMERCIAL KITCHEN HOODS.

2.2 DUCTS

A. ELECTROGALVANIZED-STEEL SHEET: ASTM A 879

1. PAINTLOK/PAINTLOCK OR EQUAL.

B. GENERAL DUCTWORK SHALL BE GALVANIZED STEEL, ASTM A653/A635M, CONSTRUCTED TO THE GAUGE AND CORRESPONDING REINFORCING SCHEDULE AS INDICATED IN THE LATEST EDITION OF SMACNA.

C. TYPE 1 KITCHEN EXHAUST DUCTWORK

1. FACTORY-BUILT COMMERCIAL KITCHEN GREASE DUCT:
   a. INSTALL REDUCED CLEARANCE, ROUND, DOUBLE-WALL GREASE DUCT AS SPECIFIED MEETING UL 1978 REQUIREMENTS. REFER TO KITCHEN EQUIPMENT SUPPLIER DRAWINGS FOR REQUIREMENTS.
   b. DUCTWORK AND FITTINGS FURNISHED BY OWNER FOR INSTALLATION BY THIS CONTRACTOR.
2. ALTERNATIVE:
   a. PROVIDE GREASE DUCT WITH 2-HOUR FIREWRAP FOR ZERO CLEARANCE TO COMBUSTIBLES.

D. TYPE 2 KITCHEN EXHAUST DUCTWORK: 18 GAUGE ALUMINUM OR STAINLESS STEEL. SEAMS SHALL BE CONTINUOUSLY WELDED LIQUID TIGHT.

E. JOINT AND SEAM TAPE, AND SEALANT: COMPLY WITH UL 181A. PROVIDE POLYMERIC RUBBER TYPE SEALANT FOR USE ON BOTH INTERIOR LOCATED DUCTWORK AND DUCTWORK EXPOSED TO OUTDOOR CONDITIONS. SEALER SHALL HAVE HIGH BONDING STRENGTH FOR SURE, FIRST TIME SEALING OF JOINTS IN LOW, MEDIUM, AND HIGH PRESSURE DUCT SYSTEMS. SEALER SHALL BE HIGH IN SOLID CONTENT. PROVIDE A TWO PART TAPE SEALING SYSTEM, CONSISTING OF WOVEN FIBER TAPE IMPREGNATED WITH A GYPSUM MINERAL COMPOUND, AND A MODIFIED ACRYLIC/SILICONE ACTIVATOR THAT REACTS EXOTHERMICALLY WITH THE TAPE. TWO PART TAPE SEALING SYSTEM MUST BE RATED FOR BOTH INDOOR AND OUTDOOR APPLICATION. TAPE SHALL NOT CONTAIN ASBESTOS.

F. METAL DUCT FABRICATION: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE."

G. OUTDOOR DUCT REQUIREMENTS: OUTDOOR DUCT SHALL BE A MANUFACTURED SYSTEM SIMILAR TO THE ENDURADUCT OUTDOOR RECTANGULAR DUCT SYSTEM.
PROVIDE THE FOLLWING:
a. R-12.29 MINIMUM INSULATION
b. INTERNAL REINFORCEMENT CAPABLE OF WITHSTANDING 3" W.C. OF POSITIVE OR NEGATIVE PRESSURE.
c. COORDINATE FINISH WITH ARCHITECT.
d. PROVIDE ALL THE REQUIRED SUPPORTS FOR ROOF MOUNTING.

2.3 ACCESSORIES

A. VOLUME DAMPERS AND CONTROL DAMPERS: SINGLE-BLADE AND MULTIPLE OPPOSED-BLADE DAMPERS, STANDARD LEAKAGE RATING, HEAVY DUTY, AND SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS; FACTORY FABRICATED AND COMPLETE WITH REQUIRED HARDWARE AND ACCESSORIES.

1. ROUND VOLUME DAMPERS: PROVIDE MINIMUM 20 GAUGE GALVANIZED STEEL FRAME AND BLADES, MINIMUM 3/8" SQUARE STEEL AXLE, MOLDED SYNTHETIC BEARINGS, WITH LOCKING POSITION REGULATOR. REGULATOR SHALL BE POSITIONED WITH SHEET METAL BRACKET BEYOND DUCT COVERING. WHERE POSITIONING REGULATOR IS NOT ACCESSIBLE, PROVIDE COUPLING AND EXTENSION ROD WITH REGULATOR FOR CEILING OR WALL INSTALLATION, AS REQUIRED.
2. RECTANGULAR VOLUME DAMPERS: PROVIDE MINIMUM 16 GAUGE GALVANIZED STEEL CHANNEL FRAME, 16 GAUGE GALVANIZED STEEL BLADES, MINIMUM ½" HEXAGONAL AXLE, BOLDED SYNTHETIC BEARINGS, WITH 3/8" SQUARE PLATED STEEL CONTROL SHAFT. LINKAGES SHALL BE CONCEALED IN THE FRAME. OPERATING SHAFT SHALL EXTEND BEYOND FRAME AND DUCT TO A LOCKING QUADRANT WITH ADJUSTABLE LEVER. MAXIMUM BLADE WIDTH SHALL NOT EXCEED 6".

B. FLEXIBLE DUCT CONNECTORS: FLAME-RETARDED OR NONCOMBUSTIBLE FABRICS, COATINGS, AND ADHESIVES COMPLYING WITH UL 181, CLASS 1. CONNECTOR TO BE 30 OUNCE, NEOPRENE COATED, FIBERGLASS FABRIC.

C. FLEXIBLE DUCTS: FACTORY ASSEMBLED, UL 181, CLASS 1, WITH 1-1/2-INCH THICK (R-4.2 MIN.), 1 PCF FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER. FLEXIBLE DUCT SHALL MEET NFPA 90A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50, AND SHALL BE RATED FOR MINIMUM 2-INCH WG PRESSURE AND 0 TO 250ºF TEMPERATURE. PROVIDE SCREW-OPERATED METAL ADJUSTABLE CLAMPING DEVICES. USE TWIST-LOCK CONICAL TAP COLLARS AT CONNECTIONS INTO SHEET METAL DUCTWORK. MAXIMUM EXTENDED LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 5 FEET.

D. TURNING VANES: PROVIDE FABRICATED TURNING VANES AND VANE RUNNERS, CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS". PROVIDE TURNING VANES CONSTRUCTED OF CURVED BLADES, SUPPORTED WITH BARS PERPENDICULAR TO BLADES, AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK. FOLLOW SMACNA GUIDELINES FOR SPACING SUPPORT, AND CONSTRUCTION. ALL BLADES SHALL BE DOUBLE THICKNESS AIRFOIL TYPE.

E. BIRD SCREENS AND FRAMES: PROVIDE BIRD SCREENS THAT CONFORM TO ASTM E 2016, NO. 2 MESH, ALUMINUM OR STAINLESS STEEL. PROVIDE "MEDIUM-LIGHT" RATED ALUMINUM SCREENS. PROVIDE "LIGHT" RATED STAINLESS STEEL SCREENS.

F. DUCT-MOUNTED ACCESS DOORS: FABRICATE ACCESS PANELS ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE"; FIGURES 2-10, "DUCT ACCESS DOORS AND PANELS," AND 2-11, "ACCESS PANELS - ROUND DUCT."

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL DUCTWORK, ACCESSORIES, AND SUPPORTS ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" UNLESS OTHERWISE INDICATED.

B. SEAL DUCTS TO THE FOLLOWING SEAL CLASSES ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE": 1-INCH WG, SEAL CLASS A.

C. AVOID PASSING THROUGH OR ABOVE ELECTRICAL EQUIPMENT SPACES AND ENCLOSURES.

D. CLEAN DUCT SYSTEMS BEFORE TESTING, ADJUSTING, AND BALANCING.

3.2 DUCTWORK SCHEDULE

A. EXPOSED DUCTWORK IN ARCHITECTURALLY FINISHED SPACES- ELECTRO-GALVANIZED STEEL SHEET.

B. CONCEALED DUCTWORK AND DUCTWORK IN UNFINISHED ARCHITECTURAL SPACES- GALVANIZED STEEL.

END OF SECTION

SECTION 233423 - HVAC EXHAUST FANS

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. PRODUCTS SHALL BE LICENSED TO USE THE AMCA-CERTIFIED RATINGS SEAL.

B. EXHAUST FANS SHALL COMPLY WITH UL 705. TYPE 1 FANS SHALL ALSO COMPLY WITH UL 762.

C. TYPE 1 FANS TO BE DESIGNED FOR HIGH HEAT OPERATION AT 300°F.

D. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

2.2 CENTRIFUGAL VENTILATORS

A. HOUSING: REMOVABLE, SPUN-ALUMINUM, DOME TOP AND OUTLET BAFFLE; SQUARE, ONE-PIECE, ALUMINUM BASE WITH VENTURI INLET CONE.

1. UPBLAST UNITS: ALUMINUM DISCHARGE BAFFLE TO DIRECT DISCHARGE AIR UPWARD, WITH RAIN AND SNOW DRAINS.

B. FAN WHEELS: ALUMINUM HUB AND WHEEL WITH BACKWARD-INCLINED BLADES.

C. BELT-DRIVEN DRIVE ASSEMBLY: RESILIENTLY MOUNTED TO HOUSING.

1. FAN SHAFT: TURNED, GROUND, AND POLISHED STEEL; KEYED TO WHEEL HUB.
2. SHAFT BEARINGS: PERMANENTLY LUBRICATED, PERMANENTLY SEALED, SELF-ALIGNING BALL BEARINGS.
3. PULLEYS: CAST-IRON, ADJUSTABLE-PITCH MOTOR PULLEY.
4. FAN AND MOTOR ISOLATED FROM EXHAUST AIRSTREAM.

D. ACCESSORIES:

1. DISCONNECT SWITCH: NON-FUSIBLE TYPE, WITH THERMAL-OVERLOAD PROTECTION, FACTORY WIRED THROUGH AN INTERNAL ALUMINUM CONDUIT.
2. BIRD SCREENS: REMOVABLE, 1/2-INCH MESH, ALUMINUM OR BRASS WIRE.
3. DAMPERS: COUNTERBALANCED, PARALLEL-BLADE, BACKDRAFT DAMPERS MOUNTED IN CURB BASE; FACTORY SET TO CLOSE WHEN FAN STOPS.
4. MOTORIZED DAMPERS: PARALLEL-BLADE DAMPERS MOUNTED IN CURB BASE WITH ELECTRIC ACTUATOR; WIRED TO CLOSE WHEN FAN STOPS.

E. ROOF CURBS: 20 GAUGE GALVANIZED STEEL; MITERED AND WELDED CORNERS; 1-1/2-INCH THICK, RIGID, FIBERGLASS INSULATION ADHERED TO INSIDE WALLS; AND 1-1/2-INCH WOOD NAILER. SIZE AS REQUIRED TO SUIT ROOF OPENING AND FAN BASE.

1. CONFIGURATION: SELF-FLASHING WITHOUT A CANT STRIP, WITH MOUNTING FLANGE.
2. OVERALL HEIGHT: 14 INCHES FOR GENERAL EXHAUST FANS; 20 INCHES FOR KITCHEN EXHAUST FANS.
3. PITCH MOUNTING: MANUFACTURER CURB FOR ROOF SLOPE.
4. MOUNTING PEDESTAL: GALVANIZED STEEL WITH REMOVABLE ACCESS PANEL.
5. TYPE 1 ROOF CURBS TO BE VENTED TYPE.
6. TYPE 1 AND TYPE 2 ROOF CURBS TO BE HINGED TYPE.

F. CAPACITIES AND CHARACTERISTICS:

1. SEE SCHEDULE.

G. MOTORS

A.A. COMPLY WITH NEMA DESIGNATION, TEMPERATURE RATING, SERVICE FACTOR, ENCLOSURE TYPE, AND EFFICIENCY REQUIREMENTS FOR MOTORS.

1.1. MOTOR SIZES: MINIMUM SIZE AS INDICATED. IF NOT INDICATED, LARGE ENOUGH SO DRIVEN LOAD WILL NOT REQUIRE MOTOR TO OPERATE IN SERVICE FACTOR RANGE ABOVE 1.0.

A.B. ENCLOSURE TYPE: TOTALLY ENCLOSED, FAN COOLED.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL UNITS WITH CLEARANCES FOR SERVICE AND MAINTENANCE

B. ROOF-MOUNTED UNITS: INSTALL ROOF CURB ON ROOF STRUCTURE, ACCORDING TO ARI GUIDELINE B. INSTALL AND SECURE ROOF-MOUNTED FANS ON CURBS, AND COORDINATE ROOF PENETRATIONS AND FLASHING WITH ROOF CONSTRUCTION.

END OF SECTION

SECTION 233713 - DIFFUSERS, REGISTERS, AND GRILLES

PART 1 - GENERAL

PART 2 - PRODUCTS

2.1 DIFFUSERS, REGISTERS, AND GRILLES:

A. REFER TO SCHEDULES FOR FINISH TYPE, COLOR, MATERIAL, AND MOUNTING.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL DIFFUSERS, REGISTERS, AND GRILLES LEVEL AND PLUMB.

B. CEILING-MOUNTED OUTLETS AND INLETS: DRAWINGS INDICATE GENERAL ARRANGEMENT OF DUCTS, FITTINGS, AND ACCESSORIES. MAKE FINAL LOCATIONS WHERE INDICATED, AS MUCH AS PRACTICAL. FOR UNITS INSTALLED IN LAY-IN CEILING PANELS, LOCATE UNITS IN THE CENTER OF PANEL UNLESS OTHERWISE INDICATED. WHERE ARCHITECTURAL FEATURES OR OTHER ITEMS CONFLICT WITH INSTALLATION, NOTIFY ARCHITECT FOR A DETERMINATION OF FINAL LOCATION.

C. AFTER INSTALLATION, ADJUST DIFFUSERS, REGISTERS, AND GRILLES TO AIR PATTERNS INDICATED, OR AS DIRECTED, BEFORE STARTING AIR BALANCING.

2. END OF SECTION

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CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

MECHANICAL SPECIFICATIONS

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SPECIFICATIONS - DIVISION 23 - HVAC (CONTINUED)

SECTION 237339 - DIRECT-FIRED MAKE-UP AIR UNIT

PART 2 - PRODUCTS

2.1 PACKAGED UNITS

A. FACTORY-ASSEMBLED, PREWIRED, SELF-CONTAINED UNIT CONSISTING OF CABINET, SUPPLY FAN, CONTROLS, FILTERS, AND DIRECT-FIRED GAS FURNACE TO BE INSTALLED OUTSIDE THE BUILDING.

2.2 CABINET

A. CABINET: GALVANIZED-STEEL PANELS WITH LIFTING LUGS. CABINET SHALL BE FULLY WEATHERIZED FOR OUTDOOR INSTALLATION. HEAT-RESISTANT, BAKED- ENAMEL FINISH. VERTICAL-PATTERN, GALVANIZED-STEEL DISCHARGE PLENUM WITH DIFFUSERS INCORPORATING INDIVIDUALLY ADJUSTABLE VANES.

B. ROOF CURB: FULL-PERIMETER CURB OF SHEET METAL, MINIMUM 20 INCHES HIGH, WITH WOOD NAILER, NEOPRENE SEALING STRIP, AND WELDED Z-BAR FLASHING.

C. OUTDOOR-AIR INTAKE: GALVANIZED-STEEL HOOD WITH RAIN BAFFLES, BIRD SCREEN, AND FINISH TO MATCH CABINET; AND SIZED TO SUPPLY 100 PERCENT OUTDOOR AIR. GALVANIZED-STEEL, OPPOSED-BLADE MOTORIZED DAMPERS WITH VINYL BLADE SEALS AND STAINLESS-STEEL JAMB SEAL.

D. FILTERS: COMPLY WITH NFPA 90A; 1 INCH THICK.

2.3 SUPPLY-AIR FAN

A. FAN: CENTRIFUGAL, RATED ACCORDING TO AMCA 210; STATICALLY AND DYNAMICALLY BALANCED, GALVANIZED STEEL; MOUNTED ON SOLID-STEEL SHAFT.

B. MOTOR: TOTALLY ENCLOSED, SINGLE SPEED MOTOR.

C. DRIVE: V-BELT DRIVE WITH MATCHING FAN PULLEY AND ADJUSTABLE MOTOR SHEAVES AND BELT ASSEMBLY.

D. GAS PRESSURE GAUGE: 2-1/2 INCH DIAMETER AND 1/4 INCH THREAD SIZE.

2.4 DIRECT-FIRED GAS FURNACE

A. DESCRIPTION: FACTORY ASSEMBLED, PIPED, AND WIRED; AND COMPLYING WITH ANSI Z83.4, ANSI Z83.18, AND NFPA 54. CAST-IRON BURNER WITH STAINLESS- STEEL MIXING PLATES. SINGLE-STAGE CONTROL VALVE. FUEL: NATURAL GAS.

B. SAFETY CONTROLS: AIRFLOW PROVING SWITCH; HIGH-TEMPERATURE LIMIT; SAFETY LOCKOUT; REDUNDANT, AUTOMATIC, MAIN GAS VALVES; ELECTRIC PILOT VALVE; MODULATING TEMPERATURE CONTROL VALVE; MAIN AND PILOT GAS REGULATORS; MAIN AND PILOT MANUAL SHUTOFF VALVES; MAIN AND PILOT PRESSURE TAPS; AND HIGH-LOW GAS PRESSURE SWITCHES TO COMPLY WITH ANSI STANDARDS.

2.5 CONTROLS

A. FACTORY-WIRED, FUSE-PROTECTED CONTROL TRANSFORMER, CONNECTION FOR POWER SUPPLY AND FIELD-WIRED UNIT TO REMOTE CONTROL PANEL.

1. FAN CONTROL: INTERLOCK FAN TO START WITH EXHAUST FAN(S) AND WITH RTU COOLING CYCLE.
2. OUTDOOR-AIR DAMPER CONTROL: OUTDOOR-AIR DAMPER OPENS WHEN SUPPLY FAN STARTS, AND CLOSES WHEN FAN STOPS.
3. TEMPERATURE CONTROL: OPERATES GAS VALVE TO MAINTAIN SUPPLY-AIR TEMPERATURE.

2.6 INSTALLATION

A. INSTALL GAS-FIRED UNITS ACCORDING TO NFPA 54.

B. INSTALL ROOF CURB ON ROOF STRUCTURE, ACCORDING TO ARI GUIDELINE B OR NRCA'S "LOW-SLOPE MEMBRANE ROOFING CONSTRUCTION DETAILS MANUAL."

C. CONNECT GAS PIPING WITH SHUTOFF VALVE AND UNION AND WITH SUFFICIENT CLEARANCE FOR BURNER REMOVAL AND SERVICE.

D. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF DUCTS. CONNECT SUPPLY DUCTS TO DIRECT-FIRED MAU WITH FLEXIBLE DUCT CONNECTORS; FLEXIBLE DUCT CONNECTORS ARE SPECIFIED IN SECTION 233100 "HVAC DUCTS AND CASINGS."

END OF SECTION

SECTION 237413 - PACKAGED ROOFTOP UNITS

1.1 SUMMARY

A. THIS SECTION INCLUDES PACKAGED, ROOFTOP UNITS WITH THE FOLLOWING COMPONENTS AND ACCESSORIES:

1. DIRECT-EXPANSION COOLING.
2. HUMIDITY CONTROL WITH HOT-GAS REHEAT (OPTIONAL)
3. GAS FURNACE.
4. ECONOMIZER OUTDOOR-AND RETURN-AIR DAMPER SECTION.
5. INTEGRAL, SPACE TEMPERATURE CONTROLS.
6. ROOF CURBS.

1.2 SECTION REQUIREMENTS

A. SUBMITTALS:

1. PRODUCT DATA: INCLUDE MANUFACTURER'S TECHNICAL DATA FOR EACH RTU, INCLUDING RATED CAPACITIES, DIMENSIONS, REQUIRED CLEARANCES, CHARACTERISTICS, FURNISHED SPECIALTIES, AND ACCESSORIES.

PART 2 - PRODUCTS

2.1 CASING

A. GENERAL FABRICATION REQUIREMENTS FOR CASINGS: FORMED AND REINFORCED INSULATED PANELS, FABRICATED TO ALLOW REMOVAL FOR ACCESS TO INTERNAL PARTS AND COMPONENTS, WITH JOINTS BETWEEN SECTIONS SEALED.

B. EXTERIOR CASING MATERIAL: GALVANIZED STEEL WITH FACTORY-PAINTED FINISH, WITH PITCHED ROOF PANELS AND KNOCKOUTS WITH GROMMET SEALS FOR ELECTRICAL AND PIPING CONNECTIONS AND LIFTING LUGS.

1. CASING THICKNESS: 16 GAUGE THICK.

C. CASING INSULATION AND ADHESIVE: COMPLY WITH NFPA 90A.

1. MATERIALS: ASTM C 1071, TYPE I.
2. THICKNESS: 1/2 INCH
3. LINER MATERIALS SHALL HAVE AIR-STREAM SURFACE INSULATED WITH A MINIMUM 1/2-IN. THICK, MINIMUM 1 1/2 LB DENSITY, FLEXIBLE FIBERGLASS INSULATION BONDED WITH A PHENOLIC BINDER, NEOPRENE COATED ON THE AIR SIDE.
4. LINER ADHESIVE: COMPLY WITH ASTM C 916, TYPE I.

D. UNIT SHALL HAVE A THRU-THE-BASE GAS AND ELECTRICAL CONNECTIONS.

2.2 FANS

OPTION A OR B:

A. DIRECT-DRIVEN SUPPLY-AIR FANS: DOUBLE WIDTH, BACKWARD INCLINED, CENTRIFUGAL; WITH PERMANENTLY LUBRICATED, MOTOR RESILIENTLY MOUNTED IN THE FAN INLET. ALUMINUM OR PAINTED-STEEL WHEELS, AND GALVANIZED- OR PAINTED-STEEL FAN SCROLLS.

B. BELT-DRIVEN SUPPLY-AIR FANS: DOUBLE WIDTH, FORWARD CURVED, CENTRIFUGAL; WITH PERMANENTLY LUBRICATED, SINGLE-SPEED MOTOR INSTALLED ON AN ADJUSTABLE FAN BASE RESILIENTLY MOUNTED IN THE CASING. ALUMINUM OR PAINTED-STEEL WHEELS, AND GALVANIZED- OR PAINTED-STEEL FAN SCROLLS.

C. CONDENSER-COIL FAN: DIRECT DRIVE, PROPELLER, MOUNTED ON SHAFT OF PERMANENTLY LUBRICATED MOTOR WITH THERMAL OVERLOAD PROTECTION.

D. POWER EXHAUST: FORWARD CURVED, SHAFT MOUNTED ON PERMANENTLY LUBRICATED MOTOR.

2.3 COILS

A. SUPPLY-AIR REFRIGERANT COIL:

1. ALUMINUM-PLATE FIN AND SEAMLESS INTERNALLY GROOVED COPPER TUBE IN STEEL CASING WITH EQUALIZING-TYPE VERTICAL DISTRIBUTOR.
2. POLYMER STRIP SHALL PREVENT ALL COPPER COIL FROM CONTACTING STEEL COIL FRAME OR CONDENSATE PAN.
3. CATHODIC EPOXY COATING.
4. CONDENSATE DRAIN PAN: GALVANIZED STEEL WITH CORROSION-RESISTANT COATING FORMED WITH PITCH AND DRAIN CONNECTIONS.

B. OUTDOOR-AIR REFRIGERANT COIL:

1. ALUMINUM-PLATE FIN AND SEAMLESS INTERNALLY GROOVED COPPER TUBE IN STEEL CASING WITH EQUALIZING-TYPE VERTICAL DISTRIBUTOR.
2. POLYMER STRIP SHALL PREVENT ALL COPPER COIL FROM CONTACTING STEEL COIL FRAME OR CONDENSATE PAN.
3. CATHODIC EPOXY COATING.

C. HOT-GAS REHEAT REFRIGERANT COIL (OPTIONAL):

1. ALUMINUM-PLATE FIN AND SEAMLESS INTERNALLY GROOVED COPPER TUBE IN STEEL CASING WITH EQUALIZING-TYPE VERTICAL DISTRIBUTOR.
2. POLYMER STRIP SHALL PREVENT ALL COPPER COIL FROM CONTACTING STEEL COIL FRAME OR CONDENSATE PAN.
3. CATHODIC EPOXY COATING.

2.4 REFRIGERANT CIRCUIT COMPONENTS

A. NUMBER OF REFRIGERANT CIRCUITS: TWO

B. COMPRESSOR: HERMETIC, SCROLL, MOUNTED ON VIBRATION ISOLATORS; WITH INTERNAL OVERCURRENT AND HIGH-TEMPERATURE PROTECTION, INTERNAL PRESSURE RELIEF AND CRANKCASE HEATER.

C. REFRIGERATION SPECIALTIES:

1. REFRIGERANT: R-410A
2. EXPANSION VALVE WITH REPLACEABLE THERMOSTATIC ELEMENT.
3. REFRIGERANT FILTER/DRYER.
4. MANUAL-RESET HIGH-PRESSURE SAFETY SWITCH.
5. AUTOMATIC-RESET LOW-PRESSURE SAFETY SWITCH.
6. MINIMUM OFF-TIME RELAY.
7. AUTOMATIC-RESET COMPRESSOR MOTOR THERMAL OVERLOAD.
8. BRASS SERVICE VALVES INSTALLED IN COMPRESSOR SUCTION AND LIQUID LINES.
9. LOW-AMBIENT KIT HIGH-PRESSURE SENSOR.
10. HOT-GAS REHEAT SOLENOID VALVE WITH A REPLACEABLE MAGNETIC COIL.

2.5 AIR FILTRATION

A. PROVIDE 2" THROW-AWAY FIBERGLASS FILTERS.

2.6 GAS FURNACE

A. BURNERS: IN-SHOT TYPE CONSTRUCTED OF ALUMINUM-COATED STEEL.

1. FUEL: NATURAL GAS.
2. IGNITION: DIRECT SPARK IGNITION (DSI).
VERIFY AVAILABILITY OF HIGH-ALTITUDE FEATURE WITH MANUFACTURERS.
3. HIGH-ALTITUDE KIT: FOR PROJECT ELEVATIONS MORE THAN 2,000 FEET ABOVE SEA LEVEL.

B. HEAT-EXCHANGER AND DRAIN PAN: STAINLESS STEEL.

C. INDUCED DRAFT COMBUSTION BLOWER.

D. SAFETY CONTROLS:

1. GAS CONTROL VALVE: TWO STAGE.
2. GAS TRAIN: SINGLE-BODY, REGULATED, REDUNDANT, 24-V AC GAS VALVE ASSEMBLY CONTAINING PILOT SOLENOID VALVE, PILOT FILTER, PRESSURE REGULATOR, PILOT SHUTOFF, AND MANUAL SHUTOFF.

2.7 DAMPERS

A. OUTDOOR AND RETURN AIR MIXING DAMPERS: PARALLEL OR OPPOSED-BLADE GALVANIZED-STEEL DAMPERS MECHANICALLY FASTENED TO CADMIUM PLATED FOR GALVANIZED-STEEL OPERATING ROD IN REINFORCED CABINET. CONNECT OPERATING RODS WITH COMMON LINKAGE AND INTERCONNECT LINKAGES SO DAMPERS OPERATE SIMULTANEOUSLY.

1. DAMPER MOTOR: MODULATING WITH ADJUSTABLE MINIMUM POSITION.
2. RELIEF AIR DAMPER: GRAVITY ACTUATED, WITH BIRD SCREEN AND HOOD.

2.8 ELECTRICAL POWER CONNECTION

A. PROVIDE FOR SINGLE CONNECTION OF POWER TO UNIT WITH UNIT-MOUNTED DISCONNECT SWITCH ACCESSIBLE FROM OUTSIDE UNIT AND CONTROL-CIRCUIT TRANSFORMER WITH BUILT-IN OVERCURRENT PROTECTION.

2.9 CONTROLS

A. BASIC UNIT CONTROLS:

1. CONTROL-VOLTAGE TRANSFORMER.
2. WALL-MOUNTED THERMOSTAT OR SENSOR WITH THE FOLLOWING FEATURES:
   a. HEAT-COOL-OFF SWITCH.
   b. FAN ON-AUTO SWITCH.
   c. FAN-SPEED SWITCH.
   d. AUTOMATIC CHANGEOVER.
   e. ADJUSTABLE DEADBAND.
   f. EXPOSED SET POINT.
   g. EXPOSED INDICATION.
   h. DEGREE F INDICATION.
   i. UNOCCUPIED-PERIOD-OVERRIDE PUSH BUTTON.
   j. DATA ENTRY AND ACCESS PORT TO INPUT TEMPERATURE AND HUMIDITY SET POINTS, OCCUPIED AND UNOCCUPIED PERIODS, AND OUTPUT ROOM TEMPERATURE AND HUMIDITY, SUPPLY-AIR TEMPERATURE, OPERATING MODE, AND STATUS.
3. WALL-MOUNTED HUMIDISTAT OR SENSOR WITH THE FOLLOWING FEATURES:
   a. EXPOSED SET POINT.
   b. EXPOSED INDICATION.
4. REMOTE WALL-MOUNTED ANNUNCIATOR PANEL WITH KEYED ACCESS FOR EACH UNIT:
   a. LIGHTS TO INDICATE POWER ON, UNIT ALARM OR FAILURE, SMOKE DETECTION.

B. DDC CONTROLLER:

1. CONTROLLER SHALL HAVE VOLATILE-MEMORY BACKUP.
2. SAFETY CONTROL OPERATION:
   a. SMOKE DETECTORS: STOP FAN AND CLOSE OUTDOOR-AIR DAMPER IF SMOKE IS DETECTED. PROVIDE ADDITIONAL CONTACTS FOR ALARM INTERFACE TO FIRE ALARM CONTROL PANEL.
   b. FIRE ALARM CONTROL PANEL INTERFACE WHERE APPLICABLE.
   c. LOW-DISCHARGE TEMPERATURE: STOP FAN AND CLOSE OUTDOOR-AIR DAMPER IF SUPPLY AIR TEMPERATURE IS LESS THAN 40°F.
   RETAIN FIRST SUBPARAGRAPH BELOW FOR AIR-TO-AIR HEAT-PUMP FEATURE.
   d. DEFROST CONTROL FOR CONDENSER COIL: PRESSURE DIFFERENTIAL SWITCH TO INITIATE DEFROST SEQUENCE.
3. UNIT SHALL BE CAPABLE OF DIRECT COMMUNICATION WITH GENERIC OPEN PROTOCOL SUCH AS BACNET MS/TP, LONTALK, OR MODUS. THIS WILL ALLOW THE UNIT TO INTEGRATE WITH A FACILITY ENERGY MANAGEMENT SYSTEM.
4. SCHEDULED OPERATION: OCCUPIED AND UNOCCUPIED PERIODS ON SEVEN-DAY CLOCK WITH A MINIMUM OF FOUR PROGRAMMABLE PERIODS PER DAY.
5. UNOCCUPIED PERIOD:
   a. HEATING SETBACK: 10°F.
   b. COOLING SETBACK: SYSTEM OFF.
   c. OVERRIDE OPERATION: TWO HOURS.
6. SUPPLY FAN OPERATION:
   a. OCCUPIED PERIODS: RUN FAN CONTINUOUSLY.
   b. UNOCCUPIED PERIODS: CYCLE FAN TO MAINTAIN SETBACK TEMPERATURE.
7. REFRIGERANT CIRCUIT OPERATION:
   a. OCCUPIED PERIODS: CYCLE OR STAGE COMPRESSORS, AND OPERATE HOT-GAS BYPASS TO MATCH COMPRESSOR OUTPUT TO COOLING LOAD TO MAINTAIN ROOM TEMPERATURE AND HUMIDITY. CYCLE CONDENSER FANS TO MAINTAIN MAXIMUM HOT-GAS PRESSURE. OPERATE LOW-AMBIENT CONTROL KIT TO MAINTAIN MINIMUM HOT-GAS PRESSURE.
   b. UNOCCUPIED PERIODS: CYCLE COMPRESSORS AND CONDENSER FANS FOR HEATING TO MAINTAIN SETBACK TEMPERATURE.
8. HOT-GAS REHEAT-COIL OPERATION (OPTIONAL):
   a. OCCUPIED PERIODS: HUMIDISTAT OPENS HOT-GAS VALVE TO PROVIDE HOT-GAS REHEAT, AND CYCLES COMPRESSOR.
   b. UNOCCUPIED PERIODS: REHEAT NOT REQUIRED.
9. GAS FURNACE OPERATION:
   a. OCCUPIED PERIODS: STAGE BURNER TO MAINTAIN ROOM TEMPERATURE.
   b. UNOCCUPIED PERIODS: CYCLE BURNER TO MAINTAIN SETBACK TEMPERATURE.
10. FIXED MINIMUM OUTDOOR-AIR DAMPER OPERATION:
    a. OCCUPIED PERIODS: OPEN TO 25 PERCENT.
    b. UNOCCUPIED PERIODS: CLOSE THE OUTDOOR-AIR DAMPER.
11. ECONOMIZER OUTDOOR-AIR DAMPER OPERATION:
    a. OCCUPIED PERIODS: OPEN TO 25 PERCENT FIXED MINIMUM INTAKE, AND MAXIMUM 100 PERCENT OF THE FAN CAPACITY TO COMPLY WITH ASHRAE CYCLE II. CONTROLLER SHALL PERMIT AIR-SIDE ECONOMIZER OPERATION WHEN OUTDOOR AIR IS LESS THAN 60 ° F. USE MIXED-AIR TEMPERATURE AND SELECT BETWEEN OUTDOOR-AIR AND RETURN-AIR ENTHALPY TO ADJUST MIXING DAMPERS DURING ECONOMIZER CYCLE OPERATION, LOCK OUT COOLING.
    b. UNOCCUPIED PERIODS: CLOSE OUTDOOR-AIR DAMPER AND OPEN RETURN-AIR DAMPER.

2.10 ACCESSORIES

A. DUPLEX, 115-V, GROUND-FAULT-INTERRUPTER OUTLET WITH 15-A OVERCURRENT PROTECTION. INCLUDE TRANSFORMER IF REQUIRED.

B. LOW-AMBIENT KIT STAGED DOWN TO 0°F.

C. FILTER DIFFERENTIAL PRESSURE SWITCH WITH SENSOR TUBING ON EITHER SIDE OF FILTER. SET FOR FINAL FILTER PRESSURE LOSS.

D. HAIL GUARDS OF GALVANIZED STEEL, PAINTED TO MATCH CASING.

E. DUCT MOUNTED SMOKE DETECTOR IN RETURN AND/OR SUPPLY AIR STREAM CAPABLE OF SHUTTING DOWN THE UNIT IN THE PRESENCE OF SMOKE DETECTION PER AUTHORITY HAVING JURISDICTION.

2.11 ROOF CURBS

A. MATERIALS: GALVANIZED STEEL WITH CORROSION-PROTECTION COATING, WATERTIGHT GASKETS, AND FACTORY-INSTALLED WOOD NAILER; COMPLYING WITH NRCA STANDARDS.

1. CURB INSULATION AND ADHESIVE: COMPLY WITH NFPA 90A OR NFPA 90B.
   a. MATERIALS: ASTM C 1071, TYPE I OR II.
   b. THICKNESS: 1-1/2 INCHES.
2. APPLICATION: FACTORY APPLIED WITH ADHESIVE AND MECHANICAL FASTENERS TO THE INTERNAL SURFACE OF CURB.
   a. LINER ADHESIVE: COMPLY WITH ASTM C 916, TYPE I.
   b. MECHANICAL FASTENERS: GALVANIZED STEEL, SUITABLE FOR ADHESIVE ATTACHMENT, MECHANICAL ATTACHMENT, OR WELDING ATTACHMENT TO DUCT WITHOUT DAMAGING LINER WHEN APPLIED AS RECOMMENDED BY MANUFACTURER AND WITHOUT CAUSING LEAKAGE IN CABINET.
   c. LINER MATERIALS SHALL HAVE AIR-STREAM SURFACE INSULATED WITH A MINIMUM 1/2-IN. THICK, MINIMUM 1 1/2 LB DENSITY, FLEXIBLE FIBERGLASS INSULATION BONDED WITH A PHENOLIC BINDER, NEOPRENE COATED ON THE AIR SIDE.
   d. LINER ADHESIVE: COMPLY WITH ASTM C 916, TYPE I.

B. CURB HEIGHT: 14 INCHES ABOVE ROOF SURFACE LEVEL TYPICAL UNO.

PART 3 - EXECUTION

3.1 EXAMINATION

A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF RTUS.

B. EXAMINE ROUGHING-IN FOR RTUS TO VERIFY ACTUAL LOCATIONS OF PIPING AND DUCT CONNECTIONS BEFORE EQUIPMENT INSTALLATION.

C. EXAMINE ROOFS FOR SUITABLE CONDITIONS WHERE RTUS WILL BE INSTALLED.

D. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 INSTALLATION

A. ROOF CURB: INSTALL ON ROOF STRUCTURE, LEVEL AND SECURE. INSTALL RTUS ON CURBS AND COORDINATE ROOF PENETRATIONS AND FLASHING WITH ROOF CONSTRUCTION. RTUS TO UPPER CURB RAIL, AND SECURE CURB BASE TO ROOF FRAMING OR CONCRETE BASE WITH ANCHOR BOLTS.

3.3 CONNECTIONS

A. . THE FOLLOWING ARE SPECIFIC CONNECTION REQUIREMENTS:

1. INSTALL DUCTS TO TERMINATION AT TOP OF ROOF CURB.
2. REMOVE ROOF DECKING ONLY AS REQUIRED FOR PASSAGE OF DUCTS. DO NOT CUT OUT DECKING UNDER ENTIRE ROOF CURB.

3.4 COORDINATION

A. CONTRACTOR TO COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER TO ENSURE THAT THE RTUS ARE COORDINATED WITH THE KITCHEN EQUIPMENT, PARTICULARLY THE EXHAUST HOODS AND THE MAKE- UP AIR UNIT, TO PROPERLY PRESSURIZE THE BUILDING/SPACE.

B. CONTRACTOR TO ENSURE THAT ALL THERMOSTATS AND SENSORS ARE COMPATIBLE WITH THE RTU CONTROLS.

3.5 FIELD QUALITY CONTROL

A. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT, TEST, AND ADJUST COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS. REPORT RESULTS IN WRITING.

B. PERFORM TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.

1. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS, AND TO ASSIST IN TESTING. REPORT RESULTS IN WRITING.

C. TESTS AND INSPECTIONS:

1. AFTER INSTALLING RTUS AND AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST UNITS FOR COMPLIANCE WITH REQUIREMENTS.
2. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION.
3. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.

D. REMOVE AND REPLACE MALFUNCTIONING UNITS AND RETEST AS SPECIFIED ABOVE.

3.6 STARTUP SERVICE

A. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICE.

B. COMPLETE INSTALLATION AND STARTUP CHECKS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND DO THE FOLLOWING:

1. INSPECT FOR VISIBLE DAMAGE TO UNIT CASING, FURNACE COMBUSTION CHAMBER, COMPRESSOR, COILS, AND FANS.
2. VERIFY THAT LABELS ARE CLEARLY VISIBLE, CLEARANCES HAVE BEEN PROVIDED FOR SERVICING, CONTROLS ARE CONNECTED AND OPERABLE, AND FILTERS ARE INSTALLED.
3. CLEAN CONDENSER COIL AND FURNACE AND INSPECT FOR CONSTRUCTION DEBRIS.
4. REMOVE PACKING FROM VIBRATION ISOLATORS.
5. VERIFY LUBRICATION ON FAN AND MOTOR BEARINGS.
6. INSPECT FAN-WHEEL ROTATION FOR MOVEMENT IN CORRECT DIRECTION WITHOUT VIBRATION AND BINDING.
7. ADJUST FAN BELTS TO PROPER ALIGNMENT AND TENSION.
8. START UNIT ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
   a. INSPECT AND RECORD PERFORMANCE OF INTERLOCKS AND PROTECTIVE DEVICES; VERIFY SEQUENCES.
10. OPERATE UNIT FOR AN INITIAL PERIOD AS RECOMMENDED OR REQUIRED BY MANUFACTURER.
11. PERFORM THE FOLLOWING OPERATIONS FOR BOTH MINIMUM AND MAXIMUM FIRING. ADJUST BURNER FOR PEAK EFFICIENCY.
    a. MEASURE GAS PRESSURE ON MANIFOLD.
    b. INSPECT OPERATION OF POWER VENTS.
    c. MEASURE SUPPLY-AIR TEMPERATURE AND VOLUME WHEN BURNER IS AT MAXIMUM FIRING RATE AND WHEN BURNER IS OFF. CALCULATE USEFUL HEAT TO SUPPLY AIR.
20. ADJUST AND INSPECT HIGH-TEMPERATURE LIMITS.
21. INSPECT OUTDOOR-AIR DAMPERS FOR PROPER STROKE AND INTERLOCK WITH RETURN-AIR DAMPERS.
22. INSPECT CONTROLS FOR CORRECT SEQUENCING OF HEATING, MIXING DAMPERS, REFRIGERATION, AND NORMAL AND EMERGENCY SHUTDOWN.
23. SIMULATE MAXIMUM COOLING DEMAND AND INSPECT THE FOLLOWING:
    a. COMPRESSOR REFRIGERANT SUCTION AND HOT-GAS PRESSURES.
    b. SHORT CIRCUITING OF AIR THROUGH CONDENSER COIL OR FROM CONDENSER FANS TO OUTDOOR-AIR INTAKE.
27. VERIFY OPERATION OF REMOTE PANEL INCLUDING PILOT-LIGHT OPERATION AND FAILURE MODES. INSPECT THE FOLLOWING:
    a. HIGH-TEMPERATURE LIMIT ON GAS-FIRED HEAT EXCHANGER.
    b. LOW-TEMPERATURE SAFETY OPERATION.
    c. FILTER HIGH-PRESSURE DIFFERENTIAL ALARM.
    d. ECONOMIZER TO MINIMUM OUTDOOR-AIR CHANGEOVER.
    e. RELIEF-AIR FAN OPERATION.
    f. SMOKE ALARMS.
28. AFTER STARTUP AND PERFORMANCE TESTING AND PRIOR TO SUBSTANTIAL COMPLETION, REPLACE EXISTING FILTERS WITH NEW FILTERS.

3.7 CLEANING AND ADJUSTING

A. OCCUPANCY ADJUSTMENTS: WHEN REQUESTED WITHIN 12 MONTHS OF DATE OF SUBSTANTIAL COMPLETION, PROVIDE ON-SITE ASSISTANCE IN ADJUSTING SYSTEM TO SUIT ACTUAL OCCUPIED CONDITIONS. PROVIDE UP TO TWO VISITS TO SITE DURING OTHER-THAN-NORMAL OCCUPANCY HOURS FOR THIS PURPOSE.

B. AFTER COMPLETING SYSTEM INSTALLATION AND TESTING, ADJUSTING, AND BALANCING RTU AND AIR-DISTRIBUTION SYSTEMS, CLEAN FILTER HOUSINGS AND INSTALL NEW FILTERS.

SECTION 230548 - VIBRATION AND SEISMIC CONTROLS FOR HVAC

1.1 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

1. ILLUSTRATE AND INDICATE STYLE, MATERIAL, STRENGTH, FASTENING PROVISION, AND FINISH FOR EACH TYPE AND SIZE OF VIBRATION ISOLATION DEVICE AND SEISMIC-RESTRAINT COMPONENT REQUIRED.
a. TABULATE TYPES AND SIZES OF SEISMIC RESTRAINTS, COMPLETE WITH REPORT NUMBERS AND RATED STRENGTH IN TENSION AND SHEAR AS EVALUATED BY AN AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
   b. ANNOTATE TO INDICATE APPLICATION OF EACH PRODUCT SUBMITTED AND COMPLIANCE WITH REQUIREMENTS.
2. INTERLOCKING SNUBBERS: INCLUDE RATINGS FOR HORIZONTAL, VERTICAL, AND COMBINED LOADS.

B. SHOP DRAWINGS:

1. DETAIL FABRICATION AND ASSEMBLY OF EQUIPMENT BASES. DETAIL FABRICATION INCLUDING ANCHORAGES AND ATTACHMENTS TO STRUCTURE AND TO SUPPORTED EQUIPMENT. INCLUDE ADJUSTABLE MOTOR BASES, RAILS, AND FRAMES FOR EQUIPMENT MOUNTING.

C. DELEGATED-DESIGN SUBMITTAL: FOR EACH SEISMIC AND WIND-RESTRAINT DEVICE.

1. DESIGN CALCULATIONS: CALCULATE STATIC AND DYNAMIC LOADING DUE TO EQUIPMENT WEIGHT, OPERATION, AND SEISMIC AND WIND FORCES REQUIRED TO SELECT VIBRATION ISOLATORS AND SEISMIC AND WIND RESTRAINTS AND FOR DESIGNING VIBRATION ISOLATION BASES. COORDINATE DESIGN CALCULATIONS WITH WIND LOAD CALCULATIONS REQUIRED FOR EQUIPMENT MOUNTED OUTDOORS. COMPLY WITH REQUIREMENTS IN OTHER SECTIONS FOR EQUIPMENT MOUNTED OUTDOORS.
2. SEISMIC AND WIND-RESTRAINT DETAILS:
   a. DESIGN ANALYSIS: TO SUPPORT SELECTION AND ARRANGEMENT OF SEISMIC[AND WIND] RESTRAINTS. INCLUDE CALCULATIONS OF COMBINED TENSILE AND SHEAR LOADS.
   b. DETAILS: INDICATE FABRICATION AND ARRANGEMENT. DETAIL ATTACHMENTS OF RESTRAINTS TO THE RESTRAINED ITEMS AND TO THE STRUCTURE. SHOW ATTACHMENT LOCATIONS, METHODS, AND SPACINGS. IDENTIFY COMPONENTS, LIST THEIR STRENGTHS, AND INDICATE DIRECTIONS AND VALUES OF FORCES TRANSMITTED TO THE STRUCTURE DURING SEISMIC EVENTS. INDICATE ASSOCIATION WITH VIBRATION ISOLATION DEVICES.
   c. COORDINATE SEISMIC-RESTRAINT AND VIBRATION ISOLATION DETAILS WITH WIND-RESTRAINT DETAILS REQUIRED FOR EQUIPMENT MOUNTED OUTDOORS. COMPLY WITH REQUIREMENTS IN OTHER SECTIONS FOR EQUIPMENT MOUNTED OUTDOORS.
   d. PREAPPROVAL AND EVALUATION DOCUMENTATION: BY AN AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, SHOWING MAXIMUM RATINGS OF RESTRAINT ITEMS AND THE BASIS FOR APPROVAL (TESTS OR CALCULATIONS).

2. PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. WIND-RESTRAINT LOADING: (VALUES ARE FOR REFERENCE ONLY, REFER TO STRUCTURAL PLANS FOR DETAILS)

   a. ULTIMATE WINDSPEED: SEE STRUCTURAL
   b. NOMINAL WINDSPEED: SEE STRUCTURAL
   c. OCCUPANCY CATEGORY: SEE STRUCTURAL
   d. EXPOSURE: SEE STRUCTURAL
   e. INTERNAL PRESSURE COEFFICIENT: SEE STRUCTURAL

END OF SECTION

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AOR PROJECT NUMBER:
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ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
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MECHANICAL SPECIFICATIONS

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ELECTRICAL DEMOLITION NOTES

1. EACH CONTRACTOR SHALL REVIEW THE EXISTING SYSTEMS IN THE FIELD ALONG WITH BID DOCUMENTS AND DETERMINE SELECTIVE DEMO AND ADDITION OF TEMPORARY SYSTEMS (IF REQUIRED) TO MAKE PHASED DEMO AND PROPOSED REMODELING. IT SHALL ASSURE UNINTERRUPTED SAFE OPERATION OF AREAS THAT ARE AFFECTED BY DEMO AND ADDITION OF PROPOSED SYSTEMS AT ALL TIMES. INCLUDE THE NECESSARY WORK TO ACCOMPLISH THIS AND COORDINATE PHASING ACCORDINGLY.
2. CONFIRM WITH THE MANUFACTURERS OF EXISTING EQUIPMENT THAT IS TO BE REUSED OR EXTENDED.
3. WHERE EXISTING ELECTRICAL WORK PREVENTS PROPER CONSTRUCTION OF NEW WORK AS INDICATED, REMOVE, REROUTE, RELOCATE, OR IN OTHER WAYS ALTER EXISTING WORK IN ORDER TO ACCOMMODATE.
4. WHERE EXISTING CONDUIT, WIRE, SUPPORTS, HANGERS AND OTHER ELECTRICAL WORK MUST BE REMOVED AS A RESULT OF THE ALTERATIONS, THEY SHALL BE COMPLETELY REMOVED, BACK TO THE FIRST OUTLET WHICH IS LEFT UNAFFECTED BY THE DEMOLITION. CONDUIT WHICH IS BURIED IN CONCRETE OR OTHERWISE INACCESSIBLY POSITIONED MAY BE ABANDONED. IN SUCH CASES, WIRE SHALL BE PULLED OUT AND THE CONDUIT SHALL BE PLUGGED AT EACH END.
5. EXISTING ELECTRICAL MATERIALS AND EQUIPMENT, INCLUDING LIGHTING FIXTURES, SWITCHES, RECEPTACLES, SIGNAL LIGHTS, SPEAKERS, INTERCOM EQUIPMENT, CONTROLS, CONDUIT OUTLETS, FITTINGS, AND OTHER DEVICES REMOVED AS A RESULT OF THE ALTERATIONS SHALL REMAIN THE PROPERTY OF THE OWNER (UNLESS OTHERWISE INDICATED) AND SHALL BE REUSED WHERE INDICATED.
6. EXAMINE THE CONDITION OF ANY SUCH MATERIALS AND EQUIPMENT TO MAKE A PRIOR DETERMINATION OF WHETHER IT IS SUITABLE FOR REUSE. PRESENT FINDINGS TO THE ENGINEER WHO WILL IN TURN MAKE THE FINAL DECISION REGARDING REUSABILITY. ALL WIRE AND CABLE FOR REUSED AND RELOCATED EQUIPMENT SHALL BE NEW.
7. IN ORDER TO COORDINATE THE WORK OF THE MECHANICAL AND ELECTRICAL TRADES, REMOVE EXISTING ELECTRICAL WORK IN AND ABOVE CEILING OF THESE AREAS (AS REQUIRED), AFTER WHICH INSTALL NEW WORK AND REINSTALL EXISTING WORK TO REMAIN, AS SHOWN ON THE DRAWINGS. EXISTING MATERIALS AND EQUIPMENT SHALL BE REUSED ONLY WHERE INDICATED.
8. SOME EXCEPTIONS MAY ARISE WHEREIN EQUIPMENT, EITHER IN ALTERED AREAS OR OTHER AREAS, MUST BE KEPT IN SERVICE, REQUIRING THAT FEEDERS, SIGNAL CONDUCTORS, CONDUITS, BOXES, ETC. SERVING SAME ALSO BE KEPT IN SERVICE. IN SUCH CASES, THOSE ELECTRICAL FEEDERS, SIGNAL CONDUCTORS, CONDUITS, ETC. SHALL BE REROUTED AND RECONNECTED BEFORE PRESENT WORK IS REMOVED. IF THIS IS NOT POSSIBLE, TEMPORARY WIRING SHALL BE PROVIDED, AFTER WHICH NEW WORK SHALL BE INSTALLED AND TEMPORARY WIRING REMOVED.
9. ANY ELECTRICAL EQUIPMENT THAT IS TAGGED TO BE DISPOSED OF SHALL BE DONE PER APPROVED METHOD IN ACCORDANCE WITH THE CONSTRUCTION PLAN AND LOCAL AUTHORITIES.
10. THIS DRAWING INDICATES AREAS THAT ARE BEING AFFECTED BY THE DEMOLITION. DASHED LINES SHOW EXISTING MATERIALS AND EQUIPMENT TO BE REMOVED. SOLID LINES SHOW EXISTING MATERIALS AND EQUIPMENT TO REMAIN. ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL EQUIPMENT AFFECTED BY THE DEMOLITION AND WILL KEEP REMAINING EQUIPMENT CONNECTED, POWERED TO THE EXISTING CIRCUITS AS REQUIRED.
11. THIS DRAWING SHOWS A REPRESENTATIVE SAMPLE OF DEMOLITION WORK THAT IS TO TAKE PLACE. NOTE THAT NOT EVERY DEVICE, LIGHTING FIXTURE, CONDUIT ETC. REQUIRED TO BE DEMOLISHED IS NECESSARILY INDICATED ON THIS PLAN. THE CONTRACTOR SHALL VISIT THE JOB SITE TO FAMILIARIZE HIMSELF WITH THE EXTENT OF EXISTING WORK TO BE DEMOLISHED.
12. ALL PROPOSED DEMOLITION WORK SHALL BE THOROUGHLY COORDINATED WITH ALL OTHER TRADES.
13. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS, FEEDERS AND BRANCH CIRCUITS PASSING THROUGH RENOVATED AREA AND SERVING UNDISTURBED AREAS.
14. ANY PORTION OF THE EXISTING CONDUIT SYSTEM THAT IS TO BE REUSED FOR THE NEW INSTALLATION SHALL BE CHECKED TO ENSURE THAT IT IS CLEAN, FREE OF DAMAGE, FREE OF CORROSION, AND ADEQUATELY SUPPORTED.
15. DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT, DEVICES AND CONDUITS IN WALLS, FLOORS AND CEILING SCHEDULED FOR DEMOLITION.
16. EXISTING ELECTRICAL SYSTEM IS DESCRIBED BASED ON SURVEYS OF EXISTING CONDITIONS THAT ARE VISIBLE DURING THE DESIGN PHASE. CONTRACTOR SHALL CONFIRM ALL SERVICES PRIOR TO PROCEEDING WITH DEMOLITION.
17. PATCH ALL HOLES IN SLABS, WALLS AND CEILING WHERE ELECTRICAL DEVICES AND/OR CONDUIT ARE REMOVED. IF THE REMOVAL OF CONDUIT, BOXES, EQUIPMENT, ETC. COMPROMISES THE FIRE RATING OF THESE ITEMS, THE CONTRACTOR SHALL SEAL OPENINGS WITH CODE APPROVED FIRE STOPPING MATERIAL.
18. WHERE FEEDERS OR BRANCH CIRCUITS ARE DISCONNECTED AND REMOVED FROM EXISTING PANEL BOARDS, CONTRACTOR SHALL MARK THE AFFECTED BREAKERS IN THOSE PANEL BOARDS AS "SPARE". INSTALL NEW KNOCK-OUT BLANK INSERT IN PANEL BOX.
19. CONTRACTOR IS TO PERFORM DEMOLITION WORK IN A NEAT, SKILLFUL, AND CAREFUL MANNER SO AS NOT TO DAMAGE OR DEFACE EXISTING CONSTRUCTION THAT IS TO REMAIN.
20. VERIFY THAT REMOVAL OF DEVICES IN RENOVATED AREA DOES NOT AFFECT DEVICES IN OTHER AREAS THAT MAY BE FED FROM THE CIRCUIT BEING DISCONNECTED.

FIRE ALARM NOTES

1. ALL FIRE ALARM DEVICES ARE NEW, UNLESS NOTED OTHERWISE.
2. FIRE ALARM SHALL BE DESIGN-BUILD BY ELECTRICAL CONTRACTOR. DEVICES ARE SHOWN FOR REFERENCE ONLY. IT WILL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO VERIFY ANY ADDITIONAL REQUIREMENTS WITH THE FIRE MARSHALL AS PART OF THE BASE BID.
3. THE FOLLOWING FIRE ALARM DRAWINGS ARE SCHEMATIC ONLY. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR BIDDING A COMPLETE & OPERATIONAL FIRE ALARM SYSTEM THAT MEETS LOCAL CODE. E.C. SHALL DEMO/DISCONNECT/RELOCATE ANY EXISTING DEVICES AS NECESSARY & PROVIDE NEW DEVICES AS REQUIRED TO MEET LOCAL MINIMUM REQUIREMENTS & NFPA FIRE CODE.
4. ALL FIRE ALARM PANELS SHALL BE AN APPROVED ADDRESSABLE TYPE.
5. A MAP INDICATING THE LOCATION OF ALL FIRE ALARM DEVICES SHALL BE POSTED DIRECTLY ADJACENT TO THE FIRE ALARM PANEL OR IN A LOCATION ACCEPTABLE TO THE FIRE PREVENTION BUREAU.
6. COORDINATE ALL WORK WITH LOCAL FIRE MARSHALL PRIOR TO BID.
7. ALL AUDIO/VISUAL DEVICES AND SMOKE DETECTORS MAY NOT BE SHOWN AS REQUIRED BY THE LOCAL JURISDICTION HAVING AUTHORITY. ALL DEVICES SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72, ADA, STATE & LOCAL CODES. A COMPLETE FIRE ALARM DEVICE LAYOUT SHALL BE PROVIDED BY THE FIRE ALARM CONTRACTOR.
8. CONDUIT & WIRING FOR ALL FIRE ALARM DEVICES TO BE RUN WITHIN COLUMNS OR WALLS WHERE APPLICABLE. ALL WIRING SHALL BE CONCEALED.
9. ALL FIRE ALARMS TO BE AUDIBLE & VISUAL, & COMPLY FULLY TO ICC/ANSI A117.1 SECTION 702. ALL VISUAL ALARMS TO BE SYNCHRONIZED THROUGHOUT.
10. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT.

ELECTRICAL NOTES

1. PROVIDE ELECTRICAL WORK IN ACCORDANCE WITH ALL ASPECTS TO THE NATIONAL ELECTRICAL CODE (NFPA CODES & LOCAL BUILDING CODES) & LOCAL CODE AMENDMENTS. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
2. PROVIDE ALL PERMITS, LICENSES & CERTIFICATES REQUIRED FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL WORK.
3. PROVIDE ALL TRENCHING, BACKFILLING & RESURFACING REQUIRED FOR THE ELECTRICAL WORK.
4. PROVIDE ALL CUTTING, PATCHING & REFINISHING OF WALLS, FLOORS & CEILINGS REQUIRED FOR THE ELECTRICAL WORK.
5. PROVIDE TEMPORARY LIGHT & POWER FOR THE DURATION OF THE PROJECT, ON ALL DAYS WHEN ANY TRADE IS WORKING. PROVIDE TEMPORARY LIGHT & POWER FOR OVERTIME DELIVERIES BY OTHER TRADES.
6. THESE DRAWINGS ARE DIAGRAMMATIC ONLY. EXACT LOCATIONS OF ALL EQUIPMENT, DEVICES, CONDUIT, ETC. MUST BE FIELD DETERMINED & COORDINATED. WHERE THE CONTRACT DOCUMENTS DO NOT AGREE, THE MORE RESTRICTIVE & COSTLY APPROACH SHALL BE USED & IDENTIFIED IN THE BID PROPOSAL.
7. SITE VISITATION: PRIOR TO SUBMITTING A BID FOR HIS WORK, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO INSPECT THE NATURE & EXTENT OF THE EXISTING CONDITIONS & EQUIPMENT, & DETERMINE HOW THEY WILL AFFECT THE ELECTRICAL WORK.
8. WORKMANSHIP: ONLY THE BEST IN WORKMANSHIP IN ACCORDANCE WITH PRESENT STANDARDS WILL BE ACCEPTABLE. ANY WORK INSTALLED & ADJUDGED BY THE ENGINEER TO BE BELOW STANDARDS SHALL BE TAKEN OUT & REPLACED WITH PROPERLY DONE WORK AT CONTRACTOR'S EXPENSE.
9. ALL EQUIPMENT & DEVICES SHALL BE NEW & BE LISTED OR LABELED BY U.L. OR EQUIVALENT ORGANIZATION.
10. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN & DETAILS FOR THE EXACT LOCATION OF ALL LIGHTING FIXTURES & ANY OTHER EQUIPMENT INSTALLED IN THE CEILING SYSTEM. VERIFY EXACT MOUNTING HEIGHTS & FINISHES WITH ARCHITECT PRIOR TO ROUGH-IN.
11. CONTRACTOR SHALL COORDINATE INSTALLATION OF WORK TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR INSTALLATION OF PLUMBING & MECHANICAL INSTALLATION. CONDUIT RUNS TO BE THROUGH OR ABOVE CEILING TRUSSES WHERE POSSIBLE.
12. CONTRACTOR TO COORDINATE EXACT PLACEMENT OF ALL DEVICES SHOWN ON THE ELECTRICAL CONSTRUCTION DOCUMENTS WITH ARCHITECTURAL, MECHANICAL & PLUMBING DRAWINGS PRIOR TO FINAL PLACEMENT.
13. ALL UNUSED OR ABANDONED CONDUIT & WIRING SHALL BE DISCONNECTED & MADE SAFE BY THE ELECTRICIAN FOR REMOVAL FROM THE BUILDING.
14. PROVIDE ALL SUPPLEMENTARY STEEL REQUIRED FOR ELECTRICAL WORK.
15. ELECTRICAL CONTRACTOR SHALL SEAL ALL ELECTRICAL PENETRATIONS THRU FIRE RATED PARTITIONS WITH FIRE RATED MATERIAL INSTALLED PER MANUFACTURER'S GUIDELINES & U.L. REQUIREMENTS. MATERIAL SELECTION SHALL BE BASED ON RATING OF PARTITION PENETRATED.
16. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY NAMEPLATE LOADS OF ALL EQUIPMENT (MECH & OWNER SUPPLIED) TO INSURE PROPER WIRE SIZING & OVERCURRENT PROTECTION & SHALL NOTIFY ENGINEER OF DISCREPANCIES.
17. ELECTRICAL DESIGN HAS BEEN BASED ON THE INSTALLATION OF 75C CONDUCTORS CONNECTED TO TERMINAL LUGS & EQUIPMENT U.L. LISTED FOR A MINIMUM 75C. CONDUCTORS TERMINATED ON EQUIPMENT WITH A LOWER RATING (60C) OR NO RATING SHOWN TO HAVE CONDUCTOR SIZE INCREASED TO CONFORM TO NFPA CODES & LOCAL BUILDING CODES.
18. SWITCHBOARDS, PANELS, DISCONNECT SWITCHES, TRANSFORMERS & CONTACTORS ARE TO BE "LISTED" & "IDENTIFIED" AS RATED FOR A MINIMUM OF 75C CONDUCTOR TERMINATION.
19. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A PULL LINE.
20. ALL HOME RUNS GREATER THAN 75-0" SHALL BE #10 WIRE MINIMUM. ALL HOME RUNS GREATER THAN 150'-0" SHALL BE #8 WIRE MINIMUM.
21. PROVIDE INSULATED GROUNDING CONDUCTOR IN ALL CONDUITS & CABLE ASSEMBLIES. SIZE RACEWAYS IN ACCORDANCE WITH LOCAL ELECTRIC CODE.
22. HANGING OF LIGHT FIXTURES IS TO BE DONE IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE & LOCAL BUILDING CODES.
23. CONDUITS INSTALLED IN DUCT BANKS, IN SLABS, IN EARTH OR FILL SHALL BE PVC SCHEDULE-40 OR GALVANIZED RIGID CONDUIT, INTERMEDIATE METAL CONDUIT ENCASED IN CONCRETE, OR HDPE, MINIMUM OF 3/4" OR AS NOTED. UNDER SLAB INSTALLATIONS MUST TRANSITION FROM BELOW GRADE TO GALVANIZED RIGID OR INTERMEDIATE METAL CONDUIT AT THE LAST BEND BEFORE EXITING THE UNDERGROUND OR UNDER SLAB LOCATION. CONDUIT ABOVE GRADE MAY BE GALVANIZED RIGID CONDUIT OR INTERMEDIATE METAL CONDUIT INDOORS OR OUTDOORS.
24. ALL MOTORS, A/C UNITS, COMPRESSORS & METAL HOUSING SHALL BE GROUNDED WITH GREEN GROUND WIRES SIZED & INSTALLED ACCORDING TO CODES. ALL FEEDERS RUN IN NON-METALLIC CONDUITS SHALL HAVE GROUND CONDUCTOR SIZED IN ACCORDANCE WITH APPLICABLE CODES. THE CONTRACTOR SHALL MAINTAIN UNIFORMITY & CONTINUITY OF THE GROUNDING SYSTEM.
25. RECEPTACLES SHALL BE RATED FOR 20A, DUPLEX/QUADRUPLEX TYPE AS NOTED ON PLANS, 125V, 3-WIRE, GROUNDING TYPE, NEMA CONFIGURATION 5-20R. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
26. PROVIDE WALL PLATES FOR FLUSH MOUNTED RECEPTACLES, SPECIFICATION GRADE, SATIN ALUMINUM, STANDARD SIZE. COVER PLATES FOR DEVICES IN TYPE FS & FD BOXES FOR EXPOSED WORK SHALL BE SHEET STEEL, SUITABLE FOR THE DEVICES INSTALLED. GANG TYPE COVERS SHALL BE USED WHERE MORE THAN ONE DEVISE IS MOUNTED IN A BOX.
27. PANEL DIRECTORIES SHALL BE COMPLETELY FILLED IN AT COMPLETION OF JOB. E.C. MUST PRODUCE A LETTER ATTESTING THAT WORK HAS BEEN COMPLETED TO THE SATISFACTION OF THE BUILDING MANAGER WHO WILL CONFIRM HIS ACCEPTANCE BY AFFIXING HIS SIGNATURE TO THE LETTER IN A SPACE PROVIDED FOR THIS PURPOSE. WORK WILL NOT BE CONSIDERED AS BEING COMPLETE WITHOUT THIS LETTER.
28. AT THE COMPLETION OF THE JOB, IT WILL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO TURN OVER TO THE BUILDING MANAGER AN AS-BUILT-DRAWING IN REPRODUCIBLE FORM. THESE DRAWINGS DO NOT HAVE TO BE MADE FROM SCRATCH. THE ENGINEER'S REFLECTED CEILING & ELECTRICAL/TELEPHONE PLANS MAY BE USED AS BACKGROUND WITH THE ACTUAL CIRCUITING CHANGES ADDED.
29. CONDUCTORS SUPPLYING CIRCUITS SHALL NOT BE LESS THAN #12 AWG THHN/THWN COPPER FOR ANY CIRCUIT UNLESS NOTED OTHERWISE ON PLANS OR IN SPECIFICATIONS. BRANCH CIRCUITS SHALL BE PROVIDED WITH (2) #12 CONDUCTORS AND (1) #12 EQUIPMENT GROUND CONDUCTOR UNLESS NOTED OTHERWISE.
30. CONDUIT INSTALLED INDOORS SHALL BE ELECTRICAL METALLIC TUBING (EMT), MINIMUM 3/4" OR AS NOTED.
31. ALL LOW VOLTAGE CABLE SHALL BE PLENUM RATED IN CEILING USED FOR RETURN AIR.
32. THERMOSTATS, TEMPERATURE SENSORS, CARBON DIOXIDE SENSORS, AND HUMIDISTATS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. UNLESS NOTED OTHERWISE, ELECTRICAL CONTRACTOR SHALL PROVIDE WALL BOX AT +5'-0" A.F.F. AND 1/2" CONDUIT WITH PULL STRING. COORDINATE CONDUIT ROUTING WITH MECHANICAL CONTRACTOR.
33. PROVIDE FLEXIBLE CONNECTIONS ONLY FOR FINAL CONNECTION TO EQUIPMENT, 6'-0" MAXIMUM LENGTH. PROVIDE LIQUID TIGHT FLEXIBLE CONNECTION AT EXTERIOR LOCATIONS AND WHERE EXPOSURE TO MOISTURE IS POSSIBLE.
34. RECESSED PANELBOARDS SHALL BE INSTALLED WITH MINIMUM OF (2) 3/4" CONDUITS STUBBED UP TO ACCESSIBLE CEILING SPACE FOR FUTURE USE.
35. ALL PANELBOARDS, SWITCHBOARDS, AND LINE VOLTAGE CONTROL EQUIPMENT SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTING, SERVICING, OR MAINTENANCE OF EQUIPMENT. MARKING SHALL BE SELF ADHESIVE, COMMERCIAL LABEL CONFORMING TO THE CHICAGO ELECTRIC CODE, ANSI, AND LOCAL BUILDING CODES, AS MANUFACTURED BY IDEAL OR APPROVED EQUAL.
36. LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS, AND OTHER ENVIRONMENTAL CONTROLS SHALL HAVE OPERABLE PARTS OF THE CONTROLS LOCATED NO HIGHER THAN +48"A.F.F. AND NO LOWER THAN +15"A.F.F. IF THE REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO +44"A.F.F. FOR FORWARD APPROACH OR +46"A.F.F. FOR SIDE APPROACH, PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. OBSTRUCTIONS SHALL NOT EXTEND MORE THAN 25" FROM THE WALL BENEATH A CONTROL.
37. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
38. ALL DEVICE HEIGHTS SHOWN ON PLAN ARE ABOVE FINISH FLOOR HEIGHT UNLESS NOTED OTHERWISE.
39. IN AREAS WHERE CONDUIT IS RUN EXPOSED, IT SHALL BE PAINTED TO MATCH FINISH COLOR. COORDINATE ALL FINISHES WITH ARCHITECT.
40. CONTRACTOR SHALL X-RAY SLAB BEFORE CORING OR TRENCHING FLOOR. COORDINATE ALL CORING & TRENCHING WITH STRUCTURAL ENGINEER PRIOR TO BEGINNING WORK.
41. CONFIRM DEVICE FINISHES IN EACH SPACE WITH ARCHITECT PRIOR TO ORDERING.
42. MOTOR FEEDERS, WIRING BETWEEN MOTORS, MOTOR CONTROLLERS, FEEDER PANELS, FUSES, CIRCUIT BREAKERS AND BUS BARS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL INTERLOCK SYSTEMS, TIME SWITCHES, ELECTRONIC RELAYS, INTERCONNECTING WIRING AND CONDUIT, ETC. SHALL BE THE RESPONSIBILITY OF THE HVAC CONTRACTOR. ALL WORK SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND THE ILLINOIS ELECTRICAL CODE.

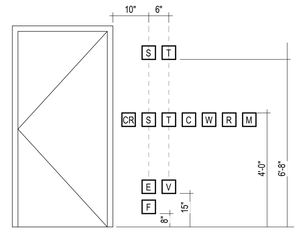
ELECTRICAL SYMBOL LIST

- DUPLEX RECEPTACLE, # INDICATES CIRCUIT
- DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER
- ABOVE COUNTER DUPLEX RECEPTACLE, MOUNT AT +44"AFF, UNLESS NOTED OTHERWISE
- USB DUPLEX RECEPTACLE WITH 2 POWER PLUGS AND 2 USB PLUGS
- TR DUPLEX RECEPTACLE, TAMPER RESISTANT
- DUPLEX RECEPTACLE, CONTROLLED. HALF OF RECEPTACLE SHALL BE CONTROLLED. CONTROLLED OUTLETS SHALL BE PERMANENTLY MARKED.
- SIMPLEX RECEPTACLE
- QUADRUPLEX RECEPTACLE, # INDICATES CIRCUIT
- QUADRUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER, UNLESS NOTED OTHERWISE
- ABOVE COUNTER QUADPLEX RECEPTACLE, MOUNT AT +44"AFF, UNLESS NOTED OTHERWISE
- CEILING MOUNTED DUPLEX RECEPTACLE
- FLOOR MOUNTED DUPLEX RECEPTACLE (FLUSH MOUNTED)
- FLOOR MOUNTED QUADRUPLEX RECEPTACLE (FLUSH MOUNTED)
- DATA OUTLET, INDICATES (2) DATA DROP
- PHONE OUTLET, INDICATES (2) PHONE DROP
- ABOVE COUNTER DATA OUTLET, INDICATES (2) DATA DROPS MOUNT AT +44"AFF, UNLESS NOTED OTHERWISE
- FLOOR MOUNTED DATA RECEPTACLE (FLUSH MOUNTED), INDICATES (2) DATA DROPS
- SPECIAL RECEPTACLE
- HEAVY DUTY DISCONNECT SWITCH
- J SINGLE POLE DISCONNECT SWITCH TOGGLE STYLE
- PP POWER POLE
- J JUNCTION BOX
- TOGGLE SWITCH
- 3 3-WAY TOGGLE SWITCH
- DIMMER SWITCH
- OS DUAL TECH WALL MOUNTED OCCUPANCY SENSOR WITH AUTO-ON/AUTO-OFF FUNCTION
- VS DUAL TECH WALL MOUNTED OCCUPANCY SENSOR WITH AUTO-ON/AUTO-OFF FUNCTION
- OV OVERRIDE SWITCH FOR CEILING OCCUPANCY SENSORS
- M MOMENTARY CONTACT CONTROL SWITCH ON-CENTER-OFF POSITION SPDT
- OS CEILING MOUNTED OCCUPANCY SENSOR
- VS CEILING MOUNTED VACANCY SENSOR
- DH CEILING MOUNTED DAYLIGHT HARVESTER
- PC BUILDING MOUNTED PHOTO CONTROL
- SP CEILING MOUNTED SPEAKER ROUGH-IN (PROVIDE JUNCTION BOX WITH 3/4" CONDUIT AND PULL STRING BACK TO AV RACK.)
- C CEILING MOUNTED SECURITY CAMERA (PROVIDE JUNCTION BOX WITH 3/4" CONDUIT AND PULL STRING BACK TO AV RACK.)
- UNIVERSAL MOUNTED (CEILING/WALL) EXIT SIGN WITH CHEVRONS
- S SECURITY DOOR CONTACT (PREPARE DOOR, ROUGH-IN ONLY UP TO ABOVE ACCESSIBLE CEILING)
- W WIRELESS ACCESS POINT ROUGH-IN (PROVIDE JUNCTION BOX WITH 3/4" CONDUIT AND (2) PULL STRINGS BACK TO AV RACK.)
- L LIGHTING CONTROL PANEL OVERRIDE WITH DIMMING CONTROL
- CR WALL MOUNTED CARD READER

FIRE ALARM SYMBOL LIST

- FACP FIRE ALARM CONTROL PANEL
- FAAP FIRE ALARM ANNUNCIATOR PANEL
- P FIRE ALARM DOUBLE ACTION PULL STATION
- FIRE ALARM AUDIO/VISUAL DEVICE
- FIRE ALARM VISUAL DEVICE
- FIRE ALARM PHOTOELECTRIC SMOKE DETECTOR
- FIRE ALARM HEAT DETECTOR (SEE DRAWINGS FOR TYPE)
- COMBINATION HEAT DETECTOR & SMOKE DETECTOR

MOUNTING HEIGHTS



NOTES:
1. ALL HEIGHTS FOR OUTLETS ARE TO CENTER OF DEVICE (UNLESS OTHERWISE INDICATED). COORDINATE WITH ARCHITECTURAL DRAWINGS. WHERE DIFFERENCES EXIST, USE ARCHITECTURAL MOUNTING HEIGHTS.

AA	AUDIBLE ALARM
SS	SAFETY STROBE
W	WALL PHONE
S	LIGHT SWITCH
T	T-STAT
V	VOICE/DATA
E	RECEPTACLE
F	WALL MOUNTED FURNITURE FEED
R	RECEPTACLE MOUNTED ABOVE MILLWORK OR 4.5" ABOVE COUNTER OR SINK/LAV. VERIFY COUNTER HEIGHTS WITH ARCHITECTURAL ELEVATION DRAWINGS
CR	CARD READER
C	CO2 SENSORS
M	FIRE ALARM PULL STATION

LEGEND

X	EXISTING FIXTURE TO REMAIN
XO	EXISTING TO BE REMOVED
XRL	EXISTING TO BE RELOCATED
XRC	EXISTING TO BE RE-CIRCUITED
XRP	EXISTING TO BE REPLACED WITH NEW
XRPC	EXISTING TO BE REPLACED WITH NEW & RE-CIRCUITED
XRLC	EXISTING TO BE RELOCATED & RE-CIRCUITED
N	NEW FIXTURE
XNL	EXISTING FIXTURE IN NEW LOCATION
XNC	EXISTING FIXTURE ON NEW CIRCUIT
XNP	EXISTING LOCATION WITH NEW FIXTURE
XNFC	EXISTING LOCATION WITH NEW FIXTURE & CIRCUIT
XNLC	EXISTING FIXTURE IN NEW LOCATION & ON NEW CIRCUIT

ELECTRICAL DRAWING LIST

ELECTRICAL SHEET INDEX

SHEET NO.	SHEET NAME
E000	GENERAL INFORMATION ELECTRICAL
E100	LIGHTING PLAN
E200	POWER PLAN
E201	ROOF POWER PLAN
E202	LOW VOLTAGE PLAN
E301	SCHEDULES ELECTRICAL
E401	ELECTRICAL SCHEDULES & DETAILS
E701	SPECIFICATIONS ELECTRICAL
E702	SPECIFICATIONS ELECTRICAL

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AOR PROJECT NUMBER:
CAV029

ISSUE	DATE
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IFC SET	06.23.25

GENERAL INFORMATION ELECTRICAL

SHEET:
E000

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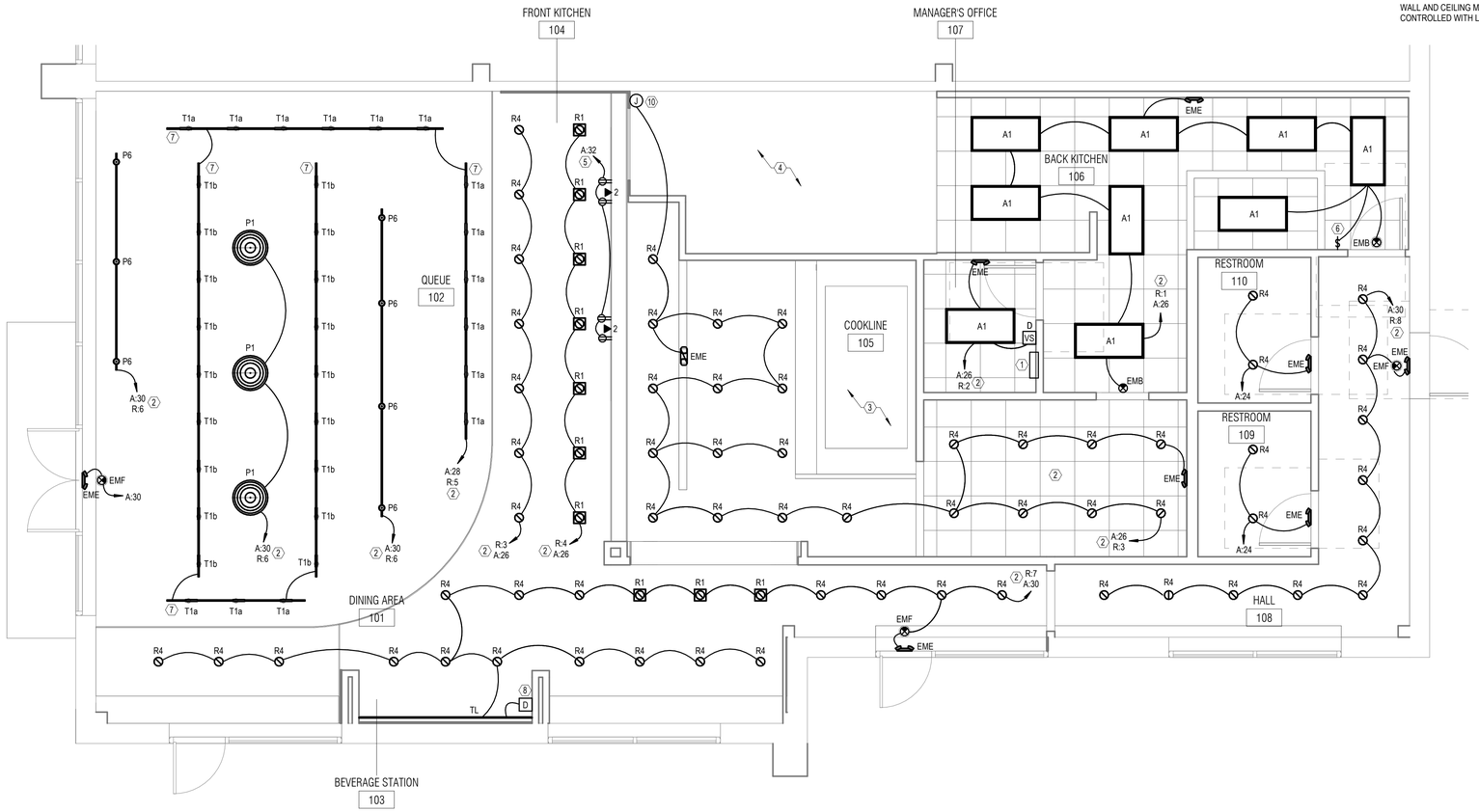
LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	FIXTURE TYPE	INPUT WATTS	VOLTS	SPECIFIED FIXTURE MANUFACTURER	SPECIFIED FIXTURE MODEL NO.	REMARKS
A1	2X4 LED FLAT PANEL	LED	45	120	NORA LIGHTING	NPDBL-E24/334-W	
EMB	EXIT SIGN (BOH)	LED	2	120	NORA LIGHTING	NX-603-LED/R	
EME	EMERGENCY LIGHT	LED	4	120	CONTECH LIGHTING	EL2HALEDEM-P	
EMF	EXIT SIGN (FOH)	LED	3	120	CONTECH LIGHTING	REXA-MF-G-EM-P	
P1	DECORATIVE PENDANT	LED	9	120	RICH BRILLIANT WILLING	MP-S-27-10_TRIAC_120V	
P6	PENDANT	LED	9	120	CONTECH LIGHTING	CTL9051FCF27CD-P	
R1	1 LAMP ADJUSTABLE RECESSED DOWNLIGHT	LED	10	120	CONTECH LIGHTING	RD4AL127K12D2FX1BLK-P	
R4	RECESSED DOWNLIGHT	LED	14	120	INTENSE LIGHTING	LC4-L4 / LD4DR-Z79-W-SF	
T1a	TRACK SYSTEM WITH CURRENT-LIMITING DEVICE	LED	7	120	CONTECH LIGHTING	CTL603-P LAMP: PAR20-7-927-40D-DIM TRACK: LT SERIES CURRENT-LIMITER SIZE: 0.5 AMPS	
T1b	TRACK SYSTEM WITH CURRENT-LIMITING DEVICE	LED	7	120	CONTECH LIGHTING	CTL603-P LAMP: PAR20-7-927-40D-DIM TRACK: LT SERIES CURRENT-LIMITER SIZE: 1 AMPS	
TL	LED TAPE	LED	4.5	120	DIODELED	DI-24V-BLBSC3-27-016	4.5W/LF

NOTES:
1. PROVIDE ALL NECESSARY MOUNTING HARDWARE AND ACCESSORIES FOR A COMPLETE INSTALLATION OF FIXTURES IN THE SPACE. COORDINATE ALL INSTALLATION REQUIREMENTS WITH ARCHITECT.
2. LIGHT FIXTURES PROVIDED BY OWNER AND INSTALLED BY THE ELECTRICAL CONTRACTOR.



LIGHTING CONTROL NOTES

A. NOTE: NOT ALL OF THE FOLLOWING WILL BE USED AT EVERY LOCATION.

B. CONTRACTOR SHALL PROVIDE NEW LIGHTING CONTROL PANEL.THE BUILDING LIGHTING CONTROLS SHALL CONTROL RELAYS TO TURN ON/OFF DURING NORMAL BUSINESS HOURS AS DETERMINED BY OWNER. THESE LIGHTS SHALL HAVE DIMMABLE LOW-VOLTAGE OVERRIDE AS SHOWN ON THE PLAN.

C. ALL OTHER ROOMS ARE NOT CONNECTED TO THE BUILDING LIGHTING CONTROLS DUE TO THE FACT THAT THE LIGHTING IN THESE ROOM ARE CONTROLLED BY OCCUPANCY OR VACANCY SENSORS WHICH WILL PROVIDE THE AUTOMATIC SHUT-OFF REQUIREMENT.

D. CONTRACTOR IS RESPONSIBLE FOR NECESSARY PROGRAMMING OF LIGHTING CONTROLS.

DETAILS OF OPERATION

THE LCP LIGHTING CONTROLS PROVIDE TIME OF DAY CONTROL FOR EXTERIOR SIGNAGE. THE OWNER DEFINES NORMAL HOURS OF OPERATION, CONTROLLED BY THE ASTRONOMICAL TIMER.

THE OVERRIDE SWITCHES FUNCTION AS REGULAR SWITCHES DURING NORMAL HOURS, BUT ALLOW PERSONNEL WORKING DURING OFF-HOURS TO TEMPORARILY OVERRIDE THE LIGHTING CONTROL FOR A PERIOD OF UP TO 2-HOURS. THE OVERRIDE SWITCHES CAUSE THE LIGHTING FOR THE ZONE THEY ARE WIRED TO TURN ON FOR THE SPECIFIED TIME PERIOD.

DAYLIGHT ZONES (NOT PART OF THE LCP):

LIGHT FIXTURES IN DAYLIGHT ZONES SHALL AUTOMATICALLY DIM BASED UPON INPUT FROM DAYLIGHT HARVESTER (LOCATIONS SHOWN ON PLANS). OCCUPANT OVERRIDE CAPABILITY OF DAYLIGHT DIMMING CONTROLS IS NOT PERMITTED, OTHER THAN A REDUCTION OF LIGHT OUTPUT FROM THE LEVEL ESTABLISHED BY THE DAYLIGHT CONTROLS.

VACANCY SENSORS AND OCCUPANCY SENSORS (NOT PART OF THE LCP):

WALL AND CEILING MOUNTED VACANCY AND OCCUPANCY SENSORS ARE USED IN ENCLOSED SPACES AND CONTROLLED WITH LOCAL OVERRIDE SWITCHES.

GENERAL NOTES

A. REFER TO GENERAL NOTES ON SHEET E000.

B. REFER TO ELECTRICAL SPECIFICATIONS ON SHEET E701 AND E702.

C. CONNECT EXIT SIGNS, EMERGENCY AND NIGHT LIGHTS TO UNSWITCHED LIGHTING CIRCUIT, NOT CONTROLLED BY OCCUPANCY SENSORS, SWITCHES OR CONTACTORS.

D. PROVIDE DEDICATED NEUTRAL WITH ALL DIMMING SYSTEM CIRCUITS. COMMON NEUTRALS SHALL NOT BE ALLOWED.

E. REFER TO "RECESSED LIGHTING FIXTURE SUPPORT DETAIL" FOR INFORMATION ON SUPPORT OF RECESSED LIGHT FIXTURES.

F. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND DETAILS FOR LOCATIONS OF LIGHTING FIXTURES AND OTHER EQUIPMENT INSTALLED IN CEILING SYSTEM. VERIFY MOUNTING HEIGHTS AND FINISHES WITH ARCHITECT PRIOR TO ROUGH-IN.

G. REFER TO POWER PLANS FOR LOCATIONS OF ELECTRICAL EQUIPMENT.

H. PROVIDE (2) ADDITIONAL #12 CONDUCTORS FOR ALL 0-10V DIMMING CIRCUITS.

I. GC TO CONTACT LIGHTING VENDOR TO REQUEST/CONFIRM LATEST LIGHTING CONTROLS DOCUMENTATION.

J. STANDARD OCC SENSOR TO BE SENSORWORXSWX-121-WH.

K. MC CABLE SHALL ONLY BE USED ABOVE ACCESSIBLE CEILINGS.

L. FIELD ADJUST AND AIM ALL MENUBOARD AND GRAPHICS LIGHTING FOR OPTIMUM COVERAGE.

M. ALL LUMINAIRES AND LAMPS (INCLUDING SHATTER SHIELDS OR PROTECTED LAMPS FOR NON LENSED FIXTURES ABOVE FOOD PREPARATION, WORK AND STORAGE AREAS) AND INVERTES ARE FURNISHED BY OWNER AND INSTALLED BY EC UNO. COORDINATE SHIPPING AND STORAGE WITH OWNER PRIOR TO CONSTRUCTION.

N. COORDINATE INSTALLATION OF LIGHTING CONTROLS AS ASSOCIATED ROUGH-IN WITH GENERAL CONTRACTOR. ALL ROUGH-IN SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF THE CEILING.

KEY NOTES (#)

1. INSTALL LIGHTING CONROL SYSTEM, TOUCHPAD, INTERFACE, AND 4-BUTTON ENGRAVED SCENE SWITCH ADJACENT TO MANAGER'S DESK. REFER TO LIGHTING CONTROL VENDOR DRAWINGS FOR COMPLETE CONTROL AND WIRING DETAILS. LIGHTING VENDOR TO ENGRAVE THE FOLLOWING SCENES:
   - DAYTIME
   - EVENING
   - CLEANING
   - OFF
2. ROUTE CIRCUIT THROUGH LIGHTING CONTROL PANEL FOR CONTROL. REFER TO CONTROL SCHEDULE AND DIAGRAMS ON LIGHTING CONTROL VENDOR DRAWINGS FOR COMPLETE DETAILS.
3. HOOD BULBS SUPPLIED BY LIGHTING VENDOR. EC TO INSTALL HOOD BULBS AND MAKE FINAL CONNECTION. WIRE WITH HOOD CONTROL PANEL. REFER TO POWER PLAN, SHEET E200 FOR HOOD CONTROL PANEL CIRCUIT.
4. LIGHTING IN W.I.C. PROVIDED BY KEC ((2) KASON 1810 LED). EC TO INSTALL AND MAKE FINAL CONNECTION. REFER TO POWER PLAN, SHEET E200 FOR CIRCUIT. COORDINATE W/ W.I.C. VENDOR DRAWINGS.
5. REFER TO DIGTIAL MENUBOARD DETAIL ON A501/1 FOR DATA/POWER LOCATIONS. COORDINATE WITH VENDOR DRAWINGS FOR COMPLETE WIRING/CONTROL DETAILS.
6. ON/OFF SWITCH - 2 BUTTON. REFER TO LIGHTING CONTROL VENDOR DRAWINGS FOR COMPLETE CONTROL AND WIRING DETAILS.
   LIGHTING VENDOR TO ENGRAVE THE FOLLOWING SCENES:
   - ON
   - OFF
7. PROVIDE EACH SECTION OF TRACK WITH A CURRENT-LIMITING DEVICE. SIZE PER LIGHT FIXTURE SCHEDULE.
8. DRIVER FOR TAPE LIGHT. INSTALL ABOVE ACCESSIBLE CEILING.
9. NOT USED.
10. PROVIDE POWER FOR LED LIGHTS AT DISPLAY DOOR. COORDINATE W/ W.I.C. VENDOR DRAWINGS.

DIMMER / SWITCH SCHEDULE

AREA	RELAY	CIRCUIT#	VOLTAGE	FIXTURE TYPE	LOAD TYPE	FIXTURE WATTS	QTY	TOTAL WATTS
BACK KITCHEN	1	A:26	120	A1	0-10V	45	8	360
MANAGERS OFFICE	2	A:26	120	A1	0-10V	45	1	45
FRONT KITCHEN	3	A:26	120	R4	0-10V	14	29	406
FRONT KITCHEN	4	A:26	120	R1	0-10V	10	7	70
DINING ROOM TRACK LIGHTS	5	A:28	120	T1a	ELV	7	15	105
DINING ROOM TRACK LIGHTS		A:28	120	T1b	ELV	7	18	126
DINING ROOM PENDANT	6	A:30	120	P1	TRIAC	9	3	27
DINING ROOM GENERAL		A:30	120	P6	TRIAC	9	7	63
DINING ROOM GENERAL	7	A:30	120	R4	0-10V	14	20	280
DINING ROOM GENERAL		A:30	120	R1	0-10V	10	3	30
DINING ROOM GENERAL		A:30	120	TL	0-10V	4.5	10	45
HALL	8	A:30	120	R4	0-10V	14	10	140
SIGNAGE	9	A:34	120		NON-DIM	1200	1	1200
SIGNAGE	10	A:36	120		NON-DIM	1200	1	1200
SIGNAGE	11	A:38	120		NON-DIM	1200	1	1200
WINDOW DISPLAY RECS.	12	A:38	120		NON-DIM	180	7	1260

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1 / E100 **ELECTRICAL LIGHTING PLAN**

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

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AOR PROJECT NUMBER: CAV029

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LIGHTING PLAN

SHEET: **E100**

GENERAL NOTES

A. REFER TO GENERAL NOTES ON SHEET E-000.

B. REFER TO ELECTRICAL SPECIFICATIONS ON SHEET E701 AND E702.

C. VERIFY EXACT LOCATIONS OF HVAC AND PLUMBING EQUIPMENT, CONDUIT STUB-INS AND POWER CONNECTIONS PRIOR TO ROUGH-IN.

D. VERIFY EXACT LOCATION, MOUNTING HEIGHTS AND CONDUIT ROUTING FOR ALL THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS AND CO2 SENSORS PRIOR TO ROUGH-IN.

E. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS. COORDINATE PROVISIONS FOR ALL CONTROL CONDUIT AND WIRING AS REQUIRED FOR INTERLOCKING OF FANS, MOTORS, ETC. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

F. MOUNT DEVICES INSTALLED ON EQUIPMENT ON NON-REMOVABLE PANEL. COORDINATE LOCATION PRIOR TO COMMENCING ROUGH-IN WORK.

G. TELEPHONE, DATA, AND CATV CABLING SHALL BE PROVIDED BY OTHERS.

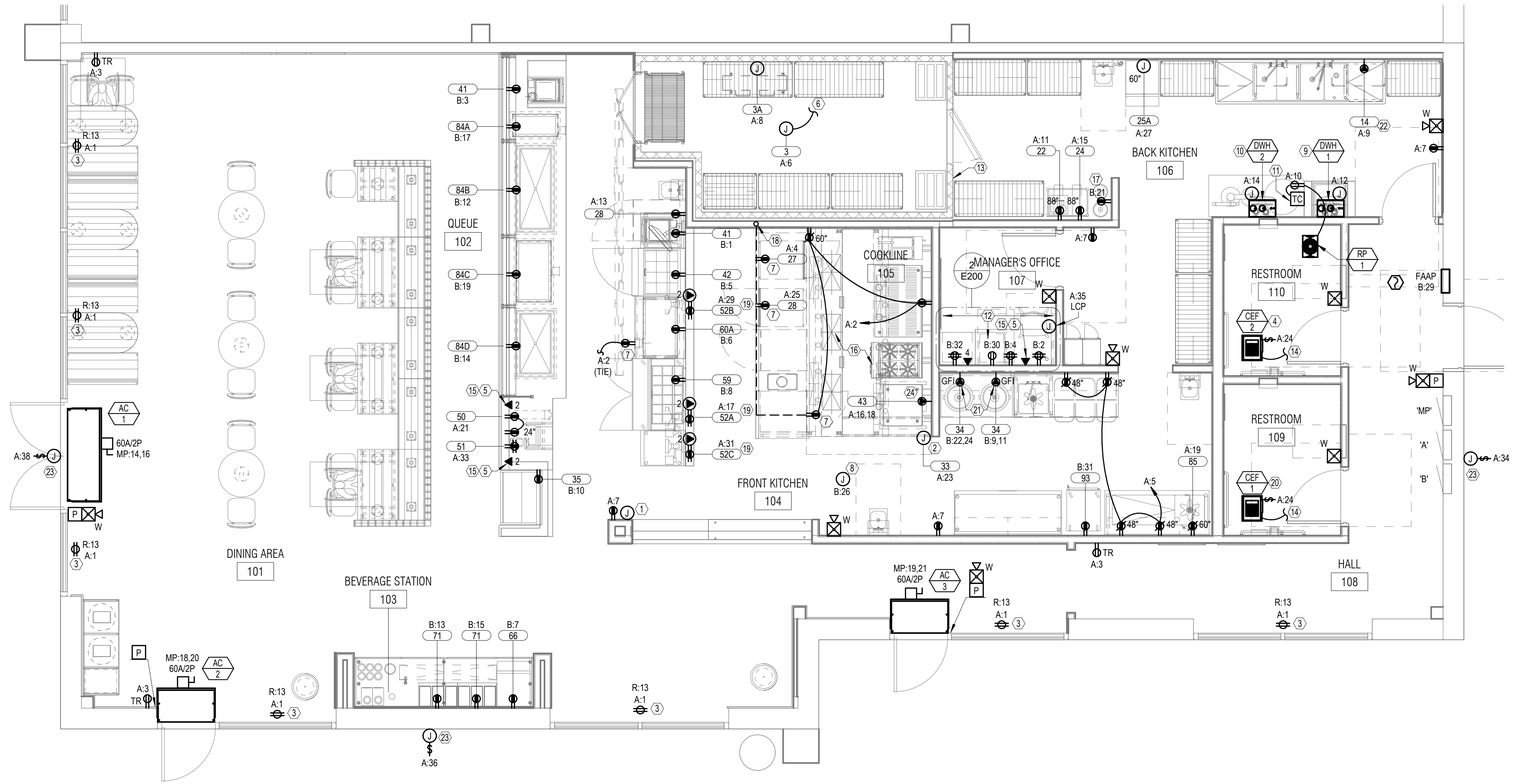
H. PROVIDE NYLON BUSHINGS ON ALL CONDUITS SERVING LOW VOLTAGE CABLING.

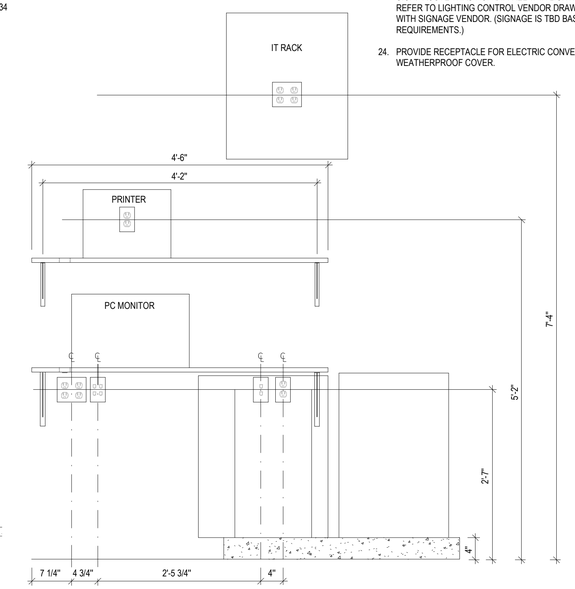
I. REFER TO SHEET E401 FOR KITCHEN EQUIPMENT SCHEDULE.

J. GFCI PROTECTION IS REQUIRED FOR ALL RECEPTACLES WITHIN THE KITCHEN AREA. FIELD COORDINATINATE MOUNTING LOCATION OF GFCI RECEPTACLES SHOWN TO ENSURE ACCESSIBILITY OF THE RESET BUTTON. IF FIELD CONDITIONS INHIBIT ACCESSIBILITY, PROVIDE GFCI BREAKER IN-LIEU OF GFCI RECEPTACLE SHOWN.

