PROJECT TEAM DIRECTORY

LANDLORD	
COMPANY NAME:	SIMON PROPERTY GROUP
CONTACT NAME:	STEVE PASKO
ADDRESS:	23106 FASHION DRIVE, SUITE 107, ESTERO, FL 33928
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EMAIL:	PASKOSPASKO@SIMON.COM
CLIENT	
COMPANY NAME:	SHAKE SHACK
ADDRESS:	225 VARICK STREET, SUITE 301, NEW YORK, NY 10014
ARCHITECT	
COMPANY NAME:	ZEBRA PROJECTS, PLLC
CONTACT NAME:	EILEEN GARCIA - WEGLARSKA
ADDRESS:	14614 N KIERLAND BLVD. SUITE N300, SCOTTSDALE, AZ 85254
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MEP ENGINEER	
COMPANY NAME:	SCHNACKEL ENGINEERS, INC.
CONTACT NAME	DUSTIN WOLLENBURG
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PHONE:	402-391-7680
EMAIL:	DWOLLENBURG@SCHNACKEL.COM
STRUCTURAL ENGINEER	
COMPANY NAME:	CARUSO TURLEY SCOTT
CONTACT NAME:	TOM MORRIS
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PHONE:	480-774-1700
EMAIL:	TMORRIS@CTSAZ.COM
KITCHEN CONSULTANT	
COMPANY NAME:	TRIMARK UNITED EAST
CONTACT NAME:	STEPHEN DUNGEY
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KITCHEN HOOD	
COMPANY NAME:	CAPTIVEAIRE
CONTACT NAME:	JOE SHIIBA
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SPECIAL INSPECTION	
COMPANY NAME:	TERRACON CONSULTANTS, INC.
CONTACT NAME:	TIFFANY KING
PHONE:	214-986-2344
EMAIL:	TIFFANY.KING@TERRACON.COM
SIGNAGE	
COMPANY NAME:	ANCHOR SIGN
CONTACT NAME:	MEGAN JACKSON
PHONE:	843-576-3289
EMAIL:	MCJACKSON@ANCHORSIGN.COM
BUILDING & FIRE DEPARTMENT	
COMPANY NAME:	THE VILLAGE OF ESTERO BUILDING DEPARTMENT
CONTACT NAME:	AL CRUDO - PLAN REVIEWER/ INSPECTOR
ADDRESS:	9990 COCONUT ROAD, ESTERO, FL 34135
PHONE:	239-221-5036
EMAIL:	PERMITTING@ESTERO-FL.GOV
HEALTH DEPARTMENT	
COMPANY NAME:	THE FLORIDA DEPARTMENT OF HEALTH IN LEE COUNTY
ADDRESS:	3920 MICHIGAN AVE, FORT MYERS, FL 33916
PHONE:	239-461-6100
EMAIL:	LEECHDFFEEDBACK@FLHEALTH.GOV

SHAKE SHACK®

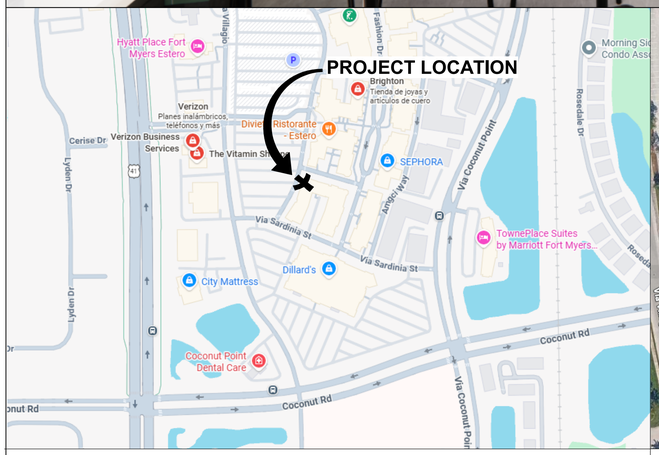
COCONUT POINT, FL

PROJECT LOCATION:

23181 VILLAGE SHOPS WAY,
SUITE 105, ESTERO, FL 33928



NOTE: VISUAL PROVIDED BY SHAKE SHACK



VICINITY MAP A3
SCALE: NTS



KEY PLAN A2
SCALE: NTS

PROJECT DATA

ADDRESS:	23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928
USE & ZONING:	MPD (MIXED USE PLANNED DEVELOPMENT)
CONSTRUCTION TYPE:	II-B, SPRINKLERED
OCCUPANCY CLASSIFICATION:	A-2
BUILDING HEIGHT:	29' - 0"
BUILDING AREA:	PROJECT: 2,963 SF PATIO: 430 SF TOTAL AREA: 3,393 SF

DINNING AREA	42 SEATS
PATIO	18 SEATS
TOTAL SEATS	60 SEATS

SCOPE OF WORK

TENANT IMPROVEMENT IN A NEW ONE-STORY COMMERCIAL SUB-URBAN IN LINE CORE SHOPPING CENTER. SCOPE TO INCLUDE NEW PARTITIONS, FINISHES, NEW KITCHEN EQUIPMENT AND ASSOCIATED, ELECTRICAL, PLUMBING, MECHANICAL WORK.

APPLICABLE CODES

BUILDING:	2023 FLORIDA BUILDING CODE, 8TH EDITION
EXISTING BUILDING:	2023 FLORIDA EXISTING BUILDING CODE, 8TH EDITION
MECHANICAL:	2023 FLORIDA MECHANICAL CODE, 8TH EDITION
PLUMBING:	2023 FLORIDA PLUMBING CODE, 8TH EDITION
ELECTRICAL:	2020 NATIONAL ELECTRICAL CODE
FIRE:	FLORIDA FIRE PREVENTION CODE, 8TH EDITION
ACCESSIBILITY:	2023 FLORIDA BUILDING CODE ACCESSIBILITY, 8TH EDITION.
ENERGY:	2023 FLORIDA ENERGY CONSERVATION, 8TH EDITION

DEFERRED SUBMITTALS

SIGNAGE UNDER A SEPARATE SUBMITTAL AND PERMIT.

WALK-IN COOLER UNDER A SEPARATE SUBMITTAL AND PERMIT.

FIRE SPRINKLER SYSTEMS (NFPA STANDARD 13).

FIRE DETECTION & ALARM SYSTEMS (HORNS AND STROBES).

LANDLORD NOTE

GENERAL COMMENTS:

•PLANS REVIEWED AND APPROVED BY LANDLORD'S TENANT COORDINATOR MUST BE PRESENT ON THE JOB SITE AND BE ACCOMPANIED BY PLANS APPROVED FOR BUILDING PERMIT. ANY PROPOSED DEVIATION FROM THE LANDLORD APPROVED PLANS MUST BE NUMBERED AND CLOUDED ON THE PLANS, AND THEN RESUBMITTED BY THE TENANT TO THE LANDLORD FOR RE-APPROVAL PRIOR TO ANY CONSTRUCTION CHANGES TAKING PLACE IN THE FIELD.

•TENANT'S GC IS REQUIRED TO CHECK IN WITH LANDLORD'S ON SITE PROPERTY MANAGER PRIOR TO THE START OF TENANT CONSTRUCTION. CONTACT MALL MANAGEMENT OFFICE.

•CONTACT PROPERTY MANAGEMENT FOR CONSTRUCTION BARRICADE REQUIREMENTS, INCLUDING BARRICADE GRAPHICS.

•TENANT'S GC IS RESPONSIBLE TO COMPLY WITH ALL MALL RULES AND REGULATIONS AND AS INSTRUCTED ON SITE BY MALL MANAGEMENT.

•ANY DAMAGE TO LANDLORD'S PROPERTY DURING TENANT DEMOLITION OR CONSTRUCTION (MALL FLOORING, BULKHEAD, NEUTRAL PIERS, ETC.) WILL BE REPAIRED PER MALL SPECIFICATIONS, AT TENANT'S EXPENSE.

•ANY LANDLORD EQUIPMENT, COMPONENT, AND / OR SERVICE FEEDING OTHER TENANT(S) THAT IS EXISTING IN THE SPACE MUST REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. TENANT SHALL INSTALL ACCESS PANELS AS REQUIRED TO MAINTAIN ACCESS. ACCESS PANELS SHALL BE LABELED TO PROPERLY IDENTIFY SYSTEM, COORDINATE WITH MALL OPERATIONS.

•ALL LANDLORD COMMENTS FROM PREVIOUS REVIEW(S) ARE TO BE INCORPORATED INTO THE FINAL SET OF APPROVED DRAWINGS AND ARE TO BE ADHERED TO IN THE FIELD.

•ALL LANDLORD COMMENTS ON THIS SET OF DRAWINGS SHALL APPLY TO THE ENTIRE DOCUMENT SET, EVEN IF NOT REPEATED ON EVERY SHEET IN DRAWING SET.

•THE RE-USE OF ANY EXISTING CONSTRUCTION, FINISHES, EQUIPMENT, OR ELECTRICAL, PLUMBING OR HVAC SYSTEMS CURRENTLY IN THE SPACE IS CONDITIONAL UPON IT BEING APPROPRIATE FOR RE-USE. ANY EXISTING CONDITION OR EQUIPMENT TO BE RE-USED MUST BE RESTORED TO LIKE NEW CONDITIONS. THE LANDLORD MAKES NO WARRANTY ON THE RE-USE OF ANY EXISTING CONDITION IN THE SPACE.

•IF AT ANY POINT A FAILURE, UPGRADES, AND / OR IMPROVEMENTS TO EXISTING SYSTEMS OCCUR, IT IS THE SOLE RESPONSIBILITY OF THE TENANT TO REPAIR OR REPLACE, AT TENANT EXPENSE.

•LANDLORD AND TENANT RESPONSIBILITIES ARE AS DEFINED IN LEASE AGREEMENT.

•LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

zebra

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14614 N KIERLAND BLVD, SUITE N300
SCOTTSDALE, AZ 85254

PHONE: 480.912.1169 zbr.global

CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK®
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify at figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
TITLE SHEET

DATE: 06/01/2026	PROJECT NO: 41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:
T001

SHEET INDEX

SHEET #	TITLE	REV 1	REV 2	REV 3
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T002	SHEET INDEX			
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T005	2023 FLORIDA BUILDING CODE ACCESSIBILITY, 8TH EDITION.			
T006	2023 FLORIDA BUILDING CODE ACCESSIBILITY, 8TH EDITION.			
ARCHITECTURAL				
SP101	REFERENCE SITE PLAN	•		
SP102	PATIO PLAN	•		
SP103	PATIO ELEVATIONS & DETAILS	•		
A001	ARCHITECTURAL ABBREVIATIONS, SYMBOLS & GENERAL NOTES			
A002	VERIFICATION DIMENSION PLAN	•		
A003	CODE ANALYSIS, OCCUPANCY & EGRESS PLAN			
A100	TRENCHING PLAN	•		
A101	GENERAL ARRANGEMENT PLAN	•		
A102	DIMENSION FLOOR PLAN	•		
A103	WALL & FLOOR FINISH PLAN	•		
A104	FURNITURE PLAN	•		
A105	TACTILE SIGNAGE PLAN	•		
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A211	INTERIOR ELEVATIONS	•		
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A302	BUILDING SECTIONS	•		
A303	EXTERIOR WALL SECTIONS	•		
A304	EXTERIOR WALL SECTIONS	•		
A401	ENLARGED MANAGER'S OFFICE PLAN AND ELEVATIONS			
A402	ENLARGED RESTROOM PLANS & ELEVATIONS	•		
A403	ENLARGED RESTROOM PLANS & ELEVATIONS	•		
A404	TACTILE SIGNAGE DIAGRAMS	•		
A501	EXTERIOR DETAILS	•		
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A512	INTERIOR DETAILS			
A513	INTERIOR DETAILS			
A514	INTERIOR DETAILS			
A515	INTERIOR DETAILS	•		
A521	ATAS TRIM DETAILS			
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A532	WALL TYPES			
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A542	SIGNAGE DETAILS			
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A583	ARCHITECTURAL SPECIFICATIONS			
A584	ARCHITECTURAL SPECIFICATIONS			
A585	ARCHITECTURAL SPECIFICATIONS			
A586	ARCHITECTURAL SPECIFICATIONS			
A587	ARCHITECTURAL SPECIFICATIONS			
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A589	ARCHITECTURAL SPECIFICATIONS			
A590	ARCHITECTURAL SPECIFICATIONS			
A591	ARCHITECTURAL SPECIFICATIONS			
A592	ARCHITECTURAL SPECIFICATIONS			
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F591	FIRE PROTECTION SPECIFICATIONS			
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K102	FOODSERVICE SPECIAL CONDITIONS PLAN			
K201	FOODSERVICE ELEVATIONS			
K601	FOODSERVICE SCHEDULES			
K602	FOODSERVICE SCHEDULES			
K603	FOODSERVICE UTILITY SCHEDULES			
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KP101	FOODSERVICE PLUMBING IN-SLAB ROUGH-IN PLAN			
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M502	MECHANICAL DETAILS			
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M703	CAPTIVEAIRE DRAWINGS			
M704	CAPTIVEAIRE DRAWINGS			
M705	CAPTIVEAIRE DRAWINGS			
M706	CAPTIVEAIRE DRAWINGS			
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M709	CAPTIVEAIRE DRAWINGS			
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P592	PLUMBING SPECIFICATIONS SYMBOL LEGEND			
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E601	ELECTRICAL SCHEDULES & ONE-LINE DIAGRAM			
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E622	LUTRON VIVE ONE-LINE			
E623	LUTRON VIVE ONE-LINE			
E624	LUTRON VIVE ONE-LINE			

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CONSULTANT LOGO:

STORE NO:

FL, #1794

SHAKE SHACK

COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION

STATUS:

IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT

08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLLC of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:

SHEET INDEX

DATE:	PROJECT NO:
05/01/2026	41354

DRAWN:	SCALE:
SO	AS INDICATED

SHEET NO:

T002

RESPONSABILITY SCHEDULE

THIS SCHEDULE IS PROVIDED FOR QUICK REFERENCE ONLY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL WORK DESCRIBED IN THE CONSTRUCTION DOCUMENTS. CONFLICTS BETWEEN THIS SCHEDULE AND THE REST OF THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO BEGINNING WORK GC TO ALSO REVIEW ARCHITECTURAL SPECIFICATIONS (A581-A593) FOR REQUIRED SUBMITTALS THAT MIGHT NOT BE LISTED BELOW.

DESCRIPTION	FURNISHED			INSTALLED			REMARKS
RESPONSIBILITY MATRIX PER 02/13/2026 ISSUANCE FROM SHAKE SHACK AND MODIFIED PROJECT W/L PAGES FROM A1.1 COCONUT POINT - DESCRIPTION OF LANDLORD'S WORK AND TENANT'S WORK.PDF UPLOADED TO LUCERNEX ON 10/22/25	GENERAL CONTRACTOR	OWNER	LANDLORD	GENERAL CONTRACTOR	OWNER	LANDLORD	
DIVISION 01: GENERAL REQUIREMENTS							
1.1 PERMITS AND FEES							
1.1.1 PERMIT FEES		•			•		GENERAL CONTRACTOR TO PULL PERMITS FOR THE BUILDING, MECHANICAL, ELECTRICAL, PLUMBING, HEALTH, AND/OR ENVIRONMENT
1.1.2 OTHER PERMTIS AND FEES	•				•		GENERAL CONTRACTOR TO SECURE AND PAY FOR OTHER REQUIRED PERMITS AND FEES NOT NOTED IN LINE ITEM 1.1.1
1.2 TEMPORARY UTILITIES			•			•	
1.3 TEMPORARY BARRICADES OR SITE FENCING			•			•	
1.3.1 BARRICADE GRAPHICS		•			•		
1.4 CONSTRUCTION DUMPSTERS AND TRASH BINS	•				•		GENERAL CONTRACTOR TO COORDINATE WITH LANDLORD, WASTE MANAGEMENT, CITY AND COUNTY
1.5 FINAL CLEANING	•				•		SITE TO BE PROFRESSIONALLY CLEANED PRIOR TO STOCKING, TRAINING AND OPENING
1.6 CERTIFICATE OF OCCUPANCY	•				•		TO INCLUDE BUILDING, FIRE AND HEALTH INSPECTIONS
DIVISION 02: EXISTING CONDITIONS							
2.1 DEMOLITION			•			•	
DIVISION 03: CONCRETE							
3.1 CONCRETE SLAB AND FOUNDATION	•				•		REFER TO STRUCTUAL DRAWINGS AND ARCHITECTURALS FOR ADDITIONAL INFORMATION
3.2 CONCRETE CUTTING AND CORING	•				•		SCOPE OF WORK INCLUDES ALL CORING REQUIRED BY OWNER-VENDOR SCOPE COORDINATE WITH OWNER-VENDOR INCLUDE SCAN OR X-RAY AS NEEDED
DIVISION 04: MASONRY							
4.1 MASONRY AND STUCCO	•				•		
DIVISION 05: METALS							
5.1 STRUCTURAL STEEL	•				•		SCOPE OF WORK INCLUDES ROOF AND WALL PENETRATIONS
5.2 SIGN STEEL BEAM	•				•		SCOPE OF WORK TO INCLUDE INTERIOR AND EXTERIOR BEAMS
5.3 ROOF LADDER AND HATCH	•				•		
5.4 FRAMING	•				•		
5.5 REVEALS AND TRIMS	•				•		
5.6 UNISTRUT, THREADED ROD AND AIRCRAFT CABLE	•				•		
DIVISION 06: WOOD, PLASTICS AND COMPOSITES							
6.1 STRUCTURAL FRAMING	•				•		SCOPE OF WORK TO INCLUDE REINFORCEMENT IN ROOF PENETRATIONS
6.2 FINISH CARPENTRY							
6.2.1 WOOD TRIM, WAINSCOT, MILLWORKS WALLS		•			•		
6.2.2 RECLAIMED WOOD		•			•		
6.3 ARCHITECTURAL WOODWORK							
6.3.1 MILLWORK CASEWORK	•				•		
6.3.2 REQUIRED WALL AND CEILING BACKING	•				•		
6.4 WOOD PANELING	•				•		
6.5 FIBERGLASS REINFORCED PLASTIC (FRP) PANELS AND ACCESSORIES	•				•		
DIVISION 07: THERMAL AND MOISTURE PROTECTION							
7.1 INSULATION	•				•		
7.2 ROOF PENETRATIONS	•				•		
7.3 PRE-FINISHED PARAPET COPING	•				•		
7.4 SEALANTS AND CAULKING	•				•		
7.5 EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)	•				•		
DIVISION 08: OPENINGS							
8.1 DOORS AND FRAMES	•				•		
8.2 METAL CEILING ACCESS PANELS	•				•		
8.3 STOREFRONT SYSTEMS AND CURTAIN WALL	•				•		
8.4 DOOR HARDWARE	•				•		
8.5 INTERIOR BUTT GLAZING AND METAL CHANNEL FRAME	•				•		
DIVISION 09: FINISHES							
9.1 GYPSUM WALLBOARD AND ACCESSORIES	•				•		
9.2 SUSPENDED GYPSUM BOARD CEILING AND FRAMING	•				•		
9.3 SUSPENDED 'T' BAR LAY-IN CEILING	•				•		
9.4 WALL TILES	•				•		GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 4 VENDOR SUBSTITUTION IS NOT PERMITTED
9.5 PRE-FINISHED CORRUGATED METAL PANELING AND FLAT STOCK	•				•		GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 3 VENDOR SUBSTITUTION IS NOT PERMITTED
9.6 FLOORING							
9.6.1 TILE FLOORING	•				•		GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 4 VENDOR SUBSTITUTION IS NOT PERMITTED
9.6.2 CONCRETE POLISHING AND SEALER	•				•		
9.6.3 THRESHOLDS	•				•		
9.6.4. REDUCERS	•				•		
9.6.5 PRE-FINISHED WALK-IN COOLER AND FREEZER		•			•		PROVIDED BY VENDOR NO. 103 GENERAL CONTRACTOR TO SUPPLY AND INSTALL WALK-IN COOLER FLOORING FOR SLAB ON GRADE.
9.7 INTERIOR PAINT	•				•		
DIVISION 10: SPECIALTIES							
10.1 IDENTIFICATION DEVICES							
10.1.1 EXTERIOR BUILDING MOUNTED SIGNAGE		•			•		GENERAL CONTRACTOR TO COORDINATE AND REVIEW SIGN PACKAGE WITH VENDOR NO. 108 FOR ADDITIONAL SCOPE OF WORK (E.G. PROVIDING POWER AND BLOCKING)
10.1.2 TACTILE SIGNAGE		•			•		SUPPLIED BY VENDOR NO. 108
10.1.3 SERVICE DOOR IDENTIFICATION	•			•			
10.1.4 ACCESSIBILITY AND MISCELLANEOUS RESTROOM SIGNAGE		•			•		SUPPLIED BY VENDOR NO. 108
10.1.5 BAND LETTERS		•			•		GENERAL CONTRACTOR TO COORDINATE AND REVIEW SIGN PACKAGE WITH VENDOR NO. 108 FOR ADDITIONAL SCOPE OF WORK (E.G. PROVIDING POWER, BLOCKING, AND SUPPORT)
10.1.6 ARTWORK AND ARTIFACTS		•			•		GENERAL CONTRACTOR TO COORDINATE LOCATIONS WITH OTHER FOR ADDITIONAL SCOPE OF WORK (E.G. PROVIDING BLOCKING)
10.1.7 MENU BOARD AND WINE RACK		•			•		GENERAL CONTRACTOR TO COORDINATE WITH VENDOR NO. 108 FOR ADDITIONAL SCOPE OF WORK (E.G. PROVIDING BLOCKING)
10.1.8 VINYL GRAPHIC (MURAL)		•			•		GENERAL CONTRACTOR TO REFER TO ARCHITECTURAL DRAWINGS FOR FINISH REQUIREMENT BEHIND VINYL GRAPHIC.
10.2 FIRE PROTECTION DEVICES							
10.2.1 FIRE EXTINGUISHERS AND CABINETS	•				•		
10.2.2 RISER ROOM IDENTIFICATION	•				•		GENERAL CONTRACTOR TO COORDINATE WITH THE FIRE DEPARTMENT
10.3 TOILET ROOMS							
10.3.1 TOILET ROOM ACCESSORIES	•				•		SUPPLIED BY VENDOR NO. 14
10.3.2 TOILET ROOM HARDWARE	•				•		SUPPLIED BY VENDOR NO. 14
10.3.3 PAPER TOWEL DISPENSER		•			•		
10.3.4 SOAP DISPENSER		•			•		
10.4 KITCHEN DISPLAY SYSTEM (KDS) MOUNTS		•			•		SUPPLIED AND INSTALLED BY VENDOR NO. 103
10.5 GLOVE BOXES		•		•			
10.6 OFFICE SAFE		•			•		GENERAL CONTRACTOR TO COORDINATE INSTALLATION WITH OWNER VENDOR NO.123
10.7 STAINLESS STEEL KITCHEN WALL PANELS		•			•		SUPPLIED AND INSTALLED BY VENDOR NO. 103 GENERAL CONTRACTOR TO PROVIDE SUBSTRATE STAINLESS
10.8 STAINLESS STEEL KITCHEN CORNER GUARDS AND END CAPS		•			•		SUPPLIED AND INSTALLED BY VENDOR NO.103

DESCRIPTION	FURNISHED			INSTALLED			REMARKS
	GENERAL CONTRACTOR	OWNER	LANDLORD	GENERAL CONTRACTOR	OWNER	LANDLORD	
DIVISION 11: EQUIPMENT							
11.1 FOOD SERVICE EQUIPMENT		•			•		SUPPLIED AND INSTALLED BY VENDOR NO. 103 GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE FINAL UTILITY CONNECTIONS
11.2 STAINLESS STEEL FABRICATED COUNTERS AND SHELVING		•			•		SUPPLIED AND INSTALLED BY VENDOR NO. 103
11.3 CONDIMENT COUNTER		•		•			SUPPLIED AND INSTALLED BY VENDOR NO. 103 GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE FINAL UTILITY CONNECTIONS
11.4 STORAGE RACKS AND SHELVING		•			•		GENERAL CONTRACTOR TO COORDINATE WITH VENDOR NO. 103 FOR ADDITIONAL SCOPE OF WORK (E.G. PROVIDING BLOCKING)
11.5 SODA SYSTEM							SUPPLIED AND INSTALLED BY VENDOR NO. 104
11.5.1 SYSTEM COMPONENTS		•			•		
11.5.2 CONDUIT	•			•			GENERAL CONTRACTOR TO COORDINATE WITH VENDOR NO.104
11.6 CARBON DIOXIDE (CO2) SYSTEM							SUPPLIED AND INSTALLED BY VENDOR NO. 101
11.6.1 CO2 TANKS		•			•		
11.6.2 CO2 LINES		•			•		
11.6.3 CONDUIT	•			•			
11.6.4 EXTERIOR FILL BOX		•		•			
11.7 OIL RECOVERY SYSTEM							SUPPLIED AND INSTALLED BY VENDOR NO. 105
11.7.1 OIL TANKS		•			•		
11.7.2 OIL LINES		•			•		
11.7.3 CONDUIT	•			•			GENERAL CONTRACTOR TO COORDINATE WITH VENDOR NO.105
11.7.4 EXTERIOR FILL BOX		•		•			
DIVISION 12: FURNISHINGS							
12.1 FIXED SEATING (BOOTHS, BENCHES, ETC.)		•			•		SUPPLIED BY VENDOR NO. 109 GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE DELIVERY COORDINATION AND STAGING OF MATERIALS. TABLE ASSEMBLY, BOTH AND HIGH-TOP ANCHORING, AND INSTALLATION OF HOOKS AND BRACKETS
12.2 TABLE TOP BASES		•			•		SUPPLIED BY VENDOR NO. 109
12.3 CHAIRS AND STOOLS		•			•		SUPPLIED BY VENDOR NO. 109
12.4 APP SHELVING	•				•		SUPPLIED BY VENDOR NO. 16
12.5 INDOOR FAUX PLANTS		•			•		SUPPLIED BY VENDOR NO. 121
12.6 OFFICE MILLWORK	•				•		
12.7 WINDOW SHADES	•				•		GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 8 VENDOR SUBSTITUTION IS NOT PERMITTED
12.8 OFFICE AND BACK OF HOUSE MISCELLANEOUS SUPPLIES	•				•		
12.9 KIOSK TABLE		•			•		GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RECEIPT AND INSTALLATION OF MATERIALS
12.10 KIOSK PADS		•			•		
12.11 INTERIOR TRASH RECEPTACLES		•			•		SUPPLIED AND INSTALLED BY VENDOR NO. 103
12.12 SITE FURNISHINGS							
12.12.1 UMBRELLAS AND BASES		•			•		SUPPLIED BY VENDOR NO. 112 GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RECEIPT, ASSEMBLY, AND INSTALLATION OF MATERIALS
12.12.2 MOBILE PLANTER BOXES	•				•		GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RECEIPT, ASSEMBLY, AND INSTALLATION OF MATERIALS
12.12.3 FIXED PLANTER BOXES AND LINERS	•				•		
12.12.4 PATIO RAILING AND GATES		•			•		
12.12.5 EXTERIOR TRASH RECEPTACLES		•			•		
12.13 EMPLOYEE LOCKERS		•			•		
DIVISION 13: SPECIAL CONSTRUCTION							
13.1 WALK-IN FREEZER AND COOLER		•			•		GENERAL CONTRACTOR TO COORDINATE INSTALLATION DETAILS WITH VENDOR NO. 103
13.2 REFRIGERATED TRASH ENCLOSURE		•			•		GENERAL CONTRACTOR TO COORDINATE INSTALLATION DETAILS WITH VENDOR NO. 103

SUBMITTAL MATRIX

SUBMITTAL	REQ'D REVIEW TIME (BUSINESS DAYS)	ARCHITECT	SUBMITTAL FOR REVIEW	SUBMITTAL FOR RECORD ONLY
ANCHOR BOLTS SHOP DRAWINGS	5	X	X	
CONCRETE MIX DESIGN	5	X	X	
LUTRON - PROGRAMMING REPORT	5	X		X
DIFFUSERS, GRILL & REGISTERS	5	X		X
DOORS, FRAMES & HARDWARE	5	X	X	
DUCTWORK LAYOUT (IF THERE ARE SIGNIFICANT CHANGES IN FIELD)	5	X	X	
EIFS	5	X	X	
ELECTRICAL DISTRIBUTION EQUIPMENT	5	X	X	
EPOXY FLOOR + APPROVED CONTRACTOR LETTER	5	X	X	
FIRE ALARM SHOP DRAWINGS & DEVICE CUT SHEETS	5	X2	X	
FIRE SPRINKLER SHOP DRAWINGS, HYDRAULIC CALCULATIONS & DEVICE CUT SHEETS	5	X2	X	
HVAC EQUIPMENT (SUBMITTED BY OWNER VENDOR DIRECTLY TO OWNER / AOR PRIOR TO CONSTRUCTION)	5	X2	X	
LIGHT FIXTURE (SUBMITTED BY OWNER VENDOR DIRECTLY TO OWNER / AOR PRIOR TO CONSTRUCTION)	5	X	X	
MEP TESTS & BALANCE REPORTS	5	X	X	
MILLWORK - MATERIAL SUBMITTALS (IF DIFFERS FROM SPEC)	5	X1	X	
MILLWORK - SHOP DRAWINGS (CUSTOM ITEMS & DESIGN FEATURES ONLY)	5	X	X	
PLUMBING FIXTURES	5	X	X	
RAILING SHOP DRAWINGS (ONLY REQUIRED WHEN GC PROVIDED)	5	X	X	
REBAR	5	X	X	
STOREFRONT - PRODUCT DATA SUBMITTAL (IF DIFFERS FROM SPEC)	5	X	X	
STOREFRONT - SHOP DRAWINGS	5	X	X	
STRUCTURAL STEEL SHOP DRAWINGS	5	X2	X	
TILE (IF DIFFERS FROM SPEC)	5	X1	X	
WINDOW FILM	5	X	X	
KITCHEN EXHAUST DUCT - WATER TEST	5	X	X	
KITCHEN EXHAUST SYSTEM	5	X	X	
ROOF SCREEN SHOP DRAWINGS	5	X	X	

PLEASE SEND ALL PHYSICAL SAMPLES DIRECTLY TO ZEBRA FOR APPROVAL,
ZEBRA - ARCHITECT OF RECORD
ATTN: EILEEN GARCIA-WEGLARSKA
14614 N KIERLAND BLVD. SUITE N 300
SCOTTSDALE, AZ 85254

NOTES:
SOME ITEMS MAY NOT APPLY TO THIS PROJECT
REQ'D REVIEW TIME IS IN BUSINESS DAYS

X1 - SHIP PHYSICAL SAMPLE DIRECT TO ARCHITECT AT ADDRESS LISTED ABOVE
X2-SHOPS & CALCULATIONS TO BE SIGNED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WICH THE PROJECT IS LOCATED.

PROJECT CLOSEOUT REQUIREMENTS

ITEM	RESPONSIBILITY
CERTIFICATE OF OCCUPANCY OR EQUIVALENT	GC
PERMANENT HEALTH DEPARTMENT APPROVAL	GC
PROOF OF COMPLETION OF PROJECT PUNCH LIST	GC
ADA REPORT PROOF OF COMPLETION	GC
NEW STORE ORIENTATION CONDUCTED	GC
DUCTWORK LAYOUT (IF THERE ARE SIGNIFICANT CHANGES IN FIELD)	GC
O&M'S APPROVED BY SHAKE SHACK	GC
LUTRON PROGRAMMING COMPLETED & REPORT APPROVED BY SHAKE SHACK	GC
TAB REVIEWED AND APPROVED BY EOR	GC
CAPTIVE AIRE / HALTON STARTUP REPORT REVIEWED AND APPROVED BY EOR	GC
GREASE DUCT TEST REPORT REVIEWED AND APPROVED BY SHAKE SHACK	GC
PERMANENT KEYS DISTRIBUTED TO THE STORE GENERAL MANAGER	GC
EMERGENCY CONTACT LIST SENT TO SHAKE SHACK	GC
INDEPENDENT INSPECTION AGENCY COMPLETION LETTER SENT TO SHAKE SHACK (IF APPLICABLE)	GC
SERVICE AGENCY LISTING (DUE ON TURNOVER)	KEC
EQUIPMENT STARTUP REPORTS	KEC

VENDOR LIST

GC PROVIDED ITEMS (VENDORS 1-22)		OWNER PROVIDED ITEMS (VENDORS 101-123)	
2. FIBER CEMENT PANELS	NICHIHA •BEN DALZIEL P) 404-4[illegible] E) BDAL[illegible].COM NOT USED	101. CO2 EQUIPMENT	NUCO2 •AMY SNOW P) 770-833-0802 E) AMY.SNOW@NUCO2.COM •JOAN PIENIAZEK P) 1-800-472-2855 EXT 30734 E) JOAN.PIENIAZEK@NUCO2.COM
3. ALUMINUM PANELS	ATAS INTERNATIONAL INC. •MARK BROWN P) 484-221-6346 E) MBROWN@ATAS.COM	102. EXHAUST HOOD & FANS	CAPTIVEAIRE •ERIC BUCKMANN P) 215-528-8021 E) ERIC.BUCKMANN@CAPTIVEAIRE.COM
4. TILE	CREATIVE MATERIALS CORPORATION (CMC) •ALLISON PICHE P) 518-713-5395 E) APICHE@CREATIVEMATERIALSCORP.COM •DOUG SALATINO P) 518-713-5371 E) DSALATINO@CREATIVEMATERIALSCORP.COM	103. KITCHEN EQUIPMENT CONTRACTOR	TRIMARK UNITED EAST •STEPHEN DUNGEY P) 508-431-3410 E) STEPHEN.DUNGEY@TRIMARKUSA.COM
6. BLACK IRON WATER LEAK TEST	ENVIRONMATIC •DON PFLEDERER P) 800-325-8476 E) INSPECTIONS@ENVIROMATIC.COM	104. SODA SYSTEM	COCA-COLA •TOM LAM P) 800-304-2652 EXT 2642 E) TOLAM@COCA-COLA.COM
7. TESTING AND BALANCING	NATIONAL TAB •BRI BRIGGS P) 513-889-7219 E) SHAKESHACK@NATIONALTAB.COM	105. OIL RECOVERY SYSTEM	RESTAURANT TECHNOLOGIES, INC. •JASON SUMMERS P) 615-945-5772 E) JSUMMERS@RTI-INC.COM
8. SHADES	ROLL-A-SHADE •SANDY MCCOY P) 951-459-0375 E) ESTIMATES@ROLLASHADE.COM	106. SPECIALTY BEVERAGE EQUIPMENT	HARNEY TEA •ANDREW WILSON P) 845-233-0255 E) ANDREW@HARNEYTEAS.COM
9. INSTAKEY KEY CONTROL & LOCKS CUSHMAN WAKEFIELD	VIXXO •HALEY D'ANNA P) 316-600-0918 E) HALEY.DANNA@VIXXO.COM E) SHAKESHACKPROJECTS@VIXXO.COM •SIOBHAN PANIAS P) 781-254-1610 E) SIOBHAN.PANIAS@VIXXO.COM	107. LOW VOLTAGE CONTRACTOR	SPENCER TECHNOLOGIES •LYNDIE THOMPSON P) 440-417-4666 E) LYTHOMPSON@SPENCERTECH.COM •BRITTANY WINCHELL P) 508-618-9524 E) BWINCHELL@SPENCERTECH.COM
10. KITCHEN URETHANE FLOORING	SHERWIN-WILLIAMS HIGH PERFOMANCE FLOORING •SAM SACKS P) 401.369.6564 E) SAMS.SACKS@SHERWIN.COM	108. SIGNAGE CONTRACTOR	PATTISON ID •JESSE AMADOR P) 469-371-1630 E) JAMADOR@PATTISONID.COM
11. SPECIAL/ DEPUTY/ 3RD PARTY INSPECTIONS	TERRACON •TIFFANY KING P) 214-986-2344 E) TIFFANY.KING@TERRACON.COM	109. FURNITURE PACKAGE (INDOOR)	PLYMOLD •EMILY PUGACZEWSKI P) 651-363-0248 E) WDAY@FCIUS.COM
12. WELDED SEAM FLOORING (WALK-IN)	PROTECT-ALL •JERRY LEE P) 989-739-6900 EXT. 6000 E) JLEE@PROTECT-ALLFLOORING.COM	110. FURNITURE PACKAGE (OUTDOOR)	FERMOB •KAYLA THURMOND P) 470-354-3005 E) KTHURMOND@FERMOBUSA.COM
13. ROOFING MEMBRANE SYSTEM	AMRIZE/DURO-LAST DIVISION •MICHAEL GONCALVES P) 508-340-6158 E) MICHAEL.GONCALVES@AMRIZE.COM	111. PLANTERS	POTS PLANTERS & MORE •RAMONA P) 847-[illegible] E)RAMONA@POTSPLANTERSANDMORE.COM NOT USED
14. RESTROOM FIXTURES & ACCESSORIES	HAINES, JONES & CADBURY •WHITNEY ASHBRIDGE P) 954-588-8194 E) WHITNEY.ASHBRIDGE@HJCINC.COM	112. PATIO UMBRELLAS	BAMBRELLA •GARY ECOFF P) 561-288-8655 E) GE@BAMBRELLAUSA.COM
15. WOOD TRUSSES	REBUILT [illegible] P) [illegible] E) ASPRAY@REBUILT.COM NOT USED	113. CABLE	DIRECTV •BRANDI PINO P) 303-898-7846 E) JBPINO@DIRECTV.COM
16. APP PICK-UP SHELF	RAKKS •CARA CULLEN P) 781-691-0597 E) CARA@RAKKS.COM	114. TRASH, RECYCLE BINS, RAILINGS (OUTDOOR)	FACILITY CONCEPTS INC •WILLIAM DAY P) 800-915-8890 EXT. 117 E) WDAY@FCIUS.COM
18. BLACKOUT WINDOW FILM	ALPHAGRAPHICS •ARIF JACKSI P) 2[illegible]-0900 E) A[illegible]GRAPHIC.COM NOT USED	115. CHEMICAL, DISHWASHER, WATER SOFTENER	SSDC / KAY CHEMICAL •ROBERT ALLEN P) 336-858-0893 E) ROBERT.ALLEN@SSDCSOAP.COM •CHRIS MEDEIROS P) 774-301-3594 E) CHRISTOPHER.MEDEIROS@SSDCSOAP.COM
19. ELECTRICAL PANELS	GRAYBAR •KIRA COOPER P) 516-506-9671 E) KIRA.COOPER@GRAYBAR.COM	116. SECURITY SYSTEM	EVERON •DEREK NICKTERN P) 856-425-8171 E) DNICKTERN@EVERONSOLUTIONS.COM
20. TANKLESS WATER HEATERS SUPPLIER	RINNAI •JAKE ALEXANDER P) 917-841-5683 E) JALEXANDER@RINNAI.US BRANDON MORRIS P) 770-632-4383 E) BMORRISON@RINNAI.US	117. DRIVE THRU OPTIMIZATION SYSTEM	HME •PATRICK KELLY P) 858-535-6042 E) PKELLY@HME.COM NOT USED
21. SITE CAMERA	EARTHCAM •MARIA CURY P) 201-488-1111 X1031 E) MARIA@EARTHCAM.COM	118. DRIVE THRU DIGITAL MENU BOARDS	HOWARD COMPANY •NATHAN JAECKEL P) 262-317-7715 E) NJAECKELS@HOWARDCOMPANY.COM
22. PASS THROUGH TRANSACTION WINDOWS READY ACCESS	READY ACCESS •ANN ELLIS P) [illegible] X120 E) ANN[illegible]ESS.COM NOT USED	119. DRIVE THRU CANOPY AND CLEARANCE BAR	SEE VENDOR 108A & 108B
		120. HVAC UNITS	CAPTIVEAIRE •JOE SHIIBA P) 610-776-9503 E) JOE.SHIIBA@CAPTIVEAIRE.COM
		121. FAUX PLANTS	PLANTSCAPE INC •CASEY EMANS P) 952-200-7007 E) CASEY@PLANTSCAPEINC.COM
		122. LIGHTING	SPECIALTY LIGHTING GROUP •JENNIFER MARQUIS P) 860-767-0110 EXT. 231 E) JENNIFER.MARQUIS@SSLIGHTING.COM •ANUSH KAZARIAN P) 860-767-0110 EXT. 252 E) ANUSH.KAZARIAN@SSLIGHTING.COM
		123. SAFE	BRINK'S, INCORPORATED •MINDY PATTERSON P) 469-549-6585 P) 945-300-1923 E) MINDY.PATTERSON@BRINKSINC.COM

NOTES:
1.TENANT GC IS RESPONSIBLE FOR ALL WORK SHOWN IN SET AND NOT SPECIFICALLY INDICATED IN THE RESPONSIBILITY MATRIX, UNLESS OTHERWISE NOTED.
2.GENERAL CONTRACTOR TO COORDINATE WITH ALL OWNER-VENDORS FOR INSTALLATION AND DELIVERY.

zebra

ZEBRA ARCHITECTURE, PLLC.
14614 N KIERLAND BLVD, SUITE N300
SCOTTSDALE, AZ 85254

PHONE: 480.912.1169 zbr.global

CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
PRELIMINARY RESPONSIBILITY MATRIX

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:
T003

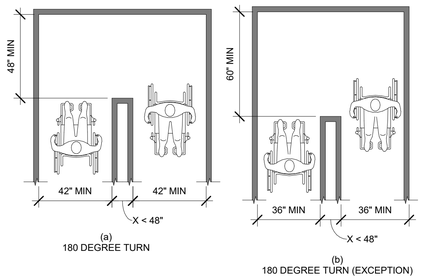


FIGURE 403.5.2
CLEAR WIDTH AT TURN

SCALE: NTS

D5

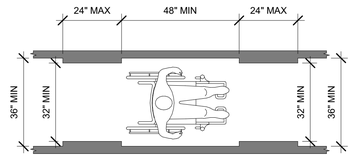


FIGURE 403.5.1
CLEAR WIDTH OF AN ACCESSIBLE ROUTE

SCALE: NTS

D4

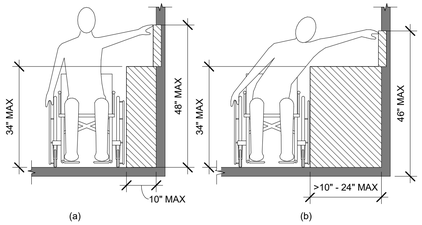


FIGURE 308.3.2
OBSTRUCTED HIGH SIDE REACH

SCALE: NTS

D3

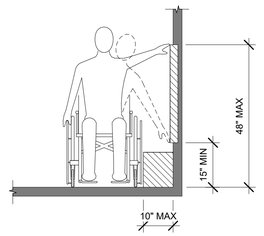


FIGURE 308.3.1
UNOBSTRUCTED SIDE REACH

SCALE: NTS

D2

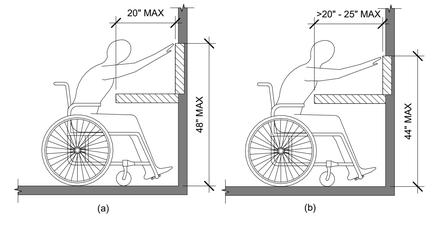


FIGURE 308.2.2
OBSTRUCTED HIGH FORWARD REACH

SCALE: NTS

D1

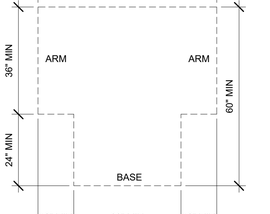


FIGURE 308.2.1
UNOBSTRUCTED FORWARD REACH

SCALE: NTS

C5

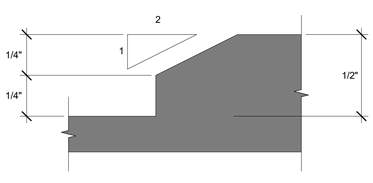


FIGURE 307.4
VERTICAL CLEARANCE

SCALE: NTS

C4

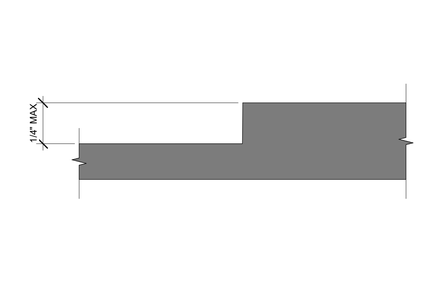


FIGURE 307.3
POST-MOUNTED PROTRUDING OBJECTS

SCALE: NTS

C3

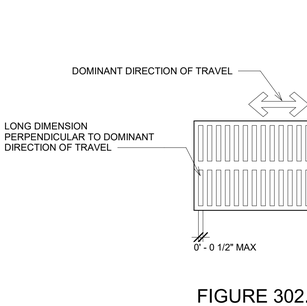


FIGURE 307.2
LIMIT OF PROTRUDING OBJECTS

SCALE: NTS

C2

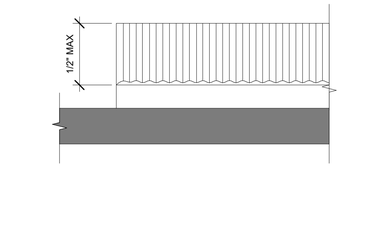


FIGURE 306.2
KNEE CLEARANCE

SCALE: NTS

C1

FIGURE 306.1
TOE CLEARANCE

SCALE: NTS

B5

FIGURE 305.7.2
MANEUVERING CLEARANCE ALCOVE - PARALLEL APPROACH

SCALE: NTS

B4

FIGURE 305.7.1
MANEUVERING CLEARANCE ALCOVE - FORWARD APPROACH

SCALE: NTS

B3

FIGURE 305.5
POSITION OF CLEAR FLOOR OR GROUND SPACE

SCALE: NTS

B2

FIGURE 305.3
CLEAR FLOOR OR GROUND SPACE

SCALE: NTS

B1

FIGURE 304.3.2
T-SHAPED TURNING SPACE

SCALE: NTS

A5

FIGURE 303.3
BEVELED CHANGE IN LEVEL

SCALE: NTS

A4

FIGURE 303.2
VERTICAL CHANGE IN LEVEL

SCALE: NTS

A3

FIGURE 302.3
ELONGATED OPENINGS IN FLOOR OR GROUND SURFACE

SCALE: NTS

A2

FIGURE 302.2
CARPET PILE HEIGHT

SCALE: NTS

A1

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ZEBRA ARCHITECTURE, PLLC.
14614 N KIERLAND BLVD, SUITE N300
SCOTTSDALE, AZ 85254

PHONE: 480.912.1169 zbr.global

CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK

COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
2023 FLORIDA BUILDING CODE ACCCESSIBILITY, 8TH EDITION.

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:
T004

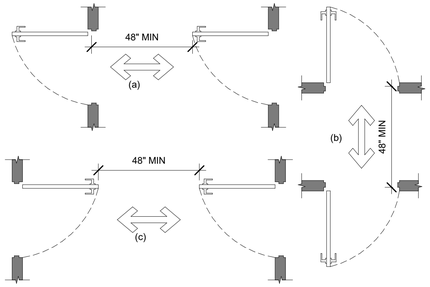


FIGURE 404.2.6
DOORS IN SERIES & GATES IN SERIES D3

SCALE: NTS

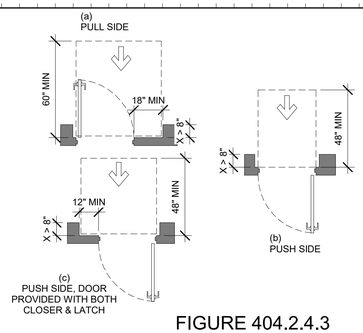


FIGURE 404.2.4.3
MANEUVERING CLEARANCES AT RECESSED DOORS & GATES D2

SCALE: NTS

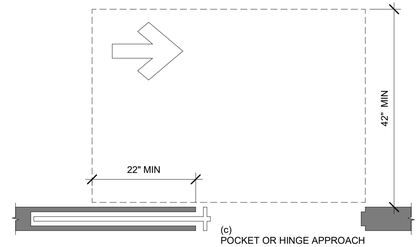


FIGURE 404.2.4.2 (c)
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS, SLIDING DOORS, GATES, & FOLDING DOORS D1

SCALE: NTS

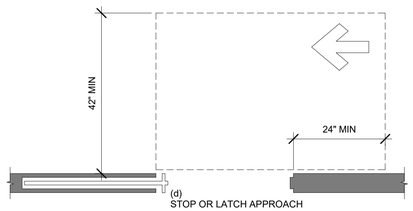


FIGURE 404.2.4.2 (d)
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS, SLIDING DOORS, GATES, & FOLDING DOORS C5

SCALE: NTS

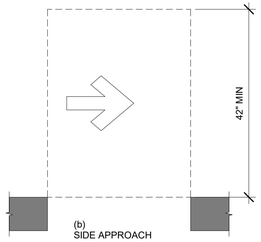


FIGURE 404.2.4.2 (b)
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS, SLIDING DOORS, GATES, & FOLDING DOORS C4

SCALE: NTS

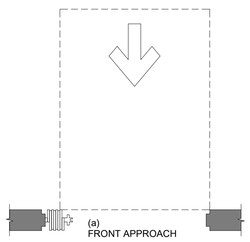


FIGURE 404.2.4.2 (a)
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS, SLIDING DOORS, GATES, & FOLDING DOORS C3

SCALE: NTS

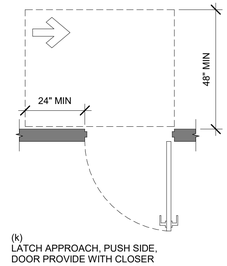


FIGURE 404.2.4.1 (k)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES C2

SCALE: NTS

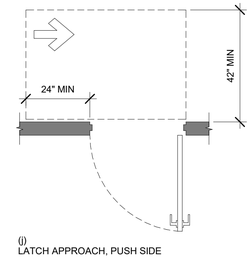


FIGURE 404.2.4.1 (j)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES C1

SCALE: NTS

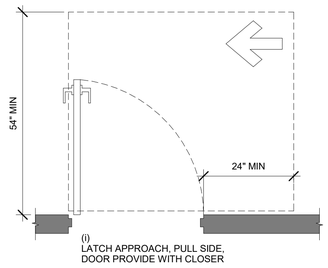


FIGURE 404.2.4.1 (i)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES B5

SCALE: NTS

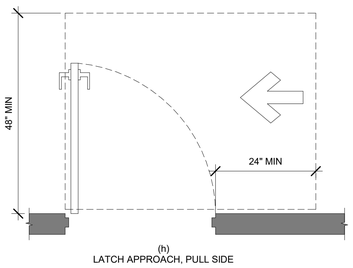


FIGURE 404.2.4.1 (h)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES B4

SCALE: NTS

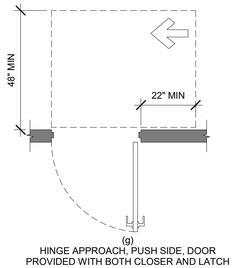


FIGURE 404.2.4.1 (g)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES B3

SCALE: NTS

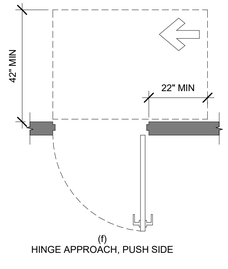


FIGURE 404.2.4.1 (f)
MANUEVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES B2

SCALE: NTS

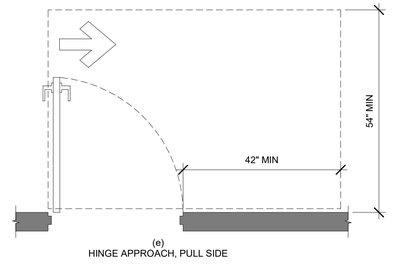


FIGURE 404.2.4.1 (e)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES B1

SCALE: NTS

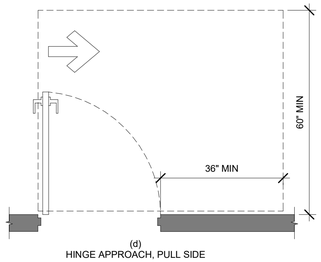


FIGURE 404.2.4.1 (d)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES A5

SCALE: NTS

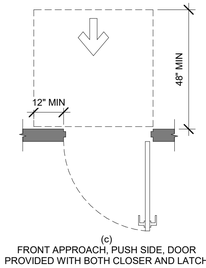


FIGURE 404.2.4.1 (c)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES A4

SCALE: NTS

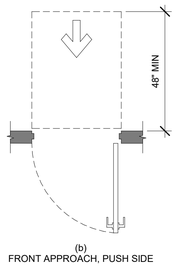


FIGURE 404.2.4.1 (b)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES A3

SCALE: NTS

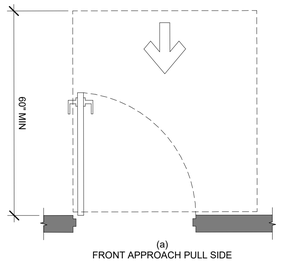


FIGURE 404.2.4.1 (a)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS & GATES A2

SCALE: NTS

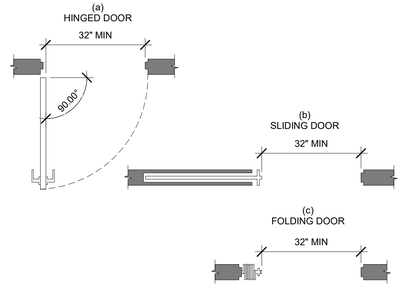


FIGURE 404.2.3
CLEAR WIDTH OF DOORWAYS A1

SCALE: NTS

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STORE NO:
FL, #1794

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REVISION

△	DATE	DESCRIPTION

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

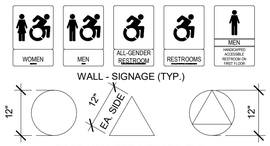
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SHEET NAME:
2023 FLORIDA BUILDING CODE ACCESSIBILITY, 8TH EDITION.

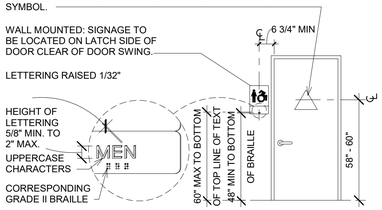
DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
T005



NOTE: PICTOGRAMS AND/OR LETTERING ARE NOT REQUIRED ON DOOR - MOUNTED SIGNAGE.

DOOR - MOUNTED SIGNAGE MOUNTED AT 58" MIN AND 60" MAX ABOVE THE FINISH FLOOR OR GROUND SURFACE MEASURED FROM THE CENTERLINE OF THE SYMBOL.

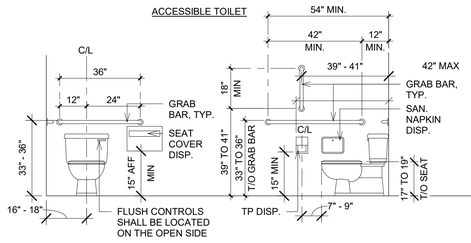


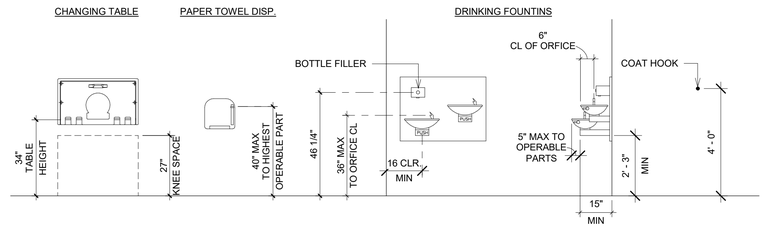
NOTES:

1. INTERNATIONAL SYMBOL OF ACCESSIBILITY COLORS TO BE A WHITE FIGURE ON A BLUE BACKGROUND.
2. TACTILE CHARACTERS ON SIGNS SHALL BE LOCATED 48 INCHES ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE LOWEST BRAILLE CELLS AND 60 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST LINE OF RAISED CHARACTERS.

FIXTURE MOUNTING HEIGHTS - FOR REFERENCE ONLY C5

SCALE: NTS





FIXTURE MOUNTING HEIGHTS - FOR REFERENCE ONLY D1

SCALE: NTS

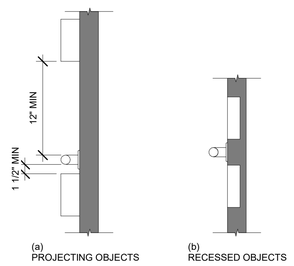


FIGURE 609.3 SPACING OF GRAB BARS C4

SCALE: NTS

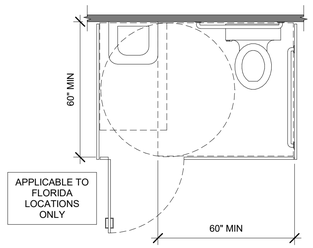


FIGURE 604.8.1.6 SIZE OF WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT IN NEW CONSTRUCTION C3

SCALE: NTS

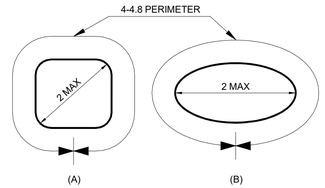


FIGURE 609.2.2 GRAB BAR NON-CIRCULAR CROSS SECTION C2

SCALE: NTS

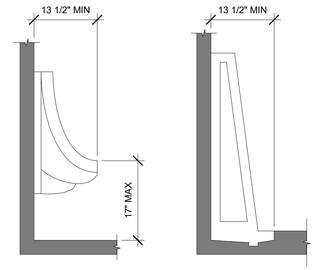


FIGURE 605.2 HEIGHT AND DEPTH OF URINALS C1

SCALE: NTS

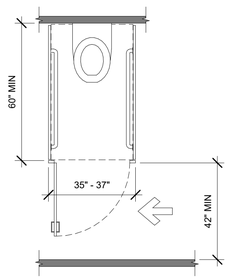


FIGURE 604.8.2 AMBULATORY ACCESSIBLE TOILET COMPARTMENT B5

SCALE: NTS

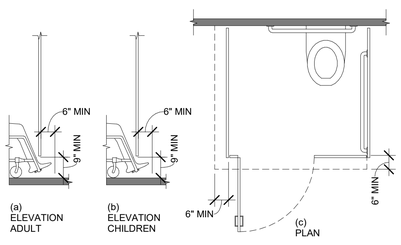


FIGURE 604.8.1.4 WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE B4

SCALE: NTS

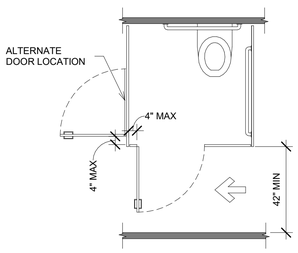


FIGURE 604.8.1.2 WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT DOORS B3

SCALE: NTS

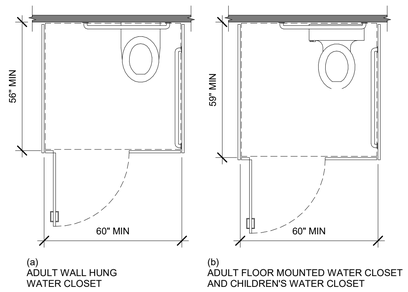


FIGURE 604.8.1.1 SIZE OF WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT B2

SCALE: NTS

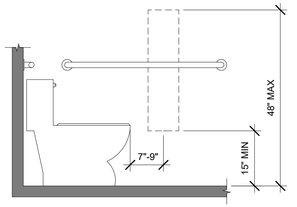


FIGURE 604.7 DISPENSER OUTLET LOCATION B1

SCALE: NTS

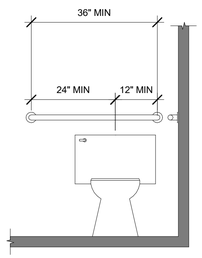


FIGURE 604.5.2 REAR WALL GRAB BAR AT WATER CLOSETS A5

SCALE: NTS

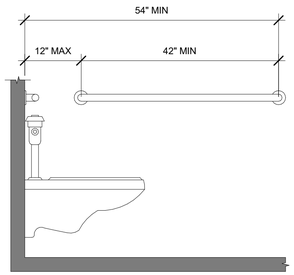


FIGURE 604.5.1 SIDE WALL GRAB BAR AT WATER CLOSETS A4

SCALE: NTS

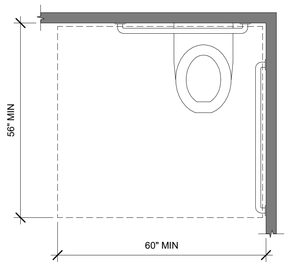


FIGURE 604.3.1 SIZE OF CLEARANCE AT WATER CLOSET A3

SCALE: NTS

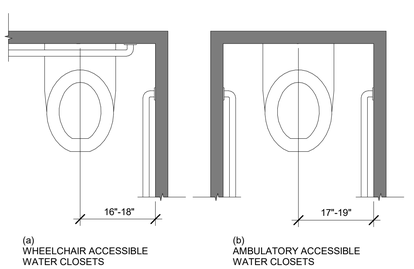


FIGURE 604.2 WATER CLOSET LOCATION A2

SCALE: NTS

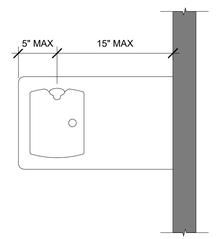


FIGURE 602.5 WATER CLOSET LOCATION A1

SCALE: NTS

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STORE NO:
FL, #1794

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COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

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△	DATE	DESCRIPTION

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AR99089
REGISTERED ARCHITECT
08/28/2026

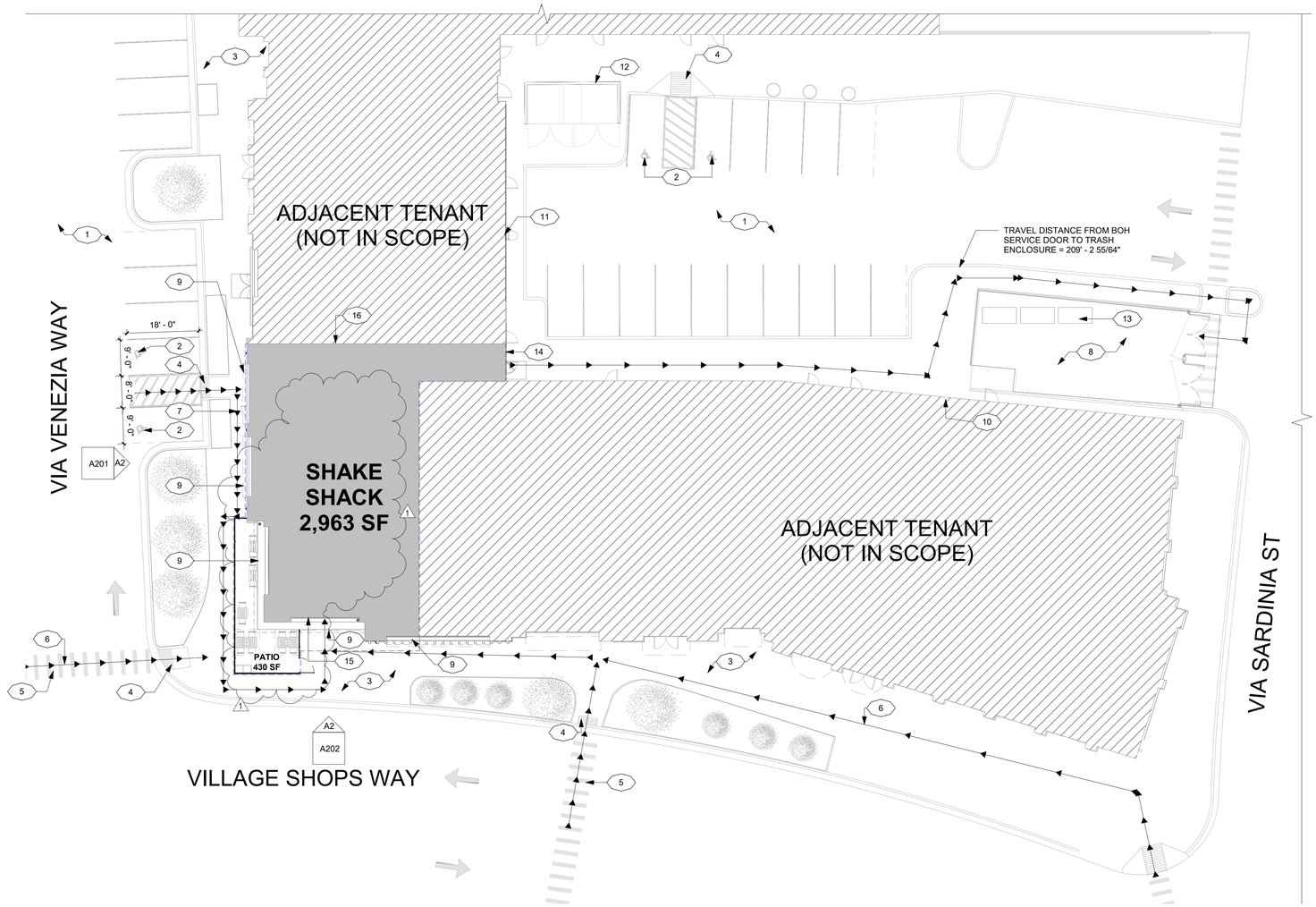
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SHEET NAME:
2023 FLORIDA BUILDING CODE ACCESSIBILITY, 8TH EDITION.

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
T006



PROJECT NORTH

REFERENCE SITE PLAN A2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

0 KEYNOTES

1. (E) PARKING AREA, NOT IN SCOPE.
2. (E) ADA PARKING, NOT IN SCOPE.
3. (E) SIDEWALK, NOT IN SCOPE.
4. (E) ACCESSIBLE RAMP, NOT IN SCOPE.
5. (E) CROSSWALK, NOT IN SCOPE.
6. ACCESSIBLE PATH OF TRAVEL FROM NEAREST PUBLIC WALKWAY TO BUILDING ENTRANCE.
7. ACCESSIBLE PATH OF TRAVEL.
8. (E) LOCATION OF SHARED TRASH ENCLOSURE BY LANDLORD.
9. (E) AWNING ABOVE.
10. (E) GAS METER.
11. (E) ROOF ACCESS LADDER
12. (E) TRANSFORMERS, NOT IN SCOPE.
13. (E) GREASE INTERCEPTOR.
14. LOCATION OF CO2 & RTI FILL BOXES; REFER TO CURB & FOUNDATION PLAN AND EXTERIOR ELEVATIONS." OWNER VENDOR TO VERIFY SITE CONDITION.
15. ACCESSIBLE ENTRY.
16. CONSTRUCTION LIMIT LINE; ALL WORK OUTSIDE OF CONSTRUCTION LIMIT LINE IS BY LANDLORD, U.N.O.

LEGEND

SYMBOL	DESCRIPTION
- - - - - - - - - - - -	CONSTRUCTION LIMIT LINE

LANDLORD NOTE

FIELD VERIFICATION REQUIREMENT:
TENANT, TENANT'S DESIGN TEAM, AND TENANT'S CONTRACTORS SHALL FIELD VERIFY ALL FIELD CONDITIONS PRIOR TO THE START OF ANY CONSTRUCTION. BE ADVISED THAT ALL CHANGES AND MODIFICATION TO THE LANDLORD'S APPROVED DRAWINGS SHALL BE RESUBMITTED TO LANDLORD FOR RE-APPROVAL. ANY CONSTRUCTION COMPLETED WITH OUT LANDLORD APPROVAL SHALL BE CORRECTED AS APPROVED BY LANDLORD AT TENANT'S EXPENSE.

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23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

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08/28/2026

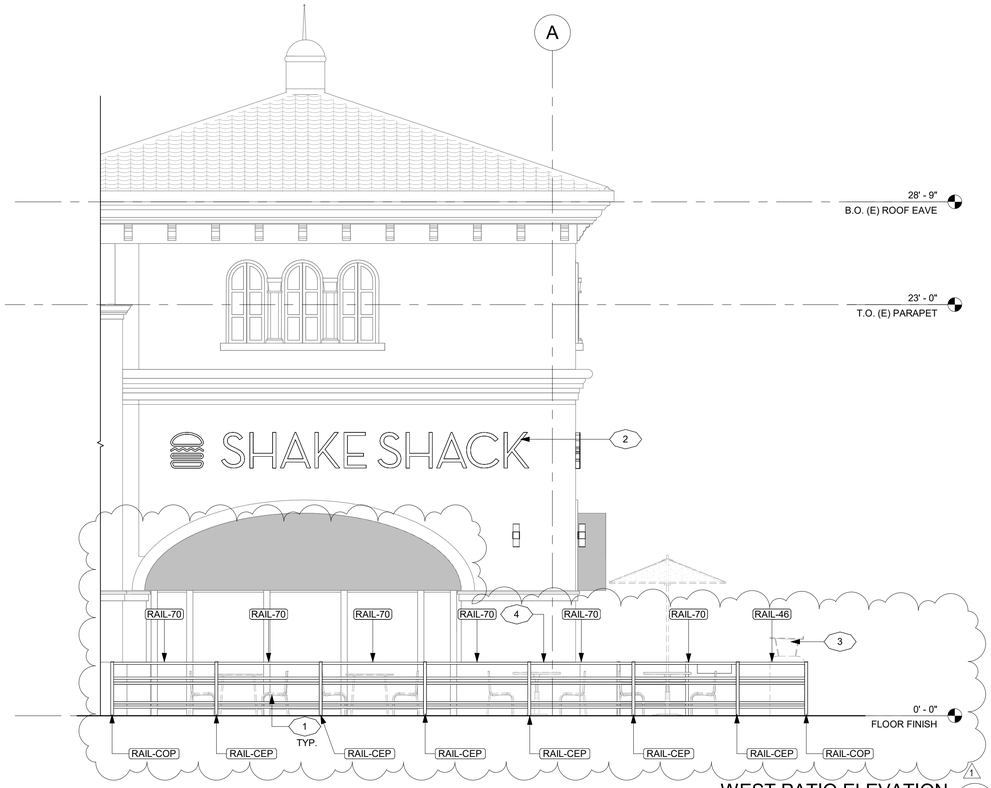
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SHEET NAME:
REFERENCE SITE PLAN

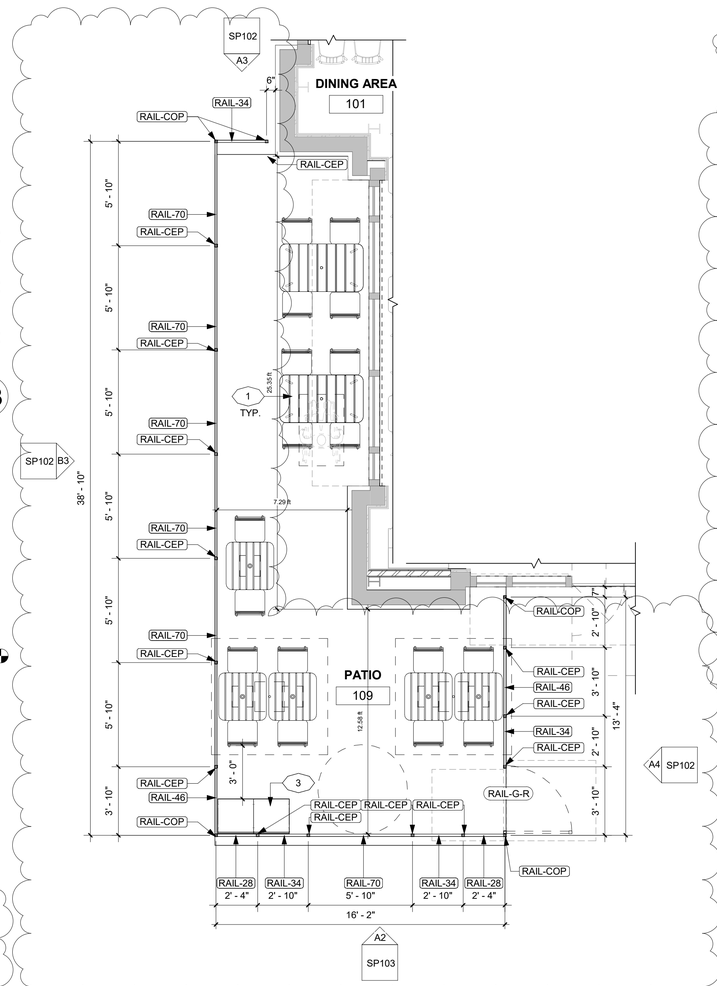
DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
SP101



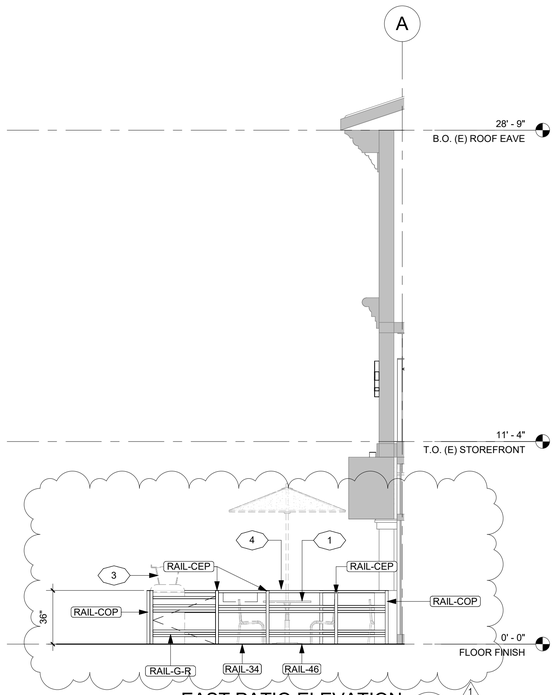
WEST PATIO ELEVATION B3

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



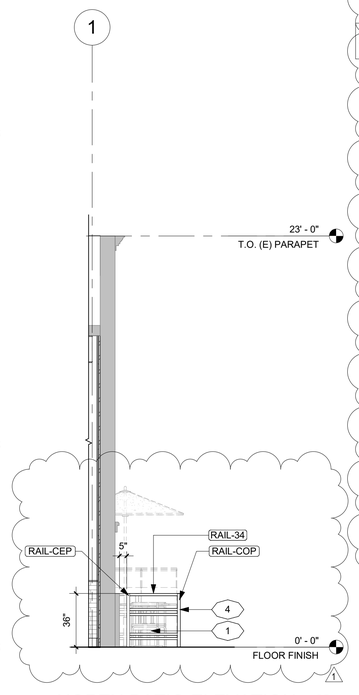
ENLARGED PATIO PLAN A2

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



EAST PATIO ELEVATION A4

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



NORTH PATIO ELEVATION A3

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

GENERAL NOTES

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2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

0 KEYNOTES

1. PATIO FURNITURE, REFER TO FURNITURE SCHEDULE.
2. SIGNAGE UNDER SEPERATE PERMIT.
3. EXTERIOR TRASH AND RECYCLING UNIT. REFER TO FURNITURE PLAN.
4. NEW PATIO RAILING TO BE PROVIDED BY OWNER'S VENDOR AND INSTALLED BY G.C. REFER TO FURNITURE SCHEDULE.

LANDLORD NOTE

STOREFRONT ELEVATION / SECTION COMMENTS:

•IF NOT ALREADY EXISTING, TENANT MUST PROVIDE A SEALED PARTITION ABOVE THE STOREFRONT TO SEPARATE THE COMMON AREA CEILING FROM THE TENANT'S SPACE. (SHALL BE RATED IF REQUIRED BY CODE AND ALL PENETRATION SHALL COMPLY AND BE LABELED WITH THE REQUIRED NFPA RATING.)

•NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK, OR ROOF DECK. YOU MAY ATTACH, NON-DESTRUCTIVELY, TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHING TO LANDLORD'S STRUCTURE, DO NOT DRILL, WELD, SCREW, OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY, NOTHING TO DAMAGE LANDLORD'S BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS, BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS, FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.

•ANY LANDLORD EQUIPMENT, COMPONENT, AND / OR SERVICE FEEDING OTHER TENANT(S) THAT IS EXISTING IN THE SPACE MUST REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. TENANT SHALL INSTALL ACCESS PANELS AS REQUIRED TO MAINTAIN ACCESS. ACCESS PANELS SHALL BE LABEL TO PROPERLY IDENTIFY SYSTEM, COORDINATE WITH MALL OPERATIONS.

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•APPROVAL OF THE TENANT'S CONSTRUCTION / DESIGN DOCUMENTS BY THE LANDLORD SHALL NOT CONSTITUTE REVIEW AND APPROVAL OF THE TENANT'S SIGNAGE. SIGNAGE SHOP DRAWINGS MUST BE SUBMITTED UNDER SEPARATE SUBMITTAL FOR LANDLORD REVIEW AND APPROVAL PRIOR TO FABRICATION AND INSTALLATION OF THE SIGN.

zebra

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STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify al figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

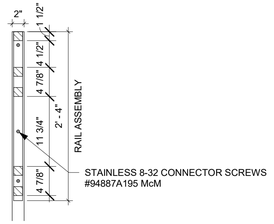
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SHEET NAME:
PATIO PLAN

DATE:	PROJECT NO:
06/01/2026	41354

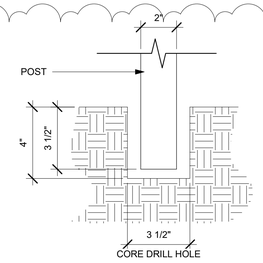
DRAWN:	SCALE:
SO	AS INDICATED

SHEET NO:
SP102



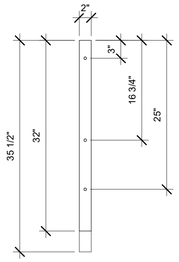
RAILING - TYP. SECTION VIEW D5

SCALE: 1" = 1'-0"



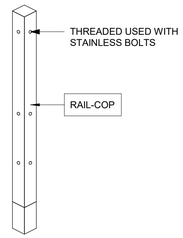
RAILING - TYP. GROUT-IN VIEW OF CORE DRILL HOLE D4

SCALE: 3" = 1'-0"



RAILING - TYP. GROUT-IN D3

SCALE: 1" = 1'-0"

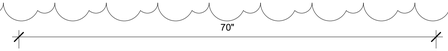


RAILING - GROUT-IN CORNER POST D2

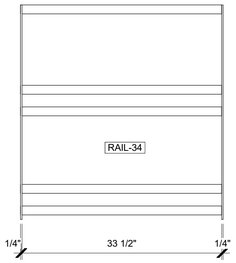
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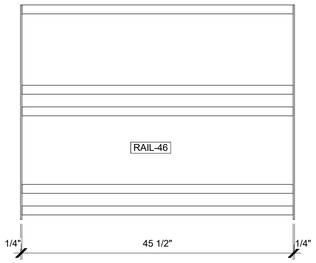


FOR 36" CENTER POST



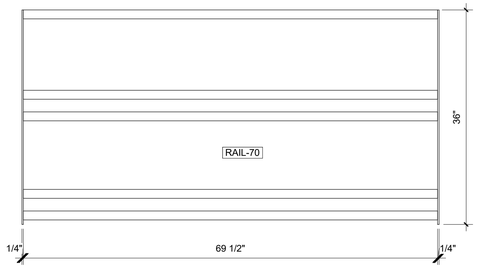
ELEVATION VIEW

FOR 48" CENTER POST



ELEVATION VIEW

FOR 72" CENTER POST



ELEVATION VIEW

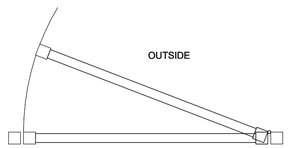


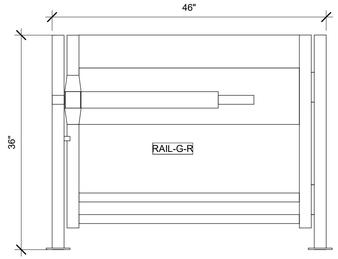
FOR 30" CENTER POST

ELEVATION VIEW

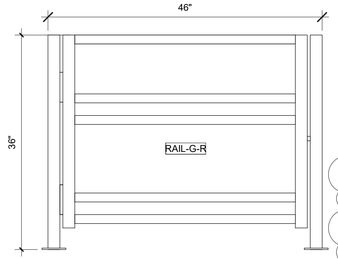
RAILING - ELEVATION VIEW B3

SCALE: 1" = 1'-0"





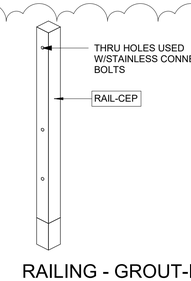
INSIDE ELEVATION



OUTSIDE ELEVATION

RAILING - BOLT DOWN SWING GATE A3

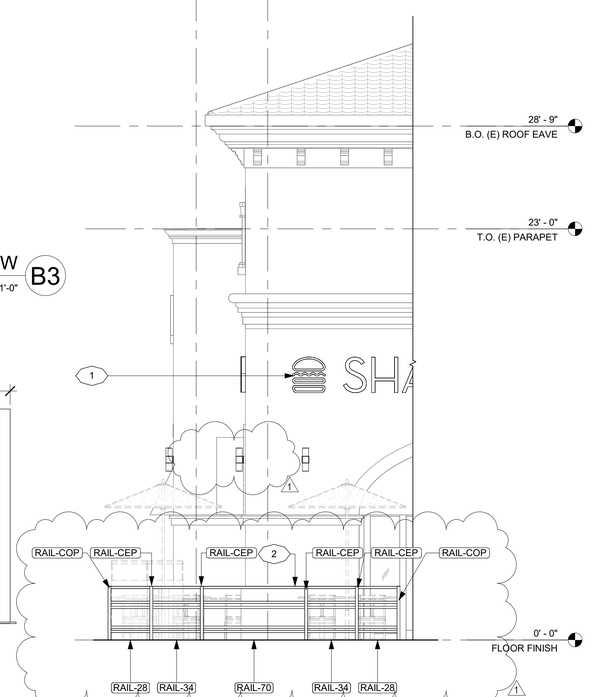
SCALE: 1" = 1'-0"



RAILING - GROUT-IN CENTER POST C2

SCALE: 1" = 1'-0"

1 1.2



PLAN SOUTH PATIO ELEVATION A2

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

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0 KEYNOTES

1. EXTERIOR SIGNAGE SHOWN FOR REFERENCE ONLY. ALL EXTERIOR SIGNAGE UNDER SEPARATE PERMIT (NOT PART OF THIS SUBMITTAL). GC. TO PROVIDE POWER & BLOCKING AS REQUIRED.
2. NEW PATIO RAILING TO BE PROVIDED BY OWNER'S VENDOR AND INSTALLED BY G.C. REFER TO FURNITURE SCHEDULE.

LANDLORD NOTE

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CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
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SHEET NAME:
PATIO ELEVATIONS & DETAILS

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
SP103

STANDARD ABBREVIATIONS

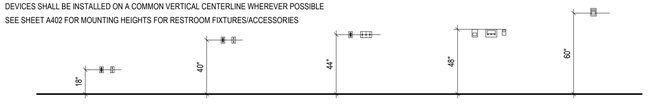
@	AT	FIXT	FIXTURE	PA	PAINT
A/C	AIR CONDITIONING	FLR	FLOOR	PBD	PARTICLE BOARD
		FLUOR	FLUORESCENT	PERF	PERFORATE(D)
A.S.S.	ALARM SYSTEM SUPPLIER	FO/F.O.	FINISHED OPENING	PLAM	PLASTIC LAMINATE
AB	ANCHOR BOLT	FOC	FACE OF CONCRETE	PLBG	PLUMBING
ABV	ABOVE	FOF	FACE OF FINISH	PLT	PLATE
ACT	ACOUSTICAL CEILING TILE	FOS	FACE OF STUD	PLYWD	PLYWOOD
AD	AREA DRAIN	FRP	FIBERGLASS REINFORCED PANEL	POS	POINT OF SALE
ADA	AMERICAN'S W/ DISABILITIES ACT	FRT	FIRE RETARDANT-TREATED	PR	PAIR
ADJ	ADJACENT	FRT	FIRE RETARDANT TREATED	PT	PRESSURE TREATED
ADJT	ADJUSTABLE	FT	FOOT (FEET)	PTD	PAINTED
AFF	ABOVE FINISH FLOOR	FTG	FOOTING	PTN	PARTITION
AGG	AGGREGATE	FV	FIELD VERIFY	PVC	POLYVINYL CHLORIDE
AL	ALUMINUM			QT	QUARRY TILE
ALT	ALTERNATE	GA	GAGE, GAUGE	R	RISER
ANC	ANCHOR, ANCHORAGE	GALV	GALVANIZED	RAD	RADIUS
ANOD	ANODIZED	GB	GYPSUM BOARD	RB	RUBBER BASE
AP	ACCESS PANEL	GC	GENERAL CONTRACTOR	RD	ROOF DRAIN
ARCH.	ARCHITECTUR(URAL	GCMU	GLAZED CONCRETE MASONRY	REC	RECESSED
ASPH	ASPHALT	GD	GRADE, GRADING	REF	REFERENCE
		GL	GLASS, GLAZING	REQD	REQUIRED
B.O.	BOTTOM OF	GLAM	GLUED LAMINATE	RESIL	RESILIENT
BD	BOARD	GYP	GYPSUM	REV	REVISION
BEL	BELOW			RH	RIGHT HAND
BL	BASE LINE	H.P.	HIGH POINT	RM	ROOM
BLDG	BUILDING	HC	HOLLOW CORE	RO/R.O.	ROUGH OPENING
BLK	BLOCK	HCWD	HOLLOW CORE WOOD DOOR	ROW	RIGHT OF WAY
BLKG	BLOCKING	HDWD	HARDWOOD		
BM	BEAM	HDWR	HARDWARE	SC	SOLID CORE
BM	BENCH MARK	HM	HOLLOW METAL	SCHED	SCHEDULE
BPL	BEARING PLATE	HMF	HOLLOW METAL FRAME	SCN	SCREEN
BRG	BEARING	HORIZ	HORIZONTAL	SD	SMOKE DETECTOR
BRK	BRICK	HT	HEIGHT	SECT	SECTION
BRKT	BRACKET	HVAC	HEATING, VENTILATION & COOLING	SF	SQUARE FOOT (FEET)
BRS	BRASS			SHT	SHEET
BRZ	BRONZE	HW	HOT WATER	SIM	SIMILAR
BS	BOTH SIDES			SIPS	STRUCTURAL INSULATED PANEL
BUR	BUILT UP ROOF	ID	INSIDE DIAMETER		
		IN	INCH	SND	INS SOUND INSULATION
C.L.	CENTER LINE	INCL	INCLUDE, (ED), (ING)	SPEC	SPECIFICATION
C.S.	CHEMICAL SUPPLIER	INSUL	INSULATION	SPK	SPEAKER
CEM	CEMENT	INT	INTERIOR	SPL	SPECIAL
CG	CORNER GUARD			SQ	SQUARE
CLG	CEILING	JC	JANITOR'S CLOSET	SS	STAINLESS STEEL
CLG HT	CEILING HEIGHT	JF	JOINT FILLER	STD	STANDARD
CLR	CLEAR, CLEARANCE	JT	JOINT	STG	SEATING
CM	CEMENTITIOUS BACKER BOARD			STL	STEEL
CMU	CONCRETE MASONRY UNIT	KEC	KITCHEN EQUIPMENT CONTRACTOR	STN	STAIN
CO2	CO2 SUPPLIER	KIT	KITCHEN	STO	STONE TILE
COL	COLUMN	KPL	KICK PLATE	SUSP	SUSPENDED
CONC	CONCRETE			SYM	SYMMETRY, (ICAL)
CONN	CONNECTION			SYS	SYSTEM
CONST	CONSTRUCTION	L	LONG (LENGTH)		
CONT	CONTINUE, CONTINUOUS	L.O.D.	LEASE OUTLINE DRAWING	T	TREAD
CONTR	CONTRACT(OR)	L.P.	LOW POINT	T&G	TONGUE & GROOVE
CORR	CORRUGATED	L/T	LIGHT TRACK	THK	THICKNESS
CPT	CARPET	LAM	LAMINATE	THR	THRESHOLD
CSMT	CASEMENT	LAV	LAVATORY	TO	TOP OF
CTR	COUNTER	LBS	POUNDS	TOB	TOP OF BEAM
		LF	LINEAR FOOT	TOC	TOP OF CONCRETE
DFE	DESIGN FLOOD ELEVATION	LGL	LAMINATED GLASS	TOJ	TOP OF JOIST
DIA	DIAMETER	LH	LEFT-HANDED	TOM	TOP OF MASONRY
DIAG	DIAGONAL	LL	LANDLORD	TOS	TOP OF SLAB
DIM	DIMENSION	LT	LIGHT	TOS	TOP OF STEEL
DIM.	DIMENSION(S)	LTL	LINTEL	TOW	TOP OF WALL
DIV	DIVISION			TPG	TOPPING
DN	DOWN	MAT	MATERIAL	TYP	TYPICAL
DR	DOOR	MAX	MAXIMUM		
DS	DENS SHIELD	MBR	MEMBER	UC	UNDERCUT
DTL	DETAIL	MDO	MEDIUM DENSITY OVERLAY	UNF	UNFINISHED
DWG	DRAWING	MECH	MECHANICAL	UNO	UNLESS NOTED OTHERWISE
		MFR	MANUFACTURER	UTL	UTILITY
(E)	EXISTING	MIN	MINIMUM		
EA	EACH	MISC	MISCELLANEOUS	VCT	VINYL COMPOSITE TILE
EIFS	EXTERIOR INSULATION & FINISHING SYSTEM	MOD	MODIFIED	VERT	VERTICAL
EL	ELEVATION (VERTICAL HEIGHT)	MR	MOISTURE RESISTANT GYP. BOARD	VF	VINYL FABRIC
ELEC	ELECTRIC(AL)	MTD	MOUNTED	VG	VERTICAL GRAIN
ELEV	ELEVATION	MTL	METAL	VIF	VERIFY IN FIELD
EQ	EQUAL			VT	VINYL TILE
EQUIP	EQUIPMENT	NAT	NATURAL		
ETR	EXISTING TO REMAIN	NIC	NOT IN CONTRACT	W/	WITH
EWC	ELECTRIC WATER COOLER	NO	NUMBER	W/O	WITHOUT
EXH	EXHAUST	NOM	NOMINAL	WA	WALL ANCHOR
EXT	EXTERIOR	NR	NOISE REDUCTION	WC	WATER CLOSET
		NTS	NOT TO SCALE	WD	WOOD
FA	FIRE ALARM			WF	WIDE FLANGE
FD	FLOOR DRAIN	OA	OVERALL	WFAB	WALL FABRIC
FE	FIRE EXTINGUISHER	OC	ON CENTER	WH	WATER HEATER
FEC	FIRE EXTINGUISHER CABINET	OD	OUTSIDE DIAMETER	WIN	WINDOW
FF	FINISH FLOOR	OPP	OPPOSITE	WP	WORKING POINT
FF EL	FINISH FLOOR ELEVATION	ORD	OVERFLOW ROOF DRAIN	WRB	WATER RESISTIVE BARRIER
FIN	FINISH			WWF	WELDED WIRE FABRIC

TYPICAL MOUNTING HEIGHTS

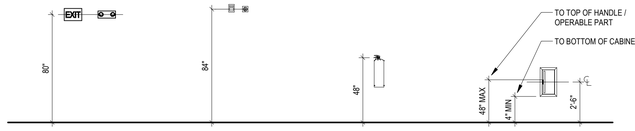
ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL, U.N.O.
ALSO REFER TO E-SHEETS FOR TYPICAL MOUNTING HEIGHTS

DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE

SEE SHEET A402 FOR MOUNTING HEIGHTS FOR RESTROOM FIXTURES/ACCESSORIES



TELEPHONE/DATA OUTLETS, RECEPTACLES | TELEPHONE/DATA OUTLETS, RECEPTACLES (ABOVE COUNTER) | RECEPTACLES (EQUIPMENT ROOM), SWITCHES | PULL STATION, CONTROL PANELS, THERMOSTAT | FIRE ALARM ANNUNCIATOR/ CONTROL PANEL/UNIT



EXIT SIGN (WALL MOUNTED), EMERGENCY LIGHT/BATTERY BOX | FIRE ALARM VISUAL DEVICES / FIRE ALARM AUDIO DEVICES | FIRE EXTINGUISHER (SURFACE MOUNTED) | FIRE EXTINGUISHER CABINET

SYMBOLS LEGEND

ELEVATION MARKER

1 / A101 — DETAIL CALLOUT

1 / A101 — WALL SECTION MARKER

1 / A101 — BUILDING SECTION MARKER

SECTION TAIL

2 / 5 A101 3 / 4 — INTERIOR ELEVATION

ROOM NAME / XXX — ROOM TAG

555 — KEYNOTE REFERENCE

101 — DOOR NUMBER

1i — WINDOW NUMBER

— WALL TYPE MARKER

XXX — FINISH TYPE MARKER / FURNITURE TYP

XXX — FIXTURE / EQUIPMENT / TYPE MARKER

MATCH LINE

#'-#" / DESCRIPTION — ELEVATION MARKER

A — 1 — COLUMN REFERENCE GRIDS

℄ — CENTERLINE

BREAKLINE

1 — REVISION

STAIR & RAMP DIRECTION SYMBOL

PROJECT NORTH / N — NORTH SYMBOL

EXISTING DOOR

NEW DOOR

SUBMITTAL PROCEDURE

PLEASE FOLLOW THE BELOW PROCEDURE FOR SUBMITTALS AND SHOP DRAWINGS:

1 G.C. RECEIVES SUBMITTAL FROM SUBCONTRACTOR, THOROUGHLY REVIEWS FOR COMPLIANCE WITH PLANS AND MAKES RED MARKS ON SUBMITTAL. THE SUBMITTAL MUST BEAR G.C. REVIEWS STAMP AND APPROVER SIGNATURE. IF SUBMITTALS ARE SENT DIRECTLY FROM SUB CONTRACTORS, THEY WILL BE RETURNED TO THE G.C. ANY SHOP DRAWINGS THAT ARE COPIES OF THE CONSTRUCTION DOCUMENTS WILL BE IMMEDIATELY RETURNED WITHOUT REVIEW OR COMMENT.

2 ANY SHOP DRAWINGS THAT ARE COPIES OF THE CONSTRUCTION DOCUMENTS WILL BE IMMEDIATELY RETURNED WITHOUT REVIEW OR COMMENT.
2.G.C. SENDS ELECTRONIC SHOP DRAWING COPY IN 24-BIT COLOR PDF FORMAT (OR 300 DPI MINIMUM IF SCANNED), CLEAR AND TO SCALE WITH TRANSMITTAL TO THE ARCHITECT. G.C. TRASMITTAL MUST CONTAIN DUE DATE. EACH SUBMITTAL MUST BE ATTACHED AS A SEPARATE FILE AND NAMED ACCORDINGLY. DO NOT SET PERMISSION RESTRICTIONS ON ATTACHMENTS. WHENEVER POSSIBLE, CREATE DIGITAL FILES FROM ORIGINALS FOR CLARIFY. UNREADABLE OR ILLEGIBLE SUBMITTALS WILL BE REJECTED.

3 THE ARCHITECT FORWARDS THE ELECTRONIC PDF COPY TO THE APPROPRIATE CONSULTANT(S) WITH COPY OF G.C. SUBMITTAL.

4 THE CONSULTANT MAKES FINAL COMMENTS AND RETURNS ONE ELECTRONIC PDF COPY TO THE ARCHITECT FOR FINAL COMMENTS.

5 ARCHITECT MAKES FINAL COMMENTS AND SENDS ELECTRONIC PDF COPY TO G.C. AND RETAINS ONE RECORD FILE COPY FOR THE ARCHITECT

6 FOR MATERIAL SAMPLE SUBMITTALS, A MINIMUM OF (3) ACTUAL SAMPLES IN THE COLOR, PATTERN, TEXTURE, FINISH, ETC. SPECIFIED ARE REQUIRED TO BE SENT TO THE ARCHITECT FOR REVIEW. SAMPLES SHALL BE OF A SIZE TO CLEARLY ILLUSTRATE THE FULL RANGE OF COLOR, TEXTURE, AND PATTERN. THE ARCHITECT WILL RETURN TWO SAMPLES TO THE G.C. AND RETAIN ONE RECORD COPY.

7 ONE COPY OF BOOTH DRAWINGS WITH A FABRIC SAMPLE INDICATING THE DIRECTION OF THE FABRIC OFF THE BOLT IS SENT TO THE ARCHITECT BY THE BOOTH MANUFACTURER. THE ARCHITECT SENDS FINALS COMMENTS TO THE BOOTH MANUFACTURER AND COPIES OWNER.

8 FAILURE TO SUBMIT SHOP DRAWINGS BEFORE THE WORK IS FURNISHED & INSTALLED WILL MAKE THE G.C. RESPONSIBLE FOR COST OF REPLACEMENT OF WORK AS WELL AS ALL OVERTIME COSTS, SO AS NOT TO DELAY THE PROJECT SCHEDULE. REFER 'SUBMITTAL MATRIX TABLE' FOR A LIST OF SHOP DRAWINGS THAT REQUIRED EXTENDED REVIEW TIMES. G.C. TO SUBMIT IN A TIMELY MANNER TO AVOID DELAY. REVIEW TIME REQUIRED IS FROM THE DATE OF RECEIPT BY ARCHITECT.

9 REFER TO 'SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS - 1.03 SUBMITTAL PROCEDURES' ON THE 'SPECIFICATIONS' SHEETS WITHIN THIS DRAWINGS SET FOR ADDITIONAL REQUIREMENTS ON SHOPS AND OTHER REQUIRED SUBMITTALS

SPECIAL INSPECTION NOTES

ITEM	DESCRIPTION
REINFORCING STEEL	PRIOR TO CONCRETE PLACEMENT, REINFORCING STEEL FOR FOOTINGS, SLABS-ON-GRADE AND OTHER STRUCTURAL ELEMENTS WILL BE OBSERVED BY TERRACON. OUR WORK WILL INCLUDE THE FOLLOWING: •OBSERVE SPECIFIED SIZE, GRADE, AND CONDITION OF REINFORCING STEEL; NOTING LOCATIONS, SPACING AND QUANTITY OF REINFORCING •OBSERVING CONCRETE COVER AND CLEARANCE
CONCRETE	TESTING AND SAMPLING WILL PERFORMED BY TERRACON FOR THE CONCRETE USED FOR FOOTINGS, SLABS-ON-GRADE CONSTRUCTION, AND OTHER ELEMENTS. THE CONCRETE WILL BE TESTED FOR SLUMP, AIR CONTENT, UNIT WEIGHT AND TEMPERATURE AT THE TIME OF PLACEMENT. TESTING WILL BE PERFORMED IN GENERAL ACCORDANCE WITH PROJECT PANS AND SPECIFICATIONS. 1 SET OF 5 (4-INCH BY 8-INCH) CYLINDERS FOR EACH DAY'S PLACEMENTS AND EACH ADDITIONAL 150 CUBIC YARDS
POST - INSTALLED ANCHORS	TERRACON WILL OBSERVE AND DOCUMENT THE POST INSTALLATION OF BOLTS, REBAR, THREADED ROD, AND OTHER ANCHORAGE SYSTEMS INCLUDING OBSERVATIONS OF MATERIALS, HOLE DEPTH AND DIAMETER, CLEANING, EPOXY PREPARATION, AND EMBEDMENT DEPTH IN ACCORDANCE WITH CONTRACT DRAWINGS AND THE MANUFACTURER'S SPECIFICATIONS.
STRUCTURAL STEEL	TERRACON WILL PERFORM INSPECTIONS AS REQUIRED FOR FIELD WELDED CONNECTIONS, AND HIGH-STRENGTH BOLTING. TERRACON HAS ASSUMED THAT THE STEEL FABRICATION WILL BE PERFORMED BY AN "APPROVED" FABRICATOR. FABRICATION SHOP INSPECTIONS CAN BE PROVIDED IF REQUESTED. FABRICATION SHOP INSPECTIONS ARE CONSIDERED AN ADDITIONAL SCOPE OF SERVICE AND WILL BE INVOICE ON A TIME AND MATERIALS BASIS.
WOOD	TERRACON WILL OBSERVE AND DOCUMENT THE WOOD SHEATHING AND NAIL SPACING AS WELL AS ANY REQUIRED NEILING, BOLTING, OR ANCHORING IN THE WOOD FRAME SEISMIC-FORCE-RESISTING SYSTEM IN ACCORDANCE WITH CONTRACT DRAWINGS AND THE MANUFACTURER'S SPECIFICATIONS.
PROJECT MANAGEMENT	A PROJECT MANAGER WILL BE ASSIGNED TO THE PROJECT TO REVIEW THE DAILY ACTIVITY AND ASSIST IN SCHEDULING THE WORK. FIELD AND LABORATORY TESTS WILL BE REVIEWED PRIOR TO FINAL SUBMITTAL. THE PROJECT MANAGER WILL BE RESPONSIBLE FOR THE PROJECT BUDGET, COMMUNICATING WITH THE CONTRACTOR REGARDING SCHEDULE, DEVIATIONS, AND DOCUMENTING THE RESOLUTION OF OUTSTANDING DEVIATIONS. TO HELP CREATE A GOOD WORKING RELATIONSHIP WITH THE CONTRACTOR AND FOR THE CONTRACTOR TO BETTER UNDERSTAND THE SCOPE OF WORK FOR THE PROJECT, WE REQUEST THAT TERRACON BE INVITED TO PRECONSTRUCTION MEETINGS PRIOR TO EACH PHASE OF CONSTRUCTION.

SHOP DRAWING SUBMITTAL PROCEDURES

1 PLEASE FOLLOW THE BELOW PROCEDURE FOR SUBMITTALS AND SHOP DRAWINGS.

2 GC RECEIVES FROM SUBCONTRACTOR, THOROUGHLY REVIEWS FOR COMPLIANCE WITH PLANS AND MAKES RED MARKS ON SUBMITTAL. THE SUBMITTAL MUST BEAR G.C. REVIEW STAMP AND APPROVER SIGNATURE, IF SUBMITTALS ARE SENT DIRECTLY FROM SUB CONTRACTORS, TEHY WILL BE RETURNED TO THE GC. ANY SHOP DRAWINGS THAT ARE COPIES OF THE CONSTRUCTION DOCUMENTS WILL BE INMEDIATELY RETURNED WITHOUT REVIEW OR COMMENT.

3 GC SENDS ELECTRONIC SHOP DRAWING COPY IN 24-BIT COLOR PDF FORMAT (OR 300 DPI MINIMUM IF SCANNED), CLEAR AND TO SCALE WITH TRANSMITTAL TO THE ARCHITECT. GC TRANSMITTAL MUST CONTAIN DUE DATE. EACH SUBMITTAL MUST BE ATTACHED AS A SEPARATE FILE AND NAMED ACCORDINGLY. DO NOT SET PERMISSION RESTRICTIONS ON ATTACHMENTS. UNREADABLE OR ILLEGIBLE SUBMITTALS WILL BE REJECTED.

4 FAILURE TO SUBMIT SHOP DRAWINGS BEFORE THE WORK IS FURNISHED & INSTALLED WILL MAKE THE GC RESPONSIBLE FOR COST OF REPLACEMENT OF WORK AS WELL AS ALL OVERTIME COSTS, SO AS NOT TO DELAY THE PROJECT SCHEDULE. GC TO SUBMIT IN A TIMELY MANNER TO AVOID DELAY. REVIEW TIME REQUIRED IS FROM THE DATE OF RECEIPT BY ARCHITECT.

5 REFER TO SECTION 01 30 00 ADMINISTRATIVE REQUIREMENTS ON THE SPECIFICATIONS SHEETS WITHIN THIS DRAWING SET FOR ADDITIONAL REQUIREMENTS ON SHOPS AND OTHER REQUIRED SUBMITTALS.

ACCESIBILITY GENERAL NOTES

A. ALL PUBLIC ACCOMMODATION SPACES AND COMMERCIAL FACILITIES ARE REQUIRED TO MEET ADA AND ANSI . REFERENCES INCLUDED IN THIS SET REFER TO THE 1004 TO 1006 ACCESSIBILITY DETAILS.

B. THIS SHEET INCLUDES TYPICAL ACCESSIBILITY NOTES AND GRAPHICS USED IN THIS PROJECT.IT IS NOT INTENDED TO REPRESENT THE ENTIRE SCOPE OF THE ADA AND ANSI GUIDELINES.

C. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE STANDARD BUILDING ENTRANCES WITH ALL ACCESSIBLE SPACES AND ELEMENTS WITHIN THE BUILDING OR FACILITY WHICH ARE OTHERWISE CONNECTED BY A CIRCULATION PATH (ADA 206.2.4). IN RESTAURANTS, AN ACCESSIBLE ROUTE SHALL BE PROVIDED TO ALL DINING AREAS, INCLUDING RAISED OR SUNKEN DINING AREAS AND OUTDOOR DINING AREAS (ADA 206.2.5)

D. A CLEAR FLOOR SPACE OF 30 " X 48" MINIMUM IS REQUIRED FOR A FORWARD OR PARALLEL APPROACH (ADA 305.3).

E. CLEAR FLOOR SPACE REQUIREMENTS SHALL NOT BE OBSTRUCTED BY FINISH ITEMS SUCH AS BASEBOARDS, WALL FINISHES OR FURNITURE.

F. OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 POUNDS MAXIMUM (ADA 309.4). OPERABLE PARTS FOR DOOR HARDWARE SHALL BE 34 " MINIMUM AND 48" MAXIMUM ABOVE THE FLOOR (ADA 404.2.7).

G. EMPLOYEE WORK AREAS DEFINITION (ADA 106.5): ALL OR ANY PORTION OF A SPACE USED ONLY BY EMPLOYEES AND USED ONLY FOR WORK. (CORRIDORS, TOILET ROOMS, KITCHENETTES AND BREAK ROOMS ARE NOT EMPLOYEE WORK AREAS.) THESE SPACES ARE DESIGNED TO ALLOW PERSONS WITH DISABILITIES TO APPROACH, ENTER AND EXIT (ADA SECTION 203.9). EMPLOYEE WORK AREAS ARE REQUIRED TO COMPLY WITH ADA SECTIONS
1. 206.2.8: COMMON USE CIRCULATION PATHS LOCATED WITHIN EMPLOYEE WORK AREAS SHALL COMPLY WITH 402 (ACCESSIBLE ROUTES).
2. 207.1: MEANS OF EGRESS SHALL COMPLY WITH THE IBC.
3. 215.3: IF AUDIBLE ALARMS ARE USED, VISIBLE ALARMS COMPLYING WITH ADA SECTION 702 ARE ALSO INTEGRATED

H. EXEMPT SPACES (ADA SECTION 203): AMONG OTHERS, THE FOLLOWING SPACES ARE NOT REQUIRED TO COMPLY WITH ADA REQUIREMENTS: ELECTRICAL OR COMMUNICATIONS EQUIPMENT ROOMS.

I. NO FEWER THAN TWO DRINKING FOUNTAINS SHALL BE PROVIDED (ADA 211.2). HI LO DRINKING FOUNTAINS SHALL BE PROVIDED THAT COMPLY WITH ADA STANDARDS (SECTION 602). IF CITY AMENDMENT ALLOWS A DRINKING FOUNTAIN SUBSTITUTION, THE SUBSTITUTION SHALL ALSO MEET THE ADA STANDARDS FOR ACCESS AND USE.

J. OBJECTS WITH LEADING EDGES MORE THAN 27 INCHES AND NOT MORE THAN 80 INCHES ABOVE FINISH FLOOR SHALL PROTRUDE 4 INCHES MAXIMUM HORIZONTALLY INTO THE CIRCULATION PATH. (ADA 307.2)

K. DOORWAYS SHALL PROVIDE A CLEAR OPENING OF 32 INCHES MINIMUM (ADA 404.2.

L. THRESHOLDS AND CHANGES IN LEVEL AT DOORWAYS SHALL BE ½ " MAXIMUM (ADA 404.2.5).

M. WHERE MULTIPLE SINGLE USER TOILET ROOMS ARE CLUSTERED AT A SINGLE LOCATION, NO MORE THAN 50 PERCENT OF THE SINGLE USER TOILET ROOMS FOR EACH USE AT EACH CLUSTER SHALL BE REQUIRED TO BE ADA COMPLIANT (ADA 213.2 EXCEPTION 4).

N. TOILET ROOMS: SHALL CONTAIN A TURNING SPACE OF EITHER 60 INCHES DIAMETER (304.3.1) OR A T-SHAPED SPACE (304.3.2). REQUIRED CLEAR FLOOR SPACES, CLEARANCE AT FIXTURES, AND TURNING SPACE SHALL BE PERMITTED TO OVERLAP (ADA 603.2.2).

O. WHERE THE TOILET ROOM IS FOR INDIVIDUAL USE AND A 30 "X48" CLEAR FLOOR SPACE IS PROVIDED IN THE ROOM BEYOND THE ARC OF THE DOOR SWING, DOORS ARE PERMITTED TO SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE FOR ANY FIXTURE. (ADA 603.2.3 EXCEPTION 2)

P. WHEN THE DOOR TO THE TOILET ROOM IS PLACED DIRECTLY IN FRONT OF THE WATER CLOSET, THE WATER CLOSET CANNOT OVERLAP THE REQUIRED MANEUVERING CLEARANCE FOR THE DOOR INSIDE THE ROOM. (ADA ADVISORY 604.3.2)

Q. CONVENIENCE FIXTURES SUCH AS BABY CHANGING TABLES MUST ALSO BE ACCESSIBLE AND CANNOT OBSTRUCT THE WHEELCHAIR MANEUVERING SPACE (ADA ADVISORY 604.8.1.1).

R. MIRRORS NOT LOCATED ABOVE LAVATORIES OR COUNTERTOPS SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 35 INCHES MAXIMUM ABOVE FINISH FLOOR (ADA 603.3).

S. A PARALLEL APPROACH SHALL BE PERMITTED AT A KITCHEN SINK WHERE A COOK TOP OR CONVENTIONAL RANGE IS NOT PROVIDED (ADA 606.2 EXCEPTION 1). HEIGHT OF KITCHEN SINKS SHALL BE INSTALLED WITH THE FRONT OF THE HIGHER OF THE RIM OR COUNTER SURFACE 34" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.

T. SALES AND SERVICE COUNTERS SHALL PROVIDE PARALLEL OR FORWARD APPROACH (ADA 904.4). PARALLEL APPROACH: COUNTER SURFACE TO BE 36 INCHES LONG MINIMUM. FORWARD APPROACH: COUNTER SURFACE TO BE 30 INCHES LONG MINIMUM. WHERE PROVIDED, AT LEAST ONE OF EACH TYPE OF SALES COUNTER AND SERVICE COUNTER SHALL COMPLY WITH 904.4. WHERE COUNTERS ARE DISPERSED THROUGHOUT THE BUILDING, COUNTERS COMPLYING WITH 904.4 MUST ALSO BE DISPERSED.

U. RAMPS ON ACCESSIBLE ROUTES SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 1:12 (ADA 405.2) AND A CROSS SLOPE NOT STEEPER THAN 1:48 (405.3). THE CLEAR WIDTH OF A RAMP RUN MEASURED BETWEEN HANDRAILS SHALL BE 36 INCHES MINIMUM (405.5). THE RISE FOR ANY RAMP RUN SHALL BE 30 INCHES MAXIMUM (405.6). RAMP RUNS WITH A RISE GREATER THAN 6 INCHES SHALL HAVE HANDRAILS COMPLYING WITH ADA 505

V. MAXIMUM ABOVE WALKING SURFACE (ADA 505.4). CLEARANCE BETWEEN HANDRAIL GRIPPING SURFACE AND ADJACENT SURFACES SHALL BE 1 ½ INCHES MINIMUM (505.5). HANDRAIL EXTENSIONS SHALL EXTEND 12 INCHES MINIMUM BEYOND THE TOP AND BOTTOM OF RAMPS AND STAIRS (ADA 505.10).

GENERAL PROJECT NOTES

1 THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND SHALL REPORT ALL DISCREPANCIES TO THE ARCHITECT PRIOR TO COMMENCING THE WORK

2 THE GENERAL CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES AND SHALL NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES PRIOR TO COMMENCING CONSTRUCTION.

3 ALL WORK SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES, ORDINANCES AND ANY APPLICABLE AMENDMENTS.

4 THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING AS REQUIRED TO ENSURE THE VERTICAL AND LATERAL STABILITY OF THE ENTIRE STRUCTURE OR A PORTION THEREOF DURING CONSTRUCTION.

5 THE GENERAL CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES, INCLUDING ADVISING ALL TRADES OF FEATURES OF CONSTRUCTION AND PROVIDING BLOCKS, HOLES, DEPRESSIONS, ETC., AS REQUIRED, FOR A COMPLETE JOB. REFER TO ALL DRAWINGS FOR SLAB DEPRESSIONS, SLOPES, CURBS, DRAINS, OPENINGS, ETC.

6 THE GENERAL CONTRACTOR IS TO BUILD AND MAINTAIN CONSTRUCTION BARRICADES AND ALL NECESSARY LIGHTS, SIGNAGE, ETC., FOR THE PROTECTION OF THE PUBLIC, AS PER LOCAL ORDINANCES AND LANDLORD REQUIREMENTS.

7 THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT FOR ANY DAMAGE CAUSED BY HIM OR HIS SUBCONTRACTORS TO EXISTING WORK IN PLACE.

8 THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MISCELLANEOUS PERMITS, FEES, AND INSPECTIONS AS MAY BE REQUIRED FOR COMPLETION OF THE JOB AS PER ALL GOVERNING AGENCIES.

9 NO STRUCTURAL CHANGES FROM THE APPROVED PLANS SHALL BE MADE IN THE FIELD WITHOUT PRIOR WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER AND LANDLORD. IF CHANGES ARE MADE WITHOUT WRITTEN APPROVAL, SUCH CHANGES SHALL BE THE LEGAL AND FINANCIAL RESPONSIBILITY OF THE CONTRACTOR TO REPLACE OR REPAIR AS DIRECTED BY THE STRUCTURAL ENGINEER.

10 ALL CONTRACTORS SHALL BE LICENSED/ REGISTER IN THE JURISDICTION FOR WHICH THE WORK IS BEING PERFORMED. PROVIDE LIABILITY INSURANCE AND WORKERS COMPENSATION BENEFITS IN ACCORDANCE WITH STATE LAW FOR ALL WORKERS AND AGENTS WHO WILL BE ON THE SITE AT ANY TIME. TENANT'S GENERAL CONTRACTOR MUST PROVIDE INSURANCE CERTIFICATE WITH COVERAGE AND ADDITIONAL INSURANCE AS REQUIRED BY LANDLORD PRIOR TO CONSTRUCTION START.

11 THE GENERAL CONTRACTOR SHALL REPORT ANY DEFECTS, DISCREPANCIES, PROBLEMS OR UNCERTAINTIES TO THE ARCHITECT FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK AFFECTED.

12 THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS SHALL BE FULLY ACQUAINTED WITH SCOPE OF THE WORK TO BE PERFORMED AND SHALL INSPECT SITE CONDITIONS PRIOR TO BID SUBMITTAL. BID SHALL INCLUDE ALL LABOR AND MATERIALS REQUIRED TO COMPLETE THE SCOPE OF WORK.

13 IT IS UNDERSTOOD THAT THE OWNER MAY BE PURCHASING AND/OR INSTALLING MATERIALS, EQUIPMENT, AND FURNISHINGS UNDER SEPARATE CONTRACTS. THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS SHALL COOPERATE AND COORDINATE WITH THE OWNER TO ALLOW THE DELIVERY AND INSTALLATION OF SUCH MATERIALS, EQUIPMENT, AND FURNISHINGS BY OTHER CONTRACTORS AND SUPPLIERS WHICH MAY COMMENCE PRIOR TO FINAL ACCEPTANCE OF THE REMODELED SPACE BY THE OWNER SO AS TO ASSURE THE OWNER OF THE EARLIEST POSSIBLE COMPLETION DATE.

14 NO EXTRAS WILL BE ALLOWED FOR CLAIMS DUE TO UNFORESEEN OR UNANTICIPATED CONDITIONS WHICH COULD HAVE BEEN DISCOVERED BY THE BIDDING CONTRACTOR DURING INSPECTION OF THE SITE DURING THE BIDDING PERIOD AND PRIOR TO THE COMMENCEMENT OF THE WORK.

15 THESE DRAWINGS ARE NOT TO BE SCALED. IF REQUIRED DIMENSIONS OR INFORMATION CANNOT BE FOUND WITHIN THE DRAWINGS OR SPECIFICATIONS, THE ARCHITECT SHALL BE REQUESTED TO INTERPRET THE DOCUMENT AND HIS INTERPRETATIONS SHALL BE FINAL AND BINDING.

16 ANY PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED TO THE OWNER, LANDLORD AND THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INCORPORATION INTO THE WORK. THE CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR ANY CHANGES TO DETAILS OR CONDITIONS MADE NECESSARY BY ANY SUBSTITUTION.

17 CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THEIR WORK AREA AND PROVIDE LANDLORD WITH ALL NECESSARY ITEMS REQUIRED UNDER THE LEASE WORK LETTER. ADDITIONALLY CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THEIR WORK AREA INCLUDING DISPOSAL OF ALL DEBRIS AND LIMITING THE STORAGE OF MATERIALS OUTSIDE THE DEMISED PREMISES.

18 USE MOISTURE RESISTANT GYPSUM BOARD AT WET WALLS & BEHIND PLUMBING FIXTURES.

19 ALL GLAZING SHALL BE FIRMLY SUPPORTED ON ALL FOUR EDGES.

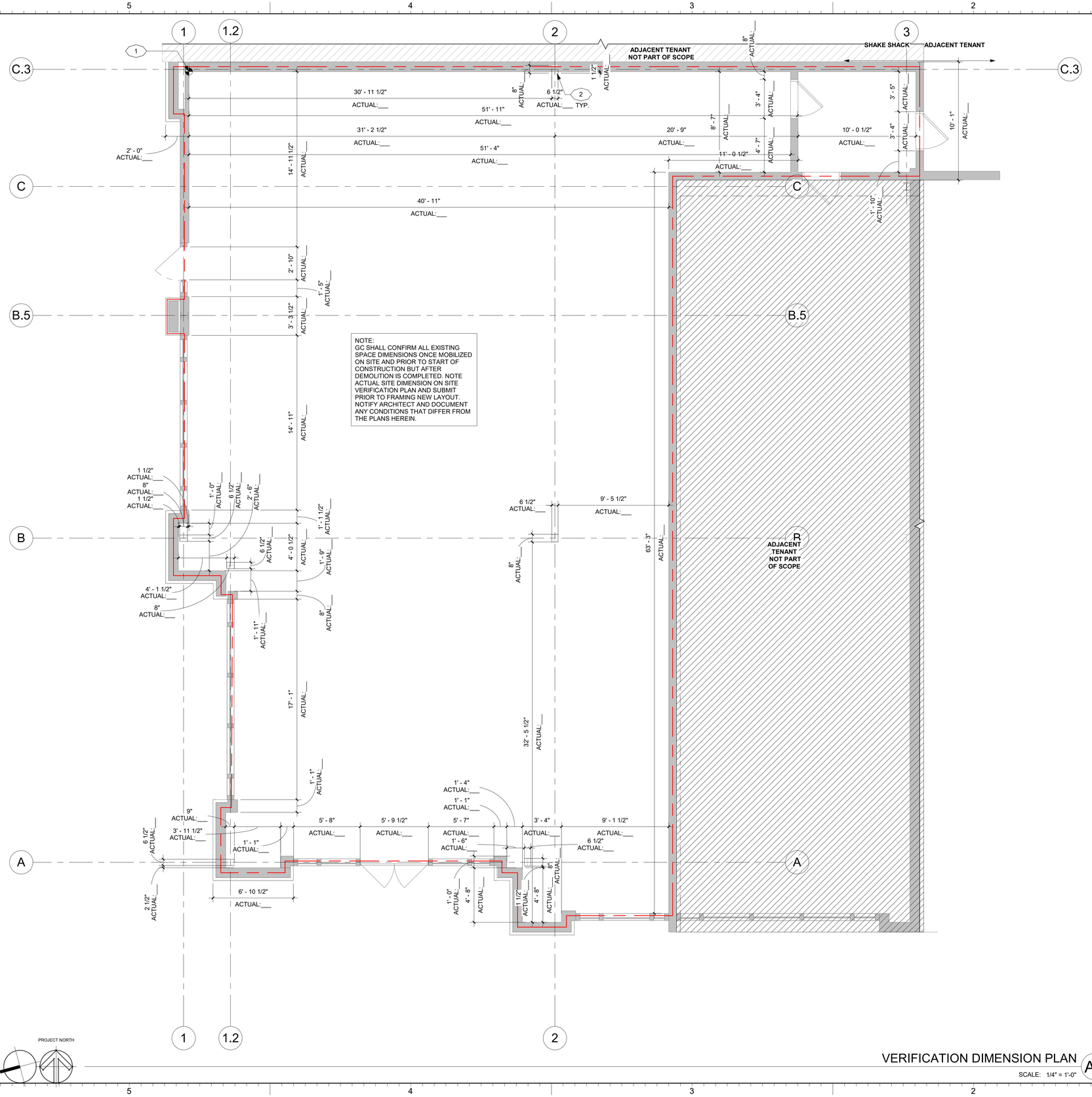
20 CONTRACTOR TO VERIFY ALL EXISTING OR LANDLORD PROVIDED WALL SUBSTRATE IS INSTALLED MIN. 6" ABOVE FINISHED CEILING.

21 GENERAL CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS BEFORE INSTALLING NEW MATERIALS AND FINISHES

22 GENERAL CONTRACTOR TO FIELD VERIFY EXISTING UTILITIES BEFORE COMMENCING CONSTRUCTION.

23 ALL PLYWOOD, PLYWOOD BACKING, PARTICLE BOARD, WOOD BLOCKING, AND FRAMING USED SHALL BE FIRE RETARDANT & STAMPED NON-COMBUSTIBLE.

24 PLACE AND FINISH ALL NEW MATERIALS SO AS T



VERIFICATION DIMENSION PLAN A2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

SITE VERIFICATION GENERAL NOTES

1. THIS SURVEY IS TO BE COMPLETED 24 HOURS AFTER DEMOLITION AND RETURNED TO THE ARCHITECT AND PROJECT MANAGER BEFORE COMMENCING CONSTRUCTION.THIS SURVEY IS TO BE COMPLETED 24 HOURS AFTER DEMOLITION AND RETURNED TO THE ARCHITECT AND PROJECT MANAGER BEFORE COMMENCING CONSTRUCTION.
2. COMPLETE ALL DIMENSIONS INDICATED WITH "ACTUAL:____" RECTANGLE ON DRAWINGS ON ALL SITE VERIFICATION SHEETS. PLEASE NOTE ALL DIMENSIONS SHOULD BE CLEAR DIMENSIONS (FROM THE INSIDE OF ONE WALL, OR COLUMN, TO THE INSIDE OF ANOTHER). IF WE REQUIRE DIMENSIONS CENTER TO CENTER, IT WILL BE SO NOTED.
3. PROVIDE LOCATION OF LEASE LINE WITH ONSITE LANDLORD REPRESENTATIVE.
4. VERIFY ELECTRIC PANELS AND SERVICE SIZE MATCHES ELECTRICAL DESIGN DRAWINGS.
5. VERIFY FIRE RATING OR FIRE PROOFING OF EXISTING ARCHITECTURAL AND STRUCTURAL ELEMENTS AND NOTIFY ARCHITECT OF EXISTING CONDITIONS PRIOR TO PROCEEDING WITH AFFECTED WORK.
6. VERIFY LOCATION AND HEIGHT OF SPRINKLER MAIN ENTERING AND LEAVING TENANT SPACE. VERIFY SPRINKLER BRANCH LINE HEIGHTS.
7. VERIFY LOCATION AND HEIGHT OF ALL FIXED UTILITIES WITHIN THIS TENANT SPACE TO DETERMINE ANY CONFLICTS WITH THE PROPOSED BUILD OUT.
8. VERIFY TYPE, THICKNESS, AND R-VALUE OF ROOF DECK INSULATION.
9. DRAW IN, LOCATE, AND VERIFY UTILITY OBSTRUCTIONS.
10. THE EXISTING DRAWING IS TO BE USED AS A REFERENCE ONLY AND IS NOT TO BE ASSUMED ACCURATE.
11. VERIFY HEIGHT, CONFIGURATION AND LOCATION OF ALL EXISTING ABOVE CEILING ITEMS OR UTILITIES TO REMAIN EITHER FOR LANDLORD USE OR TENANT REUSE. COORDINATE WITH CONSTRUCTION DRAWING SET FOR INFORMATION.
12. GC TO INFORM ARCHITECT AND PROJECT MANAGER IMMEDIATELY OF ANY MAJOR OMISSIONS, DIMENSION DIFFERENCES OR OTHER ITEMS THAT MAY CONFLICT WITH PROPOSED DESIGN.

KEYNOTES

1. DIMENSION STARTING POINT.
2. (E) COLUMNS.

LANDLORD NOTE

FIELD VERIFICATION REQUIREMENT:

TENANT, TENANT'S DESIGN TEAM, AND TENANT'S CONTRACTORS SHALL FIELD VERIFY ALL FIELD CONDITIONS PRIOR TO THE START OF ANY CONSTRUCTION. BE ADVISED THAT ALL CHANGES AND MODIFICATION TO THE LANDLORD'S APPROVED DRAWINGS SHALL BE RESUBMITTED TO LANDLORD FOR RE-APPROVAL. ANY CONSTRUCTION COMPLETED WITH OUT LANDLORD APPROVAL SHALL BE CORRECTED AS APPROVED BY LANDLORD AT TENANT'S EXPENSE.

LEGEND

EXISTING WALL

LEASE LINE

zebra
ZEBRA ARCHITECTURE, PLLC.
14614 N KIERLAND BLVD, SUITE N300
SCOTTSDALE, AZ 85254
PHONE: 480.912.1169 zbr.global
CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

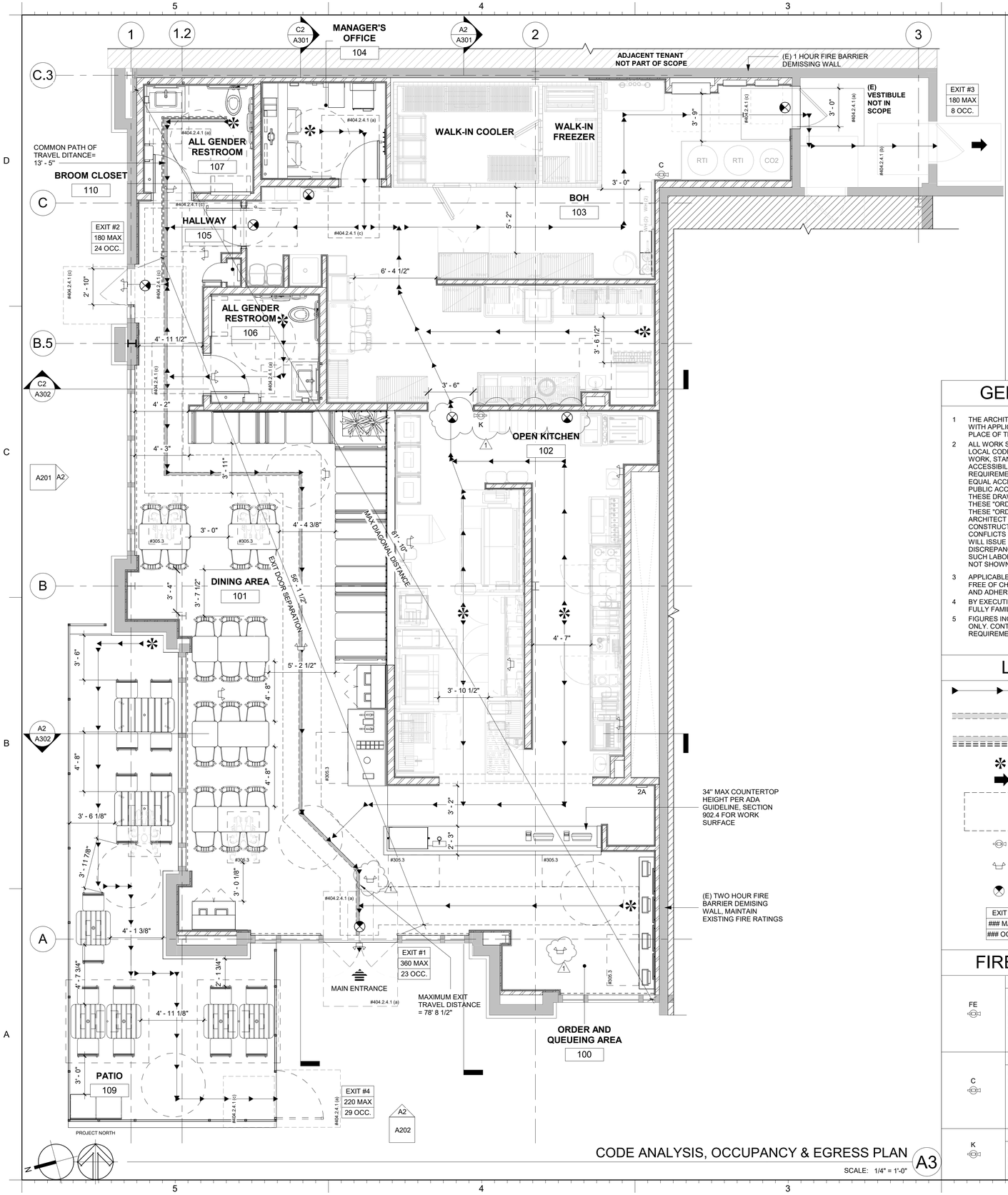
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SHEET NAME:
VERIFICATION DIMENSION PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A002



CODE ANALYSIS, OCCUPANCY & EGRESS PLAN A3

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

OCCUPANCY LOAD MUST BE POSTED NEAR THE MAIN ENTRY. G.C. TO PROVIDE VISIBLE SIGN STATING THE FOLLOWING: FINAL OCCUPANT LOAD TO BE DETERMINED BY FIRE MARSHAL

MAXIMUM CAPACITY

55

SIGN TO BE MINIMUM SIZE OF 8 1/2" X 11"

OCCUPANCY LOAD SIGNAGE C2

SCALE: NTS

GENERAL EGRESS NOTES

1 THE ARCHITECT HAS ENDEAVORED TO DESIGN THIS PROJECT IN CONFORMANCE WITH APPLICABLE CODE AND ACCESSIBILITY REQUIREMENTS GOVERNING THE PLACE OF THE WORK AT THE TIME OF PERMIT ISSUANCE.

2 ALL WORK SHALL COMPLY WITH ALL PROVISIONS OF ALL NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES ("ORDINANCES") GOVERNING THE PLACE OF THIS WORK, STANDARDS FOR ACCESSIBLE DESIGN 2023 FLORIDA ACCESSIBILITY CODE ACCESSIBILITY DETAILS ARE FEDERAL STANDARDS THAT SET THE MINIMUM REQUIREMENTS FOR CREATING ACCESSIBLE FACILITIES AND SPACES TO ENSURE EQUAL ACCESS FOR INDIVIDUALS WITH DISABILITIES IN COMMERCIAL FACILITIES, PUBLIC ACCOMMODATIONS, AND STATE AND LOCAL GOVERNMENT FACILITIES. THESE DRAWINGS AND SPECIFICATIONS DO NOT CONTAIN ALL THE PROVISIONS OF THESE "ORDINANCES." CONTRACTOR IS TO BOTH KNOW OF AND UNDERSTAND THESE "ORDINANCES" AND TO BRING TO THE ATTENTION OF THE OWNER AND THE ARCHITECT ANY CONFLICTS OR DISCREPANCIES BETWEEN THE VARIOUS CONSTRUCTION DOCUMENTS AND THE "ORDINANCES," OR ANY DISCREPANCIES OR CONFLICTS CONTAINED WITHIN THE CONSTRUCTION DOCUMENTS. THE ARCHITECT WILL ISSUE A CLARIFICATION FOR THE USE BY CONTRACTOR IN RESOLVING SUCH DISCREPANCY OR CONFLICT. CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUCH LABOR AND MATERIAL TO COMPLY WITH THE "ORDINANCES" WHETHER OR NOT SHOWN CORRECTLY HEREIN.

3 APPLICABLE CODES AND ACCESSIBILITY REQUIREMENTS ARE AVAILABLE ONLINE, FREE OF CHARGE AT: WWW.CODES.ICCSAFE.ORG. CONTRACTOR SHALL REFER AND ADHERE TO THESE DOCUMENTS.

4 BY EXECUTING THE CONTRACT, CONTRACTOR REPRESENTS THAT IT IS AWARE AND FULLY FAMILIAR WITH ALL APPLICABLE "ORDINANCES" GOVERNING THE WORK.

5 FIGURES INCLUDED ON THIS SHEET, ARE FOR INFORMATION AND REFERENCE ONLY. CONTRACTOR SHALL REFER TO THE ENTIRE TEXT OF THE ACCESSIBILITY REQUIREMENTS IN PERFORMING THE WORK.

LIFE SAFETY LEGEND

- INDICATES PATH OF TRAVEL; (MINIMUM 36" CLEAR, UNLESS NOTES OTHERWISE)
- INDICATES MAXIMUM PATH OF TRAVEL; (MINIMUM 36" CLEAR, UNLESS NOTES OTHERWISE)
- INDICATES MAXIMUM COMMON PATH OF TRAVEL; (MINIMUM 36" CLEAR, UNLESS NOTED OTHERWISE)
- START POINT
- END POINT / BUILDING EXIT
- 30"x48" CLEAR SPACE (MIN. 28" TO 34" MAX. TO TOP OF TABLE A.F.F.)
- FIRE EXTINGUISHER, SEE LEGEND
- EMERGENCY LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS
- EXIT LIGHT/SIGN GREEN LETTER COLOR, REFER TO RCP AND ELECTRICAL DRAWINGS
- EXIT # — EXIT NO.
- ### MAX — MAX CALCULATION LOAD
- ### OCC. — ACTUAL EGRESS

FIRE EXTINGUISHER TYPES

FE	CLASS 2-A EXTINGUISHER (PER NFPA 10): FOR CLASS A HAZARDS IN ORDINARY (MODERATE) HAZARD OCCUPANCY, (I) EXTINGUISHER PROVIDES 1,500 S.F. OF PROTECTION IN DINING AREAS - DISTANCE TO EXTINGUISHER NOT TO EXCEED 75'-0" SEMI-RECESSED FIRE EXTINGUISHER CABINET
C	CLASS C EXTINGUISHER (PER NFPA 10): REQUIRED WHERE ENERGIZED ELECTRICAL EQUIPMENT CAN BE ENCOUNTERED THAT WOULD REQUIRE A NON - CONDUCTING EXTINGUISHING MEDIUM
K	CLASS K EXTINGUISHER (PER NFPA 10): PROVIDED FOR HAZARDS WHERE THERE IS A POTENTIAL FOR FIRES INVOLVING COMBUSTIBLE COOKING MEDIA - DISTANCE TO EXTINGUISHER NOT TO EXCEED 30'-0" OF COOKING EQUIPMENT

PROJECT DATA

ADDRESS:	23181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928
USE & ZONING:	MPD (MIXED USE PLANNED DEVELOPMENT)
CONSTRUCTION TYPE:	II-B, SPRINKLERED
OCCUPANCY...	A-2
BUILDING HEIGHT:	29' - 0"
BUILDING AREA:	PROJECT: 2,900 SF PATIO: 430 SF TOTAL AREA: 3,330 SF

APPLICABLE CODES

BUILDING:	2023 FLORIDA BUILDING CODE, 8TH EDITION
EXISTING BUILDING:	2023 FLORIDA EXISTING BUILDING CODE, 8TH EDITION
MECHANICAL:	2023 FLORIDA MECHANICAL CODE, 8TH EDITION
PLUMBING:	2023 FLORIDA PLUMBING CODE, 8TH EDITION
ELECTRICAL:	2020 NATIONAL ELECTRICAL CODE
FIRE:	FLORIDA FIRE PREVENTION CODE, 8TH EDITION
ACCESSIBILITY:	2023 FLORIDA BUILDING CODE ACCESSIBILITY, 8TH EDITION.
ENERGY:	2023 FLORIDA ENERGY CONSERVATION, 8TH EDITION

BUILDING OCCUPANT LOAD

PER FLORIDA BUILDING CODE

	SPACE	FUNCTION	AREA (SQ FT)	LOAD FACTOR	OCCUPANTS CALC	OCCUPANTS DESIGN
100	ORDER/ QUEUE	STANDING	87.11 SF	5 NET SF	17.43	18
101	DINING	UNCONCENTRATED	167.83 SF	15 NET SF	11.19	12
		FIXED BOOTH/ LIN FT	34 LF	2 LF	17	17
102	KITCHEN	COMMERCIAL	576.54 SF	200 GROSS SF	2.89	3
103	BACK KITCHEN	COMMERCIAL	646.08 SF	200 GROSS SF	3.24	4
104	MANAGER'S OFFICE	BUSINESS	92.39 SF	150 GROSS SF	.62	1
105	HALLWAY	ACCESSORY	95 SF	NO LOAD	-	-
106	ALL GENDER RESTROOM 01	ACCESSORY	71 SF	NO LOAD	-	-
107	ALL GENDER RESTROOM 02	ACCESSORY	71 SF	NO LOAD	-	-
	INTERIOR OCCUPANT LOAD (EXIT ANALYSIS)					55
109	EXTERIOR PATIO	UNCONCENTRATED	430 SF	15 NET SF	28.67	29
	TOTAL OCCUPANT (FOR PLUMBING FACILITIES)					84
					MALE	42
					FEMALE	42

OCCUPANT LOAD SHALL BE ASSIGNED BY THE BUILDING OFFICIAL IN ACCORDANCE WITH THE ANTICIPATED USE

PLUMBING FACILITIES

PER FLORIDA BUILDING CODE

A-2 OCCUPANCY - RESTAURANT

	MALE		FEMALE		COMBINED	
FIXTURE TYPE	REQ'D	PROVIDED	REQ'D	PROVIDED	REQ'D	PROVIDED
WATER CLOSETS (1 PER 75)	1	1	1	1	N/A	N/A
URINALS	0	N/A	N/A	N/A	N/A	N/A
LAVATORIES (1 PER 200)	1	A	1	A	N/A	2
DRINKING FOUNTAINS*	N/A	N/A	N/A	N/A	1	0*
SERVICE SINK	N/A	N/A	N/A	N/A	1	1

* FACILITY WILL PROVIDE DRINKING WATER FREE OF CHARGE TO OCCUPANTS FROM A WATER STATION AND IS EXEMPT FROM PROVIDING A DRINKING FOUNTAIN.

EXIT ANALYSIS

PER APPLICABLE BUILDING CODE

MEANS OF EGRESS SIZING	DOORS & OTHER EGRESS COMPONENT UNIT WIDTH = 0.2 X INTERIOR OCCUPANT LOAD = 0.2 X 69 =11" REQUIRED WIDTH EXIT WIDTH PROVIDED = 144" (MINIMUM CLEAR WIDTH OF EXIT DOOR = 32") PATIO EXIT WIDTH PROVIDED = 44" (MINIMUM CLEAR WIDTH OF EXIT DOOR = 32")
REQUIRED EXITS	REQUIRED EXITS = 2 (1-500 OCCUPANT LOAD PER STORY) EXITS PROVIDED = 3 REQUIRED EXITS PATIO = 1 EXITS PROVIDED = 1
REQUIRED EXIT SEPARATION	MINIMUM REQUIRED EXIT SEPARATION = MAXIMUM DIAGONAL DISTANCE / 3 =81'-10" ÷ 3 = 27'-3 3/16" ACTUAL EXIT SEPARATION DIST =56'-1 1/2"
EXIT ACCESS TRAVEL DISTANCE	MAXIMUM ALLOWABLE EXIT ACCESS TRAVEL DISTANCE = 250'-0" (SPRINKLERED) ACTUAL MAXIMUM EXIT ACCESS TRAVEL DISTANCE = 78'-8 1/2"
COMMON PATH TRAVEL DISTANCE	MAXIMUM ALLOWABLE COMMON PATH TRAVEL DISTANCE = 49'-0" (SPRINKLERED) ACTUAL COMMON PATH TRAVEL DISTANCE = 13' - 5"

SEATS PER AREA

SPACE	DESIGN	SEATING ACCESSIBLE REQUIRED 5%	SEATING ACCESSIBLE PROVIDED
DINING AREA	42 SEATS	3 SEATS	3 SEATS
PATIO	18 SEATS	1 SEATS	1 SEATS
TOTAL SEATS	60 SEATS	4 SEATS	4 SEATS

TABLES PER AREA

SPACE	DESIGN	SEATING ACCESSIBLE REQUIRED 5%	SEATING ACCESSIBLE PROVIDED
DINING AREA	13 TABLES	1 TABLE	3 TABLES
PATIO	7 TABLES	1 TABLE	1 TABLES
TOTAL TABLES	20 TABLES	2 TABLE	4 TABLES

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SHEET NAME:

CODE ANALYSIS, OCCUPANCY & EGRESS PLAN

DATE: 06/01/2026

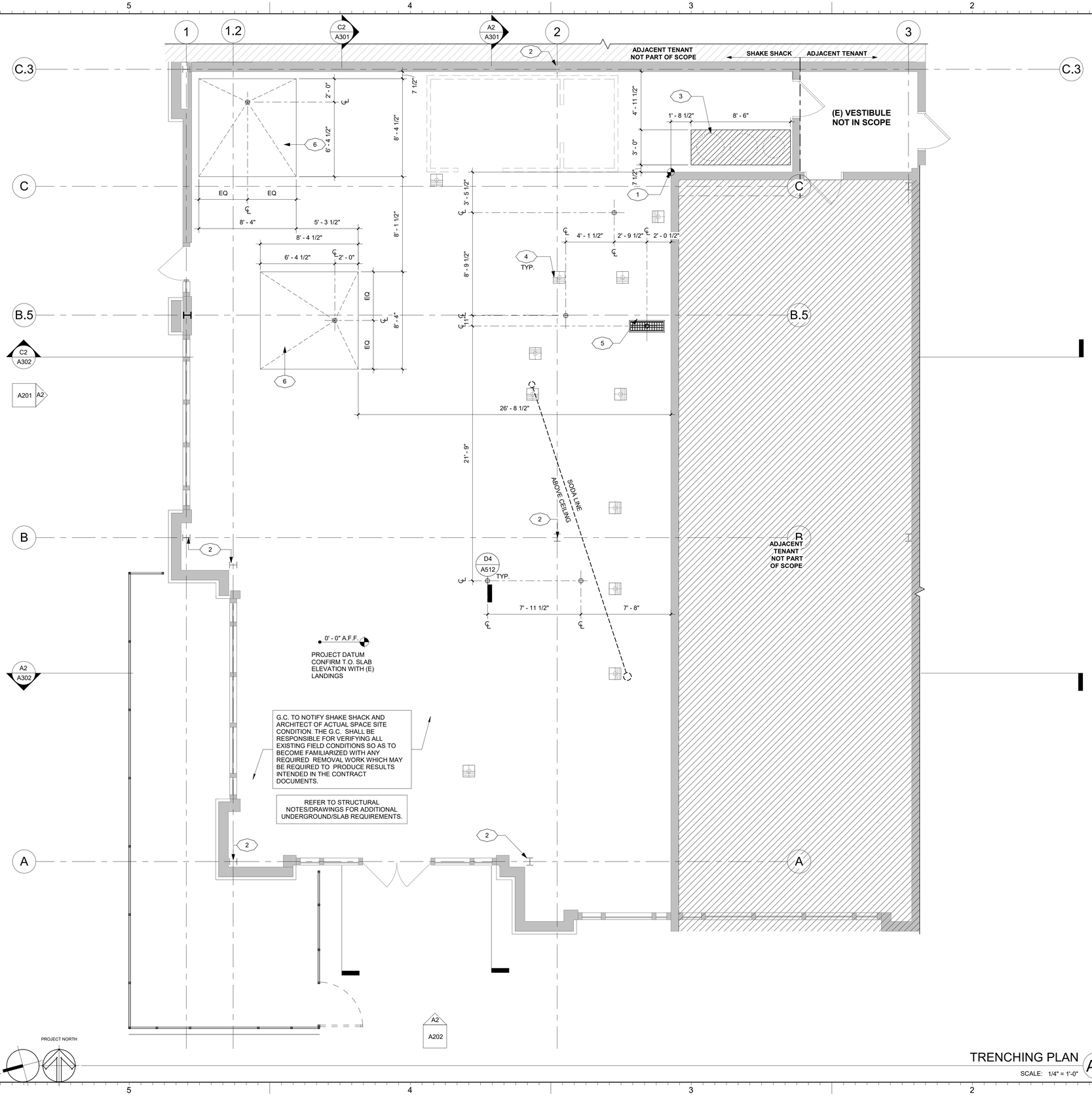
PROJECT NO: 41354

DRAWN: SO

SCALE: AS INDICATED

SHEET NO:

A003



TRENCHING PLAN (A2)

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.
10. REFER TO STRUCTURAL DRAWINGS FOR CONCRETE DETAILING, MIX DESIGN & REINFORCING
11. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE UNLESS NOTED OTHERWISE; ALLOW FOR CONCRETE SHRINKAGE.
12. ALL TARGET ELEVATIONS ARE TAKEN FROM T.O. CONCRETE SLAB

0 KEYNOTES

1. DIMENSION STARTING POINT.
2. EXISTING STRUCTURAL COLUMN.
3. 6" HEIGHT RAISED CONCRETE PAD. COORDINATE WITH STRUCTURAL DRAWINGS FOR MORE INFORMATION.
4. FLOOR DRAINS & FLOOR SINKS, COORDINATE WITH KEC DRAWINGS AND PLUMBING DRAWINGS. REFER TO KEC DRAWINGS FOR DIMENSIONED LOCATIONS OF FLOOR SINKS AND FLOOR TROUGH.
5. 4" DEEP DEPRESSION FOR FLOOR TROUGH; COORDINATE WITH K-SHEETS.
6. REFER TO PLUMBING DRAWINGS FOR MIN. SLOPE REQUIREMENTS.

LANDLORD NOTE

NOTE:

PRIOR TO ANY WORK ON THE CONCRETE SLAB TENANT GC SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER INSIDE/UNDER-SLAB CONDITION. A GROUND PENETRATING RADAR (GPR) SURVEY IS REQUIRED PRIOR TO WORK COMMENCEMENT (NONDESTRUCTIVE VERIFICATION REQUIRED). ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

DEMOLITION COMMENTS:

•ANY EXISTING EQUIPMENT OR COMPONENT IN OR PERTAINING TO THE PREMISES THAT IS BEING ABANDONED MUST BE DEMOLISHED COMPLETELY AND PROPERLY REMOVED FROM PREMISES.

•ALL ABOVE GROUND UTILITY LINES NOT TO BE RE-USED MUST BE REMOVED TO POINT OF ORIGIN. ALL UNDER SLAB UTILITY LINES TO BE CUT, CAPPED AND SEALED PER CODE.

•ALL ROOF MOUNTED EQUIPMENT ABOVE THE LEASED PREMISES NOT TO BE RE-USED MUST BE REMOVED BY TENANT GC AT TENANT EXPENSE. ROOF MUST BE PROPERLY PATCHED BY MALL REQUIRED ROOFER. ROOF CURBS MUST BE REMOVED AND ROOF PATCHED – DO NOT CAP. COORDINATE ALL WORK WITH MALL OPERATIONS DIRECTOR.

•SLAB REQUIREMENTS:
SLAB ON GRADE: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATION TEAM PRIOR TO ANY SLAB MODIFICATIONS OR REMOVAL. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

ELEVATED SLABS: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATIONS TEAM PRIOR TO ANY SLAB MODIFICATION OR REMOVAL. IF ANY ELEVATED SLAB IS TO BE MODIFIED IN ANYWAY (DRILLED, CORED, OR PENETRATED), TENANT SHALL PROVIDE STAMPED AND CERTIFIED DRAWINGS BY A LICENSED STRUCTURAL ENGINEERED CERTIFIED IN THE LOCAL JURISDICTION. ALL PENETRATIONS SHALL BE CORE BORED ONLY. SAW CUTTING, JACK HAMMERING, AND TRENCHING IS STRICTLY PROHIBITED. ALL PENETRATIONS SHALL BE SLEEVED, SEALED, FIRE STOPPED, AND WATERPROOFED. THE PENETRATION SLEEVE SHALL EXTEND A MINIMUM OF 4" ON EITHER SIDE OF THE SLAB AND BE LABELED WITH THE REQUIRED NFPA RATING. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

CURB & FOUNDATION LEGEND

SYMBOL	DESCRIPTION
	EXISTING WALL
	(E) CONCRETE SLAB
	NEW RAISED CONCRETE PAD BY GC
	FLOOR DRAIN
	FLOOR SINK
	FLOOR TROUGH
	SLAB SLOPE BOUNDARY / VALLEYS
	OVERHEAD SUPPLY LINES (REFER TO K-SHEETS FOR MORE INFORMATION)
	PREFAB WALL BY KEC

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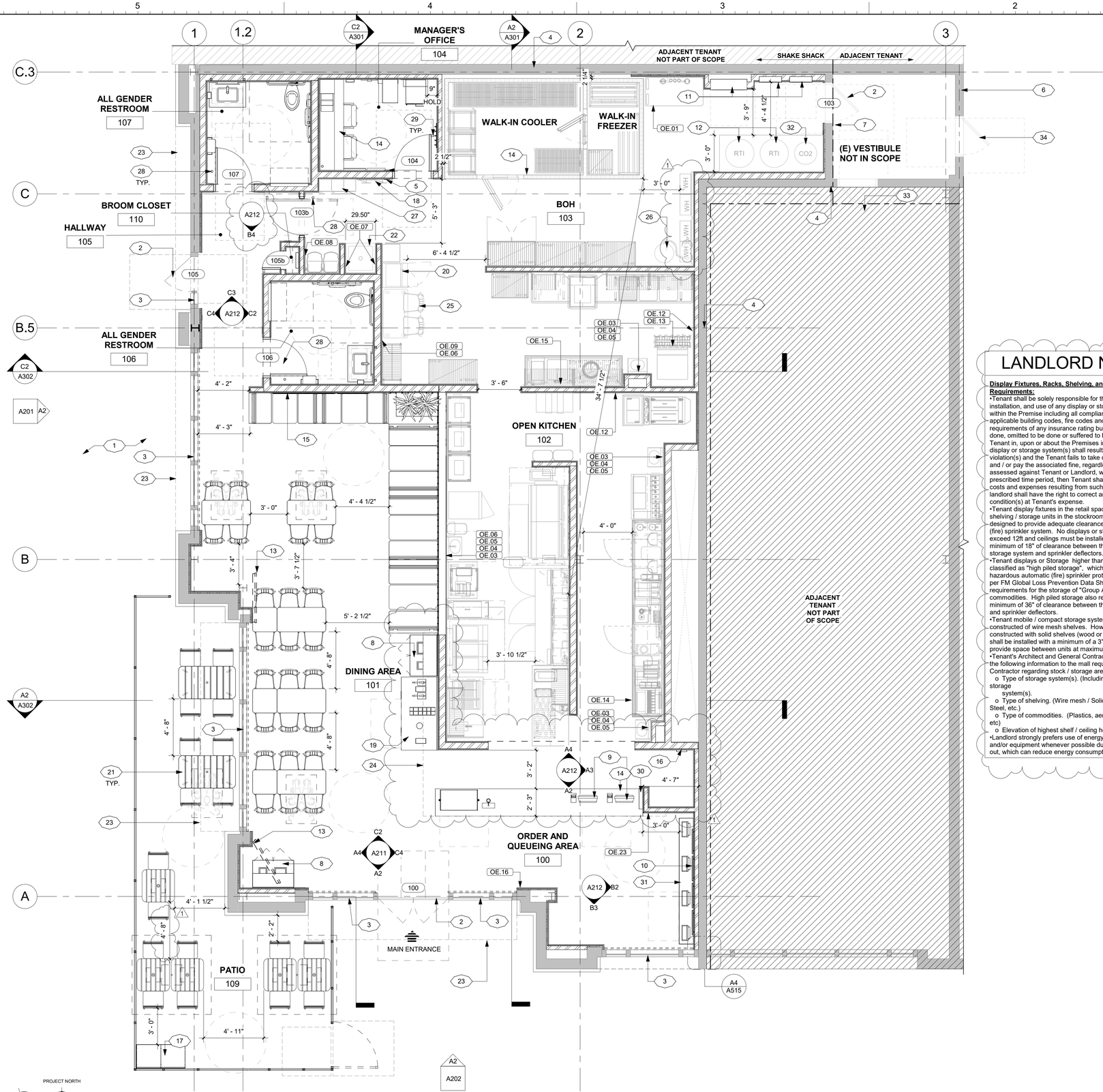
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SHEET NAME:
TRENCHING PLAN

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:
A100



GENERAL ARRANGEMENT PLAN A2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
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4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

0 KEYNOTES

1. (E) SIDEWALK.
2. (E) DOOR TO REMAIN. REFER TO DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
3. (E) STOREFRONT TO REMAIN.
4. (E) DEMISING WALL TO REMAIN. G.C. TO PATCH AND REPAIR WALL AS NECESSARY, MAINTAIN FIRE RATING.
5. LUTRON SYSTEM SWITCHES. REFER TO ELECTRICAL DRAWINGS.
6. PROPOSED LOCATION FOR RTI & CO2 FILL BOXES. OWNER VENDOR TO VERIFY SITE CONDITION.
7. LOCATION OF NEW DOOR BELL, REFER TO ELECTRICAL DRAWINGS.
8. INDOOR WASTE RECEPTACLE, OWNER PROVIDED.
9. POINT OF SALE SYSTEM, REFER TO KITCHEN DRAWINGS.
10. WALL MOUNTED MENU BOARDS.
11. NEW ELECTRICAL PANELS; REFER TO ELECTRICAL DRAWINGS.
12. RTI TANK.
13. NEW CEILING MOUNTED 55" TV. TV'S AND BRACKETS ARE OWNER FURNISHED AND INSTALLED. POWER, DATA, AND BLOCKING TO BE BY GC.
14. PANIC BUTTON BY ADT.
15. 'STAND FOR SOMETHING GOOD' SIGNAGE, BY OWNER'S VENDOR. G.C. TO PROVIDE NECESSARY POWER, BLOCKING AND GROMMETS; REFER TO FINAL SIGNAGE DRAWINGS FOR HOME RUN & POWER LOCATIONS. COORDINATE W/ OWNER'S VENDOR AND E-SHEETS; SFSG SIGN TO BE INSTALLED AFTER WOOD PANEL IS INSTALLED.
16. FIRE EXTINGUISHER CABINET.
17. OUTDOOR WASTE RECEPTACLE.
18. HARRI TIME CLOCK, REFER TO ELECTRICAL DRAWINGS.
19. CONDIMENT STATION.
20. EMPLOYEE'S REFRIGERATOR AND MICROWAVE, BY OWNER AND INSTALLED BY GC.
21. PATIO FURNITURE; REFER TO FURNITURE PLAN FOR MORE INFORMATION.
22. MOP SINK INCLUDING SPLASH KIT, REFER TO KITCHEN DRAWINGS.
23. (E) AWNING. GC IS RESPONSIBLE FOR RE-SKINNING THE AWNINGS - SW GARDEN GROVE.
24. DASHED LINE INDICATES PROJECTION OF THE C-CHANNEL AND SOFFIT ABOVE.
25. EMPLOYEE'S DESK. REFER TO KITCHEN DRAWINGS FOR MORE INFORMATION.
26. WATER SOFTENER, REFER TO PLUMBING DRAWINGS.
27. EMPLOYEE LOCKERS, REFER TO KITCHEN DRAWINGS. TO BE MOUNTED 6" AFF.
28. DOOR STOP TO BE INSTALLED BY GC. FIELD VERIFY SITE CONDITIONS.
29. WALL STOP TO BE INSTALLED BY GC. FIELD VERIFY SITE CONDITIONS.
30. WINE RACK.
31. DIGITAL SELF-ORDER KIOSKS.
32. CO2 TANK.
33. (E) SERVICE DOOR TO REMAIN. REFER TO DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
34. EXISTING DOOR; NOT IN SCOPE. LL TO PROVIDE DOOR WITHOUT LOCK DURING BUSINESS HOURS AND DESIGNATE THIS DOOR AS A DELIVERY ENTRANCE FOR SHAKE SHACK SPACE.

LANDLORD NOTE

Display Fixtures, Racks, Shelving, and Storage Unit Requirements:

- Tenant shall be solely responsible for the design, installation, and use of any display or storage system(s) within the Premise including all compliance with applicable building codes, fire codes and the requirements of any insurance rating bureaus. If anything done, omitted to be done or suffered to be done by Tenant in, upon or about the Premises in regard to such display or storage system(s) shall result in a fire code violation(s) and the Tenant fails to take corrective action and / or pay the associated fine, regardless of whether assessed against Tenant or Landlord, within the prescribed time period, then Tenant shall be liable for all costs and expenses resulting from such violation(s) and landlord shall have the right to correct any such condition(s) at Tenant's expense.
- Tenant display fixtures in the retail space and rack / shelving / storage units in the stockroom shall be designed to provide adequate clearance for the automatic (fire) sprinkler system. No displays or storage should exceed 12ft and ceilings must be installed to provide a minimum of 18" of clearance between the top of the storage system and sprinkler deflectors.
- Tenant displays or Storage higher than 12'-0" are classified as "high piled storage", which requires high hazardous automatic (fire) sprinkler protection designed per FM Global Loss Prevention Data Sheet and NFPA requirements for the storage of "Group A Plastic" commodities. High piled storage also requires a minimum of 36" of clearance between the top of storage and sprinkler deflectors.
- Tenant mobile / compact storage systems shall be constructed of wire mesh shelves. However, if constructed with solid shelves (wood or steel), the units shall be installed with a minimum of a 3" spacer to provide space between units at maximum 5'-0" intervals.
- Tenant's Architect and General Contractor shall provide the following information to the mall required Sprinkler Contractor regarding stock / storage area:
  - o Type of storage system(s). (Including details of the storage system(s).
  - o Type of shelving. (Wire mesh / Solid wood / Solid Steel, etc.)
  - o Type of commodities. (Plastics, aerosol's, clothing, etc)
  - o Elevation of highest shelf / ceiling height.
- Landlord strongly prefers use of energy star products and/or equipment whenever possible during Tenant build out, which can reduce energy consumption.

SMALLWARES SCHEDULE

TAG #	QTY	ITEM NAME	MANUFACTURER	MODEL/ ITEM #	RESPONSIBILITY		NOTES
					FURNISH	INSTALL	
OE.01	1	GARBAGE TOTER	RUBBERMAID	FG130400 BLA	O	O	1
OE.02	-	NOT IN USE	-	-	-	-	-
OE.03	4	GLOVE BOX DISPENSER	SAN JAMAR	G0801 / 464924	O	GC	1
OE.04	4	HORIZONTAL SOAP DISPENSER	FIRST MARK	53003395	O	GC	1
OE.05	4	PAPER TOWEL DISPENSER	TORK	5511284	O	GC	1
OE.06	2	HAIR NET DISPENSER	CELLUCAP	D903 / 122190	O	GC	1
OE.07	1	MOP & BROOM HOLDER	FRANKLIN MACHINE GROUP	159-1140 / 6008318	O	GC	1
OE.08	1	WET FLOOR SIGN HOLDER	GEERPRES	5047 / 305516	O	GC	-
OE.09	1	FIRST AID CABINET	AFASSCO	186/701106	O	GC	1
OE.12	2	ICE BUCKET HANG BRACKET	SAN JAMAR	101558/112509	O	GC	1
OE.13	1	ICE SCOOP LARGE	SAN JAMAR	S17700/6021258	O	O	-
OE.14	1	ICE SCOOP SMALL	SAN JAMAR	S17700/65029	O	O	-
OE.15	1	KNIFE HOLDER	SAN JAMAR	STK1008/6014881	O	GC	1
OE.16	1	FRAMED CHOKING SIGN	ALPHAGRAPHICS	-	O	GC	1
OE.23	1	ENCLOSED BULLETIN BOARD	NORWOOD COMMERCIAL FURNITURE	NOR-EB0203-I-BULLETIN	GC	GC	1

NOTES:
1. PROVIDE BACKING IN WALL FOR EQUIPMENT
2. FOR SMALLWARE LOCATED IN THE MANAGER'S OFFICE, REFER TO SHEET A401

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REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

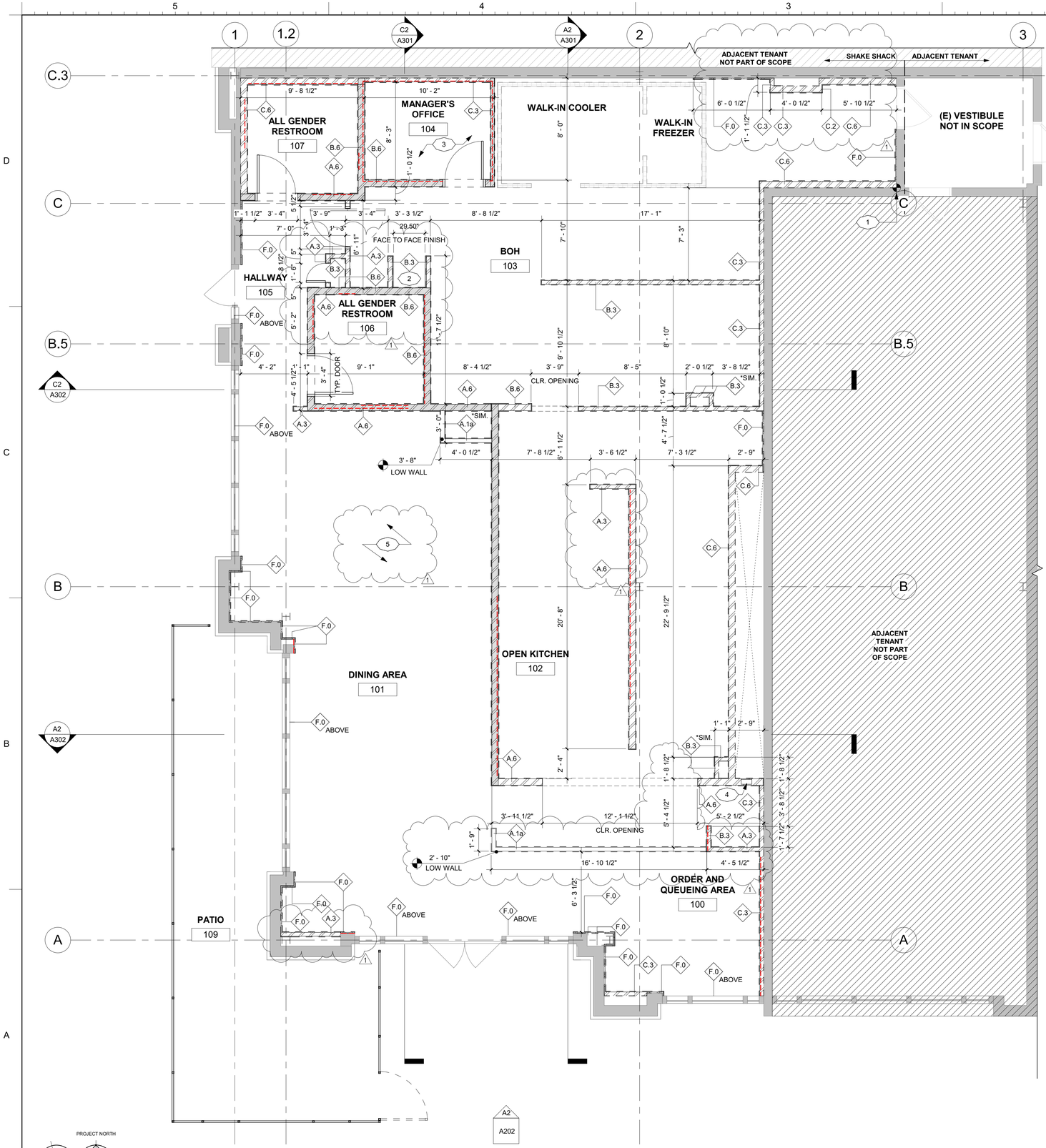
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SHEET NAME:
GENERAL ARRANGEMENT PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A101



DIMENSION FLOOR PLAN A2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

DIMENSION PLAN NOTES

A PROVIDED DIMENSIONS ARE TO FACE TO STUD.

B PROVIDE FRT (FIRE RETARDANT TREATED) PLYWOOD SUBSTRATE AT ALL MILLWORK WALL FINISHES.

C FOR NON-FIRE RATED ASSEMBLIES (AT MILLWORK WALL FINISHES ONLY, UNO) FIRE RETARDANT TREATED PLYWOOD SUBSTRATE TO BE APPLIED DIRECTLY ONTO THE WALL STUDS IN LIEU OF STANDARD GWB (GYPSUM WALL BOARD) SUBSTRATE.

D IN CASES WHERE THERE IS PAINTED GYPSUM WALL BOARD, THE WALL SUBSTRATE SHOULD TRANSITION FROM FRT PLYWOOD TO GWB.

E PROVIDE 3/4" FIRE RETARDANT TREATED PLYWOOD AT ALL WALLS IN THE MANAGER'S OFFICE FROM FLOOR TO CEILING. THE FRT PLYWOOD SHOULD BE INSTALLED AT ALL INTERIOR SIDES OF THE WALLS, INCLUDING WITHIN RATED WALL ASSEMBLIED.

0 KEYNOTES

1. DIMENSION STARTING POINT.
2. REFER TO MOP SINK SPECIFICATION SHEET FOR ADDITIONAL INFORMATION.
3. PROVIDE (1) LAYER OF F.R.T. PLYWOOD AND (1) LAYER 5/8" GWB ON METAL STUDS IN MANAGER'S OFFICE ONLY.
4. RECESSED FIRE EXTINGUISHER CABINET, REFER TO DETAIL E1 & E2/A511.
5. TEMPORARY SITE CAMERA IS REQUIRED FOR THE DURATION OF THE CONSTRUCTION. GC SHALL COORDINATE WITH OWNER VENDOR #21 FOR CAMERA LOCATION, INSTALLATION, AND RENTAL REQUIREMENTS. GC TO REFER TO T003 FOR VENDOR CONTACT INFORAMTION.

DIMENSION PLAN LEGEND

SYMBOL	DESCRIPTION
XX	WALL TYPE TAG
	(E) EXTERIOR WALL
	PARTITION WALL (METAL STUD)
	LOW PARTITION WALL (METAL STUD)
	PREFAB WALLS BY KEC
	PLYWOOD BACKING FOR SMALLWARE ASSETS, REFER TO SHEET K102 FOR MORE INFORMATION
	BATT INSULATION

NOTE:
1. STUD SIZES INDICATED ARE NOMINAL (I.E. 4" = 3-1/2" or 3-5/8")
2. REFER TO STRUCTURAL DRAWINGS, AND WALL TYPES FOR MORE INFORMATION

* PART HEIGHT ONE SIDED
* SEE SHEET A531 FOR STUD PARTITION FOR MANAGER'S OFFICE.

LANDLORD NOTE

FLOOR PLAN COMMENTS:

•TENANT IS RESPONSIBLE TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS IN THE SPACE. FAILURE TO PROPERLY FIELD VERIFY EXISTING CONDITIONS DOES NOT RELIEVE THE TENANT OF ANY EXPENSES OR RESPONSIBILITIES RESULTING FROM THAT FAILURE.
•NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK, OR ROOF DECK. YOU MAY ATTACH, NON-DESTRUCTIVELY, TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHING TO LANDLORD'S STRUCTURE, DO NOT DRILL, WELD, SCREW, OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY, NOTHING TO DAMAGE LANDLORD'S BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS, BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS, FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.
•STRUCTURAL REINFORCING DETAILS MUST BE PROVIDED BY A REGISTERED STRUCTURAL ENGINEER TO TENANT COORDINATION FOR EQUIPMENT SUPPORT OR SUSPENSION, SERVICE PLATFORMS, DECK PENETRATIONS, ETC.
•ANY LANDLORD EQUIPMENT, COMPONENT, AND / OR SERVICE FEEDING OTHER TENANT(S) THAT IS EXISTING IN THE SPACE MUST REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. TENANT SHALL INSTALL ACCESS PANELS AS REQUIRED TO MAINTAIN ACCESS. ACCESS PANELS SHALL BE LABEL TO PROPERLY IDENTIFY SYSTEM, COORDINATE WITH MALL OPERATIONS.
•TENANT'S STOCKROOM MAY NOT BE VISIBLE FROM THE SALES AREA. DOOR(S) LEADING TO THE STOCKROOM MUST HAVE AN AUTOMATIC CLOSURE.
•ALL REAR ENTRIES MUST HAVE A DOORBELL FOR DELIVERIES.
•ALL CONCRETE PATCHING MUST BE LEVEL WITH THE EXISTING CONCRETE FLOOR.
•TENANT IS REQUIRED TO INSTALL A WATERPROOF MEMBRANE IN ALL WET AREAS (RESTROOMS, KITCHENS, FOOD SERVICES, ETC…) OF THE SPACE. TENANT SHALL USE A 30 MIL POLYETHYLENE CLEAVAGE MEMBRANE (EQUAL TO NOBLESEAL TS) INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ANSI A108. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 4" OR EQUAL TO THE HEIGHT OF THE FLOOR BASE.

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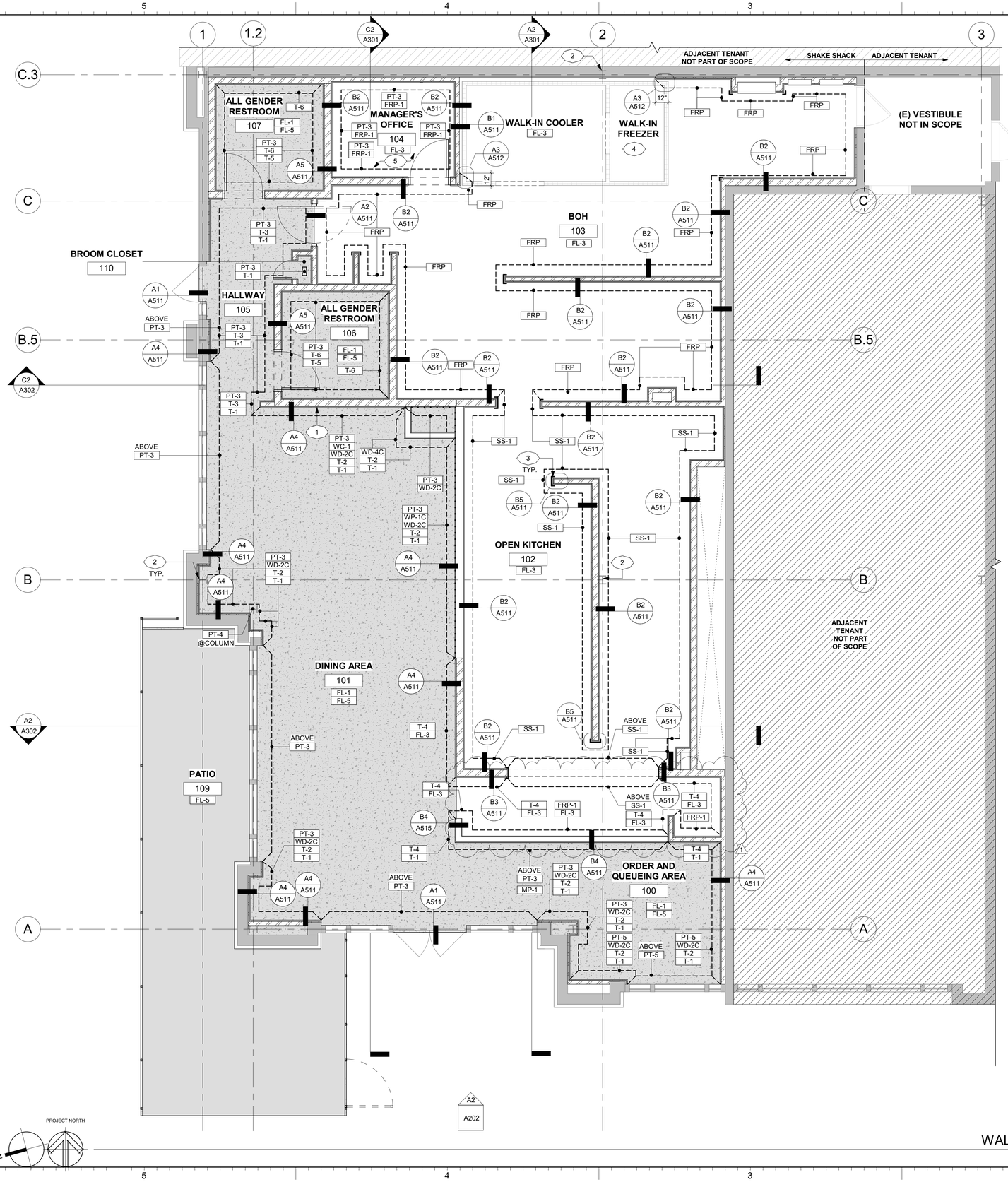
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SHEET NAME:
DIMENSION FLOOR PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A102



WALL & FLOOR FINISH PLAN

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

A2

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
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WALL & FLOOR FINISH NOTES

- A REFER TO SHEET A601 FOR FINISH SCHEDULE.
- B ENSURE SURFACES TO RECEIVE FINISHES ARE CLEAN, TRUE AND FREE OF IRREGULARITIES. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- C GENERAL CONTRACTOR TO PROVIDE WATERPROOFING MEMBRANE AT ALL WET AREAS. GENERAL CONTRACTOR TO INSTALL WATERPROOFING AT 12" UP THE WALL AND 12" ONTO THE FLOOR.
- D PROVIDE CONTINUOUS SEALANT JOINT AT ALL FRP AND STAINLESS STEEL INTERSECTIONS AND AT TILE BASE, CEILING, DOOR FRAMES, PLUMBING/GAS/ELECTRICAL ROUGH-INS, AND MISCELLANEOUS PENETRATIONS.
- E TILE CONTRACTOR TO ENSURE THAT FLOOR TILE IS FLUSH WITH COVE BASE TILE PER HEALTH DEPARTMENT.
- F ALL KITCHEN AND PREP AREA SURFACES SHALL RECEIVE SMOOTH AND WASHABLE FINISHES.
- G ALL FLOOR PENETRATIONS TO BE SEALED, WATERPROOFED, AND FIRE RATED.
- H GENERAL CONTRACTOR TO COORDINATE LOCATION AND QUANTITY OF MOVEMENT JOINTS IN ALL FLOORING.
- I MAXIMUM FLOOR SLOPE IN ANY DIRECTION IS 1:20.
- J GENERAL CONTRACTOR TO SLOPE (MAX 2%) TO EXISTING DRAIN, FLUSH TO ABUTTING SIDEWALK AND ABUTTING GRADES.
- K ALL KITCHEN FLOORS TO HAVE NO MORE THAN 1/8" PER FOOT SLOPE TO FLOOR...
- L REFER TO REFLECTED CEILING PLAN, INTERIOR ELEVATIONS, AND INTERIOR DETAILS FOR ADDITONAL INFORMATION.
- M GYPSUM BOARD WALLS TO BE TAPED AND SANDED TO LEVE 4 FINISH, U.N.O
- N GENERAL CONTRACTOR TO PROVIDE LEVEL 5 FINISH WHERE WALL COVERING OCCURS.
- O PAINT SHEEN TO BE AS FOLLOWS:
  a. SEMI-GLOSS - DOORS, FRAMES, WINDOW TRIM
  b. EGGSHELL - WALLS
  c. FLAT - CEILINGS

0 KEYNOTES

1. AREA DESIGNATED FOR VINYL GRAPHIC APPLIED MURAL BY OWNER'S VENDOR: REFER TO INTERIOR ELEVATIONS FOR OVERALL EXTENTS. GC TO PROVIDE A LEVEL 5 FINISH THAT IS BOTH PRIMED AND PAINTED PT-3. PAINT ON WALLS MUST BE COMPLETELY DRY AND DEGASSED PRIOR TO INSTALL. MANUFACTURER RECOMMENDS THAT PAINT IS DRY 2-3 WEEKS PRIOR TO INSTALL. MANUFACTURER WILL THEN PERFORM A "TAPE TEST" TO ENSURE COMPLIANCE BEFORE INSTALLATION OF VINYL GRAPHIC.
2. (E) COLUMN TO REMAIN AND BE PAINTED SW KALE GREEN
3. STAINLESS STEEL CORNER GUARD/ ANGLE BY OWNER KITCHEN VENDOR, TYP.
4. WALK-IN FREEZER FLOOR BY SHSK VENDOR.
5. SEE A401 FOR FINISH HEIGHT AT MANAGER'S OFFICE.

FINISH PLAN LEGEND

SYMBOL	DESCRIPTION
XX-X	FINISH TAG -REFER TO SHEET A601 FOR FINISH SCHEDULE
	FL-1 FLOOR FINISH PATTERN: CONCRETE POLISH FINISH
	FL-3 FLOOR FINISH PATTERN: SHERWIN WILLIAMS HIGH PERFORMANCE FLOORING - URETHANE FLOORING (APPLY SECOND TOPCOAT UNDER KITCHEN EQUIPMENT PER SPECIFICATIONS)
1	**FL-5** FLOOR FINISH PATTERN: CONCREATE SEAL (APPLY PER MANUFACTURER SPECIFICATIONS)

LANDLORD NOTE

FINISH PLAN COMMENTS:

•TENANT SHALL PROVIDE A FINISH SAMPLE BOARD OR SIMILAR TO THE LANDLORD FOR APPROVAL.

•ALL FLOORING TRANSITIONS MUST BE SMOOTH AND FLUSH. THE USE OF PLASTIC, VINYL, OR RUBBER TRANSITIONS STRIPS IS STRICTLY PROHIBITED. TENANTS MUST UTILIZE A HARD SURFACE TRANSITION.

•TENANT IS REQUIRED TO INSTALL A WATERPROOF MEMBRANE IN ALL WET AREAS (RESTROOMS, KITCHENS, FOOD SERVICES, ETC…) OF THE SPACE. TENANT SHALL USE A 30 MIL POLYETHYLENE CLEAVAGE MEMBRANE (EQUAL TO NOBLESEAL TS) INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ANSI A108. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 6" OR EQUAL TO THE HEIGHT OF THE FLOOR BASE.

•NO RUBBER OR VINYL BASE IS PERMITTED IN THE SALES AREA OF THE PREMISES.

•SLAB REQUIREMENTS: SLAB ON GRADE: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATION TEAM PRIOR TO ANY SLAB MODIFICATIONS OR REMOVAL. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

ELEVATED SLABS: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATIONS TEAM PRIOR TO ANY SLAB MODIFICATION OR REMOVAL. IF ANY ELEVATED SLAB IS TO BE MODIFIED IN ANYWAY (DRILLED, CORED, OR PENETRATED), TENANT SHALL PROVIDE STAMPED AND CERTIFIED DRAWINGS BY A LICENSED STRUCTURAL ENGINEERED CERTIFIED IN THE LOCAL JURISDICTION. ALL PENETRATIONS SHALL BE CORE BORED ONLY. SAW CUTTING, JACK HAMMERING, AND TRENCHING IS STRICTLY PROHIBITED. ALL PENETRATIONS SHALL BE SLEEVED, SEALED, FIRE STOPPED, AND WATERPROOFED. THE PENETRATION SLEEVE SHALL EXTEND A MINIMUM OF 4" ON EITHER SIDE OF THE SLAB AND BE LABELED WITH THE REQUIRED NFPA RATING. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

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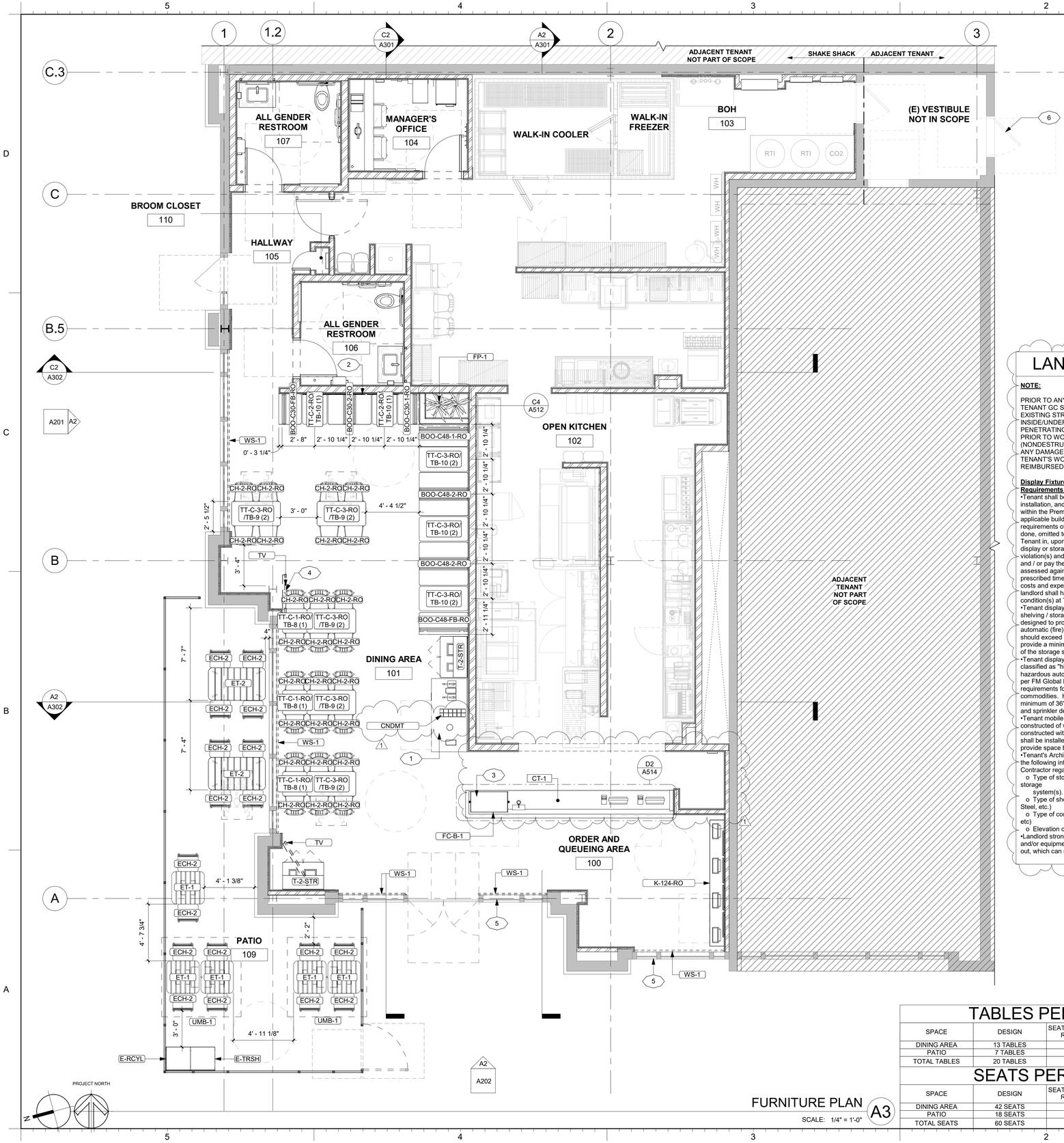
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SHEET NAME:
WALL & FLOOR FINISH PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A103



FURNITURE PLAN

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

A3

TABLES PER AREA

SPACE	DESIGN	SEATING ACCESSIBLE REQUIRED 5%	SEATING ACCESSIBLE PROVIDED
DINING AREA	13 TABLES	1 TABLE	3 TABLES
PATIO	7 TABLES	1 TABLE	1 TABLES
TOTAL TABLES	20 TABLES	2 TABLE	4 TABLES

SEATS PER AREA

SPACE	DESIGN	SEATING ACCESSIBLE REQUIRED 5%	SEATING ACCESSIBLE PROVIDED
DINING AREA	42 SEATS	3 SEATS	3 SEATS
PATIO	18 SEATS	1 SEATS	1 SEATS
TOTAL SEATS	60 SEATS	4 SEATS	4 SEATS

LANDLORD NOTE

NOTE:

PRIOR TO ANY WORK ON THE CONCRETE SLAB TENANT GC SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER INSIDE/UNDER-SLAB CONDITION. A GROUND PENETRATING RADAR (GPR) SURVEY IS REQUIRED PRIOR TO WORK COMMENCEMENT (NONDESTRUCTIVE VERIFICATION REQUIRED). ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

Display Fixtures, Racks, Shelving, and Storage Unit Requirements:

•Tenant shall be solely responsible for the design, installation, and use of any display or storage system(s) within the Premise including all compliance with applicable building codes, fire codes and the requirements of any insurance rating bureaus. If anything done, omitted to be done or suffered to be done by Tenant in, upon or about the Premises in regard to such display or storage system(s) shall result in a fire code violation(s) and the Tenant fails to take corrective action and / or pay the associated fine, regardless of whether assessed against Tenant or Landlord, within the prescribed time period, then Tenant shall be liable for all costs and expenses resulting from such violation(s) and landlord shall have the right to correct any such condition(s) at Tenant's expense.

•Tenant display fixtures in the retail space and rack / shelving / storage units in the stockroom shall be designed to provide adequate clearance for the automatic (fire) sprinkler system. No displays or storage should exceed 12ft and ceilings must be installed to provide a minimum of 18" of clearance between the top of the storage system and sprinkler deflectors.

•Tenant displays or Storage higher than 12'-0" are classified as "high piled storage", which requires high hazardous automatic (fire) sprinkler protection designed per FM Global Loss Prevention Data Sheet and NFPA requirements for the storage of "Group A Plastic" commodities. High piled storage also requires a minimum of 36" of clearance between the top of storage and sprinkler deflectors.

•Tenant mobile / compact storage systems shall be constructed of wire mesh shelves. However, if constructed with solid shelves (wood or steel), the units shall be installed with a minimum of a 3" spacer to provide space between units at maximum 5'-0" intervals.

•Tenant's Architect and General Contractor shall provide the following information to the mall required Sprinkler Contractor regarding stock / storage area:

- o Type of storage system(s). (Including details of the storage system(s).
- o Type of shelving. (Wire mesh / Solid wood / Solid Steel, etc.)
- o Type of commodities. (Plastics, aerosol's, clothing, etc)
- o Elevation of highest shelf / ceiling height.

•Landlord strongly prefers use of energy star products and/or equipment whenever possible during Tenant build out, which can reduce energy consumption.

GENERAL NOTES

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FURNITURE PLAN NOTES

- A REFER TO SHEET A601 FOR FURNITURE SCHEDULE.
- B REFER TO RESPONSIBILITY SCHEDULE FOR DIVISION OF LABOR AND VENDORS.
- C NOTIFY ARCHITECT OF CONDITIONS WHERE CLEAR OR CRITICAL DIMENSIONS ARE DESIGNATED BUT CAN NOT BE MET.
- D GENERAL CONTRACTOR TO COORDINATE WITH OWNER'S VENDORS TO ALLOW FOR PRE-INSTALLATION OF OWNER SUPPLIED ITEMS.
- E GENERAL CONTRACTOR SHALL ENSURE THAT FINISH CARPENTRY AND STAINLESS EQUIPMENT WILL NOT BE DAMAGED BY OTHER CONSTRUCTION WORK.
- F ALL TABLES WILL BE BOLTED TO THE GROUND.
- G GENERAL CONTRACTOR TO COORDINATE ALL FINAL SIGNAGE QUANTITIES AND LOCATIONS WITH OWNER AND OWNER'S VENDOR.

0 KEYNOTES

1. CONDIMENT STATION.
2. 'STAND FOR SOMETHING GOOD' SIGNAGE BY OWNER'S VENDOR. GC. TO PROVIDE NECESSARY POWER, BLOCKINGAND GROMMETS; REFER TO FINAL SIGNAGE DRAWINGS FOR HOME RUN & POWERLOCATIONS. COORDINATE W/ OWNER'S VENDOR AND E-SHEETS. SFSG SIGN TO BE INSTALLED AFTER WOOD PANEL IS INSTALLED.
3. DESIGN INTENT IS TO CENTER SHELF ON LIGHT ABOVE. SEE RCP.
4. NEW CEILING MOUNTED 55" TV. TV'S AND BRACKETS ARE OWNER FURNISHED AND INSTALLED. POWER, DATA, AND BLOCKING TO BE BY GC.
5. (E) STOREFRONT TO REMAIN.
6. (E) DOOR TO REMAIN. REFER TO DOOR SCHEDULE FOR ADDITIONAL INFORMATION.