KEY NOTES (#)

1. STANDARD 1.5" DEEP SINGLE GANG JUNCTION BOX FOR ANSUL PULL STATION A MINIMUM OF 10'-0" FROM HOOD. NOT TO EXCEED 25'-0" FROM THE HOOD ON THE EXIT PATH. REFER TO ANSUL PULL STATION DETAIL, SHEET E401.
2. HOOD CONTROL PANEL BY KITCHEN EQUIPMENT SUPPLIER. EC TO MAKE FINAL CONNECTION TO TERMINALS IN CONTROL PANEL. CONTAINS STARTERS (FURNISHED WITH PANEL) FOR HOOD EXHAUST AND MAKE UP AIR FANS.
3. SHOW WINDOW RECEPTACLES TO BE CENTERED ON STOREFRONT WINDOWS (NO MORE THAN 18" ABOVE THE WINDOW). ROUTE CIRCUIT THRU NON DIM RELAY IN LIGHTING CONTROL PANEL FOR CONTROL. REFER TO LIGHTING CONTROL VENDOR DRAWINGS FOR DETAILS.
4. CEF-2: FRACT HP, 120V. MAKE FINAL CONNECTION.
5. TELEPHONE/DATA JUNCTION BOX: RUN 3/4" EMPTY CONDUIT W/ PULL STRING TO ACESSIBLE CEILING SPACE AND STUB. FACEPLATE AND CABLE BY VENDOR. (TYP.).
6. CONNECT TO LIGHT FIXTURES FURNISHED BY KEC, INSTALLED BY EC. COORDINATE FINAL LOCATION WITH COOLER LAYOUT PRIOR TO INSTALLATION.
7. FIXTURE MOUNTED RECEPTACLE. ROUTE POWER FROM NEAREST FULL HEIGHT WALL.
8. JUCTION BOX ABOVE CEILING FOR GAS SOLENOID VALVE. LOCATION SHOWN FOR REFERENCE ONLY. FIELD VERIFY FINAL LOCATION
9. DHW-1 (ELECTRIC): 0.35 KW, 120V. MAKE FINAL CONNECTION.
10. DHW-2 (ELECTRIC): 0.35 KW, 120V. MAKE FINAL CONNECTION.
11. DUPLEX RECEPTACLE AND TIME CLOCK FOR RECIRC PUMP (EQ. TO INTERMATIC 101.)
12. REFER TO MANAGER'S DESK DETAIL ON THIS SHEET FOR MOUNTING HEIGHTS. ALL RECEPTACLES AT DESK TO HAVE INTEGRATED USB PORTS.
13. GC TO INSTALL THERMOMETER SENSOR FOR W.I.C. AWAY FROM DOOR OPENING. COORDINATE WITH W.I.C. VENDOR DRAWINGS.
14. CONNECT TO RESTROOM LIGHTING CIRCUIT TO OPERATE WHEN IN USE.
15. PROVIDE 4 GANG DATA JUNCTION BOX, PULL 3/4" EMPTY CONDUIT WITH PULL STRING TO ACCESSIBLE CEILING SPACE.
16. VERIFY ELECTRICAL REQUIREMENTS OF KITCHEN EQUIPMENT UNDER HOOD WITH MANUFACTURER'S SPECS. PROVIDE WATER GREASE RESISTANT COVERS WITH CORD ACCESS FOR RECEPTACLES AS NEEDED. WIRE ALL ELECTRICAL EQUIPMENT UNDER HOOD THRU CONTACTORS FOR SHUT DOWN CONTROL. REFER TO DETAIL 1/E401.
17. GC TO PROVIDE POWER FOR CO2 DETECTOR MODEL NUMBER: RAD-0102-6-S AT 18" AFF. MOUNT SENSOR AT 12" AFF NEXT TO POWER AND IN PROXIMITY OF CO2 TANKS. GC TO RUN CAT5 CABLE CONNECTIONS BETWEEN SENSOR AND DISPLAY, AND BETWEEN DEVICES AND STROBES AS PER MANUFACTURER'S DRAWINGS. GC TO CONTACT CO2 METER 45 DAYS BEFORE TURNOVER ABOUT ACQUIRING DEVICE.
18. ROUTE MC CABLE THROUGH ISLAND TO RECEPTACLES MOUNTED ON INTERIOR OF ISLAND.
19. PROVIDE 4 GANG DATA JUNCTION BOX AND DOUBLE DUPLEX POWER RECEPTACLE AT 60" A.F.F. FOR KDS/PRINTER.
20. CEF-1: FRACT HP, 120V. MAKE FINAL CONNECTION.
21. PROVIDE RECEPTACLES FOR RICE COOKERS AT 48" A.F.F. W/ WEATHERPROOF COVERS.
22. PROVIDE RECEPTACLE FOR DISHWASHER AT 18" A.F.F. W/ WEATHERPROOF COVER. RECEPTACLE TO BE TAYMAC MM410C.
23. EXTERIOR SIGNAGE: COORDINATE FINAL MOUNTING HEIGHT AND LOCAIION WITH CONSTRUCTION MANAGER PRIOR TO ROUGH-IN. IF SIGN DOES NOT COME EQUIPPED WITH DISCONNECT, FURNISH AND INSTALL DISCONNECT ON REAR OF SIGN. ROUTE THRU NON DIM RELAY IN LIGHTING CONTROL SYTEM FOR CONTROL. REFER TO LIGHTING CONTROL VENDOR DRAWINGS FOR DETAILS. COORDINATE WITH SIGNAGE VENDOR. (SIGNAGE IS TBD BASED ON PROJECT SPECIFIC REQUIREMENTS.)
24. PROVIDE RECEPTACLE FOR ELECTRIC CONVECTION OVEN AT 18" A.F.F. W/ WEATHERPROOF COVER.





2 MANAGER'S DESK DETAIL
SCALE: N.T.S.

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1 E200 **ELECTRICAL POWER PLAN**
SCALE: 1/4" = 1'-0"

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AOR PROJECT NUMBER: CAV029

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POWER PLAN

SHEET: **E200**

GENERAL NOTES

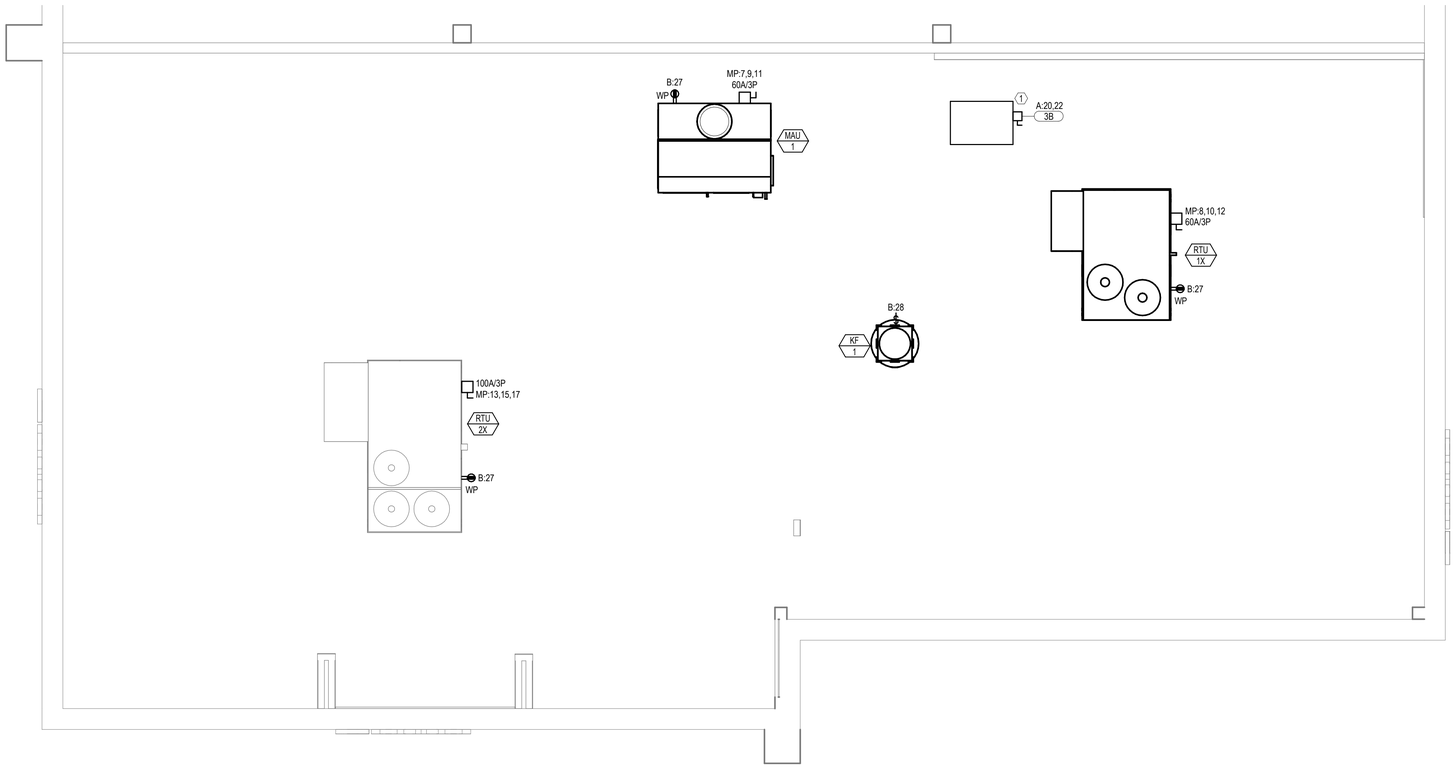
A. REFER TO GENERAL NOTES ON SHEET E000.

B. REFER TO ELECTRICAL SPECIFICATIONS ON SHEET E701 AND E702.

C. PROVIDE ALL NECESSARY SEISMIC BRACING AND SUPPORTS.

KEY NOTES (#)

1. W.I.C. CONDENSING UNIT (PROVIDED BY KES): 15 MCA, 208V/1PH. PROVIDE (2) #12 CU AWG & (1) #12 CU AWG GND. IN 3/4" CONDUIT FROM 20A/2P BREAKER THRU 30A/2P NEMA 3R NON FUSED DISC SWITCH TO UNIT. MAKE FINAL CONNECTION. W.I.C. SUPPLIER TO LOCATE UNIT, LOCATION SHOWN FOR REFERENCE ONLY.



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1 E201 **ELECTRICAL ROOF PLAN**

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ROOF POWER PLAN

SHEET:
E201

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GENERAL NOTES

A. REFER TO GENERAL NOTES ON SHEET E000.

B. REFER TO ELECTRICAL SPECIFICATIONS ON SHEET E701 AND E702.

C. ATA CABLE TO BE FURNISHED AND INSTALLED BY OWNER.

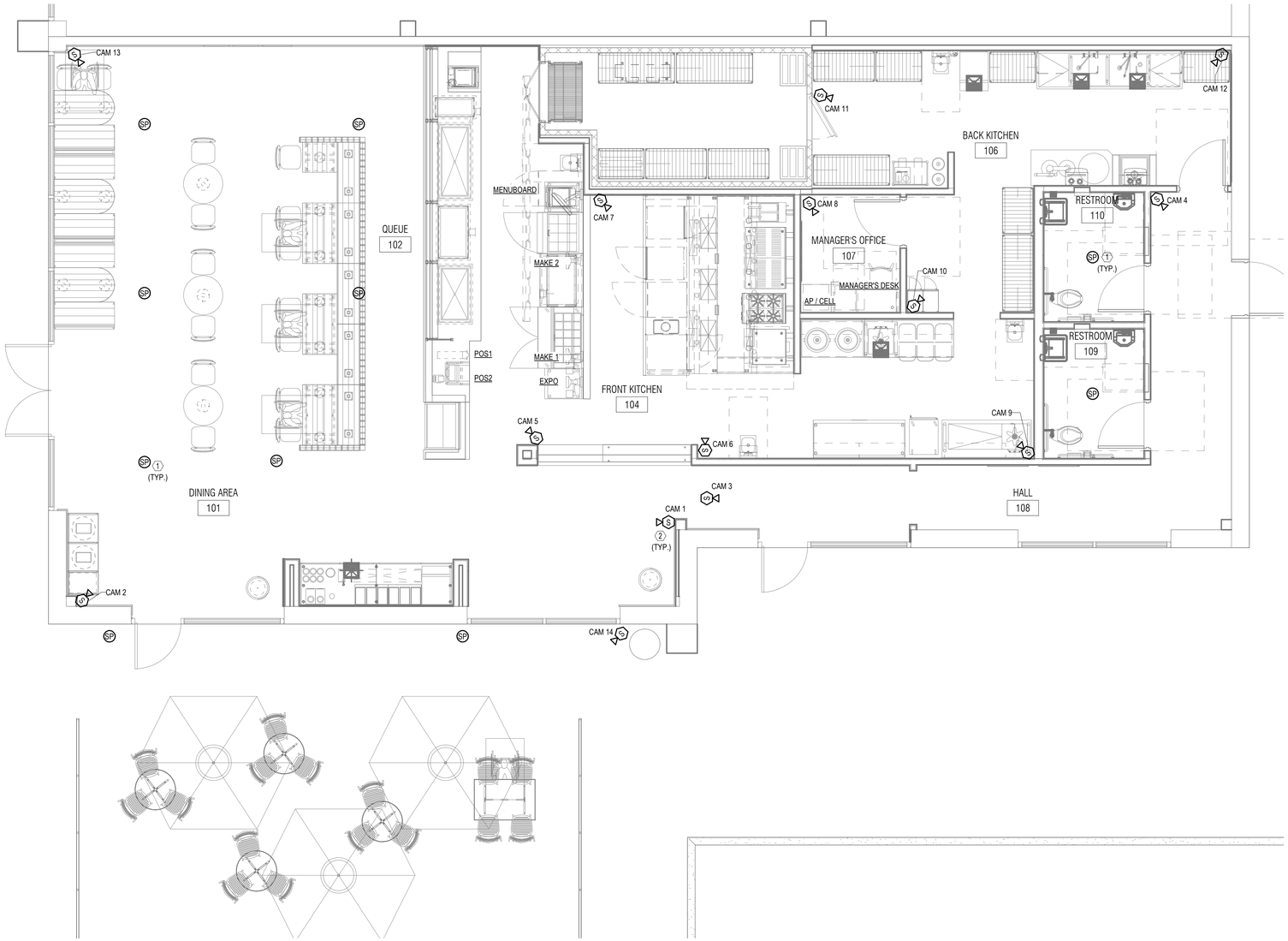
KEY NOTES (#)

1. SPEAKER: WHITE FINISH FOR INTERIOR SPEAKERS, BLACK FINISH FOR EXTERIOR. B.O. SPEAKER TO BE RIGHT ABOVE CLOUD ELEMENT, COORDINATE WITH CLOUD HEIGHT. PROVIDE SUPPORTS FOR SPEAKERS IN OPEN CEILINGS. OWNER VENDOR TO PROVIDE FIXTURE AND WIRING. COORDINATE WITH LOW VOLTAGE VENDOR (TYP.).

2. CAMERA: CAMERAS TO ALL ALIGN ON FACE OF SOFFIT. OWNER VENDOR TO PROVIDE FIXTURE AND WIRING. COORDINATE WITH LOW VOLTAGE VENDOR (TYP.).

CAMERA SCHEDULE			
CAMERA	AREA	CAMERA	AREA
CAM 1	DINING AREA	CAM 8	MANAGER'S OFFICE
CAM 2	DINING AREA	CAM 9	FRONT KITCHEN
CAM 3	HALL	CAM 10	BACK KITCHEN
CAM 4	HALL & BACK ENTRANCE	CAM 11	BACK KITCHEN
CAM 5	FRONT KITCHEN (CASH REGISTER)	CAM 12	BOH ENTRANCE & BACK KITCHEN
CAM 6	FRONT KITCHEN	CAM 13	DINING
CAM 7	FRONT KITCHEN & COOKLINE	CAM 14	PATIO

DATA CABLE SCHEDULE	
POS1	4 CABLES
KDS2	3 CABLES
MAKE 1	2 CABLES
MAKE 2	3 CABLES
EXPO	3 CABLES
MENUBOARDS	10 CABLES
MANAGER'S DESK	4 CABLES
AP / CELL	2 CABLES



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1 E202

ELECTRICAL LOW VOLTAGE PLAN

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

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NAPERVILLE, IL 60540
FOR
CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER:
CAV029

ISSUE	DATE
PERMIT REV	04.15.25
IFC SET	06.23.25

LOW VOLTAGE PLAN

SHEET:

E202

rtm engineering consultants
2800 156th Ave SE | Suite 115
Bellevue, WA 98007
rtmec.com | 847.756.4180

Branch Panel: A

Location: HALL 108 | **Volts:** 120/208 Wye | **A.I.C. Rating:** EXISTING
Supply From: MP | **Phases:** 3 | **Type:** MLO
Mounting: Recessed | **Wires:** 4 | **Bus Amps:** 200 A
Enclosure: Type 1

CB Info	CKT	Circuit Description	Amps	Trip	Poles	A		B		C		Poles	Trip	Amps	Circuit Description	CKT	CB Info
	1	SHOW WINDOW RECS.	10.5 A	20 A	1	1260 VA	720 VA					1	20 A	6 A	HOOD RECEPTACLES	2	S
	3	DINING AREA RECS.	4.5 A	20 A	1			540 VA	1100 VA			1	20 A	9.17 A	27 - UNDERCOUNTER HOT HOLDING	4	
	5	KITCHEN AREA RECS.	6 A	20 A	1					720 VA	240 VA	1	20 A	2 A	3 - WALK-IN COOLER	6	
	7	KITCHEN AREA RECS.	6 A	20 A	1	720 VA	240 VA					1	20 A	2 A	3A - EVAPORATOR COIL, COOLER	8	L
	9	14 - UC WAREWASHER, LOW TEMP	12 A	20 A	1			1440 VA	180 VA			1	15 A	1.5 A	RP-1	10	G
	11	22 - CARBONATOR	6.5 A	20 A	1					780 VA	350 VA	1	20 A	2.92 A	DWH-1	12	
	13	28 - UC REFRIGERATOR	2.5 A	20 A	1	300 VA	350 VA					1	20 A	2.92 A	DWH-2	14	
	15	24 - BOOSTER PUMP	6.5 A	20 A	1			780 VA	4160 VA			2	50 A	40 A	43 - CONVECTION OVEN, ELECTRIC	16	G,S
	17	52B - MAKE 2	1.5 A	20 A	1					180 VA	4160 VA					18	
	19	85 - PREP N PRINT	5 A	20 A	1	600 VA	1560 VA					2	20 A	15 A	3B - OUTDOOR CONDENSING UNIT	20	
	21	50 - POS 1	6 A	20 A	1			720 VA	1560 VA							22	
	23	33 - EXHAUST HOOD	5 A	20 A	1					600 VA	64 VA	1	20 A	0.53 A	RESTROOM LIGHTING	24	
	25	28 - UC REFRIGERATOR	2.5 A	20 A	1	300 VA	900 VA					1	20 A	7.5 A	OFFICE/BACK KITCHEN LIGHTING	26	
L	27	25A - ICE MAKER	13.3 A	20 A	1			1596 VA	266 VA			1	20 A	2.22 A	DINING ROOM TRACK LIGHTING	28	
	29	52A - MAKE 1	1.5 A	20 A	1					180 VA	475 VA	1	20 A	3.96 A	DINING AREA GENERAL LIGHTING	30	
	31	52C - EXPO	1.5 A	20 A	1	180 VA	720 VA					1	20 A	6 A	MENUBOARD	32	
	33	51 - POS 2	3 A	20 A	1			360 VA	180 VA			1	20 A	1.5 A	SIGNAGE	34	
	35	LIGHTING CONTROL PANEL	4.17 A	20 A	1					500 VA	180 VA	1	20 A	1.5 A	SIGNAGE	36	
	37	SPARE	--	20 A	1	0 VA	180 VA					1	20 A	1.5 A	SIGNAGE	38	
	39	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	40	
	41	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	42	
				Total Load:		7992 VA		12882 VA		8411 VA							
				Total Amps:		67 A		108 A		71 A							

CIRCUIT BREAKER INFORMATION LEGEND:
N = PROVIDE CIRCUIT BREAKER, SIZE AS INDICATED
E = EXISTING SPARE CIRCUIT BREAKER TO BE REUSED
G = GROUND FAULT SENSING
S = SHUNT TRIP
L = LOCK OUT
A = ARC FAULT INTERRUPTER

ABBREVIATIONS:
MLO = MAIN LUGS ONLY
CB = CIRCUIT BREAKER
CKT = CIRCUIT

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Equipment	16296 VA	100.00%	16296 VA		
Lighting - Dwelling Unit	1345 VA	100.00%	1345 VA	Total Conn. Load:	29281 VA
Other	231 VA	100.00%	231 VA	Total Est. Demand:	29281 VA
Receptacle	2880 VA	100.00%	2880 VA	Total Conn.:	81 A
Power	8460 VA	100.00%	8460 VA	Total Est. Demand:	81 A
Lighting	134 VA	100.00%	134 VA		
NEC14 - Plumbing - Motor	0 VA	0.00%	0 VA		

Notes:

Branch Panel: B

Location: HALL 108 | **Volts:** 120/208 Wye | **A.I.C. Rating:** EXISTING
Supply From: MP | **Phases:** 3 | **Type:** MLO
Mounting: Recessed | **Wires:** 4 | **Bus Amps:** 200 A
Enclosure: Type 1

CB Info	CKT	Circuit Description	Amps	Trip	Poles	A		B		C		Poles	Trip	Amps	Circuit Description	CKT	CB Info
	1	41 - PITA PRESS	16 A	25 A	1	1920 VA	360 VA					1	20 A	3 A	MANAGERS OFFICE REC.	2	
	3	41 - PITA PRESS	16 A	25 A	1			1920 VA	360 VA			1	20 A	3 A	MANAGERS OFFICE REC.	4	
	5	42 - REFRIGERATOR	2.5 A	20 A	1					300 VA	1800 VA	1	20 A	15 A	60A - DROP IN HOT WELL	6	
	7	66 - ICE DISPENSER	5 A	20 A	1	600 VA	420 VA					1	20 A	3.5 A	59 - REFRIGERATOR	8	
G	9	34 - RICE COOKER	15 A	20 A	2			1560 VA	360 VA			1	20 A	3 A	35 - REFRIGERATED DISPLAY CASE	10	
	11									1560 VA	840 VA	1	20 A	7 A	84B - COLD PAN	12	
	13	71 - COLD BEVERAGE DISPENSER	6 A	20 A	1	720 VA	660 VA					1	20 A	5.5 A	84D - COLD PAN	14	
	15	71 - COLD BEVERAGE DISPENSER	6 A	20 A	1			720 VA	--			1	--	--	SPACE	16	
	17	84A - HOT WELL	5 A	20 A	1					600 VA	--	1	--	--	SPACE	18	
	19	84C - HOT WELL	15 A	20 A	1	1800 VA	--					1	--	--	SPACE	20	
	21	CO2 DETECTOR	1.5 A	20 A	1			180 VA	1560 VA			2	20 A	15 A	34 - RICE COOKER	22	G
	23	SPARE	--	20 A	1					0 VA	1560 VA					24	
	25	SPARE	--	20 A	1	0 VA	600 VA					1	20 A	5 A	GAS SOLENIOD VALVE	26	
	27	ROOFTOP CONV.RECS.	4.5 A	20 A	1			540 VA	1920 VA			1	20 A	16 A	KF-1	28	
	29	FAAP	1.5 A	20 A	1					180 VA	180 VA	1	20 A	1.5 A	MANAGERS OFFICE REC.	30	
	31	93 - HOT BOX	16 A	25 A	1	1920 VA	360 VA					1	20 A	3 A	MANAGERS OFFICE REC.	32	
	33	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	34	
	35	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	36	
	37	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	38	
	39	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	40	
	41	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	42	
				Total Load:		9360 VA		9120 VA		7020 VA							
				Total Amps:		81 A		79 A		59 A							

CIRCUIT BREAKER INFORMATION LEGEND:
N = PROVIDE CIRCUIT BREAKER, SIZE AS INDICATED
E = EXISTING SPARE CIRCUIT BREAKER TO BE REUSED
G = GROUND FAULT SENSING
S = SHUNT TRIP
L = LOCK OUT
A = ARC FAULT INTERRUPTER

ABBREVIATIONS:
MLO = MAIN LUGS ONLY
CB = CIRCUIT BREAKER
CKT = CIRCUIT

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Equipment	18540 VA	100.00%	18540 VA		
Other	180 VA	100.00%	180 VA	Total Conn. Load:	25500 VA
Receptacle	1440 VA	100.00%	1440 VA	Total Est. Demand:	25980 VA
Power	3420 VA	100.00%	3420 VA	Total Conn.:	71 A
NEC14 - Plumbing - Motor	1920 VA	125.00%	2400 VA	Total Est. Demand:	72 A

Notes:

GENERAL NOTES

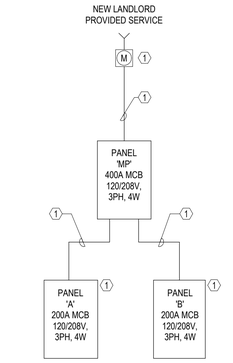
A. REFER TO GENERAL NOTES ON SHEET E000.

B. REFER TO ELECTRICAL SPECIFICATIONS ON SHEET E701 AND E702.

C. PROVIDE ALL NECESSARY SEISMIC BRACING AND SUPPORTS.

KEY NOTES (#)

1. NEW ELECTRICAL SERVICE AND PANELS ARE FURNISHED AND INSTALLED BY LANDLORD.
2. ELECTRICAL DATA SHOWN IS FOR REFERENCE ONLY. EQUIPMENT IS FURNISHED AND INSTALLED BY LANDLORD.



1 ELECTRICAL SINGLE LINE DIAGRAM
SCALE: N.T.S.

Branch Panel: MP

Location: HALL 108 | **Volts:** 120/208 Wye | **A.I.C. Rating:** EXISTING
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Recessed | **Wires:** 4 | **Bus Amps:** 400 A
Enclosure: Type 1 | **MCB Rating:** 400 A

CB Info	CKT	Circuit Description	Amps	Trip	Poles	A		B		C		Poles	Trip	Amps	Circuit Description	CKT	CB Info
	1					7992 VA	9360 VA									2	
	3	SUB PANEL 'A'	81.3 A	200 A	3			12882...	9120 VA			3	200 A	70.8 A	SUB PANEL 'B'	4	
	5									8411 VA	7020 VA					6	
	7					3528 VA	4920 VA									8	
	9	MAU-1	29.4 A	35 A	3			3528 VA	4920 VA			3	50 A	41 A	RTU-1X	10	(2)
	11									3528 VA	4920 VA					12	
	13					8040 VA	4264 VA									14	
(2)	15	RTU-2X	67 A	80 A	3			8040 VA	4264 VA			2	60 A	41 A	AC-1	16	
	17									8040 VA	3058 VA					18	
	19					3058 VA	3058 VA					2	40 A	29.4...	AC-2	20	
	21	AC-3	29.4...	40 A	2			3058 VA	0 VA							22	
	23	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	24	
	25	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	26	
	27	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	28	
	29	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	30	
	31	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	32	
	33	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	34	
	35	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	36	
	37	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	38	
	39	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	40	
	41	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	42	
				Total Load:		44215 VA		45812 VA		34975 VA							
				Tot...		380 A		394 A		291 A							

CIRCUIT BREAKER INFORMATION LEGEND:
G = GROUND FAULT SENSING
S = SHUNT TRIP
L = LOCK OUT
A = ARC FAULT INTERRUPTER

ABBREVIATIONS:
MCB = MAIN CIRCUIT BREAKER
CB = CIRCUIT BREAKER
CKT = CIRCUIT
N = NEW CIRCUIT BREAKER

				Panel Totals	
				Total Conn. Load:	125001 VA
				Total Conn.:	347 A

Notes:

EQUIPMENT CONNECTION SCHEDULE

TAG (1)	DESCRIPTION (2)	LOAD (3)	WIRE/CONDUIT (4)	STARTER/DISCONNECT/OCD (5)	VOLTAGE (6)	FEED (7)	LOCAL DISCONNECT (8)	REMARKS (9)
(2) RTU 1X	ROOFTOP UNIT	41 MCA 50 MOCP	3#6 AWG 1#10 AWG EQ. GND. 1"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	208V 3PH	MP	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY MC, INSTALLED BY EC.
(2) RTU 2X	ROOFTOP UNIT	67 MCA 80 MOCP	3#4 AWG 1#8 AWG EQ. GND. 1-1/4"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	208V 3PH	MP	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED BY MC, INSTALLED BY EC.
MAU 1	MAKE-UP AIR UNIT (FAN)	29.4 MCA 35 MOCP	3#10 AWG 1#10 AWG EQ. GND. 3/4"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	208V 3PH	MP	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	COORDINATE INSTALLATION WITH HOOD VENDOR.
AC 1	AIR CURTAIN	41 MCA 60 MOCP	2#6 AWG 1#10 AWG EQ. GND. 1"C.	☒ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	208V 1PH	MP	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT INTEGRAL TO EQUIPMENT
AC 2	AIR CURTAIN	29.4 MCA 40 MOCP	2#10 AWG 1#10 AWG EQ. GND. 3/4"C.	☒ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	208V 1PH	MP	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT INTEGRAL TO EQUIPMENT
AC 3	AIR CURTAIN	29.4 MCA 40 MOCP	2#10 AWG 1#10 AWG EQ. GND. 3/4"C.	☒ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	208V 1PH	MP	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT INTEGRAL TO EQUIPMENT
CEF 1	CEILING EXHAUST FAN	83 W	2#12 AWG 1#12 AWG EQ. GND. 3/4"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	A	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	TO BE CONTROLLED THROUGH LOCAL LIGHTING CONTROL. DISCONNECT PROVIDED BY MC, INSTALLED BY EC.
CEF 2	CEILING EXHAUST FAN	83 W	2#12 AWG 1#12 AWG EQ. GND. 3/4"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	A	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	TO BE CONTROLLED THROUGH LOCAL LIGHTING CONTROL. DISCONNECT PROVIDED BY MC, INSTALLED BY EC.
KF 1	KITCHEN EXHAUST FAN	1 HP	2#12 AWG 1#12 AWG EQ. GND. 3/4"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	B	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	COORDINATE INSTALLATION WITH HOOD VENDOR. DISCONNECT FURNISHED AND INSTALLED BY EC.
DWH 1	DOMESTIC WATER HEATER	350 W	2#12 AWG 1#12 AWG EQ. GND. 3/4"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	A	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED AND INSTALLED BY EC.
DWH 2	DOMESTIC WATER HEATER	350 W	2#12 AWG 1#12 AWG EQ. GND. 3/4"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	A	☐ FUSED A FUSE ☒ NON-FUSED A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED AND INSTALLED BY EC.
RCP 1	RECIRCULATION PUMP	45 W	2#12 AWG 1#12 AWG EQ. GND. 3/4"C.	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	A	☐ FUSED A FUSE ☒ NON-STANDARD A SWITCH ☐ THERMAL SWITCH, 120V,1P	DISCONNECT PROVIDED AND INSTALLED BY EC.

EQUIPMENT CONNECTION SCHEDULE KEY NOTES

(1) VERIFY FINAL LOCATION OF ALL EQUIPMENT WITH EQUIPMENT INSTALLER BEFORE INSTALLING FEEDERS.

(2) SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR MORE INFORMATION.

(3) SIZE STARTER/FEEDER DISCONNECT PER FINAL EQUIPMENT REQUIREMENTS.

(4) PROVIDE FEEDERS AS INDICATED, VERIFY WITH EQUIPMENT REQUIREMENTS.

(5) PROVIDE OVERLOAD PROTECTION (FUSES OR MOTOR CIRCUIT PROTECTOR) PER SPECIFICATIONS, ACTUAL FIELD MEASURED FULL LOAD CURRENT, AND EQUIPMENT MANUFACTURER'S REQUIREMENTS.

(6) VERIFY FINAL VOLTAGE AND PHASE REQUIREMENTS OF ALL EQUIPMENT WITH INSTALLER BEFORE INSTALLING FEEDERS.

(7) COORDINATE SHORT CIRCUIT OCP RATING WITH FINAL EQUIPMENT REQUIREMENTS.

(8) EC TO PROVIDE LOCAL DISCONNECT WITHIN 5'-0" OF EQUIPMENT.

(9) NON-STANDARD ITEMS, TIMERS, METERS, INTERLOCKS, ETC.

EQUIPMENT CONNECTION SCHEDULE GENERAL NOTES

1. PROVIDE POWER CONNECTIONS TO ALL ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND OWNER FURNISHED EQUIPMENT. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR LOCATIONS AND POWER REQUIREMENTS. VERIFY ALL TECHNICAL DATA WITH FINAL SHOP DRAWINGS.
2. OVER CURRENT PROTECTION SIZES LISTED ARE FROM MANUFACTURER'S AND STANDARD MOTOR DATA, FURNISH FUSES BASED ON FUSE MANUFACTURER'S STANDARDS, ACTUAL FIELD MEASURED FULL LOAD CURRENT, AND EQUIPMENT MANUFACTURER'S REQUIREMENTS.
3. FLEXIBLE CONNECTIONS TO MOTORS SHALL BE IN FLEXIBLE CONDUIT. PROVIDE COPPER EQUIPMENT GROUND FROM DISCONNECT TO MOTOR CONNECTION.

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NAPERVILLE, IL 60540
FOR
CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

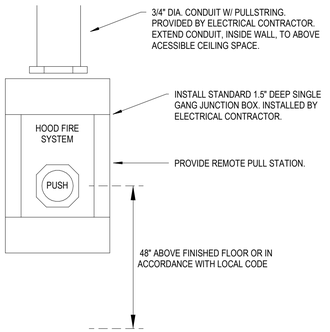
AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT REV	02.24.25
PERMIT REV	04.15.25
IFC SET	06.23.25

SCHEDULES ELECTRICAL

SHEET: E301

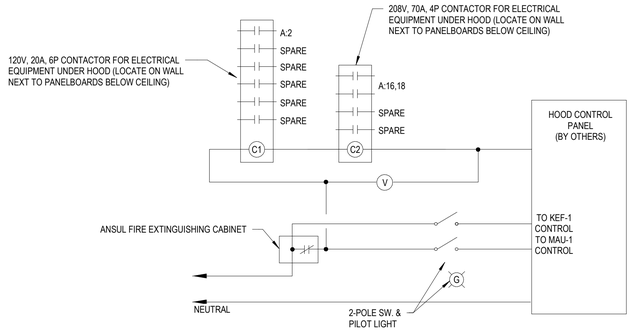
6/23/2025 4:18:34 PM



NOTE: COORDINATE EXACT LOCATION WITH AUTHORITY HAVING JURISDICTION, FIRE INSPECTOR AND ARCHITECT PRIOR TO ROUGH-IN.

2 ANSUL PULL STATION DETAIL

SCALE: N.T.S.



NOTES:

1. ELECTRICAL CONTRACTOR SHALL PROVIDE CONTACTORS AND ALL INTERLOCK WIRING. COORDINATE EXACT TERMINATION REQUIREMENTS WITHIN HOOD CONTROL PANEL AND ANSUL CABINET WITH HOOD MANUFACTURER.

1 EXHAUST HOOD SHUT-DOWN WIRING DIAGRAM

SCALE: N.T.S.

KITCHEN EQUIPMENT SCHEDULE

TAG	QTY	NAME	LOAD	VOLTAGE/ PHASE	CONNECTION TYPE	FEEDER SIZE	REMARKS
3	1	REFRIGERATED, WALK-IN COOLER	240 VA	120V/1P	HARDWIRED	(2)#12, (1)#12G, 3/4"C	ELECTRIC DOWN FROM ABOVE. FOR WALK-IN LIGHTS
3A	1	EVAPORATOR COIL, COOLER	240 VA	120V/1P	HARDWIRED	(2)#12, (1)#12G, 3/4"C	ELECTRIC DOWN FROM ABOVE
3B	1	CONDENSING UNIT, OUTDOOR	3120 VA	208V/1P	HARDWIRED	(2)#12, (1)#12G, 3/4"C	
14	1	WAREWASHER, UNDERCOUNTER, LOW TEMP	1440 VA	120V/1P	HARDWIRED	(2)#12, (1)#12G, 3/4"C	BY VENDOR VERIFY UTILITIES
22	1	CARBONATOR	780 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	BY VENDOR VERIFY UTILITIES
24	1	BOOSTER PUMP	780 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	BY VENDOR VERIFY UTILITIES
25A	1	ICE MAKER	1596 VA	120V/1P	HARDWIRED	(2)#12, (1)#12G, 3/4"C	
27	1	CABINET, MOBILE, WARMING & HOLDING	1100 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	PLUGS INTO FIXTURE MTD. RECPT. LOCATED IN ITEM #26
28	2	REFRIGERATOR, UNDERCOUNTER, COMPACT	300 VA	120V/1P	NEMA 5-15P	<varies>	PLUGS INTO FIXTURE MTD. RECPT. LOCATED IN ITEM #26
33	1	EXHAUST HOOD CONTROL PANEL	600 VA	120V/1P	HARDWIRED	(2)#12, (1)#12G, 3/4"C	COORDINATE WITH HOOD VENDOR DRAWINGS
34	2	COOKER, RICE	3120 VA	208V/1P	NEMA 6-20P	(2)#12, (1)#12G, 3/4"C	
35	1	REFRIGERATED DISPLAY CASE	360 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	
41	2	SANDWICH / PANINI GRILL	1920 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	
42	1	REFRIGERATOR, SANWICH/SALAD PREP	300 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	W/ RECESSED PLUG
43	1	OVEN, CONVECTION, ELECTRIC	8320 VA	208V/1P	HARDWIRED	(2)#8, (1)#10G, 1"C	
50	2	POS 1	360 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	BY VENDOR, VERIFY UTILITIES, DATA LINE INCLUDED
51	1	KDS	360 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	BY VENDOR, VERIFY UTILITIES, DATA LINE INCLUDED
52A	1	MAKE 1	180 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	BY VENDOR, VERIFY UTILITIES, DATA LINE INCLUDED
52B	1	MAKE 2	180 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	BY VENDOR, VERIFY UTILITIES, DATA LINE INCLUDED
52C	1	EXPO	180 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	BY VENDOR, VERIFY UTILITIES, DATA LINE INCLUDED
59	1	REFIGERATOR, REACH-IN SANDWICH PREP	420 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	
60A	1	DROP-IN, HOT WELL	1800 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	
66	1	ICE DISPENSER W/ BEVERAGE HEADS	600 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	BEVERAGE DISP., BY VENDOR, VERIFY UTILITIES
71	2	COLD BEVERAGE DISPENSER	720 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	
84A	1	HOT WELL, DROP-IN W/ TEMPLATES	600 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	
84B	1	COLD PAN, REFRIGERATED W/ TEMPLATES	840 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	
84C	1	HOT WELL, DROP-IN W/ TEMPLATES	1800 VA	120V/1P	NEMA 5-20P	(2)#12, (1)#12G, 3/4"C	
84D	1	COLD PAN, REFRIGERATED W/ TEMPLATES	660 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	
85	1	PREP N PRINT	600 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	
93	1	HOT BOX UPRIGHT ALTOSHAAM (CATERING)	1920 VA	120V/1P	NEMA 5-15P	(2)#12, (1)#12G, 3/4"C	

KITCHEN EQUIPMENT GENERAL NOTES:

A. ELECTRICAL PLANS SHOW EQUIPMENT NUMBERS WHICH CORRESPONDS TO EQUIPMENT SHOWN ON ARCHITECTURAL DRAWINGS AND REFRIGERATION DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR FINAL LOCATIONS AND EQUIPMENT VENDOR CUTSHEETS FOR COMPLETE DESCRIPTION OF EQUIPMENT AND POWER REQUIREMENTS.

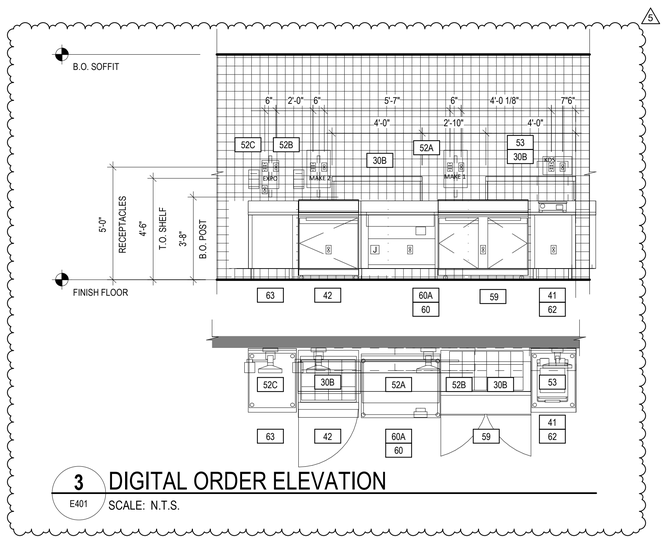
B. VERIFY ROUGH-IN REQUIREMENTS, LOCATIONS, MOUNTING HEIGHTS, VOLTAGE, PHASE, AMPS, HP, KW, NEMA RATINGS, ETC FOR ALL FOOD SERVICE EQUIPMENT PRIOR TO ROUGH-IN. DEVICE LOCATIONS SHOWN ON ELECTRICAL DRAWINGS ARE APPROXIMATE. REFER TO ARCHITECTURAL EQUIPMENT PLANS AND SHOP DRAWINGS FOR EXACT POWER ROUGH-IN LOCATIONS AND REQUIREMENTS.

C. FURNISH AND INSTALL DISCONNECT SWITCHES, INTERLOCKS, CONDUIT AND WIRING, AND INSTALL AS SPECIFICALLY OUTLINED WITHIN THE MANUFACTURER INSTALLATION INSTRUCTIONS.

D. FOR EACH EQUIPMENT ITEM NOT PROVIDED WITH CORD AND PLUG CONNECTIONS, VERIFY THE EQUIPMENT CONTAINS AN INTEGRAL UNIT SWITCH. IF EQUIPMENT HAS NO SWITCH, PROVIDE A PERMANENTLY INSTALLED LOCK-OFF DEVICE AT THE BRANCH CIRCUIT BREAKER FEEDING THE EQUIPMENT.

KITCHEN EQUIPMENT REMARKS:

1. PROVIDE CONNECTION TO FIXTURE MOUNTED RECEPTACLE IN COUNTER.
2. PROVIDE CONDUITS FROM EQUIPMENT TO REMOTE UNIT. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER AND MAKE ALL FINAL CONNECTIONS REQUIRED FOR PROPER OPERATION.
3. JUNCTION BOX FOR CONNECTION TO FIXTURE MOUNTED RECEPTACLE FOR ITEM 34.
4. PROVIDE WITH WATER/GREASE RESISTANT COVER WITH CORD ACCESS FOR RECEPTACLE.



3 DIGITAL ORDER ELEVATION

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AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT REV	02.24.25
PERMIT REV	04.15.25
IFC SET	06.23.25

ELECTRICAL SCHEDULES & DETAILS

SHEET: E401

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SPECIFICATIONS - DIVISION 26 - ELECTRICAL

SECTION 26 00 01 - GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTAL CONDITIONS AND DIVISION-1 SPECIFICATION SECTIONS, APPLY TO WORK OF DIVISION 26 SECTIONS.

B. E-SERIES DRAWINGS APPLY TO WORK OF DIVISION 26 SECTIONS AND VICE VERSA.

1.2 GENERAL STANDARDS

A. PROVIDE WORK IN COMPLIANCE WITH APPLICABLE PROVISIONS OF THE FOLLOWING STANDARDS. PROVIDE UL LISTING AND UL LABEL FOR ALL ELECTRICAL MATERIALS, EQUIPMENT, LUMINAIRES, DEVICES, ETC. IN CASES WHERE UL LISTING AND/OR LABELING IS NOT AVAILABLE FOR A PARTICULAR PRODUCT, PROVIDE EQUIVALENT LISTING AND LABELING FROM ANOTHER THIRD PARTY NATIONALLY RECOGNIZED CERTIFICATION LABORATORY, SUBJECT TO APPROVAL BY LOCAL ELECTRICAL INSPECTOR AND AUTHORITIES HAVING JURISDICTION.

B. PROVIDE WORK IN STRICT ACCORDANCE WITH THE LATEST EDITION OF APPLICABLE CODES INCLUDING (BUT NOT LIMITED TO) THE FOLLOWING CODES AND STANDARDS.

1. NATIONAL ELECTRICAL CODE (NEC), NFPA 70.
2. LIFE SAFETY CODE, NFPA 101.
3. OTHER PROVISIONS OF NFPA AS APPLICABLE.
4. LOCAL ELECTRICAL CODES.
5. LOCAL UTILITY COMPANY REQUIREMENTS.
6. ADA/ADAAG REQUIREMENTS.
7. ASME.
8. INTERNATIONAL BUILDING CODE.
9. INTERNATIONAL ENERGY CONSERVATION CODE.

1.3 MATERIALS AND EQUIPMENT

A. UNLESS SPECIFICALLY INDICATED OTHERWISE PROVIDE (FURNISH AND INSTALL) ALL SPECIFIED AND DRAWN EQUIPMENT, RACEWAY, BOXES, LUMINAIRES, CONTROLS, WIRING, CABLING, SUPPORTS AND OTHER MATERIALS AS REQUIRED TO RENDER ALL ELECTRICAL AND ELECTRICALLY OPERATED EQUIPMENT, LUMINAIRES, DEVICES, ETC. FULLY OPERATIONAL. UNLESS SPECIFICALLY INDICATED OTHERWISE PROVIDE (FURNISH AND INSTALL) ALL MATERIALS THAT ARE SPECIFIED UNDER DIVISION 26. DISCREPANCIES OR UNCERTAINTIES PERCEIVED BY A BIDDER, OR OTHER QUESTIONABLE INTERPRETATIONS BY A BIDDER, ARE SUBJECT TO FINAL INTERPRETATIONS AND DECISIONS BY THE OWNER'S REPRESENTATIVE UNLESS ADDRESSED BEFORE BIDDING BY ADDENDUM OR UNLESS QUALIFIED OR EXCEPTED WITHIN BIDS.

B. PROVIDE MATERIALS THAT ARE NEW, FULL WEIGHT, OF THE BEST QUALITY. PROVIDE SIMILAR MATERIALS THAT ARE OF THE SAME TYPE AND MANUFACTURER. PROVIDE MATERIALS, APPARATUS AND EQUIPMENT WITH UNDERWRITER'S LABORATORY, INC. LABEL WHERE REGULARLY SUPPLIED.

C. PROVIDE MATERIALS THAT ARE NEW, FULL WEIGHT, OF THE BEST QUALITY. PROVIDE SIMILAR MATERIALS THAT ARE OF THE SAME TYPE AND MANUFACTURER. PROVIDE MATERIALS, APPARATUS AND EQUIPMENT WITH UNDERWRITER'S LABORATORY, INC. LABEL WHERE REGULARLY SUPPLIED.

D. WHEN SEVERAL MATERIALS, PRODUCTS OR ITEMS OF EQUIPMENT ARE SPECIFIED BY NAME FOR ONE USE, SELECT ONE OF THOSE SPECIFIED.

END OF SECTION

SECTION 26 00 01 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 GENERAL

A. FURNISH AND INSTALL ALL LABOR AND MATERIAL, TOOLS AND EQUIPMENT NECESSARY TO RENDER ALL SYSTEMS COMPLETE AND OPERATIONAL, AND READY FOR TURNOVER TO OWNER.

1.2 HEIGHT OF BOXES

A. CONTRACTOR TO VERIFY THE EXACT MOUNTING HEIGHTS (AND LOCATIONS) OF OUTLETS IN THE FIELD WITH RELATION TO ARCHITECTURAL DETAIL AND EQUIPMENT BEING SERVED. COORDINATE OUTLET LOCATION WITH EQUIPMENT, WITH FURNITURE PLANS AND WITH ARCHITECTURAL ELEVATION PLANS. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, CONTACT THE OWNER'S REPRESENTATIVE FOR DIRECTION.

B. PRIOR TO ROUGH-IN, COORDINATE FINAL MOUNTING HEIGHTS OF SYSTEM OUTLET BOXES IN FIELD WITH OWNER'S REPRESENTATIVE. INSTALL BOXES AT HEIGHTS AS FOLLOWS, TO CENTER OF BOX, UNLESS DIRECTED OTHERWISE IN FIELD OR OTHERWISE NOTED ON E-SERIES DRAWINGS OR ARCHITECTURAL PLANS. HEIGHT OF BOXES DIMENSIONED FROM CEILING APPLY TO ROOMS HAVING CEILINGS 9' OR LESS; IN ROOMS HAVING HIGHER CEILINGS, LOCATE THESE AS DIRECTED IN THE FIELD.

SWITCHES - COUNTERS	44" (FIELD VERIFY & MATCH COUNTER RECEPT. HEIGHTS)
SWITCHES - ELSEWHERE	48" TO TOP OF OUTLET BOX
OCCUPANCY SENSORS - WALLBOX SWITCHES	48" TO TOP OF OUTLET BOX
OCCUPANCY SENSORS - ELSEWHERE	AS RECOMMENDED BY MANUFACTURER
RECEPTACLES - COUNTERS	44" (FIELD VERIFY)
RECEPTACLES - ELSEWHERE	18"
DISCONNECTS	46"
CIRCUIT BREAKER PANELBOARDS	72" TO TOP OF PANEL UNLESS SPECIAL CIRCUMSTANCES ARE INDICATED OR OTHERWISE APPLY
WALL MOUNTED LUMINAIRES	AS NOTED ON PLANS OR AS DIRECTED BY ARCHITECT
CONTROL STATIONS	46"
FIRE ALARM MANUAL PULL STATIONS	46" TO TOP OF OPERATING HANDLE
FIRE ALARM AUDIO/VISUAL ANNUNCIATORS	80" TO BOTTOM OF OUTLET BOX
TELEPHONE OUTLETS - DESK PHONE	18"
TELEPHONE OUTLETS - WALL PHONE	46"
DATA OUTLETS	18" TO TOP OF OUTLET BOX.

1.3 ELECTRICAL INSTALLATIONS

A. INSTALL WORK CONDUIT, WIRING, OUTLET BOX TYPE WORK IN FINISHED AREAS CONCEALED. SUCH WORK INSTALLED IN UNFINISHED AREAS MAY BE EXPOSED AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE.

B. VERIFY DIMENSIONS BY FIELD MEASUREMENTS. TAKE MEASUREMENTS AND BE RESPONSIBLE FOR EXACT SIZE AND LOCATIONS OF OPENINGS REQUIRED FOR THE INSTALLATION OF WORK. FIGURED DIMENSIONS ARE REASONABLY ACCURATE AND SHOULD GOVERN IN SETTING OUT WORK. WHERE DETAILED METHOD OF INSTALLATION IS NOT INDICATED OR WHERE VARIATIONS EXIST BETWEEN DESCRIBED WORK AND APPROVED PRACTICE, FOLLOW DIRECTION OF THE OWNER'S REPRESENTATIVE.

C. PROVIDE BRANCH SUBFEEDER CIRCUITS AS SHOWN ON THE PLANS. THE SYMBOLS USED TO INDICATE THE PURPOSE OF WHICH THE VARIOUS OUTLETS ARE INTENDED ARE IDENTIFIED IN THE ELECTRIC LEGEND. WHERE OUTLETS ARE INDICATED BY LETTERS ON PLANS, PROVIDE CORRESPONDING SWITCHES TO CONTROL THEM.

D. PROVIDE NO WIRE SIZE SMALLER THAN NO. 12 FOR BRANCH CIRCUITS UNLESS OTHERWISE NOTED ON PLANS FOR CONTROL CIRCUITS. PROVIDE LARGER SIZES WHERE REQUIRED BY PREVAILING CODES OR INDICATED ON CONTRACT DOCUMENTS. PROVIDE NEUTRAL CONDUCTOR FOR ALL MULTI-POLE FEEDERS. PROVIDE NEUTRAL CONDUCTOR(S) FOR ALL MULTI-POLE FEEDERS AND BRANCH CIRCUITS UNLESS THIS CONTRACTOR DETERMINES IN FIELD THAT THE AFFECTED LOAD(S) WILL NEVER HAVE NEED FOR A NEUTRAL CONDUCTOR AND NEC DOES NOT MANDATE OTHERWISE.

1.4 COORDINATION

A. PLANS ARE DIAGRAMMATIC INDICATING DESIGN INTENT AND INDICATING REQUIRED SIZE, POINTS OF TERMINATION AND, IN SOME CASES, SUGGESTED ROUTES OF RACEWAYS, ETC. HOWEVER, IT IS NOT INTENDED THAT DRAWINGS INDICATE FULLY COORDINATED CONDUIT ROUTING, NECESSARY OFFSETS, ETC. THE DRAWINGS ARE AN OUTLINE TO INDICATE THE APPROXIMATE LOCATION AND ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, OUTLETS, RACEWAYS, CABLES, ETC. INSTALL PIPING, CONDUIT, RACEWAYS, CABLE ASSEMBLIES, ETC. AS STRAIGHT AS POSSIBLE AND SYMMETRICAL (PERPENDICULAR TO OR PARALLEL WITH) WITH ARCHITECTURAL ITEMS. WORK IN AND ON THE BUILDING INSTALLED DIAGONAL TO BUILDING MEMBERS IS PROHIBITED.