FURNITURE SCHEDULE

ITEM	QTY	DESCRIPTION	FURN	INSTALL	REMARKS
SEATING (EXTERIOR)					
ECH-2	18	OUTDOOR METAL CHAIR - CEDAR GREEN	•	GC	LOW SEATING
SEATING (INTERIOR)					
BOO-C30-1-RO	1	INDOOR SINGLE SIDED SLATTED BOOTH, 30"	•	GC	LOW SEATING
BOO-C30-2-RO	1	INDOOR DOUBLE SIDED SLATTED BOOTH, 30"	•	GC	LOW SEATING
BOO-C30-FB-RO	1	INDOOR SINGLE SIDED SLATTED BOOTH WITH FINISHED BACK, 30"	•	GC	LOW SEATING
BOO-C48-1-RO	1	INDOOR SINGLE SIDED SLATTED BOOTH WITH FINISHED BACK, 48"	•	GC	LOW SEATING
BOO-C48-2-RO	2	INDOOR DOUBLE SIDED SLATTED BOOTH, 48"	•	GC	LOW SEATING
BOO-C48-FB-RO	1	INDOOR SINGLE SIDED SLATTED BOOTH WITH FINISHED BACK, 48"	•	GC	LOW SEATING
CH-2-RO	26	INDOOR DINING CHAIR WITH FINISHED RED OAK, RAL 9011 GRAPHITE BLACK	•	GC	LOW SEATING
SPECIALTY ITEMS (EXTERIOR)					
E-RCYL	1	RECYCLING UNIT, OUTDOOR	•	GC	INSTALLED BY GC
E-TRSH	1	TRASH UNIT, OUTDOOR	•	GC	INSTALLED BY GC
UMB-1	2	UMBRELLA, COMMERCIAL GRADE SANTA ANA CENTER POLE SQUARE	•	GC	
SPECIALTY ITEMS (INTERIOR)					
CNDMT	1	CONDIMENT STATION	•	GC	INSTALLED BY GC
FC-B-1	1	APP SHELVING UNIT	•	GC	INSTALLED BY GC
FP-1	2	INTERIOR PLANTS	•	GC	INSTALLED BY GC
K-124-RO	1	WALL MOUNT KIOSK W/ 4 POS, 124" W	•	GC	INSTALLED BY GC
T-2-STR	2	TRASH - 2 STREAM	•	GC	INSTALLED BY GC
TV	2	TV, CEILING HUNG LG 55 INCH UT640S SERIES; RACKET: STONG SM-CS-ART2-L	GC	GC	INSTALLED BY GC
WS-1	5	ROLL-A-SHADE	GC	GC	INSTALLED BY GC
TABLE & BASE (EXTERIOR)					
ET-1	5	OUTDOOR 2-TOP TABLE AND BASE	•	GC	INSTALLED BY GC
ET-2	2	OUTDOOR 4-TOP (ADA) TABLE AND BASE	•	GC	LOW TABLE
TABLE & BASE (INTERIOR)					
TT-C-1-RO/ TB-8 (1)	3	INDOOR RED OAK WOOD TOP 24X24 AND STOCK X-BASE	•	GC	LOW TABLE
TT-C-2-RO/ TB-10 (1)	2	INDOOR RED OAK WOOD TOP 24X30, CASK WOOD FINISH (INCL TWO BRANDS) / STOCK FIXED POST BASE, DINING HEIGHT, RAL 9011 GRAPHITE BLACK	•	GC	LOW TABLE
TT-C-3-RO /TB-9 (2)	5	INDOOR RED OAK WOOD TOP 24X48 AND STOCK T-BASE	•	GC	LOW TABLE
TT-C-3-RO/ TB-10 (2)	3	INDOOR RED OAK WOOD TOP 24X48 AND STOCK T-BASE STOCK FIXED POST BASE	•	GC	LOW TABLE
SPECIAL ITEMS (RAILING)					
RAIL-28	2	FINISH: BLACK - RAL 9011	•	GC	SEE SHEET SP102
RAIL-34	5	FINISH: BLACK - RAL 9011	•	GC	SEE SHEET SP102
RAIL-46	2	FINISH: BLACK - RAL 9011	•	GC	SEE SHEET SP102
RAIL-70	7	FINISH: BLACK - RAL 9011	•	GC	SEE SHEET SP102
RAIL-G-R	1	BOLT DOWN SINGLE GATE	•	GC	SEE SHEET SP102
RAIL-COP	3	FINISH: BLACK - RAL 9011	•	GC	SEE SHEET SP102
RAIL-CEP	20	FINISH: BLACK - RAL 9011	•	GC	SEE SHEET SP102

RESPONSIBILITY:
GC - GENERAL CONTRACTOR
O - OWNER / OWNER'S VENDOR

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CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

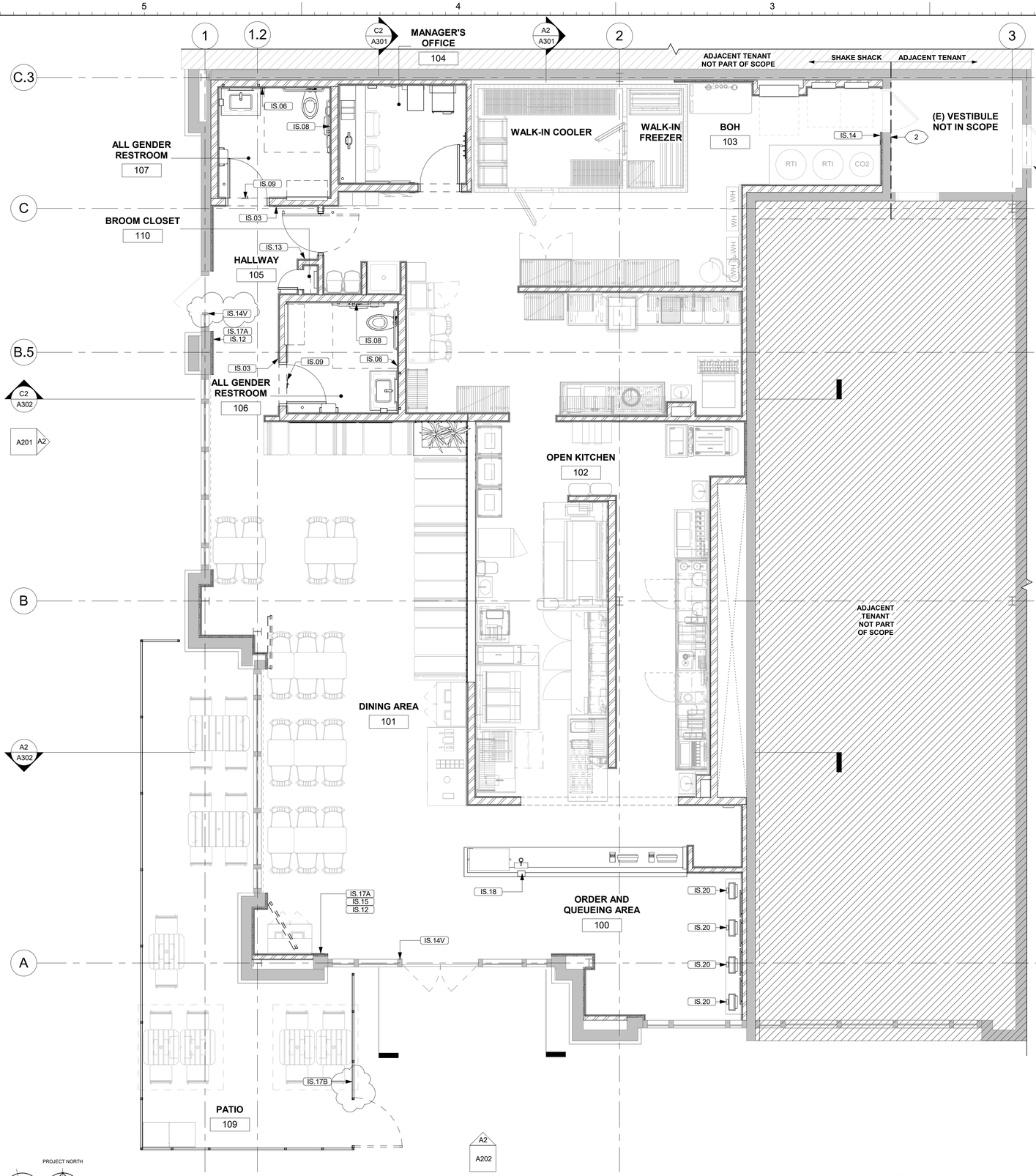
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SHEET NAME:
FURNITURE PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A104



GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
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0 KEYNOTES

1. EXISTING DOOR; NOT IN SCOPE. LL TO PROVIDE DOOR WITHOUT LOCK DURING BUSINESS HOURS AND DESIGNATE THIS DOOR AS A DELIVERY ENTRANCE FOR SHAKE SHACK SPACE.
2. LOCATION OF NEW DOOR BELL, REFER TO ELECTRICAL DRAWINGS.

LANDLORD NOTE

Landlord's Signage Comments:

•Landlord and Tenant responsibilities are as defined in the Lease.
•All modifications to the Landlord approved drawings shall be resubmitted to the Landlord for re-approval. All construction completed without Landlord approval shall be corrected as approved by Landlord at Tenant sole expense.
•Tenant shall be responsible for all permits.
•Plans reviewed and approved by Landlord shall be present on the job site and be accompanied by plans approved for permit. All proposed deviation from the Landlord approved plans shall be numbered and clouded on the plans, and then resubmitted by the Tenant to the Landlord for re-approval prior to any fabrication and / or construction changes taking place in the field.
•Approval of Tenant's signage documents by the Landlord does not release the Tenant and or Tenant's contractors from complying with the lease agreement and all authorities having jurisdiction (AHJ) including but not limited to local, state, national, and mall criteria, acts, codes, and other requirements.
•All Landlord comments on this set of drawings shall apply to the entire document set, even if not repeated on every sheet.
•Tenant's signage contractor is responsible to comply with all Mall Rules and Regulations and as instructed on site by Mall Operations Team.
•Tenant's signage contractor is required to check in with Landlord's Mall Operations Team prior to the start of Tenant construction.
•All damage and / or downtime to Landlord's property or other tenant's property during construction (i.e. mall flooring, bulkhead, neutral piers, etc.) shall be repaired to "like-new" condition and reimbursed at Tenant's sole expense.
•All Landlord equipment, component, and / or services feeding other tenant(s) that are existing in the space shall remain visible and accessible to the Landlord. Tenant shall install access panels as required to maintain access and shall be labeled to properly identify systems. Tenant shall coordinate location with Mall Operations Team.
•The sign and its system of components and devices shall be UL approved and labeled, separately grounded, and in compliance with NEC, UL, and authorities having jurisdiction (AHJ) including but not limited to local , state, national, and mall criteria, acts, codes, and other requirements.

•All signage transformers shall be exterior grade and concealed within the signage or located remotely concealed from view. Transformer noise shall NOT be audible from within the center.
•LED lamping is preferred for all signage illumination and maybe required by Landlord's Design Criteria and / or authorities having jurisdiction (AHJ); neon tubing is strictly prohibited. Auxiliary signage, posters, and / or advertising banners are prohibited in "Design Control Zone", including but not limited to hours of operation, open signs, advertising, and DBA signs.
•All illuminated storefront entry lights, show window lights, and show window receptacles shall be separately circuited and controlled by a time switch allowing 7-day / 24-hour programming. System shall be programmed for illumination during mall business hours and shall be coordinated with the Mall Operations Team.
•The sign and its system of components shall be securely fastened and concealed behind tenant's storefront or building façade. Interior Sigange Applications:
•Box or Cabinet signs will only be approved for interior application if they are recessed and flush with the storefront.
•Interior storefront signage shall be separately circuited and controlled by a time switch allowing 7-day / 24-hour programming.

Exterior Signage Applications:
•Prior to installation of exterior signage, the sign installer shall be required to place a template on the storefront indicating the sign placement & light location(s), where applicable, and approved by Mall Operations Team prior to installation.
•Exterior signage shall be manufactured from exterior grade materials, having semi-glass or matte finish, and be waterproof. All attachment systems shall be concealed stainless steel and all building penetrations shall be sealed with exterior grade systems.
•The sign and its system of components shall be securely fastened and concealed behind tenant's storefront or building façade.
•All exterior illuminated storefront signage shall be separately circuited and controlled by a photocell.
•All related roof work, including parapet walls, shall be done by Landlord's required roofing contractor, at Tenant's sole expense. Coordinate all work with Mall Operations Team.

TACTILE SIGNAGE

TAG NO.	QTY.	ITEM	MANUFACTURER	MODEL NO.	RESPONSIBILITY		COMMENTS
					FURNISH	INSTALL	
IS.03	2	RESTROOM SIGNAGE	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.06	2	NO SMOKING / HAND WASH SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.08	2	'WHOA THERE' SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.09	2	LOCK IT UP' SIGN	PATTISON ID	TBD	O	O	NOT USED
IS.12	2	'NO SMOKING' SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.13	1	'EMPLOYEES ONLY' SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.14	1	EXIT SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.14 V	2	EXIT SIGN VERTICAL	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.15	1	OCCUPANCY SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.17A	2	'NO ALCOHOL BEYOND' SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.17B	1	'NO ALCOHOL BEYOND' SIGN RAIL	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.18	1	FILTERED WATER SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION
IS.20	4	KIOSK BRAILLE SIGN	PATTISON ID	TBD	O	O	SEE PLAN FOR LOCATION

NOTES:
1. COORDINATE ALL FINAL SIGNAGE QUANTITIES & LOCATIONS WITH OWNER/OWNER'S VENDOR.
2. SEE SHEET A404 FOR TACTILE SIGNAGE DIAGRAMS.

TACTILE SIGNAGE PLAN A2
SCALE: 1/4" = 1'-0"

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STORE NO:
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REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
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STATE OF FLORIDA
ZACHARY BRIAN SHIRK
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REGISTERED ARCHITECT
08/28/2026

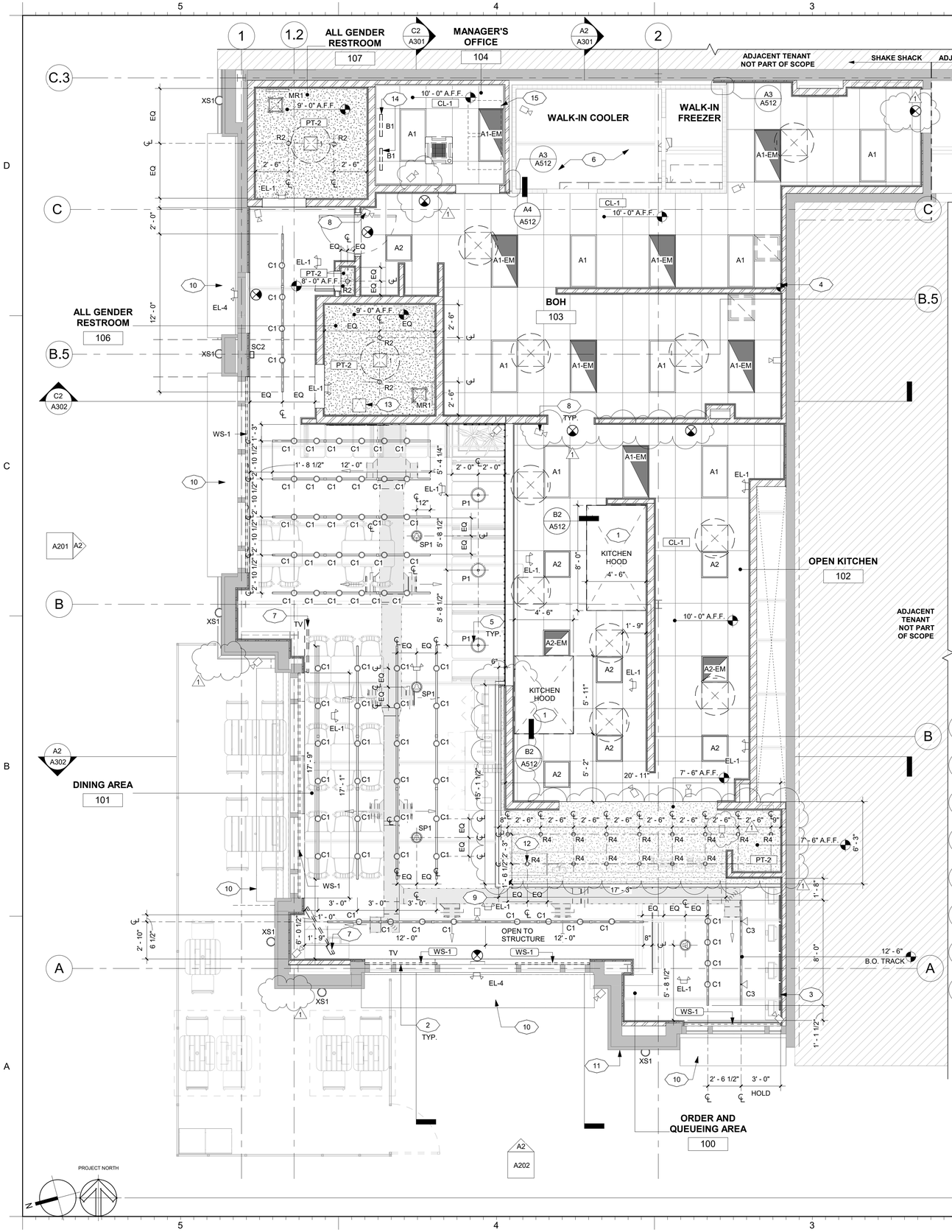
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SHEET NAME:
TACTILE SIGNAGE PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A105



REFLECTED CEILING PLAN

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

A2

CEILING LEGEND

SYMBOL	DESCRIPTION
XX-X	CEILING TYPE/FINISH TAG
	GWB CEILING
	LAY-IN CEILING
	OPEN TO STRUCTURE
	AIR SUPPLY/RETURN (REFER TO MECHANICAL DRAWINGS)
	SENSORIZED & MOTORIZED AIR DIFFUSER
	ACCESS HATCH (COORDINATE LOCATION)
	EMERGENCY LIGHT FIXTURE (REFER TO ELECTRICAL DRAWINGS)
	EXIT SIGN (REFER TO ELECTRICAL DRAWINGS)
	LEASE BOUNDARY

NOTE:
1. REFER TO SHEET A601 FOR FINISH SCHEDULE

LANDLORD NOTE

Reflected Ceiling Plan Comments:
•If not already existing, tenant must provide a sealed partition above the storefront to separate the Common Area ceiling from the tenant's space. (Shall be rated if required by code and all penetration shall comply and be labeled with the required NFPA rating.)
•Nothing is permitted to be attached to, suspended from, or penetrate Landlord's structure, floor deck, or roof deck. You may attach, non-destructively, to or suspend from the top chord of the joist or the structural steel which exists above the tenant space. When attaching to landlord's structure, do NOT drill, weld, screw, or shoot into structure. Alternative methods of attachment ONLY, nothing to damage landlord's base building structure. Tenant shall provide signed and sealed structural drawings, by a structural engineer with legally active registration as indicated by all jurisdictional requirements, for all structural modifications for Landlord records.
•Any Landlord equipment, component, and / or service feeding other tenant(s) that is existing in the space must remain visible and accessible to the Landlord. Tenant shall install access panels as required to maintain access. Access panels shall be label to properly identify system, coordinate with Mall Operations.
•SIMON requires all tenants to use Landlord's required contractor for all sprinkler work. Refer to Sprinkler Comments for further requirements.

Security Camera Comments:
•Security equipment must be installed within the Premises; cameras and/or security equipment are not permitted on the exterior of the Premises unless approved in writing by Landlord. However, in cases where Landlord approves exterior cameras or equipment, the cameras or equipment should be positioned as to limit viewing area and shall capture images of the Tenant's doorways only and shall not capture images outside of the Premises. In cases where a Tenant may have an approved patio area, all cameras or equipment shall be installed and operated so as to capture only the approved patio and no common area.
•All equipment, installation methods and locations must be approved by Landlord in writing prior to installation.
•No signal shall be emitted outside the Premises.
•Absolutely no distribution, electronically or otherwise, of captured image or video to any third party other than Landlord upon request.
•Security cameras, vision panels, or "bubbles" shall not be visible to public view in the design control zone or on patios from the common area.

GENERAL NOTES

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0 KEYNOTES

1. KITCHEN HOOD, REFER TO MECHANICAL AND FOOD SERVICE DRAWINGS FOR LOCATION AND INFORMATION.
2. ROLL-A-SHADE AT STOREFRONT, TYPICAL - REFER TO SHEET A602 FOR INFORMATION.
3. WALL MOUNTED MENU BOARDS.
4. ACT GRID STARTING POINT.
5. DESIGN INTENT IS FOR PENDANTS TO BE CENTERED ABOVE THE TABLE BELOW. CONFIRM PLACEMENT ONCE FURNITURE IS INSTALLED.
6. WALK-IN COOLER CEILING & LIGHTING BY KITCHEN CONTRACTOR, GC TO PROVIDE NECESSARY POWER AND INSTALL LIGHTING PROVIDED BY KEG; REFER TO E-SHEETS AND K-SHEETS.
7. NEW CEILING MOUNTED 55" TV. TV'S AND BRACKETS ARE OWNER FURNISHED AND INSTALLED. POWER, DATA, AND BLOCKING TO BE BY GC.
8. INTERIOR SECURITY CCTV CAMERAS FURNISHED AND INSTALLED BY OWNER'S VENDOR. TYPICAL. SEE E-SHEET.
9. FINISH LEVEL 5.
10. (E) AWNING. GC IS RESPONSIBLE FOR RE-SKINNING THE AWNINGS - SW GARDEN GROVE.
11. EXISTING DOWNSPOUT
12. DESIGN INTENT IS FOR PENDANTS TO BE CENTERED ABOVE THE APP SHELF BELOW. CONFIRM PLACEMENT ONCE FURNITURE IS INSTALLED.
13. CEILING ACCESS PANEL.
14. PLUG IN OFFICE LIGHT FIXTURE UNDER SHELVES BY GC; REFER TO ENLARGED MANAGERS OFFICE PLAN FOR MORE INFORMATION.
15. TRANSFORMERS MOUNTED ABOVE.

LIGHT FIXTURE LEGEND

TYPE	SYMBOL	QTY	DESCRIPTION
A1		8	2'X4' LED TROFFER
A1-EM		7	2'X4' LED TROFFER; EMERGENCY
A2		7	2'X2' LED TROFFER
A2-EM		2	2'X2' LED TROFFER, EMERGENCY
B1		2	UNDERCABINET LED @ MANAGER'S OFFICE
C1		75	TRACK HEAD
C3		2	TRACK HEAD
MR1		2	ILLUMINATED MIRROR (REFER TO A601 FOR FINISH SCHEDULE)
R2		5	4" RECESSED LED DOWNLIGHT
R4		15	MINI LED GIMBAL
P1		3	PENDANT LIGHT
SC2		1	INTERIOR WALL SCONCE
XS1		6	EXTERIOR WALL SCONCE
SP		4	INTERIOR SPEAKER
SP2		2	NOT USED OR SPEAKER
-		7	EXIT SIGN, GREEN LETTER COLOR
EL-1		7	EMERGENCY LIGHT
EL-4		2	EMERGENCY LIGHT EXTERIOR
-		16	SECURITY CAMERA
WS-1		5	ROLL-A-SHADE

NOTE:
1. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
2. FOR ANY SUSPENDED FIXTURES, VERIFY LENGTH OF CABLE REQUIRED (PRIOR TO PURCHASE) TO ACHIEVE BOTTOM-OF-FIXTURE HEIGHT

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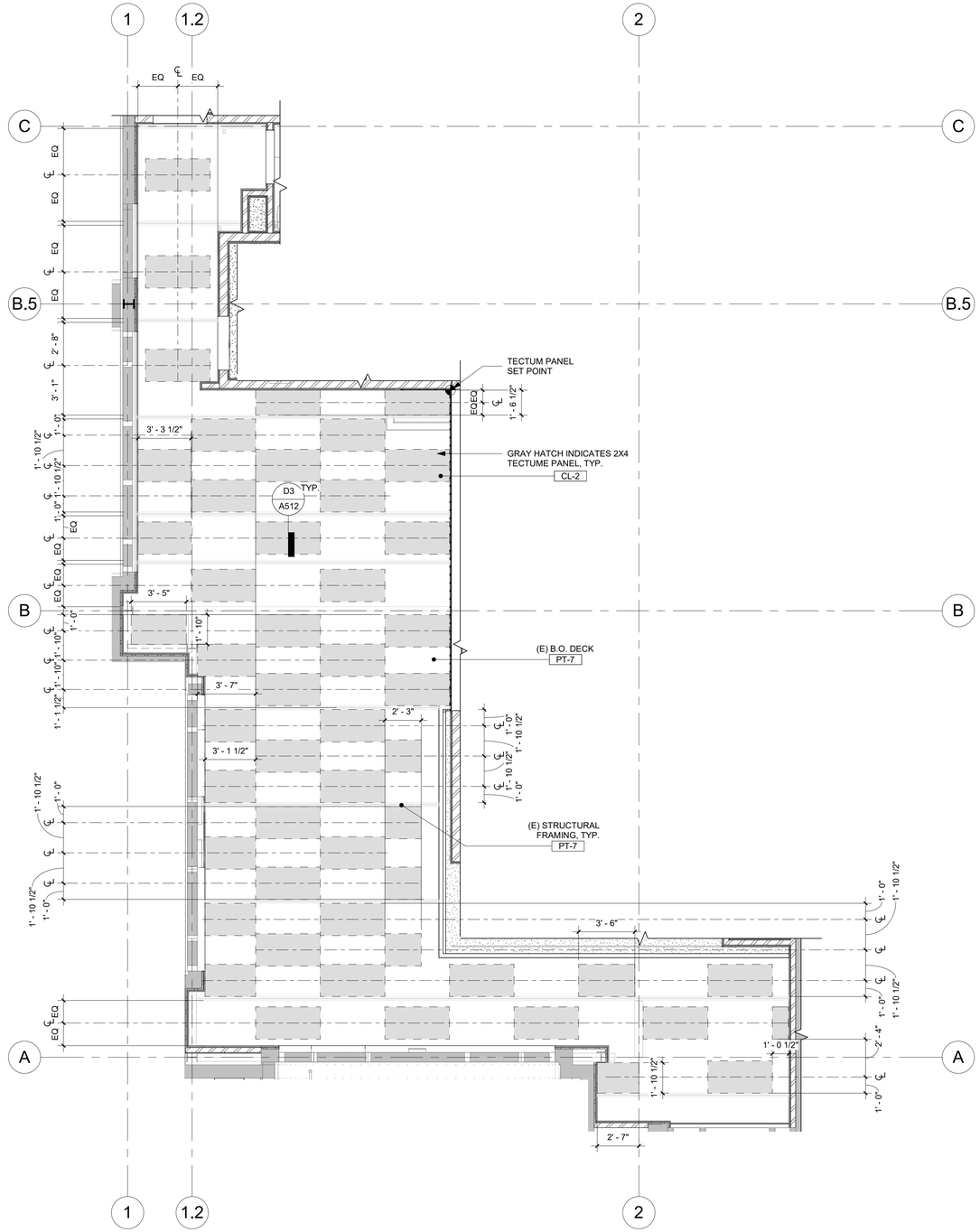
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SHEET NAME:
REFLECTED CEILING PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A106



50% COVERAGE FOR FOH TECTUM PANELS C-2 FINAL LAYOUT TO BE CONFIRMED WITH SHAKE SHACK. GC TO TRIM AROUND STRUCTURAL ELEMENTS AS REQUIRED.

LAYOUT MAY DIFFER FROM EXISTING STRUCTURE, CONFIRM WITH ARCHITECT.

CONFIRM COVERAGE RECOMMENDATION AND COORDINATE PANEL LAYOUT WITH ARCHITECT PRIOR TO INSTALLATION.

PROJECT NORTH

TECTUM PANEL PLAN A2

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

GENERAL NOTES

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LANDLORD NOTE

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•Nothing is permitted to be attached to, suspended from, or penetrate Landlord's structure, floor deck, or roof deck. You may attach, non-destructively, to or suspend from the top chord of the joist or the structural steel which exists above the tenant space. When attaching to landlord's structure, do NOT drill, weld, screw, or shoot into structure. Alternative methods of attachment ONLY, nothing to damage landlord's base building structure. Tenant shall provide signed and sealed structural drawings, by a structural engineer with legally active registration as indicated by all jurisdictional requirements, for all structural modifications for Landlord records.
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23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

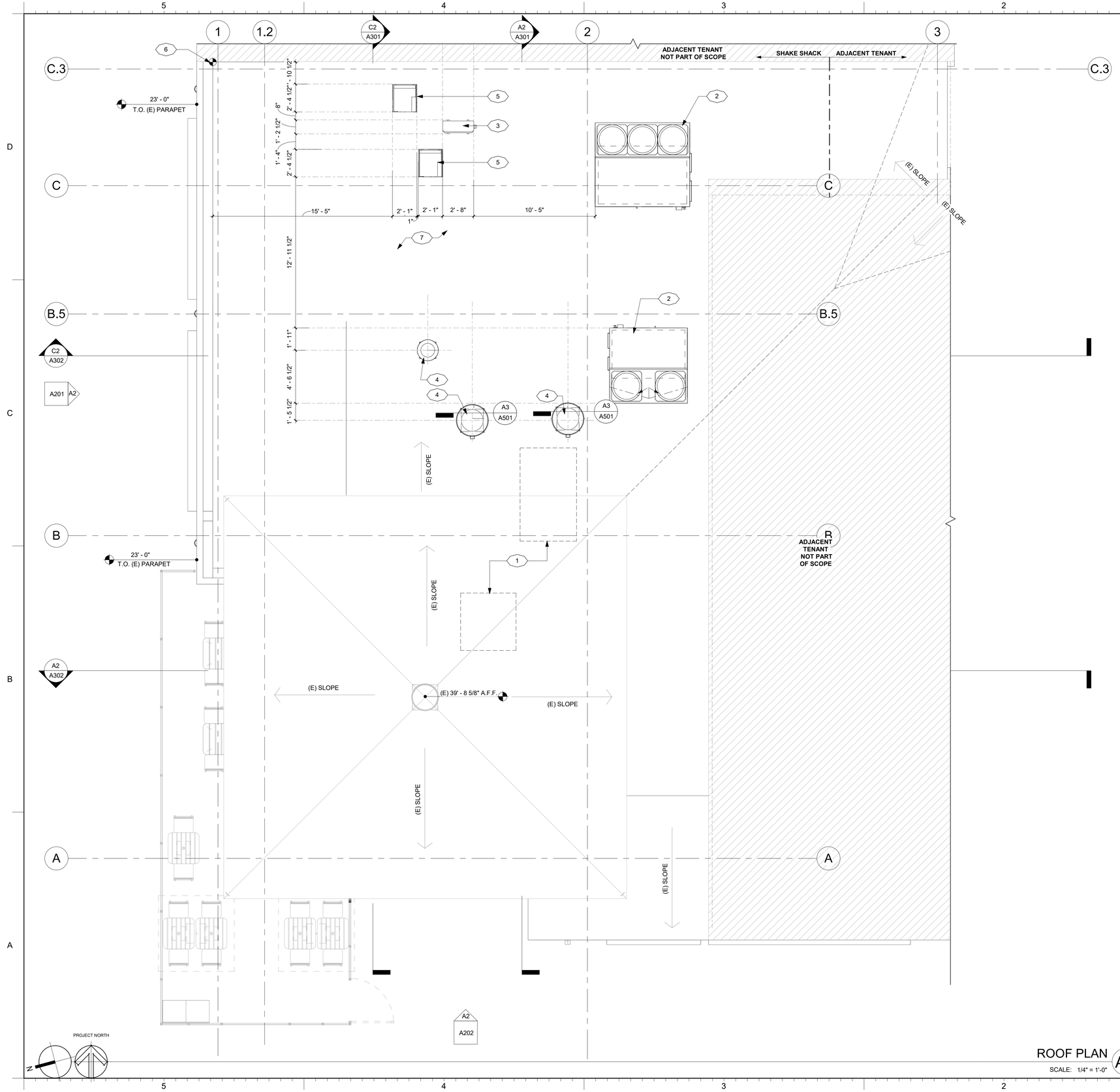
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SHEET NAME:
TECTUM PANEL PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A107



ROOF PLAN A2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

0 KEYNOTES

1. DASHED LINE INDICATES KITCHEN HOOD BELOW.
2. NEW RTU. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION. ROOF PENETRATIONS FOR NEW UNITS TO BE VERIFIED IN FIELD WITH EXISTING ROOF STRUCTURE.
3. NEW AIR-SOURCE HEAT PUMP. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
4. NEW EXHAUST FAN. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
5. GC TO COORDINATE CRICKETS AT NEW MECHANICAL CURBS; MATCH EXISTING TYPE ROOF SUBSTRATE AND ROOF FINISH
6. DIMENSION STARTING POINT.
7. (E) ROOF TO BE PATCHED AND REPAIRED AS REQUIRED FOR INSTALLATION OF NEW UNITS.

LANDLORD NOTE

NOTE:
ALL ROOF WORK SHALL BE COORDINATED IN ADVANCE WITH MAIL OPS TEAM AND PERFORMED BY LANDLORD'S DESIGNATED ROOFER. CONTACT PROPERTY MANAGEMENT FOR PREFERRED VENDOR CONTACT INFORMATION

ROOF TOP EQUIPMENT COMMENTS:
•ROOF EQUIPMENT, INCLUDING BUT NOT LIMITED TO HVAC EQUIPMENT, KITCHEN EQUIPMENT, DUCTS, AND PIPING SHALL BE SHOWN ON A ROOF PLAN TO BE INCLUDED IN TENANT'S DRAWINGS SUBMISSION, SHALL NOT BE VISIBLE FROM THE OUTER RING ROAD OR FROM MALL SKYLIGHTS, LOCATED WITHIN THE ROOF AREA OF THE PREMISES AND MINIMUM OF 5'-0" FROM THE VERTICAL PLANE OF ANY DEMISING PARTITION LOCATED, AND SHALL BE COORDINATE WITH THE MALL OPERATIONS TEAM PRIOR TO THE START OF ANY WORK. EQUIPMENT SCREENS OR SCREEN WALLS MAYBE REQUIRED AND SHALL BE APPROVED IN WRITING BY LANDLORD UNDER SEPARATE COVER.
•TENANT SHALL PROVIDE A STRUCTURAL ENGINEER EVALUATION OF THE EXISTING CONSTRUCTION / STRUCTURE AND DETERMINES THAT IT IS SUFFICIENT FOR THE ADDITIONAL LOADS OF ALL NEW ROOF TOP EQUIPMENT IN ACCORDANCE WITH THE BUILDING CODE THAT HAS BEEN ADOPTED BY THE AUTHORITIES HAVING JURISDICTION (AHJ) AT TENANT'S SOLE EXPENSE. STRUCTURAL DETAILS ARE TO INCLUDE REFERENCE OF APPLICABLE BUILDING CODE(S), EXISTING BUILDING LOADS, AND ADDITIONAL LOADS THAT WILL BE ADDED TO THE STRUCTURE AND ANY REINFORCING THAT IS REQUIRED. STRUCTURAL DETAILS ARE TO BE SIGNED, SEALED, AND SUBMIT TO THE LANDLORD FOR THEIR RECORDS BY A LICENSED STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION IN THE STATE IN WHICH THE PROJECT IS LOCATED. LANDLORD RESERVE THE RIGHT TO HAVE S 3RD PARTY ENGINEER REVIEW TENANT'S DESIGN AND MAY REQUIRE TENANT TO PROVIDE DOCUMENTATION BY A 3RD PARTY INSPECTOR TO VERIFY THAT STRUCTURAL INSTALLATION HAS BEEN INSTALLED CORRECTLY.
•ROOF EQUIPMENT REQUIRING DECK PENETRATION SHALL BE SET ON A FACTORY SUPPLIED CURB AND MUST EXTEND A MINIMUM OF 12" ABOVE HIGHEST ROOF MATERIAL. RE-USE OF EXISTING CURBS OR THE USE OF CURB ADAPTERS IS STRICTLY PROHIBITED. TENANT SHALL RE-SLOPE ROOF TO MAIN PROPER DRAINAGE AND PROVIDE ROOFING, FLASHING, AND WATERPROOFING FOR INSTALLATION OF NEW CURB PER LANDLORD'S CRITERIA TENANT'S SOLE EXPENSE.

•ALL CONDENSATION, ELECTRICAL, AND DUCTWORK SHALL BE SET INSIDE THE PERIMETER OF THE CURB. CONDENSATE SHALL DRAIN INTO AN INTERIOR FLOOR DRAIN OR MOP SINK WITHIN THE PREMISES. DAYLIGHTING CONDENSATE LINES DIRECTLY ONTO THE ROOF, DOWNSPOUT OR ROOF DRAIN IS STRICTLY PROHIBITED.
•TENANT SHALL PROVIDE "ROOF TRAFFIC / WALKWAY PADS" AROUND ALL ROOF TOP EQUIPMENT AND SHALL INDICATE LOCATION OF PADS ON A ROOF PLAN TO BE INCLUDED IN TENANT'S DRAWINGS SUBMISSION. COORDINATE FINAL LOCATION, MATERIAL, AND INSTALLATION OF PADS WITH THE MALL OPERATIONS TEAM PRIOR TO THE START OF ANY WORK
•TENANT SHALL LABEL ALL ROOF TOP EQUIPMENT INDICATING: TENANT NAME, SPACE NUMBER, AND EQUIPMENT IDENTIFICATION (RTU-1, EF-1) PER LANDLORD'S DESIGN CRITERIA.
•EQUIPMENT THAT UTILIZES CONDENSER COILS SHALL BE EQUIPPED WITH HAIL GUARDS.
•LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

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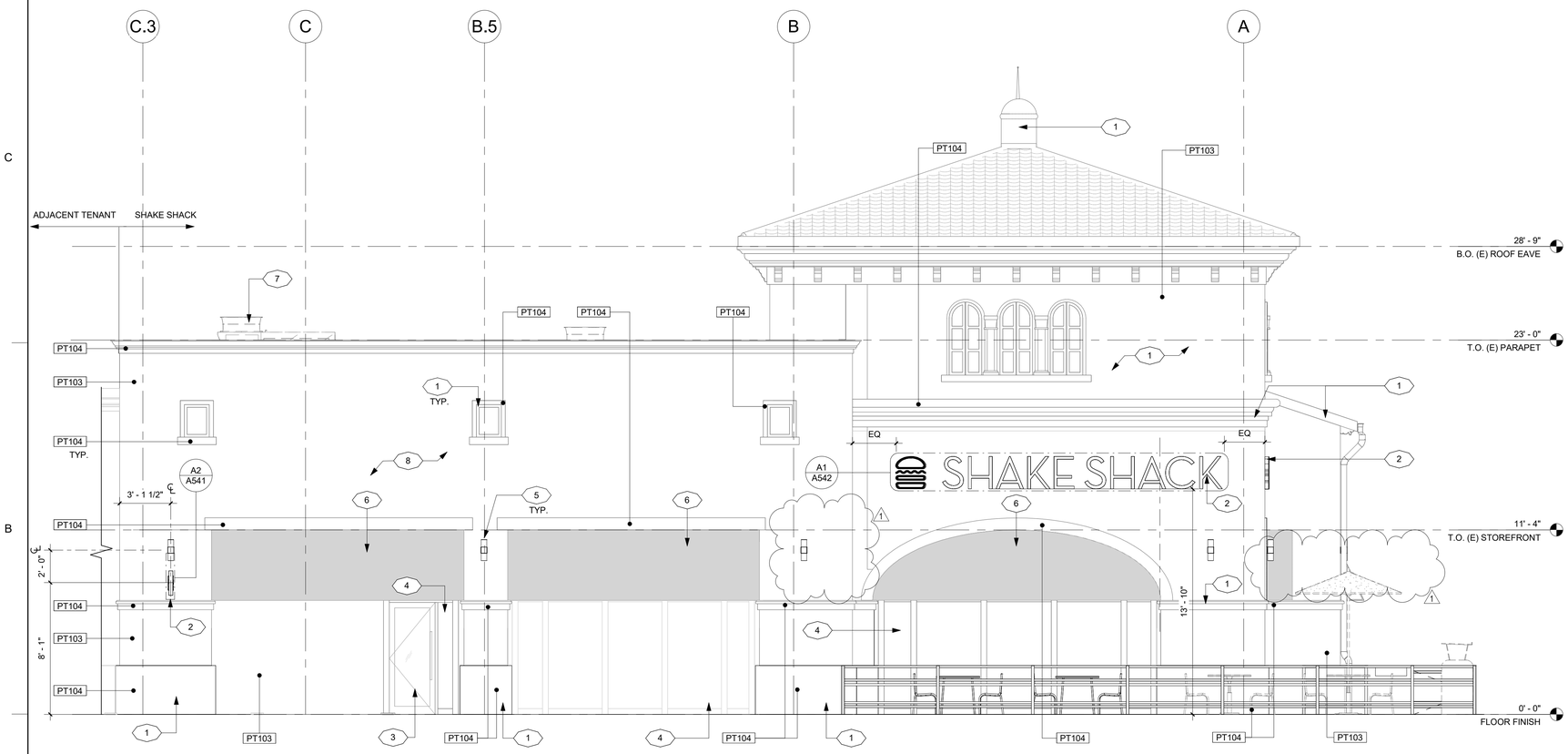
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SHEET NAME:
ROOF PLAN

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A151



WEST EXTERIOR ELEVATION A2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
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4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

EXTERIOR ELEVATION NOTES

A. ALL SIGNAGE TO BE UNDER SEPARATE PERMIT AND SUBMITTAL, TYPICAL.

0 KEYNOTES

1. (E) FINISHES TO REMAIN, PATCH AND REPAIR AS NEEDED.
2. PROPOSED LOCATION OF NEW EXTERIOR SIGNAGE SHOWN FOR REFERENCE ONLY. SIGNAGE WILL BE SUBMITTED UNDER SEPARATE PERMIT. GC. TO PROVIDE POWER & BLOCKING AS REQUIRED.
3. (E) STOREFRONT DOOR & FRAMING TO REMAIN, G.C. TO PAINT SW 7069 IRON ORE; REFER TO DOOR SCHEDULE
4. (E) STOREFRONT TO REMAIN, G.C. TO PAINT SW 7069 IRON ORE
5. NEW EXTERIOR WALL-MOUNTED SCONCE FIXTURE. REFER TO RCP AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
6. (E) AWNING. GC IS RESPONSIBLE FOR RE-SKINNING THE AWNINGS - SW GARDEN GROVE.
7. NEW ROOF MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS.
8. EXISTING FINISH WITH NEW PAINT COLOR. REFER TO FINISH SCHEDULE FOR MORE INFORMATION.

LANDLORD NOTE

STOREFRONT ELEVATION / SECTION COMMENTS:

•IF NOT ALREADY EXISTING, TENANT MUST PROVIDE A SEALED PARTITION ABOVE THE STOREFRONT TO SEPARATE THE COMMON AREA CEILING FROM THE TENANT'S SPACE. (SHALL BE RATED IF REQUIRED BY CODE AND ALL PENETRATION SHALL COMPLY AND BE LABELED WITH THE REQUIRED NFPA RATING.)

•NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK, OR ROOF DECK. YOU MAY ATTACH, NON-DESTRUCTIVELY, TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHING TO LANDLORD'S STRUCTURE, DO NOT DRILL, WELD, SCREW, OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY, NOTHING TO DAMAGE LANDLORD'S BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS, BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS, FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.

•ANY LANDLORD EQUIPMENT, COMPONENT, AND / OR SERVICE FEEDING OTHER TENANT(S) THAT IS EXISTING IN THE SPACE MUST REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. TENANT SHALL INSTALL ACCESS PANELS AS REQUIRED TO MAINTAIN ACCESS. ACCESS PANELS SHALL BE LABEL TO PROPERLY IDENTIFY SYSTEM, COORDINATE WITH MALL OPERATIONS.

•WHEN STOREFRONT GRILLES ARE PERMITTED BY LANDLORD, THEY MUST BE FLOOR SUPPORTED AND SHALL ATTACH TO LANDLORD'S STRUCTURE FOR LATERAL SUPPORT ONLY. WHEN IN OPEN POSITION, BOTTOM RAIL OF GRILLE MUST BE FULLY RECESSED INTO CEILING TREATMENT ABOVE. NO WELDING TO STRUCTURE IS PERMITTED.

•SLAT WALL MAY NOT BE USED WITHIN THE FIRST 5'-0" OF THE SPACE.

•VERTICAL GLASS JOINTS SHALL BE FRAMELESS BUTT JOINTS.

•PAINTED DRYWALL IS NOT AN ACCEPTABLE STOREFRONT FINISH.

•ANY DAMAGE TO MALL PROPERTY OR ADJACENT TENANTS DURING CONSTRUCTION MUST BE REPAIRED TO MALL SPECIFICATIONS, AT TENANT'S EXPENSE.

•STOREFRONT SIGN MUST BE ON A 7-DAY, 24-HOUR TIME CLOCK. ILLUMINATED SIGNS MUST REMAIN ILLUMINATED DURING ALL MALL HOURS.

•APPROVAL OF THE TENANT'S CONSTRUCTION / DESIGN DOCUMENTS BY THE LANDLORD SHALL NOT CONSTITUTE REVIEW AND APPROVAL OF THE TENANT'S SIGNAGE. SIGNAGE SHOP DRAWINGS MUST BE SUBMITTED UNDER SEPARATE SUBMITTAL FOR LANDLORD REVIEW AND APPROVAL PRIOR TO FABRICATION AND INSTALLATION OF THE SIGN.

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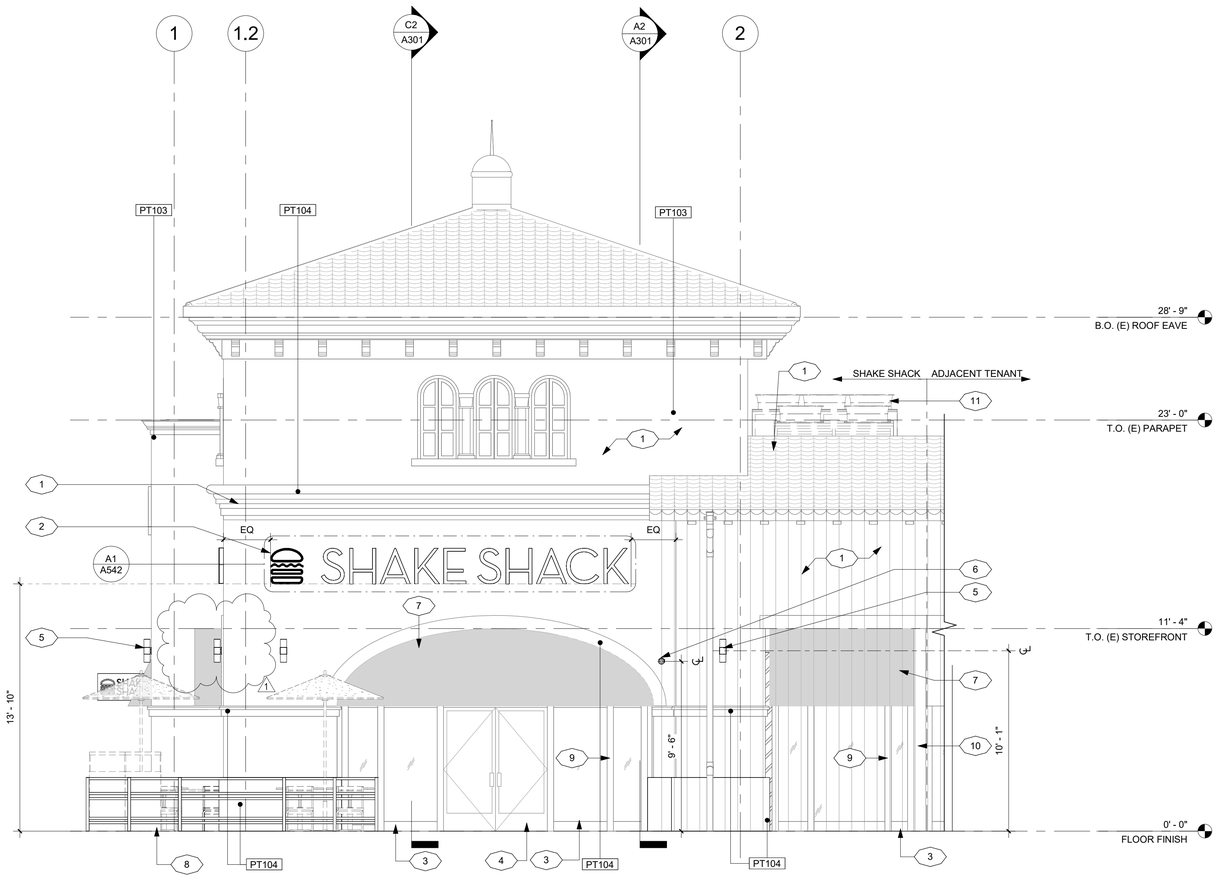
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SHEET NAME:
EXTERIOR ELEVATIONS

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A201



SOUTH EXTERIOR ELEVATION A2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
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5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
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EXTERIOR ELEVATION NOTES

A. ALL SIGNAGE TO BE UNDER SEPARATE PERMIT AND SUBMITTAL, TYPICAL.

KEYNOTES

0

1. (E) FINISHES TO REMAIN, PATCH AND REPAIR AS NEEDED.
2. PROPOSED LOCATION OF NEW EXTERIOR SIGNAGE SHOWN FOR REFERENCE ONLY. SIGNAGE WILL BE SUBMITTED UNDER SEPARATE PERMIT. GC. TO PROVIDE POWER & BLOCKING AS REQUIRED.
3. (E) STOREFRONT TO REMAIN, G.C. TO PAINT SW 7069 IRON ORE
4. (E) STOREFRONT DOOR & FRAMING TO REMAIN, G.C. TO PAINT SW 7069 IRON ORE; REFER TO DOOR SCHEDULE
5. NEW EXTERIOR WALL-MOUNTED SCONCE FIXTURE. REFER TO RCP AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
6. SECURITY CAMERA, SEE E-SHEETS.
7. (E) AWNING. GC IS RESPONSIBLE FOR RE-SKINNING THE AWNINGS - SW GARDEN GROVE.
8. PATIO FURNITURE; REFER TO FURNITURE PLAN FOR MORE INFORMATION.
9. (E) STOREFRONT FRAMING TO REMAIN, G.C. TO PAINT SW 7069 IRON ORE
10. NEUTRAL PIER.
11. NEW ROOF MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS.

LANDLORD NOTE

STOREFRONT ELEVATION / SECTION COMMENTS:

•IF NOT ALREADY EXISTING, TENANT MUST PROVIDE A SEALED PARTITION ABOVE THE STOREFRONT TO SEPARATE THE COMMON AREA CEILING FROM THE TENANT'S SPACE. (SHALL BE RATED IF REQUIRED BY CODE AND ALL PENETRATION SHALL COMPLY AND BE LABELED WITH THE REQUIRED NFPA RATING.)

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•PAINTED DRYWALL IS NOT AN ACCEPTABLE STOREFRONT FINISH.

•ANY DAMAGE TO MALL PROPERTY OR ADJACENT TENANTS DURING CONSTRUCTION MUST BE REPAIRED TO MALL SPECIFICATIONS, AT TENANT'S EXPENSE.

•STOREFRONT SIGN MUST BE ON A 7-DAY, 24-HOUR TIME CLOCK. ILLUMINATED SIGNS MUST REMAIN ILLUMINATED DURING ALL MALL HOURS.

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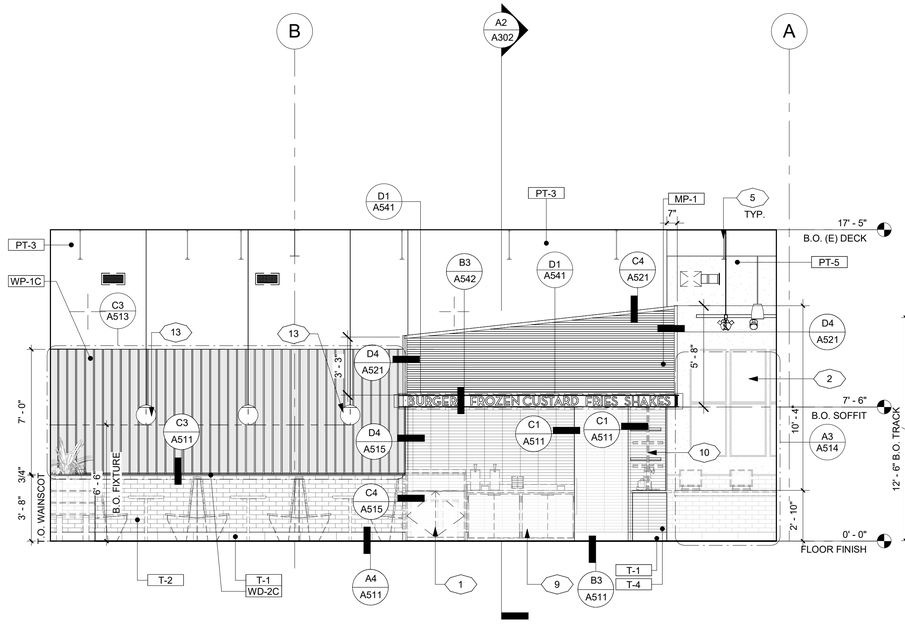
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EXTERIOR ELEVATIONS

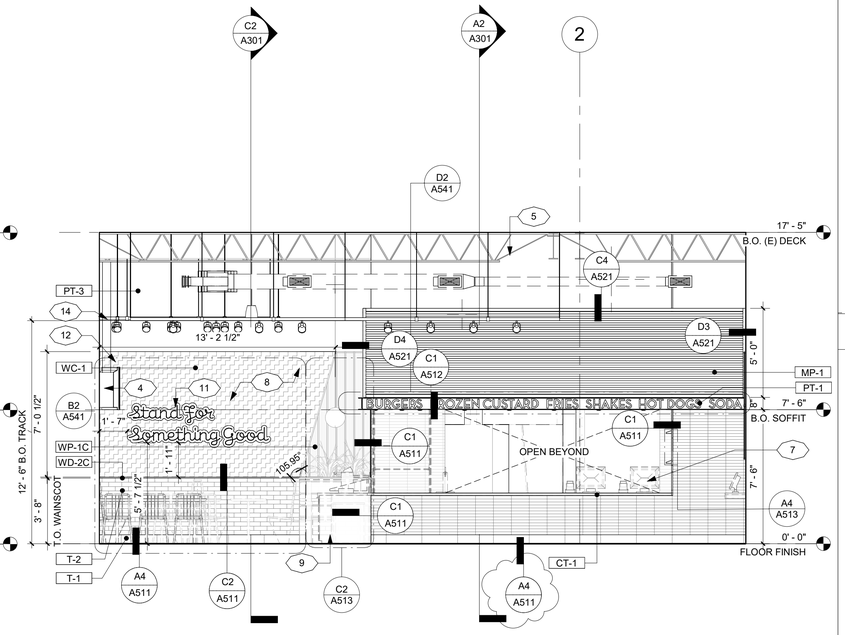
DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A202



INTERIOR ELEVATION C4

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



INTERIOR ELEVATION C2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
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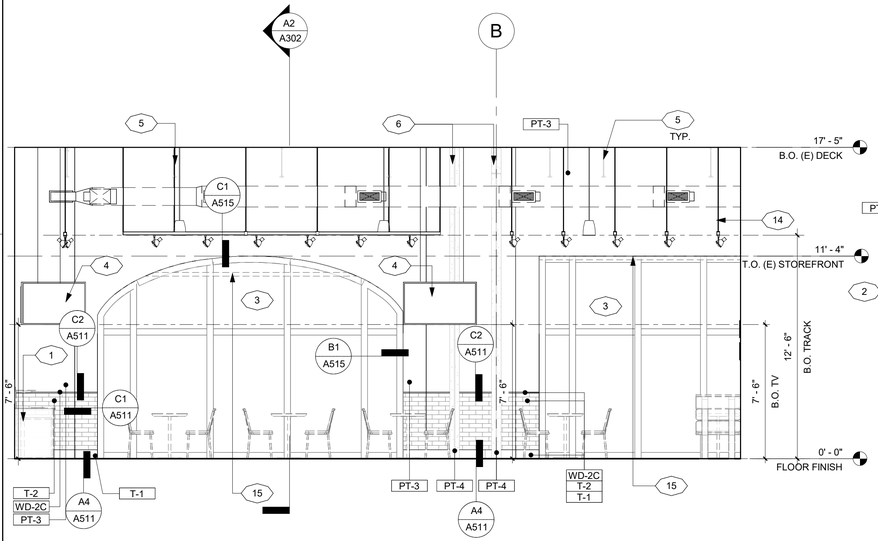
0 KEYNOTES

1. TRASH UNIT, REFER TO FURNITURE PLAN, TYP.
2. WALL MOUNTED MENU BOARDS, GC TO PROVIDE BACKING.
3. (E) STOREFRONT.
4. NEW CEILING MOUNTED 55" TV. TV'S AND BRACKETS ARE OWNER FURNISHED AND INSTALLED. POWER, DATA, AND BLOCKING TO BE BY GC.
5. (E) STRUCTURAL FRAMING. REFER TO STRUCTURAL DRAWINGS.
6. (E) COLUMN TO REMAIN.
7. POINT OF SALE SYSTEM, REFER TO KITCHEN DRAWINGS.
8. VINYL GRAPHIC ARTWORK.
9. CONDIMENT STATION.
10. APP SHELF. REFER TO FURNITURE PLAN.
11. 'STAND FOR SOMETHING GOOD' SIGNAGE BY OWNER'S VENDOR. GC. TO PROVIDE NECESSARY POWER, BLOCKINGAND GROMMETS; REFER TO FINAL SIGNAGE DRAWINGS FOR HOME RUN & POWERLOCATIONS. COORDINATE W/ OWNER'S VENDOR AND E-SHEETS. SFSG SIGN TO BE INSTALLED AFTER WOOD PANEL IS INSTALLED.
12. AREA DESIGNATED FOR VINYL GRAPHIC APPLIED MURAL BY OWNER'S VENDOR, REFER TO INTERIOR ELEVATIONS FOR OVERALL EXTENTS. GC TO PROVIDE A HIGH-QUALITY ACRYLIC LATEX INTERIOR PAINT LEVEL 5 DRYWALL FINISH THAT IS BOTH PRIMED AND PAINTED PT-3. PAINT ON WALLS MUST BE COMPLETELY DRY AND DEGASSED PRIOR TO INSTALL. MANUFACTURER RECOMMENDS THAT PAINT IS DRY 1-2 WEEKS PRIOR TO INSTALL. MANUFACTURER WILL THEN PERFORM A "TAPE TEST" TO ENSURE COMPLIANCE BEFORE INSTALLATION OF VINYL GRAPHIC. VINYL GRAPHIC TO BE APPLIED PRIOR TO INSTALLATION OF SIGNAGE.
13. DESIGN INTENT IS FOR PENDANTS TO BE CENTERED ABOVE THE TABLE BELOW. CONFIRM PLACEMENT ONCE FURNITURE IS INSTALLED.
14. NEW TRACK LIGHT / PENDANT / RECESSED LIGHT ; REFER TO SCHEDULE FOR ADDITIONAL INFORMATION.
15. ROLL-A-SHADE AT STOREFRONT, TYPICAL. REFER TO RCP SHEETS A106 & A602 FOR MORE INFORMATION.

LANDLORD NOTE

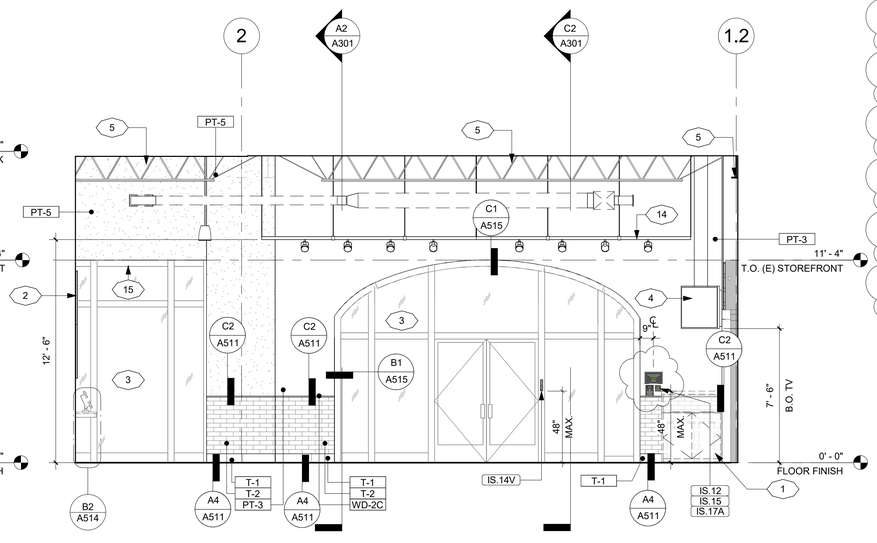
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INTERIOR ELEVATION A4

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



INTERIOR ELEVATION A2

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

zebra

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CONSULTANT LOGO:

STORE NO:

FL, #1794

SHAKE SHACK

COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:

IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

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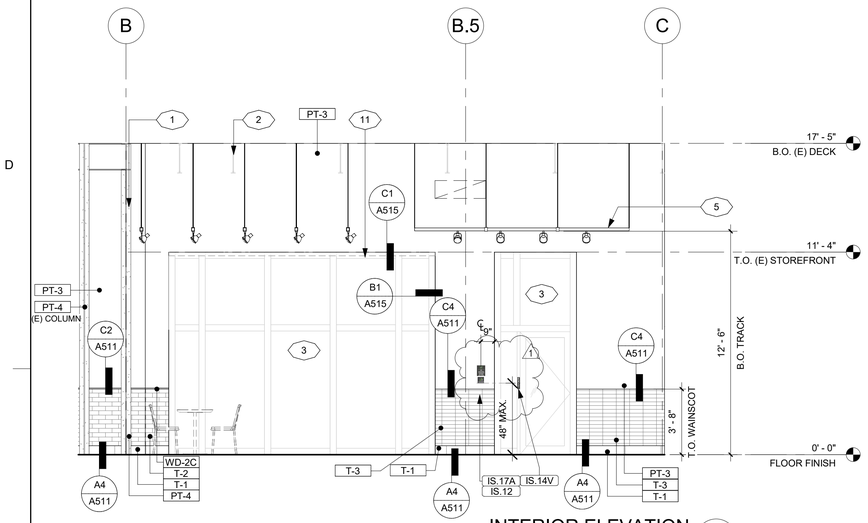
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INTERIOR ELEVATIONS

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

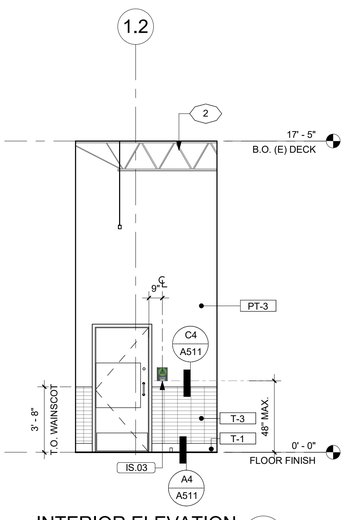
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A211



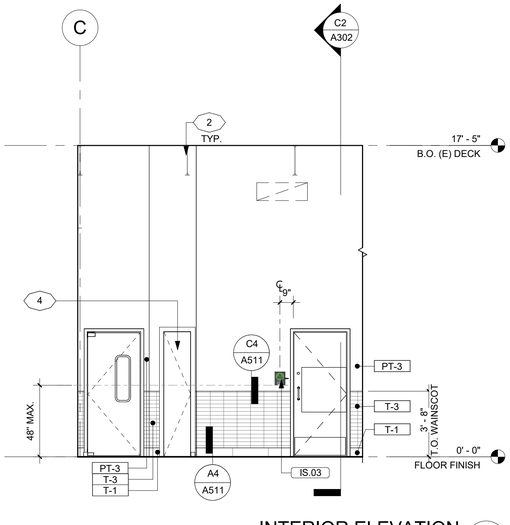
INTERIOR ELEVATION C4

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



INTERIOR ELEVATION C3

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



INTERIOR ELEVATION C2

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

INTERIOR ELEVATION B4

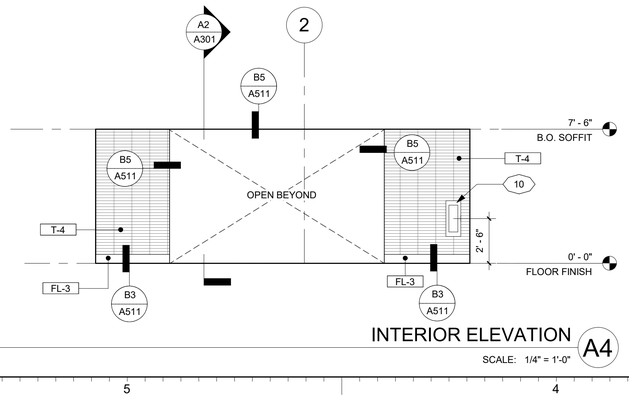
SCALE: 1/4" = 1'-0"

INTERIOR ELEVATION B3

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

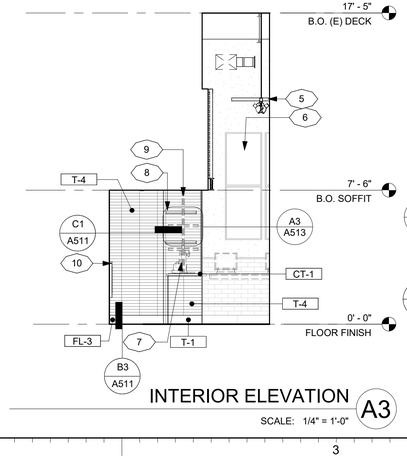
INTERIOR ELEVATION B2

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



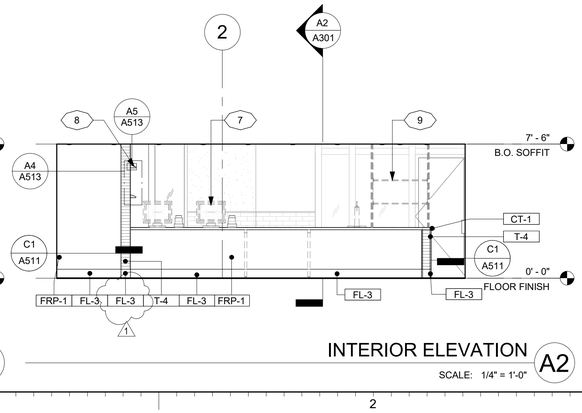
INTERIOR ELEVATION A4

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



INTERIOR ELEVATION A3

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



INTERIOR ELEVATION A2

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0 KEYNOTES

1. (E) COLUMN TO REMAIN.
2. (E) STRUCTURAL FRAMING. REFER TO STRUCTURAL DRAWINGS.
3. (E) STOREFRONT.
4. BROOM CLOSET.
5. NEW TRACK LIGHT / PENDANT / RECESSED LIGHT ; REFER TO SCHEDULE FOR ADDITIONAL INFORMATION.
6. WALL MOUNTED MENU BOARDS.
7. POINT OF SALE SYSTEM, REFER TO KITCHEN DRAWINGS.
8. WINE RACK.
9. APP SHELF. REFER TO FURNITURE PLAN.
10. FIRE EXTINGUISHER CABINET.
11. ROLL-A-SHADE AT STOREFRONT, TYPICAL. REFER TO RCP SHEETS A106 & A602 FOR MORE INFORMATION.

LANDLORD NOTE

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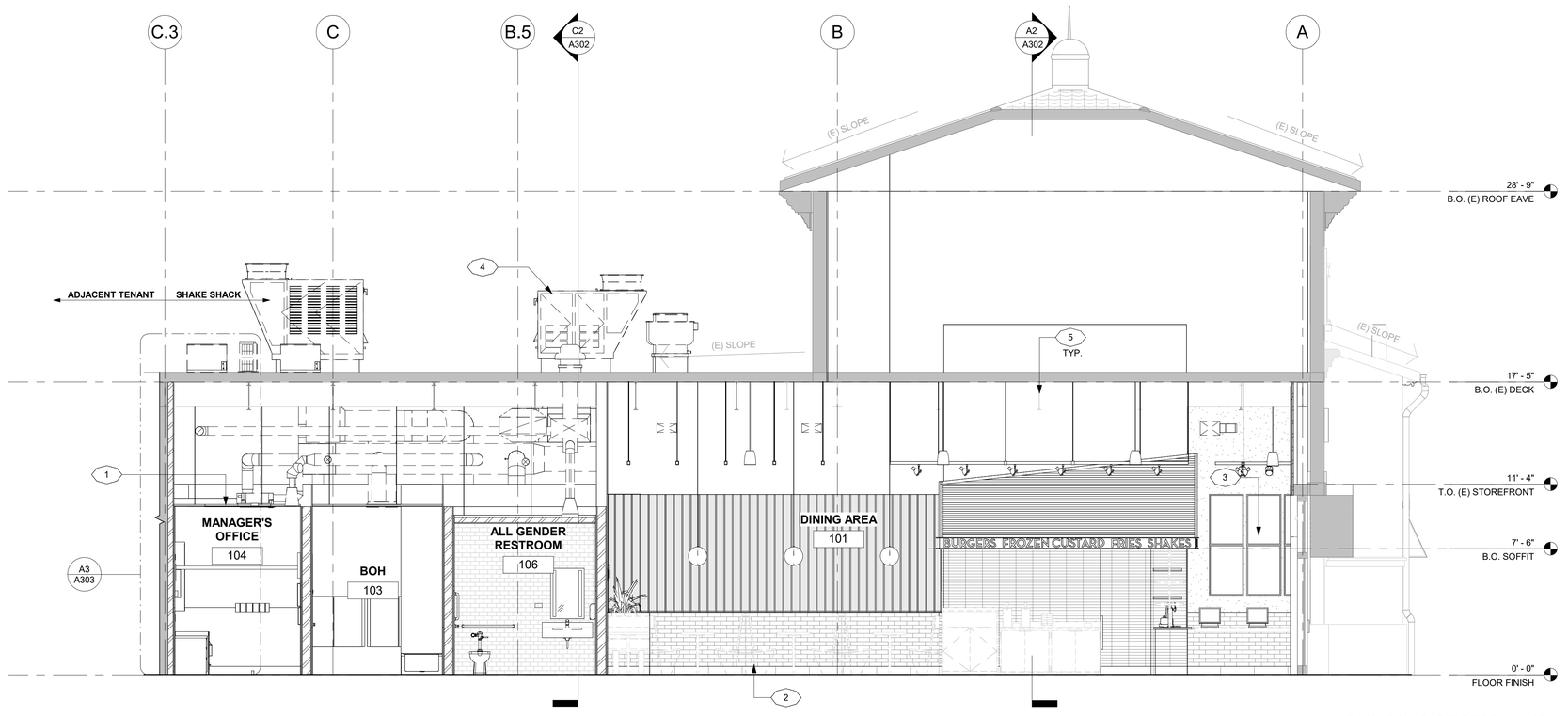
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SHEET NAME:
INTERIOR ELEVATIONS

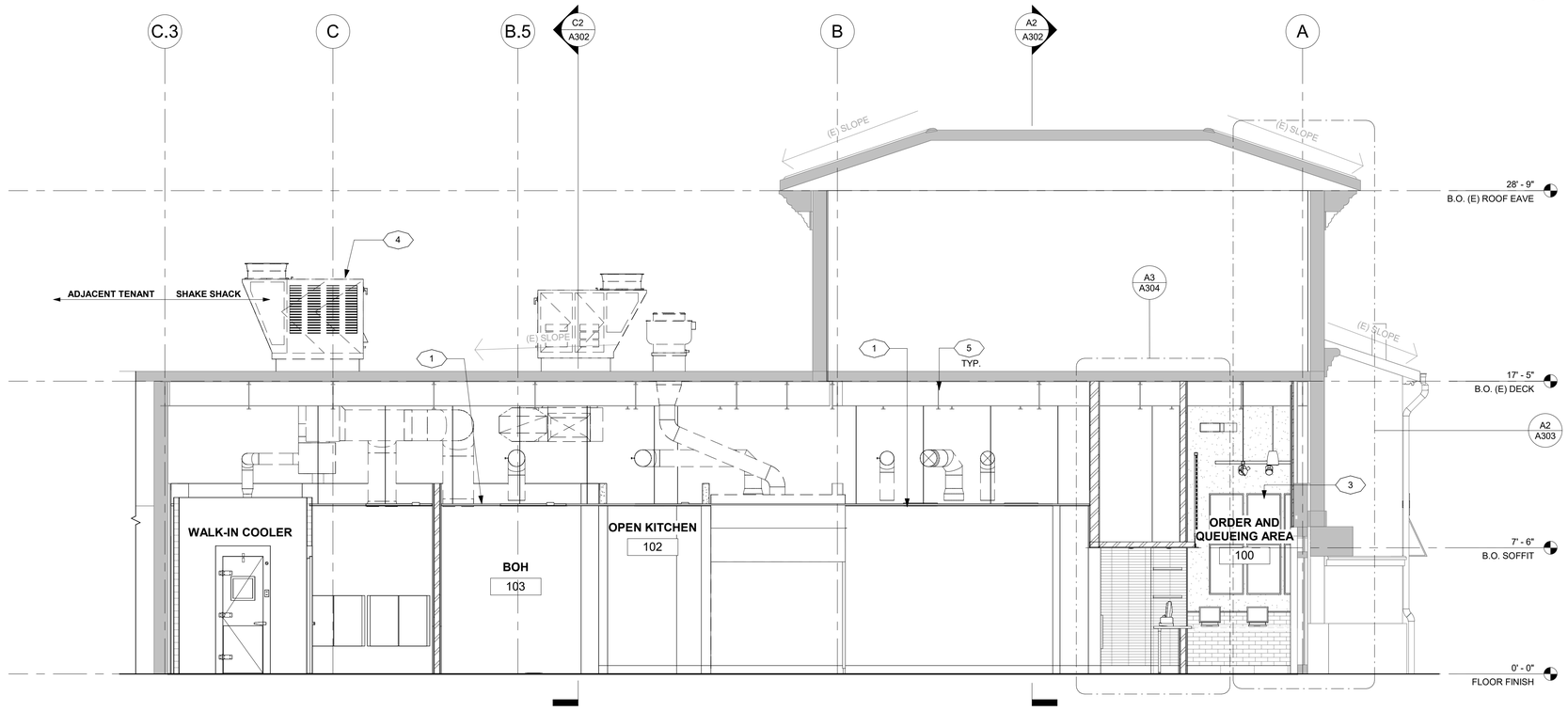
DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A212



BUILDING SECTION C2

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



BUILDING SECTION A2

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

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BUILDING SECTION NOTES

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3. WALL MOUNTED MENU BOARDS, GC TO PROVIDE BACKING AND POWER/DATA
4. NEW ROOF MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS.
5. (E) STRUCTURAL FRAMING. REFER TO STRUCTURAL DRAWINGS.

LANDLORD NOTE

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23181

REVISION

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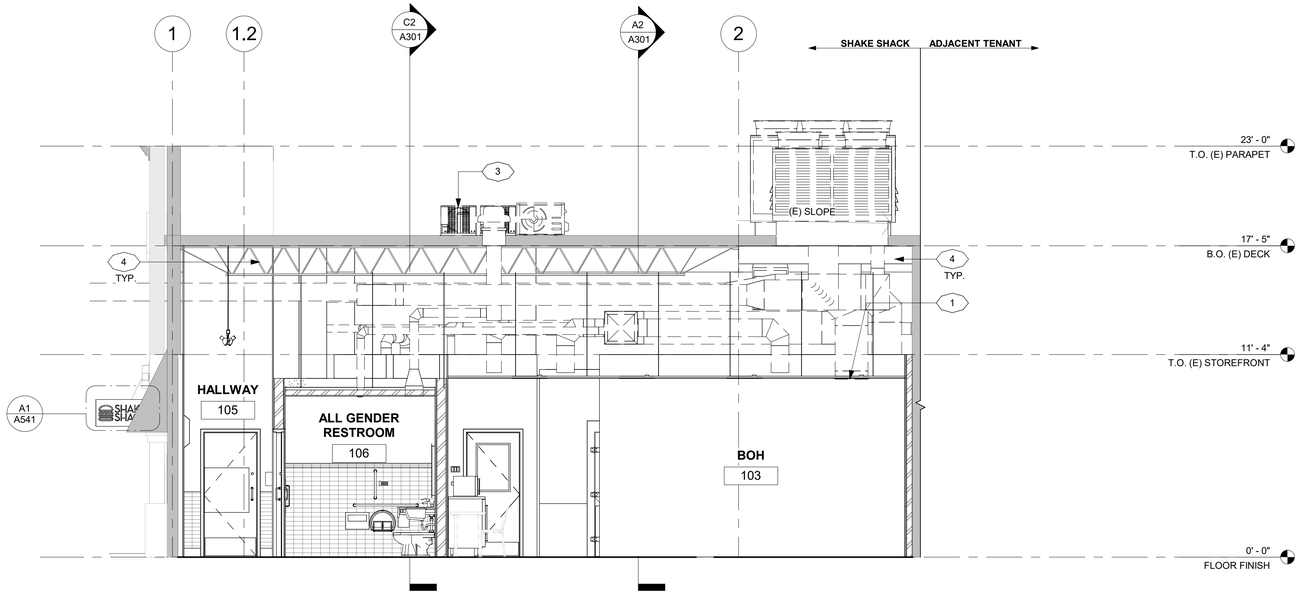
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BUILDING SECTIONS

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

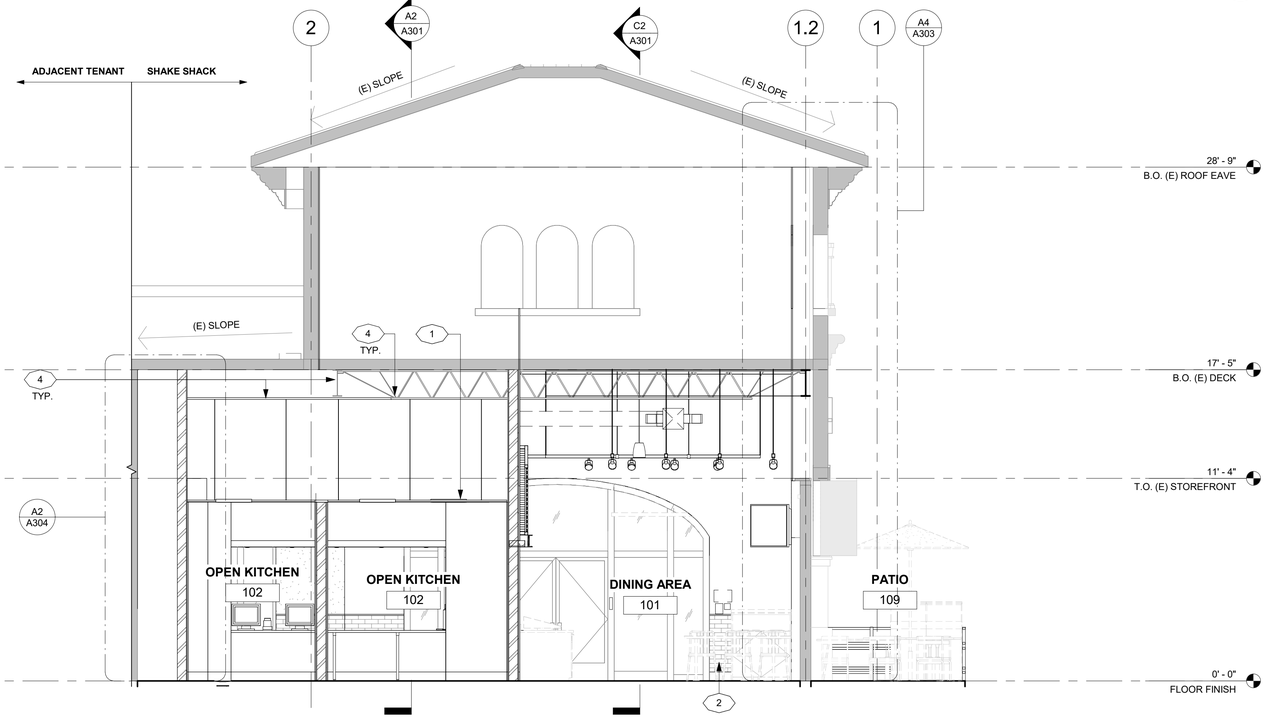
SHEET NO:

A301



BUILDING SECTION C2

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



BUILDING SECTION A2

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

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•SLAT WALL MAY NOT BE USED WITHIN THE FIRST 5'-0" OF THE SPACE.

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REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
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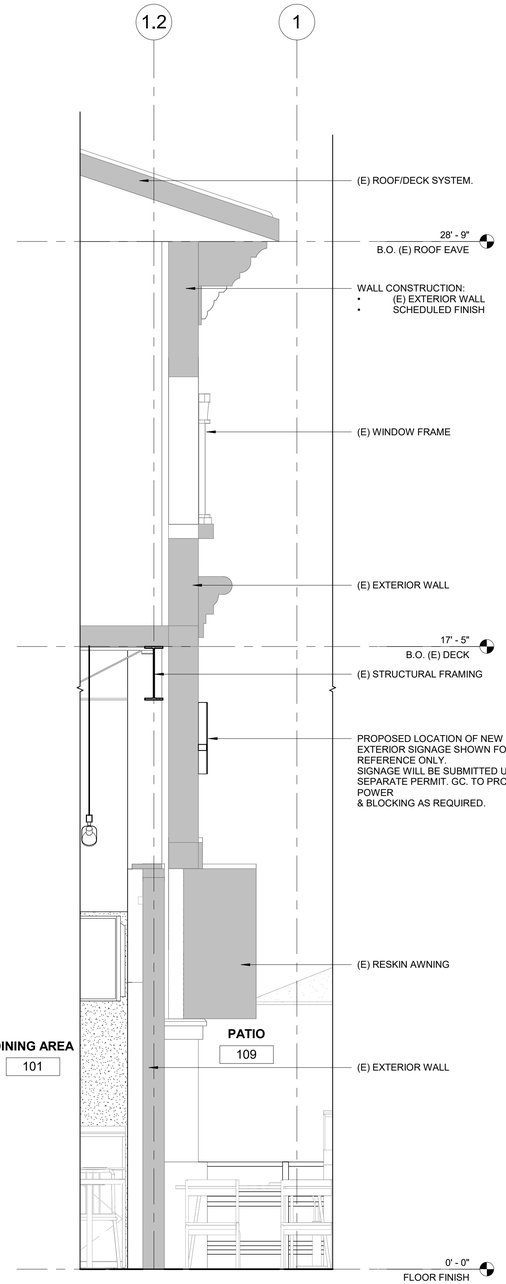
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SHEET NAME:
BUILDING SECTIONS

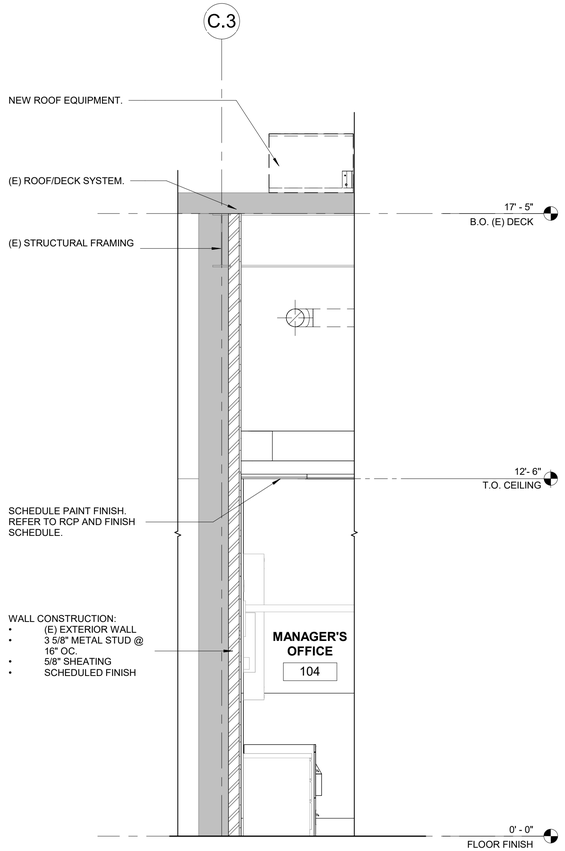
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PROJECT NO: 41354
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SCALE: AS INDICATED

SHEET NO:
A302



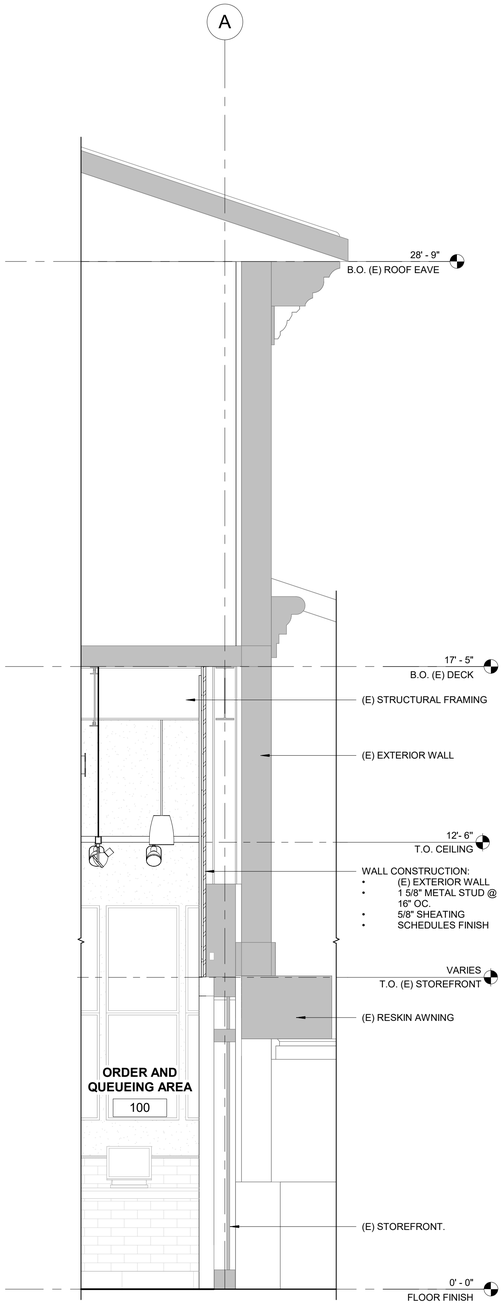
EXTERIOR WALL SECTION A4

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



EXTERIOR WALL SECTION A3

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



EXTERIOR WALL SECTION A2

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

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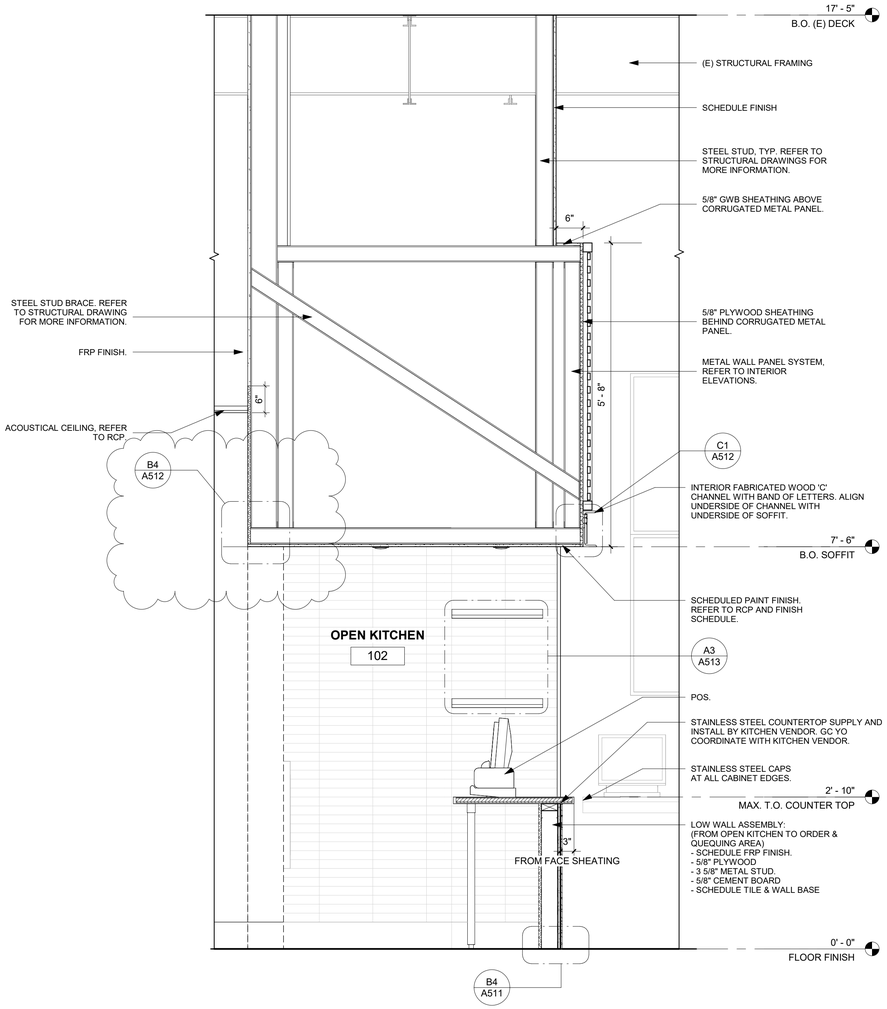
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SHEET NAME:
EXTERIOR WALL SECTIONS

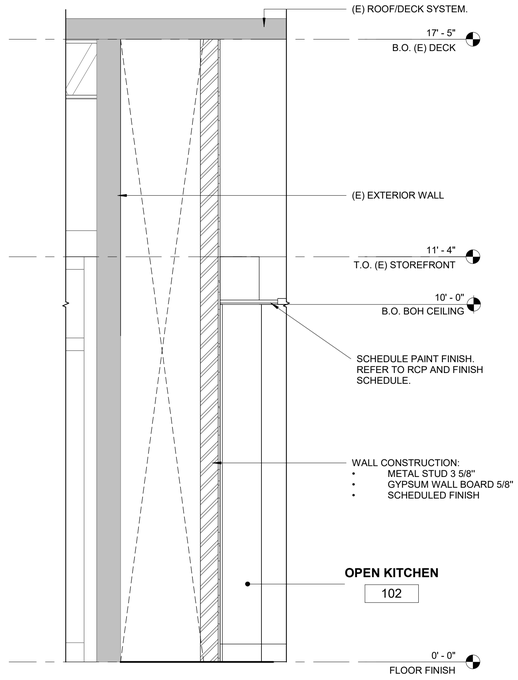
DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A303



SECTION AT FRONT COUNTER A3

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



EXTERIOR WALL SECTION A2

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

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CONSULTANT LOGO:

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REVISION

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STATUS:
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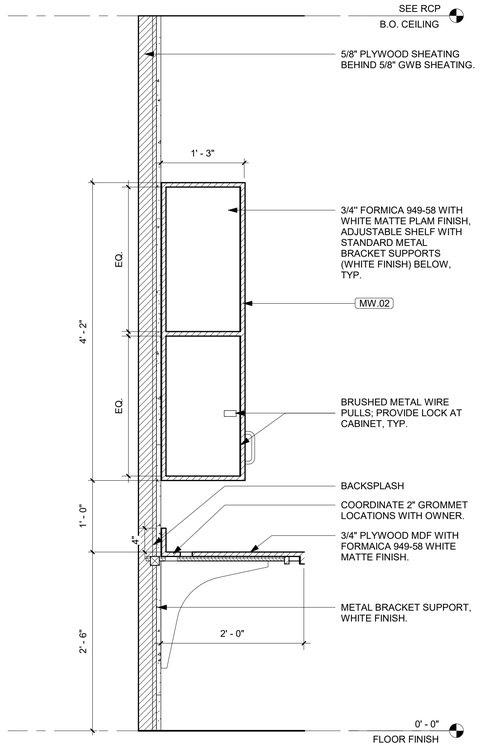
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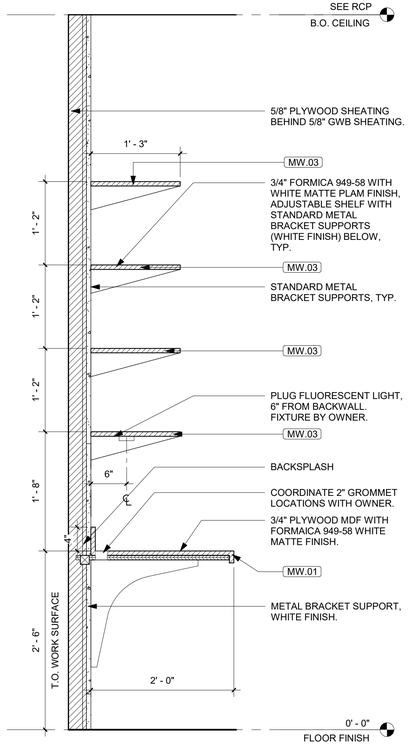
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PROJECT NO: 41354
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SCALE: AS INDICATED

SHEET NO:
A304



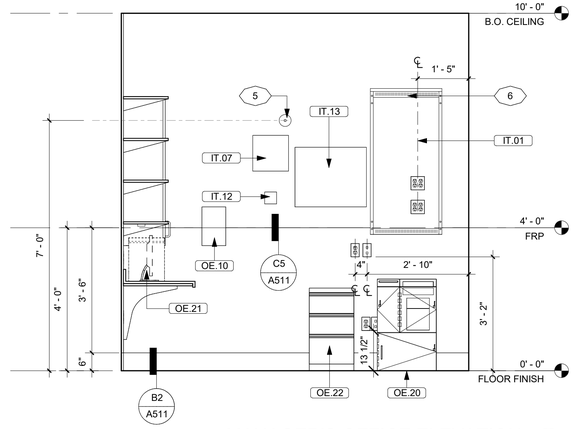
SECTION THROUGH CABINET C4

SCALE: 1" = 1'-0"



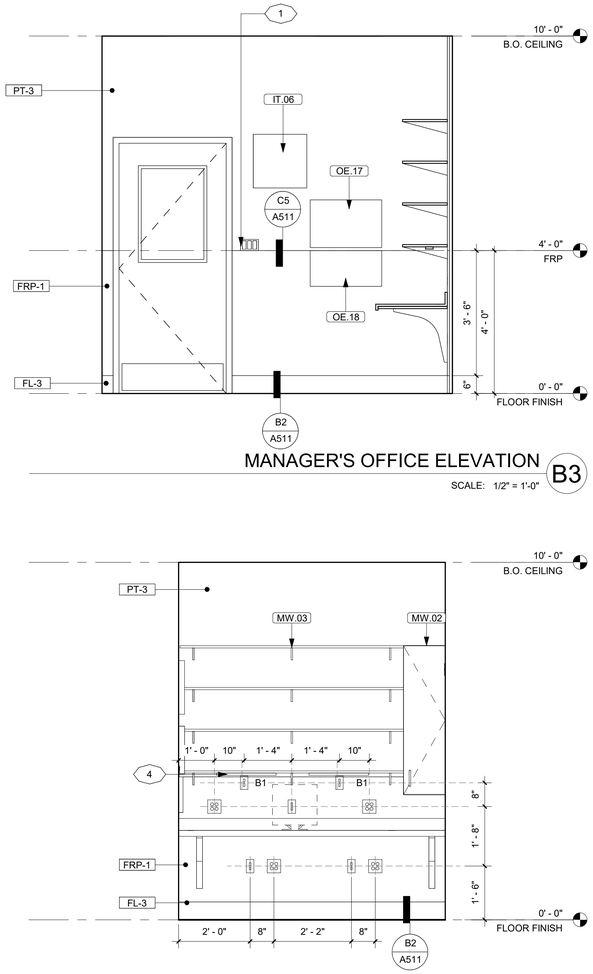
SECTION THROUGH SHELVING A4

SCALE: 1" = 1'-0"



MANAGER'S OFFICE ELEVATION C3

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

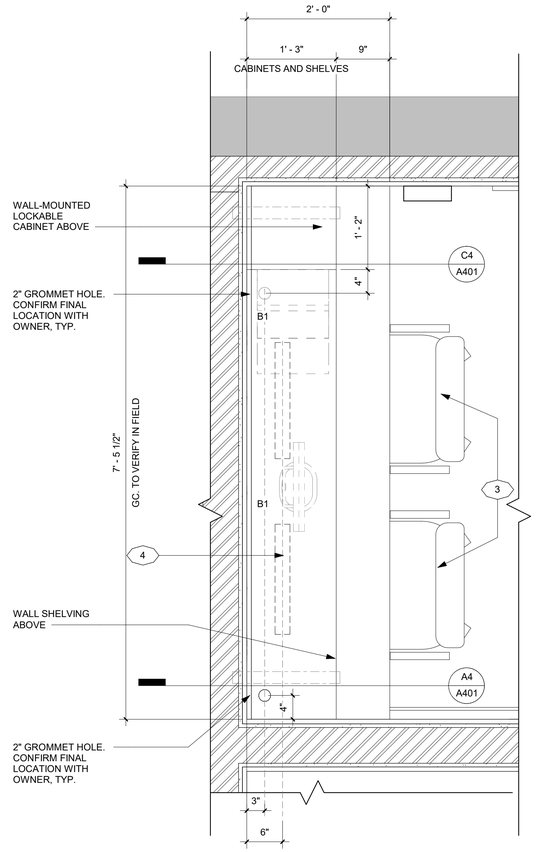


MANAGER'S OFFICE ELEVATION B3

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

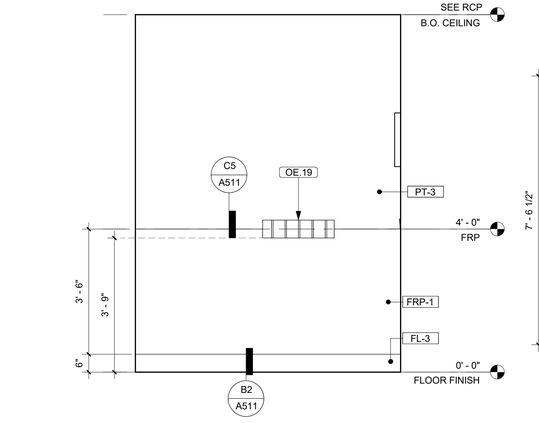
MANAGER'S OFFICE ELEVATION A3

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



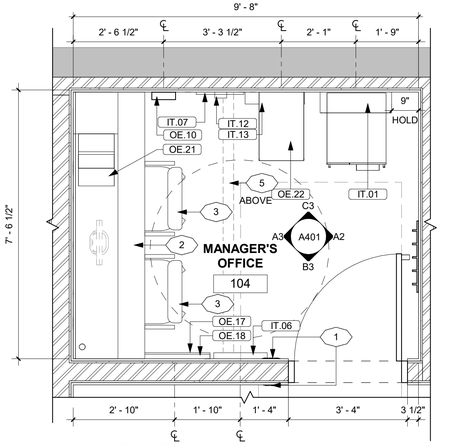
ENLARGED DESK PLAN B2

SCALE: 1" = 1'-0"



MANAGER'S OFFICE ELEVATION A2

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



ENLARGED MANAGER'S OFFICE PLAN A1

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

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SMALLWARES SCHEDULE

TAG #	QTY	ITEM NAME	MANUFACTURER	MODEL/ITEM #	RESPONSIBILITY		NOTES
					FINISH	MFR	
OE.10	1	SPARE KEY LOCKBOX	OFFICE DEPOT	TS822	O	GC	1
OE.17	1	CORK BOARD	CONTAINER STORE	10080705	GC	GC	1&2
OE.18	1	MONTHLY CALENDAR	CONTAINER STORE	10063520	GC	GC	2
OE.19	1	HOOK RACK	CONTAINER STORE	10016305	GC	GC	2
OE.20	1	SAFE	SESAMI	TIDEL S4 TILL STORAGE VAULT	O	O	
OE.21	1	PRINTER	HP	OFFICEJET PRO ALL-IN-ONE / 9010	O	O	
OE.22	1	FILE CABINET	WORKPRO	HID18506 / 884092	O	GC	

IT EQUIPMENT SCHEDULE

TAG #	QTY	ITEM NAME	MANUFACTURER	MODEL/ITEM #	RESPONSIBILITY		NOTES
					FINISH	MFR	
IT.01	1	IT RACK	MIDDLE ATLANTIC PRODUCTS	DWR-24-26	O	O	1
IT.06	1	HVAC CONTROL AREA	-	-	O	O	-
IT.07	1	SECURITY ALARM PANEL	-	-	O	O	-
IT.12	1	THERMOSTAT	VENSTAR	T2900	GC	GC	
IT.13	1	DVR MONITOR	-	-	O	O	1

MILLWORK SCHEDULE

TAG #	QTY	ITEM NAME	MANUFACTURER	MODEL/ITEM #	RESPONSIBILITY		NOTES
					FINISH	MFR	
MW.01	1	MANAGER'S DESK	-	-	GC	GC	1
MW.02	1	LOCKING CABINET	-	-	GC	GC	1
MW.03	4	WALL MOUNTED SHELF	-	-	GC	GC	1

NOTES:
1. PROVIED BACKING IN WALL FOR EQUIPMENT
2. OR EQUIVALENT

RESPONSIBILITY:
GC - GENERAL CONTRACTOR
O - OWNER / OWNER'S VENDOR

0 KEYNOTES

1. LUTRON SYSTEM SWITCHES. REFER TO ELECTRICAL DRAWINGS.
2. PANIC BUTTON BY ADT.
3. CHAIR BY OWNER.
4. PLUG-IN FLUORESCENT LIGHT STRIPS. PROVIDE ELECTRICAL OUTLET @ 44" AFF. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. PRIVACY CURTAIN. GC TO PROVIDE AND INSTALL WALL BRACKETS ONLY. BRACKETS TO BE GATCO 832 WALL FLANGE 2-3/8", CL. OF BRACKET @7'-0" AFF.
6. PANEL BY OWNER'S VENDOR, GC TO PROVIDE POWER AND DATA.

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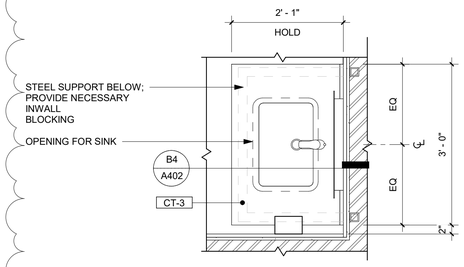
FIELD VERIFICATION:
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SHEET NAME:
ENLARGED MANAGER'S OFFICE PLAN AND ELEVATIONS

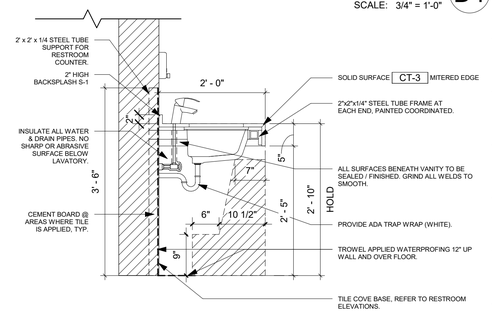
DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:
A401



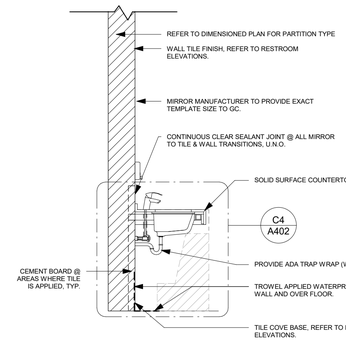
ENLARGED RESTROOM PLAN SINK D4

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



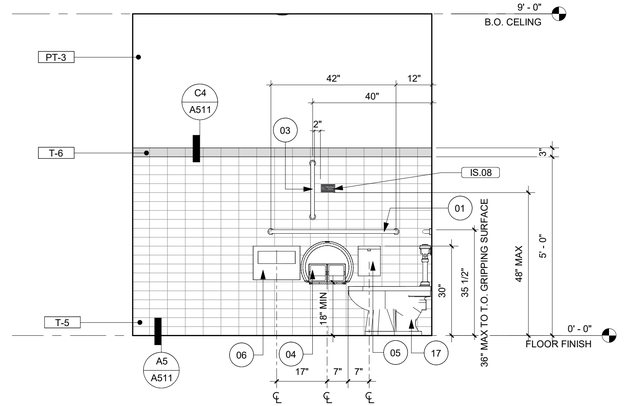
ENLARGED RESTROOM DETAIL C4

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



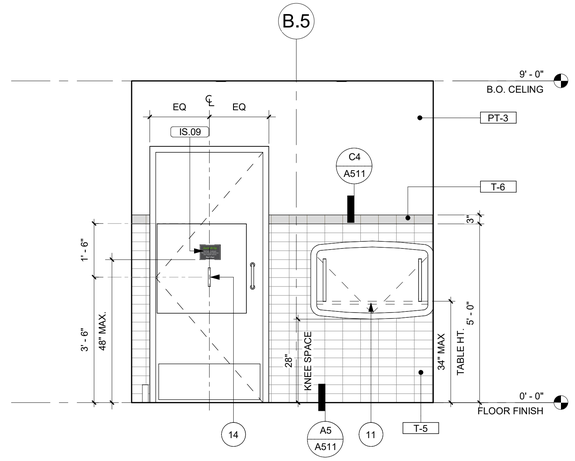
RESTROOM DETAIL B4

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



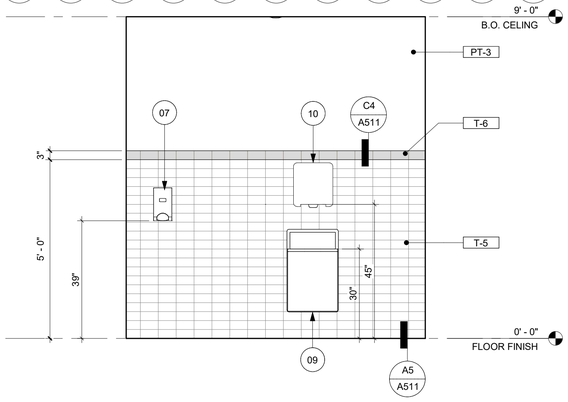
ALL GENDER RESTROOM ELEVATION C3

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



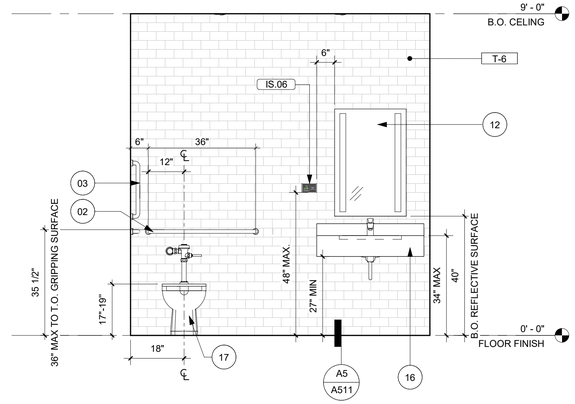
ALL GENDER RESTROOM ELEVATION B3

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



ALL GENDER RESTROOM ELEVATION A4

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



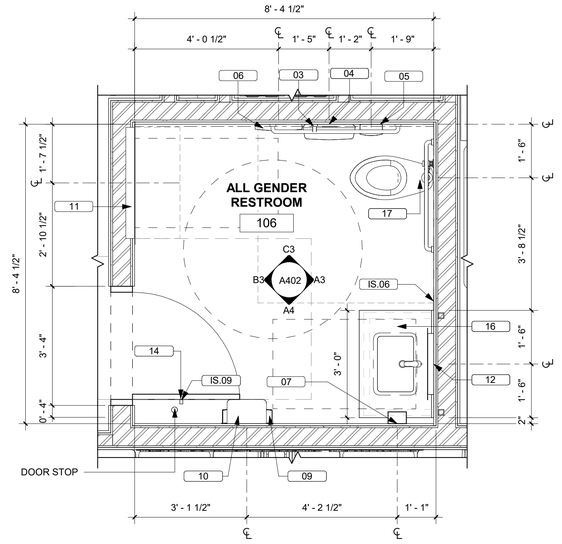
ALL GENDER RESTROOM ELEVATION A3

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

TOILET FIXTURES AND ACCESSORIES

KEY	ACCESSORY TYPE	MANF.	MATERIALS	MODEL	FINISH	MOUNTING	ELECTRICAL	WATER	NOTES	QTY	RESPONSIBILITY	
											FURNISH	INSTALL
01	36" GRAB BAR	BOBRICK	STAINLESS STEEL	B-5806	SATIN S/S	SURFACE (WALL)	-	-	-	2	GC	GC
02	42" GRAB BAR	BOBRICK	STAINLESS STEEL	B-5806	SATIN S/S	SURFACE (WALL)	-	-	-	2	GC	GC
03	18" GRAB BAR (VERTICAL)	BOBRICK	STAINLESS STEEL	B-5806	SATIN S/S	SURFACE (WALL)	-	-	-	2	GC	GC
04	JUMBO BATH TISSUE ROLL DISPENSER	TORK	PLASTIC	554028A	BLACK	SURFACE (WALL/PART)	-	-	-	2	OWNER	GC
05	SANITARY NAPKIN DISPOSAL	BOBRICK	STAINLESS STEEL	B-270	SATIN S/S	SURFACE (WALL/PART)	-	-	-	2	GC	GC
06	SEAT COVER DISPENSER	BOBRICK	STAINLESS STEEL	B-4221	SATIN S/S	SURFACE (WALL)	-	-	-	2	GC	GC
07	SOAP DISPENSER	FIRST MARK	STAINLESS STEEL	53003395	SATIN S/S	SURFACE (WALL)	-	-	-	2	OWNER	GC
08	NOT IN USE	-	-	-	-	-	-	-	-	-	-	-
09	WASTE RECEPTACLE	BOBRICK	STAINLESS STEEL	B-43644	STAINLESS STEEL	RECESSED (WALL)	-	-	-	2	GC	
10	PAPER TOWEL ROLL DISPENSER	TORK	PLASTIC	5511284	BLACK	SURFACE (WALL)	-	-	-	2	OWNER	GC
11	BABY CHANGING TABLE	KOALA CARE	S/S W/ MICROBAN INTERIOR	KB310-311	POLYETHYLENE W/ S/S FLANGE	RECESSED (WALL)	-	-	-	2	GC	GC
12	MIRROR	ARTLINE GROUP	METAL/FROSTED GLASS/GLASS	LM4WGD-2436-3K / 3624-3K	REFER TO FINISH SHEDULE (SHEET A601) FOR SPEC	SURFACE (WALL)	-	-	-	2	GC	GC
13	TOILET PARTITION	METPAT (OR EQUAL)	FP BOTTOM & FP TOP SERIES	FLOOR ANCHORED 1091	SATIN S/S	SURFACE (FLOOR)	-	-	NOTE 5	0	GC	GC
14	COAT HOOK	BOBRICK	STAINLESS STEEL	B-2116	SATIN S/S	SURFACE PARTITION)	-	-	NOTE 4	2	GC	GC
15	URINAL	KOHLER	VITREOUS CHINA	K-4991-ET	WHITE	SURFACE (WALL)	-	-	-	-	GC	GC
	URINAL FLUSH VALVE	KOHLER	BRASS	K-80UM00G20-CP	POLISHED CHROME	-	-	-	-		GC	GC
16	UNDERMOUNT LAVATORY	KOHLER	VITREOUS CHINA	K-2214	WHITE	UNDERMOUNT	-	-	-	2	GC	GC
	LAVATORY FAUCET	SLOAN	-	K-97283-4-CP	-	-	HARDWIRED	0.5 GPM	NOTE 1		GC	GC
17	WATER CLOSET	KOHLER	VITREOUS CHINA	HIGHCLIFF ULTRA K-96057-0	WHITE	-	-	1.28 GPM	-	2	GC	GC
	WATER CLOSET FLUSHING SYSTEM	KOHLER		K-80TM00N10-CP	CHROME	-	-	-	-	2	-	-
	WATER CLOSET SEAT	KOHLER	PLASTIC	K-4731-CA	WHITE	-	-	-	-	2	-	-

NOTES:
1.THE LAVATORY FAUCET REQUIRES A 6 VDC IQ FAUCET BOX MOUNTED ADAPTER.
2.THE WATER CLOSET FLUSH VALVE REQUIRES A HARDWIRED TRANSFORMER. THE MODEL NUMBER IS EL-451.
3.ONLY 1 OF THE 3 WATER CLOSET CARRIERS ARE REQUIRED. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR SELECTING THE PREFFERED CARRIER BASED ON THE SITE REQUIREMENTS.
4.G.C. TO ENSURE INSTALLATION OF ACCESSORIES MEET FLORIDA ACCESSIBILITY STANDARDS.
5.PARTITION DOORS TO HAVE SELF-CLOSING HINGES. DOOR PULLS TO COMPLY WITH 404.2.7 ON BOTH SIDES OF THE DOOR NEAR THE LATCH AS REQUIRED BY 604.8.1.2.
***REFER TO RESPONSIBILITY MATRIX AND VENDOR LIST FOR MORE INFORMATION.
***THIS SCHEDULE INCLUDES BOTH RESTROOMS.



ALL GENDER ENLARGED RESTROOM PLAN A1

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

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PHONE: 480.912.1169 zbr.global

STORE NO:

FL, #1794

SHAKE SHACK

COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:

IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT

08/28/2026

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SHEET NAME:

ENLARGED RESTROOM PLANS & ELEVATIONS

DATE: 06/01/2026

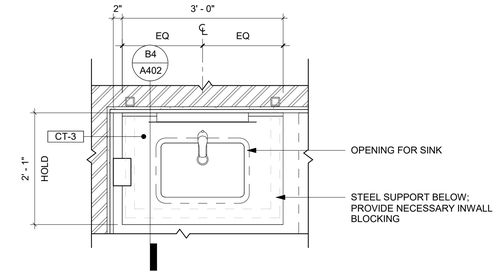
PROJECT NO: 41354

DRAWN: SO

SCALE: AS INDICATED

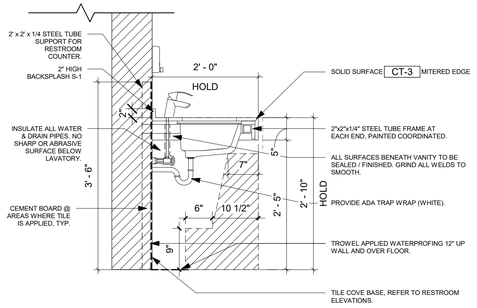
SHEET NO:

A402



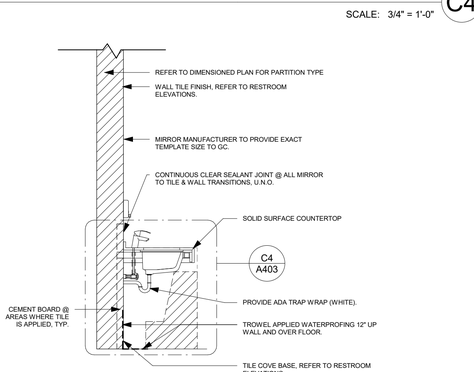
ENLARGED RESTROOM PLAN SINK D4

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



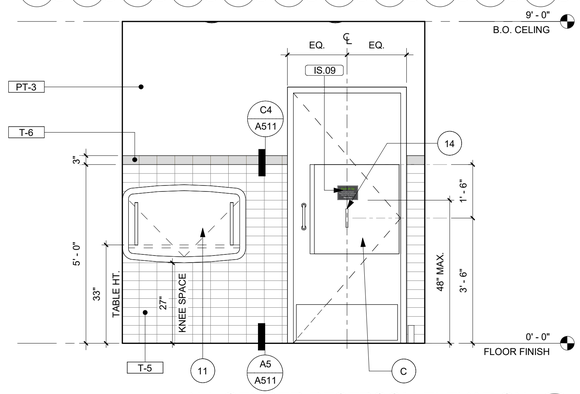
ENLARGED RESTROOM DETAIL C4

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



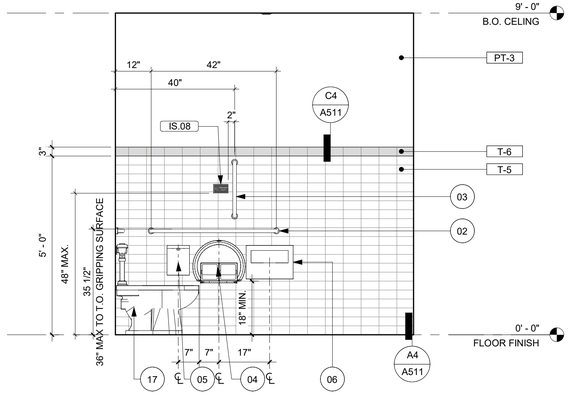
RESTROOM DETAIL B4

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



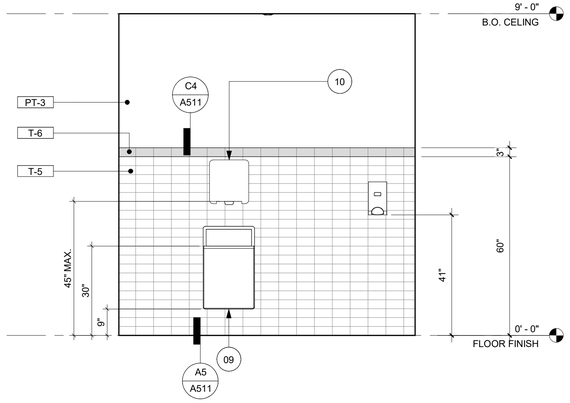
ALL GENDER RESTROOM ELEVATION A4

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



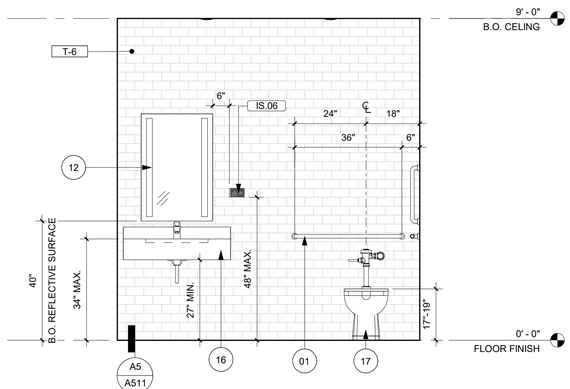
ALL GENDER RESTROOM ELEVATION C3

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



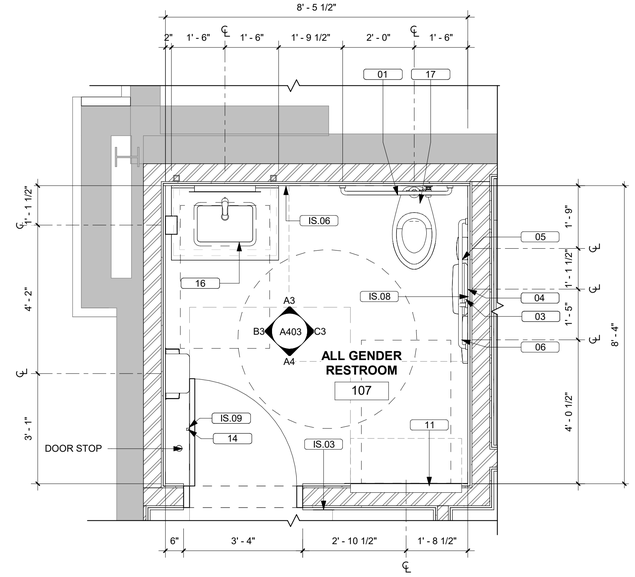
ALL GENDER RESTROOM ELEVATION B3

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



ALL GENDER RESTROOM ELEVATION A3

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



ENLARGED RESTROOM PLAN A1

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

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CONSULTANT LOGO:

STORE NO:

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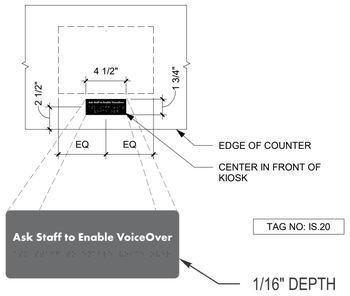
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ENLARGED RESTROOM PLANS & ELEVATIONS

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:

A403



TAG NO: IS.20

KIOSK BRAILLE SIGN C4

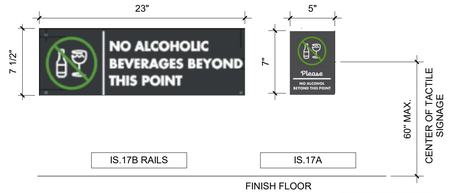
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MOUNTED TO COUNTER

FILTERED WATER SIGN C3

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

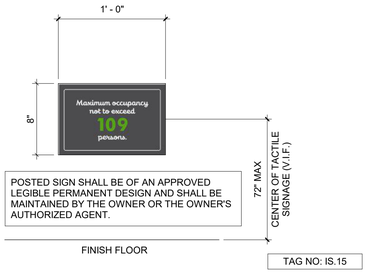


TAG NO: IS.18

TAG NO: IS.17

NO ALCOHOL BEYOND THIS POINT SIGN C2

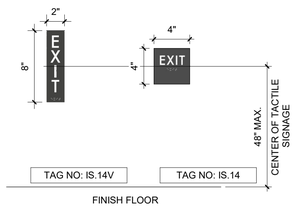
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TAG NO: IS.15

OCCUPANCY SIGN B5

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



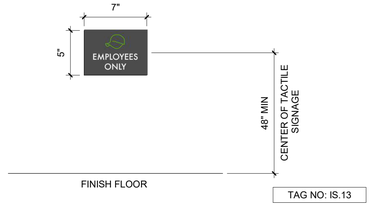
TAG NO: IS.14V

TAG NO: IS.14

FINISH FLOOR

EXIT SIGN B4

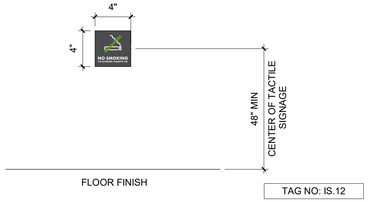
SCALE:1 1/2" = 1'-0"



TAG NO: IS.13

EMPLOYEE ONLY SIGN B3

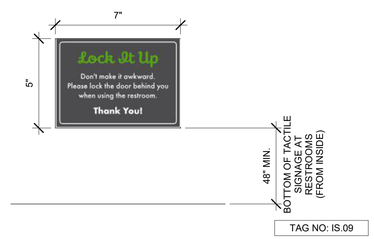
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TAG NO: IS.12

NO SMOKING SIGN B2

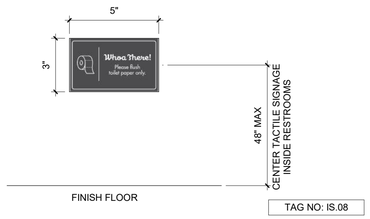
SCALE:1 1/2" = 1'-0"



TAG NO: IS.09

'LOCK IT UP' SIGN A5

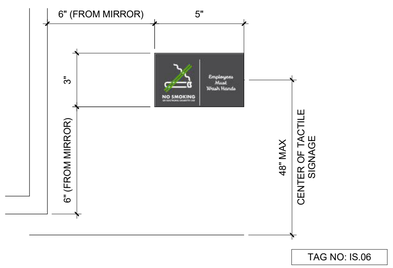
SCALE: 3" = 1'-0"



TAG NO: IS.08

WHOA THERE SIGN A4

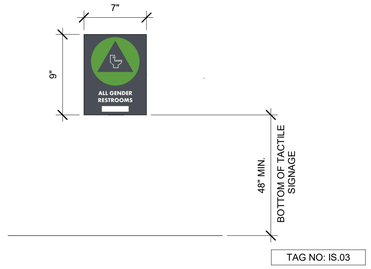
SCALE: 3" = 1'-0"



TAG NO: IS.06

NO SMOKE / HAND WASH SIGN A3

SCALE: 3" = 1'-0"



TAG NO: IS.03

ALL GENDER RESTROOM SIGN A2

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

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

LANDLORD NOTE

LANDLORD'S SIGNAGE COMMENTS:

•LANDLORD AND TENANT RESPONSIBILITIES ARE AS DEFINED IN THE LEASE.
•ALL MODIFICATIONS TO THE LANDLORD APPROVED DRAWINGS SHALL BE RESUBMITTED TO THE LANDLORD FOR RE-APPROVAL. ALL CONSTRUCTION COMPLETED WITHOUT LANDLORD APPROVAL SHALL BE CORRECTED AS APPROVED BY LANDLORD AT TENANT SOLE EXPENSE.
•TENANT SHALL BE RESPONSIBLE FOR ALL PERMITS.
•PLANS REVIEWED AND APPROVED BY LANDLORD SHALL BE PRESENT ON THE JOB SITE AND BE ACCOMPANIED BY PLANS APPROVED FOR PERMIT. ALL PROPOSED DEVIATION FROM THE LANDLORD APPROVED PLANS SHALL BE NUMBERED AND CLOUDED ON THE PLANS, AND THEN RESUBMITTED BY THE TENANT TO THE LANDLORD FOR RE-APPROVAL PRIOR TO ANY FABRICATION AND / OR CONSTRUCTION CHANGES TAKING PLACE IN THE FIELD.
•APPROVAL OF TENANT'S SIGNAGE DOCUMENTS BY THE LANDLORD DOES NOT RELEASE THE TENANT AND OR TENANT'S CONTRACTORS FROM COMPLYING WITH THE LEASE AGREEMENT AND ALL AUTHORITIES HAVING JURISDICTION (AHJ) INCLUDING BUT NOT LIMITED TO LOCAL, STATE, NATIONAL, AND MALL CRITERIA, ACTS, CODES, AND OTHER REQUIREMENTS.
•ALL LANDLORD COMMENTS ON THIS SET OF DRAWINGS SHALL APPLY TO THE ENTIRE DOCUMENT SET, EVEN IF NOT REPEATED ON EVERY SHEET.
•TENANT'S SIGNAGE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL MALL RULES AND REGULATIONS AND AS INSTRUCTED ON SITE BY MALL OPERATIONS TEAM.
•TENANT'S SIGNAGE CONTRACTOR IS REQUIRED TO CHECK IN WITH LANDLORD'S MALL OPERATIONS TEAM PRIOR TO THE START OF TENANT CONSTRUCTION.
•ALL DAMAGE AND / OR DOWNTIME TO LANDLORD'S PROPERTY OR OTHER TENANT'S PROPERTY DURING CONSTRUCTION (I.E. MALL FLOORING, BULKHEAD, NEUTRAL PIERS, ETC.) SHALL BE REPAIRED TO "LIKE-NEW" CONDITION AND REIMBURSED AT TENANT'S SOLE EXPENSE.
•ALL LANDLORD EQUIPMENT, COMPONENT, AND / OR SERVICES FEEDING OTHER TENANT(S) THAT ARE EXISTING IN THE SPACE SHALL REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. TENANT SHALL INSTALL ACCESS PANELS AS REQUIRED TO MAINTAIN ACCESS AND SHALL BE LABELED TO PROPERLY IDENTIFY SYSTEMS. TENANT SHALL COORDINATE LOCATION WITH MALL OPERATIONS TEAM.
•THE SIGN AND ITS SYSTEM OF COMPONENTS AND DEVICES SHALL BE UL APPROVED AND LABELED, SEPARATELY GROUNDED, AND IN COMPLIANCE WITH NEC, UL, AND AUTHORITIES HAVING JURISDICTION (AHJ) INCLUDING BUT NOT LIMITED TO LOCAL , STATE, NATIONAL, AND MALL CRITERIA, ACTS, CODES, AND OTHER REQUIREMENTS.

•ALL SIGNAGE TRANSFORMERS SHALL BE EXTERIOR GRADE AND CONCEALED WITHIN THE SIGNAGE OR LOCATED REMOTELY CONCEALED FROM VIEW. TRANSFORMER NOISE SHALL NOT BE AUDIBLE FROM WITHIN THE CENTER.
•LED LAMPING IS PREFERRED FOR ALL SIGNAGE ILLUMINATION AND MAYBE REQUIRED BY LANDLORD'S DESIGN CRITERIA AND / OR AUTHORITIES HAVING JURISDICTION (AHJ); NEON TUBING IS STRICTLY PROHIBITED. AUXILIARY SIGNAGE, POSTERS, AND / OR ADVERTISING BANNERS ARE PROHIBITED IN "DESIGN CONTROL ZONE", INCLUDING BUT NOT LIMITED TO HOURS OF OPERATION, OPEN SIGNS, ADVERTISING, AND DBA SIGNS.
•ALL ILLUMINATED STOREFRONT ENTRY LIGHTS, SHOW WINDOW LIGHTS, AND SHOW WINDOW RECEPTACLES SHALL BE SEPARATELY CIRCUITED AND CONTROLLED BY A TIME SWITCH ALLOWING 7-DAY / 24-HOUR PROGRAMMING. SYSTEM SHALL BE PROGRAMMED FOR ILLUMINATION DURING MALL BUSINESS HOURS AND SHALL BE COORDINATED WITH THE MALL OPERATIONS TEAM.
•THE SIGN AND ITS SYSTEM OF COMPONENTS SHALL BE SECURELY FASTENED AND CONCEALED BEHIND TENANT'S STOREFRONT OR BUILDING FAÇADE. INTERIOR SIGANGE APPLICATIONS:
•BOX OR CABINET SIGNS WILL ONLY BE APPROVED FOR INTERIOR APPLICATION IF THEY ARE RECESSED AND FLUSH WITH THE STOREFRONT.
•INTERIOR STOREFRONT SIGNAGE SHALL BE SEPARATELY CIRCUITED AND CONTROLLED BY A TIME SWITCH ALLOWING 7-DAY / 24-HOUR PROGRAMMING.

EXTERIOR SIGNAGE APPLICATIONS:
•PRIOR TO INSTALLATION OF EXTERIOR SIGNAGE, THE SIGN INSTALLER SHALL BE REQUIRED TO PLACE A TEMPLATE ON THE STOREFRONT INDICATING THE SIGN PLACEMENT & LIGHT LOCATION(S), WHERE APPLICABLE, AND APPROVED BY MALL OPERATIONS TEAM PRIOR TO INSTALLATION.
•EXTERIOR SIGNAGE SHALL BE MANUFACTURED FROM EXTERIOR GRADE MATERIALS, HAVING SEMI-GLASS OR MATTE FINISH, AND BE WATERPROOF. ALL ATTACHMENT SYSTEMS SHALL BE CONCEALED STAINLESS STEEL AND ALL BUILDING PENETRATIONS SHALL BE SEALED WITH EXTERIOR GRADE SYSTEMS.
•THE SIGN AND ITS SYSTEM OF COMPONENTS SHALL BE SECURELY FASTENED AND CONCEALED BEHIND TENANT'S STOREFRONT OR BUILDING FAÇADE.
•ALL EXTERIOR ILLUMINATED STOREFRONT SIGNAGE SHALL BE SEPARATELY CIRCUITED AND CONTROLLED BY A PHOTOCELL.
•ALL RELATED ROOF WORK, INCLUDING PARAPET WALLS, SHALL BE DONE BY LANDLORD'S REQUIRED ROOFING CONTRACTOR, AT TENANT'S SOLE EXPENSE. COORDINATE ALL WORK WITH MALL OPERATIONS TEAM.

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REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

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STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
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TACTILE SIGNAGE DIAGRAMS

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

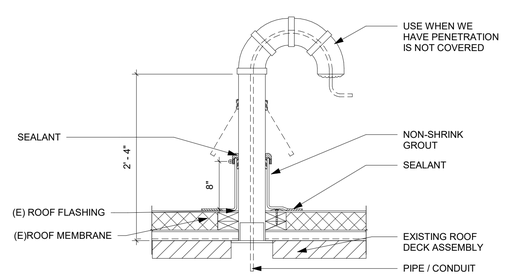
SHEET NO:
A404

GENERAL NOTES

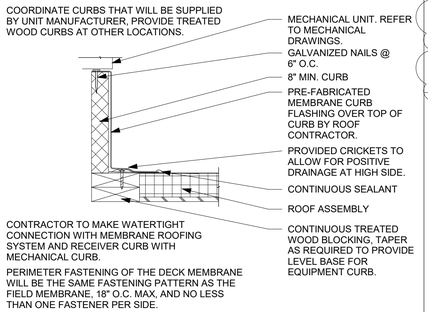
1 SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
2 THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3 IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4 VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5 VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6 DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7 VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8 DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9 AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.

LANDLORD NOTE

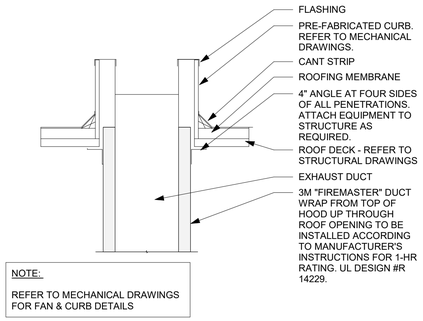
MECHANICAL COMMENTS:
•ANY CHANGES AND/ OR UPGRADES TO TENANT'S EXISTING MECHANICAL SYSTEMS SHALL COMPLY WITH ALL CODES AND LANDLORD CRITERIA. EXISTING SYSTEMS SHALL POSSESS THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.
•NO PITCH POCKETS ARE PERMITTED ON THE ROOF FOR ANY CONDENSATE DRAINS, REFRIGERANT PIPING, POWER OR CONTROL WIRING. ALL CONNECTIONS ARE TO BE MADE INSIDE THE EQUIPMENT CURB OR THROUGH PRE-MANUFACTURED PIPING CURB.
•NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK, OR ROOF DECK. YOU MAY ATTACH, NON-DESTRUCTIVELY, TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHING TO LANDLORD'S STRUCTURE, DO NOT DRILL, WELD, SCREW, OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY, NOTHING TO DAMAGE LANDLORD'S BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS, BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS, FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.
•ALL PENETRATIONS TO ROOF MUST BE APPROVED BY LANDLORD. ALL RELATED ROOF WORK MUST BE DONE BY MALL'S DESIGNATED ROOFING CONTRACTOR, AT TENANT'S EXPENSE. COORDINATE ALL WORK WITH PROPERTY MANAGEMENT ON SITE.
•TENANT MUST REMOVE ALL ABANDONED ROOFTOP AND/ OR MECHANICAL EQUIPMENT ABOVE THE LEASED PREMISES AND WITHIN THE LEASED PREMISES, AT TENANT EXPENSE. PATCH AND REPAIR ROOF AS NEEDED.
•TENANT'S GC TO LABEL ALL ROOF TOP EQUIPMENT WITH TENANT NAME SPACE NUMBER AND EQUIPMENT IDENTIFICATION (RTU-1, EF-1), PER MALL SPECIFICATIONS/ STANDARDS.
•ALL PIPING ON ROOF SHALL BE SUPPORTED ON PRE-MANUFACTURED PIPE SUPPORTS INSTALLED ON CARRY TREAD, SPACED PROPERLY TO SUPPORT PIPING. TREATED WOOD SUPPORTS ARE NOT PERMITTED.
•ALL UNEXPOSED SUPPLY AIR AND OUTSIDE AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 1 ½" THICK FOIL FACE INSULATION. INTERNALLY LINED DUCTWORK MAY BE USED FOR ACOUSTIC PURPOSES ONLY, NOT AS A SUBSTITUTE FOR EXTERNAL INSULATION.
•ALL DUCTWORK SHALL BE SHEET METAL. FLEX DUCT MAY ONLY BE USED IN RUNS OF 5'-0" OR LESS AND ONLY PERMITTED ABOVE GRID OR DRYWALL CEILINGS.
•AT CONCLUSION OF PROJECT, HVAC SYSTEM MUST BE TESTED AND BALANCED BY A LICENSED CONTRACTOR. COPY OF BALANCE REPORT MUST BE PROVIDED TO PROPERTY MANAGEMENT OFFICE ON-SITE.
•LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.



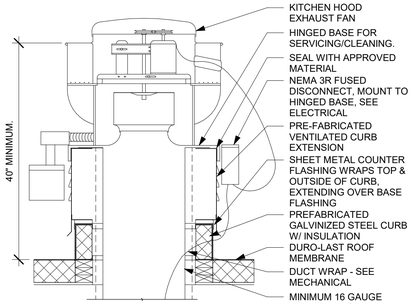
CONDUIT PENETRATION B3
SCALE: 1" = 1'-0"



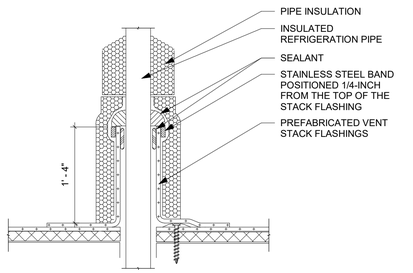
RTU CURB B2
SCALE: 1" = 1'-0"



GREASE EXHAUST PENETRATION1 A4
SCALE: 1" = 1'-0"



KITCHEN EXHAUST HOOD A3
SCALE: 1" = 1'-0"



REFRIGERATION PIPE PENETRATION A2
SCALE: 1" = 1'-0"

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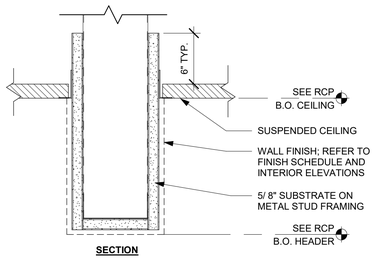
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EXTERIOR DETAILS

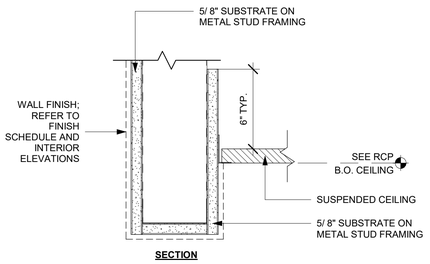
DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A501



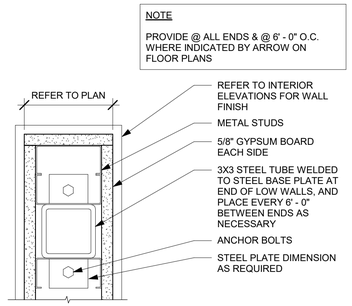
TYPICAL HEADER DETAIL D5

SCALE: 3" = 1'-0"



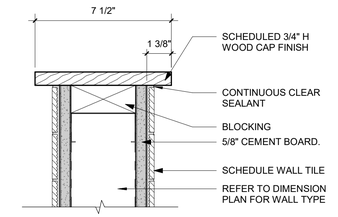
TYPICAL HEADER DETAIL D4

SCALE: 3" = 1'-0"



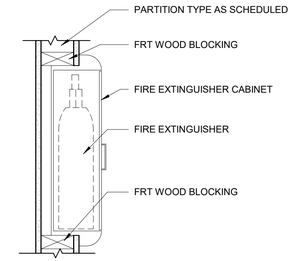
LOW WALL SUPPORT D3

SCALE: 3" = 1'-0"



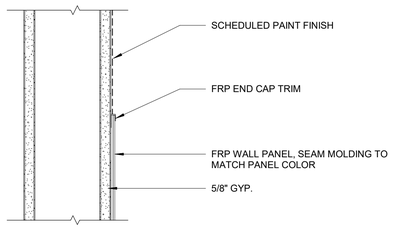
WOOD CAP @ LOW WALL SECTION D2

SCALE: 3" = 1'-0"



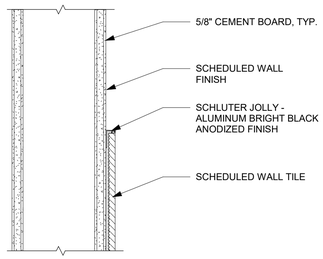
FIRE EXTINGUISHER SECTION D1

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



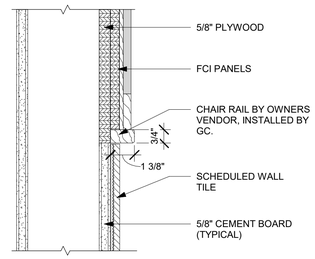
FRP TO PAINT TRANSITION C5

SCALE: 3" = 1'-0"



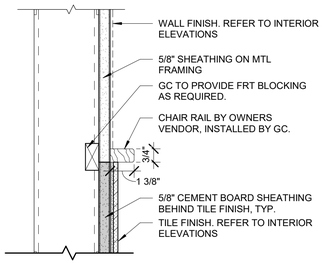
WALL TILE TERMINATION C4

SCALE: 3" = 1'-0"



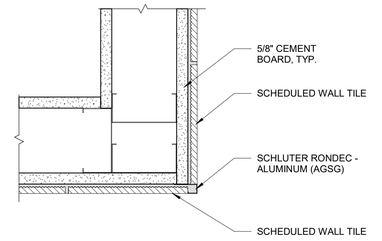
WALL TILE TO PREFAB WOOD WALL C3

SCALE: 3" = 1'-0"



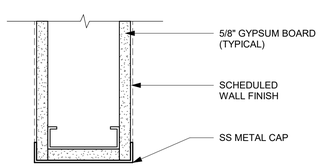
WALL TILE TERMINATION - WOOD TRIM C2

SCALE: 3" = 1'-0"



WALL TILE AT OUTSIDE CORNER C1

SCALE: 3" = 1'-0"

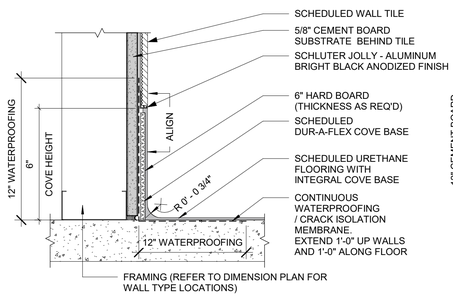


SS WALLCAP B5

SCALE: 3" = 1'-0"

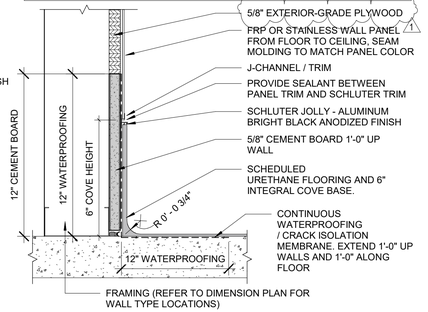
TILE @ SERVICE COUNTER B4

SCALE: 3" = 1'-0"



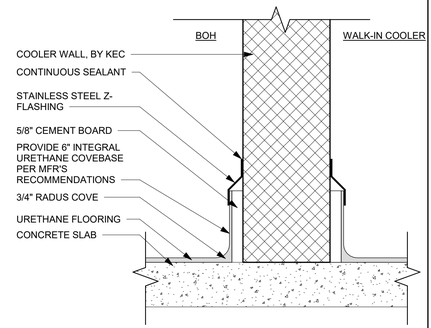
WALL BASE TO WALL TILE AT OPEN KITCHEN B3

SCALE: 3" = 1'-0"



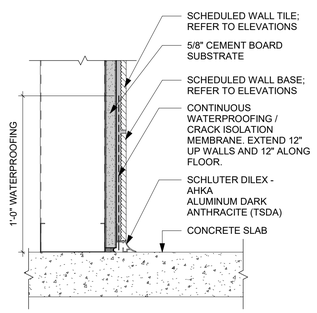
WALL BASE TO SS OR FRP AT BACK-OF-HOUSE B2

SCALE: 3" = 1'-0"



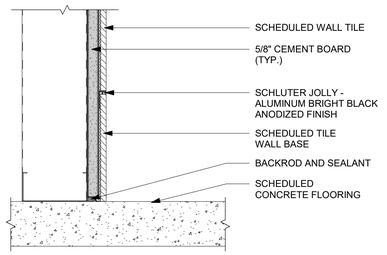
BASE AT WALK-IN B1

SCALE: 3" = 1'-0"



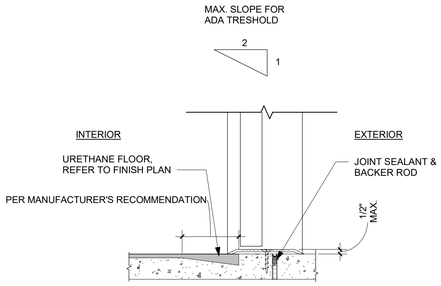
WALL BASE TILE TO CONCRETE FLOOR A5

SCALE: 3" = 1'-0"



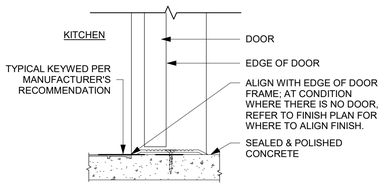
WALL BASE TILE TO CONCRETE FLOOR A4

SCALE: 3" = 1'-0"



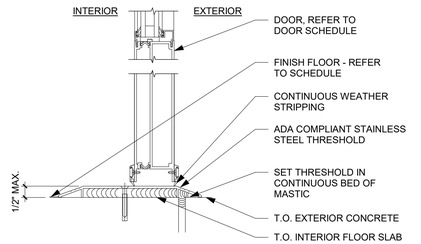
TRANSITION - BOH DOOR A3

SCALE: 3" = 1'-0"



FLOOR TRANSITION - INTERIOR CONCRETE TO POLYCRETE A2

SCALE: 3" = 1'-0"



FLOOR TRANSITION - INTERIOR TO EXTERIOR CONCRETE A1

SCALE: 3" = 1'-0"

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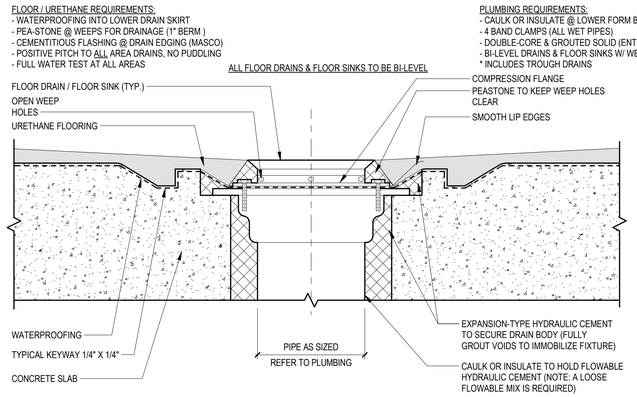
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SHEET NAME:
INTERIOR DETAILS

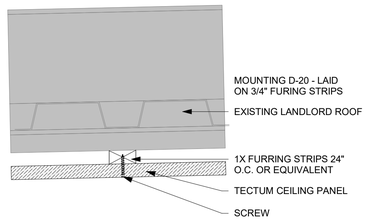
DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A511



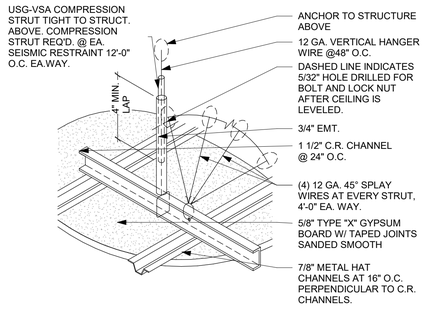
DETAIL - FLOOR DRAIN / FLOOR SINK D4

SCALE: 3" = 1'-0"



TECTUM PANEL MOUNTING METHOD D3

SCALE: 3" = 1'-0"

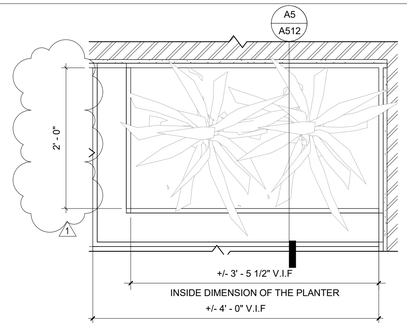


STRUT GYPSUM BOARD CEILING D2

SCALE: 3" = 1'-0"

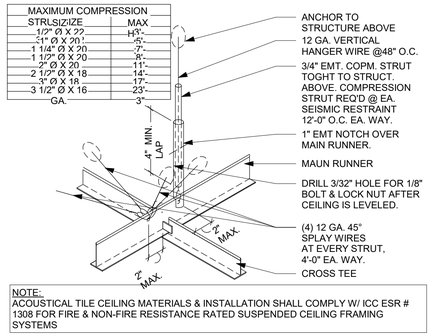
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1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES.
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES.
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE.
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.



ENLARGED PLANTER PLAN C4

SCALE: 1" = 1'-0"

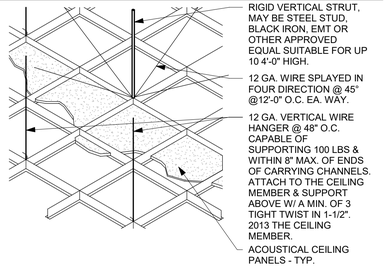


NOTE:
ACOUSTICAL TILE CEILING MATERIALS & INSTALLATION SHALL COMPLY W/ ICC ESR # 1308 FOR FIRE & NON-FIRE RESISTANCE RATED SUSPENDED CEILING FRAMING SYSTEMS

SUSPENDED CEILING DETAIL C3

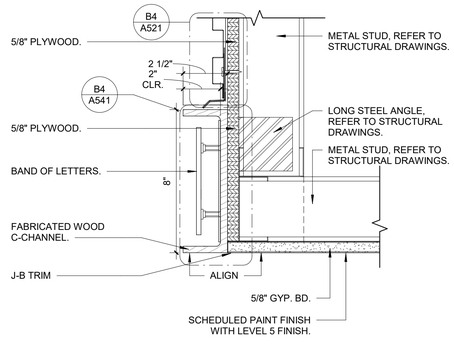
SCALE: 3" = 1'-0"

NOTE:
1. VERTICAL STRUT AT 12'-0" O.C. EACH WAY WITH FIRST POINT TO BE WITHIN 6' FROM EACH WALL FASTENED TO MAIN RUNNER AND STRUCTURE ABOVE
2. 12 GA. VERTICAL HANGER WIRE AT 4'-0" EACH WAY WITH MIN. TIGHT TURNS IN 1-1/2" AT BOTH ENDS OR WIRE (TYP.)
3. BRACING WIRES SECURED TO MAIN RUNNERS WITHIN 2" OF THE CROSS RUNNER INTERSECTIONS AND SPLAYED 90Ø FROM EZ OTHER @ AN ANGLE NOT EXCEEDING 45Ø FROM THE PLANE OF THE CEILING.



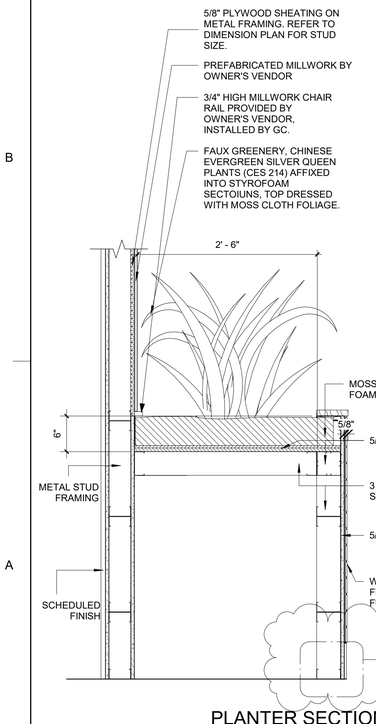
CEILING SUSPENSION SYSTEM C2

SCALE: 3" = 1'-0"



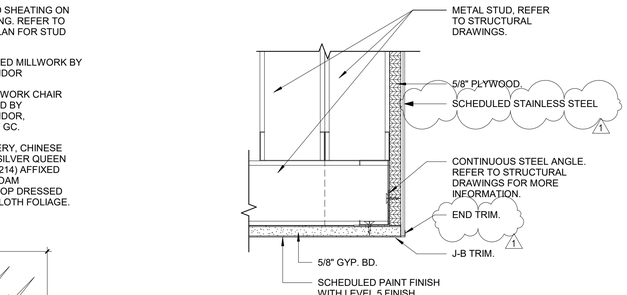
ENLARGED SOFFIT CORNER DETAIL C1

SCALE: 3" = 1'-0"



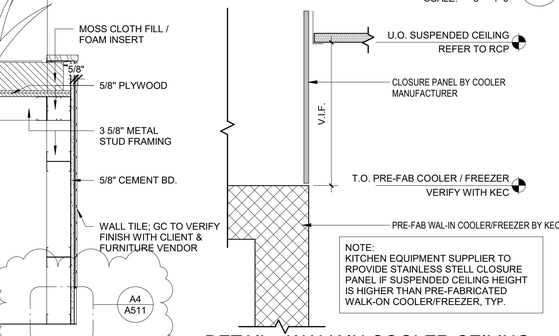
PLANTER SECTION A5

SCALE: 1" = 1'-0"



ENLARGED SOFFIT CORNER DETAIL B4

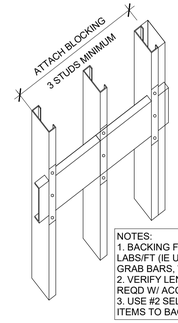
SCALE: 3" = 1'-0"



NOTE:
KITCHEN EQUIPMENT SUPPLIER TO RPOVIDE STAINLESS STELL CLOSURE PANEL IF SUSPENDED CEILING HEIGHT IS HIGHER THAN PRE-FABRICATED WALK-ON COOLER/FREEZER, TYP.

DETAIL - WALK IN COOLER CEILING PANEL A4

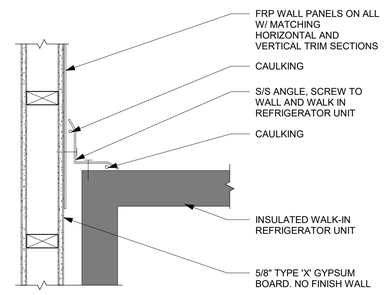
SCALE: 3" = 1'-0"



NOTES:
1. BACKING FOR ITEMS WITH MAX WEIGHT OF 250 LABS/FT (IE UPPER WALL CABINETS, HANDRAILS, GRAB BARS, WALL-HUNG EQUIPMENT ETC)
2. VERIFY LENGTH, HEIGHT, LOCATION AND NUMBER REQD W/ ACCESSORY MANUFACTURER.
3. USE #2 SELF TAPPING SCREWS WHEN ATTACHING ITEMS TO BACKING.

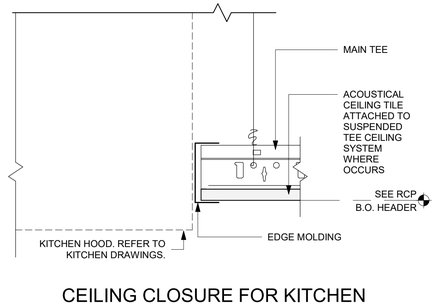
BACKING ATTACHMENT-HEAVY DUTY B3

SCALE: 3" = 1'-0"



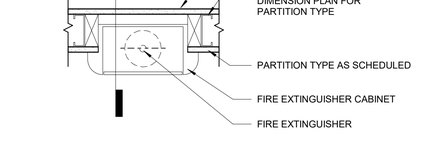
PLAN DETAIL @ WALK-IN COOLER2 A3

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



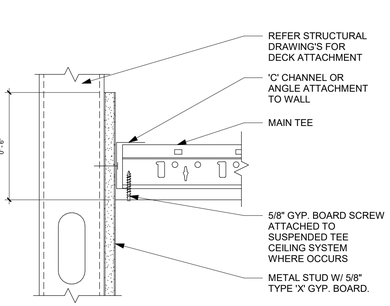
CEILING CLOSURE FOR KITCHEN HOOD B2

SCALE: 3" = 1'-0"



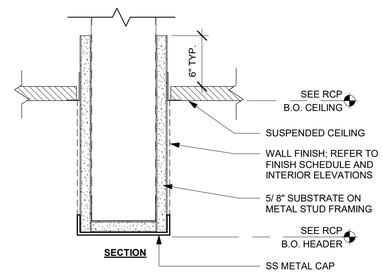
FIRE EXTINGUISHER CABINET A2

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



SUSPENDED GWB CEILING DETAIL B1

SCALE: 3" = 1'-0"



SS HEADER DETAIL A1

SCALE: 3" = 1'-0"

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REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
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STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

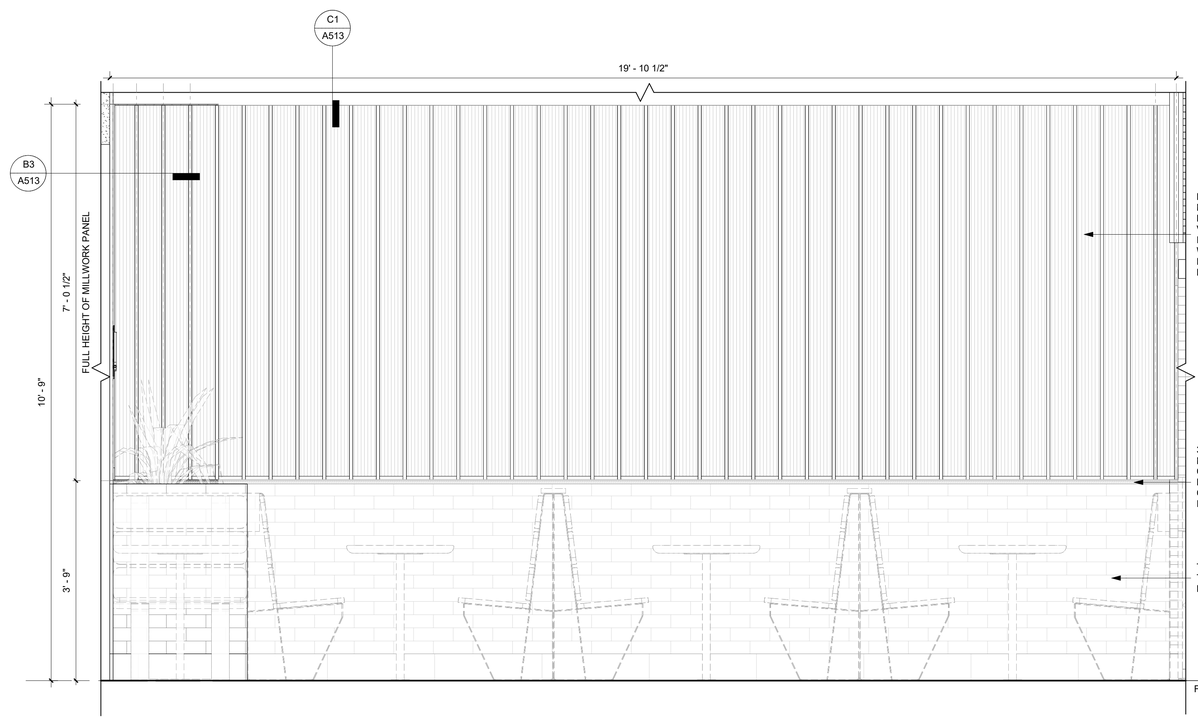
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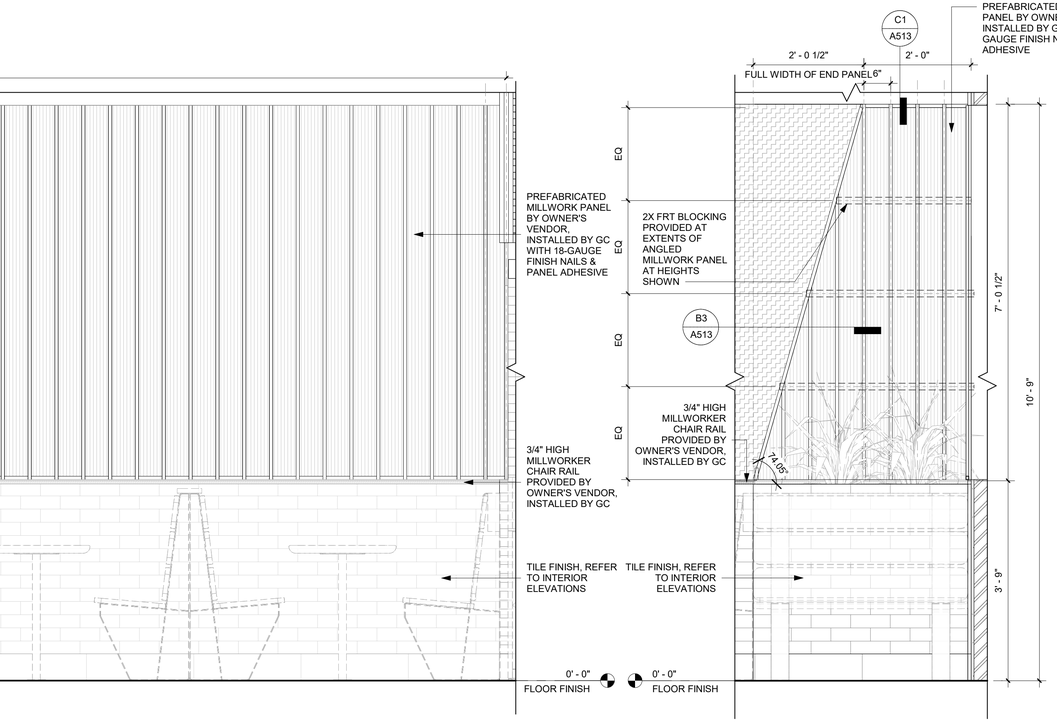
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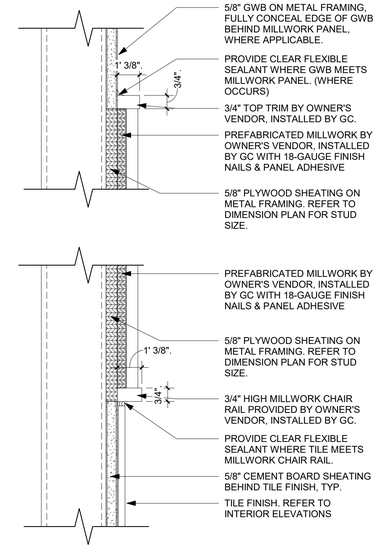
ENLARGED ELEVATION-FCI PANEL A C3

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



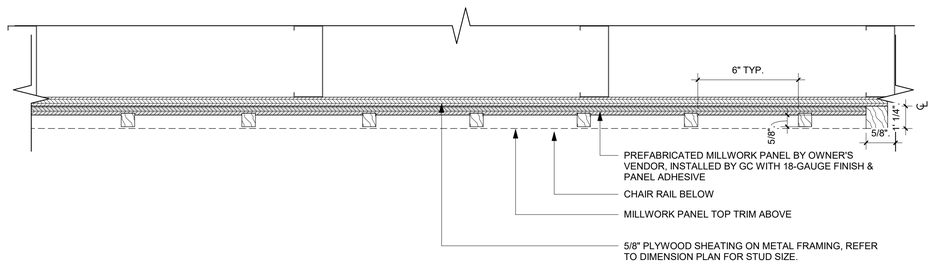
ENLARGED ELEVATION-FCI PANEL A C2

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



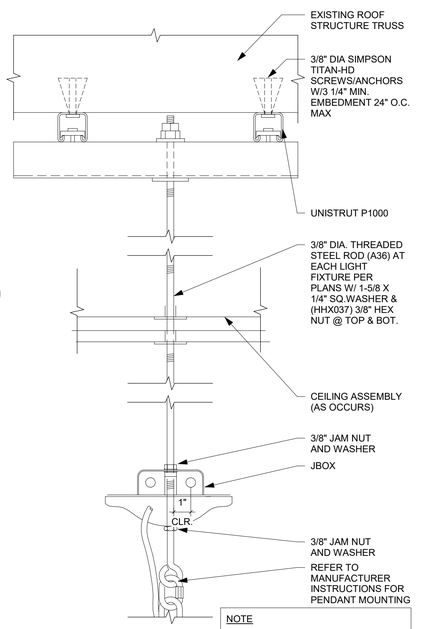
SECTION DETAIL - FCI PANEL A C1

SCALE: 3" = 1'-0"



PLAN DETAIL - FCI PANEL A B3

SCALE: 3" = 1'-0"

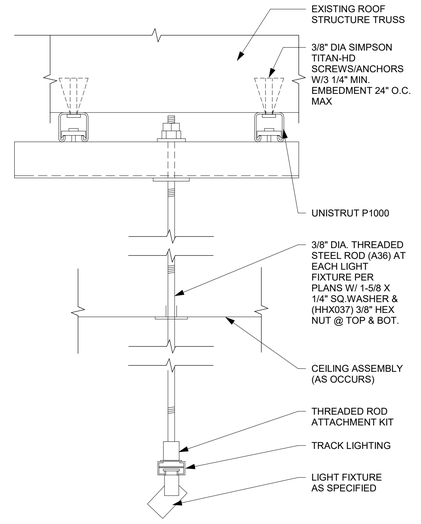


NOTE

G.C. SHALL VERIFY THAT THE SHOWN METHOD OF ATTACHMENT IS ACCEPTABLE WITH THE ON-SITE COORDINATOR, IF NOT, CONTACT ARCHITECT FOR ALTERNATE DETAIL.

PENDANT MOUNT A2

SCALE: 3" = 1'-0"

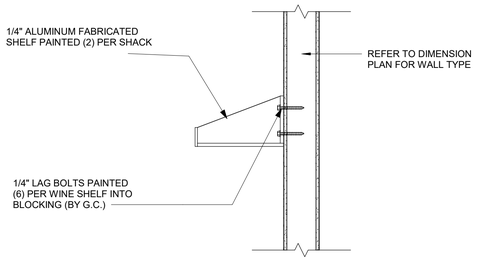


NOTE

G.C. SHALL VERIFY THAT THE SHOWN METHOD OF ATTACHMENT IS ACCEPTABLE WITH THE ON-SITE COORDINATOR, IF NOT, CONTACT ARCHITECT FOR ALTERNATE DETAIL.

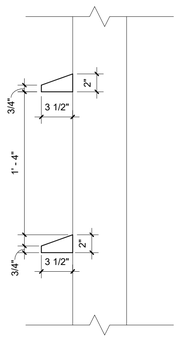
TRACK MOUNTING A1

SCALE: 3" = 1'-0"



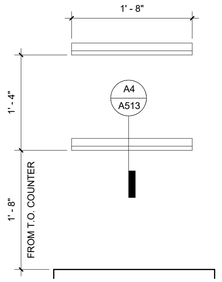
WINE RACK - VERTICAL SECTION A5

SCALE: 1" = 1'-0"



WINE SHELF - SIDE VIEW A4

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



WINE SHELF - FRONT VIEW A3

SCALE: 1" = 1'-0"

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REGISTERED ARCHITECT
08/28/2026

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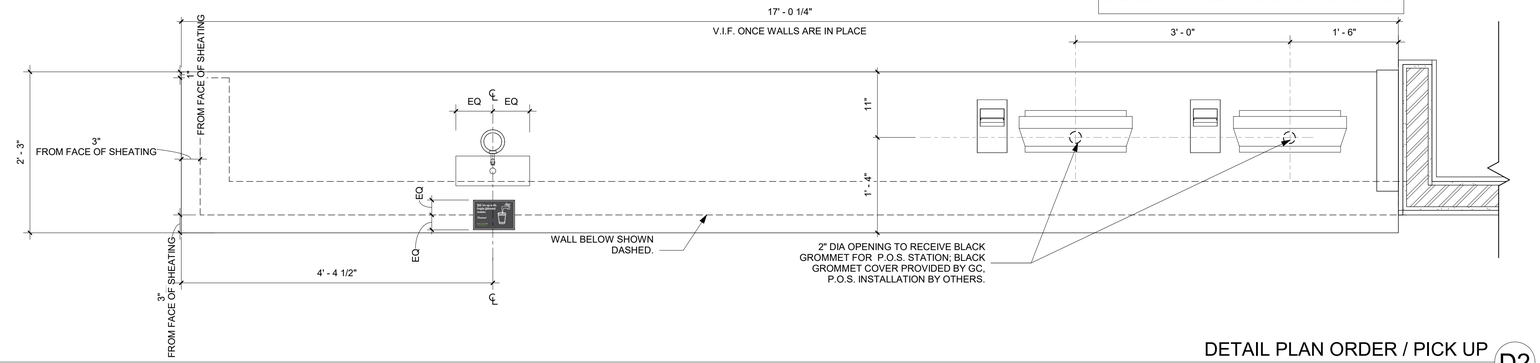
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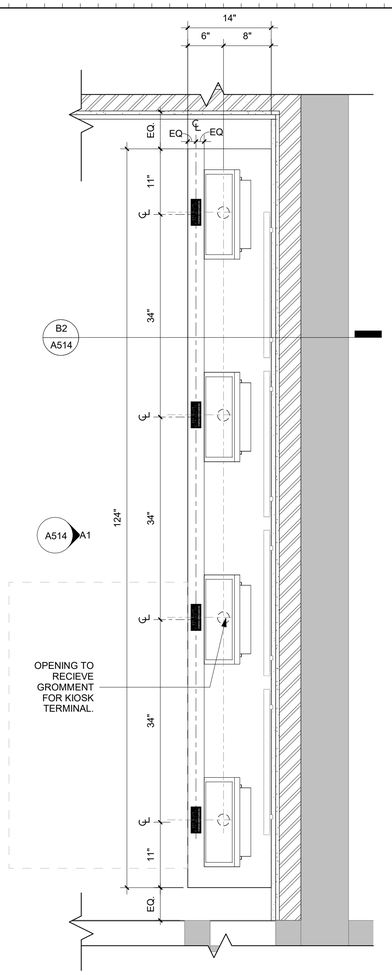
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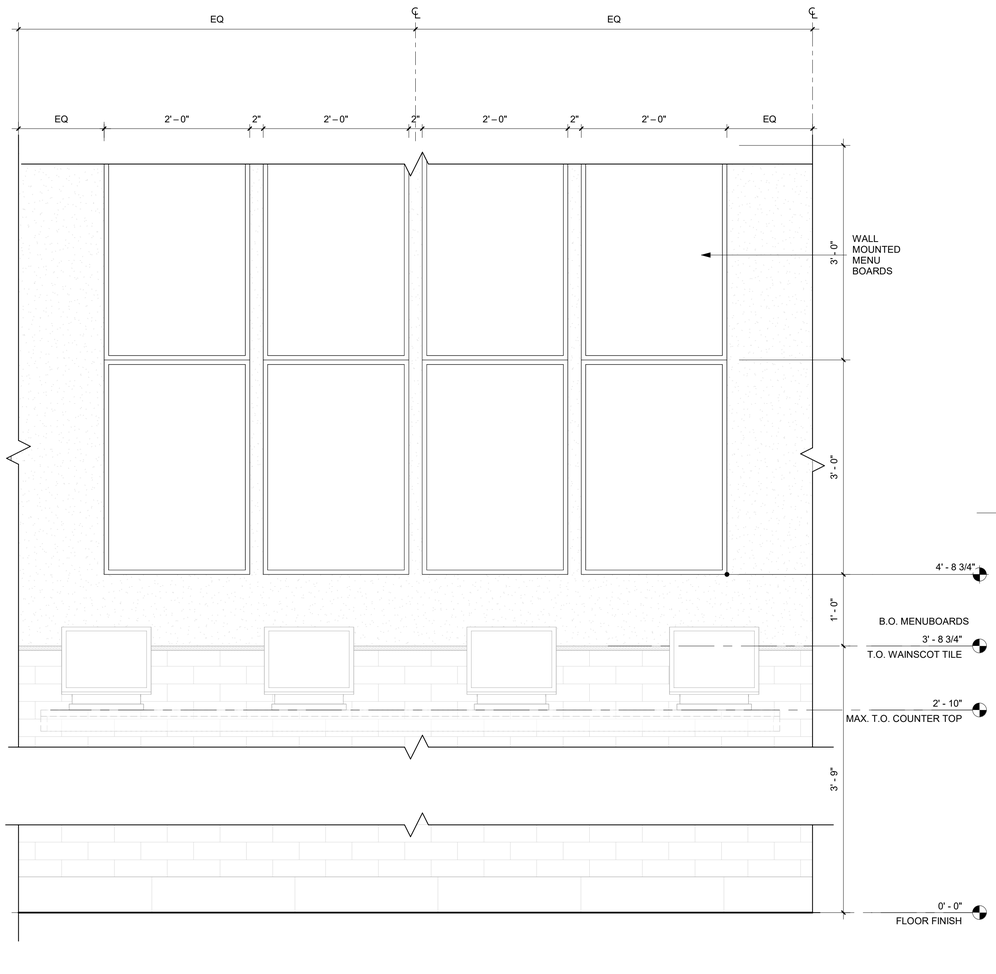
FRONT COUNTER DETAIL PROVIDED FOR QC. ALL DIMENSIONS ARE TO BE COORDINATED IN THE FIELD WITH KEC AND REVIEWED AGAINST HOLD-TO DIMENSIONS IN THE SUBMITTAL.



DETAIL PLAN ORDER / PICK UP D2

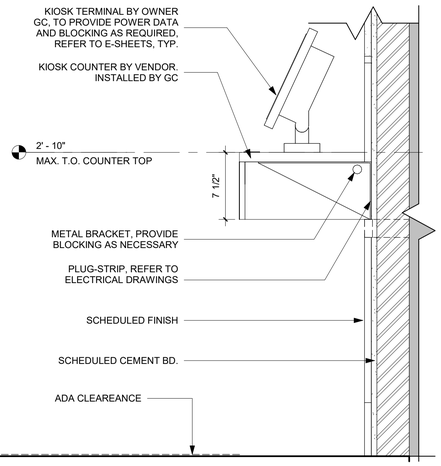
SCALE: 1" = 1'-0"





WALL MOUNTED MENU BOARD ELEVATION A3

SCALE: 1" = 1'-0"

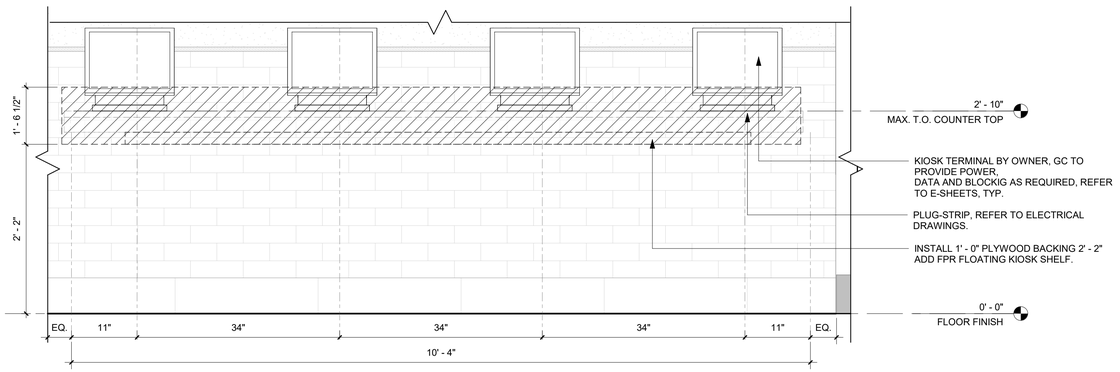


KIOSK SECTION B2

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

DIGITAL SELF - ORDER KIOSK FLOOR PLAN B1

SCALE: 1" = 1'-0"



DIGITAL SELF - ORDER KIOSK ELEVATION A1

SCALE: 1" = 1'-0"

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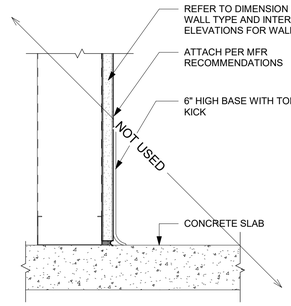
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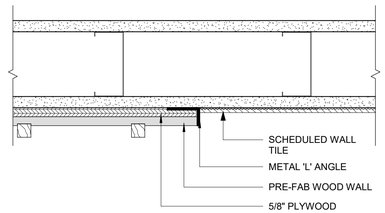
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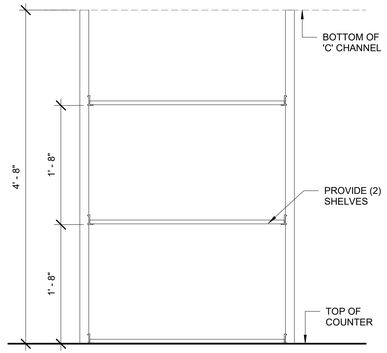
RUBBER BASE TO CONCRETE FLOOR — D5

SCALE: 3" = 1'-0"

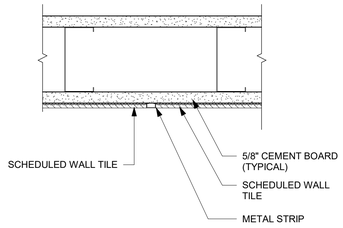


WALL TRANSITION - PREFAB WALL TO TILE — D4

SCALE: 3" = 1'-0"



FINAL APPROVAL REQUIRED BY OWNER AND ARCHITECT DURING SHOP DRAWING REVIEW.



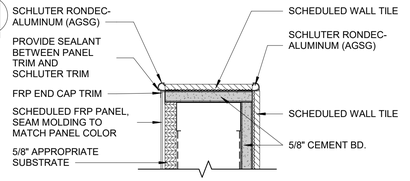
WALL TRANSITION - TILE TO TILE — C4

SCALE: 3" = 1'-0"

LANDLORD NOTE

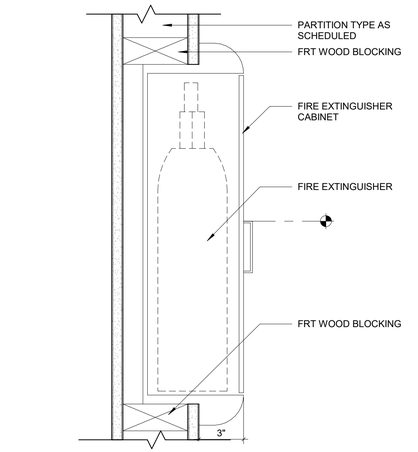
DISPLAY FIXTURES, RACKS, SHELVING, AND STORAGE UNIT REQUIREMENTS:

- TENANT SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND USE OF ANY DISPLAY OR STORAGE SYSTEM(S) WITHIN THE PREMISE INCLUDING ALL COMPLIANCE WITH APPLICABLE BUILDING CODES, FIRE CODES AND THE REQUIREMENTS OF ANY INSURANCE RATING BUREAUS. IF ANYTHING DONE, OMITTED TO BE DONE OR SUFFERED TO BE DONE BY TENANT IN, UPON OR ABOUT THE PREMISES IN REGARD TO SUCH DISPLAY OR STORAGE SYSTEM(S) SHALL RESULT IN A FIRE CODE VIOLATION(S) AND THE TENANT FAILS TO TAKE CORRECTIVE ACTION AND / OR PAY THE ASSOCIATED FINE, REGARDLESS OF WHETHER ASSESSED AGAINST TENANT OR LANDLORD, WITHIN THE PRESCRIBED TIME PERIOD, THEN TENANT SHALL BE LIABLE FOR ALL COSTS AND EXPENSES RESULTING FROM SUCH VIOLATION(S) AND LANDLORD SHALL HAVE THE RIGHT TO CORRECT ANY SUCH CONDITION(S) AT TENANT'S EXPENSE.
- TENANT DISPLAY FIXTURES IN THE RETAIL SPACE AND RACK / SHELVING / STORAGE UNITS IN THE STOCKROOM SHALL BE DESIGNED TO PROVIDE ADEQUATE CLEARANCE FOR THE AUTOMATIC (FIRE) SPRINKLER SYSTEM. NO DISPLAYS OR STORAGE SHOULD EXCEED 12FT AND CEILINGS MUST BE INSTALLED TO PROVIDE A MINIMUM OF 18" OF CLEARANCE BETWEEN THE TOP OF THE STORAGE SYSTEM AND SPRINKLER DEFLECTORS.
- TENANT DISPLAYS OR STORAGE HIGHER THAN 12'-0" ARE CLASSIFIED AS "HIGH PILED STORAGE", WHICH REQUIRES HIGH HAZARDOUS AUTOMATIC (FIRE) SPRINKLER PROTECTION DESIGNED PER FM GLOBAL LOSS PREVENTION DATA SHEET AND NFPA REQUIREMENTS FOR THE STORAGE OF "GROUP A PLASTIC" COMMODITIES. HIGH PILED STORAGE ALSO REQUIRES A MINIMUM OF 36" OF CLEARANCE BETWEEN THE TOP OF STORAGE AND SPRINKLER DEFLECTORS.
- TENANT MOBILE / COMPACT STORAGE SYSTEMS SHALL BE CONSTRUCTED OF WIRE MESH SHELVES. HOWEVER, IF CONSTRUCTED WITH SOLID SHELVES (WOOD OR STEEL), THE UNITS SHALL BE INSTALLED WITH A MINIMUM OF A 3" SPACER TO PROVIDE SPACE BETWEEN UNITS AT MAXIMUM 5'-0" INTERVALS.
- TENANT'S ARCHITECT AND GENERAL CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION TO THE MALL REQUIRED SPRINKLER CONTRACTOR REGARDING STOCK / STORAGE AREA:
  - O TYPE OF STORAGE SYSTEM(S). (INCLUDING DETAILS OF THE STORAGE SYSTEM(S).
  - O TYPE OF SHELVING. (WIRE MESH / SOLID WOOD / SOLID STEEL, ETC.)
  - O TYPE OF COMMODITIES. (PLASTICS, AEROSOL'S, CLOTHING, ETC)
  - O ELEVATION OF HIGHEST SHELF / CEILING HEIGHT.
- LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.



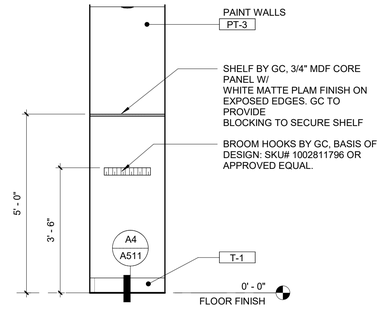
COUNTER LOW WALL - CORNER TRANSITION DETAIL — B4

SCALE: 3" = 1'-0"



FIRE EXTINGUISER SECTION — B3

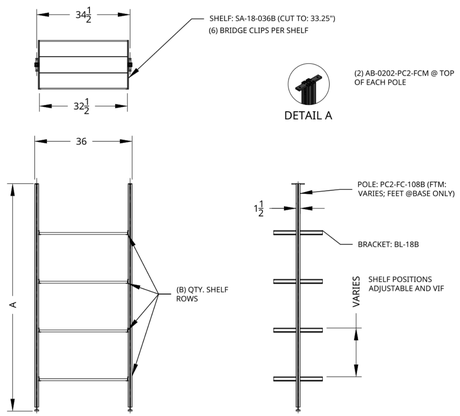
SCALE: 3" = 1'-0"



ENLARGED ELEVATION - BROOM CLOSET — B2

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

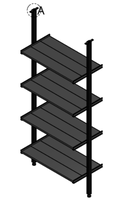
TAG NO: **FC-B-1**



PART NO: PC2BL-1BFC-18-036B

Bill of Materials

Name	Part Number	Description	Qty.
Alum. Shelf	SA-18-036B	Cut to: 33.5";	(1) per row
L-Bracket	BL-18B	Cut to: 18", (3) MOUNTING HOLES FOR CLIPS,	(2) per row
Bridge Clip	SA-BRIDGE-B	CUSTOM: LOW PROFILE STYLE,	(6) per row
Pole	PC2-FC-108B	FTC: VARIES, FEET @BASE ONLY	2
Anchor Bracket	AB-0202-PC2-FCM	BLACK FINISH, POLE TO SOFFIT	4



ALL MATERIAL IN MATTE BLACK FINISH

COMPLETE ORDER FORM:
SUBMIT ORDERS TO SALES@RAKKS.COM

A	SYSTEM HEIGHT:	
B	QTY. SHELF ROWS:	
C	DATE MATERIAL NEEDED BY:	

Rakks — BETTER DESIGN ENDURES

330 Reservoir Street,
Needham MA 02494
p: 781-455-8700 f: 781-455-8702
rakks.com

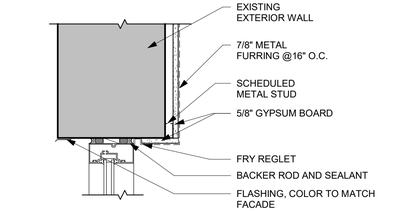
DATE: 02/08/2022 | BY:CP | SHEET: 1 / 1 | VERSION:V4 | APPROVAL: x

JOB NAME:
TYPICAL COMPRESSION BL SYSTEM
ONE BAY
SHAKE SHACK

DATE	NOTES	REV.

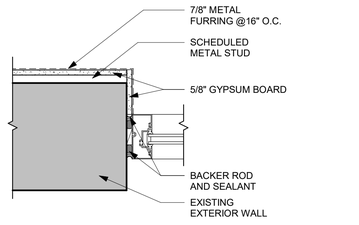
APP SHELF - RAKKS SPECIFICATION SHEET — D1

SCALE: 12" = 1'-0"



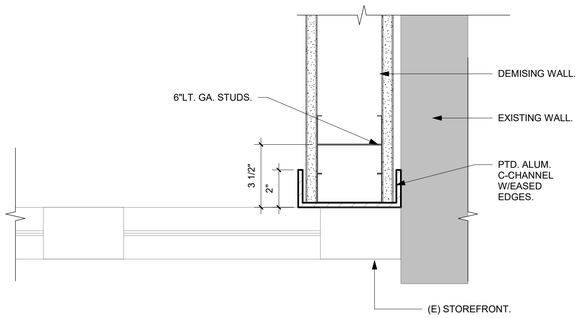
FINISH TRANTITION TO STOREFRONT HEAD — C1

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



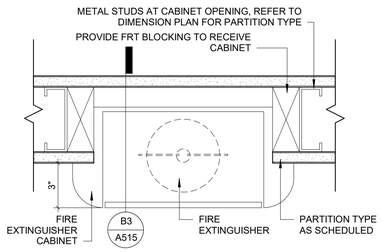
FINISH TRANTITION TO STOREFRONT JAMB — B1

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



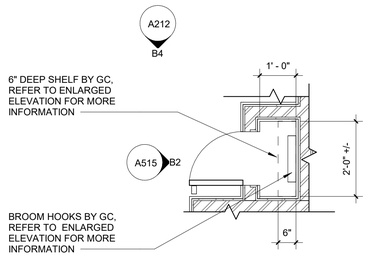
STOREFRONT - WALL — A4

SCALE: 3" = 1'-0"



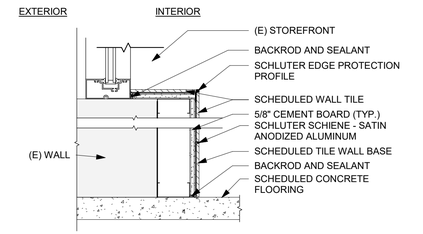
FIRE EXTINGUISER SECTION — A3

SCALE: 3" = 1'-0"



BROOM CLOSET PLAN — A2

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



WALL BASE TILE TO TILE AT WINDOW SILL — A1

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

zebra

ZEBRA ARCHITECTURE, PLLC.
14614 N KIERLAND BLVD, SUITE N300
SCOTTSDALE, AZ 85254

PHONE: 480.912.1169 zbr.global

CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify at figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

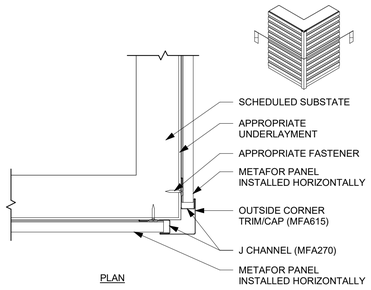
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SHEET NAME:
INTERIOR DETAILS

DATE: 06/01/2026 | PROJECT NO: 41354

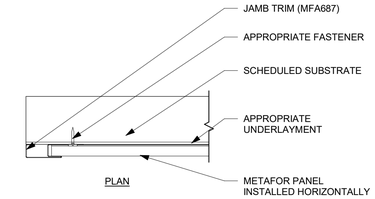
DRAWN: SO | SCALE: AS INDICATED

SHEET NO:
A515



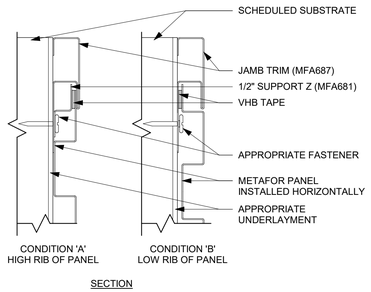
ATAS HORIZONTAL OUTSIDE CORNER D4

SCALE: 3" = 1'-0"



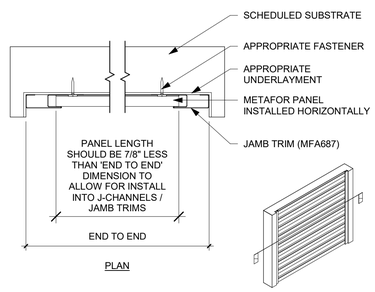
ATAS HORIZONTAL SIDE TERMINATION D3

SCALE: 3" = 1'-0"



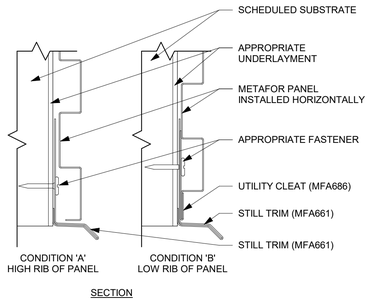
ATAS HORIZONTAL TOP TRIMS C4

SCALE: 6" = 1'-0"



ATAS HORIZONTAL JAMB C3

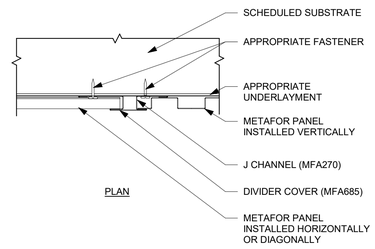
SCALE: 3" = 1'-0"



ATAS HORIZONTAL SILL TRIMS B4

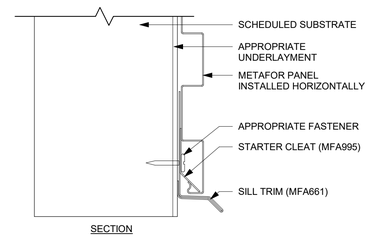
SCALE: 6" = 1'-0"

1. WHEN INSTALLING THE TRANSITION AT AN ANGLE, ENSURE THE LEG OF THE DIVIDER COVER POINTS UPWARD TO PREVENT WATER PENETRATION.



ATAS DIRECTION TRANSITION B3

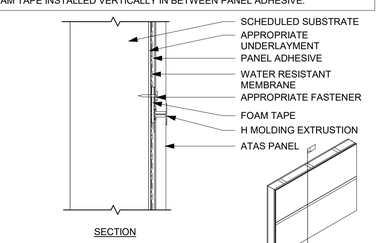
SCALE: 3" = 1'-0"



ATAS HORIZONTAL BASE OF WALL A4

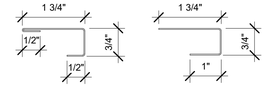
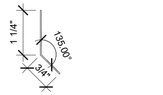
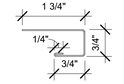
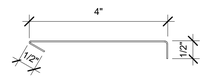
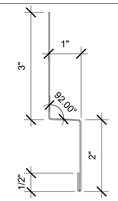
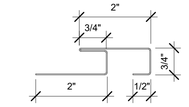
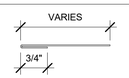
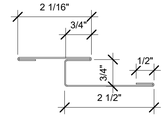
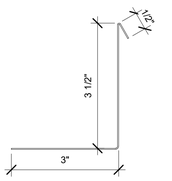
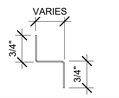
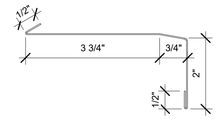
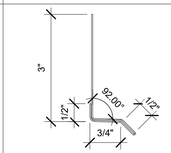
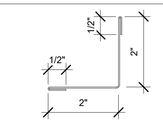
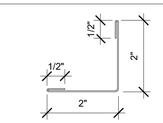
SCALE: 6" = 1'-0"

1. H MOLDING EXTRUSION INSTALLED ON FOAM TAPE. 2" MIN GAP AT 24" O.C. AND AT TRANSITION TO VERTICAL MOLDINGS.
2. PANEL ADHESIVE APPLIED 24" O.C. HORIZONTALLY AND 16" O.C. VERTICALLY.
3. FOAM TAPE INSTALLED VERTICALLY IN BETWEEN PANEL ADHESIVE.



ATAS TRANSITION DETAIL A3

SCALE: 3" = 1'-0"

MFA270		MFA995	
MFA034		MFA690	
MFA550		MFA687	
		MFA686	
		MFA685	
		MFA683	
		MFA681	
		MFA670	
		MFA661	
		MFA616	
		MFA615	

ATAS TRIM LEGEND A1

SCALE: 6" = 1'-0"

zebra

ZEBRA ARCHITECTURE, PLLC.
14614 N KIERLAND BLVD, SUITE N300
SCOTTSDALE, AZ 85254

PHONE: 480.912.1169 zbr.global

CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify al figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
ATAS TRIM DETAILS

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A521

WALL TYPE NOTES

A. ALL GWB TO BE CUT TO FIT TIGHT AROUND PENETRATIONS SUCH AS PIPES, DUCTS, CONDUIT, CABLES, ETC.
B. ALL PENETRATIONS OF FIRE-RATED PARTITIONS SHALL BE SEALED WITH FIRE STOP SEALANT; ALL OTHER PENETRATIONS TO BE SEALED WITH ACOUSTICAL SEALANT.
C. ALL PARTITIONS CONTAINING SOUND ATTENUATION BLANKETS, THERMAL INSULATION, OR FIRE STOPPING INSULATION SHALL BE SEALED ON ALL SIDES, TOP AND BOTTOM, AS DESIGNATED BY PARTITION TYPE.
D. ALL PARTITIONS WITH SINKS AND/OR "WET EQUIPMENT", ALL WALLS IN TOILET ROOMS, AND ALL WALLS IN KITCHEN AREAS TO HAVE 5/8" MOISTURE RESISTANT GWB WITH A 5/8" CEMENT BOARD BASE (SMOOTH SIDE OUT) TO 12" AFFF, UNO.
E. REVIEW DRAWINGS: PROVIDE BRACING AND BLOCKING IN PARTITIONS AS REQUIRED. ALL BLOCKING SHALL BE FIRE RETARDANT TREATED (FRT).
F. ALL FIRE RATED ASSEMBLIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE UL DESIGN NUMBER INDICATED FOR THE PARTITION TYPE.
G. ALLL PARTITIONS AT CERAMIC TILE SHALL HAVE A CEMENTITOUS BACKER BOARD SUBSTRATE.
H. ALL PARTITIONS IN MANAGER'S OFFICE TO HAVE 5/8" MINIMUM FRT PLYWOOD SHEATHING, EXTENDED TO UNDERSIDE OF STRUCTURE.
I. ALL PLYWOOD SHEATHING TO BE FIRE RETARDANT TREATED.