B. CONSULT THE PLANS OF OTHER TRADES BEFORE INSTALLING WORK SO THAT WORK WILL NOT INTERFERE WITH THOSE.

C. PARTICIPATE IN COORDINATION EFFORTS AND IN PREPARATION OF COORDINATION DRAWINGS PRIOR TO FABRICATION OR INSTALLATION OF EQUIPMENT, MATERIALS, ETC. COORDINATE ACTUAL CLEARANCES OF INSTALLED EQUIPMENT. COORDINATE EXACT LOCATION OF ELECTRICAL OUTLETS, LIGHTING FIXTURES, CONDUITS, RACEWAYS, EQUIPMENT, CABLE ASSEMBLIES, APPLICABLE DEVICES, ETC. WELL IN ADVANCE OF INSTALLATION SO THERE WILL BE NO INTERFERENCES AT INSTALLATION BETWEEN THE VARIOUS TRADES.

D. ENSURE THAT WORK AND WORKING CLEARANCES IN ELECTRICAL ROOMS AND SIMILAR SPACES COMPLIES WITH NEC ARTICLE 110. THIS ALSO APPLIES TO FINALIZING LOCATIONS OF DISCONNECTS, STARTERS, CONTACTORS AND OTHER ELECTRICALLY OPERATED EQUIPMENT THAT MAY REQUIRE TESTING OR MAINTENANCE WHILE ENERGIZED.

E. COORDINATE AND CORRECT CONFLICTS IN EQUIPMENT AND MATERIALS PRIOR TO INSTALLATION. IF A CONFLICT CANNOT BE RESOLVED, REFER THE MATTER TO THE OWNER'S REPRESENTATIVE FOR A FINAL DECISION AS TO METHOD AND MATERIAL.

1.5 IDENTIFICATION

A. CABLE AND CONDUCTOR IDENTIFICATION

1. PROVIDE MANUFACTURER'S STANDARD VINYL-CLOTH SELF-ADHESIVE CONDUCTOR MARKERS OF WRAP-AROUND TYPE, EITHER PRE-NUMBERED PLASTIC COATED TYPE, OR WRITE-ON TYPE WITH CLEAR PLASTIC SELF-ADHESIVE COVER FLAP, NUMBERED TO SHOW CIRCUIT IDENTIFICATION. PROVIDE ON CONDUCTORS. PROVIDE COLOR CODED INSULATION FOR CONDUCTORS. PROVIDE COLOR CODED JACKETS FOR CABLES. MATCH COLOR SCHEMES WITH MARKING SYSTEM USED IN SUBMITTALS, CONTRACT DOCUMENTS, INDUSTRY STANDARDS, ETC. APPLY CABLE/CONDUCTOR IDENTIFICATION ON EACH CABLE IN EACH BOX/ENCLOSURE/CABINET FOR CABLES THAT ARE NOT AVAILABLE WITH COLOR CODED INSULATION OR JACKETS.

2. USE THE FOLLOWING INSULATION COLOR CODE FOR POWER SYSTEM AND VOLTAGE IDENTIFICATION. THIS APPLIES TO BOTH FEEDER AND BRANCH CIRCUIT WIRING. DO NOT INTERCHANGE COLORS. THE USE OF SCOTCH COLOR CODING TAPES FOR PHASE IDENTIFICATION MAY BE USED ON FEEDER CABLES ONLY (#4 AWG AND LARGER).

a. 480Y/277V SYSTEM BROWN, ORANGE, YELLOW & GRAY (NEUT.)
b. 208Y/120V SYSTEM: BLACK, RED, BLUE & WHITE (NEUTRAL)
c. 240V DELTA SYSTEM: BLACK, RED & BLUE
d. 120/240V SYSTEM: BLACK, RED & WHITE (NEUTRAL)
e. ELECTRONIC GROUND: GREEN WITH YELLOW TRACER (NEUTRAL)
f. EQUIPMENT GROUNDING: GREEN

B. RACEWAY IDENTIFICATION

1. PROVIDE MANUFACTURER'S STANDARD SELF-ADHESIVE VINYL TAPE NOT LESS THAN 3 MILS THICK BY 1-1/2" WIDE. UNLESS OTHERWISE INDICATED OR REQUIRED BY GOVERNING REGULATIONS PROVIDE BLACK LETTERING ON ORANGE BASE WITH MINIMUM 1/2" HIGH LETTERING. AS A MINIMUM, NEATLY INSTALL MARKERS AT EACH AND EVERY ENTRY POINT TO ROOMS, JUNCTION BOXES, PULL BOXES, EQUIPMENT CONNECTIONS, ETC. DO NOT INSTALL THESE MARKERS ON EXPOSED RACEWAYS IN FINISHED AREAS THAT WILL BE OCCUPIED.

C. EMERGENCY SYSTEMS

1. PROVIDE PERMANENT IDENTIFICATION FOR BOXES, ENCLOSURES, ETC. THAT ARE ASSOCIATED WITH EMERGENCY SYSTEM WORK. PAINT AND IDENTIFY EMERGENCY SYSTEM PULL BOXES, JUNCTION BOXES, AND OTHER ACCESS/PULL POINTS (BOXES AND COVERS) IN ACCORDANCE WITH NEC. PROVIDE EMERGENCY SYSTEM EQUIPMENT PANELBOARDS, CABINETS, ENCLOSURES, ETC. WITH RED MECHANICALLY FASTENED ENGRAVED NAMEPLATES WITH THE FIRST LINE OF TEXT TO READ "EMERGENCY CIRCUITS" AND THE REMAINING LINES TO INCLUDE THE NECESSARY DESCRIPTIVE TEXT.

D. FIRE ALARM SYSTEMS

1. PROVIDE PERMANENT IDENTIFICATION FOR BOXES, ENCLOSURES, ETC. THAT ARE ASSOCIATED WITH FIRE ALARM SYSTEM WORK. PAINT AND IDENTIFY FIRE ALARM SYSTEM PULL BOXES, JUNCTION BOXES, AND OTHER ACCESS/PULL POINTS (BOXES AND COVERS) IN ACCORDANCE WITH NEC/NFPA. PROVIDE FIRE ALARM SYSTEM CONTROL PANEL EQUIPMENT CABINETS, ENCLOSURES, ETC. WITH RED MECHANICALLY FASTENED ENGRAVED NAMEPLATES WITH THE FIRST LINE OF TEXT TO READ "FIRE ALARM" AND THE REMAINING LINES TO INCLUDE THE NECESSARY DESCRIPTIVE TEXT.

E. KITCHEN EQUIPMENT RECEPTACLES

1. LABEL EACH RECEPTACLE FOR PROPER DEDICATED EQUIPMENT INDICATED.

FIRE ALARM SYSTEMS

1.6 CUTTING, PATCHING AND SEALING

A. GENERAL

1. PROVIDE CUTTING AND PATCHING FOR THE ADMISSION OF WORK. PERFORM CUTTING, FITTING, AND PATCHING FOR ELECTRICAL EQUIPMENT AND MATERIALS AS REQUIRED TO:
   a. UNCOVER WORK TO PROVIDE FOR INSTALLATION OF ILL-TIMED WORK.
   b. REMOVE AND REPLACE DEFECTIVE WORK.
   c. REMOVE AND REPLACE WORK NOT CONFORMING TO REQUIREMENTS OF THE CONTRACT DOCUMENTS.
   d. REMOVE SAMPLES OF INSTALLED WORK AS SPECIFIED FOR TESTING.
   e. INSTALL EQUIPMENT AND MATERIALS IN EXISTING BUILDINGS.
2. PATCH SURFACES AND BUILDING COMPONENTS USING NEW MATERIALS MATCHING EXISTING MATERIALS AS APPLICABLE AND USING EXPERIENCED INSTALLERS.

B. GROUT

1. PROVIDE NON-SHRINK, NONMETALLIC GROUT, PREMIXED, FACTORY-PACKAGED, NONSTAINING, NONCORROSIVE, NONGASEOUS GROUT, RECOMMENDED FOR INTERIOR AND EXTERIOR APPLICATIONS.

C. GENERAL FIRE STOPPING MATERIAL APPLICATION

1. FIRE STOPPING REQUIREMENTS/LOCATIONS ARE NOT INDICATED ON ELECTRICAL DRAWINGS. REVIEW ARCHITECTURAL AND OTHER DRAWINGS TO DETERMINE FIRE/SMOKE RATED WALLS AND FLOORS AND RATING REQUIREMENTS OF SAME. PROVIDE REQUIRED FIRE STOPPING WORK ASSOCIATED WITH ELECTRICALLY RELATED PENETRATIONS. PROVIDE FIRE STOP PILLOWS, PUTTY OR SEALANT, AS APPLICABLE, WITH MINIMUM UL CLASSIFICATION FOR 3 HOUR FIRE AND COLD SIDE TEMPERATURE RATINGS.

END OF SECTION

SECTION 26 05 01 - EXISTING CONDITIONS AND DEMOLITION

PART 1 - GENERAL

1.1 RELATED WORK

A. WHERE THE TERM "DEMOLITION" IS USED HEREIN, INTERPRET IT TO MEAN "DEMOLITION" OR "SELECTIVE DEMOLITION" AS APPLICABLE..

B. EXISTING ELECTRICAL WORK IS SHOWN TO A LIMITED EXTENT ON DRAWINGS AND IS SHOWN FOR GENERAL PLANNING REFERENCE ONLY. LOCATIONS AND INFORMATION WERE DERIVED FROM CURSORY VISUAL OBSERVATIONS OR FROM PORTIONS OF DOCUMENTS THAT WERE PREPARED FOR PREVIOUSLY INSTALLED WORK (NOT FROM RECORD DRAWINGS OR "AS-BUILTS").

C. HOLD ROUTING OF NEW RACEWAYS IN EXISTING BUILDINGS AS TIGHTLY AS POSSIBLE TO THE STRUCTURE ABOVE. OBTAIN APPROVAL OF OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

1.2 AFFECT ON ADJACENT OCCUPIED AREAS

A. 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.

1.3 GENERAL DEMOLITION

A. PROVIDE ELECTRICAL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT DEMOLITION AND AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.

B. PERFORM CUTTING AND PATCHING REQUIRED FOR DEMOLITION.

END OF SECTION

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 GENERAL

A. PROVIDE WIRE AND CABLE SUITABLE FOR THE TEMPERATURE, CONDITIONS, AND LOCATION WHERE INSTALLED.

1.2 CONDUCTORS

A. PROVIDE COPPER CONDUCTOR MATERIAL FOR WIRES AND CABLES UNLESS SPECIFICALLY INDICATED OTHERWISE ON SINGLE-LINE DIAGRAM ON DRAWINGS.

B. CONDUCTOR SIZES INDICATED ARE BASED ON COPPER UNLESS SPECIFICALLY INDICATED OTHERWISE ON SINGLE-LINE DIAGRAM ON DRAWINGS.

C. PROVIDE MINIMUM #12 AWG CONDUCTOR SIZE.

D. STRANDED OR SOLID CONDUCTORS MAY BE USED FOR TYPE MC CABLE CONDUCTORS THAT ARE # 10
AWG OR LESS WHERE PERMITTED BY PREVAILING CODES AND AUTHORITIES HAVING JURISDICTION. PROVIDE STRANDED CONDUCTORS FOR ALL OTHER APPLICATIONS.

E. PROVIDE THE FOLLOWING MINIMUM WIRE SIZES BASED ON DISTANCES FROM PANEL TO FIRST DEVICE OF A 15 OR 20 AMPERE GENERAL LIGHTING OR RECEPTACLE BRANCH CIRCUIT. IN ADDITION TO UPSIZING CONDUCTORS AS REQUIRED FOR VOLTAGE DROP, PROVIDE MINIMUM #10 AWG CONDUCTORS TO THE LAST DEVICE FOR BRANCH CIRCUITS MORE THAN 150 FEET IN LENGTH.

DISTANCE	AWG WIRE SIZES
UP TO 60 FEET	#12
61 TO 90 FEET	#10
91 TO 150 FEET	#8
151 TO 240 FEET	#6

F. PROVIDE THE FOLLOWING MINIMUM AWG CONDUCTOR SIZES FOR GENERAL BRANCH CIRCUITING, BASED ON USING COPPER CONDUCTORS. WHERE APPLICABLE INCREASE AS REQUIRED TO ACCOMMODATE VOLTAGE DROP AND TO ACCOMMODATE SPECIAL CONDITIONS. DO NOT DERATE ANY GROUNDED (NEUTRAL) CONDUCTORS.

	EQUIPMENT GROUNDING	
SOURCE BREAKER/FUSE	AWG WIRE SIZE	AWG WIRE SIZE
15 AMPERE	#14	#14
20 AMPERE	#12	#12
25 AMPERE	#10	#10
30 AMPERE	#10	#10
35 AMPERE	# 8	#10
40 AMPERE	# 8	#10
45 AMPERE	# 8	#10
50 AMPERE	# 6	#10
60 AMPERE	# 6	#10
70 AMPERE	# 4	#8
80 AMPERE	# 4	#8
90 AMPERE	# 2	#8
100 AMPERE	# 2	#8

G. PROVIDE CONDUCTOR INSULATION RATED AT 600VAC AND 90 DEGREES C. PROVIDE THHN/THWN INSULATION FOR CONDUCTORS SIZE 500 KCMIL AND LARGER, AND FOR CONDUCTORS # 8 AWG AND SMALLER. PROVIDE THW OR THHN/THWN INSULATION FOR OTHER SIZES AS APPROPRIATE FOR THE LOCATIONS WHERE INSTALLED.

H. PROVIDE XHHW-2 INSULATION FOR WIRING BELOW GRADE AND FOR WIRING SUBJECT TO MOISTURE CONDITIONS.

I. PROVIDE DEDICATED PARITY SIZED GROUNDED (NEUTRAL) CONDUCTOR FOR EACH BRANCH CIRCUIT PHASE CONDUCTOR FED FROM 15 AMPERE AND 20 AMPERE BRANCH CIRCUIT BREAKERS.

J. PROVIDE GROUNDED (NEUTRAL) CONDUCTOR(S) FOR ALL MULTI-POLE FEEDERS UNLESS INDICATED OTHERWISE ON POWER DISTRIBUTION SINGLE-LINE DIAGRAM.

K. PROVIDE GROUNDED (NEUTRAL) CONDUCTOR(S) FOR ALL MULTI-POLE BRANCH CIRCUITS.

1.3 TYPE AC/MC CABLES

A. PROVIDE TYPE AC/MC CABLES THAT ARE MINIMUM 90 DEGREES C RATED, WITH COMPONENTS AND FITTINGS LISTED FOR GROUNDING, AND COMPLIANT WITH THE FOLLOWING.
1. UL STD.4 AND UL STD. 83.
2. ANSI E119 AND E814.
3. NEC ARTICLES 250 AND 333.

B. PROVIDE CABLE FORMED FROM CONTINUOUS LENGTH OF SPIRALLY WOUND, INTERLOCKED ZINC-COATED OR GALVANIZED (INSIDE & OUTSIDE) STRIP STEEL. PROVIDE CABLES WITH FULL PARITY SIZED GREEN INSULATED EQUIPMENT GROUND CONDUCTOR.

C. PROVIDE COMPATIBLE STEEL FITTINGS WITH INTEGRAL RED PLASTIC INSULATED THROAT BUSHINGS, COMPLIANT WITH NEC 350-5.

D. TYPE AC/MC CABLE MAY BE UTILIZED ONLY IF NEC APPROVED AND IF APPROVED BY LOCAL AUTHORITY HAVING JURISDICTION AND IF INCLUDED IN THE LIMITED APPLICATIONS DEFINED BELOW.

1. PROVIDE FOR NEW 15 THROUGH 20 AMPERE BRANCH CIRCUIT WORK. THIS APPLIES ONLY UNDER ALL OF THE FOLLOWING CIRCUMSTANCES AND CONDITIONS.
   a. PROVIDE ONLY WHERE CONCEALED (INSTALL WIRING FOR EXPOSED APPLICATIONS IN RACEWAY).
   b. ALL EQUIPMENT WIRING SHALL BE IN CONDUIT.
   c. ROUTE CABLES PERPENDICULAR AND PARALLEL TO THE BUILDING ARCHITECTURAL LINES, SURFACES, AND STRUCTURAL MEMBERS, KEEPING OFFSETS TO A MINIMUM AND FOLLOWING SURFACE CONTOURS WHERE POSSIBLE. MAINTAIN A UNIFORM ELEVATION FOR CABLE RUNS WHEREVER POSSIBLE. SUPPORT AND ANCHOR CABLES AT MAXIMUM 4 FOOT INTERVALS AND WITHIN 12" OF BOX OR OUTLET IN A MANNER THAT PREVENTS SAGGING. INSTALL CABLES IN A MANNER THAT PREVENTS OVERHEATING. FASTEN CABLES DIRECTLY TO THE STRUCTURE USING FACTORY CLAMPS AND CLIPS SPECIFICALLY DESIGNED FOR THE RESPECTIVE CABLE (CADDY OR EQUAL).
   d. PROVIDE ONLY WHERE INSTALLED FOR NORMAL UTILITY CIRCUITS. INSTALL WIRING FOR EMERGENCY SYSTEM CIRCUITS IN STEEL CONDUIT, NO EXCEPTIONS.

1.4 THE USE OF NM/NMS CABLE IS PROHIBITED.

PART 2 - EXECUTION

2.1 INSTALLATION

A. PROVIDE GROUNDED ("NEUTRAL") CONDUCTOR IN ALL LIGHTING CONTROL DEVICE (SWITCH, DIMMER, OCCUPANCY SENSOR, ETC.) WALL OUTLET BOXES, EVEN IF NOT IMMEDIATELY USED.

B. CONNECT WIRES #6 AWG AND LARGER TO PANELS AND APPARATUS BY MEANS OF APPROVED LUGS OR CONNECTORS LARGE ENOUGH TO ENCLOSE ALL STRANDS OF THE CONDUCTORS. PROVIDE SOLDERLESS TYPE CONNECTORS.

C. PROVIDE FACTORY SPLICE KITS (U.L. APPROVED FOR SUBMERSION IN WATER AND DIRECT BURIAL) FOR WIRE SPLICING IN OUTDOOR GRADE, OR SLAB ON GRADE, JUNCTION BOXES.

END OF SECTION

SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. THIS SECTION INCLUDES GROUNDING AND BONDING REQUIREMENTS FOR ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS, CIRCUITS, AND EQUIPMENT.

B. PROVIDE THE FOLLOWING MINIMUM REQUIREMENTS FOR GROUNDING.

1. NFPA: - COMPONENTS AND INSTALLATION SHALL COMPLY WITH NFPA 70, "NATIONAL ELECTRICAL CODE" (NEC).
2. UL - COMPLY WITH UL 467, "GROUNDING AND BONDING EQUIPMENT."
3. ANSI/TIA/EIA-607, "COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS.

PART 2 - PRODUCTS

2.1 MATERIALS

A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE GROUNDING AND BONDING PRODUCT MANUFACTURERS OF THE INSTALLER'S CHOICE UNLESS NOTED OTHERWISE.

B. EXCEPT AS OTHERWISE INDICATED, PROVIDE COPPER ELECTRICAL GROUNDING AND BONDING SYSTEMS AND MATERIALS WITH ASSEMBLY OF MATERIALS INCLUDING BUT NOT LIMITED TO CABLES/WIRES, CONNECTORS, SOLDERLESS LUG TERMINALS, GROUNDING ELECTRODES AND PLATE ELECTRODES, BONDING JUMPER BRAID, AND ADDITIONAL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION. WHERE MATERIALS OR COMPONENTS ARE NOT INDICATED, PROVIDE PRODUCTS THAT COMPLY WITH NEC, UL, AND IEEE REQUIREMENTS, AND WITH ESTABLISHED INDUSTRY STANDARDS FOR THOSE APPLICATIONS INDICATED. UTILIZE COMPATIBLE METALLIC MATERIALS THROUGHOUT SYSTEM TO ELIMINATE GALVANIC ACTION.

C. PROVIDE STEEL GROUNDING ELECTRODES WITH COPPER WELDED EXTERIOR, AND 3/4" DIAMETER BY 10 FEET LENGTH. PROVIDE SHEET COPPER PLATE ELECTRODES THAT ARE 20-GAGE BY 36" BY 36", WITH CABLE ATTACHMENTS (MINIMUM QUANTITY OF 2), SIZED FOR CABLES AS NECESSARY TO FULFILL PROJECT GROUNDING REQUIREMENTS. PROVIDE COPPER GROUND PLATES WHERE GROUND RODS CANNOT BE USED. PROVIDE CONNECTIONS TO GROUND ELECTRODES AT A POINT NOT LESS THAN 1 FOOT BELOW GRADE LEVEL, AND NOT LESS THAN 2 FEET AWAY FROM FOOTINGS AND FOUNDATIONS. WELD GROUNDING CONDUCTORS TO UNDERGROUND GROUNDING ELECTRODES WHERE MECHANICAL CONNECTIONS CAN NOT, OR SHOULD NOT, BE UTILIZED.

PART 3 - EXECUTION

3.1 INSTALLATION

A. TERMINATE FEEDER AND BRANCH CIRCUIT INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH GROUNDING LUG, BUS, OR BUSHING. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND AND PROTECTIVE DEVICES IN SHORTEST AND STRAIGHTEST PATHS AS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.

B. INSTALL CLAMP-ON CONNECTORS ON CLEAN METAL CONTACT SURFACES, TO ENSURE ELECTRICAL CONDUCTIVITY AND CIRCUIT INTEGRITY.

C. PROVIDE CORROSION-RESISTANT FINISH TO FIELD-CONNECTIONS, TO PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DAMAGED, AND WHERE SUBJECT TO CORROSIVE ACTION.

D. ROUTE GROUND CONDUCTORS USED FOR BONDING IN PROTECTIVE CONDUIT SLEEVES. PROVIDE BOTH ENDS OF THESE CONDUIT SLEEVES WITH GROUND BUSHINGS, AND BOND GROUND BUSHINGS TO ENCLOSURES AND GROUND TERMINATIONS AT BOTH ENDS USING JUMPERS. SIZE GROUND JUMPER CONDUCTORS THE SAME AS THE RESPECTIVE GROUND CONDUCTOR THAT IS BEING PROTECTED WITHIN THE RESPECTIVE CONDUIT.

E. PROVIDE CORROSION-RESISTANT FINISH TO BURIED METALLIC GROUNDING AND BONDING PRODUCTS.

F. TERMINATE GROUND ELECTRODE CONDUCTORS WITH TWO-HOLE COMPRESSION LUGS. TERMINATE BONDING JUMPER CONDUCTORS WITH ONE-HOLE COMPRESSION LUGS.

G. INSTALL BRAIDED TYPE BONDING JUMPERS WITH GROUND CLAMPS ON VALVED WATER PIPING WHERE SUCH PIPING PENETRATES EXTERIOR WALLS AND FIRE WALLS. INSTALL WATER PIPE CONNECTOR FITTINGS SO THAT THEY MAKE CONTACT WITH THE WATER PIPE FOR A MINIMUM DISTANCE OF 1-1/2 INCHES (MEASURED ALONG THE AXIS), AND HAVE A MINIMUM CONTACT SURFACE AREA OF 3 SQUARE INCHES.

H. EQUALIZE (BOND TOGETHER) GROUND POTENTIALS ASSOCIATED WITH THE ELECTRICAL DISTRIBUTION SYSTEM, SEPARATELY DERIVED SYSTEMS, STEEL STRUCTURAL SYSTEMS, AND WATER SERVICES PER NEC AND AS APPLICABLE.

I. SERVICE ENTRANCE GROUNDING REQUIREMENTS

1. PROVIDE A PARITY SIZED INSULATED GROUNDED CONDUCTOR (NEUTRAL) FOR EACH SET OF SERVICE ENTRANCE FEEDER PHASE/LINE CONDUCTORS, TERMINATED AND BONDED TO SERVICE EQUIPMENT. THIS APPLIES WHETHER OR NOT DOWNSTREAM LOADS REQUIRE A NEUTRAL CONDUCTOR. INSTALL THESE NEUTRAL CONDUCTORS UNSPLICED AND UNBROKEN.
2. CONNECT GROUNDING ELECTRODE CONDUCTORS TO 1-INCH DIAMETER, OR GREATER, METALLIC COLD WATER PIPE AT SERVICE ENTRANCE USING A SUITABLY SIZED GROUND CLAMP. PROVIDE CONNECTIONS TO FLANGED PIPING AT STREET SIDE OF FLANGE. GROUND ELECTRICAL SERVICE SYSTEM NEUTRAL AT SERVICE ENTRANCE EQUIPMENT TO GROUNDING ELECTRODES. INSTALL BRAIDED TYPE BONDING JUMPERS WITH CODE-SIZED GROUND CLAMPS ON WATER METER PIPING TO ELECTRICALLY BYPASS WATER METERS AND WATER SERVICE ENTRANCE VALVES.
3. CONTACT AHJ ELECTRICAL INSPECTOR IN ADVANCE OF INSTALLING SERVICE GROUNDING WORK. DETERMINE LOCALLY APPROVED METHODS THAT MUST BE USED FOR RE-BAR GROUNDING THAT THE AHJ CONSIDERS COMPLIANT WITH NATIONAL ELECTRICAL CODE ARTICLE 250.52.
4. UPON COMPLETION OF INSTALLATION OF ELECTRICAL GROUNDING AND BONDING SYSTEMS, TEST GROUND RESISTANCE WITH GROUND RESISTANCE TESTER. WHERE TESTS SHOW RESISTANCE-TO-GROUND IS OVER 3 OHMS, TAKE APPRO

SPECIFICATIONS - DIVISION 26 - ELECTRICAL (CONTINUED)

SECTION 26 05 33 - RACEWAYS FOR ELECTRICAL SYSTEMS (CONTINUED)

A. PROVIDE CONDUIT FITTINGS WITH INSULATED THROATS, OR PLASTIC BUSHINGS FOR CONDUITS 2" AND LARGER WHERE INSULATED THROATS ARE NOT READILY AVAILABLE.

B. PROVIDE MAXIMUM OF 40 PERCENT FILL FOR RACEWAYS, OR A THRESHOLD OF LESS IF REQUIRED BY NEC.

PART 2 - PRODUCTS

2.1 ELECTRICAL METALLIC TUBING (EMT)

A. PROVIDE GALVANIZED OR ZINC COATED STEEL EMT COMPLIANT WITH FS WW-C-563, ANSI C80.3 AND UL 797.

B. PROVIDE EMT FOR ABOVE-GRADE CONDUIT, EXCEPT WHERE INDICATED OTHERWISE HEREIN, UNDER OTHER DIVISION 26 SECTIONS, OR ON DRAWINGS.

2.2 STEEL RIGID METAL CONDUIT (RMC)

A. PROVIDE RIGID STEEL, HEAVY WALL, FULL WEIGHT, ZINC-COATED, THREADED TYPE (GALVANIZED AFTER CUTTING/THREADING) CONDUIT CONFORMING TO ANSI C80.1 AND UL 6. PROVIDE ZINC COATING FUSED TO INSIDE AND OUTSIDE WALLS OF CONDUIT.

B. PROVIDE GALVANIZED OR ZINC COATED STEEL THREADED FITTINGS.

C. PROVIDE FOR THE FOLLOWING APPLICATIONS.

1. CONDUIT INSTALLED EMBEDDED IN CONCRETE, OR MASONRY.
2. CONDUITS (GROUNDED) THAT TURN UP FROM BELOW GRADE OR BELOW SLAB, EXCLUDING THE 90 DEGREE FITTINGS THAT CONNECT TO HORIZONTAL CONDUITS BELOW GRADE OR SLAB.
3. OTHER APPLICATIONS AS INDICATED IN PROJECT MANUAL OR ON DRAWINGS, AS REQUIRED BY NEC, OR AS OTHERWISE REQUIRED FOR SPECIAL PHYSICAL PROTECTION (I.E. NEARBY VEHICULAR/EQUIPMENT TRAFFIC, SITE MAINTENANCE EQUIPMENT, ETC.).

2.3 PVC COATED STEEL RIGID METAL CONDUIT (PVC/RMC)

A. PROVIDE RIGID STEEL, HEAVY WALL, FULL WEIGHT, THREADED TYPE (GALVANIZED AFTER CUTTING/THREADING INSIDE AND OUT) PVC COATED CONDUIT CONFORMING TO UL 6 STANDARD FOR SAFETY, RIGID METAL CONDUIT, AND UL514B STANDARD FOR SAFETY, FITTINGS FOR CONDUIT AND OUTLET BOXES

B. THE PVC COATED GALVANIZED RIGID CONDUIT MUST BE ETL VERIFIED TO THE INTERTEK ETL SEMKO HIGH TEMPERATURE H2O PVC COATING ADHESION TEST PROCEDURE FOR 200 HOURS. THE PVC COATED GALVANIZED RIGID CONDUIT MUST BEAR THE ETL VERIFIED PVC-001 LABEL TO SIGNIFY COMPLIANCE TO THE ADHESION PERFORMANCE STANDARD.

C. PROVIDE FOR APPLICATIONS SPECIFICALLY DESIGNATED ON DRAWINGS.

2.4 FLEXIBLE METAL CONDUIT (FMC)

A. PROVIDE FLEXIBLE METAL CONDUIT COMPLIANT WITH FS WW-C-566 AND UL 1, AND FORMED FROM CONTINUOUS LENGTH OF SPIRALLY WOUND, INTERLOCKED ZINC-COATED OR GALVANIZED (INSIDE & OUTSIDE) STRIP STEEL. PROVIDE CONDUIT FITTINGS FOR USE WITH FLEXIBLE STEEL CONDUIT OF THREADLESS HINGED CLAMP TYPE, WITH INSULATED THROATS. PROVIDE STRAIGHT TERMINAL CONNECTORS CONSISTING OF ONE PIECE BODY, FEMALE END WITH CLAMP AND DEEP SLOTTED MACHINE SCREW FOR SECURING CONDUIT, AND MALE THREADED END WITH LOCKNUT. DO NOT USE 45 DEGREE OR 90 DEGREE TERMINAL ANGLE CONNECTORS FOR FLEXIBLE OR WATER-TIGHT FLEXIBLE METAL CONDUIT IN LOCATIONS THAT WILL NOT BE FULLY ACCESSIBLE AFTER COMPLETION OF CONSTRUCTION. PROVIDE FULL SIZE GREEN INSULATED GROUND WIRE FOR ALL APPLICATIONS, REGARDLESS OF LENGTH. PROVIDE FLEXIBLE METAL CONDUIT FOR THE FOLLOWING CONDITIONS AS APPLICABLE.

1. PROVIDE FOR FINAL 72 INCHES FROM OUTLET/JUNCTION BOXES TO RECESSED LUMINAIRES THAT ARE LOCATED IN ACCESSIBLE CEILING SYSTEMS. OPTIONALLY, TYPE AC/MC CABLE MAY BE USED FOR "FIXTURE WHIPS" (REFER TO SECTION 26 05 19).
2. PROVIDE FOR FINAL 24-72 INCHES OF CONNECTION TO INDOOR EQUIPMENT THAT IS SUBJECT TO MOVEMENT OR VIBRATION. LEAVE SUFFICIENT SLACK IN FLEXIBLE CONDUIT TO PERMIT MOVEMENT FROM VIBRATION WITHOUT ADVERSELY AFFECTING CONDUITS AND CONNECTIONS.

PART 3 - EXECUTION

A. GENERAL

1. PROVIDE CONDUIT, TUBING AND FITTINGS OF TYPES, GRADES, SIZES AND WEIGHTS (WALL THICKNESSES) FOR APPLICATIONS AS NEEDED TO RENDER ELECTRICAL WORK FULLY OPERATIONAL..
2. PROPERLY SUPPORT AND ANCHOR RACEWAYS FOR THEIR ENTIRE LENGTH USING STRUCTURAL MATERIALS. DO NOT SPAN ANY SPACE UNSUPPORTED.

END OF SECTION

SECTION 26 05 34 - BOXES AND FITTINGS FOR ELECTRICAL SYSTEMS

PART 1 - PRODUCTS

1.1 INDOOR BOXES

A. PROVIDE MINIMUM SIZE OF 4 INCHES SQUARE BY 1-1/2 INCHES DEEP FOR OUTLET BOXES AND JUNCTION BOXES. PROVIDE OUTLET BOX ACCESSORIES AS REQUIRED FOR EACH INSTALLATION, INCLUDING BOX SUPPORTS, MOUNTING EARS AND BRACKETS, WALLBOARD HANGERS, BOX EXTENSION RINGS, FIXTURE STUDS, CABLE CLAMPS, AND METAL STRAPS FOR SUPPORTING OUTLET BOXES, WHICH ARE COMPATIBLE WITH OUTLET BOXES BEING USED TO FULFILL INSTALLATION REQUIREMENTS FOR INDIVIDUAL WIRING SITUATIONS. PROVIDE WITH STAINLESS STEEL NUTS, BOLTS, SCREWS AND WASHERS.

1.2 FIRE WALLS, FIRE BARRIERS, SMOKE BARRIER WALLS AND FIRE PARTITIONS

A. STEEL OUTLET BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA MAY BE USED IN FIRE WALLS, FIRE BARRIERS, SMOKE BARRIER WALLS, AND FIRE PARTITIONS ONLY IF THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.

B. PROVIDE A MINIMUM OF 24 INCHES OF SEPARATION BETWEEN OUTLET BOXES ON OPPOSITE SIDES OF A COMMON WALL.

C. PROVIDE OUTLET BOXES, EQUIPMENT BACK-BOXES, ETC. IN FIRE WALLS, FIRE BARRIERS, SMOKE BARRIER WALLS, AND FIRE PARTITIONS THAT ARE OF THE TYPE TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES. INSTALL IN ACCORDANCE WITH THE TESTED ASSEMBLY, AND WITH THE INSTRUCTIONS INCLUDED IN THE LISTING.

1.3 DAMP AND WET LOCATION OUTLET BOXES AND COVERS

A. PROVIDE CORROSION-RESISTANT WEATHERTIGHT/RAINTIGHT OUTLET WIRING BOXES, OF TYPES, SHAPES AND SIZES, INCLUDING DEPTH OF BOXES, WITH THREADED CONDUIT HOLES FOR FASTENING ELECTRICAL CONDUIT, SUITABLY CONFIGURED FOR EACH APPLICATION, INCLUDING FACE PLATE GASKETS AND CORROSION-RESISTANT PLUGS AND FASTENERS. PROVIDE WEATHERTIGHT OUTLETS FOR INTERIOR AND EXTERIOR LOCATIONS EXPOSED TO WEATHER OR MOISTURE, I.E. IN DAMP OR WET LOCATIONS.

B. PROVIDE MINIMAL PROFILE ASSEMBLIES THAT ARE RATED NEMA 3R WHILE IN USE AND THAT EMPLOY RECESSED BOX AND COVER DESIGN, EQUAL TO THOMAS & BETTS "RED DOT" SERIES. PROVIDE TRIM COLOR(S) AS DIRECTED BY ARCHITECT.

PART 2 - EXECUTION

2.1 INSTALLATION

A. INSTALL ELECTRICAL BOXES IN THOSE LOCATIONS THAT ENSURE ACCESSIBILITY TO ENCLOSED ELECTRICAL WIRING.

B. DO NOT INSTALL ALUMINUM PRODUCTS IN CONCRETE.

C. CONSIDER THE OUTLET, JUNCTION, AND PULL BOX LOCATIONS INDICATED ON DRAWINGS APPROXIMATE. STUDY THE GENERAL CONSTRUCTION WITH RELATION TO SPACES AND EQUIPMENT SURROUNDING EACH OUTLET, AND NEATLY INSTALL OUTLETS ACCORDINGLY.

END OF SECTION

SECTION 26 05 80 - MECHANICAL EQUIPMENT

PART 1 - GENERAL

1.1 RELATED WORK

A. 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 NEC. 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.

PART 2 - EXECUTION

2.1 INSTALLATION

A. GENERAL

1. PROVIDE DISCONNECT SWITCH AHEAD OF ALL EQUIPMENT, INCLUDING CONTROLS, UNLESS THE MECHANICAL EQUIPMENT COMES WITH INTEGRAL NEC-COMPLIANT DISCONNECT(S). PROVIDE NEMA 3R ENCLOSURES WHERE INSTALLED OUTDOORS AND WHERE INSTALLED INDOORS IN AREAS SUBJECT TO MOISTURE. GROUND METAL FRAMES OF EQUIPMENT BY CONNECTING FRAMES TO THE GROUNDED METAL RACEWAY OR TO A FULL SIZE GREEN GROUND CONDUCTOR OR BOTH. PROVIDE THE NECESSARY ELECTRICAL CONNECTIONS BETWEEN THE SPECIFIED EQUIPMENT AND THE JUNCTION BOX NEAR EQUIPMENT WITH FLEXIBLE METALLIC CONDUIT (LIQUID-TIGHT OUTDOORS) AND MATCHED CONNECTORS (SEE SECTION 26 05 33). WHERE MECHANICAL EQUIPMENT LUGS CANNOT ACCOMMODATE CONDUCTOR SIZES SHOWN ON DRAWINGS, PROVIDE ILSCO CLEARTAP INSULATED MULTI-TAP CONNECTORS.
2. SIZES, ELECTRICAL RATINGS, ETC. OF EQUIPMENT AND WIRING SHOWN ON DRAWINGS ARE BASED ON THE RESPECTIVE EQUIPMENT DESIGN BASE MANUFACTURERS. IF DIFFERENT MANUFACTURER(S) OR MODEL(S) ARE ACTUALLY SUPPLIED, PROVIDE NECESSARY COORDINATION IN FIELD (PRIOR TO ORDERING MATERIALS AND PRIOR TO ROUGH-IN) AND PROVIDE THE NECESSARY SIZE OF RELATED ELECTRICAL EQUIPMENT, WIRING, CONDUIT, ETC.
3. PRIOR TO FURNISHING SUBMITTALS AND PRIOR TO ROUGH-IN, DETERMINE EXACT ELECTRICALLY RELATED CHARACTERISTICS, LOADS, VOLTAGES, DISCONNECT AND STARTER REQUIREMENTS, LOCATIONS, MOUNTING HEIGHTS, CONNECTION POINTS, ETC. OF MECHANICAL EQUIPMENT.

B. HACR BREAKERS

1. COORDINATE IN FIELD WITH THE RESPECTIVE TRADES AND DETERMINE CASE BY CASE, WHICH EQUIPMENT IS FACTORY LISTED FOR USE WITH HEATING AND AIR CONDITIONING RATED (HACR) BREAKERS. IN AN EFFORT TO MINIMIZE REQUIREMENTS FOR STOCKING OF FUSES BY THE OWNER, UTILIZE HACR BREAKERS AT THE SOURCE PANELBOARDS AS THE NEC REQUIRED OVERCURRENT PROTECTION WHEREVER POSSIBLE (IN LIEU OF FUSING LOCAL DISCONNECT SWITCHES).

C. DISCONNECT SWITCH AND STARTER LOCATIONS

1. LOCATIONS OF DISCONNECTS AND STARTERS SHOWN ON DRAWINGS ARE INDICATED FOR SCHEMATIC PURPOSES ONLY. DETERMINE EXACT LOCATIONS IN FIELD SO THAT THEY ARE COMPLIANT WITH NEC ARTICLE 110 REQUIREMENTS FOR PANELBOARDS.
2. COMMERCIAL KITCHEN EXHAUST HOODS AND RELATED FAN EQUIPMENT
   a. SEE DETAILS ON DRAWINGS.
   b. REFER TO FOOD SERVICE DRAWINGS, FOOD SERVICE SPECIFICATIONS AND MANUFACTURER'S SUBMITTALS FOR SPECIFIC INFORMATION. FIELD COORDINATE WORK WITH AFFECTED ENTITIES.
   c. PROVIDE INTERLOCK WIRING AND CONNECTIONS TO AND FROM THE VARIOUS EQUIPMENT AND CONTROLS.
   d. PROVIDE CONTROL WIRING FROM THE FAN UNITS TO RESPECTIVE REMOTE DUCT STATS.
   e. PROVIDE AUXILIARY CONTROL CIRCUIT WIRING FROM THE FACTORY MICRO-SWITCH IN THE HOOD FIRE SUPPRESSION SYSTEMS TO RESPECTIVE DEDICATED FIRE ALARM SYSTEM MONITOR MODULES TO INITIATE ALARM SIGNAL WHEN RESPECTIVE HOOD FIRE PROTECTION SYSTEM IS ACTIVATED.
   f. PROVIDE AUXILIARY CONTROL CIRCUIT WIRING FROM THE FACTORY MICRO-SWITCH IN THE HOOD FIRE SUPPRESSION SYSTEM TO CONTACTOR CONTROL COIL(S).
   g. PROVIDE EMPTY OCTAGON BOX FOR MECHANICAL MANUAL PULL STATION (AND INSTALL PULL STATION) FOR EACH HOOD FIRE PROTECTION SYSTEM (MOUNTED AT 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET BOX) WITH (1) 1/2" EMPTY CONDUIT ROUTED UP AND OVER TO HOOD AS DIRECTED BY HOOD INSTALLER IN FIELD (W/SWEEP 90'S). FIELD VERIFY LOCATION.
   h. PROVIDE INTERLOCK CONTROL WIRING BETWEEN GAS SOLENOID SHUT OFF VALVES AND RESPECTIVE KITCHEN HOOD FIRE SUPPRESSION SYSTEM. COORDINATE WITH AFFECTED INSTALLERS.

END OF SECTION

SECTION 26 24 16 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED WORK

A. TYPES OF PANELBOARDS AND ENCLOSURES REQUIRED FOR THE PROJECT INCLUDE THE FOLLOWING.

1. POWER-DISTRIBUTION PANELBOARDS.
2. GENERAL USE PANELBOARDS.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PANELBOARD PRODUCTS OF ONE OF THE FOLLOWING (FOR EACH TYPE AND RATING OF PANELBOARD AND ENCLOSURE):

1. SQUARE D COMPANY.
2. GENERAL ELECTRIC COMPANY.
3. SIEMENS/ITE.
4. EATON.

2.2 GENERAL REQUIREMENTS

A. EXCEPT AS OTHERWISE INDICATED, PROVIDE PANELBOARDS, ENCLOSURES AND ANCILLARY COMPONENTS, OF TYPES, SIZES, AND RATINGS INDICATED, WHICH COMPLY WITH MANUFACTURER'S STANDARD MATERIALS; WITH THE DESIGN AND CONSTRUCTION IN ACCORDANCE WITH PUBLISHED PRODUCT INFORMATION.

B. PROVIDE PANELBOARDS WITH PROPER NUMBER OF UNIT PANELBOARD DEVICES AS REQUIRED FOR COMPLETE INSTALLATION. WHERE TYPES, SIZES, OR RATINGS ARE NOT INDICATED, COMPLY WITH NEC, UL AND ESTABLISHED INDUSTRY STANDARDS FOR THOSE APPLICATIONS INDICATED.

C. PROVIDE PANELBOARDS THAT ARE NEW AND MANUFACTURER'S LATEST STANDARD CATALOG DESIGN.

D. PROVIDE PANELBOARDS THAT BEAR UL LABELS FOR THEIR SPECIFIC APPLICATIONS.

E. PROVIDE PANELBOARDS SUITABLE FOR SERVICE VOLTAGE WITH NUMBER OF BRANCH CIRCUITS OF CAPACITY SCHEDULED.

F. PROVIDE PANELBOARDS, AND SECTIONS THEREOF IF APPLICABLE, WITH MAIN-LUGS-ONLY OF CAPACITY EQUAL TO, OR GREATER THAN, THE RATING OR SETTING OF THE OVERCURRENT PROTECTIVE DEVICE NEXT BACK ON THE LINE.

G. PROVIDE PANELBOARD BRANCHES AS SCHEDULED ON THE DRAWINGS.

H. PROVIDE CIRCUIT BREAKER PANELBOARD BUS ASSEMBLIES WITH DISTRIBUTED (SEQUENCE) TYPE BUSSING THROUGHOUT, SO THAT ANY TWO ADJACENT SINGLE-POLE BREAKERS, OR SPACES, ARE REPLACEABLE BY A TWO-POLE INTERNAL COMMON TRIP BREAKER, AND SO THAT ANY THREE ADJACENT SINGLE-POLE BREAKERS, OR SPACES, ARE REPLACEABLE BY A THREE-POLE INTERNAL COMMON TRIP BREAKER. THIS APPLIES FOR BRANCH BREAKERS SIZED 15 AMP THROUGH 70 AMP INCLUSIVE, WITHOUT DISTURBING ANY OTHER BREAKER.

I. PROVIDE PANELBOARDS THAT ARE UL LISTED AND LABELED FOR USE AS SERVICE ENTRANCE EQUIPMENT.

J. PROVIDE DEAD-FRONT SAFETY TYPE PANELBOARDS AS INDICATED, WITH PANELBOARD SWITCHING AND PROTECTIVE DEVICES IN QUANTITIES, RATINGS, TYPES, AND WITH ARRANGEMENT SHOWN. PROVIDE WITH ANTI-TURN SOLDERLESS PRESSURE TYPE MAIN LUG CONNECTORS APPROVED FOR USE WITH COPPER OR ALUMINUM CONDUCTORS.

K. PROVIDE FULL-SIZED (100 PERCENT) NEUTRAL BUS. PROVIDE SUITABLE LUGS ON NEUTRAL BUS FOR OUTGOING FEEDERS REQUIRING NEUTRAL CONNECTIONS.

L. PROVIDE PANELBOARDS WITH BARE UNINSULATED GROUNDING BARS SUITABLE FOR BOLTING TO ENCLOSURES.

2.3 GENERAL USE CIRCUIT BREAKER PANELBOARDS

A. PROVIDE 208Y/120V THREE-PHASE GENERAL USE PANELBOARDS EQUAL TO SQUARE D NQOD WITH BOLT-ON BRANCH BREAKERS.

B. PROVIDE 120/240V SINGLE-PHASE GENERAL USE PANELBOARDS EQUAL TO SQUARE D NQOD WITH BOLT-ON BRANCH BREAKERS.

C. PROVIDE 240V THREE-PHASE DELTA GENERAL USE PANELBOARDS EQUAL TO SQUARE D NQOD WITH BOLT-ON BRANCH BREAKERS.

D. PROVIDE 480Y/277V THREE-PHASE GENERAL USE PANELBOARDS EQUAL TO SQUARE D NF WITH BOLT-ON BRANCH BREAKERS.

2.4 BUSSING

A. PROVIDE COPPER BUSSING.

2.5 CIRCUIT BREAKER PANELBOARD ENCLOSURES

A. PROVIDE GALVANIZED SHEET STEEL CABINET TYPE ENCLOSURES, IN SIZES AND NEMA TYPES AS INDICATED, CODE-GAGE, MINIMUM 16-GAGE THICKNESS.

B. PROVIDE BOXES WITH CODE-COMPLIANT SIDE AND END GUTTERS (MINIMUM 4 INCHES), AND OF CODE GAUGE GALVANIZED STEEL. PROVIDE BOXES THAT ARE 20 INCHES WIDE MINIMUM, AND 5-3/4 INCHES DEEP MINIMUM. PROVIDE BOXES WITH MULTIPLE KNOCKOUTS AND WIRING GUTTERS.

C. PROVIDE PANELBOARD TRIMS THAT ARE FLUSH OR SURFACE AS REQUIRED FOR RESPECTIVE APPLICATION, THAT ARE CONSTRUCTED OF CODE GAUGE STEEL, THAT ARE FINISHED WITH RUST INHIBITING PRIME COAT AND THEN FACTORY APPLIED HOT SPRAY LACQUER OR BAKED-ON ENAMEL, AND THAT ARE FACTORY PAINTED MANUFACTURER'S STANDARD LIGHT GRAY. PROVIDE TRIMS COMPLETE WITH CONCEALED HINGES AND CONCEALED TRIM CLAMPS. PROVIDE DOORS WITH FLUSH CHROMIUM PLATED COMBINATION CYLINDER LOCK AND CATCH, AND WITH DIRECTORY SUITABLE FOR CLEAR PLASTIC. PROVIDE LOCKS THAT ARE KEYED ALIKE.

D. PROVIDE ENCLOSURES THAT ARE FABRICATED BY SAME MANUFACTURER AS PANELBOARDS, WHICH MATE AND MATCH PROPERLY WITH PANELBOARDS TO BE ENCLOSED.

2.6 MOLDED CASE CIRCUIT BREAKERS

A. PROVIDE FACTORY-ASSEMBLED, MOLDED-CASE CIRCUIT BREAKERS OF FRAME SIZES, CHARACTERISTICS, AND RATINGS INCLUDING RMS SYMMETRICAL INTERRUPTING RATINGS REQUIRED FOR EACH APPLICATION. PROVIDE BREAKERS WITH PERMANENT THERMAL AND INSTANTANEOUS MAGNETIC TRIP, WITH FAULT-CURRENT LIMITING PROTECTION, AND WITH AMPERE RATINGS AS INDICATED.

B. PROVIDE COORDINATED SERIES-RATED CIRCUIT BREAKERS AS APPLICABLE THROUGHOUT, ACCOMMODATING RESPECTIVE AVAILABLE FAULT CURRENT.

C. PROVIDE BREAKERS THAT ARE DESIGNED TO BE MOUNTED AND OPERATED IN ANY PHYSICAL POSITION, AND TO BE OPERATED IN A MINIMUM AMBIENT TEMPERATURE OF 40 DEGREES C. PROVIDE BREAKERS WITH MECHANICAL SCREW TYPE REMOVABLE CONNECTOR LUGS, AL/CU RATED.

D. PROVIDE BRANCH CIRCUIT BREAKERS THAT ARE FULL AMBIENT COMPENSATED THERMAL MAGNETIC MOLDED CASE TYPE, WITH QUICK-MAKE AND QUICK-BREAK ACTION, AND WITH POSITIVE HANDLE TRIP INDICATION (ON BOTH MANUAL AND AUTOMATIC OPERATION). PROVIDE BREAKERS OF THE OVER-THE-CENTER TOGGLE OPERATING TYPE WITH THE HANDLE GOING TO A POSITION BETWEEN "ON" AND "OFF" TO INDICATE AUTOMATIC TRIPPING.

E. PROVIDE BOLT-ON BRANCH BREAKERS.

F. PROVIDE FULL SIZE CIRCUIT BREAKERS. DO NOT PROVIDE "TANDEM" OR "SPLIT" BREAKERS.

2.7 FAULT CURRENT RATINGS

A. PROVIDE ELECTRICAL DISTRIBUTION RELATED EQUIPMENT WITH APPROPRIATELY BRACED BUSSING AND PROPERLY RATED BREAKERS, FUSES, ETC. FOR THE AVAILABLE FAULT CURRENTS.

B. IN EXISTING BUILDINGS WHERE FAULT CURRENT VALUES ARE NOT INDICATED ON DRAWINGS, COORDINATE WITH EXISTING "UPSTREAM" DISTRIBUTION EQUIPMENT, AND PROVIDE EQUIPMENT AIC RATINGS THAT MEET OR EXCEED SAME.