TYPICAL INTERIOR NON-LOAD BEARING STUD WALL - SLIP TRACK AT TOP

STUDS TO BE USED:

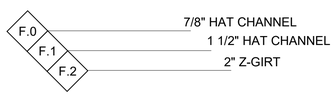
SIZE	SPACING	ALLOWABLE HEIGHT	BOTTOM TRACK GAUGE	TOP-"SLIP" TRACK GAUGE (3" DEEP TRACK)
3 5/8" - 25G STN	16"	15.4'	20	18
3 5/8" - 20G STR	16"	17.0'	20	18
3 5/8" - 18G HDS	16"	22.6'	20	18
6" - 20G STR	16"	24.5'	20	18
6" - 18G HDS	16"	33.6'	20	18

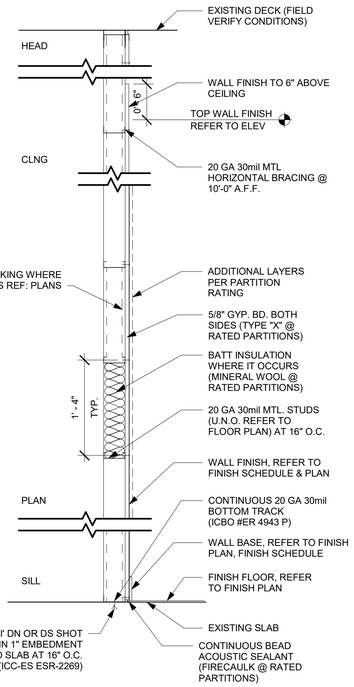
NOTES:

BUILDING CODE REQUIRES THAT INTERIOR PARTITION WALLS BE DESIGNED FOR A LATERAL LOAD OF 5 PSI. THE FOLLOWING GUIDELINES ARE BASED ON THIS LOAD. ALL STUDS GIVEN ARE ASSUMED TO BE EQUIVALENT TO THOSE MANUFACTURED BY DIETRICH INDUSTRIES, INC. ALL STUDS AND TRACKS ARE ASSUMED TO HAVE AN Fy = 33.0 KSI. ALL STUDS ARE ASSUMED TO HAVE 5/8" GYP BD ON BOTH FACES FOR THE FULL HEIGHT OR ARE PROVIDED WITH BRIDGING AS REQUIRED. DETAILS ARE PROVIDED TO ACCOMMODATE VERTICAL MOVEMENT AT THE TOP USING A 3" DEEP TRACK CONNECTION OR NO MOVEMENT. MAXIMUM HORIZONTAL DEFLECTION IS ASSUMED TO BE LIMITED TO H/240. PROVIDE LATERAL BRACING PER SCHEDULE.

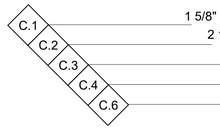
1. BOTTOM TRACK GAGES MAY BE SUBSTITUTED FOR TOP-SLIP TRACK GAGES IF STUDS ARE PERMANENTLY ATTACHED TO BOTH FLANGES OF THE TRACK WITH #10 SCREWS.
2. ATTACH BOTTOM TRACK TO SLAB WITH HILTI X-DNI 32 P8S15 @ 3'-0" O.C.
3. IF GYP BD IS ON ONE SIDE ONLY, ADD HORIZONTAL BRIDGING AT 5'-0" O.C. VERTICALLY.
4. IF YOU HAVE A CASE THAT DIFFERS FROM THE ABOVE, PLEASE CONTACT THE ARCHITECT.

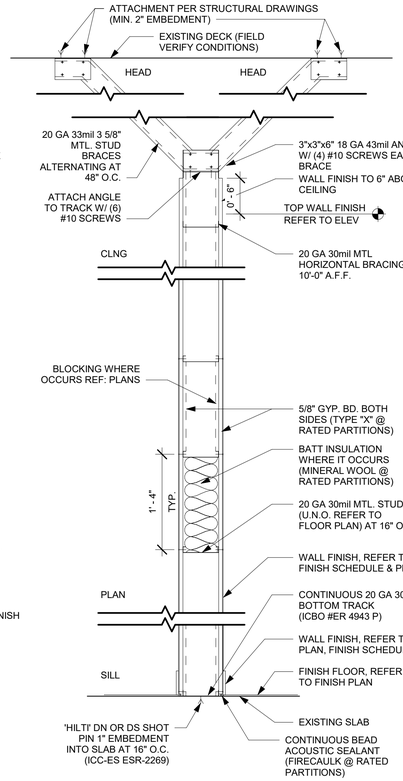
FURRING ONE SIDED



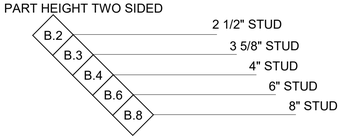


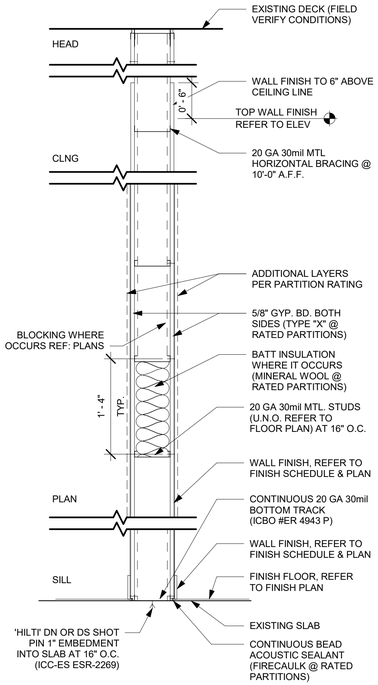
FULL HEIGHT ONE SIDED



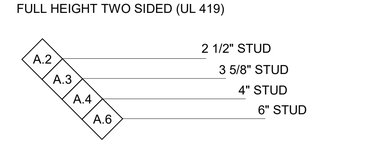


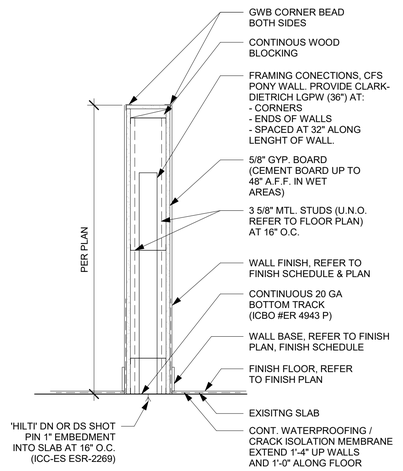
PART HEIGHT TWO SIDED





FULL HEIGHT TWO SIDED (UL 419)







LOW WALL PARTITION

PARTITION TYPES A2
SCALE: 1" = 1'-0"

LOW PARTITION A1
SCALE: 1" = 1'-0"

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CONSULTANT LOGO:

STORE NO:

FL, #1794

SHAKE SHACK

COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION

STATUS:

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STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT

08/28/2026

FIELD VERIFICATION:
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SHEET NAME:

WALL TYPES

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:

A531

CONCRETE SLAB
(UL HW-D-0003)

STEEL DECK - PARALLEL TO FLUTES
(UL HW-D-0024)

STEEL DECK - ELEVATION
(UL HW-D-0024)

STEEL DECK - PERPENDICULAR TO FLUTES
(UL HW-D-0024)

WOOD SHEATHING
(NON-RATED)

HEADER DETAILS

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

A1

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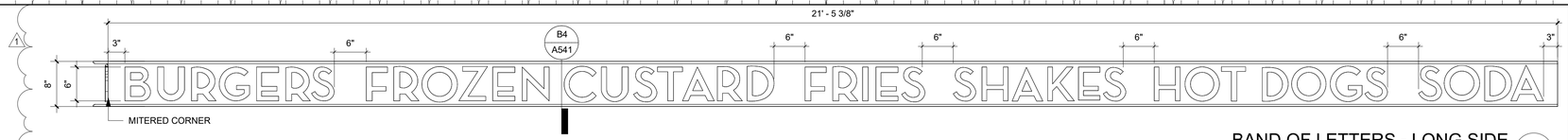
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SHEET NAME:
WALL TYPES

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

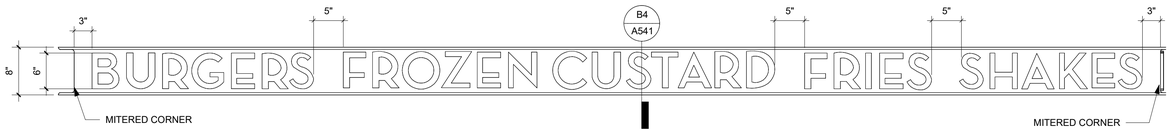
SHEET NO:
A532

SIGNAGE SHOWN FOR REFERENCE ONLY.
SIGNAGE UNDER A SEPARATE SIGN PERMIT APPLICATION.



BAND OF LETTERS - LONG SIDE D2

SCALE: 1" = 1'-0"



BAND OF LETTERS - SHORT SIDE D1

SCALE: 1" = 1'-0"

LANDLORD NOTE

LANDLORD'S SIGNAGE COMMENTS:

- LANDLORD AND TENANT RESPONSIBILITIES ARE AS DEFINED IN THE LEASE.
- ALL MODIFICATIONS TO THE LANDLORD APPROVED DRAWINGS SHALL BE RESUBMITTED TO THE LANDLORD FOR RE-APPROVAL. ALL CONSTRUCTION COMPLETED WITHOUT LANDLORD APPROVAL SHALL BE CORRECTED AS APPROVED BY LANDLORD AT TENANT SOLE EXPENSE.
- TENANT SHALL BE RESPONSIBLE FOR ALL PERMITS.
- PLANS REVIEWED AND APPROVED BY LANDLORD SHALL BE PRESENT ON THE JOB SITE AND BE ACCOMPANIED BY PLANS APPROVED FOR PERMIT. ALL PROPOSED DEVIATION FROM THE LANDLORD APPROVED PLANS SHALL BE NUMBERED AND CLOUDED ON THE PLANS, AND THEN RESUBMITTED BY THE TENANT TO THE LANDLORD FOR RE-APPROVAL PRIOR TO ANY FABRICATION AND / OR CONSTRUCTION CHANGES TAKING PLACE IN THE FIELD.
- APPROVAL OF TENANT'S SIGNAGE DOCUMENTS BY THE LANDLORD DOES NOT RELEASE THE TENANT AND OR TENANT'S CONTRACTORS FROM COMPLYING WITH THE LEASE AGREEMENT AND ALL AUTHORITIES HAVING JURISDICTION (AHJ) INCLUDING BUT NOT LIMITED TO LOCAL, STATE, NATIONAL, AND MALL CRITERIA, ACTS, CODES, AND OTHER REQUIREMENTS.
- ALL LANDLORD COMMENTS ON THIS SET OF DRAWINGS SHALL APPLY TO THE ENTIRE DOCUMENT SET, EVEN IF NOT REPEATED ON EVERY SHEET.
- TENANT'S SIGNAGE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL MALL RULES AND REGULATIONS AND AS INSTRUCTED ON SITE BY MALL OPERATIONS TEAM.
- TENANT'S SIGNAGE CONTRACTOR IS REQUIRED TO CHECK IN WITH LANDLORD'S MALL OPERATIONS TEAM PRIOR TO THE START OF TENANT CONSTRUCTION.
- ALL DAMAGE AND / OR DOWNTIME TO LANDLORD'S PROPERTY OR OTHER TENANT'S PROPERTY DURING CONSTRUCTION (I.E. MALL FLOORING, BULKHEAD, NEUTRAL PIERS, ETC.) SHALL BE REPAIRED TO "LIKE-NEW" CONDITION AND REIMBURSED AT TENANT'S SOLE EXPENSE.
- ALL LANDLORD EQUIPMENT, COMPONENT, AND / OR SERVICES FEEDING OTHER TENANT(S) THAT ARE EXISTING IN THE SPACE SHALL REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. TENANT SHALL INSTALL ACCESS PANELS AS REQUIRED TO MAINTAIN ACCESS AND SHALL BE LABELED TO PROPERLY IDENTIFY SYSTEMS. TENANT SHALL COORDINATE LOCATION WITH MALL OPERATIONS TEAM.
- THE SIGN AND ITS SYSTEM OF COMPONENTS AND DEVICES SHALL BE UL APPROVED AND LABELED, SEPARATELY GROUNDED, AND IN COMPLIANCE WITH NEC, UL, AND AUTHORITIES HAVING JURISDICTION (AHJ) INCLUDING BUT NOT LIMITED TO LOCAL , STATE, NATIONAL, AND MALL CRITERIA, ACTS, CODES, AND OTHER REQUIREMENTS.
- ALL SIGNAGE TRANSFORMERS SHALL BE EXTERIOR GRADE AND CONCEALED WITHIN THE SIGNAGE OR LOCATED REMOTELY CONCEALED FROM VIEW. TRANSFORMER NOISE SHALL NOT BE AUDIBLE FROM WITHIN THE CENTER.
- LED LAMPING IS PREFERRED FOR ALL SIGNAGE ILLUMINATION AND MAYBE REQUIRED BY LANDLORD'S DESIGN CRITERIA AND / OR AUTHORITIES HAVING JURISDICTION (AHJ); NEON TUBING IS STRICTLY PROHIBITED. AUXILIARY SIGNAGE, POSTERS, AND / OR ADVERTISING BANNERS ARE PROHIBITED IN "DESIGN CONTROL ZONE", INCLUDING BUT NOT LIMITED TO HOURS OF OPERATION, OPEN SIGNS, ADVERTISING, AND DBA SIGNS.
- ALL ILLUMINATED STOREFRONT ENTRY LIGHTS, SHOW WINDOW LIGHTS, AND SHOW WINDOW RECEPTACLES SHALL BE SEPARATELY CIRCUITED AND CONTROLLED BY A TIME SWITCH ALLOWING 7-DAY / 24-HOUR PROGRAMMING. SYSTEM SHALL BE PROGRAMMED FOR ILLUMINATION DURING MALL BUSINESS HOURS AND SHALL BE COORDINATED WITH THE MALL OPERATIONS TEAM.
- THE SIGN AND ITS SYSTEM OF COMPONENTS SHALL BE SECURELY FASTENED AND CONCEALED BEHIND TENANT'S STOREFRONT OR BUILDING FAÇADE.

INTERIOR SIGANGE APPLICATIONS:

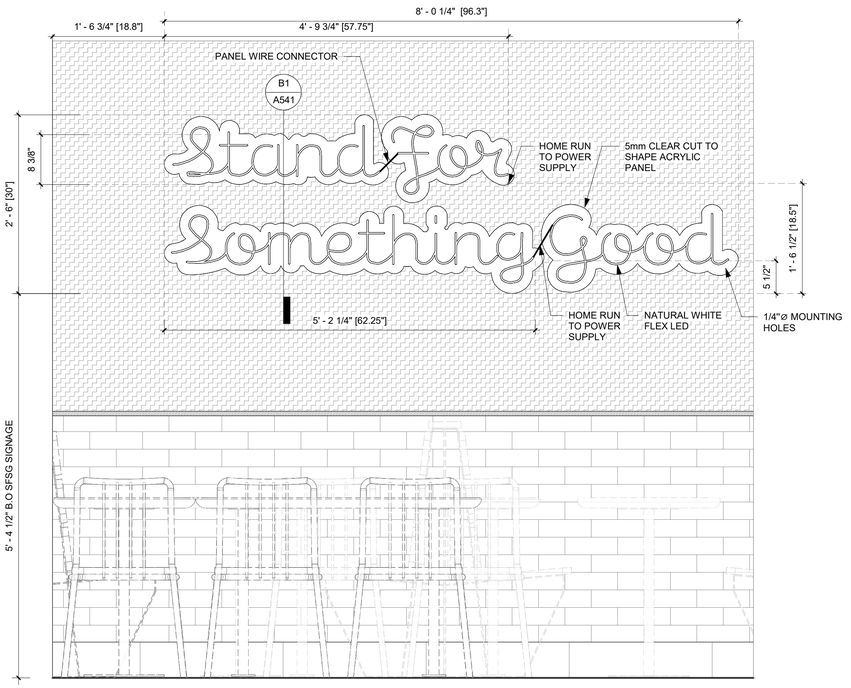
- BOX OR CABINET SIGNS WILL ONLY BE APPROVED FOR INTERIOR APPLICATION IF THEY ARE RECESSED AND FLUSH WITH THE STOREFRONT.
- INTERIOR STOREFRONT SIGNAGE SHALL BE SEPARATELY CIRCUITED AND CONTROLLED BY A TIME SWITCH ALLOWING 7-DAY / 24-HOUR PROGRAMMING.

EXTERIOR SIGNAGE APPLICATIONS:

- PRIOR TO INSTALLATION OF EXTERIOR SIGNAGE, THE SIGN INSTALLER SHALL BE REQUIRED TO PLACE A TEMPLATE ON THE STOREFRONT INDICATING THE SIGN PLACEMENT & LIGHT LOCATION(S), WHERE APPLICABLE, AND APPROVED BY MALL OPERATIONS TEAM PRIOR TO INSTALLATION.
- EXTERIOR SIGNAGE SHALL BE MANUFACTURED FROM EXTERIOR GRADE MATERIALS, HAVING SEMI-GLASS OR MATTE FINISH, AND BE WATERPROOF. ALL ATTACHMENT SYSTEMS SHALL BE CONCEALED STAINLESS STEEL AND ALL BUILDING PENETRATIONS SHALL BE SEALED WITH EXTERIOR GRADE SYSTEMS.
- THE SIGN AND ITS SYSTEM OF COMPONENTS SHALL BE SECURELY FASTENED AND CONCEALED BEHIND TENANT'S STOREFRONT OR BUILDING FAÇADE.
- ALL EXTERIOR ILLUMINATED STOREFRONT SIGNAGE SHALL BE SEPARATELY CIRCUITED AND CONTROLLED BY A PHOTOCELL.
- ALL RELATED ROOF WORK, INCLUDING PARAPET WALLS, SHALL BE DONE BY LANDLORD'S REQUIRED ROOFING CONTRACTOR, AT TENANT'S SOLE EXPENSE. COORDINATE ALL WORK WITH MALL OPERATIONS TEAM.

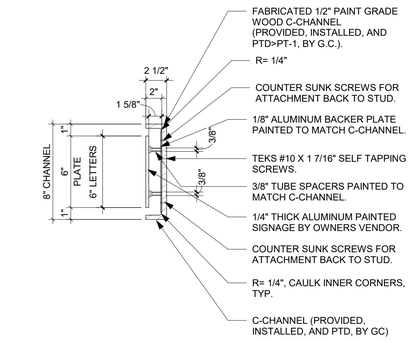
SIGNAGE BY OWNER'S VENDOR. GC TO PROVIDE NECESSARY POWER, BLOCKING AND GROMMETS; REFER TO FINAL SIGNAGE DRAWINGS FOR HOME RUN & POWER LOCATIONS. COORDINATE W/ OWNER'S VENDOR AND E-SHEETS.

GC MUST PLACE CONDUITS BASED ON THE HOME RUN DIMENSIONS PROVIDED BY THE SIGN COMPANY PER THE SIGNAGE PACKAGE/ HOME RUNS NOTED IN THIS DETAIL ARE FOR REFERENCE ONLY



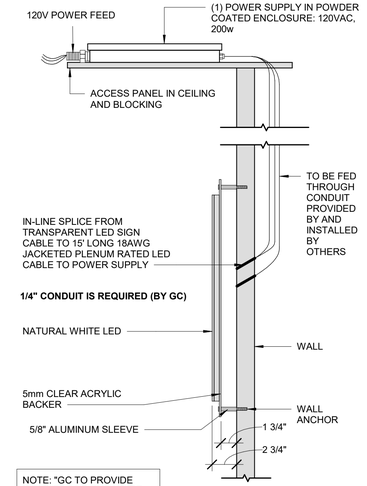
SFSG ENLARGED DETAIL B2

SCALE: 1" = 1'-0"



C-CHANNEL DETAIL B4

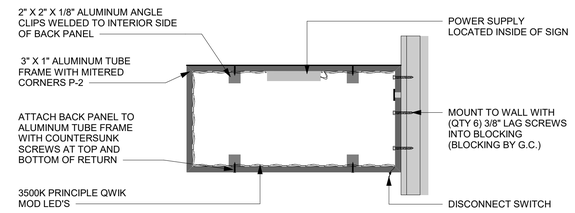
SCALE: 1 : 6



NOTE: "GC TO PROVIDE SLEEVES AND PULL WIRE TO FEED SIGN WIRING UP ABOVE CEILING / BEHIND WALL WHERE LED POWER SUPPLY WILL BE LOCATED."

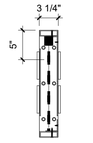
'SFSG' SIGNAGE SECTION B1

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



EXTERIOR SIGN - CROSS SECTION VIEW A4

SCALE: 1" = 1'-0"



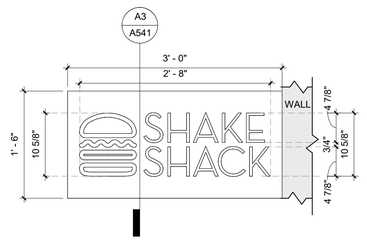
EXTERIOR SIGN - CROSS SECTION VIEW A3

SCALE: 1" = 1'-0"



EXTERIOR SIGN - END VIEW A2

SCALE: 1" = 1'-0"



EXTERIOR SIGN - FRONT VIEWEXTERIOR SIGN - FRONT VIEW A1

SCALE: 1" = 1'-0"

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08/28/2026

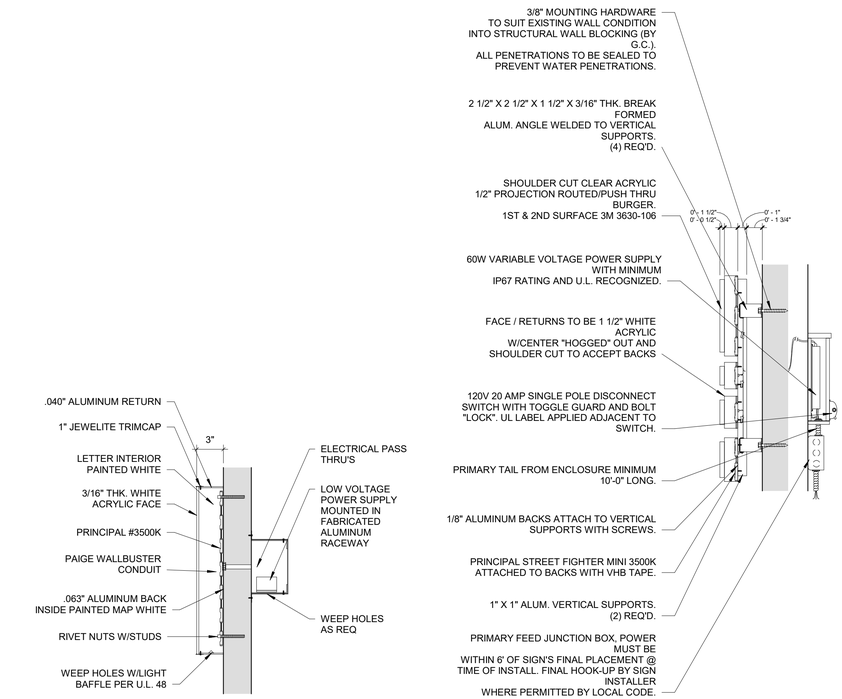
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PROJECT NO: 41354
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SHEET NO:
A541

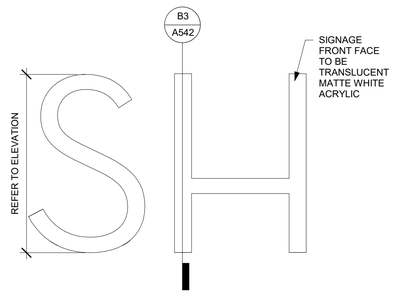


WALL MOUNTED SHAKE SHACK SECTION **B3**

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

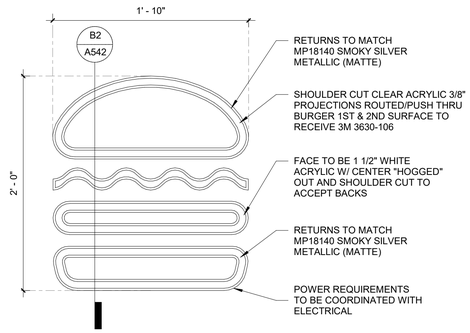
WALL MOUNTED BURGER LOGO SECTION **B2**

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



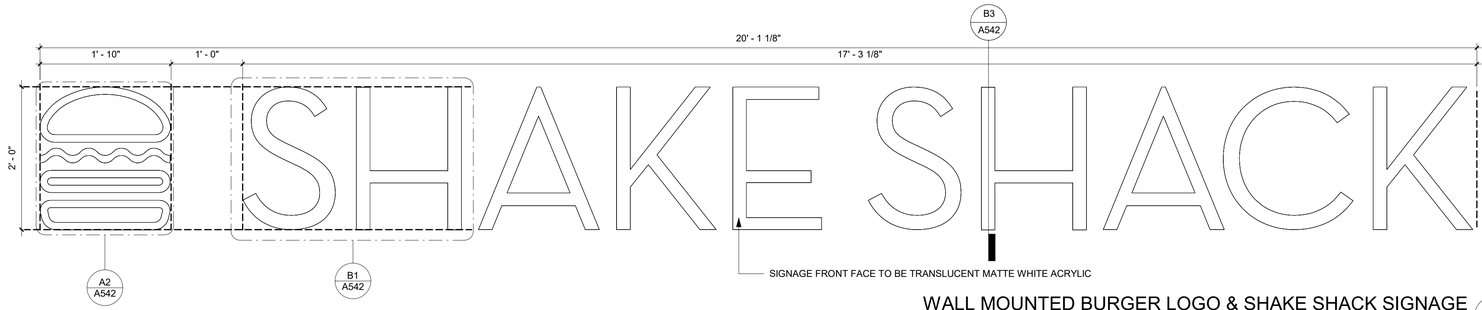
EXTERIOR WALL MOUNTED SHAKE SHACK ELEVATION **B1**

SCALE: 1" = 1'-0"



BURGER LOGO WALL MOUNTED - ELEVATION **A2**

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



WALL MOUNTED BURGER LOGO & SHAKE SHACK SIGNAGE **A1**

SCALE: 1" = 1'-0"

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SHEET NO:

A542

SHAKE SHACK

SPECIFICATIONS

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015000	TEMPORARY FACILITIES AND CONTROLS
016000	PRODUCT REQUIREMENTS
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LANDLORD NOTE

GENERAL COMMENTS:

- PLANS REVIEWED AND APPROVED BY LANDLORD'S TENANT COORDINATOR MUST BE PRESENT ON THE JOB SITE AND BE ACCOMPANIED BY PLANS APPROVED FOR BUILDING PERMIT. ANY PROPOSED DEVIATION FROM THE LANDLORD APPROVED PLANS MUST BE NUMBERED AND CLOUDED ON THE PLANS, AND THEN RESUBMITTED BY THE TENANT TO THE LANDLORD FOR RE-APPROVAL PRIOR TO ANY CONSTRUCTION CHANGES TAKING PLACE IN THE FIELD.
- TENANT'S GC IS REQUIRED TO CHECK IN WITH LANDLORD'S ON SITE PROPERTY MANAGER PRIOR TO THE START OF TENANT CONSTRUCTION. CONTACT MALL MANAGEMENT OFFICE.
- CONTACT PROPERTY MANAGEMENT FOR CONSTRUCTION BARRICADE REQUIREMENTS, INCLUDING BARRICADE GRAPHICS.
- TENANT'S GC IS RESPONSIBLE TO COMPLY WITH ALL MALL RULES AND REGULATIONS AND AS INSTRUCTED ON SITE BY MALL MANAGEMENT.
- ANY DAMAGE TO LANDLORD'S PROPERTY DURING TENANT DEMOLITION OR CONSTRUCTION (MALL FLOORING, BULKHEAD, NEUTRAL PIERS, ETC.) WILL BE REPAIRED PER MALL SPECIFICATIONS, AT TENANT'S EXPENSE.
- ANY LANDLORD EQUIPMENT, COMPONENT, AND / OR SERVICE FEEDING OTHER TENANT(S) THAT IS EXISTING IN THE SPACE MUST REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. TENANT SHALL INSTALL ACCESS PANELS AS REQUIRED TO MAINTAIN ACCESS. ACCESS PANELS SHALL BE LABELED TO PROPERLY IDENTIFY SYSTEM, COORDINATE WITH MALL OPERATIONS.
- ALL LANDLORD COMMENTS FROM PREVIOUS REVIEW(S) ARE TO BE INCORPORATED INTO THE FINAL SET OF APPROVED DRAWINGS AND ARE TO BE ADHERED TO IN THE FIELD.
- ALL LANDLORD COMMENTS ON THIS SET OF DRAWINGS SHALL APPLY TO THE ENTIRE DOCUMENT SET, EVEN IF NOT REPEATED ON EVERY SHEET IN DRAWING SET.
- THE RE-USE OF ANY EXISTING CONSTRUCTION, FINISHES, EQUIPMENT, OR ELECTRICAL, PLUMBING OR HVAC SYSTEMS CURRENTLY IN THE SPACE IS CONDITIONAL UPON IT BEING APPROPRIATE FOR RE-USE. ANY EXISTING CONDITION OR EQUIPMENT TO BE RE-USED MUST BE RESTORED TO LIKE NEW CONDITIONS. THE LANDLORD MAKES NO WARRANTY ON THE RE-USE OF ANY EXISTING CONDITION IN THE SPACE.
- IF AT ANY POINT A FAILURE, UPGRADES, AND / OR IMPROVEMENTS TO EXISTING SYSTEMS OCCUR, IT IS THE SOLE RESPONSIBILITY OF THE TENANT TO REPAIR OR REPLACE, AT TENANT EXPENSE.
- LANDLORD AND TENANT RESPONSIBILITIES ARE AS DEFINED IN LEASE AGREEMENT.
- LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

SECTION 011000 - SUMMARY

1.1 WORK REQUIREMENTS

A. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION INDICATED ON THESE CONSTRUCTION DOCUMENTS, WITH FINAL APPROVALS OF ALL WORK (AS REQUIRED) BY THE TENANT.

B. THE WORK CONSISTS OF A TOTAL SQUARE FOOTAGE AS INDICATED IN CONTRACT DOCUMENTS.

C. CONSTRUCT WORK IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS. CONTRUCT WORK IN ACCORDANCE WITH GENERALLY ACCEPTED STANDARDS OF CONSTRUCTION AND IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND SPECIFICATIONS WHETHER SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS OR NOT.

D. THE CONTRACTOR RESPONSIBLE FOR THE PORTION OF THE WORK REQUIRING INSPECTIONS BY GOVERNMENT AGENCIES IS CHARGED WITH REQUESTING ALL SUCH INSPECTIONS AND PAYING FOR ANY FEES CONNECTED THEREWITH.

E. CLOSE COORDINATION WILL BE REQUIRED BETWEEN GENERAL, MECHANICAL, ELECTRICAL, AND STRUCTURAL CONTRACTORS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE SCHEDULING AND PHASING OF THE CONSTRUCTION. THE TENANT SHALL DESIGNATE ONE PERSON TO BE RESPONSIBLE FOR COORDINATION WITH GENERAL CONTRACTOR'S SUPERINTENDENT.

F. CONTRACTOR SHALL MAINTAIN OWNER AND LANDLORD REQUIRED INSURANCE AND WORKERS' COMPENSATION AT ALL TIMES AND FURNISH PROOF OF SAME TO OWNER PRIOR TO START OF CONSTRUCTION.

G. OWNER-FURNISHED PRODUCTS: THE FOLLOWING PRODUCTS WILL BE FURNISHED BY OWNER AND SHALL BE INSTALLED BY CONTRACTOR AS PART OF THE WORK:
1. REFER TO COMPREHENSIVE EQUIPMENT SCHEDULE AND PROJECT RESPONSIBILITY MATRIX, WHICH DESIGNATES RESPONSIBILITY FOR FURNISHING AND INSTALLING THE VARIOUS ITEMS INCLUDED IN THE PROJECT, AS WELL AS FINAL CONNECTIONS.

1.2 WORK RESTRICTIONS

A. CONTRACTOR'S USE OF PREMISES: DURING CONSTRUCTION, CONTRACTOR WILL HAVE FULL USE OF SITE. CONTRACTOR'S USE OF PREMISES IS LIMITED ONLY BY OWNER'S RIGHT TO PERFORM WORK OR EMPLOY OTHER CONTRACTORS ON PORTIONS OF PROJECT AND AS FOLLOWS:
1. DRIVEWAYS, WALKWAYS, AND ENTRANCES: KEEP DRIVEWAYS LOADING AREAS, AND ENTRANCES SERVING PREMISES CLEAR AND AVAILABLE TO OWNER, OWNER'S EMPLOYEES, AND EMERGENCY VEHICLES AT ALL TIMES. DO NOT USE THESE AREAS FOR PARKING OR STORAGE OF MATERIALS.

SECTION 019113- GENERAL COMMISSIONING REQUIREMENTS

1.1 SUMMARY

A. SECTION INCLUDES GENERAL REQUIREMENTS THAT APPLY TO THE IMPLEMENTATION OF COMMISSIONING FOR THE FOLLOWING SYSTEMS, ASSEMBLIES OR COMPONENTS:

1. FIRE PROTECTION SYSTEMS.
   a. ANSUL SYSTEM
   b. WET SYSTEM
   c. DRY SYSTEM
   d. STANDPIPE

2. PLUMBING SYSTEMS:
   a. SANITARY SYSTEM
   b. DOMESTIC WATER SYSTEM
   c. CONDENSATE SYSTEM
   d. NATURAL GAS SYSTEM

3. MECHANICAL SYSTEMS:
   a. AIR HANDLING UNITS (SUPPLY FANS, RETURN FAN, PACKAGED UNITS, ROOF TOP UNITS, SPECIALIZED FANS)
   b. EXHAUST FANS
   c. FAN COIL UNITS AND TERMINAL UNITS
   d. CONDENSING UNITS
   e. MAKE-UP AIR UNITS
   f. ELECTROSTATIC PRECIPITATOR (ESP)
   g. DUCTWORK AND PIPING
   h. DUCT LEAKAGE
   i. BALANCE DAMPERS AND SMOKE/FIRE DAMPERS
   j. VARIABLE FREQUENCY DRIVES
   k. CONDENSATE PUMPS

4. ELECTRICAL SYSTEMS:
   a. TRANSFORMERS
   b. PANELBOARDS
   c. VARIABLE FREQUENCY DRIE AND MOTOR STARTERS
   d. INTERIOR/EXTERIOR LIGHTING CONTROLS AND LIGHTING OCCUPANCY SENSORS

1.2 DEFINITIONS

A. BOD: BASIS OF DESIGN. A DOCUMENT THAT RECORDS CONCEPTS, CALCULATIONS, DECISIONS, AND PRODUCT SELECTIONS USED TO MEET THE OPR AND TO SATISFY APPLICABLE REGULATORY REQUIREMENTS, STANDARDS, AND GUIDELINES. THE DOCUMENT INCLUDES BOTH NARRATIVE DESCRIPTIONS AND LISTS OF INDIVIDUAL ITEMS THAT SUPPORT THE DESIGN PROCESS.

B. COMMISSIONING PLAN: A DOCUMENT THAT OUTLINES THE ORGANIZATION, SCHEDULE, ALLOCATION OF RESOURCES, AND DOCUMENTATION REQUIREMENTS OF THE COMMISSIONING PROCESS.

C. CXA: COMMISSIONING AUTHORITY.

1.3 COMMISSIONING TEAM

A. MEMBERS APPOINTED BY OWNER:
1. CXA: THE DESIGNATED PERSON, COMPANY, OR ENTITY THAT PLANS, SCHEDULES, AND COORDINATES THE COMMISSIONING TEAM TO IMPLEMENT THE COMMISSIONING PROCESS. OWNER WILL ENGAGE THE CXA UNDER A SEPARATE CONTRACT.
2. REPRESENTATIVE OF SHAKE SHACK'S DEVELOPMENT TEAM.
3. ARCHITECT AND ENGINEERING DESIGN PROFESSIONAL.

B. MEMBERS APPOINTED BY CONTRACTOR(S): INDIVIDUALS, EACH HAVING THE AUTHORITY TO ACT ON BEHALF OF THE ENTITY HE OR SHE REPRESENTS, EXPLICITLY ORGANIZED TO IMPLEMENT THE COMMISSIONING PROCESS THROUGH COORDINATED ACTION. THE COMMISSIONING TEAM SHALL CONSIST OF, BUT NOT BE LIMITED TO, REPRESENTATIVES OF EACH CONTRACTOR, INCLUDING PROJECT SUPERINTENDENT AND SUBCONTRACTORS, INSTALLERS, SUPPLIERS, AND SPECIALISTS DEEMED APPROPRIATE BY THE CXA.

1.4 OWNER RESPONSIBILITIES

A. REVIEW AND APPROVED COMMISSIONING PLAN AND SCHEDULE, AND SUPPORT RESOLUTION OF ISSUES AND PROGRESS OF THE COMMISSIONING PROCESS.

1.5 CONTRACTOR'S RESPONSIBILITIES

A. CONTRACTORS SHALL ASSIGN REPRESENTATIVES WITH EXPERTISE AND AUTHORITY TO ACT ON ITS BEHALF AND SHALL SCHEDULE THEM TO PARTICIPATE IN AND PERFORM COMMISSIONING PROCESS ACTIVITIES INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
1. PERFORM COMMISSIONING TESTS AT THE DIRECTION OF THE CXA.
2. ATTEND TESTING, ADJUSTING AND BALANCING REVIEW AND COORDINATION MEETING.
3. ATTEND COMMISSIONING TEAM MEETINGS.
4. INTEGRATE AND COORDINATE COMMISSIONING PROCESS ACTIVITIES WITH CONSTRUCTION SCHEDULE.
5. PARTICIPATE IN COMMISSIONED SYSTEMS, ASSEMBLIES, EQUIPMENT, AND COMPONENT MAINTENANVE ORIENTATION AND INSPECTION AS DIRECTED BY THE CXA.
6. EVALUATE PERFORMANCE DEFICIENCIES IDENTIFIED IN TEST REPORTS AND, IN COLLABORATION WITH ENTITY RESPONSIBLE FOR THE SYSTEM AND EQUIPMENT INSTALLATION, RECOMMEND CORRECTIVE ACTION.
7. COOPERATE WITH THE CXA FOR RESOLUTION OF ISSUES RECORDED IN THE ISSUES LOF.
8. CONTRACTORS SHALL RESPOND TO THE COMMISSIONING ISSUES LOG ITEMS IN WRITING (OR ELECTRONICALLY) WITHIN ONE (1) WEEK OF ISSUES LOG ISSUE DATE.
9. MAINTAIN AN ACCURATE SET OF RED-LINE DRAWINGS FOR AS-BUILTS.
10. PERFORM AND DOCUMENT STATIC TESTING OF DUCT, PIPING AND ELECTRICAL CABLING AS REQUIRED BY SPECIFICATIONS.
11. REVIEW AND ACCEPT COMMISSIONING PROCESS TEST PROCEDURES PROVIDED BY THE COMMISSIONING AUTHORITY.
12. COMPLETE THE PREFUNCTIONAL COMMISSIONING (CONSTRUCTION CHECKLISTS) CHECKLISTS FORMS PROVIDED BY THE CXA.
13. PROVIDE COMPLETED PREFUNCTIONAL COMMISSIONING CHECKLIST FORMS TO THE CXA WITHIN ONE (1) WEEK OF COMPLETION AND PRIOR TO THE START OF SCHEDULED FUNCTIONAL COMMISSIONING TESTS, WHICHEVER COMES FIRST.
14. COMPLETE COMMISSIONING TEST PROCEDURES AND CHECKLISTS AS WORK IS COMPLETED.
15. SUBMIT STATIC AND DYNAMIC TEST REPORTS TO THE OWNER AND CXA AS REQUIRED BY THE PROJECT SPECIFICATIONS AND COMMISSIONING CHECKLISTS.
16. CONTRACTORS SHALL STARTUP AND PERFORM SYSTEM TESTING PRIOR TO EXECUTING THE SEQUENCE OF OPERATIONS TESTING WITH THE CXA TO "SHAKEDOWN" AND "TROUBLESHOOT" THE SYSTEM OF NUISANCE ISSUES. APPLICABLE TO ANY SYSTEM WITH CONTROLS.
17. CONTRACTORS SHALL SUPPORT THE EXECUTION OF FUNCTIONAL COMMISSIONING TESTS BY DEMONSTRATING SYSTEM OPERATION TO THE CXA.
18. OFFICIAL COMMISSIONING FUNCTIONAL TEST EXECUTION FOR ANY SPECIFIC PIECE OF EQUIPMENT/SYSTEM/SUBSYSTEM SHALL BE SCHEDULED UPON THE INSTALLING CONTRACTOR/SUBCONTRACTOR NOTIFYING THE COMMISSIONING TEAM THAT SUCH SPECIFIC PIECE OF PMENT/SUBSYSTEM IS READY FOR COMMISSIONGING. EQUIPMENT AND SYSTEMS ARE EXPECTED TO BE IN FULL COMPLIANCE WITH THE DESIGN INTENT BY THE COMMISSIONING PHASE.
19. PROVIDE RE-TESTING OF FAILED ITEMS IN THE ISSUES LOG THAT HAVE BEEN RESOLVED.

1.6 COORDINATION

A. THE ARCHITECT AND ENGINEER SHALL BE RESPONSIBLE FOR FURNISHING A COPY OF ALL CONSTRUCTION DOCUMENTS AND FIELD NOTICES TO CXA.

B. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING A COPY OF APPROPRIATE SUBMITTALS AND SHOP DRAWINGS TO THE CXA.

C. THE CXA SHALL COORDINATE DIRECTLY WITH THE CONTRACTOR ON THE PROJECT SPECIFIC TO THEIR RESPONSIBILITIES AND CONTRACTUAL OBLIGATIONS. IF THE CONTRACTORS IS A SUBCONTRACTORS TO ANOTHER CONTRACTOR, THE CXA SHALL DISSEMINATE WRITTEN INFORMATION TO ALL RESPONSIBLE PARTIES RELATIVE TO THE NATURE AND EXTENT OF THE COMMUNICATION.

D. THE CXA IS PRIMARILY RESPONSIBLE TO THE OWNER, AND AS SUCH, SHALL REGULARLY APPRISE THE OWNER OF PROGRESS, INCLUDING PENDING PROBLEMS AND/OR DISPUTES, AND SHALL PROVIDE REGULAR STATUS REPORTS ON PROGRESS WITH EACH SYSTEM. ANY POTENTIAL CHANGE IN THE CONTRACTUAL AND/OR FINANCIAL OBLIGATIONS OF THE OWNER (CREDITS, CHANGE ORDERS, SCHEDULE CHANGES, ETC.) SHALL BE IDENTIFIED AND QUANTIFIED AS SOON AS POSSIBLE.

1.7 SCHEDULE

A. START-UP AND TESTING OF SYSTEMS MAY PROCEED PRIOR TO FUNAL COMPLETION OF SYSTEMS TO EXPEDITE PROGRESS. HOWEVER, THE CXA SHALL NOT PERFORM TESTING AND CHECKOUT SERVICES THAT ARE THE PRIMARY RESPONSIBILITY OF THE CONTRACTOR OR VENDOR IN ADVANCE OF THEIR TESTING AND CHECKOUT.

B. PROBLEMS OBSERVED SHALL BE ADDRESSED IMMEDIATELY, RESPONSIBLE PARTIES NOTIFIED, AND ACTIONS TO CORRECT DEFICIENCIES COORDINATED IN A TIMELY MANNER.

C. CONTRACTOR SCHEDULES AND SCHEDULING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE CXA SHALL PROVIDE COMMISSIONING SCHEDULING INFORMATION TO THE GENERAL CONTRACTOR FOR REVIEW AND PLANNING ACTIVITIES.

1.8 RELATED WORK

A. COMMISSIONING REQUIRES SUPPORT FROM THE CONTRACTORS. THE COMMISSIONING PROCESS DOES NOT RELIEVE ANY CONTRACTORS FROM THEIR OBLIGATIONS TO COMPLETE ALL PORTIONS OF WORK IN A SATISFACTORY MANNER, NOR DOES IT RELIEVE CONTRACTORS FROM PROVIDING A COMPLETE AND FULLY FUNCTIONAL INSTALLATION MEETING THE PROJECT SPECIFICATIONS AND DESIGN INTENT.

SECTION 012500 - SUBSTITUTION PROCEDURES

1.1 SUBSTITUTION PROCEDURES

A. SUBSTITUTIONS INCLUDE CHANGES IN PRODUCTS, MATERIALS, EQUIPMENT, AND METHODS OF CONSTRUCTION FROM THOSE REQUIRED BY THE CONTRACT DOCUMENTS AND PROPOSED BY CONTRACTOR.

B. SUBSTITUTION REQUESTS: SUBMIT THREE COPIES OF EACH REQUEST FOR CONSIDERATION. IDENTIFY PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED. INCLUDE SPECIFICATION SECTION NUMBER AND TITLE AND DRAWING NUMBERS AND TITLES.
1. SUBSTITUTION REQUEST FORM: USE FACSIMILE OF FORM PROVIDED AT THE END OF THIS SECTION.
2. SUBMIT REQUESTS WITHIN 60 DAYS AFTER THE NOTICE TO PROCEED.
3. IDENTIFY PRODUCT TO BE REPLACED AND SHOW COMPLIANCE WITH REQUIREMENTS FOR SUBSTITUTIONS. INCLUDE A DETAILED COMPARISON OF SIGNIFICANT QUALITIES OF PROPOSED SUBSTITUTION WITH THOSE OF THE WORK SPECIFIED, A LIST OF CHANGES NEEDED TO OTHER PARTS OF THE WORK REQUIRED TO ACCOMMODATE PROPOSED SUBSTITUTION, AND ANY PROPOSED CHANGES IN THE CONTRACT SUM OR THE CONTRACT TIME SHOULD THE SUBSTITUTION BE ACCEPTED.

C. ARCHITECT WILL REVIEW PROPOSED SUBSTITUTIONS AND NOTIFY CONTRACTOR OF THEIR ACCEPTANCE OR REJECTION BY CHANGE ORDER. IF NECESSARY, ARCHITECT WILL REQUEST ADDITIONAL INFORMATION OR DOCUMENTATION FOR EVALUATION.
1. ARCHITECT WILL NOTIFY CONTRACTOR OF ACCEPTANCE OR REJECTION OF PROPOSED SUBSTITUTION WITHIN 15 DAYS OF RECEIPT OF REQUEST, OR SEVEN DAYS OF RECEIPT OF ADDITIONAL INFORMATION OR DOCUMENTATION, WHICHEVER IS LATER.

D. DO NOT SUBMIT UNAPPROVED SUBSTITUTIONS ON SHOP DRAWINGS OR OTHER SUBMITTALS.

SUBSTITUTION REQUEST FORM

(After the Bidding/Negotiation Stage)

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ Architect's Project Number: _____

Specification Title: _____ Description: _____

Section: _____

Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Adress: _____ Phone: _____

Trade Name: _____ Model No: _____

Installer: _____ Adress: _____ Phone: _____

History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product:

_____

☐ Point-by-point comparative data attached – **REQUIRED FOR A/E TO CONSIDER SUBSTITUTION**

Reason for not providing specified item:

_____

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

_____

Savings to Owner for accepting substitution: _____

Proposed substitution changes Contract Time ☐ No ☐ Yes

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports

SUBSTITUTION REQUEST FORM

(After the Bidding/Negotiation Stage)

The Undersigned certifies:
1. The proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
2. Same warranty will be furnished for proposed substitution as for specified product.
3. Same maintenance service and source of replacement parts, as applicable, is available.
4. Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
5. Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
7. Proposed substitution does not affect dimensions and functional clearances.
8. Payment will be made for changes to building design, including Architect/Engineer design, detailing, and construction costs caused by the substitution.
9. Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Note: Both General Contractor/CM AND Subcontractor or Supplier complete and sign below.

	General Contractor or Construction Manager	Subcontractor or Supplier
Submitted by:		
Signed by:		
Firmed:		
Address:		
Telephone:		
Email Address:		
Attachments:		

ARCHITECT'S/ENGINEER'S REVIEW AND ACTION AND OWNER'S ACCEPTANCE OF THEM

☐ Substitution approved – When both A/E and Owner have signed below make submittals in accordance with the Specification Section "Substitution Procedures".

☐ Substitution approved as noted – When both A/E and Owner have signed below, make submittals in accordance with the Specification Section "Substitution Procedures".

☐ Substitution rejected – Use specified materials.

☐ Substitution Request received too late – Use specified materials.

Signed by A/E: _____ Date: _____

A/E Action Accepted by Owner: _____ Date: _____

Additional Comments: ☐ Contractor ☐ Subontractor ☐ Supplier ☐ Manufacturer ☐ A/E

_____

_____

SECTION 013000 – ADMINISTRATIVE REQUIREMENTS

1.1 CONSTRUCTION SCHEDULE

A. PREPARE A HORIZONTAL BAR-CHART CONSTRUCTION SCHEDULE, BASED ON A CONSTRUCTION SCHEDULE WHICH WILL BE PROVIDED BY THE OWNER. PROVIDE A SEPARATE TIME BAR FOR EACH ACTIVITY AND A VERTICAL LINE TO IDENTIFY THE FIRST WORKDAY OF EACH WEEK. USE SAME BREAKDOWN OF WORK INDICATED IN THE SCHEDULE OF VALUES. AS WORK PROGRESSES, MARK EACH BAR TO INDICATE ACTUA COMPLETION.
1. SUBMIT WITHIN 10 DAYS AFTER DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK.
2. COORDINATE EACH ELEMENT WITH OTHER ACTIVITIES. SHOW EACH ACTIVITY IN PROPER SEQUENCE. INDICATE SEQUENCES NECESSARY FOR COMPLETION OF RELATED WORK.
3. INDICATE SUBSTANTIAL COMPLETION AND ALLOW TIME FOR OWNER'S PROCEDURES NECESSARY FOR CERTIFYING SUBSTANTIAL COMPLETION.
4. SCHEDULE DISTRIBUTION: DISTRIBUTE COPIES TO OWNER, ARCHITECT, SUBCONTRACTORS, AND PARTIES REQUIRED TO COMPLY WITH DATES.
5. UPDATING: REVISE THE SCHEDULE AFTER EACH MEETING OR ACTIVITY WHERE REVISIONS HAVE BEEN MADE. DISTRIBUTE REVISED COPIES TO OWNER, ARCHITECT, SUBCONTRACTORS, AND PARTIES REQUIRED TO COMPLY WITH DATES

1.2 SUBMITTAL PROCEDURES

A. COORDINATE SUBMITTAL PREPARATION WITH CONSTRUCTION SCHEDULE, FABRICATION LEAD TIMES, OTHER SUBMITTALS, AND ACTIVITIES THAT REQUIRE SEQUENTIAL OPERATIONS.
1. NO EXTENSION OF CONTRACT TIME WILL BE AUTHORIZED DUE TO FAILURE TO TRANSMIT SUBMITTALS IN TIME TO PERMIT PROCESSING SUFFICIENTLY IN ADVANCE OF WHEN MATERIALS ARE REQUIRED IN THE WORK.
2. ARCHITECT WILL NOT ACCEPT SUBMITTALS FROM SOURCES OTHER THAN THE CONTRACTOR.

B. PREPARE SUBMITTALS BY PLACING A PERMANENT LABEL ON EACH FOR IDENTIFICATION. PROVIDE A SPACE ON THE LABEL OR BESIDE TITLE BLOCK TO RECORD REVIEW AND APPROVAL MARKINGS AND ACTION TAKEN. INCLUDE THE FOLLOWING INFORMATION ON THE LABEL:
1. PROJECT NAME.
2. DATE.
3. NAME AND ADDRESS OF CONTRACTOR.
4. NAME AND ADDRESS OF SUBCONTRACTOR OR SUPPLIER.
5. NUMBER AND TITLE OF APPROPRIATE SPECIFICATION SECTION.
6. CONTRACTOR'S CERTIFICATION THAT MATERIALS COMPLY WITH SPECIFIED REQUIREMENTS.

C. COORDINATE EACH SUBMITTAL WITH OTHER SUBMITTALS AND WITH WORK THAT DOES NOT REQUIRE SUBMITTALS.

D. PRODUCT DATA: MARK EACH COPY TO SHOW APPLICABLE CHOICES AND OPTIONS. INCLUDE THE FOLLOWING:
1. DATA INDICATING COMPLIANCE WITH SPECIFIED STANDARDS AND REQUIREMENTS.
2. NOTATION OF COORDINATION REQUIREMENTS.
3. FOR EQUIPMENT DATA, INCLUDE RATED CAPACITIES, DIMENSIONS, WEIGHTS, REQUIRED CLEARANCES, AND FURNISHED SPECIALTIES AND ACCESSORIES.

E. SHOP DRAWINGS: SUBMIT NEWLY PREPARED INFORMATION DRAWN TO SCALE. DO NOT REPRODUCE CONTRACT DOCUMENTS OR COPY STANDARD INFORMATION. SUBMIT FOUR (4) BLUE OR BLACK LINE PRINTS. STRUCTURAL ENGINEER/ARCHITECT WILL RETURN TWO (2)COPIES. INCLUDE THE FOLLOWING:
1. DIMENSIONS, PROFILES, METHODS OF ATTACHMENT, COORDINATION WITH ADJOINING WORK, LARGE SCALE DETAILS, AND OTHER INFORMATION, AS APPROPRIATE FOR THE WORK.
2. IDENTIFICATION OF PRODUCTS AND MATERIALS.
3. NOTATION OF COORDINATION REQUIREMENTS.
4. NOTATION OF DIMENSIONS ESTABLISHED BY FIELD MEASUREMENT.
5. IDENTIFICATION OF DEVIATIONS FROM CONTRACT DOCUMENTS.

F. SAMPLES: SUBMIT SAMPLES FINISHED AS SPECIFIED AND IDENTICAL WITH THE MATERIAL PROPOSED. INCLUDE PRODUCT NAME OR NAME OF MANUFACTURER.

G. STRUCTURAL ENGINEER/ARCHITECT WILL REVIEW EACH SUBMITTAL, MARK AS APPROPRIATE TO INDICATE ACTION TAKEN, AND RETURN COPIES LESS THOSE RETAINED. COMPLIANCE WITH SPECIFIED REQUIREMENTS REMAINS CONTRACTOR'S RESPONSIBILITY.
1. STRUCTURAL ENGINEER TO REVIEW ALL STRUCTURAL RELATED SUBMITTALS FOR ALL PROJECTS.
2. ARCHITECT TO REVIEW SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS AS APPLICABLE PER PROJECT.

H. SHOP DRAWINGS, SAMPLE AND/OR PRODUCT DATA SUBMITTALS ARE REQUIRED FOR THE SPECIFICATION SECTIONS IDENTIFIED ON THE SCHEDULES FOLLOWING THIS SECTION.

SPECIFICATIONS CONTINUE ON SHEET A582

zebra

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FL, #1794

SHAKE SHACK

COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:

IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT

08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:

ARCHITECTURAL SPECIFICATIONS

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:

A581

SPECIFICATIONS CONTINUE FROM SHEET A581

SECTION 014000 - QUALITY REQUIREMENTS

1.1 SECTION REQUIREMENTS

A. QUALITY CONTROL SERVICES INCLUDE INSPECTIONS, TESTS, AND RELATED ACTIONS INCLUDING REPORTS. QUALITY CONTROL SERVICES ARE FURTHER SPECIFIED IN OTHER SECTIONS OF THESE SPECIFICATIONS AND SHALL BE PERFORMED BY INDEPENDENT TESTING AGENCIES PROVIDED BY CONTRACTOR OR OWNER, AS SPECIFIED.
1. UNLESS OTHERWISE INDICATED, QUALITY-CONTROL SERVICES REQUIRED BY AUTHORITIES HAVING JURISDICTION WILL BE PROVIDED BY OWNER.

B. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING INSPECTIONS AND TESTS.

C. RETESTING: CONTRACTOR SHALL PAY FOR RETESTING WHERE RESULTS OF INSPECTIONS AND TESTS PROVE UNSATISFACTORY AND INDICATE NONCOMPLIANCE WITH REQUIREMENTS.

D. AUXILIARY SERVICES: COOPERATE WITH AGENCIES PERFORMING INSPECTIONS AND TESTS. PROVIDE AUXILIARY SERVICES AS REQUESTED. NOTIFY AGENCY IN ADVANCE OF OPERATIONS REQUIRING TESTS OR INSPECTIONS, TO PERMIT ASSIGNMENT OF PERSONNEL. AUXILIARY SERVICES INCLUDE THE FOLLOWING:
1. ACCESS TO THE WORK.
2. INCIDENTAL LABOR AND FACILITIES TO ASSIST INSPECTIONS AND TESTS.
3. ADEQUATE QUANTITIES OF MATERIALS THAT REQUIRE TESTING AND ASSISTING IN TAKING SAMPLES.
4. FACILITIES FOR STORAGE AND CURING OF TEST SAMPLES.
5. SECURITY AND PROTECTION OF SAMPLES AND TEST EQUIPMENT.

E. TESTING AGENCY RESPONSIBILITIES: COOPERATE WITH ARCHITECT AND CONTRACTOR IN PERFORMANCE OF DUTIES. PROVIDE QUALIFIED PERSONNEL TO PERFORM REQUIRED TESTS AND INSPECTIONS.
1. NOTIFY ARCHITECT AND CONTRACTOR OF IRREGULARITIES OR DEFICIENCIES IN THE WORK OBSERVED DURING PERFORMANCE OF ITS SERVICES.
2. DO NOT RELEASE, REVOKE, ALTER, OR INCREASE REQUIREMENTS OF THE CONTRACT DOCUMENTS OR APPROVE OR ACCEPT ANY PORTION OF THE WORK.
3. DO NOT PERFORM ANY DUTIES OF CONTRACTOR.

F. SUBMITTALS: TESTING AGENCY SHALL SUBMIT A CERTIFIED WRITTEN REPORT OF EACH INSPECTION AND TEST TO THE FOLLOWING:
1. OWNER.
2. ARCHITECT.
3. CONTRACTOR.
4. AUTHORITIES HAVING JURISDICTION, WHEN AUTHORITIES SO DIRECT.

G. REPORT DATA: REPORTS OF EACH INSPECTION, TEST, OR SIMILAR SERVICE SHALL INCLUDE AT LEAST THE FOLLOWING:
1. NAME, ADDRESS, AND TELEPHONE NUMBER OF TESTING AGENCY.
2. PROJECT TITLE AND TESTING AGENCY'S PROJECT NUMBER.
3. DESIGNATION (NUMBER) AND DATE OF REPORT.
4. DATES AND LOCATIONS WHERE SAMPLES WERE TAKEN OR INSPECTIONS AND FIELD TESTS MADE.
5. NAMES OF INDIVIDUALS TAKING THE SAMPLE OR MAKING THE INSPECTION OR TEST.
6. DESIGNATION OF THE PRODUCT AND TEST METHOD.
7. COMPLETE INSPECTION OR TEST DATA INCLUDING AN INTERPRETATION OF TEST RESULTS.
8. AMBIENT CONDITIONS AT THE TIME OF SAMPLE TAKING AND TESTING.
9. COMMENTS OR PROFESSIONAL OPINION ON WHETHER INSPECTED OR TESTED WORK COMPLIES WITH REQUIREMENTS.
10. RECOMMENDATIONS ON RETESTING OR RE-INSPECTION.
11. NAME AND SIGNATURE OF LABORATORY INSPECTOR.

H. TESTING AGENCY QUALIFICATIONS: ENGAGE INSPECTION AND TESTING AGENCIES THAT ARE PREQUALIFIED AS COMPLYING WITH THE AMERICAN COUNCIL OF INDEPENDENT LABORATORIES' "QUALITY ASSURANCE MANUAL" AND THAT SPECIALIZE IN THE TYPES OF INSPECTIONS AND TESTS TO BE PERFORMED.
1. EACH TESTING AGENCY SHALL BE AUTHORIZED BY AUTHORITIES HAVING JURISDICTION TO OPERATE IN THE STATE WHERE PROJECT IS LOCATED.

1.2 REPAIR AND PROTECTION

A. GENERAL: ON COMPLETION OF TESTING, INSPECTING, SAMPLE TAKING, AND SIMILAR SERVICES, REPAIR DAMAGED CONSTRUCTION AND RESTORE SUBSTRATES AND FINISHES.

B. REPAIR AND PROTECTION ARE CONTRACTOR'S RESPONSIBILITY, REGARDLESS OF THE ASSIGNMENT OF RESPONSIBILITY FOR QUALITY-CONTROL SERVICES.

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

1.1 SECTION REQUIREMENTS

A. STANDARDS: COMPLY WITH NFPA 241, "STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATIONS, AND DEMOLITION OPERATIONS"; ANSI A10 SERIES STANDARDS FOR "SAFETY REQUIREMENTS FOR CONSTRUCTION AND DEMOLITION"; AND NECA ELECTRICAL DESIGN LIBRARY'S "TEMPORARY ELECTRICAL FACILITIES."
1. ELECTRICAL SERVICE: COMPLY WITH NEMA, NECA, AND UL STANDARDS AND REGULATIONS FOR TEMPORARY ELECTRIC SERVICE. INSTALL SERVICE TO COMPLY WITH NFPA 70.

B. AT THE EARLIEST POSSIBLE TIME, WHEN ACCEPTABLE TO OWNER, CHANGE OVER FROM USE OF TEMPORARY UTILITY SERVICES TO USE OF PERMANENT UTILITIES.

C. REMOVE TEMPORARY FACILITIES AND CONTROLS BEFORE SUBSTANTIAL COMPLETION. PERSONNEL REMAINING AFTER SUBSTANTIAL COMPLETION WILL BE PERMITTED TO USE PERMANENT FACILITIES, UNDER CONDITIONS ACCEPTABLE TO OWNER.

1.2 TEMPORARY UTILITIES

A. PROVIDE TEMPORARY UTILITY SERVICES, INCLUDING ELECTRIC POWER & LIGHTING, WATER, POWER, FIRE PROTECTION, GAS & TELEPHONE TO PROJECT SITE FOR USE DURING CONSTRUCTION. ARRANGE FOR AND COORDINATE UTILITY SERVICES WITH LOCAL UTILITY COMPANIES.
1. CONTRACTOR SHALL PAY USE CHARGES FOR TEMPORARY UTILITIES.

B. PROVIDE TEMPORARY HEAT FOR CURING OR DRYING OF WORK, AND FOR PROTECTION OF NEW CONSTRUCTION FROM ADVERSE EFFECTS OF LOW TEMPERATURES. USE OF GASOLINE BURNING HEATERS AND OPEN-FLAME HEATERS IS NOT PERMITTED.
1. MAINTAIN A MINIMUM 50 DEGREES F. TEMPERATURE WITHIN THE CONSTRUCTION AREA UNTIL SUCH TIME AS THE PERMANENT HEATING PLANT IS INSTALLED, INSPECTED AND FUNCTIONAL.

1.3 CONSTRUCTION FACILITIES

A. PROVIDE FIELD OFFICES, STORAGE TRAILERS, AND OTHER SUPPORT FACILITIES AS NECESSARY FOR EFFICIENT PROSECUTION OF THE WORK.
1. TEMPORARY FACILITIES LOCATED WITHIN THE CONSTRUCTION AREA OR WITHIN 30 FEET OF BUILDING LINES SHALL BE OF NONCOMBUSTIBLE CONSTRUCTION.

B. CONTRACTOR SHALL CONFIRM WITH THE OWNER'S REPRESENTATIVE AN ACCEPTABLE LOCATION OUTSIDE THE BUILDING TO SECURELY STORE MATERIALS AND STAGE CONSTRUCTION OPERATIONS. THENCE, THE CONTRACTOR SHALL CONFINE OPERATIONS STRICTLY WITHIN THIS AREA. CONTRACTOR SHALL KEEP STORAGE AND STAGING AREA CLEAN AND NEAT AT ALL TIMES AND SHALL NOT ALLOW THE ACCUMULATION OF DEBRIS OR TRASH.

C. PROVIDE TEMPORARY SANITARY FACILITIES FOR ALL CONSTRUCTION PERSONNEL. COMPLY WITH REGULATIONS AND HEALTH CODES FOR TYPE, NUMBER, LOCATION, AND MAINTENANCE OF FACILITIES.

D. PROVIDE TEMPORARY ENCLOSURES FOR PROTECTION OF CONSTRUCTION AND WORKERS FROM EXPOSURE AND INCLEMENT WEATHER AND FOR CONTAINMENT OF HEAT.

E. INSTALL PROJECT IDENTIFICATION AND OTHER SIGNS IN LOCATIONS APPROVED BY OWNER TO INFORM THE PUBLIC AND PERSONS SEEKING ENTRANCE TO PROJECT.

F. COLLECT WASTE DAILY AND, WHEN CONTAINERS ARE FULL, LEGALLY DISPOSE OF WASTE OFF-SITE.
1. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A DUMPSTER FOR WASTE GENERATED BY ALL SUBCONTRACTORS (OWNER'S & CONTRACTOR'S) & TRADES UNTIL THE RESTAURANT OPENS FOR BUSINESS. WASTE REMOVAL SHALL BE SCHEDULED ON A REGULAR BASIS.
2. HANDLE HAZARDOUS, DANGEROUS, OR UNSANITARY WASTE MATERIALS IN SEPARATE CLOSED WASTE CONTAINERS. DISPOSE OF MATERIAL ACCORDING TO APPLICABLE LAWS AND REGULATIONS.

G. OPEN FLAMES ARE EXPRESSLY PROHIBITED WITHOUT THE KNOWLEDGE OF AND PRIOR CONSENT OF THE OWNER'S REPRESENTATIVE.

1.4 TEMPORARY CONTROLS

A. PROVIDE TEMPORARY FIRE PROTECTION PER OSHA UNTIL PERMANENT SYSTEMS SUPPLY FIRE-PROTECTION NEEDS.
1. PROVIDE ADEQUATE NUMBERS AND TYPES OF FIRE EXTINGUISHERS.
2. STORE COMBUSTIBLE MATERIALS IN FIRE-SAFE CONTAINERS IN FIRE-SAFE LOCATIONS.
3. PROHIBIT SMOKING IN HAZARDOUS FIRE-EXPOSURE AREAS.
4. SUPERVISE WELDING OPERATIONS, COMBUSTION-TYPE TEMPORARY HEATING UNITS, AND SIMILAR SOURCES OF FIRE IGNITION.

B. PROVIDE TEMPORARY BARRICADES, WARNING SIGNS, AND LIGHTS TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM CONSTRUCTION HAZARDS PER OSHA.
1. ENCLOSE CONSTRUCTION AREAS WITH FENCES WITH LOCKABLE ENTRANCE GATES, TO PREVENT UNAUTHORIZED ACCESS PER OSHA.

C. PROVIDE TEMPORARY ENVIRONMENTAL CONTROLS AS REQUIRED BY AUTHORITIES HAVING JURISDICTION INCLUDING, BUT NOT LIMITED TO, DUST CONTROL, NOISE CONTROL, AND POLLUTION CONTROL.

1.5 MOISTURE AND MOLD CONTROL

A. BEFORE INSTALLATION OF WEATHER BARRIERS, PROTECT MATERIALS FROM WATER DAMAGE AND KEEP POROUS AND ORGANIC MATERIALS FROM COMING INTO PROLONGED CONTACT WITH CONCRETE.
1. PROTECT STORED AND INSTALLED MATERIAL FROM FLOWING OR STANDING WATER.
2. REMOVE STANDING WATER FROM DECKS.
3. KEEP DECK OPENINGS COVERED OR DAMMED.

B. AFTER INSTALLATION OF WEATHER BARRIERS BUT BEFORE FULL ENCLOSURE AND CONDITIONING OF BUILDING, PROTECT AS FOLLOWS:
1. DO NOT LOAD OR INSTALL DRYWALL OR POROUS MATERIALS INTO PARTIALLY ENCLOSED BUILDING.
2. DISCARD WATER-DAMAGED MATERIAL.
3. DO NOT INSTALL MATERIAL THAT IS WET.
4. DISCARD, REPLACE, OR CLEAN STORED OR INSTALLED MATERIAL THAT BEGINS TO GROW MOLD.
5. PERFORM WORK IN A SEQUENCE THAT ALLOWS ANY WET MATERIALS ADEQUATE TIME TO DRY BEFORE ENCLOSING THE MATERIAL IN DRYWALL OR OTHER INTERIOR FINISHES.

SECTION 016000 - PRODUCT REQUIREMENTS

1.1 SECTION REQUIREMENTS

A. PROVIDE PRODUCTS OF SAME KIND FROM A SINGLE SOURCE. THE TERM "PRODUCT" INCLUDES THE TERMS "MATERIAL", "EQUIPMENT", "SYSTEM", AND SIMILAR TERMS.

B. DELIVER, STORE, AND HANDLE PRODUCTS USING MEANS AND METHODS THAT WILL PREVENT DAMAGE, DETERIORATION, AND LOSS, INCLUDING THEFT. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
1. SCHEDULE DELIVERY TO MINIMIZE LONG-TERM STORAGE AT PROJECT SITE AND TO PREVENT OVERCROWDING OF CONSTRUCTION SPACES.
2. DELIVER PRODUCTS TO PROJECT SITE IN MANUFACTURER'S ORIGINAL SEALED CONTAINER OR PACKAGING, COMPLETE WITH LABELS AND INSTRUCTIONS FOR HANDLING, STORING, UNPACKING, PROTECTING, AND INSTALLING.
3. INSPECT PRODUCTS ON DELIVERY TO ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS AND TO ENSURE THAT PRODUCTS ARE UNDAMAGED AND PROPERLY PROTECTED.
4. STORE MATERIALS IN A MANNER THAT WILL NOT ENDANGER PROJECT STRUCTURE.
5. STORE PRODUCTS THAT ARE SUBJECT TO DAMAGE BY THE ELEMENTS, UNDER COVER IN A WEATHERTIGHT ENCLOSURE ABOVE GROUND, WITH VENTILATION ADEQUATE TO PREVENT CONDENSATION.

C. PRODUCT SUBSTITUTIONS: REASONABLE AND TIMELY REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED. SUBSTITUTIONS INCLUDE PRODUCTS AND METHODS OF CONSTRUCTION DIFFERING FROM THAT REQUIRED BY THE CONTRACT DOCUMENTS AND PROPOSED BY CONTRACTOR AFTER AWARD OF CONTRACT.
1. SUBMIT FOUR (4) COPIES OF EACH REQUEST FOR PRODUCT SUBSTITUTION. IDENTIFY PRODUCT TO BE REPLACED AND PROVIDE COMPLETE DOCUMENTATION SHOWING COMPLIANCE OF PROPOSED SUBSTITUTION WITH APPLICABLE REQUIREMENTS.
INCLUDE A FULL COMPARISON WITH THE SPECIFIED PRODUCT, A LIST OF CHANGES TO OTHER WORK REQUIRED TO ACCOMMODATE THE SUBSTITUTION, AND ANY PROPOSED CHANGES IN CONTRACT SUM OR CONTRACT TIME SHOULD THE SUBSTITUTION BE ACCEPTED.
2. SUBMIT REQUESTS FOR PRODUCT SUBSTITUTION IN TIME TO PERMIT PROCESSING OF REQUEST FOR SUBSEQUENT SUBMITTALS, IF ANY, SUFFICIENTLY IN ADVANCE OF WHEN MATERIALS ARE REQUIRED IN THE WORK. DO NOT SUBMIT UNAPPROVED SUBSTITUTIONS ON SHOP DRAWINGS OR OTHER SUBMITTALS.
3. ARCHITECT & OWNER WILL REVIEW THE PROPOSED SUBSTITUTION AND NOTIFY CONTRACTOR OF ITS ACCEPTANCE OR REJECTION. ACCEPTANCE OF SUBSTITUTION DOES NOT RELIEVE THE CONTRACTOR OF COORDINATING ALL OTHER ITEMS. THE SUBSTITUTION AFFECTS AT NO ADDITIONAL COST TO THE OWNER.

1.2 PRODUCT OPTIONS

A. PROVIDE PRODUCTS THAT COMPLY WITH THE CONTRACT DOCUMENTS, ARE UNDAMAGED, AND ARE NEW AT THE TIME OF INSTALLATION.
1. PROVIDE PRODUCTS COMPLETE WITH ACCESSORIES, TRIM, FINISH, AND OTHER DEVICES AND COMPONENTS NEEDED FOR A COMPLETE INSTALLATION AND THE INTENDED USE AND EFFECT.

B. DO NOT ATTACH MANUFACTURER'S LABELS OR TRADEMARKS, EXCEPT FOR REQUIRED NAMEPLATES, ON SURFACES EXPOSED TO VIEW IN OCCUPIED SPACES OR ON THE EXTERIOR. DO NOT REMOVE LABELS FROM EQUIPMENT REQUIRED TO HAVE LABELS ATTACHED.

C. SELECT PRODUCTS AS FOLLOWS:
1. WHERE ONLY A SINGLE PRODUCT OR MANUFACTURER IS NAMED, PROVIDE THE ITEM INDICATED. NO SUBSTITUTIONS WILL BE PERMITTED.
2. WHERE TWO OR MORE PRODUCT OR MANUFACTURERS ARE NAMED, PROVIDE ONE OF THE ITEMS INDICATED. NO SUBSTITUTIONS WILL BE PERMITTED.
3. WHERE PRODUCTS OR MANUFACTURERS ARE SPECIFIED BY NAME, ACCOMPANIED BY THE TERM "OR EQUAL," PROVIDE THE NAMED ITEM OR COMPLY WITH PROVISIONS CONCERNING "PRODUCT SUBSTITUTIONS" TO OBTAIN APPROVAL FOR USE OF AN UNNAMED PRODUCT OR MANUFACTURER.
4. WHERE A PRODUCT IS DESCRIBED WITH REQUIRED CHARACTERISTICS, WITH OR WITHOUT NAMING A BRAND OR TRADEMARK, PROVIDE A PRODUCT THAT COMPLIES WITH THOSE CHARACTERISTICS AND OTHER CONTRACT REQUIREMENTS.
5. WHERE COMPLIANCE WITH PERFORMANCE REQUIREMENTS IS SPECIFIED, PROVIDE PRODUCTS THAT COMPLY AND ARE RECOMMENDED IN WRITING BY THE MANUFACTURER FOR THE APPLICATION.
6. WHERE COMPLIANCE WITH CODES, REGULATIONS, OR STANDARDS IS SPECIFIED, SELECT A PRODUCT THAT COMPLIES WITH THE CODES, REGULATIONS, OR STANDARDS REFERENCED.

D. UNLESS OTHERWISE INDICATED, ARCHITECT WILL SELECT COLOR, PATTERN, AND TEXTURE OF EACH PRODUCT FROM MANUFACTURER'S FULL RANGE OF STANDARD OPTIONS.

1.3 OWNER-FURNISHED PRODUCTS

A. THE FOLLOWING PRODUCTS WILL BE FURNISHED BY OWNER AND SHALL BE INSTALLED BY CONTRACTOR AS PART OF THE WORK:
1. SEE THE COMPREHENSIVE EQUIPMENT SCHEDULE AND PROJECT RESPONSIBILITY MATRIX ON THE ARCHITECTURAL DRAWINGS.

B. CONTRACTOR SHALL COORDINATE ALL DELIVERY DATES AND INSTALLATION REQUIREMENTS & VERIFY QUANTITIES OF OWNER-FURNISHED ITEMS WITH THE OWNER PRIOR TO THE START OF CONSTRUCTION.

SECTION 017000 – EXECUTION AND CLOSEOUT REQUIREMENTS

1.1 CLOSEOUT SUBMITTALS

A. RECORD DRAWINGS: MAINTAIN A SET OF CONTRACT DRAWINGS AS RECORD DRAWINGS. MARK TO SHOW INSTALLATION THAT VARIES FROM THE WORK ORIGINALLY SHOWN.

B. RECORD SPECIFICATIONS: MAINTAIN ONE COPY OF THE PROJECT MANUAL, INCLUDING ADDENDA, AS RECORD SPECIFICATIONS. MARK TO SHOW VARIATIONS IN WORK PERFORMED IN COMPARISON WITH THE TEXT OF THE SPECIFICATIONS AND MODIFICATIONS.

C. OPERATION AND MAINTENANCE DATA: ORGANIZE DATA INTO THREE-RING BINDERS, WITH POCKET FOLDERS FOR FOLDED SHEET INFORMATION. MARK IDENTIFICATION ON FRONT AND SPINE OF EACH BINDER. INCLUDE THE FOLLOWING:
1. EMERGENCY INSTRUCTIONS.
2. SPARE PARTS LIST.
3. COPIES OF WARRANTIES.
4. WIRING DIAGRAMS.
5. SHOP DRAWINGS AND PRODUCT DATA.

1.2 EXAMINATION AND PREPARATION

A. EXAMINE SUBSTRATES AND CONDITIONS FOR COMPLIANCE WITH MANUFACTURER'S WRITTEN REQUIREMENTS INCLUDING, BUT NOT LIMITED TO, SURFACES THAT ARE SOUND, LEVEL, AND PLUMB; SUBSTRATES WITHIN INSTALLATION TOLERANCES; SURFACES THAT ARE SMOOTH, CLEAN, AND FREE OF DELETERIOUS SUBSTANCES; AND APPLICATION CONDITIONS WITHIN ENVIRONMENTAL LIMITS. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

B. PREPARE SUBSTRATES AND ADJOINING SURFACES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, INCLUDING, BUT NOT LIMITED TO, FILLER AND PRIMER APPLICATION.

C. WHERE DRAWINGS INDICATE DIMENSIONS OF EXISTING CONSTRUCTION VERIFY BY FIELD MEASUREMENT. WHERE FABRICATED PRODUCTS ARE TO BE FITTED TO OTHER CONSTRUCTION VERIFY DIMENSIONS BY FIELD MEASUREMENT BEFORE FABRICATING AND, WHEN POSSIBLE, ALLOW FOR FITTING AND TRIMMING DURINGINSTALLATION.

1.3 CUTTING AND PATCHING

A. DO NOT CUT STRUCTURAL MEMBERS WITHOUT PRIOR WRITTEN APPROVAL OF ARCHITECT.

B. FOR PATCHING, PROVIDE MATERIALS WHOSE INSTALLED PERFORMANCE WILL EQUAL OR SURPASS THAT OF EXISTING MATERIALS. FOR EXPOSED SURFACES, PROVIDE OR FINISH MATERIALS TO VISUALLY MATCH EXISTING ADJACENT SURFACES TO THE FULLEST EXTENT POSSIBLE.

1.4 INSTALLATION

A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION. ANCHOR EACH PRODUCT SECURELY IN PLACE, ACCURATELY LOCATED AND ALIGNED. CLEAN EXPOSED SURFACES AND PROTECT FROM DAMAGE. IF APPLICABLE, PREPARE SURFACES FOR FIELD FINISHING.

B. COMPLY WITH NFPA 70 FOR INSTALLATION OF ELECTRICALLY OPERATED EQUIPMENT AND ELECTRICAL COMPONENTS AND MATERIALS.

1.5 FINAL CLEANING

A. CLEAN EACH SURFACE OR ITEM AS FOLLOWS BEFORE REQUESTING INSPECTION FOR CERTIFICATION OF SUBSTANTIAL COMPLETION:

B. REMOVE LABELS THAT ARE NOT PERMANENT.

C. CLEAN TRANSPARENT MATERIALS, INCLUDING MIRRORS. REMOVE EXCESS GLAZING COMPOUNDS. REPLACE CHIPPED OR BROKEN GLASS.

D. CLEAN EXPOSED FINISHES TO A DUST-FREE CONDITION, FREE OF STAINS, FILMS, AND FOREIGN SUBSTANCES. LEAVE CONCRETE FLOORS BROOM CLEAN.

E. VACUUM CARPETED SURFACES AND CLEAN QUARRY TILE FLOORING & BASE.

F. CLEAN ACCORDING TO TILE & GROUT MANUFACTURERS' SPECIFIC RECOMMENDATIONS.

G. WIPE SURFACES OF MECHANICAL AND ELECTRICAL EQUIPMENT. REMOVE EXCESS LUBRICATION. CLEAN PLUMBING FIXTURES. CLEAN LIGHT FIXTURES AND LAMPS. CLEAN WALK-IN REFRIGERATION UNITS.

H. REMOVE ALL CONSTRUCTION DEBRIS, UNUSED MATERIALS, ETC. WHEN PROJECT IS TURNED OVER TO OWNER. MAINTAIN THE SITE IN A CLEAN CONDITION DURING THE COURSE OF CONSTRUCTION. SWEEP PAVED AREAS; REMOVE STAINS, SPILLS, AND FOREIGN DEPOSITS. RAKE GROUNDS TO A SMOOTH, EVEN-TEXTURED SURFACE.

1.6 PUNCH LIST

A. AT TIME OF PUNCH WALK MEETING (REFER TO SPECIFICATION SECTION 01 30 00) A COPY OF THE PUNCH LIST WILL BE PROVIDED TO THE CONTRACTOR.

1.7 CLOSEOUT PROCEDURES

A. REQUEST SUBSTANTIAL COMPLETION INSPECTION ONCE THE FOLLOWING ARE COMPLETE:
1. ADVISE OWNER OF PENDING INSURANCE CHANGEOVER REQUIREMENTS.
2. SUBMIT RECORD DRAWINGS AND SPECIFICATIONS, MAINTENANCE MANUALS, WARRANTIES, AND SIMILAR RECORD INFORMATION.
3. COMPLETE STARTUP TESTING OF SYSTEMS AND INSTRUCTION OF OPERATION TO OWNER'S PERSONNEL.
4. REMOVE TEMPORARY FACILITIES AND CONTROLS.
5. COMPLETE FINAL CLEANUP.
6. COMPLETE PUNCH LIST REPAIRS.
7. OBTAIN FINAL INSPECTIONS FROM AUTHORITIES HAVING JURISDICTION.
8. OBTAIN CERTIFICATE OF OCCUPANCY.
9. OBTAIN CERTIFICATE OF CAPACITY.
10. SUBMIT CONSENT OF SURETY TO FINAL PAYMENT.

B. ARRANGE FOR EACH INSTALLER OF EQUIPMENT THAT REQUIRES OPERATION AND MAINTENANCE TO PROVIDE INSTRUCTION TO OWNER'S PERSONNEL. INCLUDE A DETAILED REVIEW OF THE FOLLOWING:
1. STARTUP AND SHUTDOWN.
2. EMERGENCY OPERATIONS AND SAFETY PROCEDURES.
3. NOISE AND VIBRATION ADJUSTMENTS.
4. MAINTENANCE MANUALS.
5. SPARE PARTS, TOOLS, AND MATERIALS.
6. LUBRICANTS AND FUELS.
7. IDENTIFICATION SYSTEMS.
8. CONTROL SEQUENCES.
9. HAZARDS.
10. WARRANTIES AND BONDS

C. REQUEST INSPECTION FOR CERTIFICATION OF FINAL ACCEPTANCE, ONCE THE FOLLOWING ARE COMPLETE:
1. SUBMIT A COPY OF THE SUBSTANTIAL COMPLETION INSPECTION LIST STATING THAT EACH ITEM HAS BEEN COMPLETED OR OTHERWISE RESOLVED FOR ACCEPTANCE.

D. OWNER WILL RE-INSPECT THE WORK ON RECEIPT OF NOTICE THAT THE WORK HAS BEEN COMPLETED.

E. IF THE WORK HAS BEEN SATISFACTORILY COMPLETED, OWNER WILL SIGN AND DATE THE PUNCH LIST COVER SHEET. GC WILL FAX/EMAIL A COPY OF THIS SIGNED AND DATED COVER SHEET TO THE CONSTRUCTION MANAGER PRIOR TO OPENING. GC SUPERINTENDENT IS TO REMAIN AT THE JOB SITE THROUGH STORE OPENING TO PROVIDE SUPERVISION OF ALL PUNCHLIST ITEM COMPLETIONS, VENDOR INSTALLATION AND ALL ADJUSTMENTS AS REQUIRED BY STORE PERSONNEL. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR ONE YEAR BEGINNING AT DATE OF OPENING.

SECTION 033000 - CAST-IN-PLACE CONCRETE

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA CONCRETE MIX DESIGNS AND SUBMITTALS REQUIRED BY ACI 301.

B. READY-MIXED CONCRETE PRODUCER QUALIFICATIONS: ASTM C 94/C 94M.

1.2 PEFORMANCE REQUIREMENTS

A. COMPLY WITH ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE," AND WITH ACI 117, "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."

1.3 MATERIALS

A. REINFORCING BARS: ASTM A 615/A 615M, GRADE 60, DEFORMED.

B. PLAIN STEEL WIRE: ASTM A 82/A 82M, AS DRAWN.

C. PLAIN-STEEL WELDED WIRE REINFORCEMENT: ASTM A 185/A 185M, AS DRAWN, FLAT SHEET.

D. PORTLAND CEMENT: ASTM C 150, TYPE I OR II.

E. FLY ASH: ASTM C 618, CLASS C OR F.

F. GROUND GRANULATED BLAST-FURNACE SLAG: ASTM C 989, GRADE 100 OR 120.

G. SILICA FUME: ASTM C 1240, AMORPHOUS SILICA.

H. AGGREGATES: ASTM C 33, CLASS 3S COARSE AGGREGATE OR BETTER, GRADED, WITH AT LEAST 10 YEARS' SATISFACTORY SERVICE IN SIMILAR APPLICATIONS.
1. MAXIMUM COARSE-AGGREGATE SIZE: 1 INCH NOMINAL.
2. MAXIMUM AGGREGATE SIZE FOR CONCRETE IN INSULATING CONCRETE FORMS: 3/4 INCH.

I. AIR-ENTRAINING ADMIXTURE: ASTM C 260.

J. CHEMICAL ADMIXTURES: ASTM C 494, WATER REDUCING AND ACCELERATING AND WATER REDUCING AND RETARDING. DO NOT USE CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE.

K. VAPOR RETARDER: REINFORCED SHEET, ASTM E 1745, CLASS A.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
A. RAVEN INDUSTRIES, INC.
B. REEF INDUSTRIES, INC.
C. W. R. MEADOWS, INC.

L. MOISTURE-RETAINING COVER: ASTM C 171, POLYETHYLENE FILM OR WHITE BURLAP-POLYETHYLENE SHEET.

M. CLEAR, WATERBORNE, MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 1, CLASS B.

N. CLEAR, WATERBORNE, MEMBRANE-FORMING CURING AND SEALING COMPOUND: ASTM C 1315, TYPE 1, CLASS A.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
A. DAYTON SUPERIOR.
B. EUCLID CHEMICAL COMPANY (THE); AN RPM COMPANY.
C. L&M CONSTRUCTION CHEMICALS, INC.

O. JOINT-FILLER STRIPS: ASTM D 1751, ASPHALT-SATURATED CELLULOSIC FIBER, OR ASTM D 1752, CORK OR SELF-EXPANDING CORK.

1.4 CONCRETE MIXTURES

A. PREPARE DESIGN MIXTURES, PROPORTIONED ACCORDING TO ACI 301.

B. NORMAL-WEIGHT CONCRETE:
1. MINIMUM COMPRESSIVE STRENGTH: 4500 PSI AT 28 DAYS.
2. MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO: 0.50.
3. SLUMP LIMIT: 4 INCHES, PLUS OR MINUS 1 INCH.
4. AIR CONTENT: MAINTAIN WITHIN RANGE PERMITTED BY ACI 301. DO NOT ALLOW AIR CONTENT OF FLOOR SLABS TO RECEIVE TROWELED FINISHES TO EXCEED 3 PERCENT.

C. MEASURE, BATCH, MIX, AND DELIVER CONCRETE ACCORDING TO ASTM C 94/C 94M.
1. WHEN AIR TEMPERATURE IS ABOVE 90 DEG F, REDUCE MIXING AND DELIVERY TIME TO 60 MINUTES.

SPECIFICATIONS CONTINUE ON SHEET A583

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REVISION

△	DATE	DESCRIPTION

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify al figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
ARCHITECTURAL SPECIFICATIONS

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A582

SECTION 033000 CONTINUE FROM SHEET A582

1.5 CONCRETING

A. CONSTRUCT FORMWORK ACCORDING TO ACI 301 AND MAINTAIN TOLERANCES AND SURFACE IRREGULARITIES WITHIN ACI 347R LIMITS OF CLASS A, 1/8 INCH FOR CONCRETE EXPOSED TO VIEW AND CLASS B, 1/4 INCH FOR OTHER CONCRETE SURFACES.

B. PLACE VAPOR RETARDER ON PREPARED SUBGRADE, WITH JOINTS LAPPED 6 INCHES AND SEALED.

C. COMPLY WITH CRSI'S "MANUAL OF STANDARD PRACTICE" FOR FABRICATING, PLACING, AND SUPPORTING REINFORCEMENT.

D. INSTALL CONSTRUCTION, ISOLATION, AND CONTRACTION JOINTS WHERE INDICATED. INSTALL FULL-DEPTH JOINT-FILLER STRIPS AT ISOLATION JOINTS.

E. PLACE CONCRETE IN A CONTINUOUS OPERATION AND CONSOLIDATE USING MECHANICAL VIBRATING EQUIPMENT.

F. PROTECT CONCRETE FROM PHYSICAL DAMAGE, PREMATURE DRYING, AND REDUCED STRENGTH DUE TO HOT OR COLD WEATHER DURING MIXING, PLACING, AND CURING.

G. FORMED SURFACE FINISH: SMOOTH-FORMED FINISH FOR CONCRETE EXPOSED TO VIEW, COATED, OR COVERED BY WATERPROOFING OR OTHER DIRECT-APPLIED MATERIAL; ROUGH-FORMED FINISH ELSEWHERE.

H. SLAB FINISHES: COMPLY WITH ACI 302.1R FOR SCREEDING, ESTRAIGHTENING, AND FINISHING OPERATIONS FOR CONCRETE SURFACES. DO NOT WET CONCRETE SURFACES. PROVIDE THE FOLLOWING FINISHES:
1. SCRATCH FINISH FOR SURFACES TO RECEIVE MORTAR SETTING BEDS.
2. FLOAT FINISH FOR SURFACES TO RECEIVE WATERPROOFING, ROOFING, OR OTHER DIRECT-APPLIED MATERIAL.
3. TROWELED FINISH FOR FLOOR SURFACES AND FLOORS TO RECEIVE FLOOR COVERINGS, PAINT, OR OTHER THIN FILM-FINISH COATINGS.
4. TROWEL AND FINE-BROOM FINISH FOR SURFACES TO RECEIVE THIN-SET TILE.
5. NONSLIP-BROOM FINISH TO EXTERIOR CONCRETE PLATFORMS, STEPS, AND RAMPS.

I. CURE FORMED SURFACES BY MOISTURE CURING FOR AT LEAST SEVEN DAYS.

J. BEGIN CURING CONCRETE SLABS AFTER FINISHING. KEEP CONCRETE CONTINUOUSLY MOIST FOR AT LEAST SEVEN DAYS APPLY MEMBRANE-FORMING CURING AND SEALING COMPOUND TO CONCRETE.

K. POLISHED CONCRETE FLOOR TREATMENT: APPLY POLISHED CONCRETE FINISH SYSTEM TO CURED AND PREPARED SLABS TO LEVEL 3, HIGH SHEEN, 800 GRIT AT LOCATIONS INDICATED TO RECEIVE PENETRATING FLOOR SEALER.
1. MACHINE GRIND FLOOR SURFACES LEVEL AND SMOOTH AND TO DEPTH REQUIRED TO REVEAL AGGREGATE.
2. APPLY PENETRATING LIQUID FLOOR SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
   A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE CURECRETE, ASHFORD FORMULA.
3. FIELD SAMPLE PANELS: AFTER APPROVAL OF SAMPLES, PRODUCE FIELD SAMPLE PANELS TO DEMONSTRATE THE APPROVED RANGE OF SELECTIONS MADE UNDER SAMPLE SUBMITTALS. PRODUCE A MINIMUM OF THREE SETS OF FULL-SCALE PANELS, APPROXIMATELY 48 BY 48 INCHES MINIMUM, TO DEMONSTRATE THE EXPECTED RANGE OF FINISH, COLOR, AND APPEARANCE VARIATIONS.
   a. LOCATE PANELS AS INDICATED OR, IF NOT INDICATED, AS DIRECTED BY ARCHITECT.
   b. MAINTAIN FIELD SAMPLE PANELS DURING CONSTRUCTION IN AN UNDISTURBED CONDITION AS A STANDARD FOR JUDGING THE COMPLETED WORK.
   c. DEMOLISH AND REMOVE FIELD SAMPLE PANELS WHEN DIRECTED.

L. OWNER WILL ENGAGE A TESTING AGENCY TO PERFORM FIELD TESTS AND TO SUBMIT TEST REPORTS.

M. PROTECT CONCRETE FROM DAMAGE. REPAIR AND PATCH DEFECTIVE AREAS.

SECTION 033543 - POLISHED CONCRETE FINISHING

1.1 SUMMARY

A. SECTION INCLUDES:
1. POLISHED CONCRETE FINISHING, INCLUDING PENETRATING SEALER.

1.2 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

B. SAMPLES: FOR EACH TYPE OF PRODUCT REQUIRING COLOR SELECTION.

1.3 QUALITY ASSURANCE

A. FIELD SAMPLE PANELS: AFTER APPROVAL OF SAMPLES, PRODUCE FIELD SAMPLE PANELS TO DEMONSTRATE THE APPROVED RANGE OF SELECTIONS MADE UNDER SAMPLE SUBMITTALS. PRODUCE A MINIMUM OF THREE SETS OF FULL-SCALE PANELS, APPROXIMATELY 48 BY 48 INCHES MINIMUM, TO DEMONSTRATE THE EXPECTED RANGE OF FINISH, COLOR, AND APPEARANCE VARIATIONS.
1. LOCATE PANELS AS INDICATED OR, IF NOT INDICATED, AS DIRECTED BY ARCHITECT.
2. MAINTAIN FIELD SAMPLE PANELS DURING CONSTRUCTION IN AN UNDISTURBED CONDITION AS A STANDARD FOR JUDGING THE COMPLETED WORK.
3. DEMOLISH AND REMOVE FIELD SAMPLE PANELS WHEN DIRECTED.

1.4 LIQUID FLOOR TREATMENTS

A. PENETRATING LIQUID FLOOR TREATMENTS FOR POLISHED CONCRETE FINISH: CLEAR, WATERBORNE SOLUTION OF INORGANIC SILICONATE MATERIALS AND PROPRIETARY COMPONENTS; ODORLESS; THAT PENETRATES, HARDENS, AND IS SUITABLE FOR POLISHED CONCRETE SURFACES.
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE CURECRETE, ASHFORD FORMULA OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
   a. EUCLID CHEMICAL COMPANY (THE); AN RPM COMPANY.
   b. DAYTON SUPERIOR.

1.5 POLISHING

A. POLISH: LEVEL 3: HIGH SHEEN, 800 GRIT.

B. APPLY POLISHED CONCRETE FINISH SYSTEM TO CURED AND PREPARED SLABS.
1. MACHINE GRIND FLOOR SURFACES TO RECEIVE POLISHED FINISHES LEVEL AND SMOOTH.
2. APPLY REACTIVE STAIN FOR POLISHED CONCRETE IN POLISHING SEQUENCE AND ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. APPLY PENETRATING LIQUID FLOOR TREATMENT FOR POLISHED CONCRETE IN POLISHING SEQUENCE AND ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, ALLOWING RECOMMENDED DRYING TIME BETWEEN SUCCESSIVE COATS.
4. APPLY PENETRATING STAIN FOR POLISHED CONCRETE IN POLISHING SEQUENCE AND ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. CONTINUE POLISHING WITH PROGRESSIVELY FINER-GRIT DIAMOND POLISHING PADS TO GLOSS LEVEL, TO MATCH APPROVED MOCKUP.
6. CONTROL AND DISPOSE OF WASTE PRODUCTS PRODUCED BY GRINDING AND POLISHING OPERATIONS.
7. NEUTRALIZE AND CLEAN POLISHED FLOOR SURFACES.

1.6 LIQUID FLOOR TREATMENT

A. PREPARE SURFACES AND APPLY ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

SECTION 042000 - UNIT MASONRY

1.1 SECTION REQUIREMENTS

A. SUBMITTALS:
1. MATERIAL CERTIFICATES: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE STATEMENTS OF MATERIAL PROPERTIES INDICATING COMPLIANCE WITH REQUIREMENTS.

1.2 UNIT MASONRY

A. COMPLY WITH TMS 602/ACI 530.1/ASCE 6.

1.3 MASONRY UNITS

A. CONCRETE MASONRY UNITS: ASTM C 90; DENSITY CLASSIFICATION, NORMAL WEIGHT.
1. SPECIAL SHAPES FOR LINTELS, CORNERS, JAMBS, SASH, CONTROL JOINTS, AND OTHER SPECIAL CONDITIONS.
2. SQUARE-EDGED UNITS FOR OUTSIDE CORNERS UNLESS OTHERWISE INDICATED.

B. CONCRETE LINTELS: ASTM C 1623, PRECAST UNITS MATCHING CONCRETE MASONRY UNITS AND WITH REINFORCING BARS INDICATED OR REQUIRED TO SUPPORT LOADS INDICATED.

1.4 MORTAR AND GROUT

A. MORTAR: ASTM C 270, PROPORTION SPECIFICATION.
1. USE PORTLAND CEMENT-LIME MORTAR.
2. DO NOT USE CALCIUM CHLORIDE IN MORTAR.
3. FOR MASONRY BELOW GRADE OR IN CONTACT WITH EARTH, USE TYPE M.

B. GROUT: ASTM C 476 WITH A SLUMP OF 8 TO 11 INCHES.

1.5 REINFORCEMENT, TIES, AND ANCHORS

A. JOINT REINFORCEMENT: ASTM A 951/A 951M.
1. COATING: HOT-DIP GALVANIZED AT BOTH INTERIOR AND EXTERIOR WALLS.
2. WIRE SIZE FOR SIDE RODS: 0.148-INCH DIAMETER.
3. WIRE SIZE FOR CROSS RODS: 0.148-INCH DIAMETER.
4. FOR SINGLE-WYTHE MASONRY, PROVIDE EITHER LADDER DESIGN OR TRUSS DESIGN.

1.6 MISCELLANEOUS MASONRY ACCESSORIES

A. COMPRESSIBLE FILLER: PREMOLDED STRIPS COMPLYING WITH ASTM D 1056, GRADE 2A1.

B. PREFORMED CONTROL-JOINT GASKETS: DESIGNED TO FIT STANDARD SASH BLOCK AND TO MAINTAIN LATERAL STABILITY IN MASONRY WALL; MADE FROM STYRENE-BUTADIENE RUBBER OR PVC.

1.7 INSTALLATION, GENERAL

A. CUT MASONRY UNITS WITH SAW. INSTALL WITH CUT SURFACES AND, WHERE POSSIBLE, CUT EDGES CONCEALED.

B. MATCHING EXISTING MASONRY: MATCH COURSING, BONDING, COLOR, AND TEXTURE OF EXISTING MASONRY.

C. STOPPING AND RESUMING WORK: STEP BACK UNITS; DO NOT TOOTH.

D. BUILD NONLOAD-BEARING INTERIOR PARTITIONS FULL HEIGHT AND INSTALL COMPRESSIBLE FILLER IN JOINT BETWEEN TOP OF PARTITION AND UNDERSIDE OF STRUCTURE ABOVE.

E. TOOL EXPOSED JOINTS SLIGHTLY CONCAVE WHEN THUMBPRINT HARD UNLESS OTHERWISE INDICATED.

1.8 LINTELS

A. INSTALL LINTELS WHERE INDICATED.

B. MINIMUM BEARING OF 8 INCHES AT EACH JAMB UNLESS OTHERWISE INDICATED.

1.9 CLEANING

A. CLEAN MASONRY AS WORK PROGRESSES. REMOVE MORTAR FINS AND SMEARS BEFORE TOOLING JOINTS.

B. FINAL CLEANING: AFTER MORTAR IS THOROUGHLY CURED, CLEAN EXPOSED MASONRY.

SECTION 054000 - COLD-FORMED METAL FRAMING

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA AND MATERIAL CERTIFICATES.

B. PROTECT COLD-FORMED METAL FRAMING FROM CORROSION, DEFORMATION, AND OTHER DAMAGE DURING DELIVERY, STORAGE, AND HANDLING.

1.2 PERFORMANCE REQUIREMENTS

A. AISI SPECIFICATIONS AND STANDARDS: UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED, COMPLY WITH AISI S100 AND AISI S200.

B. COMPLY WITH AISI S230.

C. COMPLY WITH AWS D1.3.

1.3 MATERIALS

A. RECYCLED CONTENT OF STEEL PRODUCTS: POSTCONSUMER RECYCLED CONTENT PLUS ONE-HALF OF PRECONSUMER RECYCLED CONTENT NOT LESS THAN 25 PERCENT.

B. STEEL SHEET: ASTM A 1003/A 1003M, TYPE H, GRADE ST33H, METALLIC COATED, G60, A60, AZ50, OR GF30 COATING.

C. STEEL STUDS: C-SHAPED, WITH FLANGE WIDTH OF NOT LESS THAN 1-5/8 INCHES, MINIMUM UNCOATED STEEL THICKNESS AND OF DEPTHS INDICATED.

D. STEEL JOISTS: C-SHAPED, WITH FLANGE WIDTH OF NOT LESS THAN 1-5/8 INCHES, MINIMUM UNCOATED STEEL DESIGN THICKNESS AND OF DEPTHS INDICATED.

E. STEEL TRACK: U-SHAPED, MINIMUM UNCOATED METAL THICKNESS SAME AS STUDS OR JOISTS USED WITH TRACK, WITH FLANGE WIDTHS OF 1-1/4 INCHES FOR STUDS AND 1-1/2 INCHES FOR JOISTS, OF WEB DEPTHS INDICATED.

1.4 ACCESSORIES

A. FABRICATE FROM THE SAME MATERIAL AND FINISH USED FOR FRAMING MEMBERS, OF MANUFACTURER'S STANDARD THICKNESS AND CONFIGURATION, UNLESS OTHERWISE INDICATED.

B. EXPANSION ANCHORS: FABRICATED FROM CORROSION-RESISTANT MATERIALS, WITH ALLOWABLE LOAD OR STRENGTH DESIGN CAPACITIES, CALCULATED ACCORDING TO ICC-ES AC193 AND ACI 318, GREATER THAN OR EQUAL TO THE DESIGN LOAD, AS DETERMINED BY TESTING ACCORDING TO ASTM E 488 CONDUCTED BY A QUALIFIED TESTING AGENCY.

C. POWER-ACTUATED ANCHORS: FASTENER SYSTEM OF TYPE SUITABLE FOR APPLICATION INDICATED, FABRICATED FROM CORROSION-RESISTANT MATERIALS, WITH ALLOWABLE LOAD CAPACITIES CALCULATED ACCORDING TO ICC-ES AC70, GREATER THAN OR EQUAL TO THE DESIGN LOAD, AS DETERMINED BY TESTING ACCORDING TO ASTM E 1190 CONDUCTED BY A QUALIFIED TESTING AGENCY.

D. MECHANICAL FASTENERS: ASTM C 1513, SELF-DRILLING, SELF-TAPPING, STEEL DRILL SCREWS, WITH CORROSION-RESISTANT COATING.

E. GALVANIZING REPAIR PAINT: ASTM A 780.

F. SEALER GASKETS: CLOSED-CELL NEOPRENE FOAM, 1/4 INCH THICK, SELECTED FROM MANUFACTURER'S STANDARD WIDTHS TO MATCH WIDTH OF BOTTOM TRACK OR RIM TRACK MEMBERS.

1.5 FRAMING

A. INSTALL FRAMING AND ACCESSORIES LEVEL, PLUMB, SQUARE, AND TRUE TO LINE, AND SECURELY FASTENED, ACCORDING TO AISI S200 AND TO MANUFACTURER'S WRITTEN INSTRUCTIONS UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.
1. CUT FRAMING MEMBERS BY SAWING OR SHEARING; DO NOT TORCH CUT.
2. FASTEN FRAMING MEMBERS BY WELDING OR SCREW FASTENING.

B. INSTALL TEMPORARY BRACING AND SUPPORTS TO SECURE FRAMING AND SUPPORT LOADS. MAINTAIN BRACES AND SUPPORTS IN PLACE UNTIL SUPPORTING STRUCTURE HAS BEEN COMPLETED AND PERMANENT CONNECTIONS ARE SECURED.

C. INSTALL INSULATION, SPECIFIED IN SECTION 07 2100 "THERMAL INSULATION," IN BUILT-UP EXTERIOR FRAMING MEMBERS.

D. FASTEN HOLE-REINFORCING PLATE OVER WEB PENETRATIONS THAT EXCEED SIZE OF MANUFACTURER'S APPROVED OR STANDARD PUNCHED OPENINGS.

E. ERECTION TOLERANCES: INSTALL COLD-FORMED METAL FRAMING WITH A MAXIMUM VARIATION OF 1/8 INCH IN 10 FEET AND WITH INDIVIDUAL FRAMING MEMBERS NO MORE THAN PLUS OR MINUS 1/8 INCH FROM PLAN LOCATION. CUMULATIVE ERROR SHALL NOT EXCEED MINIMUM FASTENING REQUIREMENTS OF SHEATHING OR OTHER FINISHING MATERIALS.

F. STUDS: INSTALL CONTINUOUS TOP AND BOTTOM TRACKS SECURELY ANCHORED AT CORNERS AND ENDS. SQUARELY SEAT STUDS AGAINST WEBS OF TOP AND BOTTOM TRACKS. SPACE STUDS AS INDICATED; SET PLUMB, ALIGN, AND FASTEN BOTH FLANGES OF STUDS TO TOP AND BOTTOM TRACKS.
1. INSTALL AND FASTEN HORIZONTAL BRIDGING IN STUD SYSTEM, SPACED IN ROWS NOT MORE THAN 48 INCHES APART.
2. INSTALL STEEL-SHEET DIAGONAL BRACING STRAPS TO BOTH STUD FLANGES, TERMINATE AT AND FASTEN TO REINFORCED TOP AND BOTTOM TRACK, AND ANCHOR TO STRUCTURE.
3. INSTALL MISCELLANEOUS FRAMING AND CONNECTIONS TO PROVIDE A COMPLETE AND STABLE WALL-FRAMING SYSTEM.

G. JOISTS: INSTALL AND SECURELY ANCHOR PERIMETER JOIST TRACK SIZED TO MATCH JOISTS. INSTALL JOISTS BEARING ON SUPPORTING FRAMING, BRACE AND REINFORCE, AND FASTEN TO BOTH FLANGES OF JOIST TRACK.
1. INSTALL BRIDGING AND FASTEN BRIDGING AT EACH JOIST INTERSECTION.
2. INSTALL MISCELLANEOUS JOIST FRAMING AND CONNECTIONS, INCLUDING WEB STIFFENERS, CLOSURE PIECES, CLIP ANGLES, CONTINUOUS ANGLES, HOLD-DOWN ANGLES, ANCHORS, AND FASTENERS.

SECTION 055000 - METAL FABRICATIONS

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: SHOP DRAWINGS.

1.2 METALS

A. STEEL PLATES, SHAPES, AND BARS: ASTM A 36/A 36M.

B. STEEL TUBING: ASTM A 500/A 500M.

C. STEEL PIPE: ASTM A 53/A 53M, STANDARD WEIGHT (SCHEDULE 40), BLACK FINISH.

D. SLOTTED CHANNEL FRAMING: COLD-FORMED STEEL CHANNELS COMPLYING WITH MFMA-4, 1-5/8 BY 1-5/8 INCHES BY 0.067-INCH MINIMUM THICKNESS, HOT-DIP GALVANIZED AFTER FABRICATION.

E. CAST IRON: ASTM A 48/A 48M OR ASTM A 47/A 47M.

1.3 FASTENERS

A. GENERAL: UNLESS OTHERWISE INDICATED, PROVIDE TYPE 304 STAINLESS-STEEL FASTENERS FOR EXTERIOR USE AND ZINC-PLATED FASTENERS AT EXTERIOR WALLS. SELECT FASTENERS FOR TYPE, GRADE, AND CLASS REQUIRED.
1. PROVIDE STAINLESS-STEEL FASTENERS FOR FASTENING ALUMINUM.
2. PROVIDE STAINLESS-STEEL FASTENERS FOR FASTENING STAINLESS STEEL.
3. PROVIDE BRONZE FASTENERS FOR FASTENING BRONZE.

1.4 GROUT

A. NONSHRINK, NONMETALLIC GROUT: ASTM C 1107; RECOMMENDED BY MANUFACTURER FOR EXTERIOR APPLICATIONS.

1.5 FABRICATION

A. GENERAL: SHEAR AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EXPOSED EDGES. FORM BENT-METAL CORNERS TO SMALLEST RADIUS POSSIBLE WITHOUT IMPAIRING WORK.

B. WELDING: WELD CORNERS AND SEAMS CONTINUOUSLY. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS. AT EXPOSED CONNECTIONS, FINISH WELDS AND SURFACES SMOOTH, WITH CONTOUR OF WELDED SURFACE MATCHING THOSE ADJACENT.

C. COMPLY WITH AWS FOR RECOMMENDED PRACTICES IN SHOP BRAZING. BRAZE BEHIND FINISHED SURFACES WITHOUT DISTORTING OR DISCOLORING EXPOSED SIDE. CLEAN EXPOSED BRAZED JOINTS OF FLUX, AND DRESS EXPOSED AND CONTACT SURFACES.

D. ON UNITS INDICATED TO BE CAST INTO CONCRETE OR BUILT INTO MASONRY, PROVIDE WELDED-STEEL STRAP ANCHORS, 1/8 BY 1-1/2 INCHES, WITH A MINIMUM 6-INCH EMBEDMENT AND 2-INCH HOOK, NOT LESS THAN 8 INCHES FROM ENDS AND CORNERS OF UNITS AND 24 INCHES O.C.

E. FABRICATE LOOSE LINTELS FROM STEEL ANGLES AND SHAPES. SIZE TO PROVIDE BEARING LENGTH AT EACH SIDE OF OPENINGS EQUAL TO ONE-TWELFTH OF CLEAR SPAN, BUT NOT LESS THAN 8 INCHES.

F. FABRICATE LADDERS FOR LOCATIONS SHOWN, COMPLYING WITH ANSI A14.3, WELDED-STEEL CONSTRUCTION.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   a. O'KEEFFE'S INC.
   b. PRECISION LADDERS, LLC.

G. FABRICATE PIPE BOLLARDS FROM SCHEDULE 80 STEEL PIPE. CAP BOLLARDS WITH 1/4-INCH-MINIMUM STEEL PLATE.

1.6 STEEL AND IRON FINISHES

A. HOT-DIP GALVANIZE STEEL FABRICATIONS AT EXTERIOR LOCATIONS.

B. PREPARE UNCOATED FERROUS METAL SURFACES TO COMPLY WITH SSPC-SP 3 AND PAINT WITH A FAST-CURING, LEAD- AND CHROMATE-FREE, UNIVERSAL MODIFIED-ALKYD PRIMER COMPLYING WITH MPI#79.

1.7 INSTALLATION

A. PROVIDE ANCHORAGE DEVICES AND FASTENERS WHERE NEEDED TO SECURE ITEMS TO IN-PLACE CONSTRUCTION.

B. PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING MISCELLANEOUS METAL FABRICATIONS. SET METAL FABRICATION ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION, WITH EDGES AND SURFACES LEVEL, PLUMB, TRUE, AND FREE OF RACK.

C. FIT EXPOSED CONNECTIONS ACCURATELY TOGETHER TO FORM HAIRLINE JOINTS OR, WHERE INDICATED, WITH UNIFORM REVEALS AND SPACES FOR SEALANTS AND JOINT FILLERS.

D. COAT CONCEALED SURFACES OF ALUMINUM THAT WILL COME INTO CONTACT WITH GROUT, CONCRETE, MASONRY, WOOD, OR DISSIMILAR METALS WITH A HEAVY COAT OF BITUMINOUS PAINT.

E. FASTEN SECURITY BAR FRAMES TO CONCRETE AND MASONRY WALLS WITH CAST-IN-PLACE OR POSTINSTALLED ANCHORS. PEEN EXPOSED THREADS OF ANCHORS TO PREVENT REMOVAL OF SECURITY BARS.

F. ANCHOR BOLLARDS IN CONCRETE AND FILL SOLIDLY WITH CONCRETE.

SECTION 061053 – MISCELLANEOUS ROUGH CARPENTRY

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: ICC-ES EVALUATION REPORTS FOR TREATED WOOD.

1.2 WOOD PRODUCTS, GENERAL

A. LUMBER: PROVIDE DRESSED LUMBER, S4S, MARKED WITH GRADE STAMP OF INSPECTION AGENCY.

1.3 TREATED MATERIALS

A. FIRE-RETARDANT-TREATED MATERIALS: PRODUCTS WITH A FLAME-SPREAD INDEX OF 25 OR LESS WHEN TESTED ACCORDING TO ASTM E 84, AND WITH NO EVIDENCE OF SIGNIFICANT PROGRESSIVE COMBUSTION WHEN THE TEST IS EXTENDED AN ADDITIONAL 20 MINUTES, AND WITH THE FLAME FRONT NOT EXTENDING MORE THAN 10.5 FEET BEYOND THE CENTERLINE OF THE BURNERS AT ANY TIME DURING THE TEST.
1. USE INTERIOR TYPE A UNLESS OTHERWISE INDICATED.
2. FOR ENCLOSED ROOF FRAMING, FRAMING IN ATTIC SPACES, AND WHERE HIGH-TEMPERATURE FIRE-RETARDANT TREATMENT IS INDICATED, PROVIDE MATERIAL WITH DESIGN ADJUSTMENT FACTORS OF NOT LESS THAN 0.85 FOR MODULUS OF ELASTICITY AND 0.75 FOR EXTREME FIBER IN BENDING FOR PROJECT'S CLIMATOLOGICAL ZONE.
3. KILN-DRY LUMBER AFTER TREATMENT TO A MAXIMUM MOISTURE CONTENT OF 19 PERCENT.
4. IDENTIFY WITH APPROPRIATE CLASSIFICATION MARKING OF A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

B. PROVIDE FIRE-RETARDANT TREATED MATERIALS FOR ITEMS INDICATED ON DRAWINGS.

1.4 LUMBER

A. INTERIOR PARTITION FRAMING: CONSTRUCTION, STUD, OR NO. 3: MIXED SOUTHERN PINE: SPIB; OR WESTERN WOODS: WCLIB OR WWPA WITH 15 PERCENT MAXIMUM MOISTURE CONTENT.

B. MISCELLANEOUS DIMENSION LUMBER: CONSTRUCTION, OR NO. 2 GRADE WITH 15 PERCENT MAXIMUM MOISTURE CONTENT OF ANY SPECIES. PROVIDE FOR NAILERS, BLOCKING, AND SIMILAR MEMBERS.

C. UTILITY SHELVING: HEM-FIR, SELECT MERCHANTABLE OR NO. 1 COMMON: NLGA, WCLIB, OR WWPA; OR SPRUCE-PINE-FIR, SELECT MERCHANTABLE OR NO. 1 COMMON: NELMA, NLGA, WCLIB, OR WWPA; WITH 15 PERCENT MAXIMUM MOISTURE CONTENT.

D. CONCEALED BOARDS: MIXED SOUTHERN PINE, NO. 2: SPIB; OR WESTERN WOODS, STANDARD: WCLIB; OR NO. 3 COMMON: WWPA; WITH 15 PERCENT MAXIMUM MOISTURE CONTENT.

1.5 PLYWOOD BACKING PANELS

A. EQUIPMENT BACKING PANELS: PLYWOOD, EXTERIOR, AC, FIRE-RETARDANT TREATED, NOT LESS THAN 3/4-INCH NOMINAL THICKNESS.

1.6 FASTENERS

A. FASTENERS: SIZE AND TYPE INDICATED. WHERE ROUGH CARPENTRY IS EXPOSED TO WEATHER, IN GROUND CONTACT, OR IN AREA OF HIGH RELATIVE HUMIDITY, PROVIDE FASTENERS WITH HOT-DIP ZINC COATING COMPLYING WITH ASTM A 153/A 153M.
1. POWER-DRIVEN FASTENERS: CABO NER-272.

1.7 INSTALLATION

A. SET MISCELLANEOUS ROUGH CARPENTRY TO REQUIRED LEVELS AND LINES, WITH MEMBERS PLUMB, TRUE TO LINE, CUT, AND FITTED. LOCATE NAILERS, BLOCKING, AND SIMILAR SUPPORTS TO COMPLY WITH REQUIREMENTS FOR ATTACHING OTHER CONSTRUCTION.

B. SECURELY ATTACH MISCELLANEOUS ROUGH CARPENTRY TO SUBSTRATES, COMPLYING WITH THE FOLLOWING:
1. CABO NER-272 FOR POWER-DRIVEN FASTENERS.
2. TABLE 2304.9.1, "FASTENING SCHEDULE," IN THE IBC.

SECTION 064116 - PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: SHOP DRAWINGS SAMPLES SHOWING THE FULL RANGE OF COLORS AVAILABLE FOR EACH TYPE OF FINISH AND WI CERTIFIED COMPLIANCE PROGRAM CERTIFICATES.

B. FABRICATOR QUALIFICATIONS: LICENSEE OF WI'S CERTIFIED COMPLIANCE PROGRAM.

1.2 ARCHITECTURAL CABINETS

A. QUALITY STANDARD: AWI, AWMAC, AND WI'S "ARCHITECTURAL WOODWORK STANDARDS."

B. PLASTIC-LAMINATE CABINETS: CUSTOM GRADE.
1. TYPE OF CONSTRUCTION: FRAMELESS.
2. CABINET DOOR AND DRAWER STYLE: FLUSH OVERLAY.
3. LAMINATE CLADDING: HORIZONTAL SURFACES OTHER THAN TOPS; GRADE HGS; POSTFORMED SURFACES, GRADE HGP; VERTICAL SURFACES, GRADE HGS; EDGES, GRADE HGS; SEMIEXPOSED SURFACES, GRADE VGS.
4. DRAWER SIDES AND BACKS: SOLID HARDWOOD.
5. DRAWER BOTTOMS: HARDWOOD PLYWOOD.

1.3 MATERIALS

A. WOOD MOISTURE CONTENT: 4 TO 9 PERCENT.

B. MEDIUM-DENSITY FIBERBOARD: ANSI A208.2, GRADE 130, MADE WITH BINDER CONTAINING NO UREA FORMALDEHYDE.

C. PARTICLEBOARD: ANSI A208.1, GRADE M-2.

D. VENEER-FACED PANEL PRODUCTS (HARDWOOD PLYWOOD): HPVA HP-1, MADE WITH ADHESIVE CONTAINING NO UREA FORMALDEHYDE.

E. HIGH-PRESSURE DECORATIVE LAMINATE: NEMA LD 3.
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT INDICATED ON DRAWINGS OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
   A. FORMICA CORPORATION.
   B. PIONITE; A PANOLAM INDUSTRIES INTERNATIONAL, INC. BRAND.
   C. WILSONART.

1.4 CABINET HARDWARE AND ACCESSORY MATERIALS

A. BUTT HINGES: 2-3/4-INCH, FIVE-KNUCKLE STEEL HINGES MADE FROM 0.095-INCH-THICK METAL, AND AS FOLLOWS:
1. SEMICONCEALED HINGES FOR FLUSH DOORS: BHMA A156.9, B01361.
2. SEMICONCEALED HINGES FOR OVERLAY DOORS: BHMA A156.9, B01521.

B. FRAMELESS CONCEALED HINGES (EUROPEAN TYPE): BHMA A156.9, B01602, DEGREES OF OPENING.

C. WIRE PULLS: BACK MOUNTED, SOLID ,.

D. CATCHES: .

E. ADJUSTABLE SHELF STANDARDS AND SUPPORTS: .

F. SHELF RESTS: BHMA A156.9, B04013;.

G. DRAWER SLIDES: BHMA A156.9, B05091.
1. BOX DRAWER SLIDES: GRADE 1.
2. FILE DRAWER SLIDES: GRADE 1HD-100.
3. PENCIL DRAWER SLIDES: GRADE 2.
4. KEYBOARD SLIDES: GRADE 1.

H. DRAWER LOCKS: BHMA A156.11, E07041.

I. EXPOSED HARDWARE FINISHES: COMPLY WITH BHMA A156.18 FOR BHMA CODE NUMBER INDICATED.
1. FINISH: .

J. FURRING, BLOCKING, SHIMS, AND HANGING STRIPS: SOFTWOOD OR HARDWOOD LUMBER, KILN DRIED TO 15 PERCENT MOISTURE CONTENT.

1.5 FABRICATION

A. COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE. DISASSEMBLE COMPONENTS ONLY AS NECESSARY FOR SHIPMENT AND INSTALLATION. WHERE NECESSARY FOR FITTING AT SITE, PROVIDE AMPLE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.

1.6 INSTALLATION

A. BEFORE INSTALLATION, CONDITION CABINETS TO AVERAGE PREVAILING HUMIDITY CONDITIONS IN INSTALLATION AREAS.

B. INSTALL CABINETS TO COMPLY WITH REFERENCED QUALITY STANDARD FOR GRADE SPECIFIED.

C. INSTALL CABINETS LEVEL, PLUMB, TRUE, AND STRAIGHT. SHIM AS REQUIRED WITH CONCEALED SHIMS. INSTALL LEVEL AND PLUMB (INCLUDING TOPS) TO A TOLERANCE OF 1/8 INCH IN 96 INCHES.

D. SCRIBE AND CUT CABINETS TO FIT ADJOINING WORK, REFINISH CUT SURFACES, AND REPAIR DAMAGED FINISH AT CUTS.

E. ANCHOR CABINETS TO ANCHORS OR BLOCKING BUILT INTO OR DIRECTLY ATTACHED TO SUBSTRATES. FASTEN WITH COUNTERSUNK CONCEALED FASTENERS AND BLIND NAILING.

F. CABINETS: INSTALL SO DOORS AND DRAWERS ARE ACCURATELY ALIGNED. ADJUST HARDWARE TO CENTER DOORS AND DRAWERS IN OPENINGS AND TO PROVIDE UNENCUMBERED OPERATION.
1. FASTEN WALL CABINETS THROUGH BACK, NEAR TOP AND BOTTOM, AT ENDS AND NOT MORE THAN 16 INCHES O.C. WITH NO. 10 WAFER-HEAD SCREWS SIZED FOR 1-INCH PENETRATION INTO WOOD FRAMING, BLOCKING, OR HANGING STRIPS NO. 10 WAFER-HEAD SHEET METAL SCREWS THROUGH METAL BACKING OR METAL FRAMING BEHIND WALL FINISH.

SPECIFICATIONS CONTINUE ON SHEET A584

zebra
ZEBRA ARCHITECTURE, PLLC.
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FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLL

SPECIFICATIONS CONTINUE FROM SHEET A583

SECTION 064219 – PLASTIC-LAMINATE-FACED WOOD PANELING

1.1 SUMMARY
A. SECTION INCLUDES:
1. PLASTIC-LAMINATE-FACED WOOD PANELING.

1.2 PREINSTALLATION MEETINGS
A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
1. INCLUDE DATA FOR FIRE-RETARDANT TREATMENT FROM CHEMICAL-TREATMENT MANUFACTURER AND CERTIFICATION BY TREATING PLANT THAT TREATED MATERIALS COMPLY WITH REQUIREMENTS.

B. SHOP DRAWINGS: FOR PLASTIC-LAMINATE-FACED WOOD PANELING.
1. INCLUDE PLANS, ELEVATIONS, SECTIONS, AND ATTACHMENT DETAILS.

C. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH COLOR AND TEXTURE SPECIFIED.

1.4 INFORMATIONAL SUBMITTALS
A. PRODUCT CERTIFICATES.

B. RESEARCH REPORTS.

1.5 QUALITY ASSURANCE

A. FABRICATOR QUALIFICATIONS: SHOP THAT EMPLOYS SKILLED WORKERS WHO CUSTOM-FABRICATE PRODUCTS SIMILAR TO THOSE REQUIRED FOR THIS PROJECT AND WHOSE PRODUCTS HAVE A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.

1.6 PANELING, GENERAL
A. QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH THE "ARCHITECTURAL WOODWORK STANDARDS" FOR GRADES OF PLASTIC-LAMINATE-FACED WOOD PANELING (DECORATIVE LAMINATE SURFACING) INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS.

1.7 PLASTIC-LAMINATE-FACED WOOD PANELING
A. GRADE: CUSTOM.

B. PLASTIC LAMINATE: HIGH-PRESSURE DECORATIVE LAMINATE COMPLYING WITH NEMA LD 3 AND THE FOLLOWING REQUIREMENTS:
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PANEL SPECIALISTS, INC.; WALL PANEL SYSTEM WITH NEW LEAF BIRCH VENEER.

C. COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. AS INDICATED BY MANUFACTURER'S DESIGNATIONS.

D. PANEL CORE: FIRE-RETARDANT PARTICLEBOARD OR FIRE-RETARDANT MDF.
1. THICKNESS: 1/2 INCH.

E. EXPOSED PANEL EDGES: PLASTIC-LAMINATE MATCHING FACES.

F. PANEL REVEALS: STAINLESS STEEL CHANNELS, 1 BY 1 BY 1/16 INCH THICK.

G. ADHESIVES FOR BONDING PLASTIC LAMINATE: CONTACT CEMENT.

H. FIRE-RETARDANT-TREATED PANELING: PANELS SHALL CONSIST OF FIRE-RETARDANT PLASTIC LAMINATE AND FIRE-RETARDANT PARTICLEBOARD OR FIRE-RETARDANT, MEDIUM-DENSITY FIBERBOARD (MDF). PANELS SHALL HAVE A FLAME-SPREAD INDEX OF 25 OR LESS AND A SMOKE-DEVELOPED INDEX OF 450 OR LESS PER ASTM E84, AND BE LISTED AND LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

I. ASSEMBLE PANELS BY GLUING AND CONCEALED FASTENING.

1.8 MATERIALS
A. MATERIALS, GENERAL: PROVIDE MATERIALS THAT COMPLY WITH REQUIREMENTS OF REFERENCED QUALITY STANDARD FOR EACH QUALITY GRADE SPECIFIED UNLESS OTHERWISE INDICATED.

B. WOOD MOISTURE CONTENT: 8 TO 13 PERCENT.

C. COMPOSITE WOOD PRODUCTS: PROVIDE MATERIALS THAT COMPLY WITH REQUIREMENTS OF REFERENCED QUALITY STANDARD FOR EACH QUALITY GRADE SPECIFIED UNLESS OTHERWISE INDICATED.
1. MDF: ANSI A208.2, GRADE 130.
2. PARTICLEBOARD (MEDIUM DENSITY): ANSI A208.1, GRADE M-2.

1.9 FIRE-RETARDANT-TREATED MATERIALS
A. FIRE-RETARDANT-TREATED MATERIALS, GENERAL: WHERE FIRE-RETARDANT-TREATED MATERIALS ARE INDICATED, USE MATERIALS THAT ARE ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND WITH FIRE-TEST-RESPONSE CHARACTERISTICS SPECIFIED AS DETERMINED BY TESTING IDENTICAL PRODUCTS PER TEST METHOD INDICATED BY A QUALIFIED TESTING AGENCY.
1. USE TREATED MATERIALS THAT COMPLY WITH REQUIREMENTS OF REFERENCED QUALITY STANDARD. DO NOT USE MATERIALS THAT ARE WARPED, DISCOLORED, OR OTHERWISE DEFECTIVE.
2. USE FIRE-RETARDANT-TREATMENT FORMULATIONS THAT DO NOT BLEED THROUGH OR OTHERWISE ADVERSELY AFFECT FINISHES. DO NOT USE COLORANTS TO DISTINGUISH TREATED MATERIALS FROM UNTREATED MATERIALS.
3. IDENTIFY FIRE-RETARDANT-TREATED MATERIALS WITH APPROPRIATE CLASSIFICATION MARKING OF QUALIFIED TESTING AGENCY IN THE FORM OF REMOVABLE PAPER LABEL OR IMPRINT ON SURFACES THAT WILL BE CONCEALED FROM VIEW AFTER INSTALLATION.

1.10 INSTALLATION MATERIALS
A. FURRING, BLOCKING, SHIMS, AND HANGING STRIPS: SOFTWOOD OR HARDWOOD LUMBER, KILN-DRIED TO LESS THAN 15 PERCENT MOISTURE CONTENT.

B. ANCHORS: SELECT MATERIAL, TYPE, SIZE, AND FINISH REQUIRED FOR EACH SUBSTRATE FOR SECURE ANCHORAGE. PROVIDE METAL EXPANSION SLEEVES OR EXPANSION BOLTS FOR POST-INSTALLED ANCHORS. USE NONFERROUS-METAL OR HOT-DIP GALVANIZED ANCHORS AND INSERTS AT INSIDE FACE OF EXTERIOR WALLS.

C. INSTALLATION ADHESIVE: PRODUCT RECOMMENDED BY PANEL FABRICATOR FOR EACH SUBSTRATE FOR SECURE ANCHORAGE.

1.11 FABRICATION
A. COMPLETE FABRICATION, INCLUDING ASSEMBLY, TO MAXIMUM EXTENT POSSIBLE, BEFORE SHIPMENT TO PROJECT SITE.

B. SHOP CUT OPENINGS, TO MAXIMUM EXTENT POSSIBLE, TO RECEIVE HARDWARE, APPLIANCES, PLUMBING FIXTURES, ELECTRICAL WORK, AND SIMILAR ITEMS.

1.12 INSTALLATION
A. BEFORE INSTALLATION, CONDITION PANELING TO HUMIDITY CONDITIONS IN INSTALLATION AREAS.

B. GRADE: INSTALL PANELING TO COMPLY WITH QUALITY STANDARD GRADE OF PANELING TO BE INSTALLED.

C. INSTALL PANELING LEVEL, PLUMB, TRUE IN LINE, AND WITHOUT DISTORTION. SHIM AS REQUIRED WITH CONCEALED SHIMS. INSTALL LEVEL AND PLUMB TO A TOLERANCE OF 1/8 INCH IN 96 INCHES. INSTALL WITH NO MORE THAN 1/16 INCH IN 96-INCH VERTICAL CUP OR BOW AND 1/8 INCH IN 96-INCH HORIZONTAL VARIATION FROM A TRUE PLANE.
1. FOR FLUSH PANELING WITH REVEALED JOINTS, INSTALL WITH VARIATIONS IN REVEAL WIDTH, ALIGNMENT OF TOP AND BOTTOM EDGES, AND FLUSHNESS BETWEEN ADJACENT PANELS NOT EXCEEDING 1/32 INCH.

D. ANCHOR PANELING TO SUPPORTING SUBSTRATE WITH SPLINED CONNECTION STRIPS. DO NOT USE FACE FASTENING UNLESS OTHERWISE INDICATED.

SECTION 066400 - PLASTIC PANELING

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA AND SAMPLES.

1.2 PLASTIC SHEET PANELING
A. GENERAL: GEL-COAT-FINISHED, GLASS-FIBER-REINFORCED PLASTIC PANELS COMPLYING WITH ASTM D 5319. PANELS SHALL BE USDA ACCEPTED FOR INCIDENTAL FOOD CONTACT.
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY MARLITE OR COMPARABLE PRODUCTS BY ONE OF THE FOLLOWING:
a. CRANE COMPOSITES, INC.
b. NUDO PRODUCTS, INC.
c. PARKLAND PLASTICS, INC.
2. NOMINAL THICKNESS: NOT LESS THAN 0.09 INCH.
3. SURFACE FINISH: MOLDED PEBBLE TEXTURE.

B. TRIM ACCESSORIES: MANUFACTURER'S STANDARD ONE-PIECE VINYL EXTRUSIONS DESIGNED TO RETAIN AND COVER EDGES OF PANELS. PROVIDE DIVISION BARS, INSIDE CORNERS, OUTSIDE CORNERS, AND CAPS AS NEEDED TO CONCEAL EDGES.

C. ADHESIVE: AS RECOMMENDED BY PLASTIC PANELING MANUFACTURER.

D. SEALANT: MILDEW-RESISTANT SILICONE SEALANT RECOMMENDED BY PLASTIC PANELING MANUFACTURER AND COMPLYING WITH REQUIREMENTS IN SECTION 07 9200 "JOINT SEALANTS."

1.3 INSTALLATION
A. LAY OUT PANELING BEFORE INSTALLING. LOCATE PANEL JOINTS SO THAT TRIMMED PANELS AT CORNERS ARE NOT LESS THAN 12 INCHES WIDE.
1. LOCATE TRIM ACCESSORIES TO ALLOW CLEARANCE AT PANEL EDGES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

B. INSTALL PANELS IN A FULL SPREAD OF ADHESIVE.

C. INSTALL TRIM ACCESSORIES WITH ADHESIVE AND NAILS OR STAPLES. DO NOT FASTEN THROUGH PANELS.

D. FILL GROOVES IN TRIM ACCESSORIES WITH SEALANT BEFORE INSTALLING PANELS AND BED INSIDE CORNER TRIM IN A BEAD OF SEALANT.

E. MAINTAIN UNIFORM SPACE BETWEEN PANELS AND WALL FIXTURES. FILL SPACE WITH SEALANT.

SECTION 072100 - THERMAL INSULATION

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA AND ICC-ES EVALUATION REPORTS FOR FOAM-PLASTIC INSULATION.

B. SURFACE-BURNING CHARACTERISTICS: ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.

1.2 INSULATION PRODUCTS
A. GLASS-FIBER-BLANKET INSULATION: ASTM C 665, TYPE I, UNFACED WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 25 AND 450, RESPECTIVELY.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. CERTAINTEED CORPORATION; SAINT-GOBAIN NORTH AMERICA.
b. JOHNS MANVILLE: A BERKSHIRE HATHAWAY COMPANY.
c. KNAUF INSULATION.
d. OWENS CORNING.

B. OPEN-CELL POLYURETHANE FOAM INSULATION: SPRAY-APPLIED POLYURETHANE FOAM USING WATER AS A BLOWING AGENT, WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 75 AND 450, RESPECTIVELY, AND MINIMUM DENSITY OF 0.4 LB/CU. FT..
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. GACO WESTERN LLC.
b. SWD URETHANE COMPANY.

1.3 ACCESSORIES
A. VAPOR RETARDER: FIRE-RETARDANT, REINFORCED POLYETHYLENE, 6 MILS THICK.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. RAVEN INDUSTRIES, INC.
b. REEF INDUSTRIES, INC.

1.4 INSTALLATION
A. INSTALL INSULATION IN AREAS AND IN THICKNESSES INDICATED OR REQUIRED TO PRODUCE R-VALUES INDICATED. CUT AND FIT TIGHTLY AROUND OBSTRUCTIONS AND FILL VOIDS WITH INSULATION.

B. MAINTAIN 3-INCH CLEARANCE OF INSULATION AROUND RECESSED LIGHTING FIXTURES NOT RATED FOR OR PROTECTED FROM CONTACT WITH INSULATION.

C. SPRAY-APPLIED INSULATION: APPLY INSULATION ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. DO NOT APPLY INSULATION UNTIL INSTALLATION OF PIPES, DUCTS, CONDUITS, WIRING, AND ELECTRICAL OUTLETS IN WALLS IS COMPLETED AND ITEMS NOT INDICATED TO RECEIVE INSULATION ARE MASKED. AFTER INSULATION IS APPLIED, MAKE FLUSH WITH FACE OF STUDS.

D. INSTALL SHEET RADIANT BARRIERS ACCORDING TO ASTM C 1158.

E. EXTEND VAPOR RETARDER TO EXTREMITIES OF AREAS TO BE PROTECTED FROM VAPOR TRANSMISSION. SECURE IN PLACE WITH ADHESIVES OR OTHER ANCHORAGE. LOCATE SEAMS AT FRAMING MEMBERS, OVERLAP, AND SEAL WITH TAPE. SEAL JOINTS CAUSED BY PIPES, CONDUITS, ELECTRICAL BOXES, AND SIMILAR ITEMS WITH TAPE.

SECTION 072419 - WATER-DRAINAGE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA ICC-ES EVALUATION REPORTS SAMPLES OF FINISHES AND FIELD QUALITY-CONTROL REPORTS.
B. INSTALLER QUALIFICATIONS: CERTIFIED IN WRITING BY EIFS MANUFACTURER.
C. WARRANTIES: MANUFACTURER'S STANDARD WRITTEN WARRANTY, SIGNED BY MANUFACTURER AGREEING TO PROMPTLY REPAIR OR REPLACE PRODUCTS THAT FAIL IN MATERIALS OR WORKMANSHIP FOR THE PERIOD OF 10 YEARS.

1.2 MANUFACTURERS

A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE DRYVIT SYSTEMS, INC.; OUTSULATION MD SYSTEM OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
1. PAREX USA, INC.
2. STO CORP.
3. SENERGY, INC.

B. SOURCE LIMITATIONS: OBTAIN EIFS COMPONENTS FROM SINGLE SOURCE, FROM SINGLE EIFS MANUFACTURER, AND FROM SOURCES APPROVED BY EIFS MANUFACTURER AS COMPATIBLE WITH SYSTEM.

1.3 PERFORMANCE REQUIREMENTS
A. EIFS PERFORMANCE: COMPLY WITH ASTM E 2568 AND ICC-ES AC219.
B. IMPACT PERFORMANCE: ASTM E 2568, STANDARD IMPACT RESISTANCE EXCEPT WHERE OTHERWISE INDICATED ON DRAWINGS.

1.4 MATERIALS
A. WATER-RESISTIVE COATING: EIFS MANUFACTURER'S STANDARD FORMULATION AND ACCESSORIES FOR USE AS WATER/WEATHER-RESISTIVE BARRIERS, COMPATIBLE WITH SUBSTRATE, AND COMPLYING WITH PHYSICAL AND PERFORMANCE CRITERIA OF ASTM E 2570.
B. FLEXIBLE-MEMBRANE FLASHING: COLD-APPLIED, SELF-ADHERING, RUBBERIZED-ASPHALT AND POLYETHYLENE-FILM COMPOSITE SHEET OR TAPE AND PRIMER; EIFS MANUFACTURER'S STANDARD OR PRODUCT RECOMMENDED IN WRITING BY EIFS MANUFACTURER.
C. INSULATION ADHESIVE: EIFS MANUFACTURER'S STANDARD FORMULATION DESIGNED FOR INDICATED USE AND COMPATIBLE WITH SUBSTRATE.
D. MOLDED-POLYSTYRENE BOARD INSULATION: ASTM C 578, TYPE I WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 25 AND 450 OR LESS, RESPECTIVELY.
E. REINFORCING MESH: BALANCED, ALKALI-RESISTANT, OPEN-WEAVE, GLASS-FIBER MESH TREATED FOR COMPATIBILITY WITH OTHER SYSTEM MATERIALS, COMPLYING WITH ASTM D 578, AND WITH MINIMUM WEIGHT NOT LESS THAN4.0 OZ./SQ. YD..
1. HIGH-IMPACT REINFORCING MESH: NOT LESS THAN 15 Z./SQ.YD..
2. HEAVY-DUTY REINFORCING MESH: NOT LESS THAN 20 OZ./SQ. YD..
F. BASE-COAT MATERIALS: EIFS MANUFACTURER'S STANDARD MIXTURE OF PORTLAND CEMENT COMPLYING WITH ASTM C 150/ C 150M, TYPE I, AND POLYMER-EMULSION ADHESIVE DESIGNED FOR USE INDICATED.
G. FINISH-COAT MATERIALS: EIFS MANUFACTURER'S STANDARD ACRYLIC-BASED COATING, CONSISTING OF POLYMER-EMULSION BINDER, COLORFAST MINERAL PIGMENTS, SOUND STONE PARTICLES, AND FILLERS.
H. MECHANICAL FASTENERS: EIFS MANUFACTURER'S STANDARD CORROSION-RESISTANT FASTENERS CONSISTING OF THERMAL CAP, STANDARD WASHER AND SHAFT ATTACHMENTS, AND FASTENER.
I. TRIM ACCESSORIES: TYPE AS DESIGNATED OR REQUIRED TO SUIT CONDITIONS INDICATED; MANUFACTURED FROM UV-STABILIZED PVC.

1.5 INSTALLATION
A. WATER-RESISTIVE COATINGS: APPLY OVER SUBSTRATES TO PROTECT SUBSTRATES FROM DEGRADATION AND TO PROVIDE WATER-/WEATHER-RESISTIVE BARRIER.
1. TAPE AND SEAL JOINTS, EXPOSED EDGES, TERMINATIONS, AND INSIDE AND OUTSIDE CORNERS OF SHEATHING UNLESS OTHERWISE INDICATED BY EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. FLEXIBLE-MEMBRANE FLASHING: INSTALL OVER WEATHER-RESISTIVE BARRIER, APPLIED AND LAPPED TO SHED WATER; SEAL AT OPENINGS, PENETRATIONS, TERMINATIONS, AND WHERE REQUIRED BY EIFS MANUFACTURER.
C. APPLY TRIM ACCESSORIES AT PERIMETER OF EIFS, AT EXPANSION JOINTS, AT WINDOW SILLS, AND ELSEWHERE AS INDICATED. COORDINATE WITH INSTALLATION OF INSULATION.
D. APPLY ADHESIVE FORMING VERTICAL CHANNELS FOR WATER DRAINAGE AND ATTACH INSULATION TO SUBSTRATE TO COMPLY WITH ASTM C 1397 AND WITH EIFS MANUFACTURER'S WRITTEN REQUIREMENTS.
E. INSTALL BASE COAT WITH A MINIMUM TOTAL THICKNESS AT LEAST 1/16 INCH AND COMPLETELY COVERING REINFORCING MESH, APPLYING ADDITIONAL BASE-COAT MATERIAL IF NECESSARY SO REINFORCING-MESH COLOR AND PATTERN ARE NOT VISIBLE.
1. WHERE INDICATED, APPLY SECOND BASE COAT IN SAME MANNER AND THICKNESS AS FIRST APPLICATION EXCEPT WITHOUT REINFORCING MESH. DO NOT APPLY UNTIL FIRST BASE COAT HAS CURED.
F. APPLY FINISH COAT OVER DRY BASE COAT, IN THICKNESS REQUIRED BY EIFS MANUFACTURER TO PRODUCE A UNIFORM COLOR AND TEXTURE, FREE OF VARIATIONS.
1. INCLUDE EIFS MANUFACTURER'S STANDARD MILDEW RESISTANCE ADDITIVE FOR EIFS SYSTEM FINISH COAT.

1.6 FIELD QUALITY CONTROL
A. SPECIAL INSPECTIONS: ENGAGE A QUALIFIED SPECIAL INSPECTOR TO PERFORM THE FOLLOWING SPECIAL INSPECTIONS:
1. AS STIPULATED IN CH. 17 OF THE IBC.
2. ACCORDING TO ICC-ES AC24 AND ICC-ES AC235.

SECTION 072500 - WEATHER BARRIERS

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: ICC-ES EVALUATION REPORTS FOR WATER-RESISTIVE BARRIER.

1.2 WATER-RESISTIVE BARRIERS
A. BUILDING WRAP: ASTM E 1677, TYPE I AIR BARRIER; WITH WATER-VAPOR PERMEANCE NOT LESS THAN 25 PERMS PER ASTM E 96/E 96M, DESICCANT METHOD (PROCEDURE A); FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES NOT GREATER THAN 25 AND 450, RESPECTIVELY, WHEN TESTED ACCORDING TO ASTM E 84; UV STABILIZED; AND ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE DUPONT DE NEMOURS, INC.; TYVEK STUCCOWRAP OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
a. DOW CHEMICAL COMPANY (THE).
b. KINGSPAN INSULATION LIMITED.
c. RAVEN INDUSTRIES, INC.

1.3 ACCESSORIES
A. FLEXIBLE FLASHING: ADHESIVE BUTYL RUBBER OR RUBBERIZED-ASPHALT COMPOUND, BONDED TO PLASTIC FILM OR SPUNBONDED POLYOLEFIN, WITH AN OVERALL THICKNESS OF 0.030 INCH.
1. BUTYL RUBBER:
a. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE DUPONT DE NEMOURS, INC. :DUPONT FLASHING TAPE. OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
1) GCP APPLIED TECHNOLOGIES INC.
2) RAVEN INDUSTRIES, INC.
3) TYPAR.
2. RUBBERIZED ASPHALT:
a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1) CARLISLE COATINGS & WATERPROOFING INC.
2) MFM BUILDING PRODUCTS CORP.
3) TYPAR.

B. BUILDING WRAP TAPE: PRESSURE-SENSITIVE PLASTIC TAPE RECOMMENDED BY BUILDING-WRAP MANUFACTURER FOR SEALING JOINTS AND PENETRATIONS IN BUILDING WRAP.

1.4 INSTALLATION
A. BUILDING WRAP INSTALLATION:
1. APPLY BUILDING WRAP IMMEDIATELY AFTER SHEATHING IS INSTALLED.
2. SEAL SEAMS, EDGES, FASTENERS, AND PENETRATIONS WITH BUILDING WRAP TAPE.
3. EXTEND INTO JAMBS OF OPENINGS AND SEAL CORNERS WITH BUILDING WRAP TAPE.
B. FLEXIBLE FLASHING INSTALLATION:
1. PRIME SUBSTRATES AS RECOMMENDED BY FLASHING MANUFACTURER.
2. LAP SEAMS AND JUNCTURES WITH OTHER MATERIALS AT LEAST 3 INCHES, EXCEPT THAT AT FLASHING FLANGES OF OTHER CONSTRUCTION, LAPS NEED NOT EXCEED FLANGE WIDTH.
3. LAP FLASHING OVER WATER-RESISTIVE BARRIER AT BOTTOM AND SIDES OF OPENINGS.
4. LAP WATER-RESISTIVE BARRIER OVER FLASHING AT HEADS OF OPENINGS.
5. AFTER FLASHING HAS BEEN APPLIED, ROLL SURFACES WITH A HARD RUBBER OR METAL ROLLER.
C. INSTALL DRAINAGE MATERIAL OVER BUILDING WRAP AND FLASHING TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

SECTION 074213.16 - METAL WALL PANELS

1.1 SUMMARY
A. SECTION INCLUDES INTERIOR HORIZONTAL METAL PLATE WALL PANELS.

1.2 PREINSTALLATION MEETINGS
A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

B. SHOP DRAWINGS: INCLUDE FABRICATION AND INSTALLATION LAYOUTS OF METAL PANELS; DETAILS OF EDGE CONDITIONS, JOINTS, PANEL PROFILES, CORNERS, ANCHORAGES, ATTACHMENT ASSEMBLY, TRIM, FLASHINGS, CLOSURES, AND ACCESSORIES; AND SPECIAL DETAILS.

C. SAMPLES: FOR EACH TYPE OF METAL PANEL INDICATED.

1.4 INFORMATIONAL SUBMITTALS
A. PRODUCT TEST REPORTS.

B. WARRANTIES: SAMPLES OF SPECIAL WARRANTIES.

1.5 CLOSEOUT SUBMITTALS
A. MAINTENANCE DATA.

1.6 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: AN ENTITY THAT EMPLOYS INSTALLERS AND SUPERVISORS WHO ARE TRAINED AND APPROVED BY MANUFACTURER.

B. MOCKUPS: BUILD MOCKUPS TO VERIFY SELECTIONS MADE UNDER SAMPLE SUBMITTALS AND TO DEMONSTRATE AESTHETIC EFFECTS AND SET QUALITY STANDARDS FOR FABRICATION AND INSTALLATION.
1. BUILD MOCKUP OF TYPICAL METAL PANEL ASSEMBLY AS SHOWN ON DRAWINGS, INCLUDING CORNER, VERTICAL BASE AND SILL, EDGE TRIM, SUPPORTS, ATTACHMENTS, AND ACCESSORIES.
2. APPROVAL OF MOCKUPS DOES NOT CONSTITUTE APPROVAL OF DEVIATIONS FROM THE CONTRACT DOCUMENTS CONTAINED IN MOCKUPS UNLESS ARCHITECT SPECIFICALLY APPROVES SUCH DEVIATIONS IN WRITING.
3. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, APPROVED MOCKUPS MAY BECOME PART OF THE COMPLETED WORK IF UNDISTURBED AT TIME OF SUBSTANTIAL COMPLETION.

1.7 WARRANTY
A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF METAL PANEL SYSTEMS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

B. SPECIAL WARRANTY ON PANEL FINISHES: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR FINISH OR REPLACE METAL PANELS THAT SHOW EVIDENCE OF DETERIORATION OF FACTORY-APPLIED FINISHES WITHIN SPECIFIED WARRANTY PERIOD.
1. FINISH WARRANTY PERIOD: 35 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

1.8 PERFORMANCE REQUIREMENTS
A. THERMAL MOVEMENTS: ALLOW FOR THERMAL MOVEMENTS FROM AMBIENT AND SURFACE TEMPERATURE CHANGES BY PREVENTING BUCKLING, OPENING OF JOINTS, OVERSTRESSING OF COMPONENTS, FAILURE OF JOINT SEALANTS, FAILURE OF CONNECTIONS, AND OTHER DETRIMENTAL EFFECTS. BASE CALCULATIONS ON SURFACE TEMPERATURES OF MATERIALS DUE TO BOTH SOLAR HEAT GAIN AND NIGHTTIME-SKY HEAT LOSS.
1. TEMPERATURE CHANGE (RANGE): 120 DEG F, AMBIENT; 180 DEG F, MATERIAL SURFACES.

B. FIRE-RESISTANCE RATINGS: COMPLY WITH ASTM E119; TESTING BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.
1. INDICATE DESIGN DESIGNATIONS FROM UL'S "FIRE RESISTANCE DIRECTORY" OR FROM THE LISTINGS OF ANOTHER QUALIFIED TESTING AGENCY.

1.9 METAL PLATE WALL PANELS
A. METAL PLATE WALL PANELS: PROVIDE FACTORY-FORMED, METAL PLATE WALL PANELS FABRICATED FROM SINGLE SHEETS OF METAL FORMED INTO PROFILE FOR INSTALLATION METHOD INDICATED. INCLUDE ATTACHMENT ASSEMBLY COMPONENTS, AND ACCESSORIES REQUIRED FOR WEATHERTIGHT SYSTEM.
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ATAS METAFOR OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
a. BERRIDGE MANUFACTURING COMPANY
b. MCBI.
B. PANEL COVERAGE: 12 INCHES.
C. RIB SPACING: 3 INCHES ON CENTER.
D. COLOR AND GUAGE: AS INDICATED ON DRAWINGS
E. PANEL DEPTH: 5/8 INCH.
F. ALUMINUM SHEET: TENSION-LEVELED, SMOOTH ALUMINUM SHEET, ASTM B209, 0.040 INCH THICK.
1. EXTERIOR FINISH: TWO-COAT FLUOROPOLYMER.
a. COLOR: MATCH ARCHITECT'S SAMPLES.
G. ATTACHMENT ASSEMBLY: MANUFACTURER'S STANDARD.

1.10 MISCELLANEOUS MATERIALS
A. PANEL ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE PANEL SYSTEM INCLUDING TRIM, COPINGS, FASCIAE, MULLIONS, SILLS, CORNER UNITS, CLIPS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF METAL PANELS UNLESS OTHERWISE INDICATED.

B. TRIM: PROVIDE TRIM FORMED FROM SAME MATERIAL AS METAL PANELS AS REQUIRED TO PROVIDE FINISHED APPEARANCE. LOCATIONS INCLUDE, BUT ARE NOT LIMITED TO, BASES, SILLS, JAMBS, CORNERS, END WALLS, FRAMED OPENINGS, RAKES, FASCIAE, REVEALS, AND FILLERS. FINISH FLASHING AND TRIM WITH SAME FINISH SYSTEM AS ADJACENT METAL PANELS.

C. PANEL FASTENERS: SELF-TAPPING SCREWS DESIGNED TO WITHSTAND DESIGN LOADS. PROVIDE EXPOSED FASTENERS WITH HEADS MATCHING COLOR OF METAL PANELS BY MEANS OF PLASTIC CAPS OR FACTORY-APPLIED COATING. PROVIDE EPDM OR PVC SEALING WASHERS FOR EXPOSED FASTENERS.

D. PANEL SEALANTS: ASTM C920; AS RECOMMENDED IN WRITING BY METAL PANEL MANUFACTURER.

1.11 FABRICATION
A. GENERAL: FABRICATE AND FINISH METAL PANELS AND ACCESSORIES AT THE FACTORY, BY MANUFACTURER'S STANDARD PROCEDURES AND PROCESSES, AS NECESSARY TO FULFILL INDICATED PERFORMANCE REQUIREMENTS DEMONSTRATED BY LABORATORY TESTING. COMPLY WITH INDICATED PROFILES AND WITH DIMENSIONAL AND STRUCTURAL REQUIREMENTS.

B. FABRICATE METAL PANEL JOINTS WITH FACTORY-INSTALLED CAPTIVE GASKETS OR SEPARATOR STRIPS THAT PROVIDE A WEATHERTIGHT SEAL AND PREVENT METAL-TO-METAL CONTACT, AND THAT MINIMIZE NOISE FROM MOVEMENTS.

C. SHEET METAL FLASHING AND TRIM: FABRICATE FLASHING AND TRIM TO COMPLY WITH MANUFACTURER'S RECOMMENDATIONS AND RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, METAL, AND OTHER CHARACTERISTICS OF ITEM INDICATED.

1.12 FINISHES
A. ALUMINUM PANELS AND ACCESSORIES:
1. TWO-COAT FLUOROPOLYMER: AAMA 2605. FLUOROPOLYMER FINISH CONTAINING NOT LESS THAN 70 PERCENT PVDF RESIN BY WEIGHT IN COLOR COAT. PREPARE, PRETREAT, AND APPLY COATING TO EXPOSED METAL SURFACES TO COMPLY WITH COATING AND RESIN MANUFACTURERS' WRITTEN INSTRUCTIONS.

1.13 PREPARATION
A. MISCELLANEOUS SUPPORTS: INSTALL SUBFRAMING, FURRING, AND OTHER MISCELLANEOUS PANEL SUPPORT MEMBERS AND ANCHORAGES ACCORDING TO ASTM C754 AND METAL PANEL MANUFACTURER'S WRITTEN RECOMMENDATIONS.

B. ATTACHMENT ASSEMBLY, GENERAL: INSTALL ATTACHMENT ASSEMBLY REQUIRED TO SUPPORT METAL PLATE WALL PANELS AND TO PROVIDE A COMPLETE WEATHERTIGHT WALL SYSTEM, INCLUDING SUBGIRTS, PERIMETER EXTRUSIONS, TRACKS, DRAINAGE CHANNELS, PANEL CLIPS, AND ANCHOR CHANNELS.
1. INCLUDE ATTACHMENT TO SUPPORTS, PANEL-TO-PANEL JOINERY, PANEL-TO-DISSIMILAR-MATERIAL JOINERY, AND PANEL-SYSTEM JOINT SEALS.
C. INSTALLATION: ATTACH METAL PLATE WALL PANELS TO SUPPORTS AT LOCATIONS, SPACINGS, AND WITH FASTENERS RECOMMENDED BY MANUFACTURER TO ACHIEVE PERFORMANCE REQUIREMENTS SPECIFIED.
1. WET SEAL SYSTEMS: SEAL HORIZONTAL AND VERTICAL JOINTS BETWEEN ADJACENT METAL PLATE WALL PANELS WITH SEALANT BACKING AND SEALANT. INSTALL SEALANT BACKING AND SEALANT ACCORD

SPECIFICATIONS CONTINUE FROM SHEET A584

SECTION 075423 – THERMOPLASTIC-POLYOLEFIN (TPO) ROOFING

1.1 SUMMARY
A. SECTION INCLUDES:
1. ADHERED THERMOPLASTIC POLYOLEFIN (TPO) ROOFING SYSTEM.
2. SUBSTRATE BOARD.
3. ROOF INSULATION.
4. COVER BOARD.
5. WALKWAYS.

1.2 PREINSTALLATION MEETINGS
A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
1. FOR INSULATION AND ROOF SYSTEM COMPONENT FASTENERS, INCLUDE COPY OF FM APPROVALS' ROOFNAV LISTING.
B. SHOP DRAWINGS: INCLUDE ROOF PLANS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK, INCLUDING THE FOLLOWING:
1. LAYOUT AND THICKNESS OF INSULATION.
2. BASE FLASHINGS AND MEMBRANE TERMINATION DETAILS.
3. FLASHING DETAILS AT PENETRATIONS.
4. TAPERED INSULATION LAYOUT, THICKNESS, AND SLOPES.
5. ROOF PLAN SHOWING ORIENTATION OF STEEL ROOF DECK AND ORIENTATION OF ROOF MEMBRANE, FASTENING SPACINGS, AND PATTERNS FOR MECHANICALLY FASTENED ROOFING SYSTEM.
6. INSULATION FASTENING PATTERNS FOR CORNER, PERIMETER, AND FIELD-OF-ROOF LOCATIONS.
7. TIE-IN WITH ADJOINING AIR BARRIER.
C. SAMPLES: FOR THE FOLLOWING PRODUCTS:
1. ROOF MEMBRANE AND FLASHINGS, OF COLOR REQUIRED.
2. WALKWAY PADS OR ROLLS, OF COLOR REQUIRED.
D. WIND UPLIFT RESISTANCE SUBMITTAL: FOR ROOFING SYSTEM, INDICATING COMPLIANCE WITH WIND UPLIFT PERFORMANCE REQUIREMENTS.

1.4 INFORMATIONAL SUBMITTALS
A. MANUFACTURER CERTIFICATES:
1. PERFORMANCE REQUIREMENT CERTIFICATE: SIGNED BY ROOF MEMBRANE MANUFACTURER, CERTIFYING THAT ROOFING SYSTEM COMPLIES WITH REQUIREMENTS SPECIFIED IN "PERFORMANCE REQUIREMENTS" ARTICLE.
a. SUBMIT EVIDENCE OF COMPLIANCE WITH PERFORMANCE REQUIREMENTS.
2. SPECIAL WARRANTY CERTIFICATE: SIGNED BY ROOF MEMBRANE MANUFACTURER, CERTIFYING THAT ALL MATERIALS SUPPLIED UNDER THIS SECTION ARE ACCEPTABLE FOR SPECIAL WARRANTY.
B. PRODUCT TEST REPORTS: FOR ROOF MEMBRANE AND INSULATION, FOR TESTS PERFORMED BY A QUALIFIED TESTING AGENCY, INDICATING COMPLIANCE WITH SPECIFIED REQUIREMENTS.
C. RESEARCH REPORTS.
D. FIELD TEST REPORTS:
1. CONCRETE INTERNAL RELATIVE HUMIDITY TEST REPORTS.
2. FASTENER-PULLOUT TEST RESULTS AND MANUFACTURER'S REVISED REQUIREMENTS FOR FASTENER PATTERNS.
E. FIELD QUALITY-CONTROL REPORTS.
F. SAMPLE WARRANTIES.

1.5 CLOSEOUT SUBMITTALS
A. MAINTENANCE DATA.
B. CERTIFIED STATEMENT FROM EXISTING ROOF MEMBRANE MANUFACTURER STATING THAT EXISTING ROOF WARRANTY HAS NOT BEEN AFFECTED BY WORK PERFORMED UNDER THIS SECTION.

1.6 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: A QUALIFIED FIRM THAT IS APPROVED, AUTHORIZED, OR LICENSED BY ROOFING SYSTEM MANUFACTURER TO INSTALL MANUFACTURER'S PRODUCT AND THAT IS ELIGIBLE TO RECEIVE MANUFACTURER'S SPECIAL WARRANTY.

1.7 WARRANTY
A. SPECIAL WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF ROOFING SYSTEM THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

1.8 PERFORMANCE REQUIREMENTS
A. ACCELERATED WEATHERING: ROOF MEMBRANE SHALL WITHSTAND 2000 HOURS OF EXPOSURE WHEN TESTED ACCORDING TO ASTM G152, ASTM G154, OR ASTM G155.
B. IMPACT RESISTANCE: ROOF MEMBRANE SHALL RESIST IMPACT DAMAGE WHEN TESTED ACCORDING TO ASTM D3746, ASTM D4272, OR THE "RESISTANCE TO FOOT TRAFFIC TEST" IN FM APPROVALS 4470.
C. FM APPROVALS' ROOFNAV LISTING: ROOF MEMBRANE, BASE FLASHINGS, AND COMPONENT MATERIALS SHALL COMPLY WITH REQUIREMENTS IN FM APPROVALS 4450 OR FM APPROVALS 4470 AS PART OF A ROOFING SYSTEM, AND SHALL BE LISTED IN FM APPROVALS' ROOFNAV FOR CLASS 1 OR NONCOMBUSTIBLE CONSTRUCTION, AS APPLICABLE. IDENTIFY MATERIALS WITH FM APPROVALS CERTIFICATION MARKINGS.
1. FIRE/WINDSTORM CLASSIFICATION: CLASS 1A-90.
2. HAIL-RESISTANCE RATING: FM GLOBAL PROPERTY LOSS PREVENTION DATA SHEET 1-34 MH.
D. SPRI'S DIRECTORY OF ROOF ASSEMBLIES LISTING: ROOF MEMBRANE, BASE FLASHINGS, AND COMPONENT MATERIALS SHALL COMPLY WITH REQUIREMENTS IN FM APPROVALS 4450 OR FM APPROVALS 4470 AS PART OF A ROOFING SYSTEM, AND SHALL BE LISTED IN SPRI'S DIRECTORY OF ROOF ASSEMBLIES FOR ROOF ASSEMBLY IDENTICAL FOR THAT SPECIFIED FOR THIS PROJECT.
1. WIND UPLIFT LOAD CAPACITY: 120 PSF.
E. ENERGY STAR LISTING: ROOFING SYSTEM SHALL BE LISTED ON THE DOE'S ENERGY STAR "ROOF PRODUCTS QUALIFIED PRODUCT LIST" FOR LOW-SLOPE ROOF PRODUCTS.
F. ENERGY PERFORMANCE: ROOFING SYSTEM SHALL HAVE AN INITIAL SOLAR REFLECTANCE OF NOT LESS THAN 0.70 AND AN EMISSIVITY OF NOT LESS THAN 0.75 WHEN TESTED ACCORDING TO CRRC-1.
G. EXTERIOR FIRE-TEST EXPOSURE: ASTM E108 OR UL 790, CLASS A; FOR APPLICATION AND ROOF SLOPES INDICATED; TESTING BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.
H. FIRE-RESISTANCE RATINGS: COMPLY WITH FIRE-RESISTANCE-RATED ASSEMBLY DESIGNS INDICATED. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.

1.9 THERMOPLASTIC POLYOLEFIN (TPO) ROOFING
A. TPO SHEET: ASTM D6878/D6878M, INTERNALLY FABRIC- OR SCRIM-REINFORCED, FABRIC-BACKED TPO SHEET.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. TREMCO.
b. CARLISLE SYNTEC INCORPORATED.
c. COOLEY ENGINEERED MEMBRANES.
d. GAF.
e. JOHNS MANVILLE; A BERKSHIRE HATHAWAY COMPANY.
f. MULE-HIDE PRODUCTS CO., INC.
2. THICKNESS: 80 MILS, NOMINAL.
3. EXPOSED FACE COLOR: BLACK.

1.10 AUXILIARY ROOFING MATERIALS
A. GENERAL: AUXILIARY MATERIALS RECOMMENDED BY ROOFING SYSTEM MANUFACTURER FOR INTENDED USE AND COMPATIBLE WITH OTHER ROOFING COMPONENTS.
1. ADHESIVE AND SEALANTS: COMPLY WITH VOC LIMITS OF AUTHORITIES HAVING JURISDICTION.
B. SHEET FLASHING: MANUFACTURER'S STANDARD UNREINFORCED TPO SHEET FLASHING, 55 MILS THICK, MINIMUM, OF SAME COLOR AS TPO SHEET.
PREFABRICATED PIPE FLASHINGS: AS RECOMMENDED BY ROOF MEMBRANE MANUFACTURER.
C. BONDING ADHESIVE: MANUFACTURER'S STANDARD.
D. SLIP SHEET: ASTM D2178/D2178M, TYPE IV; GLASS FIBER; ASPHALT-IMPREGNATED FELT.
E. SLIP SHEET: MANUFACTURER'S STANDARD, OF THICKNESS REQUIRED FOR APPLICATION.
F. METAL TERMINATION BARS: MANUFACTURER'S STANDARD, PREDRILLED STAINLESS STEEL OR ALUMINUM BARS, APPROXIMATELY 1 BY 1/8 INCH THICK. WITH ANCHORS.
G. FASTENERS: FACTORY-COATED STEEL FASTENERS AND METAL OR PLASTIC PLATES COMPLYING WITH CORROSION-RESISTANCE PROVISIONS IN FM APPROVALS 4470, DESIGNED FOR FASTENING ROOFING COMPONENTS TO SUBSTRATE, AND ACCEPTABLE TO ROOFING SYSTEM MANUFACTURER.
H. MISCELLANEOUS ACCESSORIES: PROVIDE POURABLE SEALERS, PREFORMED CONE AND VENT SHEET FLASHINGS, PREFORMED INSIDE AND OUTSIDE CORNER SHEET FLASHINGS, T-JOINT COVERS, LAP SEALANTS, TERMINATION REGLETS, AND OTHER ACCESSORIES.

1.11 SUBSTRATE BOARDS
A. SUBSTRATE BOARD: ASTM C1396/C1396M, TYPE X GYPSUM BOARD.
1. THICKNESS: 5/8 INCH.
B. SUBSTRATE BOARD: ASTM C1177/C1177M, GLASS-MAT, WATER-RESISTANT GYPSUM BOARD OR ASTM C1278/C1278M, FIBER-REINFORCED GYPSUM BOARD.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. CERTAINTEED CORPORATION; SAINT-GOBAIN NORTH AMERICA.
b. GEORGIA-PACIFIC GYPSUM LLC.
c. NATIONAL GYPSUM COMPANY.
d. USG CORPORATION.
2. THICKNESS: TYPE X, 5/8 INCH THICK.
3. SURFACE FINISH: FACTORY PRIMED.
C. FASTENERS: FACTORY-COATED STEEL FASTENERS AND METAL OR PLASTIC PLATES COMPLYING WITH CORROSION-RESISTANCE PROVISIONS IN FM APPROVALS 4470, DESIGNED FOR FASTENING SUBSTRATE BOARD TO ROOF DECK.

1.12 ROOF INSULATION
A. POLYISOCYANURATE BOARD INSULATION: ASTM C1289, TYPE II, CLASS 1, GRADE 2, FELT OR GLASS-FIBER MAT FACER ON BOTH MAJOR SURFACES.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. CARLISLE SYNTEC INCORPORATED.
b. DYPLAST PRODUCTS.
c. FIRESTONE BUILDING PRODUCTS.
d. GAF.
e. INSULFOAM; CARLISLE CONSTRUCTION MATERIALS COMPANY.
f. JOHNS MANVILLE; A BERKSHIRE HATHAWAY COMPANY.
2. SIZE: 48 BY 48 INCHES.
3. THICKNESS:
a. BASE LAYER: 1-1/2 INCHES.
b. UPPER LAYER: THICKNESS AS REQUIRED TO MEET MINIMUM R- VALUE INDICATED.
B. TAPERED INSULATION: PROVIDE FACTORY-TAPERED INSULATION BOARDS.
1. MATERIAL: MATCH ROOF INSULATION.
2. MINIMUM THICKNESS: 1/4 INCH.
3. SLOPE:
a. ROOF FIELD: 1/4 INCH PER FOOT UNLESS OTHERWISE INDICATED ON DRAWINGS.
b. SADDLES AND CRICKETS: 1/2 INCH PER FOOT UNLESS OTHERWISE INDICATED ON DRAWINGS.

1.13 INSULATION ACCESSORIES
A. INSULATION ADHESIVE: INSULATION MANUFACTURER'S RECOMMENDED ADHESIVE FORMULATED TO ATTACH ROOF INSULATION TO SUBSTRATE OR TO ANOTHER INSULATION LAYER AS FOLLOWS:
1. MODIFIED ASPHALTIC, ASBESTOS-FREE, COLD-APPLIED ADHESIVE.
2. BEAD-APPLIED, LOW-RISE, ONE-COMPONENT OR MULTICOMPONENT URETHANE ADHESIVE.
3. FULL-SPREAD, SPRAY-APPLIED, LOW-RISE, TWO-COMPONENT URETHANE ADHESIVE.
B. COVER BOARD: ASTM C1177/C1177M, GLASS-MAT, WATER-RESISTANT GYPSUM BOARD OR ASTM C1278/C1278M FIBER-REINFORCED GYPSUM BOARD.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. GEORGIA-PACIFIC GYPSUM LLC.
b. NATIONAL GYPSUM COMPANY.
c. USG CORPORATION.
2. THICKNESS: 1/2 INCH.
3. SURFACE FINISH: FACTORY PRIMED.

1.14 WALKWAYS
A. FLEXIBLE WALKWAYS: FACTORY-FORMED, NONPOROUS, HEAVY-DUTY, SLIP-RESISTING, SURFACE-TEXTURED WALKWAY PADS OR ROLLS, APPROXIMATELY 3/16 INCH THICK AND ACCEPTABLE TO ROOFING SYSTEM MANUFACTURER.
1. SIZE: APPROXIMATELY 36 BY 60 INCHES.
2. COLOR: CONTRASTING WITH ROOF MEMBRANE.

1.15 EXAMINATION
A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
1. VERIFY THAT MINIMUM CONCRETE DRYING PERIOD RECOMMENDED BY ROOFING SYSTEM MANUFACTURER HAS PASSED.
2. VERIFY THAT CONCRETE SUBSTRATE IS VISIBLY DRY AND FREE OF MOISTURE, AND THAT MINIMUM CONCRETE INTERNAL RELATIVE HUMIDITY IS NOT MORE THAN 75 PERCENT, OR AS RECOMMENDED BY ROOFING SYSTEM MANUFACTURER,WHEN TESTED ACCORDING TO ASTM F2170.
a. TEST FREQUENCY: ONE TEST PROBE PER EACH 1000 SQ. FT., OR PORTION THEREOF, OF ROOF DECK, WITH NOT LESS THAN THREE TESTS PROBES.
b. SUBMIT TEST REPORTS WITHIN 24 HOURS AFTER PERFORMING TESTS.
3. VERIFY THAT CONCRETE-CURING COMPOUNDS THAT WILL IMPAIR ADHESION OF ROOFING COMPONENTS TO ROOF DECK HAVE BEEN REMOVED.
4. VERIFY THAT JOINTS IN PRECAST CONCRETE ROOF DECKS HAVE BEEN GROUTED FLUSH WITH TOP OF CONCRETE.

1.16 PREPARATION
A. PERFORM FASTENER-PULLOUT TESTS ACCORDING TO ROOF SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.
1. SUBMIT TEST RESULT WITHIN 24 HOURS AFTER PERFORMING TESTS.
a. INCLUDE MANUFACTURER'S REQUIREMENTS FOR ANY REVISION TO PREVIOUSLY SUBMITTED FASTENER PATTERNS REQUIRED TO ACHIEVE SPECIFIED WIND UPLIFT REQUIREMENTS.

1.17 INSTALLATION OF ROOFING, GENERAL
A. INSTALL ROOFING SYSTEM ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS, FM APPROVALS' ROOFNAV LISTED ROOF ASSEMBLY REQUIREMENTS, AND FM GLOBAL PROPERTY LOSS PREVENTION DATA SHEET 1-29.
B. COMPLETE TERMINATIONS AND BASE FLASHINGS AND PROVIDE TEMPORARY SEALS TO PREVENT WATER FROM ENTERING COMPLETED SECTIONS OF ROOFING SYSTEM AT END OF WORKDAY OR WHEN RAIN IS FORECAST. REMOVE AND DISCARD TEMPORARY SEALS BEFORE BEGINNING WORK ON ADJOINING ROOFING.
C. INSTALL ROOF MEMBRANE AND AUXILIARY MATERIALS TO TIE IN TO EXISTING ROOFING TO MAINTAIN WEATHERTIGHTNESS OF TRANSITION.

1.18 INSTALLATION OF SUBSTRATE BOARD
A. INSTALL SUBSTRATE BOARD WITH LONG JOINTS IN CONTINUOUS STRAIGHT LINES, WITH END JOINTS STAGGERED NOT LESS THAN 24 INCHES IN ADJACENT ROWS.
1. AT STEEL ROOF DECKS, INSTALL SUBSTRATE BOARD AT RIGHT ANGLE TO FLUTES OF DECK.
a. LOCATE END JOINTS OVER CRESTS OF STEEL ROOF DECK.
2. TIGHTLY BUTT SUBSTRATE BOARDS TOGETHER.
3. CUT SUBSTRATE BOARD TO FIT TIGHT AROUND PENETRATIONS AND PROJECTIONS, AND TO FIT TIGHT TO INTERSECTING SLOPING ROOF DECKS.
4. LOOSELY LAY SUBSTRATE BOARD OVER ROOF DECK.

1.19 INSTALLATION OF INSULATION
A. COORDINATE INSTALLING ROOFING SYSTEM COMPONENTS SO INSULATION NOT EXPOSED TO PRECIPITATION OR LEFT EXPOSED AT END OF WORKDAY.
B. COMPLY WITH ROOFING SYSTEM AND ROOF INSULATION MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLING ROOF INSULATION.
C. INSTALLATION OVER WOOD PANEL DECKING:
1. INSTALL BASE LAYER OF INSULATION WITH JOINTS STAGGERED NOT LESS THAN 24 INCHES IN ADJACENT ROWS.
a. WHERE INSTALLING COMPOSITE AND NONCOMPOSITE INSULATION IN TWO OR MORE LAYERS, INSTALL NONCOMPOSITE BOARD INSULATION FOR BOTTOM LAYER AND INTERMEDIATE LAYERS, IF APPLICABLE, AND INSTALL COMPOSITE BOARD INSULATION FOR TOP LAYER.
b. TRIM INSULATION NEATLY TO FIT AROUND PENETRATIONS AND PROJECTIONS, AND TO FIT TIGHT TO INTERSECTING SLOPING ROOF DECKS.
c. MAKE JOINTS BETWEEN ADJACENT INSULATION BOARDS NOT MORE THAN 1/4 INCH IN WIDTH.
d. AT INTERNAL ROOF DRAINS, SLOPE INSULATION TO CREATE A SQUARE DRAIN SUMP WITH EACH SIDE EQUAL TO THE DIAMETER OF THE DRAIN BOWL PLUS 24 INCHES. 1) TRIM INSULATION SO THAT WATER FLOW IS UNRESTRICTED.
e. FILL GAPS EXCEEDING 1/4 INCH WITH INSULATION.
f. CUT AND FIT INSULATION WITHIN 1/4 INCH OF NAILERS, PROJECTIONS, AND PENETRATIONS
2. MECHANICALLY ATTACH BASE LAYER OF INSULATION AND SUBSTRATE BOARD USING MECHANICAL FASTENERS SPECIFICALLY DESIGNED AND SIZED FOR FASTENING SPECIFIED BOARD-TYPE ROOF INSULATION TO DECKS.
WOOD PANEL
a. FASTEN INSULATION ACCORDING TO REQUIREMENTS IN SPRI'S DIRECTORY OF ROOF ASSEMBLIES FOR SPECIFIED WIND UPLIFT LOAD CAPACITY.
b. FASTEN INSULATION TO RESIST SPECIFIED UPLIFT PRESSURE AT CORNERS, PERIMETER, AND FIELD OF ROOF.
3. INSTALL UPPER LAYERS OF INSULATION AND TAPERED INSULATION WITH JOINTS OF EACH LAYER OFFSET NOT LESS THAN 12 INCHES FROM PREVIOUS LAYER OF INSULATION.
a. STAGGERED END JOINTS WITHIN EACH LAYER NOT LESS THAN 24 INCHES IN ADJACENT ROWS.
b. INSTALL WITH LONG JOINTS CONTINUOUS AND WITH END JOINTS STAGGERED NOT LESS THAN 12 INCHES IN ADJACENT ROWS.
c. TRIM INSULATION NEATLY TO FIT AROUND PENETRATIONS AND PROJECTIONS, AND TO FIT TIGHT TO INTERSECTING SLOPING ROOF DECKS.
d. MAKE JOINTS BETWEEN ADJACENT INSULATION BOARDS NOT MORE THAN 1/4 INCH IN WIDTH.
e. AT INTERNAL ROOF DRAINS, SLOPE INSULATION TO CREATE A SQUARE DRAIN SUMP WITH EACH SIDE EQUAL TO THE DIAMETER OF THE DRAIN BOWL PLUS 24 INCHES. 1) TRIM INSULATION SO THAT WATER FLOW IS UNRESTRICTED.
f. FILL GAPS EXCEEDING 1/4 INCH WITH INSULATION.
g. CUT AND FIT INSULATION WITHIN 1/4 INCH OF NAILERS, PROJECTIONS, AND PENETRATIONS.
h. ADHERE EACH LAYER OF INSULATION TO SUBSTRATE USING ADHESIVE ACCORDING TO SPRI'S DIRECTORY OF ROOF ASSEMBLIES LISTED ROOF ASSEMBLY REQUIREMENTS FOR SPECIFIED WIND UPLIFT LOAD CAPACITY AND FM GLOBAL PROPERTY LOSS PREVENTION DATA SHEET 1-29, AS FOLLOWS: 1) SET EACH LAYER OF INSULATION IN A SOLID MOPPING OF HOT ROOFING ASPHALT, APPLIED WITHIN PLUS OR MINUS 25 DEG F OF EQUIVISCOUS TEMPERATURE. 2) SET EACH LAYER OF INSULATION IN RIBBONS OF BEAD-APPLIED INSULATION ADHESIVE, FIRMLY PRESSING AND MAINTAINING INSULATION IN PLACE. 3) SET EACH LAYER OF INSULATION IN A UNIFORM COVERAGE OF FULL-SPREAD INSULATION ADHESIVE, FIRMLY PRESSING AND MAINTAINING INSULATION IN PLACE.

1.20 INSTALLATION OF COVER BOARDS
A. INSTALL COVER BOARDS OVER INSULATION WITH LONG JOINTS IN CONTINUOUS STRAIGHT LINES WITH END JOINTS STAGGERED BETWEEN ROWS, OFFSET JOINTS OF INSULATION BELOW A MINIMUM OF 6 INCHES IN EACH DIRECTION.
1. TRIM COVER BOARD NEATLY TO FIT AROUND PENETRATIONS AND PROJECTIONS, AND TO FIT TIGHT TO INTERSECTING SLOPING ROOF DECKS.
2. AT INTERNAL ROOF DRAINS, CONFORM TO SLOPE OF DRAIN SUMP.
a. TRIM COVER BOARD SO THAT WATER FLOW IS UNRESTRICTED.
3. CUT AND FIT COVER BOARD TIGHT TO NAILERS, PROJECTIONS, AND PENETRATIONS.
4. ADHERE COVER BOARD TO SUBSTRATE USING ADHESIVE ACCORDING TO FM APPROVALS' ROOFNAV LISTED ROOF ASSEMBLY REQUIREMENTS FOR SPECIFIED WINDSTORM RESISTANCE CLASSIFICATION AND FM GLOBAL PROPERTY LOSS PREVENTION DATA SHEET 1-29, AS FOLLOWS:
a. SET COVER BOARD IN A UNIFORM COVERAGE OF FULL-SPREAD INSULATION ADHESIVE, FIRMLY PRESSING AND MAINTAINING INSULATION IN PLACE.
B. INSTALL SLIP SHEET OVER COVER BOARD AND BENEATH ROOF MEMBRANE.

1.21 INSTALLATION OF ADHERED ROOF MEMBRANE
A. ADHERE ROOF MEMBRANE OVER AREA TO RECEIVE ROOFING ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. UNROLL ROOF MEMBRANE AND ALLOW TO RELAX BEFORE INSTALLING.
C. START INSTALLATION OF ROOFING IN PRESENCE OF ROOFING SYSTEM MANUFACTURER'S TECHNICAL PERSONNEL AND OWNER'S TESTING AND INSPECTION AGENCY.
D. ACCURATELY ALIGN ROOF MEMBRANE, AND MAINTAIN UNIFORM SIDE AND END LAPS OF MINIMUM DIMENSIONS REQUIRED BY MANUFACTURER. STAGGER END LAPS.
E. BONDING ADHESIVE: APPLY TO SUBSTRATE AND UNDERSIDE OF ROOF MEMBRANE AT RATE REQUIRED BY MANUFACTURER, AND ALLOW TO PARTIALLY DRY BEFORE INSTALLING ROOF MEMBRANE. DO NOT APPLY TO SPLICE AREA OF ROOF MEMBRANE.
F. IN ADDITION TO ADHERING, MECHANICALLY FASTEN ROOF MEMBRANE SECURELY AT TERMINATIONS, PENETRATIONS, AND PERIMETER OF ROOFING.
G. APPLY ROOF MEMBRANE WITH SIDE LAPS SHINGLED WITH SLOPE OF ROOF DECK WHERE POSSIBLE.
H. SEAMS: CLEAN SEAM AREAS, OVERLAP ROOF MEMBRANE, AND HOT-AIR WELD SIDE AND END LAPS OF ROOF MEMBRANE AND SHEET FLASHINGS, TO ENSURE A WATERTIGHT SEAM INSTALLATION.
1. TEST LAP EDGES WITH PROBE TO VERIFY SEAM WELD CONTINUITY. APPLY LAP SEALANT TO SEAL CUT EDGES OF ROOF MEMBRANE AND SHEET FLASHINGS.
2. VERIFY FIELD STRENGTH OF SEAMS A MINIMUM OF TWICE DAILY, AND REPAIR SEAM SAMPLE AREAS.
3. REPAIR TEARS, VOIDS, AND LAPPED SEAMS IN ROOF MEMBRANE THAT DO NOT COMPLY WITH REQUIREMENTS.
I. SPREAD SEALANT BED OVER DECK-DRAIN FLANGE AT ROOF DRAINS, AND SECURELY SEAL ROOF MEMBRANE IN PLACE WITH CLAMPING RING.

1.22 INSTALLATION OF BASE FLASHING
A. INSTALL SHEET FLASHINGS AND PREFORMED FLASHING ACCESSORIES, AND ADHERE TO SUBSTRATES ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. APPLY BONDING ADHESIVE TO SUBSTRATE AND UNDERSIDE OF SHEET FLASHING AT REQUIRED RATE, AND ALLOW TO PARTIALLY DRY. DO NOT APPLY TO SEAM AREA OF FLASHING.
C. FLASH PENETRATIONS AND FIELD-FORMED INSIDE AND OUTSIDE CORNERS WITH CURED OR UNCURED SHEET FLASHING.
D. CLEAN SEAM AREAS, OVERLAP, AND FIRMLY ROLL SHEET FLASHINGS INTO THE ADHESIVE. HOT-AIR WELD SIDE AND END LAPS TO ENSURE A WATERTIGHT SEAM INSTALLATION.
E. TERMINATE AND SEAL TOP OF SHEET FLASHINGS AND MECHANICALLY ANCHOR TO SUBSTRATE THROUGH TERMINATION BARS.

1.23 INSTALLATION OF WALKWAYS
A. FLEXIBLE WALKWAYS:
1. INSTALL FLEXIBLE WALKWAYS AT THE FOLLOWING LOCATIONS:
a. RETAIN ONE OR MORE SUBPARAGRAPHS BELOW.
a. REVISE TO SUIT PROJECT.
b. PERIMETER OF EACH ROOFTOP UNIT.
c. BETWEEN EACH ROOFTOP UNIT LOCATION, CREATING A CONTINUOUS PATH CONNECTING ROOFTOP UNIT LOCATIONS.
d. BETWEEN EACH ROOF HATCH AND EACH ROOFTOP UNIT LOCATION OR PATH CONNECTING ROOFTOP UNIT LOCATIONS.
e. TOP AND BOTTOM OF EACH ROOF ACCESS LADDER.
f. BETWEEN EACH ROOF ACCESS LADDER AND EACH ROOFTOP UNIT LOCATION OR PATH CONNECTING ROOFTOP UNIT LOCATIONS.
g. LOCATIONS INDICATED ON DRAWINGS.
h. AS REQUIRED BY ROOF MEMBRANE MANUFACTURER'S WARRANTY REQUIREMENTS.
2. PROVIDE 6-INCH CLEARANCE BETWEEN ADJOINING PADS.
3. HEAT WELD TO SUBSTRATE OR ADHERE WALKWAY PRODUCTS TO SUBSTRATE WITH COMPATIBLE ADHESIVE ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.

1.24 PROTECTING AND CLEANING
A. PROTECT ROOFING SYSTEM FROM DAMAGE AND WEAR DURING REMAINDER OF CONSTRUCTION PERIOD. WHEN REMAINING CONSTRUCTION DOES NOT AFFECT OR ENDANGER ROOFING SYSTEM, INSPECT ROOFING SYSTEM FOR DETERIORATION AND DAMAGE, DESCRIBING ITS NATURE AND EXTENT IN A WRITTEN REPORT, WITH COPIES TO ARCHITECT AND OWNER.
B. CORRECT DEFICIENCIES IN OR REMOVE ROOFING SYSTEM THAT DOES NOT COMPLY WITH REQUIREMENTS, REPAIR SUBSTRATES, AND REPAIR OR REINSTALL ROOFING SYSTEM TO A CONDITION FREE OF DAMAGE AND DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION AND ACCORDING TO WARRANTY REQUIREMENTS.
C. CLEAN OVERSPRAY AND SPILLAGE FROM ADJACENT CONSTRUCTION USING CLEANING AGENTS AND PROCEDURES RECOMMENDED BY MANUFACTURER OF AFFECTED CONSTRUCTION.

SECTION 077100 - ROOF SPECIALTIES

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA, SHOP DRAWINGS, AND COLOR SAMPLES.
B. WARRANTIES: PROVIDE MANUFACTURER'S STANDARD WRITTEN WARRANTY, WITHOUT MONETARY LIMITATION, SIGNED BY MANUFACTURER AGREEING TO PROMPTLY REPAIR OR REPLACE ROOF SPECIALTIES THAT SHOW EVIDENCE OF DETERIORATION OF FACTORY-APPLIED FINISHES FOR THE PERIOD OF 20 YEARS.

1.2 PERFORMANCE REQUIREMENTS
A. SPRI WIND DESIGN STANDARD: MANUFACTURE AND INSTALL COPINGS TESTED ACCORDING TO SPRI ES-1 AND CAPABLE OF RESISTING DESIGN PRESSURES INDICATED ON DRAWINGS.

1.3 ROOF SPECIALTIES
A. COPINGS: MANUFACTURED COPING SYSTEM CONSISTING OF FORMED-METAL COPING CAP, CONCEALED ANCHORAGE, CORNER UNITS, END CAP UNITS, AND CONCEALED SPLICE PLATES.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. ATAS INTERNATIONAL, INC.
b. CHENEY FLASHING COMPANY.
c. DREXEL METALS.
d. MERCHANT AND EVANS.
e. PAC-CLAD; PETERSEN ALUMINUM CORPORATION; A CARLISLE COMPANY.
2. FORMED ALUMINUM: 0.050 INCH THICK.
B. REGLETS: MANUFACTURED UNITS FORMED TO PROVIDE SECURE INTERLOCKING OF SEPARATE REGLET AND COUNTERFLASHING PIECES. PROVIDE REGLETS WITH SLOTTED HOLES FOR FASTENING TO SUBSTRATE, WITH NEOPRENE OR OTHER SUITABLE WEATHERPROOFING WASHERS, AND WITH CHANNEL FOR SEALANT AT TOP EDGE.
1. FORMED ALUMINUM: 0.024 INCH THICK.
C. COUNTERFLASHINGS: MANUFACTURED UNITS OF HEIGHTS TO OVERLAP TOP EDGES OF BASE FLASHINGS BY 4 INCHES DESIGNED TO SNAP INTO REGLETS OR THROUGH-WALL-FLASHING RECEIVER AND COMPRESS AGAINST BASE FLASHINGS WITH JOINTS LAPPED.
1. FORMED ALUMINUM: 0.024 INCH THICK.

1.4 MATERIALS
A. ALUMINUM SHEET: ASTM B 209, ALLOY AS STANDARD WITH MANUFACTURER FOR FINISH REQUIRED.
B. ALUMINUM FINISH: TWO-COAT FLUOROPOLYMER SYSTEM WITH COLOR COAT CONTAINING NOT LESS THAN 70 PERCENT POLYVINYLIDENE FLUORIDE (PVDF) RESIN BY WEIGHT, EXCEPT MILL FINISH FOR COUNTERFLASHINGS ON BACKSIDE OF PARAPET WALLS .
C. SELF-ADHERING SHEET UNDERLAYMENT, HIGH TEMPERATURE: BUTYL OR SBS-MODIFIED ASPHALT; SLIP-RESISTING-POLYETHYLENE SURFACED; WITH RELEASE PAPER BACKING; COLD APPLIED, STABLE AFTER TESTING AT 240 DEG F AND PASSES AFTER TESTING AT MINUS 20 DEG F; ASTM D 1970.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. CARLISLE COATINGS & WATERPROOFING INC.
b. CARLISLE WIP PRODUCTS; A BRAND OF CARLISLE CONSTRUCTION MATERIALS.
c. HENRY COMPANY.
d. KIRSCH BUILDING PRODUCTS, LLC.
e. OWENS CORNING.
D. FASTENERS: MANUFACTURER'S RECOMMENDED FASTENERS, SUITABLE FOR APPLICATION AND DESIGNED TO MEET PERFORMANCE REQUIREMENTS.
1. EXPOSED PENETRATING FASTENERS: GASKETED SCREWS WITH HEADS MATCHING COLOR OF METAL.
2. FASTENERS FOR ALUMINUM: ALUMINUM OR SERIES 300 STAINLESS STEEL.
E. ELASTOMERIC SEALANT: ASTM C 920, ELASTOMERIC SILICONE POLYMER SEALANT.
F. BUTYL SEALANT: ASTM C 1311, SOLVENT-RELEASE BUTYL RUBBER SEALANT.
G. BITUMINOUS COATING: COLD-APPLIED ASPHALT EMULSION COMPLYING WITH ASTM D 1187/D 1187M.

1.5 INSTALLATION
A. GENERAL: INSTALL ROOF SPECIALTIES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. ANCHOR ROOF SPECIALTIES SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT.
B. COAT BACK SIDE OF ALUMINUM ROOF SPECIALTIES WITH BITUMINOUS COATING WHERE THEY WILL CONTACT WOOD, FERROUS METAL, OR CEMENTITIOUS CONSTRUCTION.
C. SEPARATE DISSIMILAR METALS WITH A BITUMINOUS COATING OR POLYMER-M

SECTION 077200 CONTINUE FROM SHEET A585

1.4 INSTALLATION

A. INSTALLATION: UNLESS OTHERWISE INDICATED, INSTALL ROOF ACCESSORY ITEMS ACCORDING TO CONSTRUCTION DETAILS OF NRCA'S "ROOFING AND WATERPROOFING MANUAL." COORDINATE WITH INSTALLATION OF ROOF DECK, VAPOR BARRIERS, ROOF INSULATION, ROOFING, AND FLASHING TO ENSURE COMBINED ELEMENTS ARE SECURE, WATERPROOF, AND WEATHERTIGHT.

SECTION 079200 - JOINT SEALANTS

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA AND COLOR SAMPLES.

B. ENVIRONMENTAL LIMITATIONS: DO NOT PROCEED WITH INSTALLATION OF JOINT SEALANTS WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE OUTSIDE LIMITS PERMITTED BY JOINT-SEALANT MANUFACTURER OR ARE BELOW 40 DEG F.

1.2 JOINT SEALANTS

A. COMPATIBILITY: PROVIDE JOINT SEALANTS, JOINT FILLERS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER SERVICE AND APPLICATION CONDITIONS.

B. SEALANT FOR GENERAL EXTERIOR USE WHERE ANOTHER TYPE IS NOT SPECIFIED, ONE OF THE FOLLOWING:
1. SINGLE-COMPONENT, NEUTRAL-CURING SILICONE SEALANT, ASTM C 920, TYPE S; GRADE NS; CLASS 25; FOR USE NT.
   a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) GE CONSTRUCTION SEALANTS; MOMENTIVE PERFORMANCE MATERIALS INC.
      2) PECORA CORPORATION.
      3) SHERWIN-WILLIAMS COMPANY (THE).
      4) THE DOW CHEMICAL COMPANY.
2. SINGLE-COMPONENT, NONSAG URETHANE SEALANT, ASTM C 920, TYPE S; GRADE NS; CLASS 25; AND FOR USE NT.
   a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) BOSTIK, INC.
      2) MASTER BUILDERS SOLUTIONS.
      3) PECORA CORPORATION.
      4) SHERWIN-WILLIAMS COMPANY (THE).
      5) SIKA CORPORATION; JOINT SEALANTS.
      6) TREMCO INCORPORATED.