PART 3 - EXECUTION

3.1 INSTALLATION

A. PROVIDE ENCLOSURES FASTENED FIRMLY TO WALLS AND STRUCTURAL SURFACES, ENSURING THAT THEY ARE PERMANENTLY AND MECHANICALLY ANCHORED.

B. PROVIDE NEATLY TYPEWRITTEN CIRCUIT DIRECTORY CARD FOR EACH PANELBOARD UPON COMPLETION OF INSTALLATION WORK. INCLUDE THE ACTUAL ROOM NAMES/NUMBERS THAT ARE SELECTED FOR INTERIOR SIGNAGE/DESIGNATION.

C. SCHEDULING SHOWN ON DRAWINGS IS SHOWN TO INDICATE FEEDER AND BRANCH CIRCUITING REQUIREMENTS. DETERMINE EXACT NUMBERING SEQUENCE OF CIRCUITS IN FIELD AFTER PERFORMING FINAL BALANCING.

END OF SECTION

SECTION 26 27 26 - WIRING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. PROVIDE WIRING DEVICES, IN TYPES, CHARACTERISTICS, GRADES, COLORS, AND ELECTRICAL RATINGS FOR APPLICATIONS INDICATED WHICH ARE UL LISTED AND WHICH COMPLY WITH NEMA WD 1 AND OTHER APPLICABLE UL AND NEMA STANDARDS. VERIFY COLOR SELECTIONS WITH OWNER'S REPRESENTATIVE.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING.

SWITCHES:	LEVITON, HUBBELL, BRYANT, PASS & SEYMOUR, COOPER
DIMMERS:	LUTRON
RECEPTACLES:	LEVITON, HUBBELL, BRYANT, PASS & SEYMOUR, COOPER
WALL PLATES:	LEVITON, HUBBELL, BRYANT, PASS & SEYMOUR, COOPER

2.2 WIRING DEVICE COLORS

A. PROVIDE WHITE COLOR FOR ALL NORMAL UTILITY WIRING DEVICES UNLESS NOTED BELOW:

1. PROVIDE STAINLESS STEEL FOR ALL RECEPTACLES, JUNCTIONS BOXES, AND SWITCHPLATES INSTALLED IN THE KITCHEN WORK AREA AND PREP/STORAGE ROOMS WHERE STAINLESS STEEL OR TILE IS THE WALL FINISH.
2. PROVIDE BLACK FOR ALL RECEPTACLES AND JUNCTION BOXES INSTALLED WHERE THE WALL OR CEILING FINISH IS BLACK IN COLOR.

2.3 SPECIFICATION GRADE RECEPTACLES

A. STANDARD SPECIFICATION GRADE DUPLEX/SINGLE RECEPTACLES

1. PROVIDE DUPLEX RECEPTACLES EQUAL TO LEVITON #5342 SERIES. FOR RECEPTACLE CIRCUITS PROTECTED WITH 15A BREAKERS, PROVIDE NEMA 5-15R EQUIVALENTS. PROVIDE RECEPTACLES EQUAL TO LEVITON #5361 SERIES FOR SIMPLEX (SINGLE) APPLICATIONS.

B. GROUND-FAULT INTERRUPTER SPECIFICATION GRADE RECEPTACLES

1. PROVIDE GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLES EQUAL TO LEVITON #8898 SERIES. FOR RECEPTACLE CIRCUITS PROTECTED WITH 15A BREAKERS, PROVIDE NEMA 5-15R EQUIVALENTS.
2. RECEPTACLES INDICATED AS GFI MAY BE GFI-PROTECTED BY AN UPSTREAM GFI RECEPTACLE ON THE SAME CIRCUIT ONLY IF LOCATED IN THE SAME ROOM. OTHERWISE PROVIDE A SEPARATE GFI RECEPTACLE FOR EACH ONE SHOWN.

C. ISOLATED GROUND SPECIFICATION GRADE RECEPTACLES

1. PROVIDE DUPLEX ISOLATED GROUND RECEPTACLES EQUAL TO LEVITON #5362-IG. PROVIDE SIMPLEX (SINGLE) ISOLATED GROUND RECEPTACLES EQUAL TO LEVITON #5361-IG. FOR RECEPTACLE CIRCUITS PROTECTED WITH 15A BREAKERS, PROVIDE NEMA 5-15R EQUIVALENTS. PROVIDE DEDICATED INSULATED ISOLATED GROUND CONDUCTORS (GREEN WITH YELLOW TRACER) FOR EACH APPLICATION.

D. WEATHER RESISTANT GFCI RECEPTACLES

1. PROVIDE DUPLEX WEATHER RESISTANT RECEPTACLES EQUAL TO LEVITON # W7899 SERIES. FOR RECEPTACLE CIRCUITS PROTECTED WITH 15A BREAKERS, PROVIDE NEMA 5-15R EQUIVALENTS.

2.4 WIRING DEVICE ACCESSORIES

A. WALL PLATES

1. PROVIDE SINGLE AND COMBINATION, OF TYPES, SIZES, AND WITH GANGING AND CUTOUTS AS REQUIRED TO ACCOMMODATE EACH APPLICATION. PROVIDE PLATES WHICH MATE AND MATCH WITH WIRING DEVICES TO WHICH ATTACHED. PROVIDE METAL SCREWS FOR SECURING PLATES TO DEVICES WITH SCREW HEADS COLORED TO MATCH FINISH OF PLATES. PROVIDE WALL PLATE COLOR TO MATCH WIRING DEVICES UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. PROVIDE STANDARD SIZE WALL PLATES. DO NOT PROVIDE "MIDWAY", "OVERSIZED" ("JUMBO") OR "EXTRA DEEP" WALL PLATES.
3. PROVIDE COMMERCIAL SPECIFICATION GRADE THERMOPLASTIC WALL PLATES IN FINISHED AREAS.
4. PROVIDE STAINLESS STEEL FOR ALL COVER PLATES ON WALLS FEATURING FINISH TL-101 AND FRP.
5. PROVIDE BLACK COVER PLATES IN RESTROOMS AND HALLWAYS.
6. PROVIDE WHITE COVER PLATES AT AREAS WITH FINISH PT-106, FINISH PT-107, AND BRICK WAINSCOT.

PART 3 - EXECUTION

3.1 INSTALLATION

A. PROVIDE GROUNDED ("NEUTRAL") CONDUCTOR IN ALL LIGHTING CONTROL DEVICE (SWITCH, DIMMER, OCCUPANCY SENSOR, ETC.) WALL OUTLET BOXES, EVEN IF NOT IMMEDIATELY USED.

B. INSTALL RECEPTACLES SO THAT THE GROUND PIN IS ORIENTED IN A CONSISTENT MANNER THROUGHOUT THE FACILITY, SO THAT THE ORIENTATION IS COMPLIANT WITH ALL PREVAILING CODES AND REGULATIONS, AND SO THAT THE ORIENTATION IS ACCEPTABLE TO THE ELECTRICAL INSPECTOR.

END OF SECTION

SECTION 26 27 40 - DISCONNECTS, STARTERS, CONTACTORS

PART 1 - GENERAL

1.1 RELATED WORK

A. PROVIDE NEMA STANDARD EQUIPMENT, INCLUDING THOSE INCORPORATED AS AN INTEGRAL PART OF A FACTORY/SHOP PRE-FABRICATED PIECE OF EQUIPMENT. DO NOT USE IEC STANDARDS FOR EQUIPMENT.

B. PROVIDE UNITS AS INDICATED ON DRAWINGS AND AS INDICATED UNDER DIVISION 26 SECTIONS.

PART 2 - PRODUCTS

2.1 MATERIALS

A. DISCONNECT SWITCHES

1. PROVIDE DISCONNECT SWITCHES EQUAL TO SQUARE D TYPE HD, HEAVY DUTY, SAFETY TYPE, QUICK MAKE AND QUICK BREAK AND EXTERNALLY OPERATED.
2. PROVIDE FUSIBLE DISCONNECTS UNLESS NOTED OTHERWISE ON DRAWINGS OR DIRECTED OTHERWISE IN FIELD.
3. PROVIDE DISCONNECT SWITCHES BRACED FOR 200,000 A.I.C.
4. PROVIDE UNITS WITH FUSES OF CLASSES AND CURRENT RATINGS INDICATED, AND UL LISTED FOR USE AS SERVICE EQUIPMENT UNDER UL STANDARD 98 OR 869. SEE SECTION "FUSES" FOR FUSE SPECIFICATIONS. WHERE CURRENT LIMITING FUSES ARE INDICATED, PROVIDE SWITCHES WITH NON-INTERCHANGEABLE FEATURE SUITABLE ONLY FOR CURRENT LIMITING TYPE FUSES.
5. INSTALL DISCONNECT SWITCHES WITHIN SIGHT OF CONTROLLER POSITION UNLESS OTHERWISE INDICATED.

PART 3 - EXECUTION

3.1 INSTALLATION

A. PROVIDE UNITS WITH HORSEPOWER RATINGS SUITABLE TO THE LOADS. SIZE UNITS ACCORDING TO LOAD BEING SERVED OR AS NOTED ON DRAWINGS, WHICHEVER REQUIREMENT IS LARGER. INSTALL OVERLOADS AND FUSES AS NECESSARY TO FULFILL REQUIREMENTS OF EACH APPLICATION.

B. FURNISH ADDITIONAL FUSES/OVERLOADS AMOUNTING TO 10 PERCENT OF FUSES PROVIDED, BUT NOT LESS THAN ONE SET OF 3 OF EACH KIND, FOR REQUIRED TYPES AND RATINGS.

C. PROVIDE NEMA 3R ENCLOSURES FOR UNITS THAT ARE INSTALLED OUTDOORS, IN MOIST AREAS, AND IN OTHER ATMOSPHERES SUBJECT TO SIMILAR MOISTURE OR EXPOSURE.

END OF SECTION

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AOR PROJECT NUMBER:
CAV029

ISSUE	DATE
PERMIT REV	04.15.25
IFC SET	06.23.25

SPECIFICATIONS ELECTRICAL

SHEET:
E702

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PLUMBING VALVES:

- SOLENOID VALVE
- MODULATING 2-WAY VALVE
- BALANCING VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- MIXING VALVE
- FLOAT OPERATED VALVE
- GATE VALVE
- GLOBE VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- SAFETY RELIEF VALVE
- DOUBLE CHECK VALVE ASSEMBLY
- REDUCED PRESSURE ZONE VALVE (RPZ) (RP)
- DUAL CHECK VALVE WITH INTERMEDIATE ATMOSPHERIC VENT

PLUMBING SPECIALTIES:

- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- PRESSURE GAUGE
- PRESSURE SWITCH (PS)
- THERMOMETER
- STRAINER, BLOW DOWN
- STRAINER
- EXPANSION LOOP
- EXPANSION JOINT
- WATER HAMMER ARRESTER
- AQUASTAT
- HOSE BIBB/ WALL HYDRANT
- TRAP PRIMER
- VACUUM BREAKER (VB)
- SPILL PROOF VACUUM BREAKER (SPV)

PIPE SYSTEM LINETYPES:

- PIPING OR EQUIPMENT TO BE REMOVED
- PIPING OR EQUIPMENT TO REMAIN
- IWP — INDIRECT WASTE PIPE (IWP)
- GRS — GREY WASTE (GRS)
- GR — GREASE WASTE (GR)
- CV — CLEAR WATER VENT (CV)
- AV — ACID VENT (AV)
- AW — ACID WASTE (AW)
- DT — SUB-SOIL DRAINAGE (DT)
- IRRG — IRRIGATION (IRRIG)
- GRW — GREY WATER (GRW)
- CA — COMPRESSED AIR (CA)
- CW(CITY) — CITY COLD WATER (CW(CITY))
- COLD WATER DOMESTIC (CW)
- CWR — COLD WATER RETURN (CWR)
- SCW — SOFT COLD WATER (SCW)
- GW — GARAGE WASTE (GW)
- HOT WATER DOMESTIC (HW)
- HOT WATER DOMESTIC RETURN (HWR)
- NG — NATURAL GAS (NG)
- NPCW — NON-POTABLE COLD WATER (NPCW)
- OV — OIL VENT (OV)
- PD — PUMP DISCHARGE (PD)
- PW — PURE WATER (PW)
- SAN — SANITARY (SAN)
- ST — STORM (ST)
- STO — STORM OVERFLOW (STO)
- UNDERGROUND PIPING
- V — VENT (V)

PLUMBING FITTINGS:

- 45° ELBOW
- CAP
- 90° ELBOW
- ELBOW DOWN
- ELBOW UP
- TEE
- TEE DOWN
- TEE UP
- LATERAL
- UNION
- FLEXIBLE CONNECTION
- PIPE CONTINUATION
- CLEANOUT (CO)
- FLOOR CLEANOUT (FCO)
- WALL CLEANOUT (WCO)
- FLOOR SINK
- XX DRAIN
  - XX DENOTES THE FOLLOWING
  - (AD) AREA DRAIN
  - (FD) FLOOR DRAIN
  - (HD) HUB DRAIN
  - (RD) ROOF DRAIN

PLUMBING EQUIPMENT:

- SEWAGE EJECTOR (SE)
- BOOSTER PUMP (BP)
- GAS FIRED WATER HEATER - EXTERNAL STORAGE (GWH)
- GAS FIRED WATER HEATER - INTERNAL STORAGE (GWH)
- ELECTRIC WATER HEATER - INTERNAL STORAGE (EWH)
- GAS FIRED WATER HEATER - TANKLESS (GWH)
- WATER METER (M)
- SEPARATOR/ INTERCEPTOR (SEE SCHEDULE FOR ABBREVIATION)
- RECIRCULATION PUMP
- EXPANSION TANK (ET)
- SUMP PUMP (SP)
- BACK WATER VALVE (BW)

GENERAL:

- ## — DRAWING KEYNOTE SYMBOL
- DETAIL NUMBER / SHEET NUMBER — BUILDING SECTION
- DETAIL NUMBER / SHEET NUMBER — BUILDING ELEVATION
- DETAIL NUMBER / SHEET NUMBER — CALLOUT BOUNDARY
- DETAIL NUMBER / SHEET NUMBER — VIEW REFERENCE CALLOUT
- +X' - X" — MOUNTING HEIGHT DESIGNATION

GENERAL ABBREVIATIONS:

A/E	ARCHITECT/ENGINEER
ABV	ABOVE
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISHED GRADE
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
APPROX	APPROXIMATELY
ARCH	ARCHITECT
AVG	AVERAGE
BG	BELOW GRADE
BLDG	BUILDING
CLG	CEILING
DEG-F, °F	DEGREES FAHRENHEIT
DIR	DIRECT
DISC	DISCONNECT
DN	DOWN
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATION REFERENCE
EM	EMERGENCY
EP	EXPLOSION PROOF
F	FLUSH
FBO	FURNISHED BY OTHERS
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLR	FLOOR
FP	FIRE PROTECTION
FS	FLOW SWITCH
GC	GENERAL CONTRACTOR
GRD	GROUND
GYP	GYPSUM BOARD
HVAC	HEATING & VENTILATING - AIR CONDITIONING
HVC	HEATING VENTILATING CONTRACTOR
HW	HEAVYWALL
ID	INDIRECT
IE	INVERT ELEVATION
IL	INTERLOCK
IU	IN UNIT
J-BOX	JUNCTION BOX
LG	LAY-IN GRID
LTG	LIGHTING
LV	LOW VOLTAGE
LVT	LINE VOLTAGE THERMOSTAT
MAX	MAXIMUM
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PC	PLUMBING CONTRACTOR
PLBG	PLUMBING
RM	ROOM
RQD	REQUIRED
SF	SQUARE FEET
SPEC	SPECIFICATION(S)
SURF	SURFACE
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE

RENOVATION LEGEND:

<E>	EXISTING TO REMAIN
<ED>	EXISTING LOCATION, NEW DEVICE OR EQUIPMENT TO BE INSTALLED IN PLACE
<ER>	EXISTING TO BE RELOCATED
<EO>	EXISTING TO BE REMOVED
<EN>	EXISTING IN NEW LOCATION
<N>	NEW
<RAI>	REMAIN AS IS

PLUMBING TAGS:

- MARK / NUMBER — PLUMBING EQUIPMENT TAG
- RISER X / NUMBER — RISER TAG
- PIPE SIZE / ## " XX / SYSTEM ABBREVIATION — PIPE DIMENSION TAG
- POINT OF NEW CONNECTION
- POINT OF DISCONNECTION
- VIEW NUMBER REFERENCE / X | X / SHEET NUMBER — REFERENCE TAG

PLUMBING ABBREVIATIONS:

AD	AREA DRAIN
BFP	BACKFLOW PREVENTER
BP	BOOSTER PUMP
BTU	BRITISH THERMAL UNIT
BTUH	BTU(S) PER HOUR
CO	CLEANOUT
CO2	CARBON DIOXIDE
CPVC	CHLORINATED PVC
CW	COLD WATER
CWR	COLD WATER RETURN
CWFU	COLD WATER FIXTURE UNITS
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DS	DOWNSPOUT
DW	DISH WASHER
ES	EMERGENCY SHOWER
ET	EXPANSION TANK
EVAC	WASTE ANESTHETIC GAS DISPOSAL
EW	EMERGENCY EYE WASH
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FRS	FLUSHING RIM SINK
FS	FLOOR SINK
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HD	HUB DRAIN
HS	HAND SINK
HW	HOT WATER
HWR	HOT WATER RETURN
HWFU	HOT WATER FIXTURE UNITS
IWP	INDIRECT WASTE PIPE
KS	KITCHEN SINK
KW	KILOWATT
LA	LAB AIR
LAV	LAVATORY
LV	LABATORY VACUUM
MB	MOP BASIN
MBH	BTU PER HOUR (THOUSAND
MV	MIXING VALVE
N	NITROGEN
NCP	NITROGEN CONTROL PANEL
ND	NOZZLE DRAIN
NG	NATURAL GAS
NO	NITROUS OXIDE
NPT	NATIONAL PIPE THREAD TAPERED
O	OXYGEN
PEX	CROSS LINKED POLYETHYLENE
POC	POINT OF CONNECTION
PSI	POUNDS PER SQUARE INCH
PSIG	PSI GAUGE
PVC	POLYVINYL CHLORIDE
PW	PURE WATER
RD	ROOF DRAIN
RDO	ROOF DRAIN OVERFLOW
RPM	REVOLUTIONS PER MINUTE
S	SINK
SD	SHOWER DRAIN
SE	SEWAGE EJECTOR
SFU	SUPPLY FIXTURE UNIT
SH	SHOWER
SP	SUMP PUMP
SPR	STANDPIPE RECEPTOR
SS	SERVICE SINK
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
UR	URINAL
VA	VACUUM
VTR	VENT THROUGH ROOF
W	WASTE PIPE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WS	WATER SOFTENER
YCO	YARD CLEANOUT

PLUMBING GENERAL NOTES:

1. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF THE WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY THE ARCHITECT OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

2. FURNISH A CONSTRUCTION RECORD SET OF "AS-BUILT" DOCUMENTS TO THE OWNER REFLECTING ANY VARIANCES OF INSTALLED PIPING LOCATIONS OR EQUIPMENT CONTRARY TO THE CONSTRUCTION DOCUMENTS PREPARED BY THE ENGINEER-OF-RECORD AFTER FINAL INSPECTION OF INSTALLED PLUMBING SYSTEMS.

3. FURNISH TO THE OWNER A COPY OF INSPECTION REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS.

4. PLANS AND SPECIFICATIONS GOVERN WHERE THEY EXCEED CODE REQUIREMENTS. PLUMBING FIXTURES AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE ILLINOIS PLUMBING CODE.

5. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.

6. DO NOT SCALE FLOOR PLANS FOR EXACT HORIZONTAL LOCATION OF PIPE ROUTING.

7. VALVES SHALL BE LINE SIZE UNLESS OTHERWISE NOTED.

8. PIPING IN FINISHED AREAS SHALL BE ROUTED CONCEALED; EXPOSED PIPING, WHERE NECESSARY, SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT TO WALLS.

9. COORDINATE ALL WORK WITH OTHER TRADES AND CONTRACTORS.

10. COORDINATE PIPING INSTALLATION WITH STRUCTURAL GRADE BEAMS, FOOTINGS, COLUMN PIERS, ETC. SLEEVE PIPING THROUGH GRADE BEAMS, FOOTING, ETC. WHERE REQUIRED AND AS NOTED ON PLANS. COORDINATE SLEEVE INSTALLATIONS WITH THE ARCHITECT, STRUCTURAL ENGINEER, STRUCTURAL CONTRACTOR AND GENERAL CONTRACTOR BEFORE CONCRETE IS INSTALLED.

11. CLEAN FAUCET AERATORS, PIPE STRAINERS, AND SNAKE AND CLEAN SANITARY BRANCH LINES SERVING TOILETS PRIOR TO TURNING BUILDING OVER TO THE OWNER.

12. PROVIDE TRAP PRIMERS WHERE REQUIRED BY LOCAL AUTHORITIES.

13. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.

14. PAINT ALL EXPOSED GAS PIPING USING RUST INHIBITOR PAINT. PAINT AND COLOR SHALL BE COORDINATED WITH THE ARCHITECT AND / OR OWNER.

15. COORDINATE ALL ROOF PENETRATIONS WITH OTHER TRADES. MAINTAIN 15' MINIMUM CLEARANCE FROM ALL AIR INTAKES. MAINTAIN 2' CLEARANCE FROM ALL OTHER EQUIPMENT.

16. INSULATE PIPING ROUTED IN EXTERIOR BUILDING WALLS WITH MINIMUM 2" BATT INSULATION TO PREVENT FREEZING. ALL COLD WATER LINES SHALL BE INSULATED WITH MINIMUM OF 3/4" FIBERGLASS INSULATION WITH VAPOR BARRIER. ALL HOT WATER AND HOT WATER RECIRCULATING LINES SHALL BE INSULATED WITH MINIMUM OF 1" INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER IN/HxSFx°F.

17. PROVIDE SHIELDED ADAPTER COUPLINGS FOR CONNECTION OF PVC DWV TO CAST IRON AT SLAB ON GRADE. SEE DIVISION 15 SPECIFICATION SECTION "DRAINAGE AND VENT SYSTEMS" FOR MORE INFORMATION.

18. WATER HAMMER ARRESTORS SHALL BE SIZE "A" UNLESS NOTED OTHERWISE.

19. PROVIDE CHECK VALVES IN HOT AND COLD WATER SUPPLIES FOR MOP SINK FAUCETS DOWNSTREAM OF SHUTOFF VALVES.

20. AIR PIPING MUST BE BLED THOROUGHLY PRIOR TO CONNECTING TO TOOLS OR EQUIPMENT.

21. EXPOSED HOT WATER PIPES AND DRAINPIPES UNDER HANDICAPPED ACCESSIBLE LAVATORIES SHALL BE CONFIGURED OR INSULATED TO PROTECT AGAINST CONTACT.

22. RPZ SHALL BE INSTALLED IN THE POTABLE WATER SUPPLY TO EACH LOCATION WHERE SANITIZING CHEMICALS OR DETERGENTS WILL BE ASPIRATED OR PUSHED BY WATER PRESSURE INTO CLEANSING/SANITIZING OPERATION.

23. DRAINAGE AND VENT SYSTEM SHALL BE PRESSURE TESTED WITH WATER OR AIR.

24. ALL RPZ ASSEMBLIES SHALL BE TESTED AND APPROVED BY A CROSS CONNECTION CONTROL DEVICE INSPECTOR BEFORE INITIAL OPERATION. RECORDS TO VERIFY THIS TESTING SHALL BE AVAILABLE ON SITE.

25. ALL PENETRATIONS OF FLOOR/CEILING ASSEMBLIES SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.

26. ALL DRY VENTS SHALL RISE VERTICALLY TO A MINIMUM OF 6 INCHES ABOVE THE FLOOD LEVEL RIM OF THE HIGHEST TRAP OR TRAPPED FIXTURE BEING VENTED.

27. ALL PLUMBING WORK SHALL FOLLOW 2014 ILLINOIS PLUMBING CODE AND 2018 ILLINOIS ACCESSIBILITY CODE. ALL PLUMBING WORK SHALL BE INSTALLED BY AN ILLINOIS LICENSED PLUMBER.

PLUMBING SHEET INDEX

SHEET NO.	SHEET NAME
P000	PLUMBING GENERAL NOTES, SYMBOLS, & LEGENDS
P101	PLUMBING SANITARY & VENT PLAN
P201	PLUMBING DOMESTIC AND GAS PLAN
P301	PLUMBING RISERS
P401	PLUMBING ROOF PLAN
P501	PLUMBING DETAILS
P502	PLUMBING DETAILS
P601	PLUMBING SCHEDULES
P701	PLUMBING SPECIFICATIONS
P702	PLUMBING SPECIFICATIONS
P703	PLUMBING SPECIFICATIONS

NON-INFRINGEMENT STATEMENT

IT IS THE DESIGN PROFESSIONALS JUDGEMENT WHOSE SIGNATURE APPEARS ON THE DRAWING, THAT THE DESIGN DESCRIBED IN THIS SET OF DRAWINGS AND SPECIFICATIONS DOES NOT ADVERSELY INFRINGE UPON THE EXISTING LIFE SAFETY OF THE BUILDING.

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AOR PROJECT NUMBER: CAV029

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PERMIT REV	02.24.25
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

PLUMBING GENERAL NOTES, SYMBOLS, & LEGENDS

SHEET: P000

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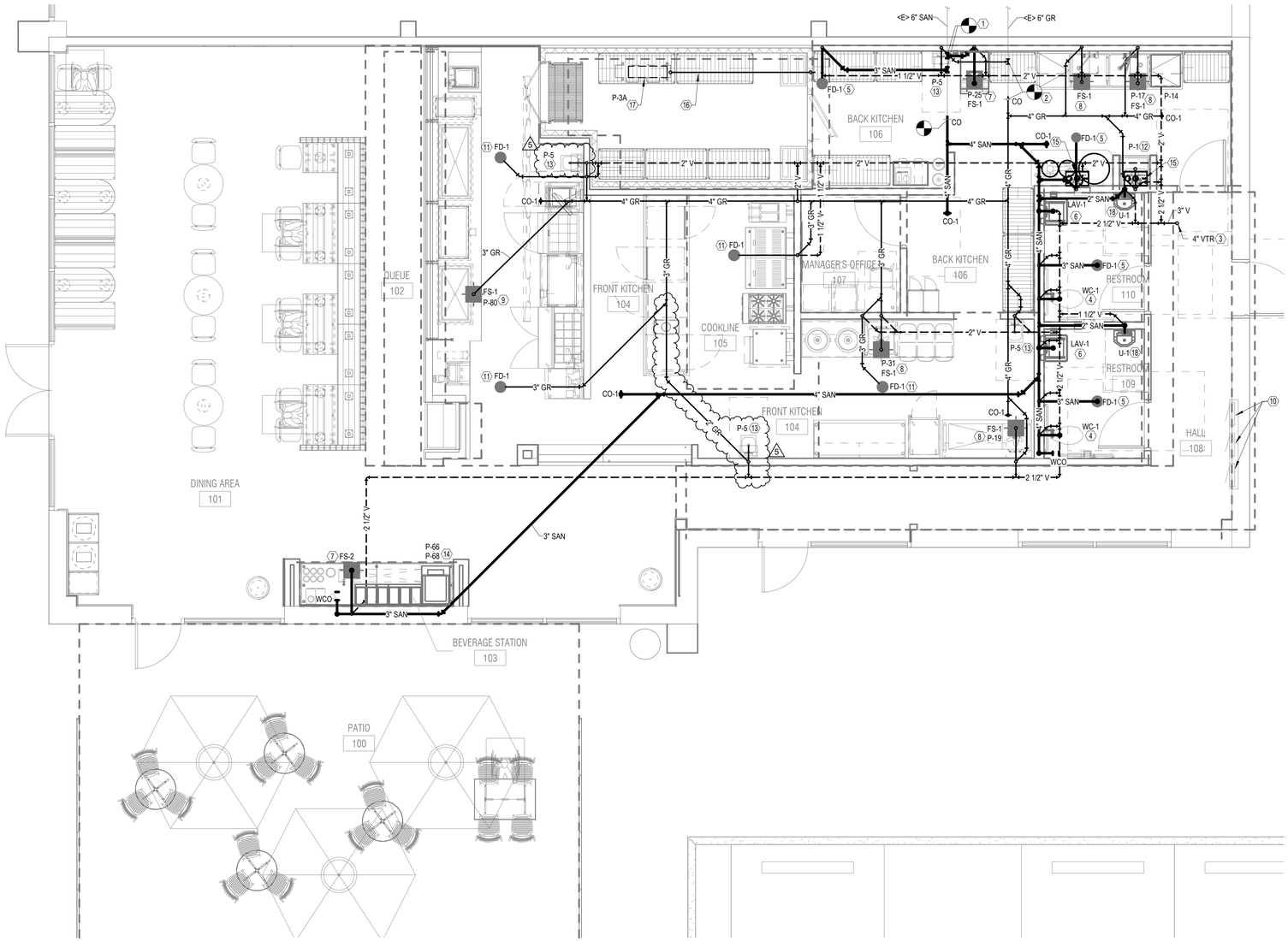
GENERAL NOTES

1. REFER TO GENERAL NOTES ON SHEET P000.
2. REFER TO SPECIFICATIONS ON SHEETS P701, P702, AND P703.
3. PRIOR TO COMPLETION OF PLUMBING WORK, PLUMBING CONTRACTOR TO SNAKE ALL SANITARY LINES TO PROVIDE FULLY CLEAN AND CLEAR SANITARY DRAINAGE SYSTEM FREE OF ANY BLOCKAGES.
4. EXPOSED PIPES AND SURFACES, WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES AND SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES AND SINKS.
5. INDIRECT WASTE CONNECTIONS MUST BE RIGID (NON-FLEXIBLE), HARD-PIPED WITH AN AIR GAP.

KEY NOTES

1. CONNECT NEW SANITARY LINE TO NEAREST EXISTING 4" SANITARY MAIN LINE. CONTRACTOR TO FIELD VERIFY FOR EXACT LOCATION, INVERT, AND SIZE USING SCOPE PRIOR TO START OF WORK.
2. CONNECT NEW GREASE WASTE LINE TO NEAREST EXISTING 4" GREASE WASTE MAIN LINE OUT TO LANDLORD PROVIDED GREASE INTERCEPTOR. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF POINT OF CONNECT.
3. ROUTE NEW 4" VENT THROUGH ROOF. CONFIRM VTR IS A MINIMUM OF 10'-0" CLEARANCE FROM ANY MECHANICAL INTAKE.
4. ROUTE 4" SANITARY WASTE UP FROM BELOW GRADE AND CONNECT TO WATER CLOSET, EXTEND 2" VENT UP IN WALL FROM WATER CLOSET TO CEILING SPACE.
5. ROUTE 3" SANITARY WASTE UP FROM BELOW GRADE AND CONNECT TO FLOOR DRAIN. EXTEND 1-1/2" VENT UP IN WALL TO CEILING SPACE.
6. ROUTE 2" SANITARY WASTE UP FROM BELOW GRADE. TRANSITION TO 1-1/2" WASTE AND CONNECT TO LAVATORY. EXTEND 1-1/2" VENT UP IN WALL FROM LAVATORY TO CEILING SPACE.
7. ROUTE 3" SANITARY WASTE UP FROM BELOW GRADE AND CONNECT TO FLOOR SINK, EXTEND 1-1/2" VENT UP IN WALL FROM FLOOR SINK TO CEILING SPACE.
8. ROUTE 3" GREASE WASTE UP FROM BELOW GRADE AND CONNECT TO FLOOR SINK, EXTEND 1-1/2" VENT UP IN WALL FROM FLOOR SINK TO CEILING SPACE.
9. ROUTE 3" GREASE WASTE UP FROM BELOW GRADE AND CONNECT TO FLOOR SINK.
10. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
11. ROUTE 3" GREASE WASTE UP FROM BELOW GRADE AND CONNECT TO FLOOR DRAIN, EXTEND 1-1/2" VENT UP IN WALL FROM FLOOR DRAIN TO CEILING SPACE.
12. ROUTE 3" GREASE WASTE UP FROM BELOW GRADE AND CONNECT TO MOP SINK, EXTEND 1-1/2" VENT UP IN WALL FROM MOP SINK TO CEILING SPACE.
13. ROUTE 2" GREASE WASTE UP FROM BELOW GRADE, TRANSITION TO 1-1/2" AND CONNECT TO HAND SINK(S). EXTEND 1-1/2" VENT UP IN WALL FROM HAND SINK(S) TO CEILING SPACE.
14. PROVIDE DRAINAGE PIPING FROM ICE MACHINE AND BEVERAGE DISPENSER TO FLOOR SINK PER MANUFACTURER'S RECOMMENDATIONS.
15. ROUTE 1/2" CONDENSATE DRAIN FROM WATER HEATERS AND ALONG WALL OVER TO MOP SINK WITH A MINIMUM 2" AIR GAP.
16. PROVIDE 3/4" COPPER CONDENSATE DRAIN PIPING FROM WALK-IN COOLER EVAPORATOR COIL AND EXTEND FULL SIZE TO FLOOR DRAIN WITH A MINIMUM 2" AIR GAP. ROUTE PIPING DIRECTLY TO EXTERIOR OF COOLER AS TIGHT TO CEILING AS POSSIBLE WHILE MAINTAINING PROPER SLOPE TO MINIMIZE IMPACT ON COOLER SHELVING AND STORAGE SPACE. PROVIDE CORROSION RESISTANT "STAND-OFFS" TO ALLOW 1" CLEARANCE BETWEEN WALLS AND PIPING. INSULATE TOTAL LENGTH OF DRAIN PIPING WITH 3/4" THICK FLEXIBLE CLOSED-CELL INSULATION SIMILAR TO ARMAFLEX PIPE INSULATION.
17. WALK-IN COOLER EQUIPMENT SHOWN FOR REFERENCE ONLY. EQUIPMENT AND ASSOCIATED REFRIGERANT PIPING TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
18. ROUTE 2" SANITARY WASTE UP FROM BELOW GRADE, AND CONNECT TO URINAL. EXTEND 1-1/2" VENT UP IN WALL FROM URINAL TO CEILING SPACE.



WASTE CONNECTION SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	DIRECT DRAIN SIZE (IN)	DIRECT DRAIN AFF (IN)	INDIRECT DRAIN (IN)
1	1	SINK, MOP	3"		
3A	1	EVAPORATOR COIL, COOLER			3/4"
5	4	HAND SINK, WALL MOUNTED	1-1/2"	16"	
14	1	WAREWASHER, UNDERCOUNTER, LOW TEMP			1"
17	1	SINK, SCULLERY, 4 COMPARTMENTS			(4) 1-1/2"
19	1	TABLE, WORK W/ SINK			1-1/2"
25	1	ICE MAKER, ICE BIN			3/4"
31	1	TABLE, CABINET BASE W/ SINK			1-1/2"
66	1	ICE DISPENSER W/ BEVERAGE HEADS			3/4"
68	1	TABLE, ENCLOSED BASE			1/2"
80	1	DROP-IN, COLD PAN			1"

N

1 / P101 **PLUMBING SANITARY AND VENT ENLARGED PLAN**

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

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14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
PERMIT REV	02.24.25
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

PLUMBING SANITARY & VENT PLAN

SHEET: **P101**

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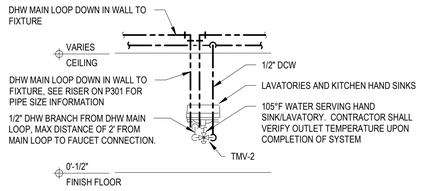


NOTE:
PER 2018 IECC SECTION C404.5.1, THE MAXIMUM ALLOWABLE PIPING LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE IN ACCORDANCE TO TABLE C404.5.1. THEREFORE THE 1/2" HOT WATER BRANCH PIPE TO LAVATORY SHALL NOT BE MORE THAN 2 FEET FROM HOT WATER MAIN LOOP TO CONNECTION OF FIXTURE.

(2) HOT WATER LOOP DETAIL

SCALE: N.T.S.

GENERAL NOTES

1. REFER TO GENERAL NOTES ON SHEET P000.
2. REFER TO SPECIFICATIONS ON SHEETS P701, P702, AND P703.
3. ALL NEW PLUMBING FIXTURES SHALL BEAR THE WATER SENSE LABEL WHEN SUCH FIXTURES ARE AVAILABLE.
4. EXPOSED PIPES AND SURFACES, WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES AND SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES AND SINKS.

KEY NOTES

(1) CONNECT NEW 2" CW TO NEAREST EXISTING MAIN. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND EQUAL OR GREATER SIZE TO CONNECT.

(2) EXISTING 2" DOMESTIC WATER PIPING ROUTED TO INTO TENANT SPACE. TENANT'S WATER METER AND RPZ LOCATED IN LANDLORD EQUIPMENT ROOM.

(3) PROVIDE 2-1/2" GAS SERVICE. FIELD VERFIY EXACT SIZE AND LOCATION PRIOR TO BID, AND UPSIZE METER AS REQUIRED TO PROVIDE 1,377 CFH. GAS PIPING IS SIZED PER 2018 IFGC TABLE 402.4(2) WITH A TOTAL DEVELOPED LENGTH OF 150' AND A CONNECTED GAS LOAD OF 1,377 CFH. COORDINATE WITH LOCAL UTILITY COMPANY.

(4) ROUTE NEW GAS PIPING IN CEILING SPACE AND CONNECT INTO EXISTING GAS SERVICE IF AVAILABLE. FIELD VERIFY EXACT SIZE AND LOCATION PRIOR TO BID.

(5) DO NOT ROUTE ANY PIPING ABOVE ELECTRICAL PANELS.

(6) ROUTE 1/2" HOT AND COLD WATER DOWN IN WALL AND CONNECT TO MOP SINK.

(7) ROUTE 1/2" HOT AND COLD WATER DOWN IN WALL AND CONNECT TO 4-COMP SINK.

(8) ROUTE 1/2" HOT AND COLD WATER DOWN IN WALL AND CONNECT TO WORK SINK.

(9) ROUTE 1/2" HOT AND COLD WATER DOWN IN WALL AND CONNECT TO HAND SINK. PROVIDE POINT OF USE MIXING VALVE TMV-2, ASSE 1070 COMPLIANT AND CONNECT TO HAND SINK. REFER 2/P-201 FOR MORE DETAIL.

(10) ROUTE 1-1/4" COLD WATER, AND 1/2" HOT WATER RECIRC PIPING DOWN FROM CEILING SPACE AND CONNECT TO WATER HEATERS. EXTEND 1-1/4" HOT WATER FROM WATER HEATER UP TO CEILING SPACE. SEE 8/P501 FOR MORE INFORMATION.

(11) ROUTE 1/2" HOT WATER RETURN DOWN FROM CEILING SPACE AND CONNECT INTO COLD WATER SUPPLY SERVING WATER HEATER. REFER TO WATER HEATER DETAIL FOR ADDITIONAL INFORMATION.

(12) ROUTE 1/2" COLD WATER DOWN IN WALL AND CONNECT TO WATER FILTER WITH SCALE INHIBITOR PROVIDED BY KEC. EXTEND FROM WATER FILTER SYSTEM AND CONNECT TO ICE MACHINE. CONTRACTOR SHALL PROVIDE WATTS LF9D DUAL CHECK BACKFLOW DEVICE PRIOR TO FINAL CONNECTION, ASSE 1022 COMPLIANT. SEE DETAIL 10/P501 FOR MORE INFORMATION.

(13) NEW WATER SOFTENER, ECOLAB EST-CP250, PROVIDED BY CAVA AND INSTALLED BY OTHERS. PROVIDE FULL-SIZE THREE VALVE BYPASS AND STUB OUTS FOR CONNECTION TO EQUIPMENT. REFER 11/P-501 SHEET FOR MORE DETAIL.

(14) ROUTE 1-1/2" GAS DOWN FROM CEILING SPACE AND CONNECT TO WATER HEATER, PROVIDE 6" DIRTLEG, GAS SHUT OFF VALVE AND UNION PRIOR TO FINAL CONNECTION. INSTALL PER MANUFACTURERS RECOMMENDATIONS.

(15) PROVIDE 1-1/2" GAS PIPING DOWN TO ANSUL MECHANICAL GAS SHUT-OFF VALVE BELOW CEILING. ANSUL SHUTOFF VALVE TO BE CONNECTED AND CONTROLLED PER KITCHEN HOOD CONTROLLER. REFER TO DETAIL 3/P501.

(16) ROUTE 1-1/2" GAS PIPING DOWN ALONG WALL AND PROVIDE 6" DIRT LEG, EXTEND ALONG WALL AT 12"A.F.F.

(17) EXTEND 3/4" GAS PIPING FROM 1-1/2" GAS HEADER UP AND PROVIDE GAS SHUT OFF VALVE AND FLEXIBLE GAS HOSE. COORDINATE WITH KEC. REFER 4/P-501 SHEET FOR MORE DETAIL.

(18) ROUTE 1-1/4" COLD WATER DOWN IN WALL AND CONNECT TO WATER CLOSET.

(19) ROUTE 1/2" COLD WATER AND 3/4" HOT WATER DOWN IN WALL TO LAVATORY, EXTEND 1/2" HOT WATER FROM 3/4" HOT WATER LOOP AND CONNECT TO LAVATORY. PROVIDE POINT OF USE MIXING VALVE TMV-2, ASSE 1070 COMPLIANT AND CONNECT TO LAVATORY. REFER 2/P-201 FOR MORE DETAIL.

(20) ROUTE 1/2" FILTERED COLD WATER DOWN IN WALL AND CONNECT TO ICE AND BEVERAGE DISPENSER. CONTRACTOR SHALL PROVIDE WATTS SD-2 DUAL CHECK BACKFLOW DEVICE PRIOR TO FINAL CONNECTION, ASSE 1012 COMPLIANT.

(21) ROUTE 1/2" FILTERED COLD WATER DOWN IN WALL AND CONNECT TO WATER DISPENSER. CONTRACTOR SHALL PROVIDE WATTS SD-2 DUAL CHECK BACKFLOW DEVICE PRIOR TO FINAL CONNECTION, ASSE 1012 COMPLIANT.

(22) ROUTE 1/2" HOT WATER DOWN IN WALL AND CONNECT TO UNDERCOUNTER WAREWASHER, PROVIDE WATER PRESSURE REGULATOR AND SET LEAVING PRESSURE TO 25 PSI. INSTALL PER MANUFACTURES RECOMMENDATIONS.

(23) ROUTE 1/2" HOT WATER RETURN IN CEILING SPACE AND CONNECT TO HOT WATER RETURN PUMP RP-1. PROVIDE ISOLATION VALVE BEFORE AND AFTER PUMP AND CHECK VALVE IN LINE WITH PUMP. REFER TO WATER HEATER AND CIRCULATING PUMP DETAIL ON SHEET P501 FOR ADDITIONAL INFORMATION.

(24) ROUTE NEW 1-1/4" GAS UP THROUGH ROOF TO SERVE MAKE-UP AIR UNIT.

(25) ROUTE 1" COLD WATER DOWN IN WALL TO WATER FILTER, ROUTE 1/2" FILTERED WATER TO BAG-IN-BOX. ROUTE 1/2" FILTERED WATER FROM WATER FILTER/ BAG-IN-BOX IN CEILING SPACE OVER TO BEVERAGE AND WATER DISPENSER. SEE DETAIL 10/P501 FOR MORE INFORMATION.

(26) PROVIDE AUTOMATIC FLOW CONTROL VALVE AT CONNECTION OF HW TO HWR LINE. VALVE MUST BE LEAD FREE AND NSF-61 CERTIFIED FOR POTABLE WATER. FOR THERMOSTATIC BALANCING VALVE, SET VALVE TO 110°F. FOR CONTROLLER/LIMITER, SET TO 1 GPM.

(27) ROUTE 6" PVC SODA CONDUIT UP TO CEILING SPACE. PROVIDE STUB AND SEAL END OF CONDUIT. COORDINATE EXACT REQUIREMENTS WITH SODA VENDOR.

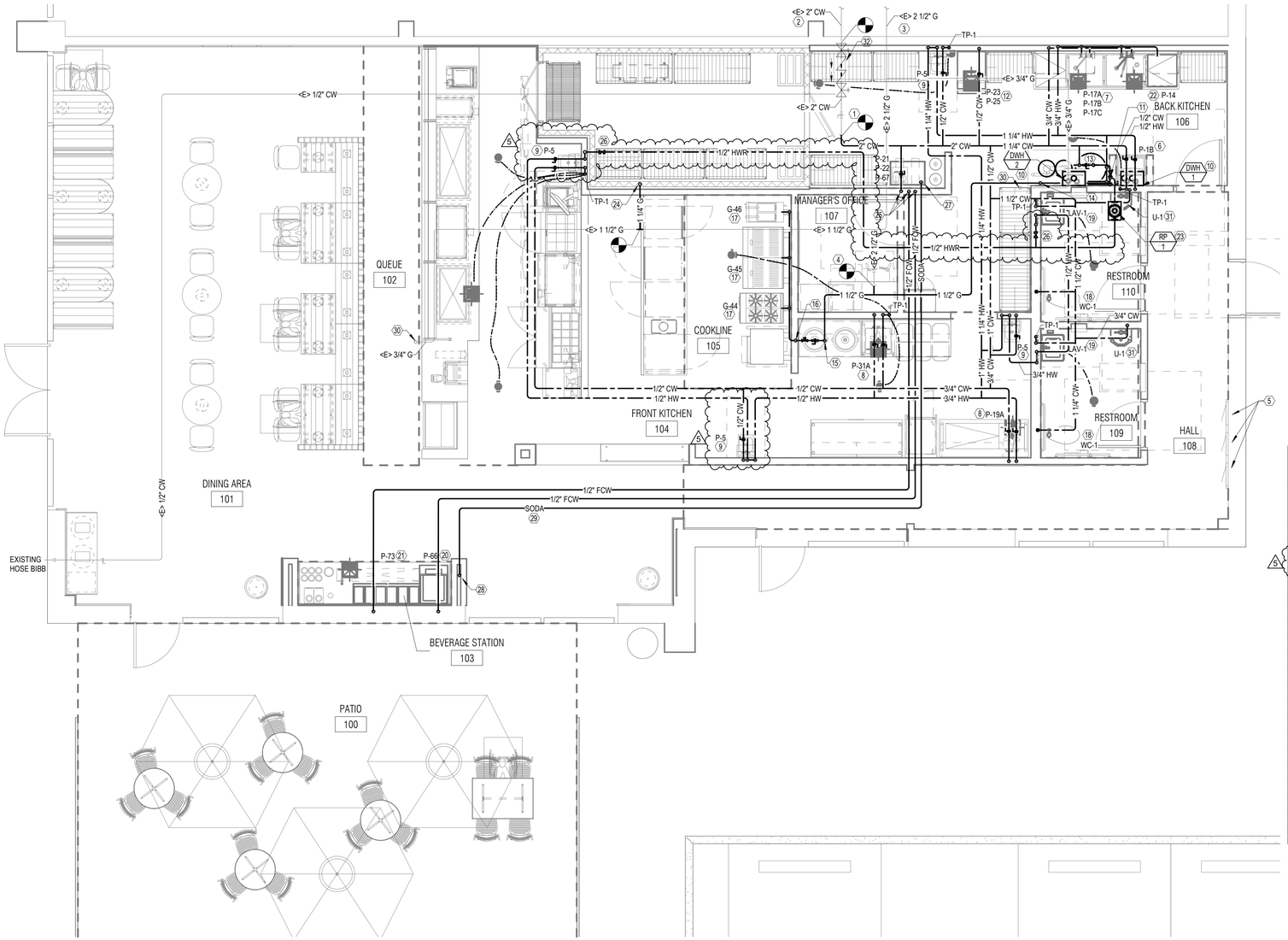
(28) ROUTE 6" PVC SODA CONDUIT DOWN FROM CEILING SPACE TO BEVERAGE STATION. USE ONLY LONG SWEEP ELBOWS FOR DIRECTION CHANGES (ELBOWS AVAILABLE IN 45°, 22.5°, AND 11.25° RADII AS REQUIRED). INSTALL PER VENDOR'S RECOMMENDATIONS.

(29) SODA CONDUIT TO BE ROUTED ABOVE CEILING. USE ONLY LONG SWEEP ELBOWS FOR DIRECTION CHANGES (ELBOWS AVAILABLE IN 45°, 22.5°, AND 11.25° RADII AS REQUIRED).

(30) EXISTING 3/4" GAS UP THROUGH ROOF TO SERVE ROOF TOP UNIT.

(31) ROUTE 34" COLD WATER DOWN IN WALL AND CONNECT TO URINAL.

(32) PROVIDE RPZ ASSEMBLY. DRAIN LINE FOR RPZ TO BE ROUTED DOWN IN WALL BELOW RACKS TO NEAREST FLOOR DRAIN.