C. SEALANT FOR EXTERIOR TRAFFIC-BEARING JOINTS, WHERE SLOPE PRECLUDES USE OF POURABLE SEALANT:
1. SINGLE-COMPONENT, NONSAG URETHANE SEALANT, ASTM C 920, TYPE S; GRADE NS; CLASS 25; FOR USE T.
   a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) LYMTAL INTERNATIONAL INC.
      2) MASTER BUILDERS SOLUTIONS.

D. SEALANT FOR EXTERIOR TRAFFIC-BEARING JOINTS, WHERE SLOPE ALLOWS USE OF POURABLE SEALANT:
1. SINGLE-COMPONENT, POURABLE URETHANE SEALANT, ASTM C 920, TYPE S; GRADE P; CLASS 25; FOR USE T.
   a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) MASTER BUILDERS SOLUTIONS.
      2) PECORA CORPORATION.
      3) SHERWIN-WILLIAMS COMPANY (THE).

E. SEALANT FOR USE IN INTERIOR JOINTS IN CERAMIC TILE AND OTHER HARD SURFACES IN KITCHENS AND TOILET ROOMS AND AROUND PLUMBING FIXTURES:
1. SINGLE-COMPONENT, MILDEW-RESISTANT SILICONE SEALANT, ASTM C 920, TYPE S; GRADE NS; CLASS 25; FOR USE NT; FORMULATED WITH FUNGICIDE.
   a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) GE CONSTRUCTION SEALANTS; MOMENTIVE PERFORMANCE MATERIALS INC.
      2) PECORA CORPORATION.
      3) THE DOW CHEMICAL COMPANY.
      4) TREMCO INCORPORATED.

F. SEALANT FOR INTERIOR USE AT PERIMETERS OF DOOR AND WINDOW FRAMES:
1. ACRYLIC LATEX OR SILICONIZED ACRYLIC LATEX, ASTM C 834, TYPE OP, GRADE NF.
   a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) EVERKEM DIVERSIFIED PRODUCTS, INC.
      2) FRANKLIN INTERNATIONAL.
      3) PECORA CORPORATION.
      4) SHERWIN-WILLIAMS COMPANY (THE).
      5) TREMCO INCORPORATED.

1.3 MISCELLANEOUS MATERIALS

A. PROVIDE SEALANT BACKINGS OF MATERIALS THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTRATES, 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, OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE.

C. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MANUFACTURER FOR PREVENTING SEALANT FROM ADHERING TO RIGID, INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT BACK OF JOINT. PROVIDE SELF-ADHESIVE TAPE WHERE APPLICABLE.

D. PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED, AS DETERMINED FROM PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS AND FIELD TESTS.

1.4 INSTALLATION

A. COMPLY WITH ASTM C 1193.

B. INSTALL SEALANT BACKINGS TO SUPPORT SEALANTS DURING APPLICATION AND TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.

C. INSTALL BOND-BREAKER TAPE BEHIND SEALANTS WHERE SEALANT BACKINGS ARE NOT USED BETWEEN SEALANTS AND BACKS OF JOINTS.

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA AND SHOP DRAWINGS.

1.2 HOLLOW METAL DOORS AND FRAMES

A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. CECO DOOR; ASSA ABLOY.
2. CURRIES COMPANY; ASSA ABLOY.
3. PIONEER INDUSTRIES.
4. STEELCRAFT; AN ALLEGION BRAND.

B. FIRE-RATED DOORS AND FRAMES: LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, BASED ON TESTING AT POSITIVE PRESSURE ACCORDING TO NFPA 252 OR UL 10C.

C. SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLIES: LISTED AND LABELED FOR SMOKE AND DRAFT CONTROL, BASED ON TESTING ACCORDING TO UL 1784 AND INSTALLED IN COMPLIANCE WITH NFPA 105.

D. DOORS: COMPLYING WITH SDI A250.8 FOR LEVEL AND MODEL AND SDI A250.4 FOR PHYSICAL-ENDURANCE LEVEL INDICATED, 1-3/4 INCHES THICK UNLESS OTHERWISE INDICATED.
1. INTERIOR DOORS: LEVEL 1 AND PHYSICAL PERFORMANCE LEVEL C (STANDARD DUTY).
2. HARDWARE REINFORCEMENT: FABRICATE ACCORDING TO SDI A250.6 WITH REINFORCEMENT PLATES FROM SAME MATERIAL AS DOOR FACE SHEETS.

E. FRAMES: ANSI A250.8; CONCEAL FASTENINGS UNLESS OTHERWISE INDICATED.
1. STEEL SHEET FOR INTERIOR FRAMES: 0.042-INCH- MINIMUM THICKNESS.
2. INTERIOR FRAME CONSTRUCTION: KNOCKED DOWN.
3. HARDWARE REINFORCEMENT: FABRICATE ACCORDING TO ANSI/SDI A250.6 WITH REINFORCEMENT PLATES FROM SAME MATERIAL AS FRAMES.
4. FRAME ANCHORS: NOT LESS THAN 0.042 INCH THICK.

F. GLAZING STOPS: NONREMOVABLE STOPS ON OUTSIDE OF EXTERIOR DOORS AND ON SECURE SIDE OF INTERIOR DOORS; SCREW-APPLIED, REMOVABLE, GLAZING STOPS ON INSIDE, FABRICATED FROM SAME MATERIAL AS DOOR FACE SHEET IN WHICH THEY ARE INSTALLED.

G. DOOR SILENCERS: THREE ON STRIKE JAMBS OF SINGLE-DOOR FRAMES AND TWO ON HEADS OF DOUBLE-DOOR FRAMES.

H. PREPARE DOORS AND FRAMES TO RECEIVE MORTISED AND CONCEALED HARDWARE ACCORDING TO SDI A250.6 AND BHMA A156.115.

I. REINFORCE DOORS AND FRAMES TO RECEIVE SURFACE-APPLIED HARDWARE.

J. PRIME FINISH: MANUFACTURER'S STANDARD, FACTORY-APPLIED COAT OF LEAD- AND CHROMATE-FREE PRIMER COMPLYING WITH SDI A250.10 ACCEPTANCE CRITERIA.

1.3 MATERIALS

A. COLD-ROLLED STEEL SHEET: ASTM A 1008/A 1008M, SUITABLE FOR EXPOSED APPLICATIONS.

B. HOT-ROLLED STEEL SHEET: ASTM A 1011/A 1011M, FREE OF SCALE, PITTING, OR SURFACE DEFECTS.

C. METALLIC-COATED STEEL SHEET: ASTM A 653/A 653M, G60 OR A60.

D. FRAME ANCHORS: ASTM A 879/A 879M, 4Z COATING DESIGNATION; MILL PHOSPHATIZED.
1. FOR ANCHORS BUILT INTO EXTERIOR WALLS, SHEET STEEL COMPLYING WITH ASTM A 1008/A 1008M OR ASTM A 1011/A 1011M, HOT-DIP GALVANIZED ACCORDING TO ASTM A 153/A 153M, CLASS B.

E. INSERTS, BOLTS, AND FASTENERS: HOT-DIP GALVANIZED ACCORDING TO ASTM A 153/A 153M.

1.4 INSTALLATION

A. INSTALL HOLLOW METAL FRAMES TO COMPLY WITH SDI A250.11.
1. FIRE-RATED FRAMES: INSTALL ACCORDING TO NFPA 80.

B. INSTALL DOORS TO PROVIDE CLEARANCES BETWEEN DOORS AND FRAMES AS INDICATED IN SDI A250.11.

C. PRIME-COAT TOUCHUP: IMMEDIATELY AFTER ERECTION, SAND SMOOTH RUSTED OR DAMAGED AREAS OF PRIME COAT AND APPLY TOUCHUP OF COMPATIBLE AIR-DRYING RUST-INHIBITIVE PRIMER.

SECTION 083113 - ACCESS DOORS AND FRAMES

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA.

1.2 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE MILCOR; A DIVISION OF HART & COOLEY, INC.; MODEL M AND AT EIFS MODEL K, OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
1. ACTIVAR CONSTRUCTION PRODUCTS GROUP, INC. - JL INDUSTRIES.
2. BABCOCK-DAVIS.
3. KARP ASSOCIATES, INC.
4. LARSENS MANUFACTURING COMPANY.

B. FLUSH ACCESS DOORS WITH EXPOSED FLANGES: PRIME-PAINTED STEEL UNITS.

C. FLUSH ACCESS DOORS WITH CONCEALED FLANGES: PRIME-PAINTED STEEL UNITS WITH PLASTER BEAD FLANGE.

D. LOCKS: FLUSH TO FINISHED SURFACE, SCREWDRIVER OPERATED.

1.3 MATERIALS

A. STEEL SHEETS: ASTM A 1008/A 1008M OR ASTM A 591/A 591M.

1.4 INSTALLATION

A. INSTALL ACCESS DOORS AND PANELS ACCURATELY IN POSITION. ADJUST HARDWARE AND DOOR AND PANELS FOR PROPER OPERATION.

SECTION 083800 - TRAFFIC DOORS

1.1 SUMMARY

A. SECTION INCLUDES: DOUBLE ACTION TRAFFIC DOORS INCLUDING HARDWARE AND ACCESSORIES.

1.2 PREINSTALLATION MEETINGS

A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

B. SHOP DRAWINGS:
1. INCLUDE PLANS, ELEVATIONS, SECTIONS, AND MOUNTING AND ATTACHMENT DETAILS.

1.4 CLOSEOUT SUBMITTALS

A. MAINTENANCE DATA.

B. OPERATION AND MAINTENANCE DATA.

1.5 QUALITY ASSURANCE

A. INSTALLER QUALIFICATIONS: AN AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED BY MANUFACTURER.

1.6 WARRANTY

A. MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF TRAFFIC DOORS THAT FAIL(S) IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: TWO YEAR(S) FROM DATE OF SUBSTANTIAL COMPLETION.

1.7 MANUFACTURERS

A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ELIASON, MODEL SCP-3 OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
1. CHASE DOORS.
2. RUBBAIR DOOR.

1.8 DESCRIPTION

A. CORE: ¾ INCH THICK SOLID WOOD.

B. DOOR FACES: 005 INCH THICK STAINLESS STEEL, REINFORCING METAL PLATES.

C. WINDOWS: CLEAR ACRYLIC GLAZING WITH BLACK RUBBER MOLDING. SIZE AS INDICATED ON DRAWINGS. APPLY SOLAR GARD PANORAMA SLAT 10 PRIVACY FILM TO HOUSE SIDE OF PANE.

D. HINGES: DOUBLE ACTION EASY SWING(R) PROPRIETARY ZINC COATED HINGES.

1.9 EXAMINATION

A. EXAMINE TRAFFIC DOORS BEFORE INSTALLATION.

B. DO NOT BEGIN INSTALLATION UNTIL SUBSTRATES HAVE BEEN PROPERLY PREPARED.

C. VERIFY JAMBS PLUMB AND SQUARE.

1.10 PREPARATION

A. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION.

B. PREPARE SURFACES USING THE METHODS RECOMMENDED BY THE MANUFACTURER FOR ACHIEVING THE BEST RESULT FOR THE SUBSTRATE UNDER THE PROJECT CONDITIONS.

1.11 INSTALLATION

A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

1.12 PROTECTION

A. PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT.

B. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA, SHOP DRAWINGS, AND COLOR SAMPLES.
1. FOR ENTRANCE DOORS, INCLUDE HARDWARE SCHEDULE.

1.2 PERFORMANCE REQUIREMENTS FOR EXTERIOR ENTRANCES AND STOREFRONTS

A. STRUCTURAL PERFORMANCE: DESIGN, ENGINEER, FABRICATE, AND INSTALL ALUMINUM-FRAMED STOREFRONTS TO WITHSTAND STRUCTURAL LOADS INDICATED.
1. LIMIT DEFLECTION OF FRAMING MEMBERS NORMAL TO WALL PLANE TO 1/175 OF CLEAR SPAN OR AN AMOUNT THAT RESTRICTS EDGE DEFLECTION OF INDIVIDUAL GLAZING LITES TO 3/4 INCH, WHICHEVER IS LESS.
2. LIMIT DEFLECTION OF FRAMING MEMBERS PARALLEL TO GLAZING PLANE TO L/360 OF CLEAR SPAN OR 1/8 INCH, WHICHEVER IS SMALLER.

B. WINDBORNE-DEBRIS RESISTANCE: FRAMING SYSTEM AND DOORS PASS BASIC-PROTECTION TESTING REQUIREMENTS IN ASTM E 1996 FOR WIND ZONE 2 WHEN TESTED ACCORDING TO ASTM E 1886.

C. AIR INFILTRATION: LIMITED TO 0.06 CFM/SQ. FT. OF FIXED FRAMING AND GLASS AREA WHEN TESTED ACCORDING TO ASTM E 283 AT A STATIC-AIR-PRESSURE DIFFERENCE OF 1.57 LBF/SQ. FT..

D. WATER PENETRATION: SYSTEMS DO NOT EVIDENCE WATER LEAKAGE WHEN TESTED ACCORDING TO ASTM E 331 AT MINIMUM DIFFERENTIAL PRESSURE OF 20 PERCENT OF POSITIVE WIND-LOAD DESIGN PRESSURE BUT NOT LESS THAN 6.24 LBF/SQ. FT..

E. THERMAL TRANSMITTANCE (U-FACTOR): FIXED GLAZING AND FRAMING AREAS SHALL HAVE U-FACTOR OF NOT MORE THAN 0.45 BTU/SQ. FT. X H X DEG F AS DETERMINED ACCORDING TO NFRC 100.

1.3 ALUMINUM-FRAMED STOREFRONTS

A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. VISTAWALL ARCHITECTURAL PRODUCTS.
2. KAWNEER NORTH AMERICA; AN ALCOA COMPANY.
3. UNITED STATES ALUMINUM CORP.

B. ALUMINUM: ALLOY AND TEMPER RECOMMENDED BY MANUFACTURER FOR TYPE OF USE AND FINISH INDICATED; ASTM B 209 SHEET; ASTM B 221 EXTRUSIONS.

C. FRAMING MEMBERS: MANUFACTURER'S STANDARD EXTRUDED-ALUMINUM FRAMING MEMBERS OF THICKNESS REQUIRED AND REINFORCED AS REQUIRED TO SUPPORT IMPOSED LOADS.
1. EXTERIOR FRAME CONSTRUCTION: THERMALLY BROKEN.
2. INTETIOR FRAME CONSTRUCTION: NON-THERMALLY BROKEN.

D. DOORS: 1-3/4-INCH-THICK GLAZED DOORS WITH MINIMUM 0.125-INCH-THICK, EXTRUDED-ALUMINUM TUBULAR RAIL AND STILE MEMBERS. MECHANICALLY FASTEN CORNERS WITH REINFORCING BRACKETS THAT ARE DEEPLY PENETRATED AND FILLET WELDED OR THAT INCORPORATE CONCEALED TIE RODS. PROVIDE SNAP-ON, EXTRUDED-ALUMINUM GLAZING STOPS AND PREFORMED GASKETS.
1. DOOR DESIGN: AS INDICATED.
2. ACCESSIBLE DOORS: SMOOTH SURFACED FOR WIDTH OF DOOR IN AREA WITHIN 10 INCHES ABOVE FLOOR OR GROUND PLANE.
3. INTERIOR DOORS: PROVIDE BHMA A156.16 SILENCERS, THREE ON STRIKE JAMB OF SINGLE-DOOR FRAMES AND TWO ON HEAD OF DOUBLE-DOOR FRAMES.
4. EXTERIOR DOORS: PROVIDE COMPRESSION WEATHER STRIPPING AT FIXED STOPS. AT OTHER LOCATIONS, PROVIDE SLIDING WEATHER STRIPPING RETAINED IN ADJUSTABLE STRIP MORTISED INTO DOOR EDGE.
5. HARDWARE: AS SPECIFIED IN SECTION 08 7100 "DOOR HARDWARE."

E. GLAZING: COMPLY WITH SECTION 08 8000 "GLAZING."

F. GLAZING GASKETS: MANUFACTURER'S STANDARD SEALED-CORNER PRESSURE-GLAZING SYSTEM OF BLACK, RESILIENT ELASTOMERIC GLAZING GASKETS. SETTING BLOCKS, AND SHIMS OR SPACERS.

G. FASTENERS AND ACCESSORIES: COMPATIBLE WITH ADJACENT MATERIALS, CORROSION RESISTANT, NONSTAINING, AND NONBLEEDING. USE CONCEALED FASTENERS EXCEPT FOR APPLICATION OF DOOR HARDWARE.

H. FABRICATION: FABRICATE FRAMING IN PROFILES INDICATED FOR FLUSH GLAZING (WITHOUT PROJECTING STOPS). PROVIDE SUBFRAMES AND REINFORCING OF TYPES INDICATED OR, IF NOT INDICATED, AS REQUIRED FOR A COMPLETE SYSTEM. FACTORY-ASSEMBLE COMPONENTS TO GREATEST EXTENT POSSIBLE. DISASSEMBLE COMPONENTS ONLY AS NECESSARY FOR SHIPMENT AND INSTALLATION.
1. DOOR FRAMING: REINFORCE TO SUPPORT IMPOSED LOADS. FACTORY-ASSEMBLE DOOR AND FRAME UNITS AND FACTORY-INSTALL HARDWARE TO GREATEST EXTENT POSSIBLE. REINFORCE DOOR AND FRAME UNITS FOR HARDWARE INDICATED. CUT, DRILL, AND TAP FOR FACTORY-INSTALLED HARDWARE BEFORE FINISHING COMPONENTS.

I. ALUMINUM FINISH: BAKED-ENAMEL OR POWDER-COAT FINISH; THERMOSETTING PRIMER/TOPCOAT SYSTEM COMPLYING WITH AAMA 2603. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

1.4 INSTALLATION

A. ISOLATE METAL SURFACES IN CONTACT WITH INCOMPATIBLE MATERIALS, INCLUDING WOOD, BY PAINTING CONTACT SURFACES WITH BITUMINOUS COATING OR PRIMER OR BY APPLYING SEALANT OR TAPE RECOMMENDED BY MANUFACTURER.

B. INSTALL COMPONENTS TO DRAIN WATER PASSING JOINTS, CONDENSATION OCCURRING WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR.

C. SET CONTINUOUS SILL MEMBERS AND FLASHING IN FULL SEALANT BED AS SPECIFIED IN SECTION 07 9200 "JOINT SEALANTS" TO PRODUCE WEATHERTIGHT INSTALLATION.

D. INSTALL FRAMING COMPONENTS TRUE IN ALIGNMENT WITH ESTABLISHED LINES AND GRADES TO THE FOLLOWING TOLERANCES:
1. VARIATION FROM PLANE: LIMIT TO 1/8 INCH IN 12 FEET; 1/4 INCH OVER TOTAL LENGTH.
2. ALIGNMENT: FOR SURFACES ABUTTING IN LINE, LIMIT OFFSET TO 1/16 INCH. FOR SURFACES MEETING AT CORNERS, LIMIT OFFSET TO 1/32 INCH.
3. DIAGONAL MEASUREMENTS: LIMIT DIFFERENCE BETWEEN DIAGONAL MEASUREMENTS TO 1/8 INCH.

E. INSTALL DOORS WITHOUT WARP OR RACK. ADJUST DOORS AND HARDWARE TO PROVIDE TIGHT FIT AT CONTACT POINTS AND SMOOTH OPERATION.

SECTION 085653 - SECURITY WINDOWS

1.1 SUMMARY

A. SECTION INCLUDES:
1. SLIDING, TRANSACTION SECURITY WINDOWS.

1.2 PREINSTALLATION MEETINGS

A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

B. SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, AND ATTACHMENT DETAILS.

C. SAMPLES: FOR FRAME MEMBERS WITH FACTORY-APPLIED COLOR FINISHES.

1.4 INFORMATIONAL SUBMITTALS

A. WELDING CERTIFICATES.

B. PRODUCT TEST REPORTS.

C. ANCHOR INSPECTION REPORTS.

D. FIELD QUALITY-CONTROL REPORTS.

E. SAMPLE WARRANTY.

1.5 QUALITY ASSURANCE

A. INSTALLER QUALIFICATIONS: AN AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED BY MANUFACTURER FOR INSTALLATION AND MAINTENANCE OF UNITS REQUIRED FOR THIS PROJECT.

B. WELDING QUALIFICATIONS: QUALIFY PROCEDURES AND PERSONNEL ACCORDING TO THE FOLLOWING:
1. AWS D1.1/D1.1M, "STRUCTURAL WELDING CODE - STEEL."
2. AWS D1.3/D1.3M, "STRUCTURAL WELDING CODE - SHEET STEEL."
3. AWS D1.6, "STRUCTURAL WELDING CODE - STAINLESS STEEL."

1.6 WARRANTY

A. SPECIAL WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE SECURITY WINDOWS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: THREE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

1.7 PERFORMANCE REQUIREMENTS

A. ATTACK RESISTANCE: PROVIDE UNITS IDENTICAL TO THOSE TESTED FOR COMPLIANCE WITH REQUIREMENTS INDICATED, AND AS FOLLOWS:
1. BALLISTICS RESISTANCE: LEVEL 1 WHEN TESTED ACCORDING TO UL 752.
2. BALLISTICS RESISTANCE: CLASS HG1 WHEN TESTED ACCORDING TO ASTM F1233.
3. BALLISTICS RESISTANCE: A WHEN TESTED ACCORDING TO HPW-TP-0500.03.
4. FORCED-ENTRY RESISTANCE: LEVEL I WHEN TESTED ACCORDING TO HPW-TP-0500.03.
5. FORCED-ENTRY RESISTANCE: CLASS 1.0 WHEN TESTED ACCORDING TO ASTM F1233.

B. WINDBORNE-DEBRIS IMPACT RESISTANCE: PASSES ASTM E1886 MISSILE-IMPACT AND CYCLIC-PRESSURE TESTS IN ACCORDANCE WITH ASTM E1996 FOR WIND ZONE 2 FOR BASIC PROTECTION.
1. LARGE-MISSILE TEST: FOR GLAZING LOCATED WITHIN 30 FEET OF GRADE.

1.8 SLIDING, TRANSACTION SECURITY WINDOWS

A. PROVIDE SLIDING, TRANSACTION SECURITY WINDOWS.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   a. ARMORTEX.
   b. C.R. LAURENCE CO., INC.
   c. PROTECTIVE STRUCTURES, LTD.

B. CONFIGURATION: AS INDICATED ON DRAWINGS.

C. OPERATION: MANUAL OPEN/MANUAL CLOSING.

D. FRAMING: FABRICATE PERIMETER FRAMING, MULLIONS, AND GLAZING STOPS FROM AS FOLLOWS:
1. PROFILE: MANUFACTURER'S STANDARD, WITH MINIMUM FACE DIMENSION INDICATED.
   a. MINIMUM FACE DIMENSION: AS INDICATED ON DRAWINGS.
2. DEPTH: MANUFACTURER'S STANDARD.

E. HEAD AND JAMB FRAMING: DESIGNED FOR SEALANT GLAZING. REMOVABLE HEADER ACCESS PANEL ON SECURE SIDE.

F. SILL: STAINLESS-STEEL CHANNEL FRAME DESIGNED FOR SEALANT GLAZING.

G. SLIDING WINDOW HARDWARE: PROVIDE ROLLER TRACK DESIGNED FOR OVERHEAD SUPPORT OF TWO- OR FOUR-WHEEL CARRIAGE SUPPORTING HORIZONTAL-SLIDING GLAZED PANEL. PROVIDE SELF-LATCHING AND SELF-LOCKING MANUFACTURER'S STANDARD PULL AND LOCK WITH TWO KEYS FOR EACH HORIZONTAL-SLIDING GLAZED PANEL.
1. PROVIDE WEATHER STRIPPING FOR EXTERIOR HORIZONTAL-SLIDING, TRANSACTION SECURITY WINDOWS.

H. GLAZING AND GLAZING MATERIALS: COMPLY WITH REQUIREMENTS IN SECTION 088853 "SECURITY GLAZING."
1. GLAZING MEETING EDGES: POLISHED GLAZING.

1.9 FABRICATION

A. GENERAL: FABRICATE SECURITY WINDOWS TO PROVIDE A COMPLETE SYSTEM FOR ASSEMBLY OF COMPONENTS AND ANCHORAGE OF WINDOW UNITS.
1. PROVIDE UNITS THAT ARE REGLAZABLE FROM THE SECURE SIDE WITHOUT DISMANTLING THE ATTACK SIDE OF FRAMING.
2. PREPARE SECURITY WINDOWS FOR FIELD GLAZING UNLESS PREGLAZING AT THE FACTORY IS INDICATED.

B. PROVIDE WEEP HOLES AND INTERNAL WATER PASSAGES FOR EXTERIOR SECURITY WINDOWS TO CONDUCT INFILTRATING WATER TO THE EXTERIOR.

C. THERMALLY IMPROVED OR THERMALLY BROKEN CONSTRUCTION: FABRICATE FRAMING WITH AN INTEGRAL, CONCEALED, LOW-CONDUCTANCE THERMAL BARRIER, LOCATED BETWEEN EXTERIOR MATERIALS AND MEMBERS EXPOSED ON INTERIOR IN A MANNER THAT ELIMINATES DIRECT METAL-TO-METAL CONTACT.

D. FRAMING: MITER OR COPE CORNERS THE FULL DEPTH OF FRAMING; WELD AND DRESS SMOOTH.
1. FABRICATE FRAMING WITH MANUFACTURER'S STANDARD, INTERNAL OPAQUE ARMORING IN THICKNESSES REQUIRED FOR SECURITY WINDOWS TO COMPLY WITH BALLISTICS-RESISTANCE PERFORMANCE INDICATED.

E. GLAZING STOPS: FINISH GLAZING STOPS TO MATCH SECURITY WINDOW FRAMING.
1. ATTACK-SIDE (EXTERIOR) GLAZING STOPS: WELDED OR INTEGRAL TO FRAMING.
2. SECURE-SIDE (INTERIOR) GLAZING STOPS: REMOVABLE, COORDINATED WITH GLAZING INDICATED.

F. WELDING: WELD COMPONENTS TO COMPLY WITH REFERENCED AWS STANDARD. TO GREATEST EXTENT POSSIBLE, WELD BEFORE FINISHING AND IN CONCEALED LOCATIONS TO MINIMIZE DISTORTION OR DISCOLORATION OF FINISH. REMOVE WELD SPATTER AND WELDING OXIDES FROM EXPOSED SURFACES BY DESCALING OR GRINDING.

G. FACTORY-CUT OPENINGS IN GLAZING FOR SPEAKING APERTURES.

H. PREGLAZED FABRICATION: PREGLAZE WINDOW UNITS AT FACTORY, WHERE REQUIRED FOR APPLICATIONS INDICATED. INSTALLATION ORIENTATION OF GLAZING TO MEET PERFORMANCE REQUIREMENTS. COMPLY WITH REQUIREMENTS IN SECTION 088853 "SECURITY GLAZING."

I. WEATHER STRIPPING: FACTORY APPLIED.

1.10 STAINLESS-STEEL FINISHES

A. POLISHED FINISHES: GRIND AND POLISH SURFACES TO PRODUCE UNIFORM FINISH, FREE OF CROSS SCRATCHES.
1. DIRECTIONAL SATIN FINISH: NO. 4.

1.11 ACCESSORIES

A. CONCEALED BOLTS: ASTM A307, GRADE A UNLESS OTHERWISE INDICATED.

B. GLAZING STRIPS AND WEATHER STRIPPING: MANUFACTURER'S STANDARD REPLACEABLE COMPONENTS.
1. COMPRESSION TYPE: MOLDED EPDM OR NEOPRENE GASKETS COMPLYING WITH ASTM D2000, DESIGNATIONS 2BC415 TO 3BC620; MOLDED PVC GASKETS COMPLYING WITH ASTM D2287; OR MOLDED, EXPANDED EPDM OR NEOPRENE GASKETS COMPLYING WITH ASTM C509, GRADE 4.
2. SLIDING TYPE: AAMA 701/702, MADE OF WOOL, POLYPROPYLENE, OR NYLON WOVEN PILE WITH NYLON-FABRIC BACKING.

C. MISCELLANEOUS GLAZING MATERIALS: PROVIDE MATERIAL, SIZE, AND SHAPE COMPLYING WITH REQUIREMENTS OF GLASS MANUFACTURERS AND WITH A PROVEN RECORD OF COMPATIBILITY WITH SURFACES CONTACTED IN INSTALLATION.

D. ANCHORS, CLIPS, AND WINDOW ACCESSORIES: STAINLESS STEEL; HOT-DIP, ZINC-COATED STEEL OR IRON, COMPLYING WITH ASTM B633; PROVIDE SUFFICIENT STRENGTH TO WITHSTAND DESIGN PRESSURES INDICATED.

1.12 EXAMINATION

A. EXAMINE ROUGHING-IN FOR EMBEDDED AND BUILT-IN ANCHORS TO VERIFY ACTUAL LOCATIONS OF SECURITY WINDOW CONNECTIONS BEFORE SECURITY WINDOW INSTALLATION.

B. INSPECT BUILT-IN AND CAST-IN ANCHOR INSTALLATIONS, BEFORE INSTALLING SECURITY WINDOWS, TO VERIFY THAT ANCHOR INSTALLATIONS COMPLY WITH REQUIREMENTS. PREPARE INSPECTION REPORTS.

1.13 INSTALLATION

A. FASTENING TO IN-PLACE CONSTRUCTION: PROVIDE ANCHORAGE DEVICES AND FASTENERS WHERE NECESSARY FOR SECURING SECURITY WINDOWS TO IN-PLACE CONSTRUCTION. INCLUDE THREADED FASTENERS FOR INSERTS, SECURITY FASTENERS, AND OTHER CONNECTORS.

B. GLAZED FRAMING: PROVIDE SEALANT-GLAZED FRAMING. COMPLY WITH INSTALLATION REQUIREMENTS IN SECTION 088853 "SECURITY GLAZING."

C. REMOVABLE GLAZING STOPS AND TRIM: FASTEN COMPONENTS WITH SECURITY FASTENERS.

D. FASTENERS: INSTALL SECURITY WINDOWS USING FASTENERS RECOMMENDED BY MANUFACTURER WITH HEAD

SPECIFICATIONS CONTINUE FROM SHEET A586

SECTION 087100 – DOOR HARDWARE

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. MECHANICAL AND ELECTRIFIED DOOR HARDWARE FOR:
   a. SLIDING DOORS.
   b. GATES.
2. ELECTRONIC ACCESS CONTROL SYSTEM COMPONENTS, INCLUDING:
   a. ELECTRONIC ACCESS CONTROL DEVICES.

B. EXCLUSIONS: UNLESS SPECIFICALLY LISTED IN HARDWARE SETS, HARDWARE IS NOT SPECIFIED IN THIS SECTION FOR:
1. WINDOWS
2. CABINETS (CASEWORK), INCLUDING LOCKS IN CABINETS
3. SIGNAGE
4. TOILET ACCESSORIES
5. OVERHEAD DOORS
6. INSTALLATION.
7. ROUGH HARDWARE.
8. CONDUIT, JUNCTION BOXES & WIRING.
9. FOLDING PARTITIONS, EXCEPT CYLINDERS WHERE DETAILED.
10. SLIDING ALUMINUM DOORS, EXCEPT CYLINDERS WHERE DETAILED.
11. ACCESS DOORS AND PANELS, EXCEPT CYLINDERS WHERE DETAILED.

C. RELATED SECTIONS:
1. DIVISION 01 SECTION “ALTERNATES” FOR ALTERNATES AFFECTING THIS SECTION.
2. DIVISION 07 SECTION “JOINT SEALANTS” FOR SEALANT REQUIREMENTS APPLICABLE TO THRESHOLD INSTALLATION SPECIFIED IN THIS SECTION.
3. DIVISION 09 SECTIONS FOR TOUCHUP FINISHING OR REFINISHING OF EXISTING OPENINGS MODIFIED BY THIS SECTION.
4. DIVISION 13 SECTION “RADIATION PROTECTION” FOR REQUIREMENTS FOR LEAD-LINING FOR DOOR HARDWARE AT OPENINGS INDICATED TO RECEIVE RADIATION PROTECTION.
5. DIVISION 26 SECTIONS FOR CONNECTIONS TO ELECTRICAL POWER SYSTEM AND FOR LOW-VOLTAGE WIRING.
6. DIVISION 28 SECTIONS FOR COORDINATION WITH OTHER COMPONENTS OF ELECTRONIC ACCESS CONTROL SYSTEM.

1.3 REFERENCES

A. UL - UNDERWRITERS LABORATORIES
1. UL 10B - FIRE TEST OF DOOR ASSEMBLIES
2. UL 10C - POSITIVE PRESSURE TEST OF FIRE DOOR ASSEMBLIES
3. UL 1784 - AIR LEAKAGE TESTS OF DOOR ASSEMBLIES
4. UL 305 - PANIC HARDWARE

B. ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
1. ANSI/BHMA A156.1 - A156.29, AND ANSI/BHMA A156.31 - STANDARDS FOR HARDWARE AND SPECIALTIES

C. CALIFORNIA CODE OF REGULATIONS
1. TITLE 24: CALIFORNIA BUILDING STANDARDS CODE
USE DATE OF STANDARD IN EFFECT AS OF BID DATE.
BHMA – BUILDERS HARDWARE MANUFACTURERS ASSOCIATION
2016 CALIFORNIA BUILDING CODE
CHAPTER 11B – ACCESSIBILITY TO PUBLIC BUILDINGS, PUBLIC ACCOMMODATIONS, COMMERCIAL BUILDINGS AND PUBLIC HOUSING
NFPA – NATIONAL FIRE PROTECTION ASSOCIATION NFPA 80 – STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES.
NFPA 105 – SMOKE AND DRAFT CONTROL DOOR ASSEMBLIES
NFPA 252 – FIRE TESTS OF DOOR ASSEMBLIES
UL – UNDERWRITERS LABORATORIES UL10C – POSITIVE PRESSURE FIRE TESTS OF DOOR ASSEMBLIES.
UL 305 – PANIC HARDWARE

1.4 SUBMITTALS

A. GENERAL:
1. SUBMIT IN ACCORDANCE WITH CONDITIONS OF CONTRACT AND DIVISION 01 REQUIREMENTS.

B. ACTION SUBMITTALS:

1. PRODUCT DATA: PRODUCT DATA INCLUDING MANUFACTURERS' TECHNICAL PRODUCT DATA FOR EACH ITEM OF DOOR HARDWARE, INSTALLATION INSTRUCTIONS, MAINTENANCE OF OPERATING PARTS AND FINISH, AND OTHER INFORMATION NECESSARY TO SHOW COMPLIANCE WITH REQUIREMENTS.
2. RISER AND WIRING DIAGRAMS: AFTER FINAL APPROVAL OF HARDWARE SCHEDULE, SUBMIT DETAILS OF ELECTRIFIED DOOR HARDWARE, INDICATING:
   a. WIRING DIAGRAMS: FOR POWER, SIGNAL, AND CONTROL WIRING AND INCLUDING:
      1) DETAILS OF INTERFACE OF ELECTRIFIED DOOR HARDWARE AND BUILDING SAFETY AND SECURITY SYSTEMS.
      2) SCHEMATIC DIAGRAM OF SYSTEMS THAT INTERFACE WITH ELECTRIFIED DOOR HARDWARE.
      3) POINT-TO-POINT WIRING.
      4) RISERS.
3. SAMPLES FOR VERIFICATION: IF REQUESTED BY ARCHITECT, SUBMIT PRODUCTION SAMPLE OR SAMPLE INSTALLATIONS OF EACH TYPE OF EXPOSED HARDWARE UNIT IN FINISH INDICATED, AND TAGGED WITH FULL DESCRIPTION FOR COORDINATION WITH SCHEDULE.
   a. SAMPLES WILL BE RETURNED TO SUPPLIER IN LIKE-NEW CONDITION. UNITS THAT ARE ACCEPTABLE TO ARCHITECT MAY, AFTER FINAL CHECK OF OPERATIONS, BE INCORPORATED INTO WORK, WITHIN LIMITATIONS OF KEY COORDINATION REQUIREMENTS.
4. DOOR HARDWARE SCHEDULE: SUBMIT SCHEDULE WITH HARDWARE SETS IN VERTICAL FORMAT AS ILLUSTRATED BY SEQUENCE OF FORMAT FOR THE HARDWARE SCHEDULE AS PUBLISHED BY THE DOOR AND HARDWARE INSTITUTE. INDICATE COMPLETE DESIGNATIONS OF EACH ITEM REQUIRED FOR EACH DOOR OR OPENING, INCLUDE:
   a. DOOR INDEX; INCLUDE DOOR NUMBER, HEADING NUMBER, AND ARCHITECTS HARDWARE SET NUMBER.
   b. OPENING LOCK FUNCTION SPREADSHEET: LIST LOCKING DEVICE AND FUNCTION FOR EACH OPENING.
   c. TYPE, STYLE, FUNCTION, SIZE, AND FINISH OF EACH HARDWARE ITEM.
   d. NAME AND MANUFACTURER OF EACH ITEM.
   e. FASTENINGS AND OTHER PERTINENT INFORMATION.
   f. LOCATION OF EACH HARDWARE SET CROSS-REFERENCED TO INDICATIONS ON DRAWINGS.
   g. EXPLANATION OF ALL ABBREVIATIONS, SYMBOLS, AND CODES CONTAINED IN SCHEDULE.
   h. MOUNTING LOCATIONS FOR HARDWARE.
   i. DOOR AND FRAME SIZES AND MATERIALS.
   j. NAME AND PHONE NUMBER FOR LOCAL MANUFACTURER'S REPRESENTATIVE FOR EACH PRODUCT. .
   k. OPERATIONAL DESCRIPTION OF OPENINGS WITH ANY ELECTRIFIED HARDWARE (LOCKS, EXITS, ELECTROMAGNETIC LOCKS, ELECTRIC STRIKES, AUTOMATIC OPERATORS, DOOR POSITION SWITCHES, MAGNETIC HOLDERS OR CLOSER/HOLDER UNITS, AND ACCESS CONTROL COMPONENTS). OPERATIONAL DESCRIPTION SHOULD INCLUDE HOW DOOR WILL OPERATE ON EGRESS, INGRESS, AND FIRE AND SMOKE ALARM CONNECTION.
      1) SUBMITTAL SEQUENCE: SUBMIT DOOR HARDWARE SCHEDULE CONCURRENTLY WITH SUBMISSIONS OF PRODUCT DATA, SAMPLES, AND SHOP DRAWINGS. COORDINATE SUBMISSION OF DOOR HARDWARE SCHEDULE WITH SCHEDULING REQUIREMENTS OF OTHER WORK TO FACILITATE FABRICATION OF OTHER WORK THAT IS CRITICAL IN PROJECT CONSTRUCTION SCHEDULE.
5. KEY SCHEDULE:
   a. INITIATE AND CONDUCT MEETING(S) WITH OWNER REPRESENTATIVES AND HARDWARE SUPPLIER TO DETERMINE SYSTEM KEYWAY(S), KEYBOW STYLES, STRUCTURE, STAMPING, DEGREE OF PHYSICAL SECURITY AND DEGREE OF GEOGRAPHIC EXCLUSIVITY. FURNISH OWNER'S WRITTEN APPROVAL OF THE SYSTEM; DO NOT ORDER KEYS OR CYLINDERS WITHOUT WRITTEN CONFIRMATION OF ACTUAL REQUIREMENTS FROM THE OWNER.
   b. AFTER KEYING CONFERENCE, PROVIDE KEYING SCHEDULE LISTING LEVELS OF KEYING AS WELL AS EXPLANATION OF KEY SYSTEM'S FUNCTION, KEY SYMBOLS USED AND DOOR NUMBERS CONTROLLED.
   c. USE ANSI/BHMA A156.28 “RECOMMENDED PRACTICES FOR KEYING SYSTEMS” AS GUIDELINE FOR NOMENCLATURE, DEFINITIONS, AND APPROACH FOR SELECTING OPTIMAL KEYING SYSTEM.
   d. PROVIDE 3 COPIES OF KEYING SCHEDULE FOR REVIEW PREPARED AND DETAILED IN ACCORDANCE WITH REFERENCED DHI PUBLICATION. INCLUDE SCHEMATIC KEYING DIAGRAM AND INDEX EACH KEY TO UNIQUE DOOR DESIGNATIONS.
   e. INDEX KEYING SCHEDULE BY DOOR NUMBER, KEYSET, HARDWARE HEADING NUMBER, CROSS KEYING INSTRUCTIONS, AND SPECIAL KEY STAMPING INSTRUCTIONS.
   f. PROVIDE ONE COMPLETE BITTING LIST OF KEY CUTS AND ONE KEY SYSTEM SCHEMATIC ILLUSTRATING SYSTEM USAGE AND EXPANSION.
      1) FORWARD BITTING LIST, KEY CUTS AND KEY SYSTEM SCHEMATIC DIRECTLY TO OWNER, BY MEANS AS DIRECTED BY OWNER.
6. TEMPLATES: AFTER FINAL APPROVAL OF HARDWARE SCHEDULE, PROVIDE TEMPLATES FOR DOORS, FRAMES AND OTHER WORK SPECIFIED TO BE FACTORY PREPARED FOR DOOR HARDWARE INSTALLATION.

C. INFORMATIONAL SUBMITTALS:
1. QUALIFICATION DATA: FOR SUPPLIER AND INSTALLER.
2. PRODUCT CERTIFICATES FOR ELECTRIFIED DOOR HARDWARE, SIGNED BY MANUFACTURER:
   a. CERTIFY THAT DOOR HARDWARE APPROVED FOR USE ON TYPES AND SIZES OF LABELED FIRE-RATED DOORS COMPLIES WITH LISTED FIRE-RATED DOOR ASSEMBLIES.
3. CERTIFICATES OF COMPLIANCE:
   a. ELECTRIFIED HARDWARE COORDINATION CONFERENCE CERTIFICATION: LETTER OF COMPLIANCE, SIGNED BY CONTRACTOR, ATTESTING TO COMPLETION OF ELECTRIFIED HARDWARE COORDINATION CONFERENCE, SPECIFIED IN “QUALITY ASSURANCE” ARTICLE, HEREIN.
4. WARRANTY: SPECIAL WARRANTY SPECIFIED IN THIS SECTION.

D. CLOSEOUT SUBMITTALS:
1. OPERATIONS AND MAINTENANCE DATA: PROVIDE IN ACCORDANCE WITH DIVISION 01 AND INCLUDE:
   a. COMPLETE INFORMATION ON CARE, MAINTENANCE, AND ADJUSTMENT; DATA ON REPAIR AND REPLACEMENT PARTS, AND INFORMATION ON PRESERVATION OF FINISHES.
   b. CATALOG PAGES FOR EACH PRODUCT.
   c. NAME, ADDRESS, AND PHONE NUMBER OF LOCAL REPRESENTATIVE FOR EACH MANUFACTURER.
   d. FINAL APPROVED HARDWARE SCHEDULE, EDITED TO REFLECT CONDITIONS AS-INSTALLED.
   e. FINAL KEYING SCHEDULE
   f. AS-INSTALLED WIRING DIAGRAMS FOR EACH OPENING CONNECTED TO POWER, BOTH LOW VOLTAGE AND 110 VOLTS.
   g. COPY OF WARRANTIES INCLUDING APPROPRIATE REFERENCE NUMBERS FOR MANUFACTURERS TO IDENTIFY PROJECT.

1.5 QUALITY ASSURANCE

A. PRODUCT SUBSTITUTIONS: COMPLY WITH PRODUCT REQUIREMENTS STATED IN DIVISION 01 AND AS SPECIFIED HEREIN.
1. WHERE SPECIFIC MANUFACTURER'S PRODUCT IS NAMED AND ACCOMPANIED BY “OWNER PREFERENCE”, INCLUDING MAKE OR MODEL NUMBER OR OTHER DESIGNATION, PROVIDE PRODUCT SPECIFIED. (NOTE: CERTAIN PRODUCTS HAVE BEEN SELECTED FOR THEIR UNIQUE CHARACTERISTICS AND PARTICULAR PROJECT SUITABILITY.)
   a. WHERE NO ADDITIONAL PRODUCTS OR MANUFACTURERS ARE LISTED IN PRODUCT CATEGORY, REQUIREMENTS FOR “OWNER PREFERENCE” GOVERN PRODUCT SELECTION.
2. WHERE PRODUCTS INDICATE “ACCEPTABLE MANUFACTURERS” OR “ACCEPTABLE MANUFACTURERS AND PRODUCTS”, PROVIDE PRODUCT FROM SPECIFIED MANUFACTURERS, SUBJECT TO COMPLIANCE WITH SPECIFIED REQUIREMENTS AND “SINGLE SOURCE RESPONSIBILITY” REQUIREMENTS STATED HEREIN.

B. SUPPLIER QUALIFICATIONS AND RESPONSIBILITIES: RECOGNIZED ARCHITECTURAL HARDWARE SUPPLIER WITH RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE FOR SUPPLYING DOOR HARDWARE SIMILAR IN QUANTITY, TYPE, AND QUALITY TO THAT INDICATED FOR THIS PROJECT.
1. SCHEDULING RESPONSIBILITY: PREPARATION OF DOOR HARDWARE AND KEYING SCHEDULES.
2. ENGINEERING RESPONSIBILITY: PREPARATION OF DATA FOR ELECTRIFIED DOOR HARDWARE, INCLUDING SHOP DRAWINGS, BASED ON TESTING AND ENGINEERING ANALYSIS OF MANUFACTURER'S STANDARD UNITS IN ASSEMBLIES SIMILAR TO THOSE INDICATED FOR THIS PROJECT.
3. COORDINATION RESPONSIBILITY: COORDINATE INSTALLATION OF ELECTRONIC SECURITY HARDWARE WITH ARCHITECT AND ELECTRICAL ENGINEERS AND PROVIDE INSTALLATION AND TECHNICAL DATA TO ARCHITECT AND OTHER RELATED SUBCONTRACTORS.
   a. UPON COMPLETION OF ELECTRONIC SECURITY HARDWARE INSTALLATION, INSPECT AND VERIFY THAT ALL COMPONENTS ARE WORKING PROPERLY.

C. INSTALLER QUALIFICATIONS: QUALIFIED TRADESMEN, SKILLED IN APPLICATION OF COMMERCIAL GRADE HARDWARE WITH RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE FOR INSTALLING DOOR HARDWARE SIMILAR IN QUANTITY, TYPE, AND QUALITY TO THAT INDICATED FOR THIS PROJECT.

D. SINGLE SOURCE RESPONSIBILITY: OBTAIN EACH TYPE OF DOOR HARDWARE FROM SINGLE MANUFACTURER.
1. PROVIDE ELECTRIFIED DOOR HARDWARE FROM SAME MANUFACTURER AS MECHANICAL DOOR HARDWARE, UNLESS OTHERWISE INDICATED.
2. MANUFACTURERS THAT PERFORM ELECTRICAL MODIFICATIONS AND THAT ARE LISTED BY TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION ARE ACCEPTABLE.

E. FIRE-RATED DOOR OPENINGS: PROVIDE DOOR HARDWARE FOR FIRE-RATED OPENINGS THAT COMPLIES WITH NFPA 80 AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. PROVIDE ONLY ITEMS OF DOOR HARDWARE THAT ARE LISTED AND ARE IDENTICAL TO PRODUCTS TESTED BY UNDERWRITERS LABORATORIES, INTERTEK TESTING SERVICES, OR OTHER TESTING AND INSPECTING ORGANIZATIONS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION FOR USE ON TYPES AND SIZES OF DOORS INDICATED, BASED ON TESTING AT POSITIVE PRESSURE AND ACCORDING TO NFPA 252 OR UL 10C AND IN COMPLIANCE WITH REQUIREMENTS OF FIRE-RATED DOOR AND DOOR FRAME LABELS.

F. SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLIES: WHERE SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLIES ARE REQUIRED, PROVIDE DOOR HARDWARE THAT MEETS REQUIREMENTS OF ASSEMBLIES TESTED ACCORDING TO UL 1784 AND INSTALLED IN COMPLIANCE WITH NFPA 105.
1. AIR LEAKAGE RATE: MAXIMUM AIR LEAKAGE OF 0.3 CFM/SQ. FT. (3 CU. M PER MINUTE/SQ. M) AT TESTED PRESSURE DIFFERENTIAL OF 0.3-INCH WG (75 PA) OF WATER.

G. ELECTRIFIED DOOR HARDWARE: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

H. MEANS OF EGRESS DOORS: LATCHES DO NOT REQUIRE MORE THAN 5 LBS (67 N) TO RELEASE LATCH. LOCKS DO NOT REQUIRE USE OF KEY, TOOL, OR SPECIAL KNOWLEDGE FOR OPERATION.

I. ACCESSIBILITY REQUIREMENTS: FOR DOOR HARDWARE ON DOORS IN AN ACCESSIBLE ROUTE, COMPLY WITH GOVERNING ACCESSIBILITY REGULATIONS CITED IN “REFERENCES” ARTICLE, HEREIN.
1. PROVIDE OPERATING DEVICES THAT DO NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF WRIST AND THAT OPERATE WITH FORCE OF NOT MORE THAN 5 LBS (22.2 N).
2. MAXIMUM OPENING-FORCE REQUIREMENTS:
   a. INTERIOR, NON-FIRE-RATED HINGED DOORS: 5 LBS (22.2 N) APPLIED PERPENDICULAR TO DOOR.
   b. SLIDING OR FOLDING DOORS: 5 LBS (22.2 N) APPLIED PARALLEL TO DOOR AT LATCH.
   c. FIRE DOORS: MINIMUM OPENING FORCE ALLOWABLE BY AUTHORITIES HAVING JURISDICTION.
3. BEVEL RAISED THRESHOLDS WITH SLOPE OF NOT MORE THAN 1:2. PROVIDE THRESHOLDS NOT MORE THAN 1/2 INCH (13 MM) HIGH.
4. ADJUST DOOR CLOSER SWEEP PERIODS SO THAT, FROM OPEN POSITION OF 70 DEGREES, DOOR WILL TAKE AT LEAST 3 SECONDS TO MOVE TO 3 INCHES (75 MM) FROM LATCH, MEASURED TO LEADING EDGE OF DOOR.

J. PRE-INSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 01.
1. REVIEW AND FINALIZE CONSTRUCTION SCHEDULE AND VERIFY AVAILABILITY OF MATERIALS, INSTALLER'S PERSONNEL, EQUIPMENT, AND FACILITIES NEEDED TO MAKE PROGRESS AND AVOID DELAYS.
2. INSPECT AND DISCUSS PREPARATORY WORK PERFORMED BY OTHER TRADES.
3. INSPECT AND DISCUSS ELECTRICAL ROUGHING-IN FOR ELECTRIFIED DOOR HARDWARE.
4. REVIEW SEQUENCE OF OPERATION FOR EACH TYPE OF ELECTRIFIED DOOR HARDWARE.
5. REVIEW REQUIRED TESTING, INSPECTING, AND CERTIFYING PROCEDURES.

K. COORDINATION CONFERENCES:
1. INSTALLATION COORDINATION CONFERENCE: PRIOR TO HARDWARE INSTALLATION, SCHEDULE AND HOLD MEETING TO REVIEW QUESTIONS OR CONCERNS RELATED TO PROPER INSTALLATION AND ADJUSTMENT OF DOOR HARDWARE.
   a. ATTENDEES: DOOR HARDWARE SUPPLIER, DOOR HARDWARE INSTALLER, CONTRACTOR.
   b. AFTER MEETING, PROVIDE LETTER OF COMPLIANCE TO ARCHITECT, INDICATING WHEN MEETING WAS HELD AND WHO WAS IN ATTENDANCE.
2. ELECTRIFIED HARDWARE COORDINATION CONFERENCE: PRIOR TO ORDERING ELECTRIFIED HARDWARE, SCHEDULE AND HOLD MEETING TO COORDINATE DOOR HARDWARE WITH SECURITY, ELECTRICAL, DOORS AND FRAMES, AND OTHER RELATED SUPPLIERS.
   a. ATTENDEES: ELECTRIFIED DOOR HARDWARE SUPPLIER, DOORS AND FRAMES SUPPLIER, ELECTRIFIED DOOR HARDWARE INSTALLER, ELECTRICAL SUBCONTRACTOR, OWNER, OWNER'S SECURITY CONSULTANT, ARCHITECT AND CONTRACTOR.
   b. AFTER MEETING, PROVIDE LETTER OF COMPLIANCE TO ARCHITECT, INDICATING WHEN COORDINATION CONFERENCE WAS HELD AND WHO WAS IN ATTENDANCE.

1.6 DELIVERY, STORAGE, AND HANDLING

A. INVENTORY DOOR HARDWARE ON RECEIPT AND PROVIDE SECURE LOCK-UP FOR HARDWARE DELIVERED TO PROJECT SITE.

B. TAG EACH ITEM OR PACKAGE SEPARATELY WITH IDENTIFICATION COORDINATED WITH FINAL DOOR HARDWARE SCHEDULE, AND INCLUDE INSTALLATION INSTRUCTIONS, TEMPLATES, AND NECESSARY FASTENERS WITH EACH ITEM OR PACKAGE.
1. DELIVER EACH ARTICLE OF HARDWARE IN MANUFACTURER'S ORIGINAL PACKAGING.

C. PROJECT CONDITIONS:
1. MAINTAIN MANUFACTURER-RECOMMENDED ENVIRONMENTAL CONDITIONS THROUGHOUT STORAGE AND INSTALLATION PERIODS.
2. PROVIDE SECURE LOCK-UP FOR DOOR HARDWARE DELIVERED TO PROJECT, BUT NOT YET INSTALLED. CONTROL HANDLING AND INSTALLATION OF HARDWARE ITEMS SO THAT COMPLETION OF WORK WILL NOT BE DELAYED BY HARDWARE LOSSES BOTH BEFORE AND AFTER INSTALLATION.

D. PROTECTION AND DAMAGE:
1. PROMPTLY REPLACE PRODUCTS DAMAGED DURING SHIPPING.
2. HANDLE HARDWARE IN MANNER TO AVOID DAMAGE, MARRING, OR SCRATCHING. CORRECT, REPLACE OR REPAIR PRODUCTS DAMAGED DURING WORK.
3. PROTECT PRODUCTS AGAINST MALFUNCTION DUE TO PAINT, SOLVENT, CLEANSER, OR ANY CHEMICAL AGENT.

E. DELIVER KEYS AND PERMANENT CORES TO OWNER BY REGISTERED MAIL OR OVERNIGHT PACKAGE SERVICE.

1.7 COORDINATION

A. COORDINATE LAYOUT AND INSTALLATION OF FLOOR-RECESSED DOOR HARDWARE WITH FLOOR CONSTRUCTION. CAST ANCHORING INSERTS INTO CONCRETE. CONCRETE, REINFORCEMENT, AND FORMWORK REQUIREMENTS ARE SPECIFIED IN DIVISION 03.

B. INSTALLATION TEMPLATES: DISTRIBUTE FOR DOORS, FRAMES, AND OTHER WORK SPECIFIED TO BE FACTORY PREPARED. CHECK SHOP DRAWINGS OF OTHER WORK TO CONFIRM THAT ADEQUATE PROVISIONS ARE MADE FOR LOCATING AND INSTALLING DOOR HARDWARE TO COMPLY WITH INDICATED REQUIREMENTS.

C. SECURITY: COORDINATE INSTALLATION OF DOOR HARDWARE, KEYING, AND ACCESS CONTROL WITH OWNER'S SECURITY CONSULTANT.

D. ELECTRICAL SYSTEM ROUGHING-IN: COORDINATE LAYOUT AND INSTALLATION OF ELECTRIFIED DOOR HARDWARE WITH CONNECTIONS TO POWER SUPPLIES AND BUILDING SAFETY AND SECURITY SYSTEMS.

E. EXISTING OPENINGS:
1. PRIOR TO SUBMITTAL, CAREFULLY INSPECT EXISTING CONDITIONS TO VERIFY FINISH HARDWARE REQUIRED TO COMPLETE WORK, INCLUDING SIZES, QUANTITIES, EXISTING HARDWARE SCHEDULED FOR RE-USE, AND SILL CONDITION MATERIAL. IF CONFLICT BETWEEN THE SPECIFIED/SCHEDULED HARDWARE AND EXISTING CONDITIONS, SUBMIT REQUEST FOR DIRECTION FROM ARCHITECT. INCLUDE DATE OF JOBSITE VISIT IN THE SUBMITTAL.
2. SUBMITTALS PREPARED WITHOUT THOROUGH JOBSITE VISIT BY QUALIFIED HARDWARE EXPERT WILL BE REJECTED AS NON-COMPLIANT.

F. DIRECT SHIPMENTS NOT PERMITTED, UNLESS APPROVED BY CONTRACTOR.

1.8 WARRANTY

A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF DOOR HARDWARE THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: YEARS FROM DATE OF SUBSTANTIAL COMPLETION, FOR DURATIONS INDICATED.
   a. CLOSERS:
      1) MECHANICAL: 30 YEARS.
      2) ELECTRIFIED: 2 YEARS.
   b. EXIT DEVICES:
      1) MECHANICAL: 3 YEARS.
      2) ELECTRIFIED: 1 YEAR.
   c. LOCKSETS:
      1) MECHANICAL: 3 YEARS
      2) ELECTRIFIED: 1 YEAR.
   d. CONTINUOUS HINGES: 10 YEARS.
   e. KEY BLANKS: LIFETIME
2. WARRANTY DOES NOT COVER DAMAGE OR FAULTY OPERATION DUE TO IMPROPER INSTALLATION, IMPROPER USE OR ABUSE.

PART 2 -

2.1 MANUFACTURERS

A. WHERE “OWNER PREFERENCE” IS NOTED, SUBMITTALS AND SUBSTITUTION REQUESTS FOR OTHER PRODUCTS WILL NOT BE CONSIDERED.

B. APPROVAL OF MANUFACTURERS AND/OR PRODUCTS OTHER THAN THOSE LISTED AS “SCHEDULED MANUFACTURER” OR “ACCEPTABLE MANUFACTURER” IN THE INDIVIDUAL ARTICLE FOR THE PRODUCT CATEGORY SHALL BE IN ACCORDANCE WITH QUALITY ASSURANCE ARTICLE, HEREIN.

C. APPROVAL OF PRODUCTS FROM MANUFACTURERS INDICATED IN “ACCEPTABLE MANUFACTURERS” IS CONTINGENT UPON THOSE PRODUCTS PROVIDING ALL FUNCTIONS AND FEATURES AND MEETING ALL REQUIREMENTS OF SCHEDULED MANUFACTURER'S PRODUCT.

D. HAND OF DOOR: DRAWINGS SHOW DIRECTION OF SLIDE, SWING, OR HAND OF EACH DOOR LEAF. FURNISH EACH ITEM OF HARDWARE FOR PROPER INSTALLATION AND OPERATION OF DOOR MOVEMENT AS SHOWN.

E. WHERE SPECIFIED HARDWARE IS NOT ADAPTABLE TO FINISHED SHAPE OR SIZE OF MEMBERS REQUIRING HARDWARE, FURNISH SUITABLE TYPES HAVING SAME OPERATION AND QUALITY AS TYPE SPECIFIED, SUBJECT TO ARCHITECT'S APPROVAL.

2.2 MATERIALS

A. FASTENERS
1. PROVIDE HARDWARE MANUFACTURED TO CONFORM TO PUBLISHED TEMPLATES, GENERALLY PREPARED FOR MACHINE SCREW INSTALLATION.
2. FURNISH SCREWS FOR INSTALLATION WITH EACH HARDWARE ITEM. FINISH EXPOSED (EXPOSED UNDER ANY CONDITION) SCREWS TO MATCH HARDWARE FINISH, OR, IF EXPOSED IN SURFACES OF OTHER WORK, TO MATCH FINISH OF THIS OTHER WORK INCLUDING PREPARED FOR PAINT SURFACES TO RECEIVE PAINTED FINISH.
3. PROVIDE CONCEALED FASTENERS FOR HARDWARE UNITS EXPOSED WHEN DOOR IS CLOSED EXCEPT WHEN NO STANDARD UNITS OF TYPE SPECIFIED ARE AVAILABLE WITH CONCEALED FASTENERS. DO NOT USE THRU-BOLTS FOR INSTALLATION WHERE BOLT HEAD OR NUT ON OPPOSITE FACE IS EXPOSED IN OTHER WORK UNLESS THRU-BOLTS ARE REQUIRED TO FASTEN HARDWARE SECURELY. REVIEW DOOR SPECIFICATION AND ADVISE ARCHITECT IF THRU-BOLTS ARE REQUIRED.
4. INSTALL HARDWARE WITH FASTENERS PROVIDED BY HARDWARE MANUFACTURER.

B. PROVIDE SCREWS, BOLTS, EXPANSION SHIELDS, DROP PLATES AND OTHER DEVICES NECESSARY FOR HARDWARE INSTALLATION.
1. WHERE FASTENERS ARE EXPOSED TO VIEW: FINISH TO MATCH ADJACENT DOOR HARDWARE MATERIAL.

2.3 HINGES

A. MANUFACTURERS AND PRODUCTS:
1. SCHEDULED MANUFACTURER AND PRODUCT: IVES 3CB1HW SERIES

B. REQUIREMENTS: NO SUBSTITUTE
1. PROVIDE FIVE-KNUCKLE BALL BEARING HINGES CONFORMING TO ANSI/BHMA A156.1.
2. 1-3/4 INCH (44 MM) THICK DOORS, UP TO AND INCLUDING 36 INCHES (914 MM) WIDE:
   a. EXTERIOR: STANDARD WEIGHT, BRONZE OR STAINLESS STEEL, 4-1/2 INCHES (114 MM) HIGH
   b. INTERIOR: STANDARD WEIGHT, STEEL, 4-1/2 INCHES (114 MM) HIGH
3. 1-3/4 INCH (44 MM) THICK DOORS OVER 36 INCHES (914 MM) WIDE:
   a. EXTERIOR: HEAVY WEIGHT, BRONZE/STAINLESS STEEL, 5 INCHES (127 MM) HIGH
   b. INTERIOR: HEAVY WEIGHT, STEEL, 5 INCHES (127 MM) HIGH
4. 2 INCHES OR THICKER DOORS:
   a. EXTERIOR: HEAVY WEIGHT, BRONZE OR STAINLESS STEEL, 5 INCHES (127 MM) HIGH
   b. INTERIOR: HEAVY WEIGHT, STEEL, 5 INCHES (127 MM) HIGH
5. PROVIDE THREE HINGES PER DOOR LEAF FOR DOORS 90 INCHES (2286 MM) OR LESS IN HEIGHT, AND ONE ADDITIONAL HINGE FOR EACH 30 INCHES (762 MM) OF ADDITIONAL DOOR HEIGHT.
6. WHERE NEW HINGES ARE SPECIFIED FOR EXISTING DOORS OR EXISTING FRAMES, PROVIDE NEW HINGES OF IDENTICAL SIZE TO HINGE PREPARATION PRESENT IN EXISTING DOOR OR EXISTING FRAME.
7. HINGE PINS: EXCEPT AS OTHERWISE INDICATED, PROVIDE HINGE PINS AS FOLLOWS:
   a. STEEL HINGES: STEEL PINS
   b. NON-FERROUS HINGES: STAINLESS STEEL PINS
   c. OUT-SWINGING EXTERIOR DOORS: NON-REMOVABLE PINS
   d. OUT-SWINGING INTERIOR LOCKABLE DOORS: NON-REMOVABLE PINS
   e. INTERIOR NON-LOCKABLE DOORS: NON-RISING PINS
8. WIDTH OF HINGES: 4-1/2 INCHES (114 MM) AT 1-3/4 INCH (44 MM) THICK DOORS, AND 5 INCHES (127 MM) AT 2 INCHES (51 MM) OR THICKER DOORS. ADJUST HINGE WIDTH AS REQUIRED FOR DOOR, FRAME, AND WALL CONDITIONS TO ALLOW PROPER DEGREE OF OPENING.
9. DOORS 36 INCHES (914 MM) WIDE OR LESS FURNISH HINGES 4-1/2 INCHES (114 MM) HIGH; DOORS GREATER THAN 36 INCHES (914 MM) WIDE FURNISH HINGES 5 INCHES (127 MM) HIGH, HEAVY WEIGHT OR STANDARD WEIGHT AS SPECIFIED.
10. PROVIDE HINGES WITH ELECTRIFIED OPTIONS AS SCHEDULED IN THE HARDWARE SETS. PROVIDE WITH SUFFICIENT NUMBER AND WIRE GAGE TO ACCOMMODATE ELECTRIC FUNCTION OF SPECIFIED HARDWARE. LOCATE ELECTRIC HINGE AT SECOND HINGE FROM BOTTOM OR NEAREST TO ELECTRIFIED LOCKING COMPONENT.
11. PROVIDE MORTAR GUARD FOR EACH ELECTRIFIED HINGE SPECIFIED.
12. PROVIDE SPRING HINGES WHERE SPECIFIED. PROVIDE TWO SPRING HINGES AND ONE BEARING HINGE PER DOOR LEAF FOR DOORS 90 INCHES (2286 MM) OR LESS IN HEIGHT. PROVIDE ONE ADDITIONAL BEARING HINGE FOR EACH 30 INCHES (762 MM) OF ADDITIONAL DOOR HEIGHT.

2.4 CONTINUOUS HINGES

A. STAINLESS STEEL
1. MANUFACTURERS:
   a. SCHEDULED MANUFACTURER: IVES
2. REQUIREMENTS: NO SUBSTITUTION
   a. PROVIDE PIN AND BARREL CONTINUOUS HINGES CONFORMING TO ANSI/BHMA A156.26, GRADE 2.
   b. PROVIDE PIN AND BARREL CONTINUOUS HINGES FABRICATED FROM 14 GAUGE, TYPE 304 STAINLESS STEEL.
   c. PROVIDE TWIN SELF-LLUBRICATED NYLON BEARINGS AT EACH HINGE KNUCKLE, WITH 0.25-INCH (6 MM) DIAMETER STAINLESS STEEL PIN.
   d. PROVIDE HINGES CAPABLE OF SUPPORTING DOOR WEIGHTS UP TO 600 POUNDS, AND SUCCESSFULLY TESTED FOR 1,500,000 CYCLES.
   e. ON FIRE-RATED DOORS, PROVIDE PIN AND BARREL CONTINUOUS HINGES THAT ARE CLASSIFIED FOR USE ON RATED DOORS BY TESTING AGENCY ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.
   f. PROVIDE PIN AND BARREL CONTINUOUS HINGES WITH ELECTRIFIED OPTIONS AS SCHEDULED IN THE HARDWARE SETS. PROVIDE WITH SUFFICIENT NUMBER AND WIRE GAGE TO ACCOMMODATE ELECTRIC FUNCTION OF SP

SECTION 087100 CONTINUE FROM SHEET A587

2.6 CYLINDERS

A. MANUFACTURERS:
1. SCHEDULED MANUFACTURER: MUL-T-LOCK CLASSIC **NO SUBSTITUTE**

B. REQUIREMENTS:
1. PROVIDE CYLINDERS/CORES, FROM THE SAME MANUFACTURER OF LOCKSETS], COMPLIANT WITH ANSI/BHMA A156.5; LATEST REVISION, SECTION 12, GRADE 1; PERMANENT CYLINDERS; CYLINDER FACE FINISHED TO MATCH LOCKSET; MANUFACTURER'S SERIES AS INDICATED. REFER TO "KEYING" ARTICLE, HEREIN.
2. PROVIDE CYLINDERS IN THE BELOW-LISTED CONFIGURATION(S), DISTRIBUTED THROUGHOUT THE PROJECT AS INDICATED. **MUL-T-LOCK CLASSIC**

OWNER FURNISHED MATERIALS

A. OWNER FURNISHED CORES AND KEYS: CONSTRUCTION AND PERMANENT INTERCHANGEABLE CORES AND KEYS WILL BE PROVIDED BY OWNER FOR INSTALLATION BY GENERAL CONTRACTOR.
1. COORDINATE DELIVERY OF CORES TO PROJECT SITE WITH OWNER.

B. PADLOCKS: OWNER WILL PROVIDE PADLOCKS FOR GATES, COOLERS AND ROOF HATCH.

2.7 KEYING

A. PROVIDE A FACTORY REGISTERED KEYING SYSTEM, COMPLYING WITH GUIDELINES IN ANSI/BHMA A156.28, INCORPORATING DECISIONS MADE AT KEYING CONFERENCE.

B. PROVIDE CYLINDERS/CORES KEYED INTO OWNER'S EXISTING FACTORY REGISTERED KEYING SYSTEM, COMPLYING WITH GUIDELINES IN ANSI/BHMA A156.28, INCORPORATING DECISIONS MADE AT KEYING CONFERENCE.

C. REQUIREMENTS:
1. PROVIDE PERMANENT CYLINDERS/CORES KEYED BY THE MANUFACTURER ACCORDING TO THE FOLLOWING KEY SYSTEM.
a. MASTER KEYING SYSTEM AS DIRECTED BY THE OWNER.
2. FORWARD BITTING LIST AND KEYS SEPARATELY FROM CYLINDERS, BY MEANS AS DIRECTED BY OWNER. FAILURE TO COMPLY WITH FORWARDING REQUIREMENTS SHALL BE CAUSE FOR REPLACEMENT OF CYLINDERS/CORES INVOLVED AT NO ADDITIONAL COST TO OWNER.
3. PROVIDE KEYS WITH THE FOLLOWING FEATURES:
a. MATERIAL: NICKEL SILVER; MINIMUM THICKNESS OF .107-INCH (2.3MM)
4. IDENTIFICATION:
a. MARK PERMANENT CYLINDERS/CORES AND KEYS WITH APPLICABLE BLIND CODE PER DHI PUBLICATION "KEYING SYSTEMS AND NOMENCLATURE" FOR IDENTIFICATION. BLIND CODE MARKS SHALL NOT INCLUDE ACTUAL KEY CUTS.
b. IDENTIFICATION STAMPING PROVISIONS MUST BE APPROVED BY THE ARCHITECT AND OWNER.
c. STAMP CYLINDERS/CORES AND KEYS WITH OWNER'S UNIQUE KEY SYSTEM FACILITY CODE AS ESTABLISHED BY THE MANUFACTURER; KEY SYMBOL AND EMBOSSED OR STAMPED WITH "DO NOT DUPLICATE" ALONG WITH THE "PATENTED" OR PATENT NUMBER TO ENFORCE THE PATENT PROTECTION.
d. FAILURE TO COMPLY WITH STAMPING REQUIREMENTS SHALL BE CAUSE FOR REPLACEMENT OF KEYS INVOLVED AT NO ADDITIONAL COST TO OWNER.
e. FORWARD PERMANENT CYLINDERS/CORES TO OWNER, SEPARATELY FROM KEYS, BY MEANS AS DIRECTED BY OWNER.
5. QUANTITY: FURNISH IN THE FOLLOWING QUANTITIES
a. CHANGE (DAY) KEYS: 3 PER CYLINDER/CORE.
PERMANENT CONTROL KEYS: 3.
b. MASTER KEYS: 6.

2.8 DOOR CLOSERS

A. MANUFACTURERS AND PRODUCTS:
1. SCHEDULED MANUFACTURER AND PRODUCT: LCN 4040XP SERIES.
2. ACCEPTABLE MANUFACTURERS AND PRODUCTS: NO SUBSTITUTE.

B. REQUIREMENTS:
1. PROVIDE DOOR CLOSERS CONFORMING TO ANSI/BHMA A156.4 GRADE 1 REQUIREMENTS BY BHMA CERTIFIED INDEPENDENT TESTING LABORATORY. ISO 9000 CERTIFY CLOSERS. STAMP UNITS WITH DATE OF MANUFACTURE CODE.
2. PROVIDE DOOR CLOSERS WITH FULLY HYDRAULIC, FULL RACK AND PINION ACTION WITH HIGH STRENGTH CAST IRON CYLINDER, AND FULL COMPLEMENT BEARINGS AT SHAFT.
3. CYLINDER BODY: 1-1/2 INCH (38 MM) DIAMETER WITH 3/4 INCH (19 MM) DIAMETER DOUBLE HEAT-TREATED PINION JOURNAL.
4. HYDRAULIC FLUID: FIREPROOF, PASSING REQUIREMENTS OF UL10C, AND REQUIRING NO SEASONAL CLOSER ADJUSTMENT FOR TEMPERATURES RANGING FROM 120 DEGREES F TO -30 DEGREES F.
5. SPRING POWER: CONTINUOUSLY ADJUSTABLE OVER FULL RANGE OF CLOSER SIZES, AND PROVIDING REDUCED OPENING FORCE AS REQUIRED BY ACCESSIBILITY CODES AND STANDARDS.
6. HYDRAULIC REGULATION: BY TAMPER-PROOF, NON-CRITICAL VALVES, WITH SEPARATE ADJUSTMENT FOR LATCH SPEED, GENERAL SPEED, AND BACKCHECK.
7. PROVIDE CLOSERS WITH SOLID FORGED STEEL MAIN ARMS AND FACTORY ASSEMBLED HEAVY-DUTY FORGED FOREARMS FOR PARALLEL ARM CLOSERS.
8. PRESSURE RELIEF VALVE (PRV) TECHNOLOGY: NOT PERMITTED.
9. FINISH FOR CLOSER CYLINDERS, ARMS, ADAPTER PLATES, AND METAL COVERS: POWDER COATING FINISH WHICH HAS BEEN CERTIFIED TO EXCEED 100 HOURS SALT SPRAY TESTING AS DESCRIBED IN ANSI STANDARD A156.4 AND ASTM B117, OR HAS SPECIAL RUST INHIBITOR (SRI).
10. PROVIDE SPECIAL TEMPLATES, DROP PLATES, MOUNTING BRACKETS, OR ADAPTERS FOR ARMS AS REQUIRED FOR DETAILS, OVERHEAD STOPS, AND OTHER DOOR HARDWARE ITEMS INTERFERING WITH CLOSER MOUNTING.
11. MOUNTING.

2.9 DOOR TRIM

A. MANUFACTURERS:
1. SCHEDULED MANUFACTURER: IVES

B. REQUIREMENTS:
1. PROVIDE PUSH PLATES 4 INCHES (102 MM) WIDE BY 16 INCHES (406 MM) HIGH BY 0.050 INCH (1 MM) THICK AND BEVELED 4 EDGES.

WHERE WIDTH OF DOOR STILE PREVENTS USE OF 4 INCHES (102 MM) WIDE PLATE, ADJUST WIDTH TO FIT.
2. PROVIDE PUSH BARS OF SOLID BAR STOCK, DIAMETER AND LENGTH AS SCHEDULED. PROVIDE PUSH BARS OF SUFFICIENT LENGTH TO SPAN FROM CENTER TO CENTER OF EACH STILE. WHERE REQUIRED, MOUNT BACK TO BACK WITH PULL.
3. PROVIDE OFFSET PULLS OF SOLID BAR STOCK, DIAMETER AND LENGTH AS SCHEDULED. WHERE REQUIRED, MOUNT BACK TO BACK WITH PUSH BAR.
4. PROVIDE FLUSH PULLS AS SCHEDULED. WHERE REQUIRED, PROVIDE BACK-TO-BACK MOUNTED MODEL.
5. PROVIDE PULLS OF SOLID BAR STOCK, DIAMETER AND LENGTH AS SCHEDULED. WHERE REQUIRED, MOUNT BACK TO BACK WITH PUSH BAR.
6. PROVIDE PULL PLATES 4 INCHES (102 MM) WIDE BY 16 INCHES (406 MM) HIGH BY 0.050 INCH (1 MM) THICK, BEVELED 4 EDGES, AND PREPPED FOR PULL. WHERE WIDTH OF DOOR STILE PREVENTS USE OF 4 INCHES (102 MM) WIDE PLATE, ADJUST WIDTH TO FIT.
7. PROVIDE WIRE PULLS OF SOLID BAR STOCK, DIAMETER AND LENGTH AS SCHEDULED.
8. PROVIDE DECORATIVE PULLS AS SCHEDULED. WHERE REQUIRED, MOUNT BACK TO BACK WITH PULL.

2.10 PROTECTION PLATES

A. MANUFACTURERS:
1. SCHEDULED MANUFACTURER: IVES

B. REQUIREMENTS:
1. PROVIDE KICK PLATES, MOP PLATES, AND ARMOR PLATES MINIMUM OF 0.050 INCH (1 MM) THICK, BEVELED FOUR EDGES AS SCHEDULED. FURNISH WITH SHEET METAL OR WOOD SCREWS, FINISHED TO MATCH PLATES.
2. SIZES OF PLATES:
a. KICK PLATES: 10 INCHES (254 MM) HIGH BY 2 INCHES (51 MM) LESS WIDTH OF DOOR ON SINGLE DOORS, 1 INCH (25 MM) LESS WIDTH OF DOOR ON PAIRS
b. MOP PLATES: 4 INCHES (102 MM) HIGH BY 2 INCHES (51 MM) LESS WIDTH OF DOOR ON SINGLE DOORS, 1 INCH (25 MM) LESS WIDTH OF DOOR ON PAIRS
c. ARMOR PLATES: 36 INCHES (914 MM) HIGH BY 2 INCHES (51 MM) LESS WIDTH OF DOOR ON SINGLE DOORS, 1 INCH (25 MM) LESS WIDTH OF DOOR ON PAIRS

2.11 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. MANUFACTURERS:
1. SCHEDULED MANUFACTURERS: GLYNN-JOHNSON

B. REQUIREMENTS:
1. PROVIDE HEAVY DUTY CONCEALED MOUNTED OVERHEAD STOP OR HOLDER AS SPECIFIED FOR EXTERIOR AND INTERIOR VESTIBULE SINGLE ACTING DOORS.
2. PROVIDE HEAVY DUTY CONCEALED MOUNTED OVERHEAD STOP OR HOLDER AS SPECIFIED FOR DOUBLE ACTING DOORS.
3. PROVIDE HEAVY OR MEDIUM DUTY AND CONCEALED OR SURFACE MOUNTED OVERHEAD STOP OR HOLDER FOR INTERIOR DOORS AS SPECIFIED. PROVIDE MEDIUM DUTY SURFACE MOUNTED OVERHEAD STOP FOR INTERIOR DOORS AND AT ANY DOOR THAT SWINGS MORE THAN 140 DEGREES BEFORE STRIKING WALL, OPEN AGAINST EQUIPMENT, CASEWORK, SIDELIGHTS, AND WHERE CONDITIONS DO NOT ALLOW WALL STOP OR FLOOR STOP PRESENTS TRIPPING HAZARD.
4. WHERE OVERHEAD HOLDERS ARE SPECIFIED PROVIDE FRICTION TYPE AT DOORS WITHOUT CLOSER AND POSITIVE TYPE AT DOORS WITH CLOSER.

2.12 DOOR STOPS AND HOLDERS

A. MANUFACTURERS:
1. SCHEDULED MANUFACTURER: IVES

B. PROVIDE DOOR STOPS AT EACH DOOR LEAF:
1. PROVIDE WALL STOPS WHEREVER POSSIBLE. PROVIDE CONVEX TYPE WHERE MORTISE TYPE LOCKS ARE USED AND CONCAVE TYPE WHERE CYLINDRICAL TYPE LOCKS ARE USED.
2. WHERE A WALL STOP CANNOT BE USED, PROVIDE UNIVERSAL FLOOR STOPS FOR LOW OR HIGH RISE OPTIONS.
3. WHERE WALL OR FLOOR STOP CANNOT BE USED, PROVIDE MEDIUM DUTY SURFACE MOUNTED OVERHEAD STOP.

2.13 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. MANUFACTURERS:
1. SCHEDULED MANUFACTURER: ZERO INTERNATIONAL

B. REQUIREMENTS:
1. PROVIDE THRESHOLDS, WEATHER-STRIPPING (INCLUDING DOOR SWEEPS, SEALS, AND ASTRAGALS) AND GASKETING SYSTEMS (INCLUDING SMOKE, SOUND, AND LIGHT) AS SPECIFIED AND PER ARCHITECTURAL DETAILS. MATCH FINISH OF OTHER ITEMS.
2. SIZE OF THRESHOLDS:
a. SADDLE THRESHOLDS: 1/2 INCH (13 MM) HIGH BY JAMB WIDTH BY DOOR WIDTH
b. BUMPER SEAL THRESHOLDS: 1/2 INCH (13 MM) HIGH BY 5 INCHES (127 MM) WIDE BY DOOR WIDTH
3. PROVIDE DOOR SWEEPS, SEALS, ASTRAGALS, AND AUTO DOOR BOTTOMS ONLY OF TYPE WHERE RESILIENT OR FLEXIBLE SEAL STRIP IS EASILY REPLACEABLE AND READILY AVAILABLE.

2.14 SILENCERS

A. MANUFACTURERS:
1. SCHEDULED MANUFACTURER: IVES

B. REQUIREMENTS:
1. PROVIDE "PUSH-IN" TYPE SILENCERS FOR HOLLOW METAL OR WOOD FRAMES.
2. PROVIDE ONE SILENCER PER 30 INCHES (762 MM) OF HEIGHT ON EACH SINGLE FRAME, AND TWO FOR EACH PAIR FRAME.
3. OMIT WHERE GASKETING IS SPECIFIED.

2.15 FINISHES

A. FINISH: BHMA 626/652 (US26D); EXCEPT:
1. HINGES AT EXTERIOR DOORS: BHMA 630 (US32D)
2. CONTINUOUS HINGES: BHMA 630 (US32D)
3. CONTINUOUS HINGES: BHMA 628 (US28)
4. PUSH PLATES, PULLS, AND PUSH BARS: BHMA 630 (US32D)
5. PROTECTION PLATES: BHMA 630 (US32D)
6. OVERHEAD STOPS AND HOLDERS: BHMA 630 (US32D)
7. DOOR CLOSERS: POWDER COAT TO MATCH
8. WALL STOPS: BHMA 630 (US32D)
9. LATCH PROTECTORS: BHMA 630 (US32D)
10. WEATHERSTRIPPING: CLEAR ANODIZED ALUMINUM
11. THRESHOLDS: MILL FINISH ALUMINUM

PART 3 EXECUTION

3.1 EXAMINATION

A. PRIOR TO INSTALLATION OF HARDWARE, EXAMINE DOORS AND FRAMES, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES, LABELED FIRE- RATED DOOR ASSEMBLY CONSTRUCTION, WALL AND FLOOR CONSTRUCTION, AND OTHER CONDITIONS AFFECTING PERFORMANCE.

B. EXAMINE ROUGHING-IN FOR ELECTRICAL POWER SYSTEMS TO VERIFY ACTUAL LOCATIONS OF WIRING CONNECTIONS BEFORE ELECTRIFIED DOOR HARDWARE INSTALLATION.

C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 PREPARATION

A. WHERE ON-SITE MODIFICATION OF DOORS AND FRAMES IS REQUIRED:
1. CAREFULLY REMOVE EXISTING DOOR HARDWARE AND COMPONENTS BEING REUSED. CLEAN, PROTECT, TAG, AND STORE IN ACCORDANCE WITH STORAGE AND HANDLING REQUIREMENTS SPECIFIED HEREIN.
2. FIELD MODIFY AND PREPARE EXISTING DOOR AND FRAME FOR NEW HARDWARE BEING INSTALLED.
3. WHEN MODIFICATIONS ARE EXPOSED TO VIEW, USE CONCEALED FASTENERS, WHEN POSSIBLE.
4. PREPARE HARDWARE LOCATIONS AND REINSTALL IN ACCORDANCE WITH INSTALLATION REQUIREMENTS FOR NEW DOOR HARDWARE AND WITH:
a. STEEL DOORS AND FRAMES: FOR SURFACE APPLIED DOOR HARDWARE, DRILL AND TAP DOORS AND FRAMES ACCORDING TO ANSI/SDI A250.6.
WOOD DOORS: DHI WDHS.5 "RECOMMENDED HARDWARE REINFORCEMENT LOCATIONS FOR MINERAL CORE WOOD FLUSH DOORS."
b. DOORS IN RATED ASSEMBLIES: NFPA 80 FOR RESTRICTIONS ON ON-SITE DOOR HARDWARE PREPARATION.

3.3 INSTALLATION

A. MOUNTING HEIGHTS: MOUNT DOOR HARDWARE UNITS AT HEIGHTS TO COMPLY WITH THE FOLLOWING, UNLESS OTHERWISE INDICATED OR REQUIRED TO COMPLY WITH GOVERNING REGULATIONS.
1. STANDARD STEEL DOORS AND FRAMES: ANSI/SDI A250.8.
2. CUSTOM STEEL DOORS AND FRAMES: HMMA 831.
3. WOOD DOORS: DHI WDHS.3, "RECOMMENDED LOCATIONS FOR ARCHITECTURAL HARDWARE FOR WOOD FLUSH DOORS."

B. INSTALL EACH HARDWARE ITEM IN COMPLIANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS, USING ONLY FASTENERS PROVIDED BY MANUFACTURER.

C. DO NOT INSTALL SURFACE MOUNTED ITEMS UNTIL FINISHES HAVE BEEN COMPLETED ON SUBSTRATE. PROTECT ALL INSTALLED HARDWARE DURING PAINTING.

D. SET UNITS LEVEL, PLUMB AND TRUE TO LINE AND LOCATION. ADJUST AND REINFORCE ATTACHMENT SUBSTRATE AS NECESSARY FOR PROPER INSTALLATION AND OPERATION.

E. DRILL AND COUNTERSINK UNITS THAT ARE NOT FACTORY PREPARED FOR ANCHORAGE FASTENERS. SPACE FASTENERS AND ANCHORS ACCORDING TO INDUSTRY STANDARDS.

F. INSTALL OPERATING PARTS SO THEY MOVE FREELY AND SMOOTHLY WITHOUT BINDING, STICKING, OR EXCESSIVE CLEARANCE.

G. HINGES: INSTALL TYPES AND IN QUANTITIES INDICATED IN DOOR HARDWARE SCHEDULE BUT NOT FEWER THAN QUANTITY RECOMMENDED BY MANUFACTURER FOR APPLICATION INDICATED OR ONE HINGE FOR EVERY 30 INCHES (750 MM) OF DOOR HEIGHT, WHICHEVER IS MORE STRINGENT, UNLESS OTHER EQUIVALENT MEANS OF SUPPORT FOR DOOR, SUCH AS SPRING HINGES OR PIVOTS, ARE PROVIDED.

H. INTERMEDIATE OFFSET PIVOTS: WHERE OFFSET PIVOTS ARE INDICATED, PROVIDE INTERMEDIATE OFFSET PIVOTS IN QUANTITIES INDICATED IN DOOR HARDWARE SCHEDULE BUT NOT FEWER THAN ONE INTERMEDIATE OFFSET PIVOT PER DOOR AND ONE ADDITIONAL INTERMEDIATE OFFSET PIVOT FOR EVERY 30 INCHES (750 MM) OF DOOR HEIGHT GREATER THAN 90 INCHES (2286 MM).

I. LOCK CYLINDERS: INSTALL CONSTRUCTION CORES TO SECURE BUILDING AND AREAS DURING CONSTRUCTION PERIOD.
1. REPLACE CONSTRUCTION CORES WITH PERMANENT CORES AS INDICATED IN KEYING SECTION.

J. KEY CONTROL SYSTEM: TAG KEYS AND PLACE THEM ON MARKERS AND HOOKS IN KEY CONTROL SYSTEM CABINET, AS DETERMINED BY FINAL KEYING SCHEDULE.

K. DOOR CLOSERS: MOUNT CLOSERS ON ROOM SIDE OF CORRIDOR DOORS, INSIDE OF EXTERIOR DOORS, AND STAIR SIDE OF STAIRWAY DOORS FROM CORRIDORS. CLOSERS SHALL NOT BE VISIBLE IN CORRIDORS, LOBBIES AND OTHER PUBLIC SPACES UNLESS APPROVED BY ARCHITECT.

L. CLOSER/HOLDERS: MOUNT CLOSER/HOLDERS ON ROOM SIDE OF CORRIDOR DOORS, INSIDE OF EXTERIOR DOORS, AND STAIR SIDE OF STAIRWAY DOORS.

M. POWER SUPPLIES: LOCATE POWER SUPPLIES AS INDICATED OR, IF NOT INDICATED, ABOVE ACCESSIBLE CEILINGS OR IN EQUIPMENT ROOM, OR ALTERNATE LOCATION AS DIRECTED BY ARCHITECT.
1. COORDINATION: COORDINATE PROVISION WITH THE SECURITY SYSTEMS PROVIDER TO MITIGATE EXCESSIVE OR REDUNDANT PURCHASE.
2. CONFIGURATION: PROVIDE LEAST NUMBER OF POWER SUPPLIES REQUIRED TO ADEQUATELY SERVE DOORS WITH ELECTRIFIED DOOR HARDWARE.

N. THRESHOLDS: SET THRESHOLDS IN FULL BED OF SEALANT COMPLYING WITH REQUIREMENTS SPECIFIED IN DIVISION 07 SECTION "JOINT SEALANTS."

O. STOPS: PROVIDE FLOOR STOPS FOR DOORS UNLESS WALL OR OTHER TYPE STOPS ARE INDICATED IN DOOR HARDWARE SCHEDULE. DO NOT MOUNT FLOOR STOPS WHERE THEY MAY IMPEDE TRAFFIC OR PRESENT TRIPPING HAZARD.

P. PERIMETER GASKETING: APPLY TO HEAD AND JAMB, FORMING SEAL BETWEEN DOOR AND FRAME.

Q. MEETING STILE GASKETING: FASTEN TO MEETING STILES, FORMING SEAL WHEN DOORS ARE CLOSED.

R. DOOR BOTTOMS: APPLY TO BOTTOM OF DOOR, FORMING SEAL WITH THRESHOLD WHEN DOOR IS CLOSED.

S. FIELD-VERIFY EXISTING CONDITIONS AND MEASUREMENTS PRIOR TO ORDERING HARDWARE. FILL EXISTING HARDWARE CUT OUTS NOT BEING USED BY THE NEW HARDWARE.

T. REMOVE EXISTING HARDWARE NOT BEING REUSED. TAG AND BAG REMOVED HARDWARE, TURN OVER TO OWNER.

U. WHERE EXISTING WALL CONDITIONS WILL NOT ALLOW DOOR TO SWING USING THE SCHEDULED HINGES, PROVIDE WIDE-THROW HINGES AND IF NEEDED, EXTENDED ARMS ON CLOSERS.

V. PROVIDE MANUFACTURER'S RECOMMENDED BRACKETS TO ACCOMMODATE THE MOUNTING OF CLOSERS ON DOORS WITH FLUSH TRANSOMS.

3.4 ADJUSTING

A. INITIAL ADJUSTMENT: ADJUST AND CHECK EACH 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 DEVICES TO COMPENSATE FOR FINAL OPERATION OF HEATING AND VENTILATING EQUIPMENT AND TO COMPLY WITH REFERENCED ACCESSIBILITY REQUIREMENTS.
1. SPRING HINGES: ADJUST TO ACHIEVE POSITIVE LATCHING WHEN DOOR IS ALLOWED TO CLOSE FREELY FROM AN OPEN POSITION OF 30 DEGREES.
2. ELECTRIC STRIKES: ADJUST HORIZONTAL AND VERTICAL ALIGNMENT OF KEEPER TO PROPERLY ENGAGE LOCK BOLT.
3. DOOR CLOSERS: ADJUST SWEEP PERIOD TO COMPLY WITH ACCESSIBILITY REQUIREMENTS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

B. OCCUPANCY ADJUSTMENT: APPROXIMATELY THREE MONTHS AFTER DATE OF SUBSTANTIAL COMPLETION, INSTALLER SHALL EXAMINE AND READJUST EACH ITEM OF DOOR HARDWARE. INCLUDING ADJUSTING OPERATING FORCES, AS NECESSARY TO ENSURE FUNCTION OF DOORS, DOOR HARDWARE, AND ELECTRIFIED DOOR HARDWARE.

3.5 CLEANING AND PROTECTION

A. CLEAN ADJACENT SURFACES SOILED BY DOOR HARDWARE INSTALLATION.

B. CLEAN OPERATING ITEMS AS NECESSARY TO RESTORE PROPER FUNCTION AND FINISH.

C. PROVIDE FINAL PROTECTION AND MAINTAIN CONDITIONS THAT ENSURE DOOR HARDWARE IS WITHOUT DAMAGE OR DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION.

3.6 DEMONSTRATION

A. PROVIDE TRAINING FOR OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN DOOR HARDWARE AND DOOR HARDWARE FINISHES. REFER TO DIVISION 01 SECTION "DEMONSTRATION AND TRAINING."

3.7 DOOR HARDWARE SCHEDULE

A. LOCKSETS, EXIT DEVICES, AND OTHER HARDWARE ITEMS ARE REFERENCED IN THE FOLLOWING HARDWARE SETS FOR SERIES, TYPE AND FUNCTION. REFER TO THE ABOVE-SPECIFICATIONS FOR SPECIAL FEATURES, OPTIONS, CYLINDERS/KEYING, AND OTHER REQUIREMENTS.

B. DO NOT ORDER MATERIAL UNTIL SUBMITTAL HAS BEEN REVIEWED, STAMPED, AND SIGNED BY ARCHITECT'S DOOR HARDWARE CONSULTANT.

C. HARDWARE SETS:
INSPECTION OF FIRE DOOR ASSEMBLIES AND MEANS-OF- EGRESS PANIC-HARDWARE DOORS**:** PER 2016 NFPA-80 5.2.1: HIRE AN INDEPENDENT THIRD-PARTY INSPECTION SERVICE TO PREPARE A REPORT LISTING THESE DOORS, AND INCLUDE A STATEMENT THAT THERE ARE ZERO DEFICIENCIES WITH THE FIRE-RATED ASSEMBLIES AND THE OPENINGS WITH PANIC HARDWARE CERTIFICATION, TESTING AND QUALITY CONTROL SHALL BE IN ACCORDANCE WITH DIVISION 01 45 23 TESTING AND INSPECTION SERVICES. ALL DOORS HARDWARE AND INSTALLATION WILL BE INSPECTED BY A THIRD PARTY SELECTED BY THE ARCHITECT/OWNER
DIV 01 45 23:

PER 2016 NFPA-80 5.2.1: USE A THIRD PARTY INSPECTOR NOT ASSOCIATED WITH THE CONSTRUCTION, SUPPLY OR INSTALLATION OF THIS PROJECT TO DEVELOP A FIELD SURVEY OF THE DOORS AND HARDWARE. SURVEY IS TO BE DONE BY A MEMBER CERTIFIED AS A FDAI (FIRE DOOR ASSEMBLY INSPECTOR), CERTIFIED AHC (ARCHITECTURAL HARDWARE CONSULTANT) OR A CERTIFIED TESTING LABORATORY: UL OR INTERTEK. CERTIFIED INSPECTORS MAY BE FOUND AT DHI.ORG, INTERTEK, OR CAFDI.ORG.

48330 OPT0194566 Version 1
Hardware Group No. 01
For use on Door #(s):
106 & 107
Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	3CB1HW 4.5 X 4.5	630	IVE
1	EA	PRIVACY LOCK	L9040 06A L583-363 L283-722	630	SCH
1	EA	SURFACE CLOSER	4041 DEL	689	LCN
2	EA	PUSH PLATE	8400 18" X 2" LESS DOOR WIDTH	630	IVE
2	EA	KICK PLATE	8400 6" X 2" LESS DOOR WIDTH	630	IVE
1	EA	WALL STOP	WS406/407 CCV	630	IVE
1	EA	SEALS	488S	S-BK	ZER

Hardware Group No. 02
For use on Door #(s):
100 & 101
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	700	630	IVE
2	EA	PANIC HARDWARE	CD-3347A-L-06	626	VON
4	EA	CYLINDER AS REQUIRED	MUL-T-LOCK CLASSIC	626	MLC
2	EA	SURFACE CLOSER	4040XP SHOUSH	689	LCN
2	EA	FLUSH CEILING MTG PLT	4040XP-18G	AA	LCN
2	EA	MEETING STILE	8193AA-S	AA	ZER
1	EA	WEATHER STRIPPING	BALANCE OF GASKET BY DOOR MANUF.		
2	EA	DOOR SWEEP	8192AA	AA	ZER
1	EA	THRESHOLD	655A-223	A	ZER

Hardware Group No. 03
For use on Door #(s):
105
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	DOOR MANUFACTURER	ALL HARDWARE BY DOOR MANUFACTURER		

Hardware Group No. 04
For use on Door #(s):
104
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	3CB1HW 4.5 X 4.5	630	IVE
1	EA	OFFICE/ ENTRY LOCK	L9050T 06L	626	SCH
1	EA	CYLINDER AS REQUIRED	MUL-T-LOCK CLASSIC	626	MLC
2	EA	OH STOP & HOLDER	100H ADJ	630	GLY
2	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	488SBK PSA	BK	ZER
1	EA	LITE KIT			

Hardware Group No. 05
For use on Door #(s):
103
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	700	630	IVE
1	EA	PANIC HARDWARE	GUARD X 2670	711	VON
2	EA	CYLINDER AS REQUIRED	MUL-T-LOCK	626	MLC
1	EA	SURFACE CLOSER	4040XP	630	LCN
1	EA	KICK PLATE	8400 36" X 2"	630	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	SET	GASKETING	429AA-S	AA	ZER
1	EA	DOOR SWEEP	8192AA	AA	ZER
1	EA	THRESHOLD	655A-223	A	ZER
1	EA	VIEWPORT	DS/2000 ALS	ALUM	DOO

*END OF SECTION

SECTION 088000 - GLAZING

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA AND SAMPLES.