WATER CONNECTION SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	HW SIZE (IN)	HW AFF (IN)	CW SIZE (IN)	CW AFF (IN)	MBTUH	GAS SIZE (IN)	GAS AFF (IN)
1B	1	FAUCET, SERVICE SINK	1/2"	36"	1/2"	36"			
5	4	HAND SINK, WALL MOUNTED	1/2"	18"	1/2"	18"			
14	1	WAREWASHER, UNDERCOUNTER, LOW TEMP	1/2"	18"					
17A	1	FAUCET, ADD-ON	1/2"	18"	1/2"	18"			
17B	1	PRE-RINSE FAUCET, WALL MOUNT	1/2"	18"	1/2"	18"			
17C	1	TABLE, WORK W/ SINK	1/2"	18"	1/2"	18"			
19A	1	FAUCET, WALL MOUNTED	1/2"	18"	1/2"	18"			
21	1	BAG-IN-BOX			1/2"				
22	1	CARBONATOR			1/2"				
23	1	FILTER SYSTEM, ICEMAKER			1/2"	72"			
25	1	ICE MAKER			1/2"				
31A	1	FAUCET, DECK MOUNT	1/2"	18"	1/2"	18"			
44	1	RANGE, RESTAURANT, GAS					151	3/4"	18"
45	1	GRIDDLE, HEAVY DUTY, GAS					112	3/4"	18"
46	1	FRYER, DEEP FAT, GAS					120	3/4"	18"
66	1	ICE DISPENSER W/ BEVERAGE HEADS			1/2"				
67	1	FILTER SYSTEM, FOUNTAIN BEVERAGE			1/2"	72"			
73	2	WATER DISPENSER, FAUCET			1/2"	72"			

(1) PLUMBING DOMESTIC ENLARGED PLAN

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

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AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
PERMIT REV	02.24.25
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

PLUMBING DOMESTIC AND GAS PLAN

SHEET: P201

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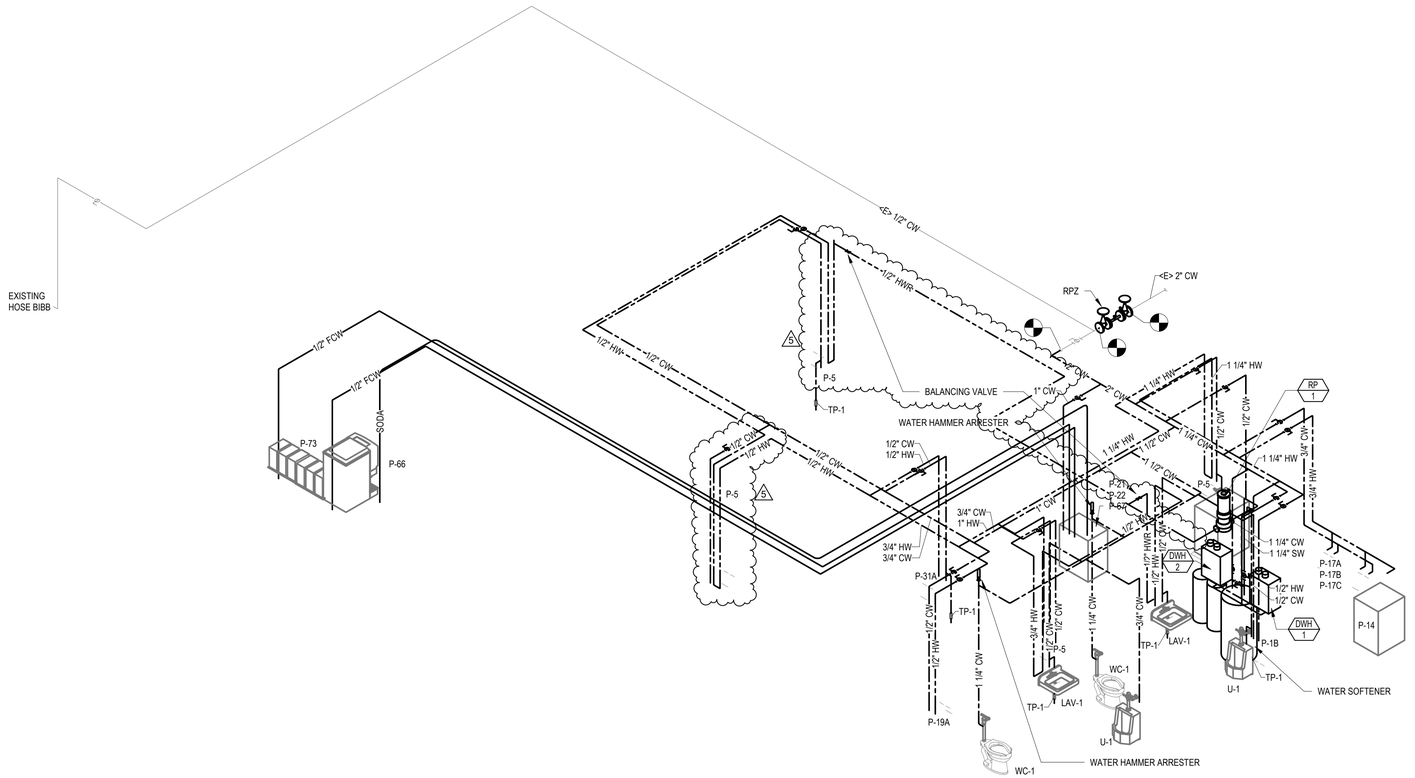
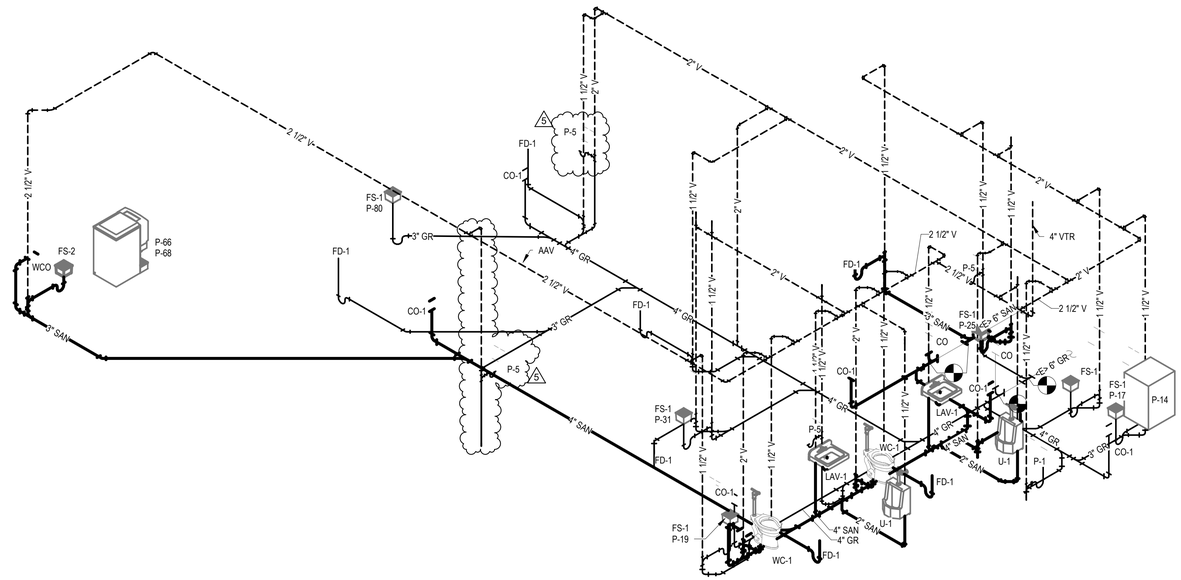
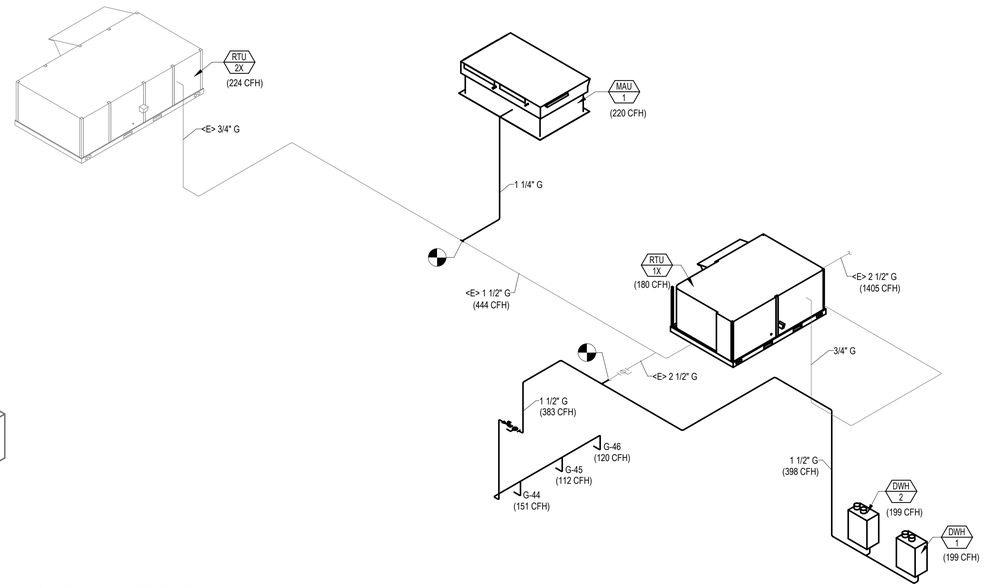


1 DOMESTIC WATER RISER DIAGRAM
SCALE: N.T.S.



2 SANITARY AND VENT RISER DIAGRAM
SCALE: N.T.S.



3 NATURAL GAS RISER DIAGRAM
SCALE: N.T.S.

GAS SCHEDULE

KITCHEN EQUIPMENT		
ID	DESCRIPTION	CFH
44	RANGE, RESTAURANT, GAS	151
45	GRIDDLE, HEAVY DUTY, GAS	112
46	FRYER, DEEP FAT, GAS	120
	KITCHEN EQUIPMENT GAS LOAD TOTAL	383

PLUMBING EQUIPMENT		
ID	DESCRIPTION	CFH
DWH-1	GAS FIRED TANKLESS WATER HEATER	199
DWH-2	GAS FIRED TANKLESS WATER HEATER	199
	PLUMBING EQUIPMENT GAS LOAD TOTAL	398

MECHANICAL EQUIPMENT		
ID	DESCRIPTION	CFH
RTU-1X	EXISTING ROOF TOP UNIT	180
RTU-2X	EXISTING ROOF TOP UNIT	224
MAU-1	MAKU-UP AIR UNIT	220
	MECHANICAL EQUIPMENT GAS LOAD TOTAL	624
	TOTAL GAS LOAD	1,405

NOTES:
GAS PIPING SIZED FOR TOTAL DEVELOPED LENGTH OF 150'-0" AND LESS THAN 2 PSI SERVICE PRESSURE.

REFER TO "COOKING APPLIANCE GAS" FOR CONNECTION TO FOOD SERVICE EQUIPMENT.

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AOR PROJECT NUMBER:
CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

PLUMBING RISERS

SHEET:
P301

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GENERAL NOTES

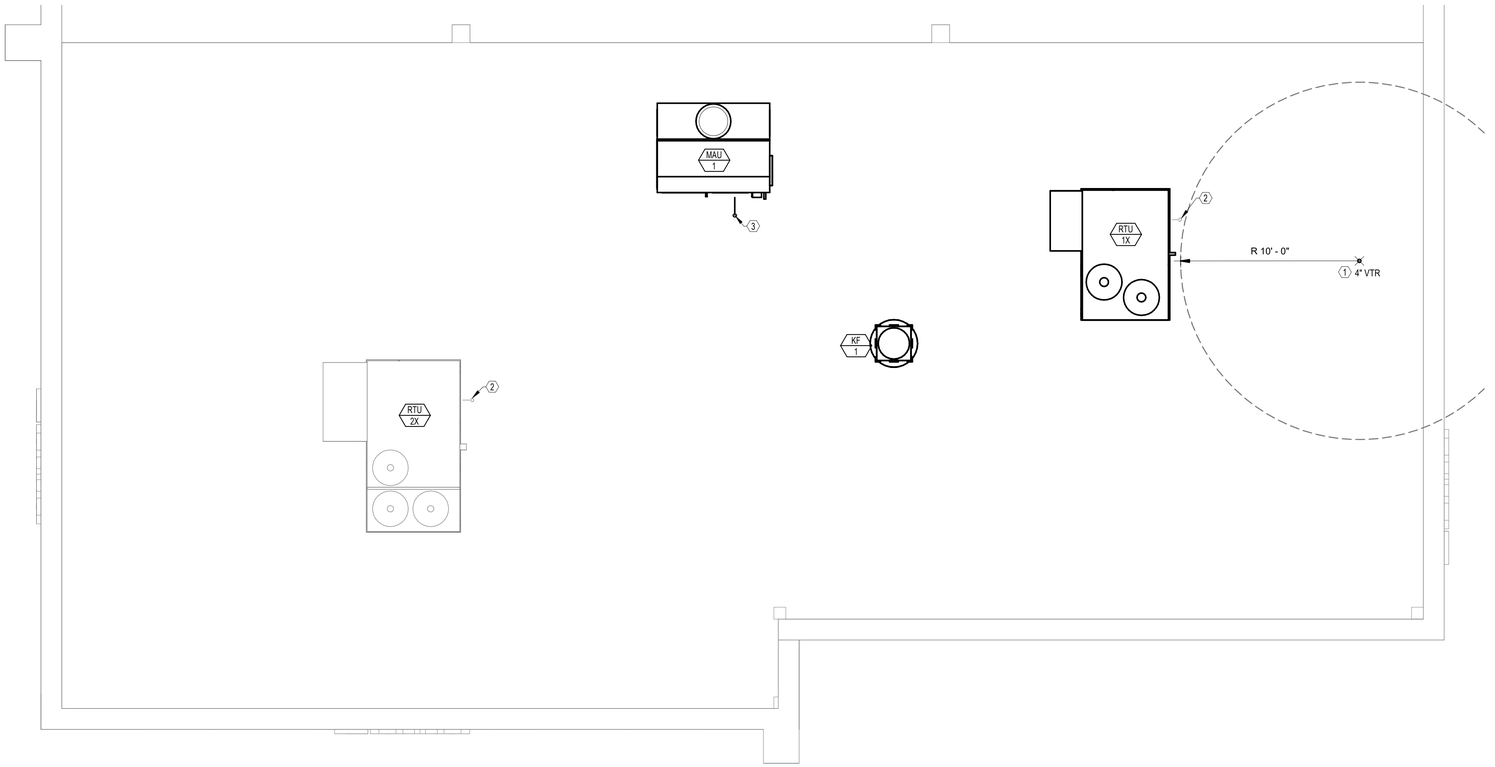
1. REFER TO GENERAL NOTES ON SHEET P000.

KEY NOTES

(1) NEW 4" VTR. CONFIRM A MINIMUM OF 10'-0" CLEARANCE FROM ANY MECHANICAL INTAKE.

(2) EXISTING 3/4" G DOWN THROUGH ROOF TO CONNECT MAIN.

(3) NEW 1-1/4" G DOWN THROUGH ROOF TO CONNECT MAIN.



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1 P401 **PLUMBING ROOF PLAN**

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

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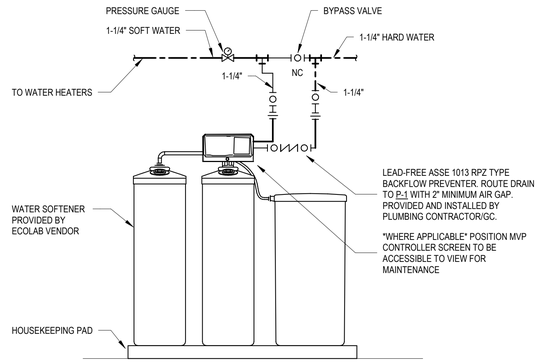
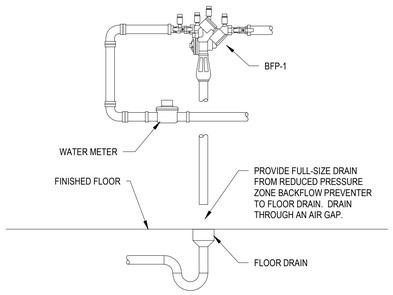
PLUMBING ROOF PLAN

SHEET:

P401

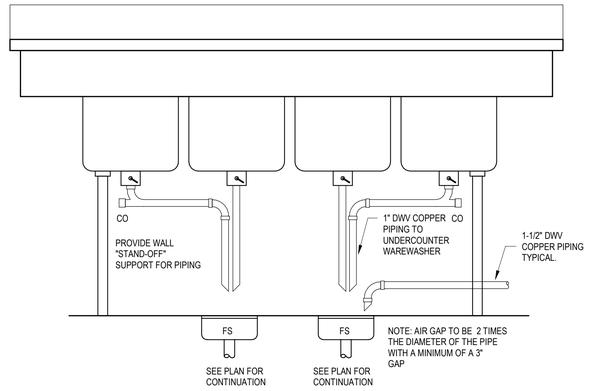


11 WATER SOFTENER DETAIL
SCALE: N.T.S.

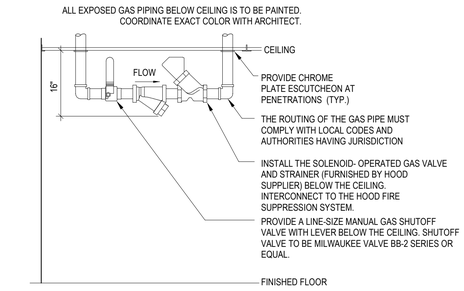


NOTES:
MAKE NECESSARY ARRANGEMENTS WITH WATER COMPANY TO INSTALL NEW WATER SERVICE PER LOCAL CODES & WATER COMPANY REGULATIONS AND PAY ALL CHARGES. SERVICE SHALL BE SIZED PER THE PLUMBING PLAN & INSTALLED IN STRICT ACCORDANCE OF WATER COMPANY REGULATIONS. ANCHOR METER, BACKFLOW PREVENTER, AND PIPING TO THE WALL OR THE CERTIFY THE BACKFLOW PREVENTER PER THE WATER COMPANY'S REQUIREMENTS.

9 WATER SERVICE ENTRY DETAIL
SCALE: N.T.S.



6 4 COMPARTMENT SINK DETAIL
SCALE: N.T.S.



NOTE: CONFIGURATION CAN BE MOUNTED HORIZONTALLY OR VERITCALLY, COORDINATE WITH CAVA CONSTRUCTION MANAGER.

SEQUENCE OF OPERATIONS:

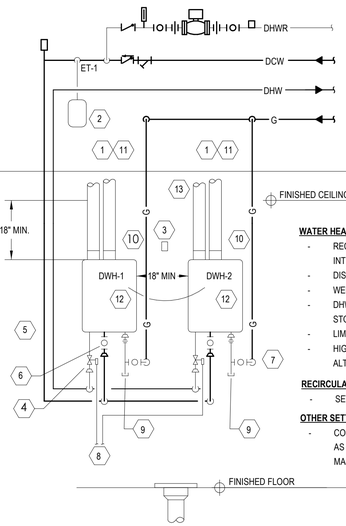
NORMAL MODE:

- WHEN HOOD FAN IS ENERGIZED, SOLENOID VALVE SHALL OPEN.
- ON A LOSS OF POWER OR IF THE FAN IS DE-ENERGIZED, THE VALVE SHALL CLOSE.

EMERGENCY MODE:

- UPON ACTUATION OF THE FIRE SUPPRESSION SYSTEM OR A SIGNAL FROM THE FIRE ALARM, THE SOLENOID VALVE SHALL CLOSE.

3 KITCHEN GAS SHUTOFF DETAIL
SCALE: N.T.S.



WATER HEATER DIP SWITCH SETTINGS

- RECIRCULATION MODE: INTERNAL W/ INTELLIGENT PREHEATING.
- DISPLAY TEMPERATURE UNIT: FAHRENHEIT
- WELL PUMP: DO NOT USE WELL PUMP
- DHW STORAGE TANK: DO NOT USE STORAGE TANK
- LIME ALARM: 6 MONTH ALERT
- HIGH ALTITUDE: BASED ON PROJECT ALTITUDE.

RECIRCULATION VALVE SETTINGS

- SET INTERNAL RECIRUCLATION VALVE TO "EXT".

OTHER SETTINGS

- CONNECT WATER HEATERS TOGETHER AS A CASCADE SYSTEM. SET DWH-1 AS MASTER AND DWH-2 AS SLAVE.

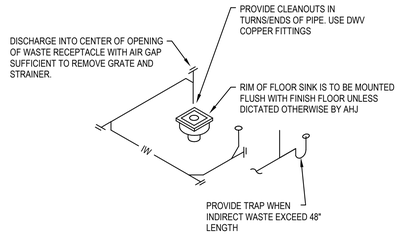
WATER HEATER DETAIL NOTES

1. PROVIDE CONCENTRIC TERMINATION KIT FOR FLUE/INTAKE TERMINATION THROUGH ROOF AS SHOWN. TYPICAL OF 2. REFERENCE DETAIL ON SHEET P401 FOR CONTINUATION.
2. PROVIDE EXPANSION TANK AS SHOWN PER MANUFACTURERS REQUIREMENTS. SUPPORT TANK FROM WALL OR STRUCTURE ABOVE.
3. PROVIDE WATER HEATER RECEPTACLE WITHIN 12" OF THE FINISHED CEILING. FASTEN CORD TIGHT TO THE WALL.
4. PROVIDE PRESSURE RELIEF VALVE. PIPE PRESSURE RELIEF VALVE TO MOP SINK
5. CONCEAL HOT AND COLD WATER PIPING WITHIN THE WALL AS SHOWN. INSULATE EXPOSED AND CONCEALED HOT AND COLD WATER PIPING TO WITHIN 3" OF THE WATER HEATER.
6. INSTALL "PLUMB EASY VALVE SET" EXPOSED AT THE COLD AND HOT WATER CONNECTIONS TO THE WATER HEATER AS SHOWN.
7. IF THE COLD, HOT, OR GAS PIPE LINE SIZE AS SHOWN ON THE PLUMBING PLANS IS LARGER THAN THE WATER HEATER CONNECTION SIZES, PROVIDE REDUCERS WITHIN 6" OF THE WATER HEATER.
8. PIPE PRESSURE RELIEF VALVE DISCHARGE AND FLUE CONDENSATE DRAIN TO MOP SINKP-1 , DRAIN THROUGH AN AIR GAP.
9. PROVIDE AN EXPOSED DRIP LEG AND LINE-SIZE GAS VALVE ON THE GAS SERVICE TO THE WATER HEATER.
10. ROUTE GAS PIPING EXPOSED ON SURFACE OF THE WALL.
11. PROVIDE 3" SCH.40 LISTED PVC VENT INTAKE AND 3" NAVIEN EXHAUST VENT SYSTEM PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
12. PROVIDE COMMUNICATION CABLE CONCEALED IN WALL TO CONNECT THE WATER HEATERS. INSTALL THE TWO UNITS 3" APART ON CENTER TO ENSURE THE CORD WILL REACH.
13. MOUNT HEATER IN ACCESSIBLE LOCATION WITH THE TOP OF THE WATER HEATER WITHIN 18" BELOW FINISHED CEILING AND MAINTAIN APPROPRIATE WORKING CLEARANCE AS SPECIFIED BY MANUFACTURER'S INSTALLATION INSTRUCTIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS, COORDINATE EXACT LOCATION WITH CONSTRUCTION MANAGER.

WATER HEATER INSTALLATION NOTES

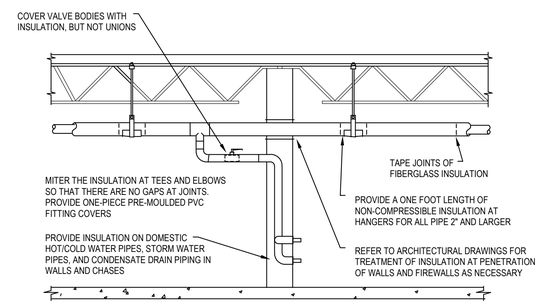
A. CLEAN INLET STRAINERS AFTER CONSTRUCTION HAS BEEN COMPLETED AND PRIOR TO TURNOVER OF THE BUILDING TO THE OWNER.
B. INSTALL PIPING WITH AS FEW ELBOWS AS POSSIBLE.
C. MAINTAIN REQUIRED CLEARANCES TO COMBUSTIBLE MATERIALS.
D. ADJUST WATER HEATER TO A SETPOINT OF 140° F.

8 WATER HEATER DETAIL
SCALE: N.T.S.



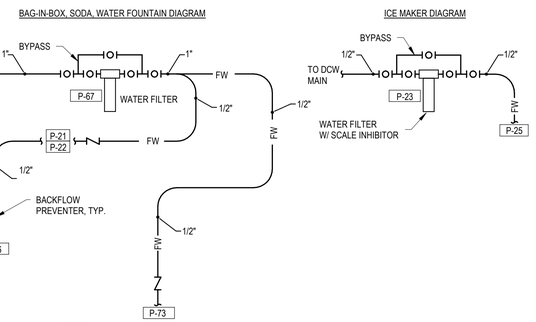
NOTE: ROUTE PIPE INCONSPICUOUSLY AND UNOBTRUSIVELY. HANG PIPE AS REQUIRED. DO NOT INSULATE INDIRECT DRAIN PIPE WHEN INSTALLED EXPOSED IN FOOD SERVICE FACILITY. REFER TO LOCAL CODES FOR FURTHER INFORMATION.

5 INDIRECT DRAIN DETAIL
SCALE: N.T.S.



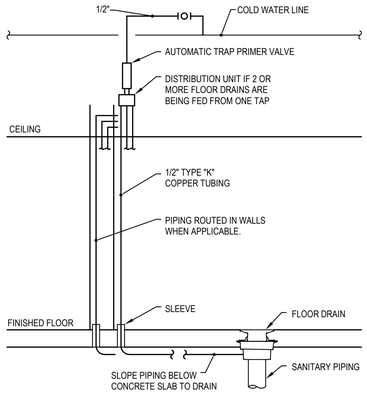
PROVIDE FIBERGLASS INSULATION WITH ALL-SERVICE JACKET WITH VAPOR BARRIER ON ALL COLD/HOT WATER PIPING AND CONDENSATE DRAIN PIPE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING INSULATION. INSTALL ALL ITEMS PER SPECIFICATIONS AND MANUFACTURERS INSTRUCTIONS. MAINTAIN VAPOR BARRIER ON COLD PIPING BY MEANS OF SEALANT AND TAPE. FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES SHALL NOT EXCEED 25/50. SEAL EXPOSED ENDS OF FIBERGLASS INSULATION WITH ADHESIVE MASTIC.

2 PIPE INSULATION DETAIL
SCALE: N.T.S.

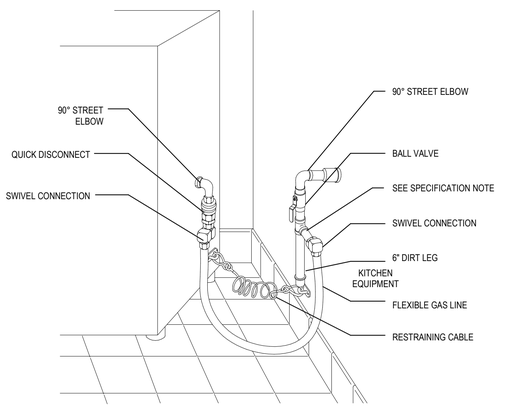


NOTES:
1. PROVIDE ASSE 1022 (ICE MAKERS). ASSE 1012 (DRINK DISPENSERS) APPROVED BACKFLOW PREVENTER SIMILAR TO WATTS NO. LF9D (ICE MAKERS), WATTS NO. SD-2 (DRINK DISPENSERS) IN FILTERED WATER SUPPLY LINE TO EACH PIECE OF EQUIPMENT.
2. REFER TO ARCHITECTURAL EQUIPMENT PLAN FOR MORE INFORMATION
3. WATER FILTERS TO BE INSTALLED IN BACK OF HOUSE

10 WATER FILTRATION SYSTEM
SCALE: N.T.S.



7 TRAP PRIMER DETAIL
SCALE: N.T.S.



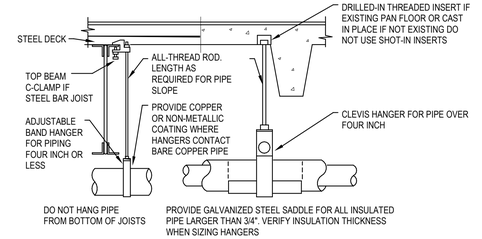
ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT ACTUAL CONDITIONS. MAKE FINAL CONNECTION TO EQUIPMENT AS RECOMMENDED BY MANUFACTURER. PROVIDE WELDED FITTINGS/JOINTS IN ANY CONCEALED, UNSLEEVED LOCATION.

SPECIFICATION:

DORMONT 1675KIT2S48

DORMONT BLUE HOSE MOVEABLE GAS CONNECTOR KIT, 3/4" INSIDE DIA., 48" LONG, COVERED WITH STAINLESS STEEL BRAID, COATED WITH BLUE ANTIMICROBIAL PVC, (1) SNAPFAST QD, (2) SWIVEL MAX, (1) FULL PORT VALVE, COILED RESTRAINING CABLE WITH HARDWARE 160 MBH MINIMUM FLOW CAPACITY, LIMITED WARRANTY. PURCHASED BY CAVA AND INSTALLED BY GC.

4 KITCHEN GAS CONNECTION DETAIL
SCALE: N.T.S.



PROVIDE UPPER ATTACHMENT AS REQUIRED FOR CASES NOT SHOWN HERE. DO NOT INSTALL HANGER INSIDE INSULATION OR OTHERWISE PENETRATE VAPOR BARRIER. DO NOT HANG ONE PIPE FROM ANOTHER. TRAPEZE HANGERS MAY BE USED FOR MULTIPLE PARALLEL PIPES. HANGER SPACING FOR PIPE SIZE: COPPER: 4"=12'; 3"= 11'; 2-1/2"=10'; 2"=9'; 1-1/2"=8'; 1-1/4"=7'; 1"=6'; 3/4"=6'; 1/2"=5'. CAST IRON: 10' AND ONE NEAR ALL JOINTS. STEEL: 4"= 14'; 3"=12'; 2-1/2"=11'; 2"=10'; 1-1/2"=9'; 1"=7'; 3/4"=6'; 1/2"=5'. LOCATE HANGERS AS CLOSE AS POSSIBLE TO TURNS AND TEES OF PIPE. PROVIDE SUPPLEMENTARY STEEL STRUTS BETWEEN JOISTS IF REQUIRED. LOCATE HANGERS TO TAKE LOAD OFF OF EQUIPMENT CONNECTIONS. ANCHOR WATER PIPE AGAINST SWAYING DUE TO CHANGES IN WATER VELOCITY. PROVIDE SEISMIC BRACING IF/AS REQUIRED BY LOCAL AUTHORITIES. CHAINS OR PERFORATED STRAP IRON OR STEEL IS NOT ACCEPTABLE. REFER TO CODES AND SPECIFICATIONS FOR FURTHER INFORMATION.

1 PIPE HANGER DETAIL
SCALE: N.T.S.

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AOR PROJECT NUMBER:
CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

PLUMBING DETAILS

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P501

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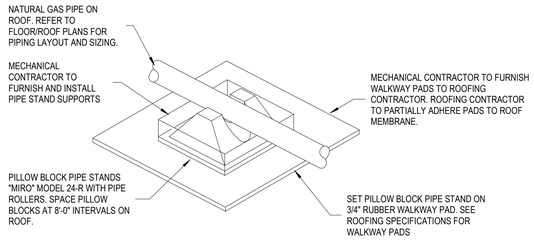
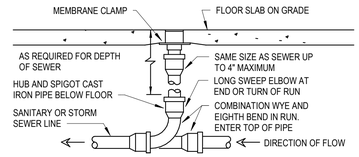


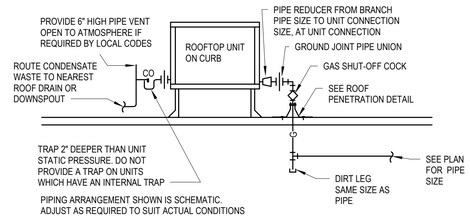
6 PIPE ON ROOF DETAIL
SCALE: N.T.S.

PROVIDE ROUND SECURED NICKEL BRONZE ADJUSTABLE TOP WITH "CO" CAST IN COVER. PROVIDE CLEANOUT TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKER, RECESSED FOR TILE, SCORIATED FOR UNFINISHED FLOORS). PROVIDE BRONZE PLUG IN CAST IRON BODY.

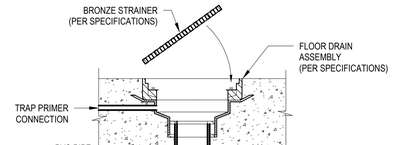


LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45 DEGREES, AT 80' INTERVALS ON STRAIGHT RUNS, AND WHERE SHOWN ON PLANS. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS. LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND. CONSULT LOCAL CODES FOR OTHER FCO REQUIREMENTS.

3 FLOOR CLEANOUT DETAIL
SCALE: N.T.S.

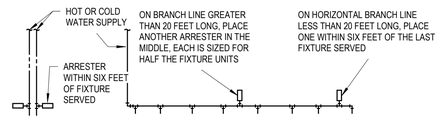


5 ROOTOP UNIT CONNECTIONS
SCALE: N.T.S.



NOTES:
1. TO MAKE A WATERTIGHT SEAL, USE AN ADHESIVE TYPE CAULK UNDER THE TOP FLANGE AND THE GASKET MATERIAL.

2 FLOOR DRAIN DETAIL
SCALE: N.T.S.

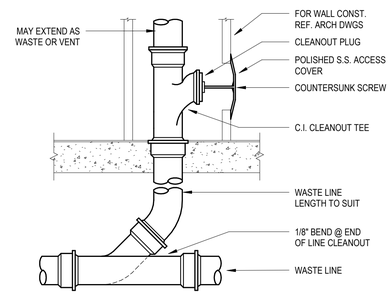


PDI SIZE	FIXTURE UNIT LOAD
AA	1-3
A	4-11
B	12-32
C	33-60
D	61-113
E	114-154

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	-
URINAL	5	-
LAVATORY	1.5	1.5
SINK / SHOP SINK	2	2
SHOWER	2	3
DRINKING FOUNTAIN	0.5	-

PC TO PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 OR ANSI #A112.26.1M CERTIFICATION, SIZE AND INSTALL PER PDI #WH-201 STANDARD OR MANUFACTURER'S INSTRUCTION. THE TABLES ABOVE ARE BASED ON THE SIOUX CHIEF PRODUCT LINE. IF PRESSURE IS IN EXCESS OF 65 PSIG THEN UPSIZE THE ARRESTER BY ONE (EXAMPLE: AN 'A' ARRESTER WOULD BECOME A 'B' ARRESTER.)

4 WATER HAMMER ARRESTERS
SCALE: N.T.S.



1 FLOOR DRAIN DETAIL
SCALE: N.T.S.

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AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

PLUMBING DETAILS

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PLUMBING FIXTURE SCHEDULE

FIXTURE								ACCESSORIES			DESCRIPTION
TAG	ITEM	MANUFACTURER	MODEL	DCW	DHW	DRAIN	VENT	ITEM	MANUFACTURER	MODEL	
WC-1	WATER CLOSET	KOHLER	K-96057-0	1-1/4"	-	4"	2"	SEAT	OLSONITE	95CTSS	ADA COMPLIANT FLOOR MOUNTED WHITE VITREOUS CHINA FLUSH VALVE WATER CLOSET WITH ELONGATED BOWL, MANUAL FLUSH, 1.6 GPF, 16-1/2" RIM HEIGHT. PROVIDE HEAVY-DUTY PLASTIC OPEN FRONT SEATLESS COVER. PROVIDE CHORME PLATED BRASS LOOSE KEY ANGLE STOP WITH CHROME PLATED FLEXIBLE COPPER SUPPLY RISER. PROVIDE FLUSH LEVER ON WIDE SIDE OF ROOM. INSTALLATION TO COMPLY WITH ADA ACCESSIBILITY REQUIREMENTS. FIXTURE SHALL BEAR THE WATER SENSE LABEL.
								SUPPLY	McGUIRE	2166LK	
								FLUSH VALVE	MOEN	8310M16	
LAV-1	LAVATORY	KOHLER	K-1997-1N	1/2"	1/2"	1-1/2"	1-1/2"	FAUCET	KOHLER	K7514	ADA COMPLIANT WALL MOUNTED WHITE VITREOUS CHINA LAVATORY WITH SINGLE FAUCET HOLE AND OVERFLOW. PROVIDE LEAD FREE CHROME PLATED, AUTOMATIC SINGLE HOLE FAUCET WITH 0.5 GPM FLOW RATE AND 3.6 VOLT HYBRID ENERGY CELL. PROVIDE CHROME PLATED GRID STRAINER DRAIN WITH CHROME PLATED BRASS TAILPIECE. PROVIDE CHROME PLATED BRASS P-TRAP WITH CLEANOUT, WALL BEND AND WALL FLANGE. PROVIDE CHROME PLATED BRASS LOOSE KEY ANGLE STOP WITH CHROME PLATED FLEXIBLE COPPER SUPPLY RISERS. PROVIDE CHROME FINISH ASSE 1070 LISTED UNDER-SINK THERMOSTATIC MIXING VALVE SET A 105°F. PROVIDE MOLDED VINYL SAFETY COVERS FOR ALL EXPOSED SUPPLY AND DRAIN PIPING BELOW LAVATORY. PROVIDE RIGID IN-WALL CONCEALED LAVATORY SUPPORT SYSTEM. INSTALLATION TO COMPLY WITH ADA ACCESIBILITY REQUIREMENTS. FIXTURE SHALL BEAR THE WATER SENSE LABEL.
								DRAIN	KOHLER	57248	
								TRAP	McGUIRE	891CBECO	
								SUPPLY	McGUIRE	LF2165LK	
								TMV	WATTS	LFUSG-B-M2-SC	
								PIPING COVER	TRUEBRO	LAV-GUARD 2 E-Z	
								CARRIER	ZURN	Z1231	
U-1	URINAL	SLOAN	SU-1009	3/4"	-	2"	1-1/2"	FLUSH VALVE	ZURN	Z6003AV-ULF	VITREOUS CHINA, WASHDOWN FLUSHING ACTION, 0.125 GPF, 3/4" TOP SPUD INLET. PROVIDE MANUFAL FLUSH VALVE, EXPOSED, DIAPHRAGM-TYPE, CHROME FINISH. FIXTURE SHALL BEAR THE WATER SENSE LABEL.

PLUMBING EQUIPMENT SCHEDULE

TAG	ITEM	MANUFACTURER	MODEL NO.	COMMENTS
DWH-1	TANKLESS DOMESTIC WATER HEATER	NAVIEN	NPE-240A2	HIGH EFFICIENCY CONDENSING TANKLESS WATER HEATER, 120V/1Ø, 350 W, 3A, 95% EFFICIENCY, 5.6 GPM @67° RISER, INCLUDE WITH CASCADE LINKING CABLE, PROVIDE WITH CONDENTRIC TERMINATION KIT.
DWH-2	TANKLESS DOMESTIC WATER HEATER	NAVIEN	NPE-240A2	HIGH EFFICIENCY CONDENSING TANKLESS WATER HEATER, 120V/1Ø, 350 W, 3A, 95% EFFICIENCY, 5.6 GPM @67° RISER, INCLUDE WITH CASCADE LINKING CABLE, PROVIDE WITH CONDENTRIC TERMINATION KIT.
TP-1	TRAP PRIMER	PRECISION PLUMBING	PR-500	ALL BRASS BODY TRAP PRIMER VALVE, PRESSURE DROP OF 5-10 PSIG OPENS VALVE, OPERATING RANGE: 35-75 PSIG, 1/2" MALE NPT INLET CONNECTION, 1/2" FEMALE NPT OUTLET CONNECTION. PROVIDE ON ALL FLOOR DRAINS AND FLOOR SINKS.
ET-1	EXPANSION TANK	RHEEM-RUUD	RRT-12	THERMAL EXPANSION TANK, MOUNT ON WALL NEAR WATER HEATER.
RP-1	DOMESTIC HOT WATER RECIRCULATION PUMP	GRUNDFOS	ALPHA2 15-55SF	ALL BRONZE CONSTRUCTION, LISTED FOR POTABLE WATER SERVICE AND 120 PSIG WORKING PRESSURE, 6.3 GPM AT 6 FEET OF HEAD, 115V, 45W, 1Ø, 3250 RPM. MOUNT PUMP NEAR WATER HEATER IN ACCESSIBLE LOCATION. PUMP TO BE ON A TIMECLOCK. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
TMV-1	THERMOSTATIC MIXING VALVE	WATTS	LFL1170-M2	SET THE MIXED OUTLET WATER TEMPERATURE OF THE TMV PER ECOLAB'S RECOMMENDATIONS FOR OPTIMAL CHEMICAL MIXING.
TMV-2	THERMOSTATIC MIXING VALVE	WATTS	LFMMV-UT-M1	LEAD-FREE ASSE 1070 LISTED. PROVIDE ON ALL KITCHEN HAND SINKS. SET THE MIXED OUTLET WATER TEMPERATURE AT 110°F.

DRAIN AND CLEANOUT SCHEDULE

TAG	ITEM	MANUFACTURER	MODEL NO.	COMMENTS
FD-1	FLOOR DRAIN	SIOUX CHIEF FINISHLINE	833-23DNRB	LIGHT-DUTY CAST IRON FLOOR DRAIN WITH 6-1/2" DIA. NICKEL BRONZE STRAINER, MEMBRANE FLASHING CLAMP AND 1/2" TRAP PRIMER CONNECTION. PROVIDE OUTLET WITH P-TRAP. CLEAN AND POLISH ROUND STRAINER TOP AFTER INSTALLATION.
HD-1	HUB DRAIN INDIRECT WASTE RECEPTOR	-	-	HUB AND SPIGOT WASTE PIPE SECTION IN VERTICAL ORIENTATION, WITH THE 6" DIAMETER "HUB" PORTION COMPLETELY EXPOSED ABOVE THE FLOOR SURFACE. THE INLET/FLOOR RIM SHALL BE A MINIMUM 1" ABOVE THE FINISH FLOOR SURFACE. REFER TO PLANS FOR OUTLET SIZE.
FS-1	FLOOR SINK INDIRECT WASTE RECEPTOR	SIOUX CHIEF	861-24XFi2WC	CAST IRON FLOOR RECEPTOR WITH 12"X12" SQUARE TOP, 6" DEEP SUMP BODY, WHITE ACID RESISTANT COATED INTERIOR BODY, ACID RESISTANT COATED LOOSE SET 1/2 GRATE, AND STAINLESS STEEL BEDRIS BASKET AND MEMBRANE FLASHING CLAMP. PROVIDE OUTLET WITH P-TRAP. PROVIDE WITH GUARDIAN DOME-D-LOCK GDL-DOME-3000 AND DUO 2-IN-1 BASKET SYSTEM (GDL-DUO-4500-BSK-S).
FS-2	FLOOR SINK INDIRECT WASTE RECEPTOR	SIOUX CHIEF	861-4PCW2	PVC PLASTIC FLOOR RECEPTOR WITH 12"X12" SQUARE TOP, 6" DEEP SUMP BODY, PVC BODY, PVC LOOSE SET 1/2" GRATE, STAINLESS STEEL DEBRIS BASKET AND MEMBRANE FLASHING CLAMP. PROVIDE OUTLET WITH P-TRAP. PROVIDE WITH GUARDIAN DOME-D-LOCK GDL-DOME-3000 AND DUO 2-IN-1 BASKET SYSTEM (GDL-DUO-4500BSK-S).
CO-1	FINISHED AREA FLOOR CLEANOUT	SIOUX CHIEF FINISHLINE	834-3DNRZ	DUCTILE IRON CLEANOUT WITH GAS TIGHT POLYPROYLENE PLUG, AND 6-1/2" DIA. ADJUSTABLE SCORIATED NICKEL BRONZE TOP.
RD-1	COMBINATION ROOF AND OVERFLOW DRAIN	SIOUX CHIEF FINISHLINE	867-DI4	CAST IRON ROOF DRAIN AND OVERFLOW, ONE PIECE ENAMEL COATED CAST IRON BODE WITH SEPARATE, NO-HUB CONNECTIONS, CAST IRON CLAMPING COLLAR NA DOME STRAINER FOR BOTH PRIMARY AND OVERFLOW.
DS-1	DOWNSPOUT NOZZLE	SIOUX CHIEF FINISHLINE	868-N4H 868-NS4	NICKEL-BRONZE DOWNSPOUT NOZZLE AND MOUNTING FLANGE, COMPLETE WITH STAINLESS STEEL PROTECTION SCREEN.

GREASE INTERCEPTOR SIZING

TAG	DESCRIPTION	QTY.	TAIL PIECE	DFU		FIXTURE SERVED
				FIXTURE	TOTAL	
P-5	HAND SINK	4	1 1/2"	2	8	HAND SINK
P-1 P-1B	MOP SINK	1	3"	3	3	MOP SINK
FS-1	FLOOR SINK	2	3"	5	10	4-COMP SINK
FS-1	FLOOR SINK	1	3"	5	5	DROP IN COLD PAN
FS-1	FLOOR SINK	2	3"	5	10	WORK TABLE W/SINK
FD-1	FLOOR DRAIN	4	3"	6	24	EMERGENCY FLOOR DRAIN
		14			60	

NOTE:
1. 1 GPM = 2 DFU. TOTAL OF 30 GPM.
2. SIZING BASED ON 2018 INTERNATIONAL PLUMBING CODE TABLE 1003.3.5.1. TOTAL FLOW-THROUGH RATING (GPM) OF 30 GPM REQUIRES A GREASE RETENTION CAPACITY (LBS) OF 70 LBS.

FIXTURE UNIT SCHEDULE

TAG	DESCRIPTION	QTY.	CWFU	HWFU	TOTAL WSFU	
			FIXTURE	FIXTURE	FIXTURE	TOTAL
LAV-1	LAVATORY	2	1	1	2	4
P-1 P-1B	MOP SINK	1	2	2	3	3
P-5	HAND SINK	4	1	1	2	8
P-14	WARE WASHER	1	0	1	1	1
P-17A	4-COMP SINK FAUCET	1	3	3	4	4
P-17B	PRE RINSE SINK FAUCET	1	3	3	4	4
P-17C	4-COMP SINK FAUCET	1	3	3	4	4
P-19 P-19A	DROP-IN SINK	1	1	1	2	2
P-22	CARBONATOR	1	0.25	0	0.25	0.25
P-23	WATER FILTRATION SYSTEM	1	0.5	0	0.5	0.5
P-25	ICE MAKER	1	0.5	0	0.5	0.5
P-31 P-31A	DROP-ON SINK	1	1	1	2	2
P-66	ICE DISPENSER	1	0.5	0	0.5	0.5
P-67	WATER FILTRATION SYSTEM	1	0.5	0	0.5	0.5
P-73	WATER DISPENSER	2	0.5	0	0.5	1
U-1	URINAL	2	5	0	5	10
WC-1	WATER CLOSET	2	10	0	10	20
		24				65.25

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PLUMBING SCHEDULES

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SPECIFICATIONS - DIVISION 22 - PLUMBING

SECTION 220500 - COMMON WORK RESULTS FOR PLUMBING

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
A. HANGERS AND SUPPORTS FOR PLUMBING PIPING EQUIPMENT:
1. STRUCTURAL PERFORMANCE: HANGERS AND SUPPORTS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.
a. DESIGN SUPPORTS FOR MULTIPLE PIPES CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS, AND SYSTEM CONTENTS.
b. DESIGN EQUIPMENT SUPPORTS CAPABLE OF SUPPORTING COMBINED OPERATING WEIGHT OF SUPPORTED EQUIPMENT AND CONNECTED SYSTEMS AND COMPONENTS.

2.2 SLEEVES AND SLEEVE SEALS
A. GALVANIZED-STEEL-PIPE SLEEVES: ASTM A 53/A 53M, TYPE E, GRADE B, SCHEDULE 40, ZINC COATED, WITH PLAIN ENDS.

B. PVC-PIPE SLEEVES: ASTM D 1785, SCHEDULE 40.

C. GALVANIZED-STEEL-SHEET SLEEVES: 0.0239-INCH MINIMUM THICKNESS; ROUND TUBE CLOSED WITH WELDED LONGITUDINAL JOINT.

2.3 GROUT
A. STANDARD: ASTM C 1107/C 1107M, GRADE B, POST-HARDENING AND VOLUME-ADJUSTING, DRY, HYDRAULIC-CEMENT GROUT.
1. CHARACTERISTICS: NONSHRINK; RECOMMENDED FOR INTERIOR AND EXTERIOR APPLICATIONS.
2. DESIGN MIX: 5000-PSI, 28-DAY COMPRESSIVE STRENGTH.
3. PACKAGING: PREMIXED AND FACTORY PACKAGED.

2.4 ESCUTCHEONS AND FLOOR PLATES
A. ONE-PIECE, DEEP-PATTERN TYPE: DEEP-DRAWN, BOX-SHAPED BRASS WITH CHROME-PLATED FINISH AND SPRING-CLIP FASTENERS.

B. ONE-PIECE, STAMPED-STEEL TYPE: WITH CHROME-PLATED FINISH AND SPRING-CLIP FASTENERS.

C. ONE-PIECE FLOOR PLATES: CAST-IRON FLANGE WITH HOLES FOR FASTENERS.

2.5 PRESSURE GAGES AND TEST PLUGS
A. DIRECT-MOUNTED, METAL-CASE, DIAL-TYPE PRESSURE GAGES:
1. STANDARD: ASME B40.100.
2. CASE: SEALED OPEN-FRONT, PRESSURE RELIEF TYPE(S); CAST ALUMINUM OR DRAWN STEEL 4-1/2-INCH NOMINAL DIAMETER.
3. MOVEMENT: MECHANICAL, WITH LINK TO PRESSURE ELEMENT AND CONNECTION TO POINTER.
4. DIAL: NONREFLECTIVE ALUMINUM WITH PERMANENTLY ETCHED SCALE MARKINGS GRADUATED IN PSI.
5. ACCURACY: GRADE A, PLUS OR MINUS 1 PERCENT OF MIDDLE HALF OF SCALE RANGE.

B. TEST PLUG: CORROSION-RESISTANT BRASS OR STAINLESS-STEEL BODY WITH TWO SELF-SEALING RUBBER CORE INSERTS AND GASKETED AND THREADED CAP, WITH EXTENDED STEM FOR UNITS TO BE INSTALLED IN INSULATED PIPING. MINIMUM PRESSURE AND TEMPERATURE RATING 500 PSIG AT 200 DEG F.

2.6 HANGERS AND SUPPORTS FOR PLUMBING PIPING EQUPMENT
A. CARBON-STEEL PIPE HANGERS AND SUPPORTS:
1. DESCRIPTION: MSS SP-58, TYPES 1 THROUGH 58, FACTORY-FABRICATED COMPONENTS.
2. GALVANIZED METALLIC COATINGS: PREGALVANIZED OR HOT DIPPED.
3. NONMETALLIC COATINGS: PLASTIC COATING, JACKET, OR LINER.
4. PADDED HANGERS: HANGER WITH FIBERGLASS OR OTHER PIPE INSULATION PAD OR CUSHION TO SUPPORT BEARING SURFACE OF PIPING.
5. HANGER RODS: CONTINUOUS-THREAD ROD, NUTS, AND WASHER MADE OF CARBON STEEL.

B. COPPER PIPE HANGERS:
1. DESCRIPTION: MSS SP-58, TYPES 1 THROUGH 58, COPPER-COATED-STEEL, FACTORY-FABRICATED COMPONENTS.
2. HANGER RODS: CONTINUOUS-THREAD ROD, NUTS, AND WASHER MADE OF COPPER-COATED STEEL.

C. FASTENER SYSTEMS:
1. MECHANICAL-EXPANSION ANCHORS: INSERT-WEDGE-TYPE, ZINC-COATED STEEL ANCHORS, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE; WITH PULL-OUT, TENSION, AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.

D. MISCELLANEOUS MATERIALS:
1. STRUCTURAL STEEL: ASTM A 36/A 36M, CARBON-STEEL PLATES, SHAPES, AND BARS; BLACK AND GALVANIZED.
2. GROUT: ASTM C 1107, FACTORY-MIXED AND -PACKAGED, DRY, HYDRAULIC-CEMENT, NONSHRINK AND NONMETALLIC GROUT; SUITABLE FOR INTERIOR AND EXTERIOR APPLICATIONS.
a. PROPERTIES: NONSTAINING, NONCORROSIVE, AND NONGASEOUS.
b. DESIGN MIX: 5000-PSI, 28-DAY COMPRESSIVE STRENGTH.

PART 3 - EXECUTION

3.1 GENERAL PIPING INSTALLATIONS
A. INSTALL PIPING FREE OF SAGS AND BENDS.

B. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.

C. SLEEVES:
1. INSTALL SLEEVES FOR PIPING PASSING THROUGH PENETRATIONS IN FLOORS, PARTITIONS, ROOFS, AND WALLS.
2. INSTALL SLEEVES IN CONCRETE FLOORS, CONCRETE ROOF SLABS, AND CONCRETE WALLS AS NEW SLABS AND WALLS ARE CONSTRUCTED.
a. USE GROUT AND SEAL THE SPACE OUTSIDE OF SLEEVES IN SLABS AND WALLS WITHOUT SLEEVE-SEAL SYSTEM.
3. INSTALL SLEEVES FOR PIPES PASSING THROUGH INTERIOR PARTITIONS.
4. FIRE-BARRIER PENETRATIONS: MAINTAIN INDICATED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. SEAL PIPE PENETRATIONS WITH FIRESTOP MATERIALS. COMPLY WITH REQUIREMENTS FOR FIRESTOPPING SPECIFIED IN SECTION 078446 "PENETRATION FIRESTOPPING."

D. ESCUTCHEONS AND FLOOR PLATES:
4. INSTALL ESCUTCHEONS FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FINISHED FLOORS.
5. INSTALL ESCUTCHEONS WITH ID TO CLOSELY FIT AROUND PIPE, TUBE, AND INSULATION OF PIPING AND WITH OD THAT COMPLETELY COVERS OPENING.
6. INSTALL FLOOR PLATES FOR PIPING PENETRATIONS OF EQUIPMENT-ROOM FLOORS.
7. INSTALL FLOOR PLATES WITH ID TO CLOSELY FIT AROUND PIPE, TUBE, AND INSULATION OF PIPING AND WITH OD THAT COMPLETELY COVERS OPENING.

F. METERS AND GAGES:
1. INSTALL DIRECT-MOUNTED PRESSURE GAGES IN PIPING TEES WITH PRESSURE GAGE LOCATED ON PIPE AT THE MOST READABLE POSITION.
2. INSTALL METERS AND GAGES ADJACENT TO MACHINES AND EQUIPMENT TO ALLOW SERVICE AND MAINTENANCE OF METERS, GAGES, MACHINES, AND EQUIPMENT.
3. ADJUST FACES OF METERS AND GAGES TO PROPER ANGLE FOR BEST VISIBILITY.

G.INSTALL UNIONS AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.

H. INSTALL DIELECTRIC UNIONS AND FLANGES TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS IN GAS PIPING.

I. INSTALL DIELECTRIC COUPLING AND NIPPLE FITTINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS IN WATER PIPING.

3.2 HANGERS AND SUPPORTS
A. COMPLY WITH MSS SP-69 AND MSS SP-89. INSTALL BUILDING ATTACHMENTS WITHIN CONCRETE OR TO STRUCTURAL STEEL.

B. INSTALL HANGERS AND SUPPORTS TO ALLOW CONTROLLED THERMAL AND SEISMIC MOVEMENT OF PIPING SYSTEMS.

C. LOAD DISTRIBUTION: INSTALL HANGERS AND SUPPORTS SO PIPING LIVE AND DEAD LOADING AND STRESSES FROM MOVEMENT WILL NOT BE TRANSMITTED TO CONNECTED EQUIPMENT.

D. HORIZONTAL-PIPING HANGERS AND SUPPORTS: UNLESS OTHERWISE INDICATED AND EXCEPT AS SPECIFIED IN PIPING SYSTEM SPECIFICATION SECTIONS, INSTALL THE FOLLOWING TYPES:

1. ADJUSTABLE STEEL CLEVIS HANGERS (MSS TYPE 1): FOR SUSPENSION OF NONINSULATED OR INSULATED STATIONARY PIPES, NPS 1/2 TO NPS 30.
2. PIPE HANGERS (MSS TYPE 5): FOR SUSPENSION OF PIPES, NPS 1/2 TO NPS 4, TO ALLOW OFF-CENTER CLOSURE FOR HANGER INSTALLATION BEFORE PIPE ERECTION.
3. ADJUSTABLE STEEL BAND HANGERS (MSS TYPE 7): FOR SUSPENSION OF NONINSULATED STATIONARY PIPES, NPS 1/2 TO NPS 8.
4. ADJUSTABLE BAND HANGERS (MSS TYPE 9): FOR SUSPENSION OF NONINSULATED STATIONARY PIPES, NPS 1/2 TO NPS 8.
5. ADJUSTABLE SWIVEL-RING BAND HANGERS (MSS TYPE 10): FOR SUSPENSION OF NONINSULATED STATIONARY PIPES, NPS 1/2 TO NPS 2.

E. VERTICAL-PIPING CLAMPS: UNLESS OTHERWISE INDICATED AND EXCEPT AS SPECIFIED IN PIPING SYSTEM SPECIFICATION SECTIONS, INSTALL THE FOLLOWING TYPES:

1. EXTENSION PIPE OR RISER CLAMPS (MSS TYPE 8): FOR SUPPORT OF PIPE RISERS, NPS 3/4 TO NPS 20.
2. CARBON- OR ALLOY-STEEL RISER CLAMPS (MSS TYPE 42): FOR SUPPORT OF PIPE RISERS, NPS 3/4 TO NPS 20, IF LONGER ENDS ARE REQUIRED FOR RISER CLAMPS.

F. PIPING INSULATION SHOULD BE CONTINUOUS THROUGH HANGER ON SUPPORT. PROVIDE DOWEL ROD WITHIN HANGERS TO SUPPORT PIPING

3.3 GENERAL EQUIPMENT INSTALLATIONS
G.INSTALL EQUIPMENT TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS ARE NOT INDICATED.

H. INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, UNLESS OTHERWISE INDICATED.

I. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS. CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM INTERFERENCE TO OTHER INSTALLATIONS. EXTEND GREASE FITTINGS TO ACCESSIBLE LOCATIONS.

J. INSTALL EQUIPMENT TO ALLOW RIGHT OF WAY FOR PIPING INSTALLED AT REQUIRED SLOPE.

END OF SECTION

SECTION 220523 - GENERAL-DUTY VALVES FOR PLUMBING PIPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. SUBMITTALS:
1. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION
A. ASME COMPLIANCE: ASME B16.10 AND ASME B16.34 FOR FERROUS VALVE DIMENSIONS AND DESIGN CRITERIA.
B. NSF COMPLIANCE: NSF 61 FOR VALVE MATERIALS FOR POTABLE-WATER SERVICE.

2.2 GENERAL-DUTY VALVES
A. VALVE SIZES: SAME AS UPSTREAM PIPING UNLESS OTHERWISE INDICATED.
B. VALVES IN INSULATED PIPING: WITH 2-INCH STEM EXTENSIONS.
C. END CONNECTIONS: THREADS SHALL COMPLY WITH ANSI B1.20.1. FLANGES SHALL COMPLY WITH ANSI B16.24 FOR BRONZE VALVES. SOLDER-JOINT CONNECTIONS SHALL COMPLY WITH ANSI B16.18.
D. ONE-PIECE, COPPER-ALLOY BALL VALVES: LEAD FREE BRONZE BODY WITH CHROME-PLATED BRASS BALL, MTFE SEATS, AND 600-PSIG MINIMUM CWP RATING.
E. TWO-PIECE, COPPER-ALLOY BALL VALVES: LEAD FREE BRONZE BODY WITH FULL-PORT, CHROME-PLATED BRASS BALL; RPTFE SEATS; AND 600-PSIG MINIMUM CWP RATING AND BLOWOUT-PROOF STEM.
F. LEAD FREE BRONZE, SWING CHECK VALVES: CLASS 125, BRONZE BODY WITH BRONZE DISC AND SEAT.

PART 3 - EXECUTION

3.1 INSTALLATION
A. USE BALL VALVES FOR SHUTOFF DUTY AND FOR THROTTLING DUTY.
B. LOCATE VALVES FOR EASY ACCESS AND PROVIDE SEPARATE SUPPORT WHERE NECESSARY.
C. INSTALL VALVES FOR EACH FIXTURE AND ITEM OF EQUIPMENT.
D. INSTALL VALVES IN HORIZONTAL PIPING WITH STEM AT OR ABOVE CENTER OF PIPE.
E. INSTALL VALVES IN A POSITION TO ALLOW FULL STEM MOVEMENT.
F. INSTALL CHECK VALVES FOR PROPER DIRECTION OF FLOW IN HORIZONTAL POSITION WITH HINGE PIN LEVEL.

END OF SECTION

SECTION 220700 - PLUMBING INSULATION

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
A. INSULATION INSTALLED INDOORS: FLAME-SPREAD INDEX OF 25 OR LESS, AND SMOKE-DEVELOPED INDEX OF 50 OR LESS ACCORDING TO ASTM E 84.

2.2 INSULATION MATERIALS
A. MINERAL-FIBER, PREFORMED PIPE INSULATION: COMPLY WITH ASTM C 547, TYPE I, GRADE A, WITH FACTORY-APPLIED ASJ.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. JOHNS MANVILLE; MICRO-LOK.
b. KNAUF INSULATION; 1000-DEGREE PIPE INSULATION.
c. OWENS CORNING; FIBERGLAS PIPE INSULATION.
2. TYPE I, 850 DEG F MATERIALS: MINERAL OR GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 547, TYPE I, GRADE A, WITH FACTORY-APPLIED ASJ. FACTORY-APPLIED JACKET REQUIREMENTS ARE SPECIFIED IN "FACTORY-APPLIED JACKETS" ARTICLE.

B. PROTECTIVE SHIELDING PIPE COVERS:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. MCGUIRE MANUFACTURING.
b. PLUMBEREX.
c. TRUEBRO; A BRAND OF IPS CORPORATION.
d. ZURN INDUSTRIES, LLC; TUBULAR BRASS PLUMBING PRODUCTS OPERATION.

2. DESCRIPTION: MANUFACTURED PLASTIC WRAPS FOR COVERING PLUMBING FIXTURE HOT- AND COLD-WATER SUPPLIES AND TRAP AND DRAIN PIPING. COMPLY WITH AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS.

2.3 ADHESIVES

A. MINERAL-FIBER ADHESIVE: COMPLY WITH MIL-A-3316C, CLASS 2, GRADE A.
1. FOR INDOOR APPLICATIONS, ADHESIVE SHALL HAVE A VOC CONTENT OF 80 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
2. ADHESIVE SHALL COMPLY WITH THE TESTING AND PRODUCT REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES' "STANDARD PRACTICE FOR THE TESTING OF VOLATILE ORGANIC EMISSIONS FROM VARIOUS SOURCES USING SMALL-SCALE ENVIRONMENTAL CHAMBERS."

2.4 MASTICS
A. VAPOR-BARRIER MASTIC: WATER BASED; SUITABLE FOR INDOOR USE ON BELOW AMBIENT SERVICES.
1. FOR INDOOR APPLICATIONS, USE MASTICS THAT HAVE A VOC CONTENT OF 50 G/L OR LESS.
2. WATER-VAPOR PERMEANCE: ASTM E 96/E 96M, PROCEDURE B, 0.013 PERM AT 43-MIL DRY FILM THICKNESS.
3. SERVICE TEMPERATURE RANGE: MINUS 20 TO PLUS 180 DEG F.
4. SOLIDS CONTENT: ASTM D 1644, 58 PERCENT BY VOLUME AND 70 PERCENT BY WEIGHT.
5. COLOR: WHITE.

B. BREATHER MASTIC: WATER BASED; SUITABLE FOR INDOOR AND OUTDOOR USE ON ABOVE AMBIENT SERVICES.
1. WATER-VAPOR PERMEANCE: ASTM F 1249, 1.8 PERMS AT 0.0625-INCH DRY FILM THICKNESS.
2. SERVICE TEMPERATURE RANGE: MINUS 20 TO PLUS 180 DEG F.
3. SOLIDS CONTENT: 60 PERCENT BY VOLUME AND 66 PERCENT BY WEIGHT.
4. COLOR: WHITE.

2.5 SEALANTS
A. JOINT SEALANTS:
1. MATERIALS SHALL BE COMPATIBLE WITH INSULATION MATERIALS, JACKETS, AND SUBSTRATES.
2. PERMANENTLY FLEXIBLE, ELASTOMERIC SEALANT.
3. SERVICE TEMPERATURE RANGE: MINUS 100 TO PLUS 300 DEG F.
4. COLOR: WHITE OR GRAY.
5. FOR INDOOR APPLICATIONS, SEALANTS SHALL HAVE A VOC CONTENT OF 420 G/L OR LESS.

B. ASJ FLASHING SEALANTS:
1. MATERIALS SHALL BE COMPATIBLE WITH INSULATION MATERIALS, JACKETS, AND SUBSTRATES.
2. FIRE- AND WATER-RESISTANT, FLEXIBLE, ELASTOMERIC SEALANT.
3. SERVICE TEMPERATURE RANGE: MINUS 40 TO PLUS 250 DEG F.
4. COLOR: WHITE.
5. FOR INDOOR APPLICATIONS, SEALANTS SHALL HAVE A VOC CONTENT OF 420 G/L OR LESS.

2.6 FACTORY-APPLIED JACKETS
A. INSULATION SYSTEM SCHEDULES INDICATE FACTORY-APPLIED JACKETS ON VARIOUS APPLICATIONS. WHEN FACTORY-APPLIED JACKETS ARE INDICATED, COMPLY WITH THE FOLLOWING:
1. ASJ: WHITE, KRAFT-PAPER, FIBERGLASS-REINFORCED SCRIM WITH ALUMINUM-FOIL BACKING; COMPLYING WITH ASTM C 1136, TYPE I.

2.7 TAPES
A. ASJ TAPE: WHITE VAPOR-RETARDER TAPE MATCHING FACTORY-APPLIED JACKET WITH ACRYLIC ADHESIVE, COMPLYING WITH ASTM C 1136.
1. WIDTH: 3 INCHES.
2. THICKNESS: 11.5 MILS.
3. ADHESION: 90 OUNCES FORCE/INCH IN WIDTH.
4. ELONGATION: 2 PERCENT.
5. TENSILE STRENGTH: 40 LBF/INCH IN WIDTH.
6. ASJ TAPE DISKS AND SQUARES: PRECUT DISKS OR SQUARES OF ASJ TAPE.

PART 3 - EXECUTION

3.1 PIPE INSULATION INSTALLATION
A. COMPLY WITH REQUIREMENTS OF THE MIDWEST INSULATION CONTRACTORS ASSOCIATION'S "NATIONAL COMMERCIAL & INDUSTRIAL INSULATION STANDARDS" FOR INSULATION INSTALLATION ON PIPES AND EQUIPMENT.

B. INSULATION INSTALLATION AT INTERIOR WALL AND PARTITION PENETRATIONS (THAT ARE NOT FIRE RATED): INSTALL INSULATION CONTINUOUSLY THROUGH WALLS AND PARTITIONS.

C. INSULATION INSTALLATION AT FIRE-RATED WALL, PARTITION, AND FLOOR PENETRATIONS: INSTALL INSULATION CONTINUOUSLY THROUGH PENETRATIONS. SEAL PENETRATIONS. COMPLY WITH REQUIREMENTS IN SECTION 078400.

D. MINERAL-FIBER INSULATION INSTALLATION:
1. INSULATION INSTALLATION ON STRAIGHT PIPES AND TUBES: WHERE VAPOR BARRIERS ARE INDICATED, SEAL LONGITUDINAL SEAMS, END JOINTS, AND PROTRUSIONS WITH VAPOR-BARRIER MASTIC AND JOINT SEALANT.
2. FOR INSULATION WITH FACTORY-APPLIED JACKETS ON ABOVE AMBIENT SURFACES, SECURE LAPS WITH OUTWARD CLINCHED STAPLES AT 6 INCHES O.C.
3. FOR INSULATION WITH FACTORY-APPLIED JACKETS ON BELOW AMBIENT SURFACES, DO NOT STAPLE LONGITUDINAL TABS BUT SECURE TABS WITH ADDITIONAL ADHESIVE AS RECOMMENDED BY INSULATION MATERIAL MANUFACTURER AND SEAL WITH VAPOR-BARRIER MASTIC AND FLASHING SEALANT.

E. INTERIOR PIPING SYSTEM APPLICATIONS: INSULATE THE FOLLOWING PIPING SYSTEMS:
1. DOMESTIC HOT WATER.
2. RECIRCULATED DOMESTIC HOT WATER.
3. EXPOSED WATER SUPPLIES AND SANITARY DRAINS OF FIXTURES FOR PEOPLE WITH DISABILITIES.

F. DO NOT APPLY INSULATION TO THE FOLLOWING SYSTEMS, MATERIALS, AND EQUIPMENT:
1. FLEXIBLE CONNECTORS.
2. SANITARY DRAINAGE AND VENT PIPING.
3. DRAINAGE PIPING LOCATED IN CRAWLSPACES UNLESS OTHERWISE INDICATED.
4. PIPING SPECIALTIES, INCLUDING AIR CHAMBERS, UNIONS, STRAINERS, CHECK VALVES, PLUG VALVES, AND FLOW REGULATORS.

3.2 INDOOR PIPING INSULATION SCHEDULE
A. DOMESTIC COLD WATER WITHIN 6 FT OF WATER HEATER:
1. NPS 1 AND SMALLER: INSULATION SHALL BE THE FOLLOWING:
a. MINERAL-FIBER, PREFORMED PIPE INSULATION, TYPE I: 1/2 INCH THICK.
2. NPS 1-1/4 AND LARGER: INSULATION SHALL BE THE FOLLOWING:
a. MINERAL-FIBER, PREFORMED PIPE INSULATION, TYPE I: 1 INCH THICK.

B. DOMESTIC HOT AND RECIRCULATED HOT WATER:
1. NPS 2 AND SMALLER: INSULATION SHALL BE THE FOLLOWING:
a. MINERAL-FIBER, PREFORMED PIPE INSULATION, TYPE I: 1 INCH THICK.

C. EXPOSED SANITARY DRAINS, DOMESTIC WATER, DOMESTIC HOT WATER, AND STOPS FOR PLUMBING FIXTURES FOR PEOPLE WITH DISABILITIES:
1. ALL PIPE SIZES: INSULATION SHALL BE THE FOLLOWING:
a. PROTECTIVE SHIELDING PIPING COVERS.
b. MANUFACTURED PLASTIC WRAPS FOR COVERING PLUMBING FIXTURE HOT- AND COLD-WATER SUPPLIES AND TRAP AND DRAIN PIPING. COMPLY WITH AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS.

D. PROTECTION OF INSULATION: FOR ALL PIPE INSULATION EXPOSED WITHIN 10 FEET ABOVE FINISHED FLOOR, FINISH WITH JOHNS-MANVILLE ZESTON 2000 PVC JACKET PIPING AND FITTING COVERS.

END OF SECTION

SECTION 221116 - DOMESTIC WATER PIPING

PART 2 - PRODUCTS

2.1 PREFORMANCE REQUIREMENTS
A. POTABLE-WATER PIPING AND COMPONENTS SHALL COMPLY WITH NSF 14 AND NSF 61.

2.2 PIPE AND FITTINGS
A. HARD COPPER TUBING: ASTM B 88, TYPE L, WATER TUBE, DRAWN TEMPER WITH WROUGHT-COPPER, SOLDER-JOINT FITTINGS. FURNISH WROUGHT-COPPER FITTINGS IF INDICATED.
1. COPPER UNIONS: CAST-COPPER-ALLOY, HEXAGONAL-STOCK BODY, WITH BALL-AND-SOCKET, METAL-TO-METAL SEATING SURFACES AND SOLDER-JOINT OR THREADED ENDS.
2. JOINING MATERIALS: USE ASTM B 813, WATER-FLUSHABLE, LEAD-FREE FLUX; ASTM B 32, LEAD-FREE-ALLOY SOLDER.

B. SOFT COPPER TUBING: ASTM B 88, TYPES K, WATER TUBE, ANNEALED TEMPER WITH COPPER PRESSURE FITTINGS, CAST-COPPER-ALLOY OR WROUGHT-COPPER, SOLDER-JOINT FITTINGS. FURNISH WROUGHT-COPPER FITTINGS IF INDICATED.
1. JOINING MATERIALS: USE ASTM B 813, WATER-FLUSHABLE, LEAD-FREE FLUX; ASTM B 32, LEAD-FREE-ALLOY SOLDER.

C. SPECIAL-DUTY VALVES
1. COMPLY WITH REQUIREMENTS IN SECTION 220523 "GENERAL-DUTY VALVES FOR PLUMBING PIPING" FOR GENERAL-DUTY METAL VALVES.
2. COMPLY WITH REQUIREMENTS IN SECTION 221119 "DOMESTIC WATER PIPING SPECIALTIES" FOR BALANCING VALVES, DRAIN VALVES, BACKFLOW PREVENTERS, AND VACUUM BREAKERS

D. TRANSITION FITTINGS: MANUFACTURED PIPING COUPLING OR SPECIFIED PIPING SYSTEM FITTING. SAME SIZE AS PIPES TO BE JOINED AND PRESSURE RATING AT LEAST EQUAL TO PIPES TO BE JOINED:

E. FLEXIBLE CONNECTORS: STAINLESS-STEEL, CORRUGATED-METAL TUBING WITH WIRE-BRAID COVERING. WORKING-PRESSURE RATING A MINIMUM OF 200 PSIG.

PART 3 - EXECUTION

3.1 INSTALLATION
A. COMPLY WITH REQUIREMENTS IN SECTION 220500 "COMMON WORK RESULTS FOR PLUMBING" FOR BASIC PIPING INSTALLATION REQUIREMENTS.

B. INSTALL WALL PENETRATION SYSTEM AT EACH SERVICE PIPE PENETRATION THROUGH FOUNDATION WALL. MAKE INSTALLATION WATERTIGHT. COMPLY WITH REQUIREMENTS IN SECTION 220500 "COMMON WORK RESULTS FOR PLUMBING" FOR WALL PENETRATION SYSTEMS.

C. INSTALL SHUTOFF VALVE, HOSE-END DRAIN VALVE, STRAINER, PRESSURE GAGE, AND TEST TEE WITH VALVE, INSIDE THE BUILDING AT EACH DOMESTIC WATER SERVICE ENTRANCE.

D. INSTALL DOMESTIC WATER PIPING WITHOUT PITCH FOR HORIZONTAL PIPING AND PLUMB FOR VERTICAL PIPING.

E. SUPPORT VERTICAL PIPING AT EACH FLOOR.

3.2 INSPECTING AND CLEANING
A. INSPECT AND TEST PIPING SYSTEMS AS FOLLOWS:
1. FILL DOMESTIC WATER PIPING. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT AIR BOUND AND THAT PIPING IS FULL OF WATER.
2. TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED.

B. CLEAN AND DISINFECT POTABLE DOMESTIC WATER PIPING BY FILLING SYSTEM WITH WATER/CHLORINE SOLUTION WITH AT LEAST 50 PPM OF CHLORINE. ISOLATE WITH VALVES AND ALLOW TO STAND FOR 24 HOURS. FLUSH SYSTEM WITH CLEAN, POTABLE WATER UNTIL NO CHLORINE IS IN WATER COMING FROM SYSTEM AFTER THE STANDING TIME.

3.3 PIPING SCHEDULE
A. ABOVEGROUND DISTRIBUTION PIPING: TYPE L HARD COPPER TUBING.

B. BELOWGROUND DISTRIBUTION PIPING: TYPE K SOFT COPPER TUBING.

3.4 VALVE SCHEDULE
A. DRAWINGS INDICATE VALVE TYPES TO BE USED. WHERE SPECIFIC VALVE TYPES ARE NOT INDICATED, THE FOLLOWING REQUIREMENTS APPLY:
1. SHUTOFF DUTY: USE BRONZE BALL VALVES FOR PIPING NPS 2 AND SMALLER.
2. THROTTLING DUTY: USE BRONZE BALL VALVES FOR PIPING NPS 2 AND SMALLER.
3. HOT-WATER-PIPING, BALANCING DUTY: MEMORY-STOP BALANCING VALVES.
4. DRAIN DUTY: HOSE-END DRAIN VALVES.

B. INSTALL BALL VALVES CLOSE TO MAIN ON EACH BRANCH AND RISER SERVING TWO OR MORE PLUMBING FIXTURES OR EQUIPMENT CONNECTIONS AND WHERE INDICATED.

C. INSTALL BALL VALVES ON INLET TO EACH PLUMBING EQUIPMENT ITEM, ON EACH SUPPLY TO EACH PLUMBING FIXTURE NOT HAVING STOPS ON SUPPLIES, AND ELSEWHERE AS INDICATED.

D. INSTALL DRAIN VALVE AT BASE OF EACH RISER, AT LOW POINTS OF HORIZONTAL RUNS, AND WHERE REQUIRED TO DRAIN WATER DISTRIBUTION PIPING SYSTEM.

E. INSTALL SWING CHECK VALVE ON DISCHARGE SIDE OF EACH PUMP AND ELSEWHERE AS INDICATED.

F. INSTALL BALL VALVES IN EACH HOT-WATER CIRCULATING LOOP AND DISCHARGE SIDE OF EACH PUMP.

END OF SECTION

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ISSUE	DATE
PERMIT SET	12.06.24
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PLUMBING SPECIFICATIONS

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SPECIFICATIONS - DIVISION 22 - PLUMBING (CONTINUED)

SECTION 221119 - DOMESTIC WATER PIPING SPECIALTIES

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PIPING SPECIALTIES

A. POTABLE-WATER PIPING AND COMPONENTS SHALL COMPLY WITH NSF 61AND NSF 14.

2.2 PERFORMANCE REQUIREMENTS

A. MINIMUM WORKING PRESSURE FOR DOMESTIC WATER PIPING SPECIALTIES: 125 PSIG UNLESS OTHERWISE INDICATED.

2.3 MANUFACTURED UNITS

A. PIPE-APPLIED, ATMOSPHERIC-TYPE VACUUM BREAKERS:

1. STANDARD: ASSE 1001.
2. SIZE: NPS 1/4 TO NPS 3, AS REQUIRED TO MATCH CONNECTED PIPING.
3. BODY: BRONZE.
4. INLET AND OUTLET CONNECTIONS: THREADED.
5. FINISH: CHROME PLATED.

B. HOSE-CONNECTION VACUUM BREAKERS:

1. STANDARD: ASSE 1011.
2. BODY: BRONZE, NONREMOVABLE, WITH MANUAL DRAIN.
3. OUTLET CONNECTION: GARDEN-HOSE THREADED COMPLYING WITH ASME B1.20.7.
4. FINISH: CHROME OR NICKEL PLATED BRONZE.

C. REDUCED-PRESSURE-PRINCIPLE BACKFLOW PREVENTERS:

1. STANDARD: ASSE 1013.
2. OPERATION: CONTINUOUS-PRESSURE APPLICATIONS.
3. PRESSURE LOSS: 12 PSIG MAXIMUM, THROUGH MIDDLE THIRD OF FLOW RANGE.
4. BODY: LEAD FREE BRONZE OR STAINLESS STEEL FOR NPS 2 AND SMALLER.
5. END CONNECTIONS: THREADED FOR NPS 2 AND SMALLER.
6. CONFIGURATION: DESIGNED FOR HORIZONTAL, STRAIGHT-THROUGH FLOW.
7. ACCESSORIES:
   a. VALVES NPS 2 AND SMALLER: BALL TYPE WITH THREADED ENDS ON INLET AND OUTLET.
   b. AIR-GAP FITTING: ASME A112.1.2, MATCHING BACKFLOW-PREVENTER CONNECTION.

D. WATER REGULATORS:

1. STANDARD: ASSE 1003.
2. PRESSURE RATING: INITIAL WORKING PRESSURE OF 150 PSIG.
3. DESIGN OUTLET PRESSURE SETTING: 60 PSIG.
4. BODY: LEAD FREE BRONZE WITH CHROME-PLATED FINISH FOR NPS 2 AND SMALLER.
5. END CONNECTIONS: THREADED FOR NPS 2 AND SMALLER.

E. MEMORY-STOP BALANCING VALVES:

1. STANDARD: MSS SP-110 FOR TWO-PIECE, COPPER-ALLOY BALL VALVES.
2. PRESSURE RATING: 400-PSIG MINIMUM CWP.
3. SIZE: NPS 2 OR SMALLER.
4. BODY: LEAD FREE COPPER ALLOY.
5. PORT: FULL PORT.
6. BALL: CHROME-PLATED BRASS.
7. SEATS AND SEALS: REPLACEABLE.
8. END CONNECTIONS: SOLDER JOINT OR THREADED.
9. HANDLE: VINYL-COVERED STEEL WITH MEMORY-SETTING DEVICE.

F. THERMOSTATIC, WATER MIXING VALVES:

1. STANDARD: ASSE 1017.
2. PRESSURE RATING: 125 PSIG MINIMUM UNLESS OTHERWISE INDICATED.
3. TYPE: EXPOSED-MOUNTED, THERMOSTATICALLY CONTROLLED, WATER MIXING VALVE.
4. MATERIAL: LEAD FREE BRONZE BODY WITH CORROSION-RESISTANT INTERIOR COMPONENTS.
5. CONNECTIONS: THREADED OR UNION INLETS AND OUTLET.
6. ACCESSORIES: MANUAL TEMPERATURE CONTROL, CHECK STOPS ON HOT- AND COLD-WATER SUPPLIES, AND ADJUSTABLE, TEMPERATURE-CONTROL HANDLE.
7. TEMPERED-WATER SETTING: AS SPECIFIED ON DRAWINGS.
8. PRESSURE DROP AT DESIGN FLOW RATE: NOT EXCEED 15 PSIG.
9. VALVE FINISH: CHROME PLATED.

G. Y-PATTERN STRAINERS:

1. PRESSURE RATING: 125 PSIG MINIMUM UNLESS OTHERWISE INDICATED.
2. BODY: LEAD FREE BRONZE FOR NPS 2 AND SMALLER.
3. END CONNECTIONS: THREADED FOR NPS 2 AND SMALLER.
4. SCREEN: STAINLESS STEEL WITH ROUND PERFORATIONS UNLESS OTHERWISE INDICATED.
5. PERFORATION SIZE:
   a. STRAINERS NPS 2 AND SMALLER: 0.020 INCH.
6. DRAIN: PIPE PLUG.

H. HOSE BIBBS:

1. STANDARD: ASME A112.18.1 FOR SEDIMENT FAUCETS.
2. BODY MATERIAL: BRONZE.
3. SEAT: BRONZE, REPLACEABLE.
4. SUPPLY CONNECTIONS: NPS 3/4 THREADED OR SOLDER-JOINT INLET.
5. OUTLET CONNECTION: GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7.
6. PRESSURE RATING: 125 PSIG.
7. VACUUM BREAKER: INTEGRAL, NONREMOVABLE, DRAINABLE, HOSE-CONNECTION VACUUM BREAKER COMPLYING WITH ASSE 1011.
8. FINISH FOR EQUIPMENT ROOMS: ROUGH BRONZE, OR CHROME OR NICKEL PLATED.
9. FINISH FOR SERVICE AREAS: CHROME OR NICKEL PLATED.
10. FINISH FOR FINISHED ROOMS: CHROME OR NICKEL PLATED.
11. OPERATION FOR EQUIPMENT ROOMS: WHEEL HANDLE OR OPERATING KEY.
12. OPERATION FOR SERVICE AREAS: OPERATING KEY.
13. OPERATION FOR FINISHED ROOMS: OPERATING KEY.
14. INCLUDE OPERATING KEY WITH EACH OPERATING-KEY HOSE BIBB.
15. INCLUDE INTEGRAL WALL FLANGE WITH EACH CHROME- OR NICKEL-PLATED HOSE BIBB.

I. NONFREEZE WALL HYDRANTS:

1. STANDARD: ASME A112.21.3M FOR CONCEALED OR EXPOSED-OUTLET, SELF-DRAINING WALL HYDRANTS.
2. PRESSURE RATING: 125 PSIG.
3. OPERATION: LOOSE KEY.
4. CASING AND OPERATING ROD: OF LENGTH REQUIRED TO MATCH WALL THICKNESS. INCLUDE WALL CLAMP.
5. INLET: NPS 3/4.
6. OUTLET: CONCEALED, WITH INTEGRAL VACUUM BREAKER AND GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7.
7. BOX: DEEP, FLUSH MOUNTED WITH COVER.
8. BOX AND COVER FINISH: CHROME PLATED.
9. OUTLET: EXPOSED, WITH INTEGRAL VACUUM BREAKER AND GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7.
10. NOZZLE AND WALL-PLATE FINISH: POLISHED NICKEL BRONZE.
11. OPERATING KEYS: ONE WITH EACH WALL HYDRANT.

J. BALL-VALVE-TYPE, HOSE-END DRAIN VALVES:

1. STANDARD: MSS SP-110 FOR STANDARD-PORT, TWO-PIECE BALL VALVES.
2. PRESSURE RATING: 400-PSIG MINIMUM CWP.
3. SIZE: NPS 3/4.
4. BODY: COPPER ALLOY.
5. BALL: CHROME-PLATED BRASS.
6. SEATS AND SEALS: REPLACEABLE.
7. HANDLE: VINYL-COVERED STEEL.
8. INLET: THREADED OR SOLDER JOINT.
9. OUTLET: THREADED, SHORT NIPPLE WITH GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7 AND CAP WITH BRASS CHAIN.

K. WATER-HAMMER ARRESTERS:

1. STANDARD: ASSE 1010 OR PDI-WH 201.
2. TYPE: COPPER TUBE WITH PISTON.
3. SIZE: ASSE 1010, SIZES AA AND A THROUGH F, OR PDI-WH 201, SIZES A THROUGH F.

L. SUPPLY-TYPE, TRAP-SEAL PRIMER DEVICE:

1. STANDARD: ASSE 1018
2. PRESSURE RATING: 125 PSIG MINIMUM.
3. BODY: BRONZE.
4. INLET AND OUTLET CONNECTIONS: NPS 1/2 THREADED, UNION, OR SOLDER JOINT.
5. GRAVITY DRAIN OUTLET CONNECTION: NPS 1/2 THREADED OR SOLDER JOINT.
6. FINISH: CHROME PLATED, OR ROUGH BRONZE FOR UNITS USED WITH PIPE OR TUBE THAT IS NOT CHROME FINISHED.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL BACKFLOW PREVENTERS IN EACH WATER SUPPLY TO MECHANICAL EQUIPMENT AND SYSTEMS AND TO OTHER EQUIPMENT AND WATER SYSTEMS THAT MAY BE SOURCES OF CONTAMINATION. COMPLY WITH AUTHORITIES HAVING JURISDICTION.

B. INSTALL WATER REGULATORS WITH INLET AND OUTLET SHUTOFF VALVES. INSTALL PRESSURE GAGES ON INLET AND OUTLET.

C. INSTALL BALANCING VALVES IN LOCATIONS WHERE THEY CAN EASILY BE ADJUSTED.

D. INSTALL TEMPERATURE-ACTUATED, WATER MIXING VALVES WITH CHECK STOPS OR SHUTOFF VALVES ON INLETS AND WITH SHUTOFF VALVE ON OUTLET.

E. INSTALL Y-PATTERN STRAINERS FOR WATER ON SUPPLY SIDE OF EACH CONTROL VALVE, WATER PRESSURE-REDUCING VALVE, SOLENOID VALVE AND PUMP.

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

G. INSTALL SUPPLY-TYPE, TRAP-SEAL PRIMER VALVES WITH OUTLET PIPING PITCHED DOWN TOWARD DRAIN TRAP A MINIMUM OF 1 PERCENT, AND CONNECT TO FLOOR-DRAIN BODY, TRAP, OR INLET FITTING. ADJUST VALVE FOR PROPER FLOW.

3.2 FIELD QUALITY CONTROL

A. PERFORM THE FOLLOWING TESTS AND INSPECTIONS:

1. TEST EACH PRESSURE VACUUM BREAKER, REDUCED-PRESSURE-PRINCIPLE BACKFLOW PREVENTER, AND DOUBLE-CHECK BACKFLOW-PREVENTION ASSEMBLY ACCORDING TO AUTHORITIES HAVING JURISDICTION AND THE DEVICE'S REFERENCE STANDARD.
2. DOMESTIC WATER PIPING SPECIALTIES WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.
3. PREPARE TEST AND INSPECTION REPORTS.

END OF SECTION 221119

SECTION 221123 - DOMESTIC WATER PUMPS

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIRMENTS

A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

B. COMPLY WITH UL 778 FOR MOTOR-OPERATED WATER PUMPS.

2.2 DOMESTIC WATER PUMPS

A. HOT WATER CIRCULATOR PUMP, RP-1:

1. BASIS-OF-DESIGN PRODUCT: GRUNDFOS ALPHA2 15-55SF, AS INDICATED ON DRAWINGS.
2. CASING: STAINLESS STEEL WITH COMPANION-FLANGE CONNECTIONS.
3. MOTOR: AUTOMATIC ADJUSTABLE, WET-ROTOR, PERMANENT MAGNET.

2.3 MOTORS

A. COMPLY WITH NEMA DESIGNATION, TEMPERATURE RATING, SERVICE FACTOR, ENCLOSURE TYPE, AND EFFICIENCY REQUIREMENTS FOR MOTORS.

B. MOTOR SIZES: MINIMUM SIZE AS INDICATED. IF NOT INDICATED, LARGE ENOUGH SO DRIVEN LOAD WILL NOT REQUIRE MOTOR TO OPERATE IN SERVICE FACTOR RANGE ABOVE 1.0.

2.4 CONTROLS

A. TIMERS: ELECTRIC, FOR CONTROL OF HOT-WATER CIRCULATION PUMP.
1. TYPE: PROGRAMMABLE, SEVEN-DAY CLOCK WITH MANUAL OVERRIDE ON-OFF SWITCH.
2. PROGRAMMABLE SEQUENCE OF OPERATION: UP TO TWO ON-OFF CYCLES EACH DAY FOR SEVEN DAYS.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL PUMPS WITH ACCESS FOR PERIODIC MAINTENANCE, INCLUDING REMOVAL OF MOTORS, IMPELLERS, COUPLINGS, AND ACCESSORIES.

B. SUPPORT PUMPS AND PIPING SO WEIGHT OF PIPING IS NOT SUPPORTED BY PUMP VOLUTE.

C. INSTALL ELECTRICAL CONNECTIONS FOR POWER, CONTROLS, AND DEVICES.

D. SUSPEND IN-LINE PUMPS INDEPENDENT FROM PIPING. USE CONTINUOUS-THREAD HANGER RODS AND VIBRATION ISOLATION HANGERS. FABRICATE BRACKETS OR SUPPORTS AS REQUIRED FOR PUMPS.

E. CONNECT PIPING WITH VALVES THAT ARE AT LEAST THE SAME SIZE AS PIPING CONNECTING TO PUMPS.
F. INSTALL SUCTION AND DISCHARGE PIPE SIZES EQUAL TO OR GREATER THAN DIAMETER OF PUMP NOZZLES.
G. INSTALL SHUTOFF VALVE AND STRAINER ON SUCTION SIDE OF PUMPS.
H. INSTALL NONSLAM CHECK VALVE AND THROTTLING VALVE ON DISCHARGE SIDE OF PUMPS.
I. INSTALL THERMOSTATS IN HOT-WATER RETURN PIPING.
J. INSTALL TEST PLUGS ON SUCTION AND DISCHARGE OF EACH PUMP. INSTALL AT INTEGRAL PRESSURE GAGE TAPPINGS WHERE PROVIDED.

END OF SECTION

SECTION 221316 - SANITARY WASTE AND VENT PIPING

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
A. COMPONENTS AND INSTALLATION SHALL BE CAPABLE OF WITHSTANDING THE FOLLOWING MINIMUM WORKING PRESSURE UNLESS OTHERWISE INDICATED:
1. SOIL, WASTE, AND VENT PIPING: 10-FOOT HEAD OF WATER.

B. PIPING MATERIALS SHALL BEAR LABEL, STAMP, OR OTHER MARKINGS OF SPECIFIED TESTING AGENCY.

C. COMPLY WITH NSF/ANSI 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS," FOR PLASTIC PIPING COMPONENTS.

2.2 PIPES AND FITTINGS
A. COPPER DRAINAGE TUBE AND FITTINGS: ASTM B 306, TYPE DWV DRAWN TEMPER WITH ASME B16.23, CAST COPPER OR ASME B16.29, WROUGHT COPPER, SOLDER-JOINT FITTINGS.
1. COPPER FLANGES: ASME B16.24, CLASS 150, CAST COPPER WITH SOLDER-JOINT END.
a. FLANGE GASKET MATERIALS: ASME B16.21, FULL-FACE, FLAT, NONMETALLIC, ASBESTOS-FREE, 1/8-INCH MAXIMUM THICKNESS UNLESS THICKNESS OR SPECIFIC MATERIAL IS INDICATED.
b. FLANGE BOLTS AND NUTS: ASME B18.2.1, CARBON STEEL UNLESS OTHERWISE INDICATED.
2. SOLDER: ASTM B 32, LEAD FREE WITH ASTM B 813, WATER-FLUSHABLE FLUX.

B. HUB-AND-SPIGOT CAST-IRON SOIL PIPE AND FITTINGS: ASTM A 74, SERVICE CLASS; ASTM C 564 RUBBER GASKETS.

C. HUBLESS CAST-IRON SOIL PIPE AND FITTINGS: ASTM A 888 OR CISPI 301, WITH ASTM C 1277 SHIELDED COUPLINGS.

D. PVC PLASTIC, DWV PIPE AND FITTINGS: ASTM D 2665, SCHEDULE 40, PLAIN ENDS WITH PVC SOCKET-TYPE, DWV PIPE FITTINGS.
1. ADHESIVE PRIMER: ASTM F 656.
a. ADHESIVE PRIMER SHALL HAVE A VOC CONTENT OF 550 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
2. SOLVENT CEMENT: ASTM D 2564.
a. PVC SOLVENT CEMENT SHALL HAVE A VOC CONTENT OF 510 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).

PART 3 - EXECUTION

3.1 PIPING INSTALLATION
A. INSTALL CAST-IRON SOIL PIPING ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK," CHAPTER IV, "INSTALLATION OF CAST IRON SOIL PIPE AND FITTINGS."

B. INSTALL WALL PENETRATION SYSTEM AT EACH PIPE PENETRATION THROUGH FOUNDATION WALL. MAKE INSTALLATION WATERTIGHT. COMPLY WITH REQUIREMENTS IN SECTION 220513 "COMMON WORK RESULTS FOR PLUMBING" FOR WALL PENETRATION SYSTEMS.
1. SLEEVES ARE NOT REQUIRED FOR CAST-IRON SOIL PIPING PASSING THROUGH CONCRETE SLABS-ON-GRADE IF SLAB IS WITHOUT MEMBRANE WATERPROOFING.

C. MAKE CHANGES IN DIRECTION FOR SOIL AND WASTE DRAINAGE AND VENT PIPING USING APPROPRIATE BRANCHES, BENDS, AND LONG-SWEEP BENDS. SANITARY TEES AND SHORT-SWEEP 1/4 BENDS MAY BE USED ON VERTICAL STACKS IF CHANGE IN DIRECTION OF FLOW IS FROM HORIZONTAL TO VERTICAL. USE LONG-TURN, DOUBLE Y-BRANCH AND 1/8-BEND FITTINGS IF TWO FIXTURES ARE INSTALLED BACK TO BACK OR SIDE BY SIDE WITH COMMON DRAIN PIPE. STRAIGHT TEES, ELBOWS, AND CROSSES MAY BE USED ON VENT LINES. DO NOT CHANGE DIRECTION OF FLOW MORE THAN 90 DEGREES. USE PROPER SIZE OF STANDARD INCREASERS AND REDUCERS IF PIPES OF DIFFERENT SIZES ARE CONNECTED. REDUCING SIZE OF DRAINAGE PIPING IN DIRECTION OF FLOW IS PROHIBITED.

D. LAY BURIED BUILDING DRAINAGE PIPING BEGINNING AT LOW POINT OF EACH SYSTEM. INSTALL TRUE TO GRADES AND ALIGNMENT INDICATED, WITH UNBROKEN CONTINUITY OF INVERT. PLACE HUB ENDS OF PIPING UPSTREAM. INSTALL REQUIRED GASKETS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR USE OF LUBRICANTS, CEMENTS, AND OTHER INSTALLATION REQUIREMENTS. MAINTAIN SWAB IN PIPING AND PULL PAST EACH JOINT AS COMPLETED.

E. INSTALL SOIL AND WASTE DRAINAGE AND VENT PIPING AT THE FOLLOWING MINIMUM SLOPES, UNLESS OTHERWISE INDICATED:
1. HORIZONTAL SANITARY DRAINAGE PIPING: 2 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 2-1/2 AND SMALLER; 1 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 3 AND LARGER.
2. VENT PIPING: ALL VENT AND BRANCH VENT PIPING SHALL BE GRADED AND CONNECTED TO DRAIN BACK TOWARD VERTICAL FIXTURE VENT OR TOWARD VENT STACK.

F. INSTALL PVC SOIL AND WASTE DRAINAGE AND VENT PIPING ACCORDING TO ASTM D 2665.

G. INSTALL UNDERGROUND PVC SOIL AND WASTE DRAINAGE PIPING ACCORDING TO ASTM D 2321.

H. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

I. COMPLY WITH REQUIREMENTS IN SECTION 220513 "COMMON WORK RESULTS FOR PLUMBING" FOR BASIC PIPING JOINT CONSTRUCTION.

J. SOLDERED JOINTS: USE ASTM B 813, WATER-FLUSHABLE, LEAD-FREE FLUX; ASTM B 32, LEAD-FREE-ALLOY SOLDER; AND ASTM B 828 PROCEDURE UNLESS OTHERWISE INDICATED.

K. COMPLY WITH REQUIREMENTS IN SECTION 220513 "COMMON WORK RESULTS FOR PLUMBING" FOR PIPE HANGER AND SUPPORT DEVICES.

3.2 PIPE SCHEDULE
A. ABOVEGROUND APPLICATIONS: HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS, HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS, PVC PLASTIC, DWV PIPE AND FITTINGS WITH SOLVENT-CEMENTED JOINTS, COPPER DRAINAGE TUBE AND FITTINGS WITH SOLDERED JOINTS. PVC PLASTIC PIPE AND FITTINGS SHALL NOT BE PERMITTED FOR INSTALLATION IN RETURN AIR PLENUMS OR LOCATIONS EXPOSED TO RETURN AIR PLENUMS. ANY EXPOSED SEWER WASTE PIPE SHALL NOT BE PLASTIC OF ANY KIND.

B. BELOWGROUND APPLICATIONS: HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS, PVC PLASTIC, DWV PIPE AND DRAINAGE-PATTERN FITTINGS WITH CEMENTED JOINTS.
1. GREASE WASTE PIPE: HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS. PVC PLASTIC PIPE AND FITTINGS SHALL NOT BE PERMITTED FOR GREASE WASTE PIPING.

END OF SECTION

SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES

PART 1 - GENERAL
1.1 SECTION REQUIREMENTS
A. SUBMITTALS:
1. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
a. INCLUDE RATED CAPACITIES, OPERATING CHARACTERISTICS, AND ACCESSORIES FOR GREASE INTERCEPTORS.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. DRAINAGE PIPING SPECIALTIES SHALL BEAR LABEL, STAMP, OR OTHER MARKINGS OF SPECIFIED TESTING AGENCY.

2.2 MANUFACTURED UNITS - AS INDICATED ON DRAWINGS

A. FLOOR CLEANOUTS: PER STANDARD ASME A112.36.2M-2002.

B. FLOOR DRAINS: PER STANDARD ASME A112.6.3-2001.

C. CAST IRON FLOOR SINKS: PER STANDARD ASME A112.6.7-2001.

D. PVC PLASTIC FLOOR SINKS: PER STANDARD ASME A112.6.7-2001.

PART 3 - EXECUTION

3.1 INSTALLATION

A. INSTALL CLEANOUTS AT GRADE AND EXTEND TO WHERE BUILDING SANITARY DRAINS CONNECT TO BUILDING SANITARY SEWERS.

B. INSTALL FLOOR DRAINS AT LOW POINTS OF SURFACE AREAS TO BE DRAINED. SET GRATES OF DRAINS FLUSH WITH FINISHED FLOOR UNLESS OTHERWISE INDICATED.
1. INSTALL FLOOR-DRAIN FLASHING COLLAR OR FLANGE SO NO LEAKAGE OCCURS BETWEEN DRAIN AND ADJOINING FLOORING. MAINTAIN INTEGRITY OF WATERPROOF MEMBRANES WHERE PENETRATED.
2. INSTALL INDIVIDUAL TRAPS FOR FLOOR DRAINS CONNECTED TO SANITARY BUILDING DRAIN, UNLESS OTHERWISE INDICATED.

END OF SECTION

SECTION 22 34 00 - FUEL-FIRED, DOMESTIC WATER HEATERS

PART 1 - GENERAL

1.1 QUALITY ASSURANCE

A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

B. NSF COMPLIANCE: FABRICATE AND LABEL EQUIPMENT COMPONENTS THAT WILL BE IN CONTACT WITH POTABLE WATER TO COMPLY WITH NSF 61, "DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS."

1.2 COORDINATION

A. COORDINATE SIZES AND LOCATIONS OF CONCRETE BASES WITH ACTUAL EQUIPMENT PROVIDED.

1.3 WARRANTY

A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF FUEL-FIRED, DOMESTIC-WATER HEATERS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. FAILURES INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a. STRUCTURAL FAILURES INCLUDING STORAGE TANK AND SUPPORTS.
b. FAULTY OPERATION OF CONTROLS.
c. DETERIORATION OF METALS, METAL FINISHES, AND OTHER MATERIALS BEYOND NORMAL USE.
2. WARRANTY PERIODS: FROM DATE OF SUBSTANTIAL COMPLETION.
a. COMMERCIAL, GAS-FIRED, TANKLESS, DOMESTIC-WATER HEATERS:
1) PARTS: THREE YEARS.
2) HEAT EXCHANGER: EIGHT YEARS.

PART 2 - PRODUCTS

1. AS SCHEDULED ON PLUMBING SCHEDULES.

2.2 DOMESTIC WATER HEATER ACCESSORIES

B. GAS SHUTOFF VALVES: ANSI Z21.15/CSA 9.1-M, MANUALLY OPERATED. FURNISH FOR INSTALLATION IN PIPING.

C. GAS PRESSURE REGULATORS: ANSI Z21.18/CSA 6.3, APPLIANCE TYPE. INCLUDE 1/2-PSIG PRESSURE RATING AS REQUIRED TO MATCH GAS SUPPLY.

D. AUTOMATIC GAS VALVES: ANSI Z21.21/CSA 6.5, APPLIANCE, ELECTRICALLY OPERATED, ON-OFF AUTOMATIC VALVE.

E. COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVES: INCLUDE RELIEVING CAPACITY AT LEAST AS GREAT AS HEAT INPUT, AND INCLUDE PRESSURE SETTING LESS THAN DOMESTIC-WATER HEATER WORKING-PRESSURE RATING. SELECT RELIEF VALVES WITH SENSING ELEMENT THAT EXTENDS INTO STORAGE TANK.
1. GAS-FIRED, DOMESTIC-WATER HEATERS: ANSI Z21.22/CSA 4.4-M.

2.3 SOURCE QUALITY CONTROL

A. HYDROSTATICALLY TEST COMMERCIAL DOMESTIC-WATER HEATERS TO MINIMUM OF ONE AND ONE-HALF TIMES PRESSURE RATING BEFORE SHIPMENT.

B. DOMESTIC-WATER HEATERS WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS. PREPARE TEST AND INSPECTION REPORTS.

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AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
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PLUMBING SPECIFICATIONS

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SPECIFICATIONS - DIVISION 22 - PLUMBING (CONTINUED)

PART 3 - EXECUTION

3.1 DOMESTIC WATER HEATER INSTALLATION

A. INSTALL GAS-FIRED, DOMESTIC-WATER HEATERS ACCORDING TO NFPA 54.
1. INSTALL GAS SHUTOFF VALVES ON GAS SUPPLY PIPING TO GAS-FIRED, DOMESTIC-WATER HEATERS WITHOUT SHUTOFF VALVES.
2. INSTALL GAS PRESSURE REGULATORS ON GAS SUPPLIES TO GAS-FIRED, DOMESTIC-WATER HEATERS WITHOUT GAS PRESSURE REGULATORS IF GAS PRESSURE REGULATORS ARE REQUIRED TO REDUCE GAS PRESSURE AT BURNER.
3. INSTALL AUTOMATIC GAS VALVES ON GAS SUPPLIES TO GAS-FIRED, DOMESTIC-WATER HEATERS IF REQUIRED FOR OPERATION OF SAFETY CONTROL.

B. INSTALL COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVES IN TOP PORTION OF STORAGE TANKS. USE RELIEF VALVES WITH SENSING ELEMENTS THAT EXTEND INTO TANKS. EXTEND COMMERCIAL-WATER-HEATER RELIEF-VALVE OUTLET, WITH DRAIN PIPING SAME AS DOMESTIC-WATER PIPING IN CONTINUOUS DOWNWARD PITCH, AND DISCHARGE BY POSITIVE AIR GAP ONTO CLOSEST FLOOR DRAIN.

C. INSTALL WATER-HEATER DRAIN PIPING AS INDIRECT WASTE TO SPILL BY POSITIVE AIR GAP INTO OPEN DRAINS OR OVER FLOOR DRAINS. INSTALL HOSE-END DRAIN VALVES AT LOW POINTS IN WATER PIPING FOR DOMESTIC-WATER HEATERS THAT DO NOT HAVE TANK DRAINS.

3.2 FIELD QUALITY CONTROL

A. PERFORM TESTS AND INSPECTIONS.
1. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS, AND TO ASSIST IN TESTING.
2. LEAK TEST: AFTER INSTALLATION, CHARGE SYSTEM AND TEST FOR LEAKS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.
3. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER OPERATION.
4. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.

B. DOMESTIC-WATER HEATERS WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.

C. PREPARE TEST AND INSPECTION REPORTS.

END OF SECTION

SECTION 224000 - PLUMBING FIXTURES

PART 1 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. REGULATORY REQUIREMENTS: COMPLY WITH REQUIREMENTS IN ICC A117.1, "ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES", PUBLIC LAW 90-480, "ARCHITECTURAL BARRIERS ACT"; AND PUBLIC LAW 101-336, "AMERICANS WITH DISABILITIES ACT" FOR PLUMBING FIXTURES FOR PEOPLE WITH DISABILITIES.

B. REGULATORY REQUIREMENTS: COMPLY WITH REQUIREMENTS IN PUBLIC LAW 102-486, "ENERGY POLICY ACT," ABOUT WATER FLOW AND CONSUMPTION RATES FOR PLUMBING FIXTURES.

C. NSF STANDARD: COMPLY WITH NSF 61, "DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS," FOR FIXTURE MATERIALS THAT WILL BE IN CONTACT WITH POTABLE WATER.

D. FIXTURES SHALL BE PROVIDED AS SCHEDULED ON THE DRAWINGS.

PART 2 - EXECUTION

3.1 INSTALLATIONS

A. INSTALL FITTING INSULATION KITS ON FIXTURES FOR PEOPLE WITH DISABILITIES.

B. INSTALL FIXTURES WITH FLANGES AND GASKET SEALS.

C. INSTALL TANKS FOR ACCESSIBLE, TANK-TYPE WATER CLOSETS WITH LEVER HANDLE MOUNTED ON WIDE SIDE OF COMPARTMENT.

D. FASTEN WALL-HANGING PLUMBING FIXTURES SECURELY TO SUPPORTS ATTACHED TO BUILDING SUBSTRATE WHEN SUPPORTS ARE SPECIFIED, AND TO BUILDING WALL CONSTRUCTION WHERE NO SUPPORT IS INDICATED.

E. FASTEN FLOOR-MOUNTED FIXTURES TO SUBSTRATE. FASTEN FIXTURES HAVING HOLES FOR SECURING FIXTURE TO WALL CONSTRUCTION, TO REINFORCEMENT BUILT INTO WALLS.

F. FASTEN WALL-MOUNTED FITTINGS TO REINFORCEMENT BUILT INTO WALLS.

G. FASTEN COUNTER-MOUNTING PLUMBING FIXTURES TO CASEWORK.

H. SECURE SUPPLIES TO SUPPORTS OR SUBSTRATE WITHIN PIPE SPACE BEHIND FIXTURE.

I. SET MOP BASINS IN LEVELING BED OF CEMENT GROUT.

J. INSTALL INDIVIDUAL SUPPLY INLETS, SUPPLY STOPS, SUPPLY RISERS, AND TUBULAR BRASS TRAPS WITH CLEANOUTS AT FIXTURE. ALL ABOVE FLOOR FIXTURE TRAPS DIRECTLY CONNECTED TO SANITARY WASTE SYSTEMS SHALL BE CHROME PLATED 17 GAUGE SEAMLESS TUBULAR CAST BRASS P-TRAPS WITH CLEANOUTS.

K. INSTALL WATER-SUPPLY STOP VALVES IN ACCESSIBLE LOCATIONS.

L. INSTALL TRAPS ON FIXTURE OUTLETS. OMIT TRAPS ON FIXTURES HAVING INTEGRAL TRAPS. OMIT TRAPS ON INDIRECT WASTES UNLESS OTHERWISE INDICATED.

M. INSTALL ESCUTCHEONS AT WALL, FLOOR, AND CEILING PENETRATIONS IN EXPOSED, FINISHED LOCATIONS AND WITHIN CABINETS AND MILLWORK. USE DEEP-PATTERN ESCUTCHEONS WHERE REQUIRED TO CONCEAL PROTRUDING PIPE FITTINGS.

N. SEAL JOINTS BETWEEN FIXTURES AND WALLS, FLOORS, AND COUNTERS USING SANITARY-TYPE, ONE-PART, MILDEW-RESISTANT, SILICONE SEALANT. MATCH SEALANT COLOR TO FIXTURE COLOR.

O. INSTALL PIPING CONNECTIONS BETWEEN PLUMBING FIXTURES AND PIPING SYSTEMS AND PLUMBING EQUIPMENT. INSTALL INSULATION ON SUPPLIES AND DRAINS OF FIXTURES FOR PEOPLE WITH DISABILITIES.

END OF SECTION

SECTION 226316 - FACILITY NATURAL-GAS PIPING

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. MINIMUM OPERATING-PRESSURE RATINGS:
1. PIPING AND VALVES: 100 PSIG MINIMUM UNLESS OTHERWISE INDICATED.

B. NATURAL-GAS SYSTEM PRESSURE WITHIN BUILDING: ONE DISTRIBUTION PRESSURE. 14" W.C., BUT NOT MORE THAN 2.0 PSIG.

2.2 PIPES, TUBES, AND FITTINGS

A. STEEL PIPE: ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B.
1. MALLEABLE-IRON THREADED FITTINGS: ASME B16.3, CLASS 150, STANDARD PATTERN.
2. WROUGHT-STEEL WELDING FITTINGS: ASTM A 234/A 234M FOR BUTT WELDING AND SOCKET WELDING.
3. UNIONS: ASME B16.39, CLASS 150, MALLEABLE IRON WITH BRASS-TO-IRON SEAT, GROUND JOINT, AND THREADED ENDS.
4. PROTECTIVE COATING FOR UNDERGROUND PIPING: FACTORY-APPLIED, THREE-LAYER COATING OF EPOXY, ADHESIVE, AND PE.

B. CORRUGATED, STAINLESS-STEEL TUBING: COMPLY WITH ANSI/IAS LC 1; INCLUDE FLAME-RETARDANT PE COATING, COPPER-ALLOY THREADED ENDS, AND STRIKER PLATES.

2.3 SPECIALTIES

A. APPLIANCE FLEXIBLE CONNECTORS:
1. INDOOR, FIXED-APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.24.
2. INDOOR, MOVABLE-APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.69.
3. OUTDOOR, APPLIANCE FLEXIBLE CONNECTORS: COMPLY WITH ANSI Z21.75.
4. CORRUGATED STAINLESS-STEEL TUBING WITH POLYMER COATING.

B. STRAINERS: ASTM A 126, CLASS B, CAST-IRON BODY, Y-PATTERN, FULL SIZE OF CONNECTING PIPING, CWP RATING OF 125 PSIG. INCLUDE 40-MESH STARTUP STRAINER, AND PERFORATED STAINLESS-STEEL BASKET.

C. WEATHERPROOF VENT CAP: CAST- OR MALLEABLE-IRON INCREASER FITTING WITH CORROSION-RESISTANT WIRE SCREEN, WITH FREE AREA AT LEAST EQUAL TO CROSS-SECTIONAL AREA OF CONNECTING PIPE AND THREADED-END CONNECTION.

2.4 VALVES

A. GENERAL REQUIREMENTS FOR METALLIC MANUAL GAS SHUTOFF VALVES: COMPLY WITH ASME B16.33.
1. CWP RATING: 125 PSIG.

B. ONE-PIECE, BRONZE BALL VALVE WITH BRONZE TRIM: MSS SP-110.
1. BODY: BRONZE, COMPLYING WITH ASTM B 584.
2. BALL: CHROME-PLATED BRASS.
3. STEM: BRONZE; BLOWOUT PROOF.
4. SEATS: REINFORCED TFE; BLOWOUT PROOF.
5. PACKING: SEPARATE PACKNUT WITH ADJUSTABLE STEM PACKING THREADED ENDS.
6. CWP RATING: 600 PSIG.
7. LISTING: VALVES NPS 1 AND SMALLER SHALL BE LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
8. SERVICE: SUITABLE FOR NATURAL-GAS SERVICE WITH "WOG" INDICATED ON VALVE BODY.

C. TWO-PIECE, FULL-PORT, BRONZE BALL VALVES WITH BRONZE TRIM: MSS SP-110.
1. BODY: BRONZE, COMPLYING WITH ASTM B 584.
2. BALL: CHROME-PLATED BRONZE.
3. STEM: BRONZE; BLOWOUT PROOF.
4. SEATS: REINFORCED TFE; BLOWOUT PROOF.
5. PACKING: THREADED BODY PACKNUT DESIGN WITH ADJUSTABLE STEM PACKING.
6. CWP RATING: 600 PSIG.
7. LISTING: VALVES NPS 1 AND SMALLER SHALL BE LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
8. SERVICE: SUITABLE FOR NATURAL-GAS SERVICE WITH "WOG" INDICATED ON VALVE BODY.

D. BRONZE PLUG VALVES: MSS SP-78.
1. BODY: BRONZE, COMPLYING WITH ASTM B 584.
2. PLUG: BRONZE.
3. OPERATOR: SQUARE HEAD OR LUG TYPE WITH TAMPERPROOF FEATURE WHERE INDICATED.
4. PRESSURE CLASS: 125 PSIG.
5. LISTING: VALVES NPS 1 AND SMALLER SHALL BE LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
6. SERVICE: SUITABLE FOR NATURAL-GAS SERVICE WITH "WOG" INDICATED ON VALVE BODY.

E. CAST-IRON, NONLUBRICATED PLUG VALVES: MSS SP-78.
1. BODY: CAST IRON, COMPLYING WITH ASTM A 126, CLASS B.
2. PLUG: BRONZE OR NICKEL-PLATED CAST IRON.
3. SEAT: COATED WITH THERMOPLASTIC.
4. STEM SEAL: COMPATIBLE WITH NATURAL GAS.
5. OPERATOR: SQUARE HEAD OR LUG TYPE WITH TAMPERPROOF FEATURE WHERE INDICATED.
6. PRESSURE CLASS: 125 PSIG.
7. LISTING: VALVES NPS 1 AND SMALLER SHALL BE LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
8. SERVICE: SUITABLE FOR NATURAL-GAS SERVICE WITH "WOG" INDICATED ON VALVE BODY.

F. ELECTRICALLY OPERATED, AUTOMATIC GAS VALVES: COMPLY WITH UL 429.

2.5 PRESSURE REGULATORS

A. GENERAL REQUIREMENTS: SINGLE STAGE, STEEL JACKETED, AND CORROSION RESISTANT. INCLUDE ELEVATION COMPENSATOR.

B. LINE PRESSURE REGULATORS: ANSI Z21.80; 2-PSIG MAXIMUM INLET PRESSURE. FACTORY- OR FIELD-INSTALLED, STAINLESS-STEEL SCREEN IN VENT OPENING IF NOT CONNECTED TO VENT PIPING.

C. APPLIANCE PRESSURE REGULATORS: ANSI Z21.18; 2-PSIG MAXIMUM INLET PRESSURE. REGULATOR MAY INCLUDE VENT LIMITING DEVICE, INSTEAD OF VENT CONNECTION, IF APPROVED BY AUTHORITIES HAVING JURISDICTION.

PART 3 - EXECUTION

3.1 OUTDOOR PIPING INSTALLATION

A. INSTALL SHUTOFF VALVE, DOWNSTREAM FROM GAS METER, OUTSIDE BUILDING AT GAS SERVICE ENTRANCE.

B. INSTALL WALL PENETRATION SYSTEM AT EACH SERVICE PIPE PENETRATION THROUGH EXTERIOR WALL. MAKE INSTALLATION WATERTIGHT.

3.2 INDOOR PIPING INSTALLATION

A. INSTALL PIPING IN CONCEALED LOCATIONS UNLESS OTHERWISE INDICATED AND EXCEPT IN EQUIPMENT ROOMS AND SERVICE AREAS.

B. INSTALL ESCUTCHEONS AT PENETRATIONS OF INTERIOR WALLS, CEILINGS, AND FLOORS.

C. FIRE-BARRIER PENETRATIONS: MAINTAIN INDICATED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. SEAL PIPE PENETRATIONS WITH FIRESTOP MATERIALS. COMPLY WITH REQUIREMENTS IN SECTION 078413 "PENETRATION FIRESTOPPING."

D. INSTALL GAS STOPS FOR SHUTOFF TO APPLIANCES WITH LOW-PRESSURE GAS SUPPLY.

E. INSTALL NATURAL-GAS PIPING AT UNIFORM GRADE OF 2 PERCENT DOWN TOWARD DRIP AND SEDIMENT TRAPS.

F. USE ECCENTRIC REDUCER FITTINGS TO MAKE REDUCTIONS IN PIPE SIZES. INSTALL FITTINGS WITH LEVEL SIDE DOWN.

G. CONNECT BRANCH PIPING FROM TOP OR SIDE OF HORIZONTAL PIPING.

H. INSTALL UNIONS IN PIPES NPS 2 AND SMALLER, ADJACENT TO EACH VALVE, AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT. UNIONS ARE NOT REQUIRED AT FLANGED CONNECTIONS.

I. INSTALL STRAINER ON INLET OF EACH LINE PRESSURE REGULATOR AND AUTOMATIC OR ELECTRICALLY OPERATED VALVE.

J. INSTALL PRESSURE GAGE PLUG UPSTREAM AND DOWNSTREAM FROM EACH LINE REGULATOR.

K. CONNECT GAS PIPING TO EQUIPMENT AND APPLIANCES WITH SHUTOFF VALVES AND UNIONS. INSTALL GAS VALVE UPSTREAM FROM AND WITHIN 72 INCHES OF EACH APPLIANCE USING GAS. INSTALL UNION OR FLANGED CONNECTIONS DOWNSTREAM FROM VALVES.

L. EXTEND RELIEF VENT CONNECTIONS FOR SERVICE REGULATORS, LINE REGULATORS, AND OVERPRESSURE PROTECTION DEVICES TO THE OUTDOORS AND TERMINATE WITH WEATHERPROOF VENT CAP.

M. DO NOT USE NATURAL-GAS PIPING AS GROUNDING ELECTRODE.

3.3 PIPING JOINT CONSTRUCTION

A. THREADED JOINTS: THREAD PIPE WITH TAPERED PIPE THREADS COMPLYING WITH ASME B1.20.1.

B. WELDED JOINTS: CONSTRUCT JOINTS ACCORDING TO AWS D10.12M/D10.12, USING QUALIFIED PROCESSES AND WELDING OPERATORS.

C. JOINTS IN STEEL PIPING WITH PROTECTIVE COATING: APPLY JOINT COVER KITS TO PIPE AFTER JOINING TO COVER, SEAL, AND PROTECT JOINTS.

D. FLANGED JOINTS: INSTALL GASKET MATERIAL, SIZE, TYPE, AND THICKNESS APPROPRIATE FOR NATURAL-GAS SERVICE. INSTALL GASKET CONCENTRICALLY POSITIONED.

3.4 VALVE INSTALLATION

A. INSTALL MANUAL GAS SHUTOFF VALVE FOR EACH GAS APPLIANCE AHEAD OF CORRUGATED STAINLESS-STEEL TUBING, ALUMINUM, OR COPPER CONNECTOR.

B. INSTALL REGULATORS AND OVERPRESSURE PROTECTION DEVICES WITH MAINTENANCE ACCESS SPACE ADEQUATE FOR SERVICING AND TESTING.

3.5 OUTDOOR PIPING SCHEDULE

A. ABOVEGROUND NATURAL-GAS PIPING SHALL BE THE FOLLOWING:
1. STEEL PIPE WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS. COAT PIPE AND FITTINGS WITH PROTECTIVE COATING FOR STEEL PIPING.
2. STEEL PIPING TO BE PROVIDED WITH ONE COAT OF PRIMER AND TWO COATS OF WEATHER RESISTANT FINISH PAINT. FINISH COLOR TO BE YELLOW, UNLESS ANOTHER COLOR IS REQUIRED BY THE LANDLORD/GAS UTILITY PROVIDER AND/OR REVIEW, INSPECTION AND APPROVAL AUTHORITIES.

3.6 INDOOR PIPING SCHEDULE FOR SYSTEM PRESSURES MORE THAN 7" W.C. AND LESS THAN 5 PSIG.

A. ABOVEGROUND, BRANCH PIPING NPS 1 AND SMALLER SHALL BE THE FOLLOWING:
1. CORRUGATED STAINLESS-STEEL TUBING WITH MECHANICAL FITTINGS HAVING SOCKET OR THREADED ENDS TO MATCH ADJACENT PIPING.
2. STEEL PIPE WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS.

B. ABOVEGROUND, DISTRIBUTION PIPING SHALL BE THE FOLLOWING:
1. STEEL PIPE WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS.

END OF SECTION

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AOR PROJECT NUMBER:
CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

PLUMBING SPECIFICATIONS

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GENERAL NOTES

1. THE FIRE PROTECTION DRAWINGS WILL BE SUBMITTED UNDER SEPARATE COVER FOR REVIEW AND PERMIT BY THE GENERAL CONTRACTOR.
2. IT IS RESPONSIBILITY OF THE OWNER TO MAINTAIN THE INTEGRITY OF THE SPRINKLER SYSTEM.
3. THE FIRE PROTECTION CONTRACTOR WILL PROVIDE THE OWNER WITH THE NECESSARY INSTRUCTION MANUAL NFPA 25, FOR THE UPKEEP OF THE SYSTEM AS WELL AS A COPY OF NFPA 13.
4. ONLY SPECIFIED SPRINKLER SHALL BE EMPLOYED IN THE INSTALLATION OF THE SPRINKLER SYSTEM.
5. THE SYSTEM SHALL ONLY EMPLOY THE USE OF APPROVED MATERIAL AND DEVICES.
6. SPRINKLER PLANS SHALL BE APPROVED PRIOR TO THE INSTALLATION OF ANY PIPE. A SET OF APPROVED PLANS SHALL BE MAINTAINED AT ALL TIMES OF THE JOBSITE.
7. AN APPOINTMENT SHALL BE MADE A MINIMUM OF TWO WORKING DAYS IN ADVANCE WITH THE APPROPRIATE FIRE PREVENTION OFFICE FOR ALL INSPECTIONS AND TESTS.
8. ALL SYSTEM PIPING SHALL BE HYDROSTATICALLY TESTED AT 200 PSI FOR TWO HOURS OR AT 50 PSI ABOVE THE SYSTEM OPERATION PRESSURE, WHICHEVER IS GREATER.
9. ALL UNDERGROUND MAINS AND LEAD-IN CONNECTIONS SHALL BE FLUSHED AS INDICATED IN CHAPTER 10 SECTION 10.10.2.1 (2016 NFPA #13) PRIOR TO CONNECTION TO THE OVERHEAD PIPING. THE FLUSHING SHALL CONTINUE UNTIL THE WATER IS CLEAR. FLUSHING SHOULD BE PERFORMED AT TIME OF HYDROSTATIC TEST.
10. FIRE DEPARTMENT CONNECTION SHALL BE VISIBLE, ACCESSIBLE, HAVE NST FEMALE OUTLETS, HAVE PROTECTIVE CAPS AND AN APPROVED CHECK VALVE LOCATED IN THE MAIN LINE. (AS CLOSE TO FDC AS POSSIBLE)
11. ALL VALVES SHALL HAVE A PERMANENTLY AFFIXED SIGN INDICATING ITS FUNCTION.
12. A STOCK OF SPARE SPRINKLER OF EACH STYLE, TYPE, AND TEMPERATURE RATING ALONG WITH A SPRINKLER WRENCH SHALL BE LOCATED AT THE MAIN RISER.
13. AUTOMATIC SPRINKLER SYSTEMS SHALL BE SUPERVISED BY A LISTED/APPROVED CENTRAL, PROPRIETARY, OR REMOTE STATION, OR A LOCAL ALARM WHEN APPROVED BY THE CHIEF, WHICH WILL GIVE AN AUDIBLE SIGNAL AT A CONSTANTLY ATTENDED LOCATION WHEN THE NUMBER OF SPRINKLERS IS 20 OR MORE.
14. THE PROTECTION OF SPRINKLER HEADS FROM PAINT IS TO BE THE RESPONSIBILITY OF OTHERS.
15. ALL ELECTRICAL WRING REQUIRED IS TO BE PERFORMED BY OTHERS.
16. FIRE SPRINKLER HEADS SHALL BE LOCATED IN STRAIGHT LINES PARALLEL TO THE WALL.

SPRINKLER PIPING SUPPORT

1. SPKR. HEAD DEFLECTOR ELEV. (SSU) = 1" TO 4" BBD (OR OTHERWISE NOTED)
2. SPRINKLER LINE ELEVATION = MIN. 0'-6" BBD (OR OTHERWISE NOTED)
3. MAINLINE ELEVATION = MIN. 1' 10" BBD (OR OTHERWISE NOTED)
4. SPRING 4 FT.(1.2M) OR LONGER SHALL BE RESTRAINED AGAINST LATERAL MOVEMENT PER 2016 NFPA SECTION 9.2.3.7

PIPING NOTES:
1. HANG ALL NEW PIPES 1" TO 3" IN SIZE (SEE PLAN FOR ELEVATIONS.)
2. ALL ARM-OVERS 24" OVER HEIGHT TO HAVE HANGER.
3. FOR GENERAL NOTES AND DETAILS SEE FP4.01, FP4.02, FP4.03, & FP4.04.
4. ALL GROOVED COUPLINGS ON MAINS SHALL BE OF RIGID TYPE,

2016 NFPA13,TABLE9.2.2.1(a) MAXIMUM DISTANCE BETWEEN HANGERS.

PIPE SIZE (SCH 40)	MAX SPACING (STEEL)	MAX SPACING (DUCTILE - IRON PIPE)
1" UP TO 1 1/4"	12'-0"	NA
1 1/2" UP TO 3"	15'-0"	15'-0"
0'-4"	15'-0"	15'-0"
0'-6"	15'-0"	15'-0"
0'-8"	15'-0"	15'-0"

SPRINKLER HEAD LOCATION

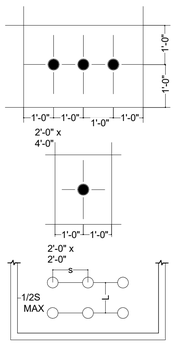
GYPSUM BOARD CEILING:
HEAD WILL BE LINED UP WITH CEILING FIXTURES HOWEVER, IF THIS VIOLATES HEAD SPACING RULES, NFPA - 13 CODE SPACING REQUIREMENTS SHALL TAKE PRECEDENCE.

2'-0" x 2'-0" ACOUSTIC TITLE:
SPRINKLER HEAD SHALL BE ALIGNED IN BOTH DIRECTIONS WHEREVER POSSIBLE AND THEY WILL BE LOCATED IN CENTER OF TITLE WITH (+/-1") ACCURACY UNLESS SUCH LOCATION CONFLICT WITH CODE SPACING REQUIREMENTS SHALL TAKE PRECEDENCE

2'-0" X 4'-0" ACOUSTIC TITLE:
SPRINKLER HEADS SHALL BE LOCATED AT QUARTER POINTS ALONG LONGER DIMENSION AND @ CENTER LINE ALONG SMALLER SIDE WITH (+/-1") ACCURACY.

MINIMUM DISTANCE FROM WALL
PER 2016 NFPA13 SEC.8..12.3.3* THE END SPRINKLER ON A LINE SHALL BE LOCATED AT MINIMUM OF 4" FROM WALL.

MAXIMUM DISTANCE FROM WALL
PER 2016 NFPA13 SEC.8..12.3.2* THE DISTANCE FROM SPRINKLER TO WALL SHALL NOT EXCEED ONE HALF OF THE ALLOWABLE DISTANCE PERMITTED BETWEEN SPRINKLER.



DESIGN CRITERIA (PER NFPA-13)

FIRE PROTECTION AREA TYPES:

A) ORDINARY HAZARD-II - 0.20 GPM/S.F. OVER 1500 S.F. SPRINKLERS SHALL BE SPACED AT A 130 SQ. FT. MAXIMUM WITH SPRINKLER HEADS AT A MAXIMUM OF 15'-0" APART AND SPACED AT A MAXIMUM OF 7'-6" FROM ALL WALLS.

B) ORDINARY HAZARD-I - 0.15 GPM/S.F. OVER 1500 S.F. SPRINKLERS SHALL BE SPACED AT A 130 SQ. FT. MAXIMUM WITH SPRINKLER HEADS AT A MAXIMUM OF 15'-0" APART AND SPACED AT A MAXIMUM OF 7'-6" FROM ALL WALLS.

C) LIGHT HAZARD - 0.10 GPM/S.F. OVER 1500 S.F. SPRINKLERS SHALL BE SPACED AT A 225 SQ.FT. MAXIMUM WITH SPRINKLER HEADS AT A MAXIMUM OF 15'-0" APART AND SPACED AT A MAXIMUM OF 7'-6" FROM ALL WALLS.

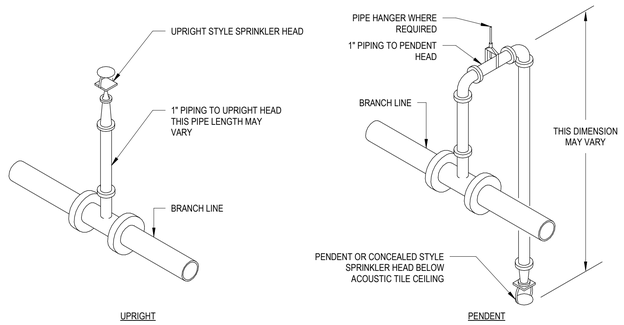
NOTES: FIRE PROTECTION SHALL PREPARE A SCHEMATIC OF THE NEW SPRINKLER SYSTEM INCLUDING HYDRAULIC CALCULATIONS BASED ON A RECENT FLOW TEST DATA.

FIRE SPRINKLER NOTES

1. UNDERGROUND FIRE LINES WILL TERMINATE 6" ABOVE FINISHED FLOOR.
2. ABOVE GROUND FIRE SPRINKLER SYSTEM PIPING. COMMENCING AT 6" ABOVE FINISHED FLOOR AND EXTENDING THROUGH STRUCTURE TO INCLUDE ATTACHED EXTERIOR WALKS, CORRIDORS, BALCONIES, STAIRS AND ELEVATOR.
3. INSTALLATION SHALL BE IN ACCORDANCE WITH PLANS AND SPECIFICATIONS "APPROVED" BY THE AUTHORITY HAVING JURISDICTION (AHJ'S).
4. INSTALLATION WORK SHALL BE PERFORMED BY C16 LICENSED CONTRACTOR ONLY, FULLY EXPERIENCED AND RESPONSIBLE PERSONS.
5. FIRE DEPARTMENT CONNECTION HOSE CONNECTIONS SHALL BE OF AN APPROVED TYPE, PROPERLY SUPPORTED, AND LOCATED WITHOUT INTERFERENCE FROM NEARBY OBSTRUCTIONS AND ON THE STREET SIDE OF THE BUILDING(S) WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION(AHJ'S).
6. FIRE DEPARTMENT CONNECTION(S) SHALL BE IDENTIFIED BY A SIGN HAVING RAISED LETTERS AT LEAST 1" IN SIZE, CAST ON A PLATE OF FITTING("AUTO SPKR","OPEN SPKR", "STANDPIPE"), ETC. (NFPA-24, 5.9.5)
7. PIPING SHALL BE "LISTED" FOR FIRE PROTECTION SERVICE AND COMPLY WITH AWWA STANDARDS WHERE APPLICABLE. (NFPA-24, 10.1.1)
8. FITTINGS SHALL BE OF AN "APPROVED" TYPE. (NFPA-24, 10.2)
9. ALL CONTROL VALVES SHALL BE "LISTED" INDICATING TYPE UNLESS A NON INDICATING VALVE, SUCH AS AN UNDERGROUND GATE VALVE WITH APPROVED ROADWAY BOX COMPLETE WITH T-WRENCH, IS APPLICABLE TO THE AUTHORITY HAVING JURISDICTION (AHJ'S). (NFPA-24, 6.1)
10. POST INDICATING VALVES (PIV) SHALL BE TESTED TO INSURE THAT THE "TARGETS" (OPEN, CLOSED) ARE CLEARLY IDENTIFIED WHEN VALVE IS OPENED AND CLOSED. (NFPA-24,6.3)
11. ALL TEES, PLUGS, CAPS, BENDS, AND HYDRANT BRANCHES ON PIPE INSTALLED UNDERGROUND SHALL BE RESTRAINED (PIPE CLAMPS AND TIE RODS, THRUST BLOCKS, LOCKED MECHANICAL OR PUSH-ON JOINTS, MECHANICAL JOINTS UTILIZING SET SCREW RETAINER GLANDS, OR OTHER APPROVED METHODS) AGAINST MOVEMENT. (NFPA-24, 10.8.1)
12. DEPTH OF COVER OF PIPING SHALL BE 36-INCHES (MINIMUM) (NFPA-24, 10.4.4)
13. THE TRENCH SHALL BE BACK FILLED BETWEEN JOINTS BEFORE PRESSURE TESTING TO PREVENT MOVEMENT OF PIPE. (NFPA-24, 10.10.2.2.4)
14. BACK FILL SHALL BE BACK WELL TAMPED IN LAYERS. NO ASHES, CINDERS, REFUSE, ORGANIC OR OTHER CORROSIVE MATERIALS SHALL BE USED AS BACK FILL MATERIAL. (NFPA-24, 10.9.1)
15. ALL UNDERGROUND PIPING SHALL BE FLUSHED AT THE MINIMUM WATER DEMAND RATE OF THE SYSTEM, OR WHEN SUCH RATE IS NOT VERIFIED OR MET, PIPING SHALL BE FLUSHED AT THE MAXIMUM FLOW RATE AVAILABLE TO THE SYSTEM UNDER FIRE CONDITIONS. (NFPA-24, 1010.2.1)
16. ALL NEW PRIVATE FIRE SERVICE MAINS SHALL BE HYDROSTATICALLY TESTED AT NOT LESS THAN 200 PSI PRESSURE FOR TWO HOURS,OR AT 50-PSI IN EXCESS OF THE MAXIMUM STATIC PRESSURE WHEN THE MAXIMUM STATIC PRESSURE IS IN EXCESS OF 150-PSI. (NFPA-24, 10.10.2.3)
17. TESTS SHALL BE MADE BY THE INSTALLING CONTRACTOR IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION (AHJ'S) IF THEY DESIRE TO BE PRESENT. (NFPA-24, 10.10.2.3)
18. PROVIDE SPRINKLERS ABOVE CEILING.
19. PROVIDE CONTROL VALVE AND FLOW SWITCH FOR EACH FLOOR/ZONE.
20. FIRE SPRINKLER SYSTEMS PIPING HANGER AND SUPPORTS SHALL CONFORM TO THE NFPA 13 SEISMIC BRACING REQUIREMENTS.
21. THE OS & Y VALVES SHALL BE PROVIDED WITH UL LISTED TAMPERPROOF SUPERVISORY ELECTRIC SWITCHES
22. ALARM VALVE ASSEMBLIES FOR SPRINKLER SYSTEMS IN BUILDINGS SHALL BE PROVIDED WITH UL LISTED ELECTRICAL ALARM SWITCHES. PROVIDE ELECTRICAL ALARM HORN (NON SILENCING TYPE) AT THE MAIN ENTRANCE OF THE BUILDINGS (SEE PLUMBING SITE PLANS FOR APPROXIMATE LOCATION). FINAL LOCATION SHALL BE ARCHITECT APPROVAL.
23. IN CASE OF CONFLICT WITH REQUIREMENTS OF DIFFERENT AUTHORITIES HAVING JURISDICTION, MOST STRINGENT SHALL APPLY.
24. SPRINKLERS SHALL BE INSTALLED UNDER EXTERIOR PROJECTIONS EXCEEDING 4 FT IN WIDTH. (2016 NFPA 13,SECTION 8.15.7.1)
25. AUXILIARY DRAIN SHALL BE PROVIDED WHERE A CHANGE IN PIPING DIRECTION PREVENTS DRAINAGE OF SYSTEM PIPING THROUGH THE MAIN DRAIN VALVE. (2016 NFPA 13,SECTION 8.16.2.5.1)
26. CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING EXTENDING THROUGH WALLS, FLOOR, PLATFORM, AND FOUNDATIONS, INCLUDING DRAINS, FIRE DEPARTMENT CONNECTIONS AND OTHER AUXILIARY PIPING. (2016 NFPA 13 SECTION 9.3.4.1)
    THE HOLES SHALL BE SIZED SUCH THE DIAMETER OF THE HOLES IS NORMINALLY
    2 IN. LARGER THAN THE PIPE FOR 1 IN. NORMINAL TO 3-1/2 IN. NORMINAL AND
    4 IN. LARGER THAN THE PIPE FOR 4 IN. NORMINAL AND LARGER. (2016 NFPA 13, SECTION 9.3.4.2)
27. IN CASE OF CONFLICT WITH REQUIREMENTS OF DIFFERENT AUTHORITIES HAVING JURISDICTION, MOST STRINGENT SHALL APPLY.
28. SPRINKLERS SHALL BE INSTALLED UNDER EXTERIOR PROJECTIONS EXCEEDING 4 FT WIDTH. (2016 NFPA 13, SECTION 8.15.7.1)
29. AUXILIARY DRAIN SHALL BE PROVIDED WHERE A CHANGE IN PIPING DIRECTION PREVENTS DRAINAGE OF SYSTEM PIPING THROUGH THE MAIN DRAIN VALVE. (2016 NFPA 13, SECTION 8.16.2.5.1)
30. SPRINKLERS SHALL BE LOCATED ABOVE AND BELOW ALL DUCTWORK GREATER THAN 4'-0"
31. ROUTING OF SPRINKLERS MAINS, BRANCHES AND HEADS SHALL BE THOROUGHLY COORDINATED SHOP DRAWINGS. FIRE PROTECTION CONTRACTOR RESPONSIBLE FOR COORDINATING PREPARING AND SUBMITTING COORDINATION DRAWINGS FOR APPROVAL.

FIRE PROTECTION HYDRAULIC CRITERIA

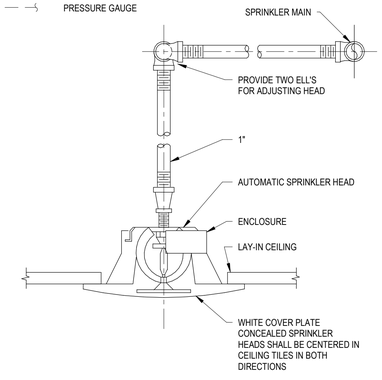
HAZARD DESCRIPTION	OCCUPANCY CLASSIFICATION	DENSITY (GPM / SQ.FT.)	MAX. AREA PER SPRINKLER (SQ.FT.)	SPRINKLER TYPE	HOSE DEMAND	REMARKS
KITCHENS, MECHANICAL ROOMS, STORAGE ROOMS WITH STORAGE HEIGHT OF 8 FT OR LESS	ORDINARY HAZARD - I	0.15	1500	UPRIGHT OR AS CLG. REQUIRED	250	WET SYSTEM 212 F HEADS



2 SPRINKLER TAKEOFF DETAIL
NOT TO SCALE

WATER SUPPLY AND DISTRIBUTION:

- DENOTES PUBLIC WATER MAIN (INDICATE PIPE SIZE AND MATERIAL)
- DENOTES PRIVATE WATER MAIN (INDICATE PIPE SIZE AND MATERIAL)
- DENOTES WATER MAIN UNDER BUILDING (INDICATE PIPE SIZE AND MATERIAL)
- DENOTES SUCTION PIPE (INDICATE PIPE SIZE AND MATERIAL)
- DENOTES THRUST BLOCK
- DENOTES RISER
- DENOTES VALVE IN GENERAL (BASIC SHAPE - INDICATE VALVE SIZE)
- DENOTES VALVE IN PIT (INDICATE VALVE SIZE)
- DENOTES VALVE WITH INDICATOR POST (INDICATE VALVE SIZE)
- DENOTES KEY-OPERATED VALVE (INDICATE VALVE SIZE)
- DENOTES OS&Y VALVE (OUTSIDE SCREW AND YOKE, RISING STEM - INDICATE VALVE SIZE)
- DENOTES INDICATING BUTTERFLY VALVE (INDICATE VALVE SIZE)
- DENOTES NON-INDICATING VALVE (NON-RISING STEM - INDICATE VALVE SIZE)
- DENOTES CHECK VALVE (BASIC SHAPE - INDICATE VALVE SIZE AND DIRECTION OF FLOW)
- DENOTES BACKFLOW PREVENTER - DOUBLE-CHECK TYPE
- DENOTES BACKFLOW PREVENTER - REDUCED PRESSURE ZONE TYPE
- DENOTES PRESSURE REGULATING VALVE
- DENOTES PRESSURE RELIEF VALVE
- DENOTES FLOAT VALVE
- DENOTES METER (INDICATE TYPE)
- DENOTES PRIVATE HYDRANT, ONE HOSE OUTLET (INDICATE SIZE, TYPE OF THREAD OR CONNECTION)
- DENOTES PUBLIC HYDRANT, TWO HOSE OUTLETS (INDICATE SIZE, TYPE OF THREAD OR CONNECTION)
- DENOTES PUBLIC HYDRANT, TWO HOSE OUTLETS AND PUMPER CONNECTION (INDICATE SIZE, TYPE OF THREAD OR CONNECTION)
- DENOTES WALL HYDRANT, TWO HOSE OUTLETS (INDICATE SIZE, TYPE OF THREAD OR CONNECTION)
- DENOTES WALL HYDRANT, TWO HOSE OUTLETS (INDICATE SIZE, TYPE OF THREAD OR CONNECTION)
- DENOTES PRIVATE HOUSED HYDRANT, TWO HOSE OUTLETS (INDICATE SIZE, TYPE OF THREAD OR CONNECTION)
- DENOTES SIAMESE FIRE DEPARTMENT CONNECTION (SPECIFY TYPE, SIZE, AND ANGLE)
- DENOTES FREESTANDING SIAMESE FIRE DEPARTMENT CONNECTION (SIDEWALK OR PIT TYPE, SPECIFY SIZE)
- DENOTES SINGLE FIRE DEPARTMENT CONNECTION (SPECIFY TYPE, SIZE, THREAD, AND ANGLE)
- DENOTES FIRE PUMP WITH DRIVER
- DENOTES FREESTANDING TEST HEADER (SPECIFY NUMBER AND SIZES OF OUTLETS)
- DENOTES WALL-MOUNTED TEST HEADER (SPECIFY NUMBER AND SIZES OF OUTLETS)
- FLOW SWITCH
- PRESSURE GAUGE



1 CONCEALED SPRINKLER HEAD MOUNTING DETAIL
NOT TO SCALE

FIRE FIGHTING EQUIPMENT:

- DENOTES FIRE FIGHTING EQUIPMENT (BASIC SHAPE)
- DENOTES CO2 REEL STATION
- DENOTES DRY CHEMICAL REEL STATION
- DENOTES FOAM REEL STATION
- DENOTES HOSE STATION, DRY STANDPIPE
- DENOTES HOSE STATION, WET STANDPIPE
- DENOTES DRY MONITOR NOZZLE (SPECIFY ORIFICE SIZE)
- DENOTES CHARGED MONITOR NOZZLE (SPECIFY ORIFICE SIZE)

FIRE SPRINKLERS:

- DENOTES UPRIGHT SPRINKLER
- DENOTES PENDENT SPRINKLER (NOTE "DP" ON DRAWING AND / OR SPECIFICATION WHERE DRY PENDENT SPRINKLERS ARE EMPLOYED)
- DENOTES UPRIGHT SPRINKLER ON SPRIG
- DENOTES UPRIGHT SPRINKLER ON TOP OF RISER NIPPLE
- DENOTES UPRIGHT SPRINKLER ON TOP OF RISER NIPPLE WITH SPRIG
- DENOTES PENDENT SPRINKLER ON DROP NIPPLE (NOTE "DP" ON DRAWING AND / OR SPECIFICATION WHERE DRY PENDENT SPRINKLERS ARE EMPLOYED)
- DENOTES SPRINKLER WITH GUARD (UPRIGHT SPRINKLER SHOWN)
- DENOTES SIDEWALL SPRINKLER
- DENOTES OUTSIDE SPRINKLER - SPECIFY TYPE, ORIFICE SIZE; FOR EXAMPLE, OPEN SPRINKLER (WINDOW OR CORNICE)
- DENOTES OPEN SPRINKLER ON BRANCH LINE
- DENOTES OPEN SPRINKLER ON BRANCH LINE WITH SPRIG
- DENOTES WATER SPRAY NOZZLE
- DENOTES WINDOW SPRINKLERS

GENERAL:

- ## DRAWING KEYNOTE SYMBOL
- DETAIL NUMBER / SHEET NUMBER — BUILDING SECTION
- DETAIL NUMBER / SHEET NUMBER — BUILDING ELEVATION
- DETAIL NUMBER / SHEET NUMBER — CALLOUT BOUNDARY
- DETAIL NUMBER / SHEET NUMBER — VIEW REFERENCE CALLOUT
- +X" - X" MOUNTING HEIGHT DESIGNATION

RENOVATION LEGEND:

<E>	EXISTING TO REMAIN
<ED>	EXISTING LOCATION, NEW DEVICE OR EQUIPMENT TO BE INSTALLED IN PLACE
<ER>	EXISTING TO BE RELOCATED
<EO>	EXISTING TO BE REMOVED
<EN>	EXISTING IN NEW LOCATION
<N>	NEW
<RAI>	REMAIN AS IS

FIRE PROTECTION SHEET INDEX

SHEET NO.	SHEET NAME
FP000	FIRE PROTECTION GENERAL NOTES, SYMBOLS AND LEGENDS
FP110	FIRE PROTECTION PLAN

NON-INFRINGEMENT STATEMENT

IT IS THE DESIGN PROFESSIONALS JUDGEMENT WHOSE SIGNATURE APPEARS ON THE DRAWING, THAT THE DESIGN DESCRIBED IN THIS SET OF DRAWINGS AND SPECIFICATIONS DOES NOT ADVERSELY INFRINGE UPON THE EXISTING LIFE SAFETY OF THE BUILDING.

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FOR
CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

AOR PROJECT NUMBER: CAV029

ISSUE	DATE
PERMIT SET	12.06.24
BID SET	04.04.25
PERMIT REV	04.15.25
IFC SET	06.23.25

FIRE PROTECTION GENERAL NOTES, SYMBOLS AND LEGENDS

SHEET: **FP000**

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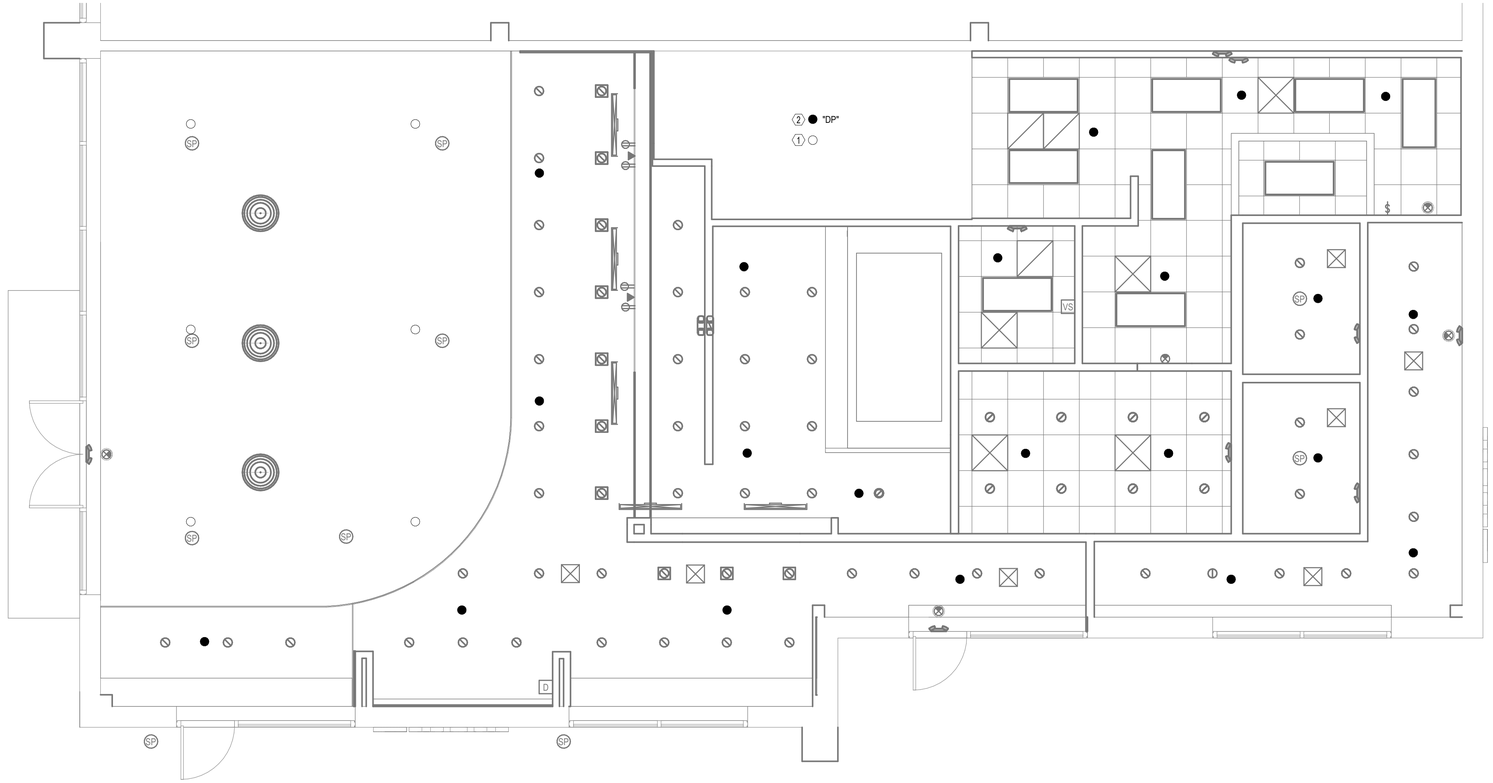

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1 FP110 **FIRE PROTECTION PLAN**

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

GENERAL NOTES:

1. REFER TO GENERAL NOTES ON SHEET FP000.
2. SPRINKLER CONTRACTOR TO INSTALL NEW SPRINKLER HEADS PER THE NEW TENANT LAYOUT. CONNECT INTO THE EXISTING SPRINKLER SYSTEM PROVIDED BY THE LANDLORD.
3. THE DRAWINGS ARE FOR REFERENCE PURPOSES ONLY. FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR THE FULL DESIGN OF THE SPRINKLER SYSTEM AND ITS CONFORMANCE TO NFPA 13 AND ANY LOCAL CODE REQUIREMENTS. THE FIRE SPRINKLER CONTRACTOR SHALL INCLUDE ALL NEEDED OFFSETS, CHANGES IN DIRECTION, TRANSITIONS, ETC. NEEDED FOR THE COMPLETE AND OPERATIONAL SYSTEMS.
4. FIRE SPRINKLER CONTRACTOR SHALL VISIT THE SITE AND BE FAMILIAR WITH THE SITE CONDITIONS. NO EQUIPMENT OR MATERIAL IS TO BE ORDERED OR FABRICATED PRIOR TO FIELD VERIFICATION OF ALL MEASUREMENTS, CLEARANCES, POTENTIAL CONFLICTS WITH EXISTING CONDITIONS OR THAT OF OTHER TRADES ON THE JOB.
5. PERFORM ALL WORK IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE APPROPRIATE STATE AND LOCAL BUILDING CODES AND SUBTITLES.
6. SPRINKLER CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS FOR CEILING TYPES, COLOR, ELEVATIONS, SOFFITS, DISPLAY WINDOWS, RACKING, ETC.

KEY NOTES:

① FIRE SPRINKLER CONTRACTOR TO PROVIDE UPRIGHT SPRINKLER HEAD ABOVE COOLER.

② FIRE SPRINKLER CONTRACTOR TO PROVIDE DRY TYPE SPRINKLER HEAD IN WALK-IN COOLER.

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