1.2 GLASS, GENERAL
A. GLAZING PUBLICATIONS: COMPLY WITH PUBLISHED RECOMMENDATIONS OF GLASS PRODUCT MANUFACTURERS AND ORGANIZATIONS BELOW UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED. SEE THESE PUBLICATIONS FOR GLAZING TERMS NOT OTHERWISE DEFINED IN THIS SECTION OR IN REFERENCED STANDARDS.
1. IGMA PUBLICATION FOR INSULATING GLASS: SIGMA TM-3000, "NORTH AMERICAN GLAZING GUIDELINES FOR SEALED INSULATING GLASS UNITS FOR COMMERCIAL AND RESIDENTIAL USE."
B. SAFETY GLAZING: WHERE SAFETY GLAZING IS INDICATED, PROVIDE GLAZING THAT COMPLIES WITH 16 CFR 1201, CATEGORY II.
C. SAFETY GLAZING LABELING: WHERE SAFETY GLAZING IS INDICATED, PERMANENTLY MARK GLAZING WITH CERTIFICATION LABEL OF THE SGCC OR ANOTHER CERTIFICATION AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. LABEL SHALL INDICATE MANUFACTURER'S NAME, TYPE OF GLASS, THICKNESS, AND SAFETY GLAZING STANDARD WITH WHICH GLASS COMPLIES.
D. INSULATING-GLASS CERTIFICATION PROGRAM: PERMANENTLY MARKED EITHER ON SPACERS OR ON AT LEAST ONE COMPONENT LITE OF UNITS WITH APPROPRIATE CERTIFICATION LABEL OF IGCC.

1.3 GLASS PRODUCTS
A. ANNEALED FLOAT GLASS: ASTM C 1036, TYPE I, QUALITY-Q3.
B. FULLY TEMPERED FLOAT GLASS: ASTM C 1048, KIND FT; TYPE I; QUALITY-Q3.
C. HEAT-STRENGTHENED FLOAT GLASS: ASTM C 1048, KIND HS; TYPE I; QUALITY-Q3.
D. INSULATING-GLASS UNITS: FACTORY-ASSEMBLED UNITS CONSISTING OF SEALED LITES OF GLASS SEPARATED BY A DEHYDRATED INTERSPACE, QUALIFIED ACCORDING TO ASTM E 2190.

1.4 TINTED WINDOW FILM
A. BASIS OF DESIGN: 3M SUN CONTROL WINDOW FILMS; 3M CORPORATION; RENEWABLE ENERGY DIVISION: PRESTIGE SERIES, PR 70.

1.5 GLAZING SEALANTS
A. GLAZING SEALANT:NEUTRAL-CURING SILICONE GLAZING SEALANT COMPLYING WITH ASTM C 920, TYPE S, GRADE NS, CLASS 25, USE NT.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. BOSTIK, INC.
b. DOW CORNING CORPORATION.
c. GE CONSTRUCTION SEALANTS; MOMENTIVE PERFORMANCE MATERIALS INC.
d. SIKA CORPORATION.
e. TREMCO INCORPORATED.

1.6 INSTALLATION
A. COMPLY WITH COMBINED RECOMMENDATIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS, UNLESS MORE STRINGENT REQUIREMENTS ARE CONTAINED IN GANA'S "GLAZING MANUAL."
B. FOR FIRE-PROTECTION-RATED GLAZING, USE METHODS APPROVED BY TESTING AGENCIES THAT LISTED AND LABELED PRODUCTS.
C. SET GLASS LITES IN EACH SERIES WITH UNIFORM PATTERN, DRAW, BOW, AND SIMILAR CHARACTERISTICS.
D. REMOVE NONPERMANENT LABELS, AND CLEAN SURFACES IMMEDIATELY AFTER INSTALLATION.

1.7 MONOLITHIC - GLASS TYPES
A. GLASS TYPE : CLEAR FLOAT GLASS.
1. THICKNESS: 6 MM.
2. SAFETY GLAZING REQUIRED.
B. GLASS TYPE : TINTED FLOAT GLASS.
1. THICKNESS: 6 MM.
2. TINT COLOR: .
3. SOLAR HEAT-GAIN COEFFICIENT: MAXIMUM.
4. SAFETY GLAZING REQUIRED.
C. GLASS TYPE : .
1. THICKNESS: 6 MM.
2. FINISH: .
3. PATTERN: .
4. SAFETY GLAZING REQUIRED.
D. GLASS TYPE : REFLECTIVE-COATED, TINTED FLOAT GLASS.
1. THICKNESS: 6 MM.
2. TINT COLOR: .
3. COATING

SECTION 088300 CONTINUE FROM SHEET A588

1.5 INSTALLATION

A. GENERAL: INSTALL MIRRORS TO COMPLY WITH MIRROR MANUFACTURER'S WRITTEN INSTRUCTIONS AND WITH REFERENCED GANA PUBLICATIONS. MOUNT MIRRORS ACCURATELY IN PLACE IN A MANNER THAT AVOIDS DISTORTING REFLECTED IMAGES.
1. GANA PUBLICATIONS: "GLAZING MANUAL" AND "MIRRORS, HANDLE WITH EXTREME CARE: TIPS FOR THE PROFESSIONAL ON THE CARE AND HANDLING OF MIRRORS."

B. PROVIDE A MINIMUM AIR SPACE OF 1/8 INCH BETWEEN BACK OF MIRRORS AND MOUNTING SURFACE FOR AIR CIRCULATION BETWEEN BACK OF MIRRORS AND FACE OF MOUNTING SURFACE.

C. WALL-MOUNTED MIRRORS: INSTALL MIRRORS WITH MASTIC AND MIRROR HARDWARE. ATTACH MIRROR HARDWARE SECURELY TO MOUNTING SURFACES WITH MECHANICAL FASTENERS INSTALLED SO HEADS DO NOT IMPOSE POINT LOADS ON BACKS OF MIRRORS.
1. TOP AND BOTTOM ALUMINUM J-CHANNELS: PROVIDE SETTING BLOCKS 1/8 INCH THICK BY 4 INCHES LONG AT QUARTER POINTS.
2. MIRROR CLIPS: PLACE A FELT OR PLASTIC PAD BETWEEN MIRROR AND EACH CLIP. LOCATE CLIPS SO THEY ARE SYMMETRICALLY PLACED AND EVENLY SPACED.
3. APPLY MASTIC TO COMPLY WITH MASTIC MANUFACTURER'S WRITTEN INSTRUCTIONS FOR COVERAGE AND TO ALLOW AIR CIRCULATION BETWEEN BACK OF MIRRORS AND FACE OF MOUNTING SURFACE.

D. REMOVE NONPERMANENT LABELS, AND CLEAN SURFACES IMMEDIATELY AFTER INSTALLATION.

SECTION 089119 - FIXED LOUVERS

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA, SHOP DRAWINGS, AND SAMPLES.

1.2 PERFORMANCE REQUIREMENTS

A. PROVIDE LOUVERS COMPLYING WITH PERFORMANCE REQUIREMENTS INDICATED AS DEMONSTRATED BY TESTING ACCORDING TO AMCA 500-L.

B. WINDBORNE-DEBRIS RESISTANCE: LOUVERS PASS BASIC-PROTECTION TESTING REQUIREMENTS IN ASTM E 1996 FOR WIND ZONE 2 WHEN TESTED ACCORDING TO ASTM E 1886.

1.3 FIXED, EXTRUDED-ALUMINUM LOUVERS

A. HORIZONTAL, WIND-DRIVEN, RAIN-RESISTANT LOUVERS:
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   a. AIROLITE COMPANY, LLC (THE).
   b. CONSTRUCTION SPECIALTIES, INC.
   c. NYSTROM.
   d. RUSKIN COMPANY.
2. LOUVER DEPTH: 4 INCHES.
3. FRAME AND BLADE NOMINAL THICKNESS: NOT LESS THAN 0.080 INCH.
4. LOUVER PERFORMANCE RATINGS:
   a. FREE AREA: NOT LESS THAN 7.0 SQ. FT. FOR 48-INCH-WIDE BY 48-INCH-HIGH LOUVER.
   b. AIR PERFORMANCE: NOT MORE THAN 0.10-INCH WG STATIC PRESSURE DROP AT 600-FPM FREE-AREA EXHAUST OR INTAKE VELOCITY.
   c. WIND-DRIVEN RAIN PERFORMANCE: NOT LESS THAN 99 PERCENT EFFECTIVENESS WHEN SUBJECTED TO A RAINFALL RATE OF 8 INCHES PER HOUR AND A WIND SPEED OF 50 MPH AT A CORE-AREA INTAKE VELOCITY OF 400 FPM.

1.4 LOUVER SCREENS

A. PROVIDE SCREEN AT INTERIOR FACE OF EACH EXTERIOR LOUVER, FABRICATE SCREEN FRAMES FROM SAME KIND AND FORM OF METAL AS INDICATED FOR LOUVER TO WHICH SCREENS ARE ATTACHED.
1. SCREENING: ALUMINUM, 1/2-INCH-SQUARE MESH.
2. SCREENING: FLATTENED, EXPANDED ALUMINUM, 3/4 BY 0.050 INCH THICK.

1.5 MATERIALS

A. ALUMINUM EXTRUSIONS: ASTM B 221, ALLOY 6063-T5, -T-52, OR -T6.
B. ALUMINUM SHEET: ASTM B 209, ALLOY 3003 OR 5005.
C. FASTENERS: OF SAME BASIC METAL AND ALLOY AS FASTENED METAL OR 300 SERIES STAINLESS STEEL.

1.6 LOUVER FINISHES

A. ALUMINUM LOUVERS: HIGH-PERFORMANCE ORGANIC COATING; TWO-COAT FLUOROPOLYMER SYSTEM COMPLYING WITH AAMA 2604, WITH FINISH COATS CONTAINING AT LEAST 70 PERCENT POLYVINYLIDENE FLUORIDE RESIN BY WEIGHT.

1.7 INSTALLATION

A. INSTALL LOUVERS LEVEL, PLUMB, AND AT INDICATED ALIGNMENT WITH ADJACENT WORK.
B. PROVIDE PERIMETER REVEALS OF UNIFORM WIDTH FOR SEALANTS AND JOINT FILLERS, AS INDICATED.
C. USE CONCEALED ANCHORAGES WHERE POSSIBLE.
D. PROTECT METAL SURFACES FROM CORROSION OR GALVANIC ACTION BY APPLYING A HEAVY COATING OF BITUMINOUS PAINT ON SURFACES THAT WILL BE IN CONTACT WITH CONCRETE, MASONRY, OR DISSIMILAR METALS.

SECTION 090561.13 - MOISTURE VAPOR EMISSION CONTROL

1.1 SUMMARY

A. SECTION INCLUDES FLUID-APPLIED, RESIN-BASED, MEMBRANE-FORMING SYSTEMS THAT CONTROL THE MOISTURE-VAPOR-EMISSION RATE OF HIGH-MOISTURE, INTERIOR CONCRETE TO PREPARE IT FOR FLOOR COVERING INSTALLATION.
B. CONDUCT TESTS INDICATED IN THIS SECTION WHERE NEW FLOOR COVERING IS TO BE APPLIED ON CONCRETE TO DETERMINE IF THE MOISTURE VAPOR EMISSION-CONTROL SYTSTEM IS REQUIRED.

1.2 UNIT PRICES

A. WORK OF THIS SECTION IS AFFECTED BY MOISTURE VAPOR EMISSION CONTROL UNIT PRICE TO BE PROVIDED BY CONTRACTOR WITH BID AND INCLUDED IN CONTRACT AS UNIT PRICE.

1.3 DEFINITIONS

A. MVE: MOISTURE VAPOR EMISSION.
B. MVER: MOISTURE VAPOR EMISSION RATE.

1.4 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

1.5 INFORMATIONAL SUBMITTALS

A. PRODUCT TEST REPORTS.
B. PREINSTALLATION TESTING REPORTS.

1.6 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS: EMPLOYS FACTORY-TRAINED PERSONNEL WHO ARE AVAILABLE FOR CONSULTATION AND PROJECT-SITE INSPECTION.
B. INSTALLER QUALIFICATIONS: AN AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED BY MANUFACTURER.

1.7 PERFORMANCE REQUIREMENTS

A. MVE-CONTROL SYSTEM CAPABILITIES: CAPABLE OF SUPPRESSING MVE WITHOUT FAILURE WHERE INSTALLED ON CONCRETE THAT EXHIBITS THE FOLLOWING CONDITIONS:
1. MVER: MAXIMUM 15 LB OF WATER/1000 SQ. FT. WHEN TESTED ACCORDING TO ASTM F 1869.
2. RELATIVE HUMIDITY: MAXIMUM 100 PERCENT WHEN TESTED ACCORDING TO ASTM F 2170 USING IN SITU PROBES.

B. WATER-VAPOR TRANSMISSION: THROUGH MVE-CONTROL SYSTEM, MAXIMUM 0.10 PERM WHEN TESTED ACCORDING TO ASTM E 96/E 96M.
C. TENSILE BOND STRENGTH: FOR MVE-CONTROL SYSTEM, GREATER THAN 200 PSI WITH FAILURE IN THE CONCRETE ACCORDING TO ASTM D 7234.

1.8 MVE-CONTROL SYSTEM

A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. ADVANCED MOISTURE CONTROL, INC.
2. ARDEX AMERICAS.
3. BASF CORP. - CONSTRUCTION CHEMICALS.
4. H.B. FULLER CONSTRUCTION PRODUCTS INC. / TEC.
5. LATICRETE SUPERCAP, LLC.
6. MAPEI CORPORATION.

B. MVE-CONTROL SYSTEM: ASTM F 3010-QUALIFIED, FLUID-APPLIED, TWO-COMPONENT, EPOXY-RESIN, MEMBRANE-FORMING SYSTEM; FORMULATED FOR APPLICATION ON CONCRETE SUBSTRATES TO REDUCE MVER TO LEVEL REQUIRED FOR INSTALLATION OF FLOOR COVERINGS INDICATED AND ACCEPTABLE TO MANUFACTURERS OF FLOOR COVERING PRODUCTS INDICATED, INCLUDING ADHESIVES.
1. SUBSTRATE PRIMER: PROVIDE MVE-CONTROL SYSTEM MANUFACTURER'S CONCRETE-SUBSTRATE PRIMER IF REQUIRED FOR SYSTEM INDICATED BY SUBSTRATE CONDITIONS.
2. CEMENTITIOUS UNDERLAYMENT PRIMER: IF REQUIRED FOR SUBSEQUENT INSTALLATION OF CEMENTITIOUS UNDERLAYMENT PRODUCTS, PROVIDE MVE-CONTROL SYSTEM MANUFACTURER'S PRIMER TO ENSURE ADHESION OF PRODUCTS TO MVE-CONTROL SYSTEM.

1.9 ACCESSORIES

A. PATCHING AND LEVELING MATERIAL: MOISTURE-, MILDEW-, AND ALKALI-RESISTANT PRODUCT RECOMMENDED IN WRITING BY MVE-CONTROL SYSTEM MANUFACTURER AND WITH MINIMUM OF 3000-PSI COMPRESSIVE STRENGTH AFTER 28 DAYS WHEN TESTED ACCORDING TO ASTM C 109/C 109M.
B. CRACK-FILLING MATERIAL: RESIN-BASED MATERIAL RECOMMENDED IN WRITING BY MVE-CONTROL SYSTEM MANUFACTURER FOR SEALING CONCRETE SUBSTRATE CRACK REPAIR.
C. CEMENTITIOUS UNDERLAYMENT: IF REQUIRED TO MAINTAIN MANUFACTURER'S WARRANTY, PROVIDE MVE-CONTROL SYSTEM MANUFACTURER'S HYDRAULIC CEMENT-BASED UNDERLAYMENT.

1.10 PREPARATION

A. PREINSTALLATION TESTING:
1. TESTING AGENCY: ENGAGE A QUALIFIED TESTING AGENCY TO PERFORM TESTS.
2. ALKALINITY TESTING: PERFORM PH TESTING ACCORDING TO ASTM F 710. INSTALL MVE-CONTROL SYSTEM IN AREAS WHERE PH READINGS ARE LESS THAN 7.0 AND IN AREAS WHERE PH READINGS ARE GREATER THAN 8.5.
3. MOISTURE TESTING: PERFORM TESTS SO THAT EACH TEST AREA DOES NOT EXCEED 200 SQ. FT., AND PERFORM NO FEWER THAN THREE TESTS IN EACH INSTALLATION AREA AND WITH TEST AREAS EVENLY SPACED IN INSTALLATION AREAS. PERFORM TEST USING ONE OF THE FOLLOWING:
   A. ANHYDROUS CALCIUM CHLORIDE TEST: ASTM F 1869. INSTALL MVE-CONTROL SYSTEM IN LOCATIONS WHERE CONCRETE SUBSTRATE MVER EXCEEDS 3 LB OF WATER/1000 SQ. FT. IN 24 HOURS.
   B. INTERNAL RELATIVE HUMIDITY TEST: USING IN SITU PROBES, ASTM F 2170. INSTALL MVE-CONTROL SYSTEM IN LOCATIONS WHERE CONCRETE SUBSTRATES EXHIBIT RELATIVE HUMIDITY LEVEL GREATER THAN 75 PERCENT.
4. TENSILE-BOND-STRENGTH TESTING: FOR TYPICAL LOCATIONS INDICATED TO RECEIVE INSTALLATION OF MVE-CONTROL SYSTEM,INSTALL MINIMUM 100-SQ. FT. AREA OF MVE-CONTROL SYSTEM TO PREPARED CONCRETE SUBSTRATE AND TEST ACCORDING TO ASTM D 7234.
5. PROCEED WITH INSTALLATION ONLY WHERE TENSILE BOND STRENGTH IS GREATER THAN 200 PSI WITH FAILURE IN THE CONCRETE.

B. CONCRETE SUBSTRATES: PREPARE AND CLEAN SUBSTRATES ACCORDING TO MVE-CONTROL SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS TO ENSURE ADHESION OF SYSTEM TO CONCRETE.

1.11 INSTALLATION

A. GENERAL: INSTALL MVE-CONTROL SYSTEM ACCORDING TO ASTM F 3010 AND MANUFACTURER'S WRITTEN INSTRUCTIONS TO PRODUCE A UNIFORM, MONOLITHIC SURFACE FREE OF SURFACE DEFICIENCIES SUCH AS PIN HOLES, FISH EYES, AND VOIDS.
1. INSTALL PRIMERS AS REQUIRED TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

B. DO NOT APPLY MVE-CONTROL SYSTEM ACROSS SUBSTRATE EXPANSION, ISOLATION, AND OTHER MOVING JOINTS.
C. APPLY SYSTEM, INCLUDING COMPONENT COATS IF ANY, IN THICKNESS RECOMMENDED IN WRITING BY MVE-CONTROL SYSTEM MANUFACTURER FOR MVER INDICATED BY PREINSTALLATION TESTING.
D. AFTER CURING, EXAMINE MVE-CONTROL SYSTEM FOR SURFACE DEFICIENCIES. REPAIR SURFACE DEFICIENCIES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
E. INSTALL CEMENTITIOUS UNDERLAYMENT OVER CURED MEMBRANE IF REQUIRED TO MAINTAIN MANUFACTURER'S WARRANTY AND IN THICKNESS REQUIRED TO MAINTAIN THE WARRANTY.
F. PROTECT MVE-CONTROL SYSTEM FROM DAMAGE, WEAR, DIRT, DUST, AND OTHER CONTAMINANTS BEFORE FLOOR COVERING INSTALLATION. USE PROTECTIVE METHODS AND MATERIALS, INCLUDING TEMPORARY COVERINGS, RECOMMENDED IN WRITING BY MVE-CONTROL SYSTEM MANUFACTURER.
G. DO NOT ALLOW SUBSEQUENT PREINSTALLATION EXAMINATION AND TESTING FOR FLOOR COVERING INSTALLATION TO DAMAGE, PUNCTURE, OR OTHERWISE COMPROMISE THE MVE-CONTROL SYSTEM MEMBRANE.

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA.

1.2 PERFORMANCE REQUIREMENTS

A. FIRE-RESISTANCE-RATED ASSEMBLIES: PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLIES PER ASTM E 119 BY AN INDEPENDENT TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
B. STC-RATED ASSEMBLIES: PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLIES PER ASTM E 90 AND CLASSIFIED PER ASTM E 413 BY A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY.

1.3 METAL FRAMING AND SUPPORTS

A. STEEL FRAMING MEMBERS, GENERAL: ASTM C 754.
1. STEEL SHEET COMPONENTS: ASTM C 645. THICKNESS SPECIFIED IS MINIMUM UNCOATED BASE-METAL THICKNESS.
2. PROTECTIVE COATING: ASTM A 653/A 653M, G40, HOT-DIP GALVANIZED ZINC COATING.

B. FRAMING SYSTEMS:
1. STUDS AND RUNNERS: IN DEPTH INDICATED AND 0.018 INCH THICK UNLESS OTHERWISE INDICATED.
2. FLAT STRAP AND BACKING: 0.018 INCH THICK.
3. HAT-SHAPED, RIGID FURRING CHANNELS: IN DEPTH INDICATED AND
4. 0.018 INCH THICK.
5. RESILIENT FURRING CHANNELS: 1/2 INCH DEEP, WITH SINGLE- OR DOUBLE-LEG CONFIGURATION.
6. COLD-ROLLED FURRING CHANNELS: 0.053 INCH THICK, 3/4 INCH DEEP
7. Z-FURRING: IN DEPTH REQUIRED BY INSULATION, 1-1/4-INCH FACE FLANGE, 7/8-INCH WALL-ATTACHMENT FLANGE, AND 0.018 INCH THICK.

C. SUSPENSION SYSTEMS:
1. TIE WIRE: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER, 0.062-INCH DIAMETER, OR DOUBLE STRAND OF 0.048-INCH- DIAMETER WIRE.
2. WIRE HANGERS: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER, AND 0.162-INCH DIAMETER.
3. CARRYING CHANNELS: COLD-ROLLED STEEL, 0.053 INCH THICK, 2-1/2 INCHES DEEP.
4. FURRING CHANNELS: 3/4-INCH-DEEP, COLD-ROLLED CHANNELS.
5. 0.053 INCH THICK.

1.4 ACCESSORIES

A. GENERAL: COMPLY WITH REFERENCED INSTALLATION STANDARDS.
1. FASTENERS FOR METAL FRAMING: OF TYPE, MATERIAL, SIZE, CORROSION RESISTANCE, HOLDING POWER, AND OTHER PROPERTIES REQUIRED TO FASTEN STEEL MEMBERS TO SUBSTRATES.

B. ISOLATION STRIP AT EXTERIOR WALLS: ASPHALT FELT OR FOAM GASKET.

1.5 INSTALLATION

A. INSTALL STEEL FRAMING TO COMPLY WITH ASTM C 754."
1. GYPSUM BOARD ASSEMBLIES: ALSO COMPLY WITH ASTM C 840.

B. INSTALL SUPPLEMENTARY FRAMING, AND BLOCKING TO SUPPORT FIXTURES, EQUIPMENT SERVICES, HEAVY TRIM, GRAB BARS, TOILET ACCESSORIES, FURNISHINGS, OR SIMILAR CONSTRUCTION.
C. ISOLATE STEEL FRAMING FROM BUILDING STRUCTURE, EXCEPT AT FLOOR, TO PREVENT TRANSFER OF LOADING IMPOSED BY STRUCTURAL MOVEMENT.
1. WHERE STUDS ARE INSTALLED DIRECTLY AGAINST EXTERIOR WALLS, INSTALL ISOLATION STRIP BETWEEN STUDS AND WALL.

D. FIRE-RESISTANCE-RATED ASSEMBLIES: COMPLY WITH REQUIREMENTS OF LISTED ASSEMBLIES.
E. INSTALL SUSPENSION SYSTEMS LEVEL TO WITHIN 1/8 INCH IN 12 FEET.

SECTION 092900 - GYPSUM BOARD

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA.

1.2 PERFORMANCE REQUIREMENTS

A. FIRE-RESISTANCE-RATED ASSEMBLIES: PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLIES PER ASTM E 119 BY AN INDEPENDENT TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

B. STC-RATED ASSEMBLIES: PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLIES PER ASTM E 90 AND CLASSIFIED PER ASTM E 413 BY A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY.

1.3 PANEL PRODUCTS

A. PROVIDE IN MAXIMUM LENGTHS AVAILABLE TO MINIMIZE END-TO-END BUTT JOINTS.

B. INTERIOR GYPSUM BOARD: ASTM C 1396/C 1396M, IN THICKNESS INDICATED, WITH MANUFACTURER'S STANDARD EDGES. TYPE X WHERE INDICATED SAG-RESISTANT TYPE FOR CEILING SURFACES.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   A. AMERICAN GYPSUM.
   B. GEORGIA-PACIFIC BUILDING PRODUCTS.
   C. NATIONAL GYPSUM COMPANY.
   D. USG CORPORATION.

C. WATER-RESISTANT GYPSUM BACKING BOARD: ASTM C 1396/C 1396M, IN THICKNESS INDICATED. TYPE X WHERE REQUIRED FOR FIRE-RESISTANCE-RATED ASSEMBLIES AND WHERE INDICATED.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   A. AMERICAN GYPSUM.
   B. CERTAINTEED CORPORATION.
   C. GEORGIA-PACIFIC BUILDING PRODUCTS.
   D. USG CORPORATION.

D. GLASS-MAT, WATER-RESISTANT GYPSUM BACKING BOARD: ASTM C 1178/C 1178M, OF THICKNESS INDICATED. TYPE X WHERE REQUIRED FOR FIRE-RESISTANCE-RATED ASSEMBLIES AND WHERE INDICATED.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   A. CERTAINTEED CORPORATION.
   B. GEORGIA-PACIFIC BUILDING PRODUCTS.
   C. NATIONAL GYPSUM COMPANY.
   D. USG CORPORATION.
   E. CEMENTITIOUS BACKER UNITS: ANSI A118.9, ASTM C 1288, OR ASTM C 1325.
      1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
         A. C-CURE.
         B. CERTAINTEED CORPORATION.
         C. CUSTOM BUILDING PRODUCTS.
         D. JAMES HARDIE BUILDING PRODUCTS, INC.
         E. NATIONAL GYPSUM COMPANY.
         F. USG CORPORATION.

1.4 ACCESSORIES

A. TRIM ACCESSORIES: ASTM C 1047, FORMED FROM GALVANIZED OR ALUMINUM-COATED STEEL SHEET, ROLLED ZINC, PLASTIC, OR PAPER-FACED GALVANIZED-STEEL SHEET. FOR EXTERIOR TRIM, USE ACCESSORIES FORMED FROM HOT-DIP GALVANIZED-STEEL SHEET, PLASTIC, OR ROLLED ZINC.
1. PROVIDE CORNERBEAD AT OUTSIDE CORNERS UNLESS OTHERWISE INDICATED.
2. PROVIDE LC-BEAD (J-BEAD) AT EXPOSED PANEL EDGES.
3. PROVIDE CONTROL JOINTS WHERE INDICATED.

B. ALUMINUM ACCESSORIES: EXTRUDED-ALUMINUM ACCESSORIES INDICATED WITH
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   A. FRY REGLET CORPORATION.
   B. GORDON, INC.
   C. PITTCON INDUSTRIES.

C. JOINT-TREATMENT MATERIALS: ASTM C 475/C 475M.
1. JOINT TAPE: PAPER UNLESS OTHERWISE RECOMMENDED BY PANEL MANUFACTURER.
2. JOINT COMPOUNDS: SETTING-TYPE COMPOUNDS.
3. SKIM COAT: FOR FINAL COAT OF LEVEL 5 FINISH, USE SETTING-TYPE, SANDABLE TOPPING COMPOUND.
4. CEMENTITIOUS BACKER UNIT JOINT-TREATMENT MATERIALS: PRODUCTS RECOMMENDED BY CEMENTITIOUS BACKER UNIT MANUFACTURER.

D. LAMINATING ADHESIVE: ADHESIVE OR JOINT COMPOUND RECOMMENDED FOR DIRECTLY ADHERING GYPSUM PANELS TO CONTINUOUS SUBSTRATE.

E. ACOUSTICAL SEALANT FOR EXPOSED AND CONCEALED JOINTS: NONSAG, PAINTABLE, NONSTAINING LATEX SEALANT COMPLYING WITH ASTM C 834.

F. SOUND-ATTENUATION BLANKETS: ASTM C 665, TYPE I (UNFACED).

1.5 INSTALLATION

A. INSTALL GYPSUM BOARD TO COMPLY WITH ASTM C 840.
1. ISOLATE GYPSUM BOARD ASSEMBLIES FROM ABUTTING STRUCTURAL AND MASONRY WORK. PROVIDE EDGE TRIM AND ACOUSTICAL SEALANT.
2. SINGLE-LAYER FASTENING METHODS: FASTEN GYPSUM PANELS TO SUPPORTS WITH SCREWS.
3. MULTILAYER FASTENING METHODS: FASTEN BASE LAYERS WITH SCREWS, AND FACE LAYERS TO BASE LAYERS WITH ADHESIVE AND SUPPLEMENTARY FASTENERS.

B. INSTALL CEMENTITIOUS BACKER UNITS TO COMPLY WITH ANSI A108.11.

C. FIRE-RESISTANCE-RATED ASSEMBLIES: COMPLY WITH REQUIREMENTS OF LISTED ASSEMBLIES.

D. FINISHING GYPSUM BOARD: ASTM C 840.
1. AT CONCEALED AREAS, UNLESS A HIGHER LEVEL OF FINISH IS REQUIRED FOR FIRE-RESISTANCE-RATED ASSEMBLIES, PROVIDE LEVEL 1 FINISH: EMBED TAPE AT JOINTS.
2. AT SUBSTRATES FOR TILE, PROVIDE LEVEL 2 FINISH: EMBED TAPE AND APPLY SEPARATE FIRST COAT OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES.
3. UNLESS OTHERWISE INDICATED, PROVIDE LEVEL 4 FINISH: EMBED TAPE AND APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES.
4. WHERE INDICATED, PROVIDE LEVEL 5 FINISH: EMBED TAPE AND APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES. APPLY SKIM COAT TO ENTIRE SURFACE.

E. GLASS-MAT, WATER-RESISTANT BACKING PANELS: FINISH ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

F. CEMENTITIOUS BACKER UNITS: FINISH ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

SECTION 093013 - CERAMIC TILING

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA AND SAMPLES.

B. OBTAIN TILE OF EACH TYPE AND COLOR OR FINISH FROM SAME PRODUCTION RUN FOR EACH CONTIGUOUS AREA.

C. DELIVER AND STORE PACKAGED MATERIALS IN ORIGINAL CONTAINERS WITH SEALS UNBROKEN AND LABELS INTACT UNTIL TIME OF USE. COMPLY WITH REQUIREMENTS IN ANSI A137.1 FOR LABELING CERAMIC TILE PACKAGES.

1.2 CERAMIC TILE

A. CERAMIC TILE THAT COMPLIES WITH ANSI A137.1.

B. PRODUCTS ARE AS INDICATED.
1. TRIM UNITS: COORDINATED WITH SIZES AND COURSING OF ADJOINING FLAT TILE AND MATCHING CHARACTERISTICS OF ADJOINING FLAT TILE:
   A. BASE: COVED.
   B. BASE CAP FOR THINSET MORTAR INSTALLATIONS: SURFACE BULLNOSE.
   C. WAINSCOT CAP FOR THINSET MORTAR INSTALLATIONS: SURFACE BULLNOSE.
   D. EXTERNAL CORNERS FOR THINSET MORTAR INSTALLATIONS: SURFACE BULLNOSE.
   E. INTERNAL CORNERS: COVE.

1.3 INSTALLATION MATERIALS

A. CEMENTITIOUS BACKER UNITS: ANSI A118.9 OR ASTM C 1325, 5/8 inch THICK.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   A. C-CURE.
   B. CUSTOM BUILDING PRODUCTS.
   C. GEORGIA-PACIFIC BUILDING PRODUCTS.
   D. USG CORPORATION.

B. FIBER-CEMENT UNDERLAYMENT: ASTM C 1288, 5/8 inch THICK.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   A. CERTAINTEED CORPORATION.
   B. JAMES HARDIE BUILDING PRODUCTS, INC.

C. WATERPROOFING MEMBRANES FOR THINSET INSTALLATIONS: ANSI A118.10, FABRIC-FACED CHLORINATED POLYETHYLENE, PVC, OR POLYETHYLENE SHEET PRODUCT OR UNREINFORCED LIQUID-LATEX OR ELASTOMERIC POLYMER PRODUCT.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
   A. SCHLUTER, DITRA SHEET MEMBRANE.
   B. CUSTROM BUILDING PRODUCTS; RED GUARD WATERPROOFING AND CRACK PREVENTION MEMBRANE.

1.4 CRACK ISOLATION MEMBRANE

A. GENERAL: MANUFACTURER'S STANDARD PRODUCT, SELECTED FROM THE FOLLOWING, THAT COMPLIES WITH ANSI A118.12 FOR STANDARD PERFORMANCE AND IS RECOMMENDED BY THE MANUFACTURER FOR THE APPLICATION INDICATED. INCLUDE REINFORCEMENT AND ACCESSORIES RECOMMENDED BY MANUFACTURER.
1. FABRIC-REINFORCED, FLUID-APPLIED MEMBRANE: SYSTEM CONSISTING OF LIQUID-LATEX RUBBER OR ELASTOMERIC POLYMER AND FABRIC REINFORCEMENT.
   A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) CUSTOM BUILDING PRODUCTS.
      2) LATICRETE SUPERCAP, LLC.
      3) MAPEI CORPORATION.

B. SETTING AND GROUTING MATERIALS: COMPLY WITH MATERIAL STANDARDS IN ANSI'S "SPECIFICATIONS FOR THE INSTALLATION OF CERAMIC TILE" THAT APPLY TO MATERIALS AND METHODS INDICATED.
1. THINSET MORTAR TYPE: STANDARD DRY-SET, ANSI A118.1 MORTAR; WHITE, UNLESS OTHERWISE INDICATED.
   A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) BONSAL AMERICAN, AN OLDCASTLE COMPANY.
      2) C-CURE.
      3) CUSTOM BUILDING PRODUCTS.
      4) LATICRETE SUPERCAP, LLC.
      5) MAPEI CORPORATION.
2. THINSET MORTAR TYPE FOR WOOD SUBFLOORS: EGP (EXTERIOR GLUE PLYWOOD) LATEX-PORTLAND CEMENT MORTAR, ANSI A118.11.
3. WATER-CLEANABLE, TILE-SETTING EPOXY:
   A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) BONSAL AMERICAN, AN OLDCASTLE COMPANY.
      2) C-CURE.
      3) CUSTOM BUILDING PRODUCTS.
      4) LATICRETE SUPERCAP, LLC.
      5) MAPEI CORPORATION.
4. GROUT TYPE: STANDARD CEMENT GROUT, ANSI A118.6, UNLESS OTHERWISE INDICATED.
   A. POLYMER-FORTIFIED, CEMENTITIOUS GROUT WITH INTEGRAL COLOR; COMPLY WITH ANSI A118.7
      - LOCATION(S): INTERIOR AND EXTERIOR WALLS, EXCLUDING RESTROOM WALLS AND KITCHEN WALLS.
      - BASIS OF DESIGN: LATICRETE PERMACOLOR GROUT. REFER TO FINISH SCHEDULE FOR COLOR.

B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
   1) ARDEX AMERICAS.
   2) BOIARDI PRODUCTS CORPORATION; A QEP COMPANY.
   3) BONSAL AMERICAN, AN OLDCASTLE COMPANY.
   4) BOSTIK, INC.
   5) CUSTOM BUILDING PRODUCTS.
   6) LATICRETE SUPERCAP, LLC.
   7) MAPEI CORPORATION.
   8) SUMMITVILLE TILES, INC.

5. GROUT TYPE: WATER-CLEANABLE EPOXY, WHERE INDICATED.
   A. CHEMICAL RESISTANT, WATER CLEANABLE, EPOXY GROUT WITH INTEGRAL COLOR; COMPLY WITH ANSI A118.3
      -LOCATION(S): FLOORS, RESTROOM WALLS, KITCHEN WALLS.
      -BASIS OF DESIGN: LATICRETE SPECTRALOCK PRO PREMIUM GROUT. REFER TO FINISH SCHEDULE FOR COLOR;
      -JOINT WIDTH: 1/8" TYPICAL, UNLESS NOTED OTHERWISE.

   B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      1) ARDEX AMERICAS.
      2) BOIARDI PRODUCTS CORPORATION; A QEP COMPANY.
      3) BONSAL AMERICAN, AN OLDCASTLE COMPANY.
      4) C-CURE.
      5) CUSTOM BUILDING PRODUCTS.
      6) LATICRETE SUPERCAP, LLC.
      7) MAPEI CORPORATION.

1.5 MISCELLANEOUS MATERIALS

A. TILE CLEANER: A NEUTRAL CLEANER CAPABLE OF REMOVING SOIL AND RESIDUE WITHOUT HARMING TILE AND GROUT SURFACES, SPECIFICALLY APPROVED FOR MATERIALS AND INSTALLATIONS INDICATED BY TILE AND GROUT MANUFACTURERS.

B. FLOOR SEALER: MANUFACTURER'S STANDARD PRODUCT FOR SEALING GROUT JOINTS AND THAT DOES NOT CHANGE COLOR OR APPEARANCE OF GROUT.

1.6 INSTALLATION

A. COMPLY WITH TCNA'S "HANDBOOK FOR CERAMIC, GLASS, AND STONE TILE INSTALLATION" FOR TCNA INSTALLATION METHODS SPECIFIED IN TILE INSTALLATION SCHEDULES. COMPLY WITH PARTS OF ANSI A108 SERIES "SPECIFICATIONS FOR INSTALLATION OF CERAMIC TILE" THAT ARE REFERENCED IN TCNA INSTALLATION METHODS, ARE SPECIFIED IN TILE INSTALLATION SCHE

SECTION 095113 CONTINUE FROM SHEET A589

C. ATTACHMENT DEVICES: SIZED FOR 5 TIMES THE DESIGN LOAD INDICATED IN ASTM C 635, TABLE 1, DIRECT HUNG, UNLESS OTHERWISE INDICATED. COMPLY WITH SEISMIC DESIGN REQUIREMENTS.

D. WIRE HANGERS, BRACES, AND TIES: ZINC-COATED CARBON-STEEL WIRE; ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER.
1. SIZE: PROVIDE YIELD STRENGTH AT LEAST 3 TIMES THE HANGER DESIGN LOAD (ASTM C 635, TABLE 1, DIRECT HUNG), BUT NOT LESS THAN 0.106-INCH- DIAMETER WIRE.

1.5 INSTALLATION

A. INSTALL ACOUSTICAL CEILINGS TO COMPLY WITH ASTM C 636/C 636M AND SEISMIC DESIGN REQUIREMENTS INDICATED, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND CISCA'S "CEILING SYSTEMS HANDBOOK."
1. FIRE-RATED ASSEMBLY: INSTALL FIRE-RATED CEILING SYSTEMS ACCORDING TO TESTED FIRE-RATED DESIGN.

B. INSTALL ACOUSTICAL PANELS WITH UNDAMAGED EDGES AND FIT ACCURATELY INTO SUSPENSION SYSTEM RUNNERS AND EDGE MOLDINGS. SCRIBE AND CUT PANELS AT BORDERS AND PENETRATIONS TO PROVIDE A NEAT, PRECISE FIT.

C. ARRANGE DIRECTIONALLY PATTERNED ACOUSTICAL UNITS AS INDICATED ON DRAWINGS.

SECTION 095426 - SUSPENDED WOOD CEILINGS

1.1 SUMMARY
A. SECTION INCLUDES:
1. SOLID-WOOD, LINEAR-PANEL (PLANK) CEILINGS.

1.2 PREINSTALLATION MEETINGS
A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
B. SHOP DRAWINGS: FOR SUSPENDED WOOD CEILINGS.
1. INCLUDE REFLECTED CEILING PLANS, SECTIONS, AND DETAILS, DRAWN TO SCALE.
C. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH TYPE, COLOR, AND FINISH SPECIFIED.

1.4 INFORMATIONAL SUBMITTALS
A. PRODUCT TEST REPORTS.
B. RESEARCH REPORTS.

1.5 CLOSEOUT SUBMITTALS
A. MAINTENANCE DATA.

1.6 QUALITY ASSURANCE
A. TESTING AGENCY QUALIFICATIONS: ACCREDITED BY NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM FOR TESTING INDICATED.

1.7 WOOD VENEER, LINEAR-PANEL (PLANK) CEILING
A. PROVIDE PRODUCTS INDICATED ON FINISH PLAN.

1.8 SUSPENSION-SYSTEM HANGERS, BRACES, AND TIES
A. ATTACHMENT DEVICES: SIZE FOR 5 TIMES THE DESIGN LOAD INDICATED IN ASTM C635/C635M, TABLE 1, DIRECT HUNG, UNLESS OTHERWISE INDICATED.
1. POWER-ACTUATED FASTENERS IN CONCRETE: FASTENER SYSTEM OF TYPE SUITABLE FOR APPLICATION INDICATED, FABRICATED FROM CORROSION-RESISTANT MATERIALS, WITH CLIPS OR OTHER ACCESSORY DEVICES FOR ATTACHING HANGERS OF TYPE INDICATED, AND WITH CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO 10 TIMES THAT IMPOSED BY CEILING CONSTRUCTION AS DETERMINED BY TESTING IN ACCORDANCE WITH ASTM E1190 CONDUCTED BY A QUALIFIED TESTING AND INSPECTING AGENCY.
B. WIRE HANGERS, BRACES, AND TIES: PROVIDE WIRE COMPLYING WITH THE FOLLOWING REQUIREMENTS:
1. ZINC-COATED, CARBON-STEEL WIRE: ASTM A641/A641M, CLASS 1 ZINC COATING, SOFT TEMPER.
2. SIZE: SELECT WIRE DIAMETER SO ITS STRESS AT 3 TIMES THE HANGER DESIGN LOAD INDICATED IN ASTM C635/C635M, TABLE 1, DIRECT HUNG IS LESS THAN YIELD STRESS OF WIRE, BUT PROVIDE NOT LESS THAN 0.135-INCH- DIAMETER WIRE.
C. HANGER RODS: MILD STEEL, ZINC COATED OR PROTECTED WITH RUST-INHIBITIVE PAINT.
D. FLAT HANGERS: MILD STEEL, ZINC COATED OR PROTECTED WITH RUST-INHIBITIVE PAINT.
E. ANGLE HANGERS: ANGLES WITH LEGS NOT LESS THAN 7/8 INCH WIDE; FORMED FROM 0.04-INCH-THICK, GALVANIZED-STEEL SHEET COMPLYING WITH ASTM A653/A653M, G90 COATING DESIGNATION; WITH BOLTED CONNECTIONS AND 5/16-INCH-DIAMETER BOLTS.
F. SEISMIC STABILIZER BARS: GRID-SUSPENSION-SYSTEM MANUFACTURER'S STANDARD PERIMETER STABILIZERS DESIGNED TO ACCOMMODATE SEISMIC FORCES.
G. SEISMIC STRUTS: SUSPENSION-SYSTEM MANUFACTURER'S STANDARD COMPRESSION STRUTS DESIGNED TO ACCOMMODATE SEISMIC FORCES.

1.9 INSTALLATION
A. MEASURE EACH CEILING AREA AND ESTABLISH LAYOUT OF SUSPENDED WOODVENEER CEILINGS.
1. BALANCE BORDER WIDTHS AT OPPOSITE EDGES OF EACH CEILING.
2. AVOID USING LESS-THAN-HALF-WIDTH UNITS.
B. SUSPEND CEILING HANGERS FROM BUILDING'S STRUCTURAL MEMBERS AND AS FOLLOWS:
1. INSTALL HANGERS PLUMB AND FREE FROM CONTACT WITH INSULATION OR OTHER OBJECTS WITHIN CEILING PLENUM THAT ARE NOT PART OF SUPPORTING STRUCTURE OR OF CEILING SUSPENSION SYSTEM.
2. SPLAY HANGERS ONLY WHERE REQUIRED TO MISS OBSTRUCTIONS; OFFSET RESULTING HORIZONTAL FORCES BY BRACING, COUNTERSPLAYING, OR OTHER EQUALLY EFFECTIVE MEANS.
3. WHERE WIDTH OF DUCTS AND OTHER CONSTRUCTION WITHIN CEILING PLENUM PRODUCES HANGER SPACINGS THAT INTERFERE WITH LOCATION OF HANGERS AT SPACINGS REQUIRED TO SUPPORT STANDARD SUSPENSION-SYSTEM MEMBERS, INSTALL SUPPLEMENTAL SUSPENSION MEMBERS AND HANGERS IN FORM OF TRAPEZES OR EQUIVALENT DEVICES.
4. SECURE WIRE HANGERS TO CEILING SUSPENSION MEMBERS AND TO SUPPORTS ABOVE WITH A MINIMUM OF THREE TIGHT TURNS IN 3 INCHES. CONNECT HANGERS DIRECTLY EITHER TO STRUCTURES OR TO INSERTS, EYE SCREWS, OR OTHER DEVICES THAT ARE SECURE AND APPROPRIATE FOR SUBSTRATE TO WHICH HANGERS ARE ATTACHED AND FOR TYPE OF HANGER INVOLVED.
5. SECURE FLAT, ANGLE, CHANNEL, AND ROD HANGERS TO STRUCTURE, INCLUDING INTERMEDIATE FRAMING MEMBERS, BY ATTACHING TO INSERTS, EYE SCREWS, OR OTHER DEVICES THAT ARE SECURE AND APPROPRIATE FOR BOTH STRUCTURE TO WHICH HANGERS ARE ATTACHED AND TYPE OF HANGER INVOLVED. INSTALL HANGERS IN A MANNER THAT DOES NOT CAUSE THEM TO DETERIORATE OR FAIL DUE TO AGE, CORROSION, OR ELEVATED TEMPERATURES.
6. DO NOT SUPPORT CEILINGS DIRECTLY FROM PERMANENT METAL FORMS OR FLOOR DECK. FASTEN HANGERS TO CAST-IN-PLACE HANGER INSERTS, POWER-ACTUATED FASTENERS, OR POSTINSTALLED MECHANICAL OR ADHESIVE ANCHORS THAT EXTEND THROUGH FORMS INTO CONCRETE.
7. WHEN STEEL FRAMING DOES NOT PERMIT INSTALLATION OF HANGER WIRES AT SPACING REQUIRED, INSTALL CARRYING CHANNELS OR OTHER SUPPLEMENTAL SUPPORT FOR ATTACHMENT OF HANGER WIRES.
8. DO NOT ATTACH HANGERS TO STEEL DECK TABS.
9. DO NOT ATTACH HANGERS TO STEEL ROOF DECK. ATTACH HANGERS TO STRUCTURAL MEMBERS.
10. SPACE HANGERS NOT MORE THAN 48 INCHES O.C. ALONG EACH MEMBER SUPPORTED DIRECTLY FROM HANGERS UNLESS OTHERWISE INDICATED; PROVIDE HANGERS NOT MORE THAN 8 INCHES FROM ENDS OF EACH MEMBER.
11. SIZE SUPPLEMENTAL SUSPENSION MEMBERS AND HANGERS TO SUPPORT CEILING LOADS WITHIN PERFORMANCE LIMITS ESTABLISHED BY REFERENCED STANDARDS AND PUBLICATIONS
C. SECURE BRACING WIRES TO CEILING SUSPENSION MEMBERS AND TO SUPPORTS WITH A MINIMUM OF FOUR TIGHT TURNS IN 1-1/2 INCHES. SUSPEND BRACING FROM BUILDING'S STRUCTURAL MEMBERS AS REQUIRED FOR HANGERS AND WITHOUT ATTACHING TO PERMANENT METAL FORMS, STEEL DECK, OR STEEL DECK TABS. FASTEN BRACING WIRES INTO CONCRETE WITH CAST-IN-PLACE OR POSTINSTALLED ANCHORS.
D. INSTALL EDGE MOLDINGS AND TRIM AT PERIMETER OF CEILING AREA AND WHERE NECESSARY TO CONCEAL EDGES AND ENDS OF WOOD UNITS.
1. SCREW-ATTACH METAL MOLDINGS TO SUBSTRATE AT INTERVALS OF NOT MORE THAN 16 INCHES O.C. AND NOT MORE THAN 3 INCHES FROM ENDS, LEVELING WITH CEILING SUSPENSION SYSTEM TO A TOLERANCE OF 1/8 INCH IN 12 FEET. MITER CORNERS ACCURATELY AND CONNECT SECURELY.
E. LINEAR-CARRIER SUSPENSION SYSTEMS: INSTALL CARRIERS AT NO MORE THAN 24 INCHES O.C. ALIGNED AND SECURELY INTERLOCKED WITH ONE ANOTHER.
1. INSTALL STABILIZER CHANNELS, TEES, AND BARS AT REGULAR INTERVALS TO STABILIZE CARRIERS AND AT LIGHT FIXTURES, AIR-DISTRIBUTION EQUIPMENT, ACCESS DOORS, AND OTHER EQUIPMENT; SPACED AS STANDARD WITH MANUFACTURER FOR USE INDICATED.
2. REMOVE AND REPLACE DENTED, BENT, OR KINKED MEMBERS.
F. INSTALL WOOD VENEERCOMPONENTS AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND TO ACCOMMODATE NATURAL EXPANSION AND CONTRACTION OF WOOD PRODUCTS RESULTING FROM FLUCTUATIONS IN HUMIDITY.
G. INSTALL WOOD VENEER COMPONENTS IN COORDINATION WITH SUSPENSION SYSTEM AND MOLDINGS AND TRIM.
1. INSTALL WOOD VENEER COMPONENTS IN PATTERNS INDICATED ON DRAWINGS.
H. INSTALL FIELD-CONSTRUCTED ACCESS PANELS IN LOCATIONS INDICATED ON DRAWINGS.
I. CLEAN EXPOSED SURFACES OF CEILINGS, INCLUDING TRIM AND EDGE MOLDINGS. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR CLEANING AND TOUCHUP OF MINOR FINISH DAMAGE. REMOVE AND REPLACE CEILING COMPONENTS THAT CANNOT BE SUCCESSFULLY CLEANED AND REPAIRED TO PERMANENTLY ELIMINATE EVIDENCE OF DAMAGE, INCLUDING DENTED UNITS.

SECTION 096263 - STAINLESS STEEL WALL BASE

1.1 SUMMARY
A. SECTION INCLUDES:
1. STAINLESS STEEL COVE BASE.
2. STAINLESS STEEL STRAIGHT BASE.

1.2 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
1. INSTALLATION ACCESSORIES.
2. INSTALLATION INSTRUCTIONS.
B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS SHOWING MOUNTING DETAILS. INCLUDE CORNER DETAILS [SHOWING PRE-FORMED CORNERS, AND END CONDITIONS.
C. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH FINISH SPECIFIED.

1.3 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: INSTALLATION OF WORK OF THIS SECTION SHALL BE BY A SUBCONTRACTOR APPROVED BY THE MANUFACTURER WITH A MINIMUM OF 5 YEARS EXPERIENCE IN SIMILAR WORK OR OTHER DECORATIVE METAL INSTALLATIONS HAVING SUCCESSFUL IN-SERVICE PERFORMANCE.

1.4 PROJECT/SITE CONDITIONS
A. ENVIRONMENTAL REQUIREMENTS: AREAS TO RECEIVE WALL BASE SHALL BE ENCLOSED WITH HVAC IN OPERATION AND MAINTAINING TEMPERATURES WITHIN RANGE EXPECTED DURING BUILDING OCCUPANCY TO AVOID THERMAL DIMENSIONAL CHANGE IN LENGTHS OF MATERIAL AFTER INSTALLATION.

1.5 MAINTENANCE
A. EXTRA MATERIALS: FURNISH 8 LINEAL FEET OF EACH TYPE OF WALL BASE SPECIFIED AND 2 PREFORMED CORNER UNITS OF EACH TYPE SPECIFIED FOR OWNERS MAINTENANCE USE.

1.6 STAINLESS STEEL WALL BASE
A. STAINLESS STEEL SHEET: ASTM A240, TYPE 304.
B. THICKNESS: 0.0625 INCH.
C. HEIGHT: AS INDICATED ON DRAWINGS.
D. FINISH: NO. 4 SATIN IN ACCORDANCE WITH ASTM A480.
E. PREFORMED CORNER UNITS: PROVIDE PREFORMED INSIDE AND OUTSIDE ORNER UNITS.

1.7 INSTALLATION ACCESSORIES
A. ADHESIVE: MANUFACTURER'S STANDARD VOC COMPLIANT POLYMER ADHESIVE SUPPLIED IN 3.5 GALLON BUCKET.

1.8 FABRICATION
A. STAINLESS STEEL WALL BASE AND CORNERS SHALL BE FACTORY FORMED FROM STAINLESS STEEL SHEET WITH DIRECTIONAL POLISH GRAIN ORIENTED PARALLEL WITH LENGTH.
1. EDGES SHALL BE FREE OF BURRS.
2. STANDARD LENGTH: 8'-0".
3. FABRICATE EXPOSED ENDS WITH FILLER TO MATCH PROFILE OF COVER BASE.
4. PREFORMED CORNERS SHALL BE 90 DEGREE, OR AS OTHERWISE REQUIRED TO SUITE CORNER DEGREE INDICATED ON DRAWINGS. FABRICATE PREFORMED CORNERS WITH MINIMUM 4 INCH LEGS.

1.9 EXAMINATION
A. VERIFICATION OF CONDITIONS: EXAMINE SUBSURFACES TO RECEIVE WORK AND REPORT DETRIMENTAL CONDITIONS IN WRITING TO ARCHITECT. COMMENCEMENT OF WORK WILL BE CONSTRUED AS ACCEPTANCE OF SUBSURFACES.
1. PAINTED WALLS SHALL BE DRY AND THOROUGHLY CURED PRIOR TO APPLICATION OF STAINLESS STEEL WALL BASE.
2. PERFORM ADHESION TEST ON PAINTED DRYWALL OR PLASTER WALLS TO RECEIVE STAINLESS STEEL WALL BASE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS TO VERIFY PROPER ADHESION.

1.10 PREPARATION
A. SURFACE PREPARATION: SURFACES TO RECEIVE STAINLESS STEEL WALL BASE SHALL BE CLEANED TO REMOVE ALL DUST, DEBRIS, AND OTHER CONTAMINATES THAT WOULD INTERFERE WITH ADHESIVE BOND.
B. PLACE STAINLESS STEEL BASE AND ACCESSORY UNITS IN LOCATIONS/ROOMS WHERE MATERIAL IS TO BE INSTALLED AND ACCLIMATE TO BUILDING CONDITIONS AS SPECIFIED HEREIN IN PROJECT/SITE CONDITIONS ARTICLE FOR A MINIMUM PERIOD OF 24 HOURS PRIOR TO INSTALLATION.

1.11 WALL BASE INSTALLATION
A. ADHESIVE INSTALLATION: INSTALL STAINLESS STEEL WALL BASE WITH ADHESIVE IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
B. INSTALL BASE ACCURATELY PLACED IN PROPER LOCATION, LEVEL, AND IN PROPER ALIGNMENT WITH ADJOINING WORK AND APPLIED FINISHES. INSTALL RESILIENT BASE IN LENGTHS AS LONG AS PRACTICAL WITHOUT GAPS AT SEAMS AND WITH TOPS OF ADJACENT PIECES ALIGNED.
1. FIT FIELD CONNECTIONS ACCURATELY TOGETHER TO FORM HAIRLINE JOINTS.
C. FIELD FABRICATED CORNERS: WHERE PREFORMED CORNERS ARE NOT UTILIZED, FIELD FABRICATE CORNERS BY V-NOTCHING BACK OF BASE TO 1/2 DEPTH MAXIMUM OF THICKNESS OF MATERIAL AND BEND TO FORM TIGHTLY TO CORNER SUBSTRATE.

1.12 DAMAGE AND REPAIR
A. UPON COMPLETION OF THE INSTALLATION, VISUALLY CHECK EXPOSED SURFACES OF THE WORK OF THIS SECTION, AND TOUCH UP SCRATCHES AND DAMAGED SURFACES BY FIELD POLISHING SO THEY ARE COMPLETELY INVISIBLE TO THE UNAIDED EYE FROM A DISTANCE OF FIVE FEET.

1.13 CLEANING AND PROTECTION
A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR CLEANING AND PROTECTING STAINLESS STEEL BASE PRODUCTS TO REMOVE ALL TRACES OF DUST, DIRT, ADHESIVE, AND OTHER FOREIGN MATERIALS.
B. DURING THE COURSE OF THE WORK AND ON COMPLETION, REMOVE AND DISPOSE OF EXCESS MATERIALS, EQUIPMENT AND DEBRIS AWAY FROM PREMISES. LEAVE WORK IN CLEAN CONDITION.

SECTION 096723 - RESINOUS FLOORING

1.1 SUMMARY
A. SECTION INCLUDES:
1. RESINOUS FLOORING.

1.2 PREINSTALLATION MEETINGS
A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
B. SAMPLES: FOR EACH RESINOUS FLOOR SYSTEM REQUIRED AND FOR EACH COLOR AND TEXTURE SPECIFIED.

1.4 INFORMATIONAL SUBMITTALS
A. MATERIAL CERTIFICATES.
B. MATERIAL TEST REPORTS.

1.5 CLOSEOUT SUBMITTALS
A. MAINTENANCE DATA.

1.6 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: AN AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED BY MANUFACTURER.
B. MOCKUPS: BUILD MOCKUPS TO VERIFY SELECTIONS MADE UNDER SAMPLE SUBMITTALS AND TO DEMONSTRATE AESTHETIC EFFECTS AND SET QUALITY STANDARDS FOR MATERIALS AND EXECUTION.
1. APPLY FULL-THICKNESS MOCKUPS ON 96-INCH- SQUARE FLOOR AREA SELECTED BY ARCHITECT.
a. INCLUDE 96-INCH LENGTH OF INTEGRAL COVE BASE WITH INSIDE AND OUTSIDE CORNER.
2. PROVIDE THREE SECTIONS ON MOCKUP, EACH WITH GREATER SLIP RESISTANCE, BY SEEDING MORE SAND WITH 20/40 MESH. ARCHITECT WILL SELECT WHICH LEVEL OF SLIP RESISTANCE WILL BE PROVIDED.
3. SIMULATE FINISHED LIGHTING CONDITIONS FOR ARCHITECT'S REVIEW OF MOCKUPS.
4. APPROVAL OF MOCKUPS DOES NOT CONSTITUTE APPROVAL OF DEVIATIONS FROM THE CONTRACT DOCUMENTS CONTAINED IN MOCKUPS UNLESS ARCHITECT SPECIFICALLY APPROVES SUCH DEVIATIONS IN WRITING.
5. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, APPROVED MOCKUPS MAY BECOME PART OF THE COMPLETED WORK IF UNDISTURBED AT TIME OF SUBSTANTIAL COMPLETION PRODUCTS.

1.7 PERFORMANCE REQUIREMENTS
A. FLAMMABILITY: SELF-EXTINGUISHING IN ACCORDANCE WITH ASTM D635.

1.8 RESINOUS FLOORING
A. RESINOUS FLOORING SYSTEM: ABRASION-, IMPACT-, AND CHEMICAL-RESISTANT, AGGREGATE-FILLED, RESIN-BASED MONOLITHIC FLOOR SURFACING DESIGNED TO PRODUCE A SEAMLESS FLOOR AND INTEGRAL COVE BASE.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE FOLLOWING:
a. DURAFLEX, INC., POLYCRETE MDB WITH TF PLUS TOPCOAT WITH ELAST-O-COAT.
B. SYSTEM CHARACTERISTICS:
1. COLOR AND PATTERN: AS INDICATED BY MANUFACTURER'S PRODUCT DESIGNATION.
2. WEARING SURFACE: TEXTURED FOR SLIP RESISTANCE.
3. OVERALL SYSTEM THICKNESS: 1/4 INCH.
C. PRIMER: TYPE RECOMMENDED IN WRITING BY RESINOUS FLOORING MANUFACTURER FOR SUBSTRATE AND RESINOUS FLOORING SYSTEM INDICATED.
1. PRODUCTS:
a. DUR-A-GLAZE MVP PRIMER RESIN AND HARDENER.
2. FORMULATION DESCRIPTION: 100 PERCENT SOLIDS.
D. WATERPROOFING MEMBRANE: TYPE RECOMMENDED IN WRITING BY RESINOUS FLOORING MANUFACTURER FOR SUBSTRATE AND RESINOUS FLOORING SYSTEM INDICATED.
1. PRODUCTS:
a. DUR-A-FLEX, INC, ELAST-O-COAT RESIN AND HARDENER.
2. FORMULATION DESCRIPTION: 100 PERCENT SOLIDS.
E. REINFORCING MEMBRANE: FLEXIBLE RESIN FORMULATION THAT IS RECOMMENDED IN WRITING BY RESINOUS FLOORING MANUFACTURER FOR SUBSTRATE AND RESINOUS FLOORING SYSTEM INDICATED AND THAT INHIBITS SUBSTRATE CRACKS FROM REFLECTING THROUGH RESINOUS FLOORING.
F. PATCHING AND FILL MATERIAL: RESINOUS PRODUCT OF OR APPROVED BY RESINOUS FLOORING MANUFACTURER AND RECOMMENDED IN WRITING BY MANUFACTURER FOR INSTALLATION INDICATED.
1. PRODUCTS:
a. SHALLOW FILL AND PATCHING: DUR-A-FLEX, INC. POLY-CRETE MD (UP TO ¼ INCH)..
b. DEEP FILL AND SLOPING MATERIAL (OVER ¼ INCH): DUR-A-FLEX, INC. POLY-CRETE WR.
G. TOPPING:
1. PRODUCTS:
a. DUR-A-FLEX, INC, POLY-CRETE MD RESIN, HARDENER AND AGGREGATE.
2. RESIN: URETHANE.
3. FORMULATION DESCRIPTION: 100 PERCENT SOLIDS.
4. TYPE: PIGMENTED.
5. THICKNESS OF COAT: 3/16 INCH.
H. TOPCOATS: SEALING OR FINISH COATS.
1. PRODUCTS:
a. DUR-A-FLEX, INC. POLY-CRETE COLOR-FAST RESIN, HARDENER AND POWDER AGGREGATE .
2. RESIN: URETHANE.
3. FORMULATION DESCRIPTION: 100 PERCENT SOLIDS.
4. TYPE: PIGMENTED.
5. NUMBER OF COATS: ONE.
6. TOTAL RESINOUS FLOOR SYSTEM THICKNESS AFTER TOPPING COAT: 1/4 INCH.
7. FINISH: MATTE.

1.9 PREPARATION
A. PREPARE AND CLEAN SUBSTRATES IN ACCORDANCE WITH RESINOUS FLOORING MANUFACTURER'S WRITTEN INSTRUCTIONS FOR SUBSTRATE INDICATED TO ENSURE ADHESION.
B. CONCRETE SUBSTRATES: PROVIDE SOUND CONCRETE SURFACES FREE OF LAITANCE, GLAZE, EFFLORESCENCE, CURING COMPOUNDS, FORM-RELEASE AGENTS, DUST, DIRT, GREASE, OIL, AND OTHER CONTAMINANTS INCOMPATIBLE WITH RESINOUS FLOORING.
1. ROUGHEN CONCRETE SUBSTRATES AS FOLLOWS:
a. SHOT-BLAST SURFACES WITH AN APPARATUS THAT ABRADES THE CONCRETE SURFACE, CONTAINS THE DISPENSED SHOT WITHIN THE APPARATUS, AND RECIRCULATES THE SHOT BY VACUUM PICKUP.
b. COMPLY WITH REQUIREMENTS IN SSPC-SP 13/NACE NO. 6, WITH A CONCRETE SURFACE PROFILE OF 3 OR GREATER IN ACCORDANCE WITH ICRI TECHNICAL GUIDELINE NO. 310.2R, UNLESS MANUFACTURER'S WRITTEN INSTRUCTIONS ARE MORE STRINGENT.
2. REPAIR DAMAGED AND DETERIORATED CONCRETE IN ACCORDANCE WITH RESINOUS FLOORING MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. MOISTURE TESTING: PERFORM TESTS SO THAT EACH TEST AREA DOES NOT EXCEED 1000 SQ. FT., AND PERFORM NO FEWER THAN THREE TESTS IN EACH INSTALLATION AREA AND WITH TEST AREAS EVENLY SPACED IN INSTALLATION AREAS.
a. ANHYDROUS CALCIUM CHLORIDE TEST: ASTM F1869. PROCEED WITH INSTALLATION ONLY AFTER SUBSTRATES HAVE MAXIMUM MOISTURE-VAPOR-EMISSION RATE OF 3 LB OF WATER/1000 SQ. FT. IN 24 HOURS.
b. RELATIVE HUMIDITY TEST: USING IN-SITU PROBES, ASTM F2170. PROCEED WITH INSTALLATION ONLY AFTER SUBSTRATES HAVE A MAXIMUM 75 PERCENT RELATIVE HUMIDITY LEVEL MEASUREMENT.
4. ALKALINITY AND ADHESION TESTING: PERFORM TESTS RECOMMENDED IN WRITING BY RESINOUS FLOORING MANUFACTURER. PROCEED WITH INSTALLATION ONLY AFTER SUBSTRATE ALKALINITY IS NOT LESS THAN 6 OR MORE THAN 8 PH UNLESS OTHERWISE RECOMMENDED IN WRITING BY FLOORING MANUFACTURER,
C. PATCHING AND FILLING: USE PATCHING AND FILL MATERIAL TO FILL HOLES AND DEPRESSIONS IN SUBSTRATES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
1. CONTROL JOINT TREATMENT: TREAT CONTROL JOINTS AND OTHER NONMOVING SUBSTRATE CRACKS TO PREVENT CRACKS FROM REFLECTING THROUGH RESINOUS FLOORING IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
D. RESINOUS MATERIALS: MIX COMPONENTS AND PREPARE MATERIALS IN ACCORDANCE WITH RESINOUS FLOORING MANUFACTURER'S WRITTEN INSTRUCTIONS.

1.10 INSTALLATION
A. APPLY COMPONENTS OF RESINOUS FLOORING SYSTEM IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS TO PRODUCE A UNIFORM, MONOLITHIC WEARING SURFACE OF THICKNESS SPECIFIED.
B. PRIMER: APPLY PRIMER OVER PREPARED SUBSTRATE AT SPREADING RATE RECOMMENDED IN WRITING BY MANUFACTURER.
C. WATERPROOFING MEMBRANE: APPLY WATERPROOFING MEMBRANE OVER ENTIRE SUBSTRATE SURFACE, IN THICKNESS RECOMMENDED IN WRITING BY MANUFACTURER.
1. APPLY WATERPROOFING MEMBRANE TO INTEGRAL COVE BASE SUBSTRATES.
D. REINFORCING MEMBRANE: APPLY REINFORCING MEMBRANE TO SUBSTRATE CRACKS.
E. FIELD-FORMED INTEGRAL COVE BASE: APPLY COVE BASE MIX TO WALL SURFACES BEFORE APPLYING FLOORING COATS. APPLY IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS, INCLUDING THOSE FOR TAPING, MIXING, PRIMING, TROWELING, SANDING, AND TOPCOATING OF COVE BASE. ROUND INTERNAL AND EXTERNAL CORNERS.
1. INTEGRAL COVE BASE: 4 INCHES HIGH.
F. SELF-LEVELING BODY COATS: APPLY SELF-LEVELING SLURRY BODY COATS IN THICKNESS SPECIFIED FOR FLOORING SYSTEM.
1. AGGREGATES: BROADCAST AGGREGATES AT RATE RECOMMENDED IN WRITING BY MANUFACTURER. AFTER RESIN IS CURED, REMOVE EXCESS AGGREGATES TO PROVIDE SURFACE TEXTURE INDICATED.
G. TROWELED OR SCREEDED BODY COATS: APPLY TROWELED OR SCREEDED BODY COATS IN THICKNESS SPECIFIED FOR FLOORING SYSTEM. HAND OR POWER TROWEL AND GROUT TO FILL VOIDS. WHEN BODY COATS ARE CURED, REMOVE TROWEL MARKS AND ROUGHNESS USING METHOD RECOMMENDED IN WRITING BY MANUFACTURER.
H. GROUT COAT: APPLY GROUT COAT TO FILL VOIDS IN SURFACE OF FINAL BODY COAT.
I. TOPCOATS: APPLY TOPCOATS IN NUMBER INDICATED FOR FLOORING SYSTEM SPECIFIED, AT SPREADING RATES RECOMMENDED IN WRITING BY MANUFACTURER, AND TO PRODUCE WEARING SURFACE SPECIFIED.
J. PROTECT RESINOUS FLOORING FROM DAMAGE AND WEAR DURING THE REMAINDER OF CONSTRUCTION PERIOD. USE PROTECTIVE METHODS AND MATERIALS, INCLUDING TEMPORARY COVERING, RECOMMENDED IN WRITING BY RESINOUS FLOORING MANUFACTURER.

SECTION 097813 - STAINLESS STEEL SHEET WALL PANELS

1.1 SUMMARY
A. STAINLESS STEEL WALL PANELS FOR WALL PROTECTION.

1.2 SUBMITTALS
A. PRODUCT DATA FOR EACH SYSTEM COMPONENT AND INSTALLATION ACCESSORY REQUIRED, INCLUDING INSTALLATION METHODS WITH THE APPROPRIATE ADHESIVES FOR EACH TYPE OF SUBSTRATE.
B. SHOP DRAWINGS SHOWING LOCATIONS, EXTENT AND INSTALLATION DETAILS OF WALL COVERING PRODUCTS.
C. SAMPLES FOR VERIFICATION OF COLOR, TEXTURE, PATTERN, AND THICKNESS.
D. MAINTENANCE DATA FOR WALL PROTECTION SYSTEM COMPONENTS.

1.3 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: ENGAGE AN INSTALLER WHO HAS NO LESSON THREE YEARS EXPERIENCE IN INSTALLATION OF SYSTEMS SIMILAR IN COMPLEXITY TO THOSE REQUIRED FOR THIS PROJECT.
B. MANUFACTURES QUALIFICATIONS: NOT LESSON FIVE YEARS EXPERIENCE IN THE PRODUCTION OF SPECIFIED PRODUCTS AND A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.
C. FIRE PERFORMANCE CHARACTERISTICS: PROVIDE STAINLESS STEEL COMPONENTS TESTED IN ACCORDANCE WITH ASTM E 84 FOR CLASS A/1 FIRE CHARACTERISTICS.
D. SINGLE SOURCE RESPONSIBILITIES: PROVIDE ALL COMPONENTS OF A WALL PROTECTION SYSTEM MANUFACTURED BY THE SAME COMPANY TO ENSURE COMPATIBILITY OF COLOR, TEXTURE, AND PHYSICAL PROPERTIES.

1.4 PROJECT CONDITIONS
A. ENCLOSE AND WEATHERPROOF INSTALLATION AREAS BEFORE BEGINNING THE INSTALLATION.

1.5 WARRANTY
A. MANUFACTURER'S STANDARD LIFETIME WARRANTY AGAINST MATERIAL AND MANUFACTURING DEFECTS.

1.6 MANUFACTURERS
1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY CONSTRUCTION SPECIALTIES, OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
a. INPRO CORPORATION..

1.7 MANUFACTURED UNITS
A. STAINLESS STEEL WALL PANELS
1. PROVIDE STAINLESS STEEL WALL PANEL SYSTEMS THAT INCLUDE PANELS, OUTSIDE CORNERS AND INSIDE CORNERS. PANEL SYSTEM SHALL INCLUDE STAINLESS STEEL PANELS THAT HAVE RECESSED OVERLAP JOINTS THAT MAINTAIN PANEL FLATNESS AND MINIMIZES PANEL PROTRUSION.
2. PANEL SIZE: MAXIMUM 4' X 10',
3. PANEL THICKNESS: 0.0625 INCH.
4. FINISH: STAINLESS STEEL TYPE 304 WITH #4 SATIN FINISH.
5. TEXTURE: SMOOTH.
B. STAINLESS STEEL OUTSIDE CORNERS:
1. 1. 2" X 2", 0.0625 INCH THICK. MAXIMUM HEIGHT 96", EDGES SHALL HAVE AN 11" TAPER.
a. FINISH: MATCH STAINLESS STEEL WALL PANELS.
C. STAINLESS STEEL INSIDE CORNERS:
1. 1. 2" X 2", 0.0625 INCH THICK. MAXIMUM HEIGHT 96", EDGES SHALL HAVE AN 11" TAPER.
a. FINISH: MATCH STAINLESS STEEL WALL PANELS.

1.8 FINISHES
A. COMPLY WITH NAAMM "METAL FINISHES MANUAL" FOR RECOMMENDATIONS RELATIVE TO APPLICATIONS AND DESIGNATIONS OF FINISHES.

1.9 AUXILIARY MATERIALS
A. ADHESIVE: ADHESIVE RECOMMENDED IN WRITING BY PANEL MANUFACTURER FOR DIRECTLY ADHERING PANELS AND CORNER GUARDS TO CONTINUOUS SUBSTRATE.
1. USE ADHESIVES THAT HAVE A VOC CONTENT OF 50 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).

1.10 EXAMINATION
A. COMPLETE FINISH

SECTION 099113 CONTINUE FROM SHEET A590

C. MATERIAL COMPATIBILITY: PROVIDE MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH SUBSTRATES.
1. 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.

D. COLORS: AS SCHEDULED.

1.3 PREPARATION

A. COMPLY WITH RECOMMENDATIONS IN MPI'S "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES INDICATED.

B. REMOVE HARDWARE, LIGHTING FIXTURES, AND SIMILAR ITEMS THAT ARE NOT TO BE PAINTED. MASK ITEMS THAT CANNOT BE REMOVED. REINSTALL ITEMS IN EACH AREA AFTER PAINTING IS COMPLETE.

C. CLEAN AND PREPARE SURFACES IN AN AREA BEFORE BEGINNING PAINTING IN THAT AREA. SCHEDULE PAINTING SO CLEANING OPERATIONS WILL NOT DAMAGE NEWLY PAINTED SURFACES.

1.4 APPLICATION

A. COMPLY WITH RECOMMENDATIONS IN MPI'S "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES INDICATED.

B. PAINT EXPOSED SURFACES UNLESS OTHERWISE INDICATED.
1. DO NOT PAINT PREFINISHED ITEMS, ITEMS WITH AN INTEGRAL FINISH, OPERATING PARTS, AND LABELS UNLESS OTHERWISE INDICATED.

C. APPLY PAINTS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
1. USE BRUSHES ONLY WHERE THE USE OF OTHER APPLICATORS IS NOT PRACTICAL.

D. 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.
1. IF UNDERCOATS OR OTHER CONDITIONS SHOW THROUGH TOPCOAT, APPLY ADDITIONAL COATS UNTIL CURED FILM HAS A UNIFORM PAINT FINISH, COLOR, AND APPEARANCE.

1.5 EXTERIOR PAINT APPLICATION SCHEDULE

A. CONCRETE, NONTRAFFIC SURFACES:
1. SEMIGLOSS LATEX: TWO COATS: MPI EXT 3.1A.

B. CONCRETE, TRAFFIC SURFACES:
1. LOW-GLOSS LATEX FLOOR PAINT: TWO COATS: MPI EXT 3.2A.

C. CONCRETE MASONRY UNITS:
1. SEMIGLOSS LATEX: TWO COATS OVER LATEX BLOCK FILLER: MPI EXT 4.2A.

D. STEEL:
1. SEMIGLOSS WATER-BASED, LIGHT-INDUSTRIAL COATING: TWO COATS OVER ALKYD ANTICORROSIVE PRIMER.

E. GALVANIZED METAL:

F. ALUMINUM:
1. SEMIGLOSS LATEX: TWO COATS OVER QUICK-DRYING PRIMER FOR ALUMINUM: MPI EXT 5.4H.

G. EXTERIOR GYPSUM SOFFIT BOARD:
1. LOW-SHEEN LATEX: TWO COATS: MPI EXT 9.2A.

SECTION 099123 - INTERIOR PAINTING

1.1 SECTION REQUIREMENTS

A. SUBMITTALS:
1. PRODUCT DATA: INCLUDE PRINTOUT OF MPI'S "MPI APPROVED PRODUCTS LIST" WITH PRODUCT HIGHLIGHTED.
2. SAMPLES.

B. MOCKUPS: FULL-COAT FINISH SAMPLE OF EACH TYPE OF COATING, COLOR, AND SUBSTRATE, APPLIED WHERE DIRECTED.

C. EXTRA MATERIALS: DELIVER TO OWNER 1 GAL. OF EACH COLOR AND TYPE OF FINISH-COAT PAINT USED ON PROJECT, IN CONTAINERS, PROPERLY LABELED AND SEALED.

1.2 PAINT

A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT INDICATED ON DRAWINGS OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
1. BENJAMIN MOORE & CO.
2. DUNN-EDWARDS CORPORATION.
3. FRAZEE PAINT; COMEX GROUP.
4. GLIDDEN PROFESSIONAL.
5. KELLY-MOORE PAINT COMPANY INC.
6. M.A.B. PAINTS.
7. PPG ARCHITECTURAL COATINGS.
8. PRATT & LAMBERT.
9. SHERWIN-WILLIAMS COMPANY (THE).

B. MPI STANDARDS: PROVIDE MATERIALS THAT COMPLY WITH MPI STANDARDS INDICATED AND LISTED IN ITS "MPI APPROVED PRODUCTS LIST."
1. BLOCK FILLER, LATEX: MPI #4.
2. PRIMER SEALER, LATEX: MPI #50.
3. PRIMER, ALKALI RESISTANT, WATER BASED: MPI #3.
4. PRIMER, LATEX, FOR INTERIOR WOOD: MPI #39.
5. PRIMER, BONDING, WATER BASED: MPI #17.
6. PRIMER, ALKYD, ANTICORROSIVE: MPI #79.
7. PRIMER, GALVANIZED, WATER BASED: MPI #134.
8. PRIMER, QUICK DRY, FOR ALUMINUM: MPI #95.
9. LATEX, INTERIOR, FLAT, (GLOSS LEVEL 1): MPI #53.
10. LATEX, INTERIOR, (GLOSS LEVEL 2): MPI #44.
11. LATEX, INTERIOR, (GLOSS LEVEL 4): MPI #43.
12. LATEX, INTERIOR, SEMIGLOSS, (GLOSS LEVEL 5): MPI #54.
13. LATEX, INTERIOR, GLOSS, (GLOSS LEVEL 6, EXCEPT MINIMUM GLOSS OF 65 UNITS AT 60 DEGREES): MPI #114.

C. MATERIAL COMPATIBILITY: PROVIDE MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH SUBSTRATES.
1. 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.

D. COLORS: AS SCHEDULED.

1.3 PREPARATION

A. COMPLY WITH RECOMMENDATIONS IN MPI'S "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES INDICATED.

B. REMOVE HARDWARE, LIGHTING FIXTURES, AND SIMILAR ITEMS THAT ARE NOT TO BE PAINTED. MASK ITEMS THAT CANNOT BE REMOVED. REINSTALL ITEMS IN EACH AREA AFTER PAINTING IS COMPLETE.

C. CLEAN AND PREPARE SURFACES IN AN AREA BEFORE BEGINNING PAINTING IN THAT AREA. SCHEDULE PAINTING SO CLEANING OPERATIONS WILL NOT DAMAGE NEWLY PAINTED SURFACES.

1.4 APPLICATION

A. COMPLY WITH RECOMMENDATIONS IN MPI'S "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES INDICATED.

B. PAINT EXPOSED SURFACES UNLESS OTHERWISE INDICATED.
1. PAINT SURFACES BEHIND MOVABLE EQUIPMENT AND FURNITURE SAME AS SIMILAR EXPOSED SURFACES.
2. PAINT SURFACES BEHIND PERMANENTLY FIXED EQUIPMENT OR FURNITURE WITH PRIME COAT ONLY.
3. PAINT THE BACK SIDE OF ACCESS PANELS.
4. COLOR-CODE MECHANICAL PIPING IN ACCESSIBLE CEILING SPACES.
5. DO NOT PAINT PREFINISHED ITEMS, ITEMS WITH AN INTEGRAL FINISH, OPERATING PARTS, AND LABELS UNLESS OTHERWISE INDICATED.

C. APPLY PAINTS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
1. USE BRUSHES ONLY WHERE THE USE OF OTHER APPLICATORS IS NOT PRACTICAL.
2. USE ROLLERS FOR FINISH COAT ON INTERIOR WALLS AND CEILINGS.

D. 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.
1. IF UNDERCOATS OR OTHER CONDITIONS SHOW THROUGH TOPCOAT, APPLY ADDITIONAL COATS UNTIL CURED FILM HAS A UNIFORM PAINT FINISH, COLOR, AND APPEARANCE.

1.5 INTERIOR PAINT APPLICATION SCHEDULE

A. CONCRETE, NONTRAFFIC SURFACES:
1. GLOSS LEVEL 4 LATEX: TWO COATS OVER PRIMER/SEALER: MPI INT 3.1A.

B. CONCRETE, TRAFFIC SURFACES:
1. LOW-GLOSS LATEX FLOOR PAINT: TWO COATS: MPI INT 3.2A.

C. CONCRETE MASONRY UNITS:
1. GLOSS LEVEL 4 LATEX: TWO COATS OVER LATEX BLOCK FILLER: MPI INT 4.2A.

D. STEEL:
1. GLOSS LEVEL 4 LATEX: TWO COATS OVER ALKYD ANTICORROSIVE PRIMER: MPI INT 5.1Q.

E. GALVANIZED METAL:
1. GLOSS LEVEL 4 LATEX: TWO COATS OVER WATERBORNE GALVANIZED-METAL PRIMER: MPI INT 5.3J.

F. ALUMINUM:
1. GLOSS LEVEL 4 LATEX: TWO COATS OVER QUICK-DRYING PRIMER FOR ALUMINUM: MPI INT 5.4H.

G. WOOD: INCLUDING WOOD TRIM ARCHITECTURAL WOODWORK.
1. SEMIGLOSS LATEX: TWO COATS OVER LATEX PRIMER FOR WOOD: MPI INT 6.3T.

H. FIBERGLASS AND PLASTIC:
1. GLOSS LEVEL 4 LATEX: TWO COATS OVER (WATER-BASED) BONDING PRIMER: MPI INT 6.7A.

I. GYPSUM BOARD:
1. GLOSS LEVEL 2 LATEX: TWO COATS OVER LATEX PRIMER/SEALER: MPI INT 9.2A.

SECTION 099600 - HIGH-PERFORMANCE COATINGS

1.1 SUMMARY

A. SECTION INCLUDES SURFACE PREPARATION AND THE APPLICATION OF HIGH-PERFORMANCE COATING SYSTEMS.

1.2 DEFINITIONS

A. MPI GLOSS LEVEL 5: 35 TO 70 UNITS AT 60 DEGREES, ACCORDING TO ASTM D523.

B. MPI GLOSS LEVEL 6: 70 TO 85 UNITS AT 60 DEGREES, ACCORDING TO ASTM D523.

C. MPI GLOSS LEVEL 7: MORE THAN 85 UNITS AT 60 DEGREES, ACCORDING TO ASTM D523.

1.3 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT. INCLUDE PREPARATION REQUIREMENTS AND APPLICATION INSTRUCTIONS.
1. INCLUDE PRINTOUT OF CURRENT "MPI APPROVED PRODUCTS LIST" FOR EACH PRODUCT CATEGORY SPECIFIED, WITH THE PROPOSED PRODUCT HIGHLIGHTED.

B. SAMPLES: FOR EACH TYPE OF COATING SYSTEM AND IN EACH COLOR AND GLOSS OF TOPCOAT INDICATED.

1.4 QUALITY ASSURANCE

A. MOCKUPS: APPLY MOCKUPS OF EACH COATING SYSTEM INDICATED 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 REPRESENT SURFACES AND CONDITIONS FOR APPLICATION OF EACH COATING SYSTEM.
   a. WALL AND CEILING SURFACES: PROVIDE SAMPLES OF AT LEAST 100 SQ. FT..
   b. OTHER ITEMS: ARCHITECT WILL DESIGNATE ITEMS OR AREAS REQUIRED.
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.

1.5 MANUFACTURERS

A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE TIGER DRYLAC® SERIES 44 ANTI-GRAFFITI POLYURETHANE-BASED COATING OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
1. BENJAMIN MOORE & CO.
2. SHERWIN-WILLIAMS COMPANY (THE).

B. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT LISTED IN THE EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE OR INTERIOR HIGH-PERFORMANCE COATING SCHEDULE FOR THE COATING CATEGORY INDICATED.

1.6 HIGH-PERFORMANCE COATINGS, GENERAL

A. MPI STANDARDS: PRODUCTS SHALL COMPLY WITH MPI STANDARDS INDICATED AND SHALL BE LISTED IN ITS "MPI APPROVED PRODUCTS LISTS."

B. MATERIAL COMPATIBILITY:
1. MATERIALS FOR USE WITHIN EACH PAINT SYSTEM SHALL BE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES 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, PRODUCTS SHALL BE RECOMMENDED IN WRITING BY TOPCOAT MANUFACTURERS FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED.
3. PRODUCTS SHALL BE OF SAME MANUFACTURER FOR EACH COAT IN A COATING SYSTEM.

C. COLORS: AS INDICATED IN COLOR SCHEDULE.

1.7 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. GYPSUM BOARD: 12 PERCENT.

C. VERIFY SUITABILITY OF SUBSTRATES, INCLUDING SURFACE CONDITIONS AND COMPATIBILITY WITH EXISTING FINISHES AND PRIMERS.

D. PROCEED WITH COATING APPLICATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
1. APPLICATION OF COATING INDICATES ACCEPTANCE OF SURFACES AND CONDITIONS.

1.8 PREPARATION

A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES AND COATING 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 WEIGHT 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 IF ANY.

C. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF COATINGS, INCLUDING DUST, DIRT, OIL, GREASE, AND INCOMPATIBLE PAINTS AND ENCAPSULANTS.
1. REMOVE INCOMPATIBLE PRIMERS AND REPRIME SUBSTRATE WITH COMPATIBLE PRIMERS OR APPLY TIE COAT AS REQUIRED TO PRODUCE COATING SYSTEMS INDICATED.

1.9 APPLICATION

A. APPLY HIGH-PERFORMANCE COATINGS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL."

B. APPLY COATINGS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. PRODUCE SHARP GLASS LINES AND COLOR BREAKS.

1.10 HIGH-PERFORMANCE COATING SCHEDULE

A. INSTALL ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR SUBSTRATES INDICATED.

SECTION 101429 - MODULAR SIGNAGE

1.1 SUMMARY

A. SECTION INCLUDES MODULAR SIGNAGE.

1.2 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
B. SHOP DRAWINGS: FOR MODULAR SIGNS.
1. INCLUDE PLANS, ELEVATIONS, SECTIONS, AND MOUNTING DETAILS.
2. SHOW MESSAGE LIST, TYPESTYLES, GRAPHIC ELEMENTS, INCLUDING RAISED CHARACTERS AND BRAILLE, AND LAYOUT FOR EACH SIGN AT LEAST HALF SIZE.
C. SAMPLES: FOR EACH TYPE OF MODULAR SIGN, EXPOSED COMPONENT, AND EXPOSED FINISH.
D. PRODUCT SCHEDULE: FOR MODULAR SIGNS. USE SAME DESIGNATIONS INDICATED ON DRAWINGS OR SPECIFIED.

1.3 QUALITY ASSURANCE

A. USE A SINGLE MANUFACTURING SOURCE TO PRODUCE TACTILE SIGNAGE THAT IS FINISHED AND READY FOR INSTALLATION.
B. MANUFACTURER QUALIFICATION: USE A TACTILE SIGN MANUFACTURER WITH AT LEAST TEN YEARS EXPERIENCE IN THE FABRICATION OF ARCHITECTURAL AND ADA SIGNS.
C. INSTALLER QUALIFICATIONS: USE A SIGN INSTALLATION CONTRACTOR THAT IS SPECIALIZED AND EXPERIENCED IN WORK SIMILAR TO THE SIGN INSTALLATION REQUIREMENTS FOR THIS PROJECT.

1.4 CLOSEOUT SUBMITTALS

A. MAINTENANCE DATA.

1.5 PERFORMANCE REQUIREMENTS

A. ACCESSIBILITY STANDARD: COMPLY WITH APPLICABLE PROVISIONS IN THE USDOJ'S "2010 ADA STANDARDS FOR ACCESSIBLE DESIGN".

1.6 MODULAR SIGNS

A. MODULAR SIGNS: SIGN SYSTEM WITH REMOVABLE INSERTS FOR GRAPHICS AND COPY ATTACHED TO A RECEIVER FRAME SYSTEM USING CLIPS, SPLINES, OR COMPARABLE METHOD. PROVIDE SYSTEM WITH MODULAR INCREMENTS OF HEIGHT AND WIDTH, PERMITTING ASSEMBLY OF UNITS WITH MULTIPLE INSERTS OF VARYING SIZE.
1. SIGN SIZE: AS INDICATED.
2. FABRICATE TACTILE SIGN PANEL USING A NYLON INTERIOR GRADE PHOTOPOLYMER WITH A NON-GLARE CLEAR (UV) ULTRAVIOLET RESISTANT (PETG) POLYETHYLENE TEREPHTHALATE GLYCOL SIGN BASE. USE MATERIAL THAT HAS AN OVERALL BASE THICKNESSES OF 0.040 INCHES. BACK PAINT TACTILE SIGN PANEL WITH AN ACRYLIC POLYURETHANE FINISH AND A UV RESISTANT CLEAR TOPCOAT. TEXT, PICTOGRAMS AND SYMBOL ARE RAISED WITH SURFACE APPLIED COLOR.
   a. INSTALL 0.118 INCH THICK PETG SIGN BASE INTO A 0.510 INCH THICK BLACK INJECTION MOLDED SIGN FRAME.
B. MOUNTING: MOUNT MODULAR SIGNS TO WALL SURFACES USING ADHESIVE OR TWO-FACED TAPE.

1.7 MATERIALS

A. ALUMINUM EXTRUSIONS: ASTM B221, ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED.
B. VINYL FILM: UV-RESISTANT VINYL FILM OF NOMINAL THICKNESS INDICATED, WITH PRESSURE-SENSITIVE, PERMANENT ADHESIVE ON BACK; DIE CUT TO FORM COPY INDICATED ON DRAWINGS.

1.8 ACCESSORIES

A. FASTENERS AND ANCHORS: MANUFACTURER'S STANDARD AS REQUIRED FOR SECURE ANCHORAGE OF SIGNS, NONCORROSIVE AND COMPATIBLE WITH EACH MATERIAL JOINED. USE CONCEALED FASTENERS AND ANCHORS UNLESS INDICATED TO BE EXPOSED.
B. ADHESIVE: AS RECOMMENDED BY SIGN MANUFACTURER.
C. TWO-FACE TAPE: MANUFACTURER'S STANDARD HIGH-BOND, FOAM-CORE TAPE, 0.045 INCH THICK, WITH ADHESIVE ON BOTH SIDES.

1.9 FABRICATION

A. SURFACE-ENGRAVED GRAPHICS: MACHINE ENGRAVE CHARACTERS AND OTHER GRAPHIC DEVICES INTO INDICATED SIGN SURFACE TO PRODUCE PRECISELY FORMED COPY, INCISED TO UNIFORM DEPTH.
B. SUBSURFACE-APPLIED GRAPHICS: APPLY GRAPHICS TO BACK OF CLEAR FACE-SHEET MATERIAL TO PRODUCE PRECISELY FORMED IMAGE. IMAGE SHALL BE FREE OF ROUGH EDGES.
C. SUBSURFACE-ENGRAVED GRAPHICS: REVERSE ENGRAVE BACK OF CLEAR FACE-SHEET MATERIAL. FILL RESULTING COPY WITH MANUFACTURER'S STANDARD ENAMEL. APPLY OPAQUE MANUFACTURER'S STANDARD BACKGROUND COLOR COATING OVER ENAMEL-FILLED COPY.
D. SHOP- AND SUBSURFACE-APPLIED VINYL: ALIGN VINYL FILM IN FINAL POSITION AND APPLY TO SURFACE. FIRMLY PRESS FILM FROM THE MIDDLE OUTWARD TO OBTAIN GOOD BOND WITHOUT BLISTERS OR FISHMOUTHS.

1.10 INSTALLATION

A. INSTALL SIGNS USING MOUNTING METHODS INDICATED AND IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. ACCESSIBLE SIGNAGE: INSTALL IN LOCATIONS ON WALLS AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH THE ACCESSIBILITY STANDARDS.
C. ADHESIVES AND TAPES: CLEAN SUBSTRATE TO REMOVE MATERIALS THAT WOULD ADVERSELY AFFECT BOND. USE MATERIALS AND QUANTITIES SUFFICIENT TO SUPPORT WEIGHT OF SIGN AFTER CURE WITHOUT SLIPPAGE. KEEP ADHESIVES AND TAPES AWAY FROM EDGES TO PREVENT VISIBILITY AT SIGN EDGES.

SECTION 101429 - MODULAR SIGNAGE

1.1 SUMMARY

A. SECTION INCLUDES MODULAR SIGNAGE.

1.2 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
B. SHOP DRAWINGS: FOR MODULAR SIGNS.
1. INCLUDE PLANS, ELEVATIONS, SECTIONS, AND MOUNTING DETAILS.
2. SHOW MESSAGE LIST, TYPESTYLES, GRAPHIC ELEMENTS, INCLUDING RAISED CHARACTERS AND BRAILLE, AND LAYOUT FOR EACH SIGN AT LEAST HALF SIZE.
C. SAMPLES: FOR EACH TYPE OF MODULAR SIGN, EXPOSED COMPONENT, AND EXPOSED FINISH.
D. PRODUCT SCHEDULE: FOR MODULAR SIGNS. USE SAME DESIGNATIONS INDICATED ON DRAWINGS OR SPECIFIED.

1.3 QUALITY ASSURANCE

A. USE A SINGLE MANUFACTURING SOURCE TO PRODUCE TACTILE SIGNAGE THAT IS FINISHED AND READY FOR INSTALLATION.
B. MANUFACTURER QUALIFICATION: USE A TACTILE SIGN MANUFACTURER WITH AT LEAST TEN YEARS EXPERIENCE IN THE FABRICATION OF ARCHITECTURAL AND ADA SIGNS.
C. INSTALLER QUALIFICATIONS: USE A SIGN INSTALLATION CONTRACTOR THAT IS SPECIALIZED AND EXPERIENCED IN WORK SIMILAR TO THE SIGN INSTALLATION REQUIREMENTS FOR THIS PROJECT.

1.4 CLOSEOUT SUBMITTALS

A. MAINTENANCE DATA.

1.5 PERFORMANCE REQUIREMENTS

A. ACCESSIBILITY STANDARD: COMPLY WITH APPLICABLE PROVISIONS IN THE USDOJ'S "2010 ADA STANDARDS FOR ACCESSIBLE DESIGN".

1.6 MODULAR SIGNS

A. MODULAR SIGNS: SIGN SYSTEM WITH REMOVABLE INSERTS FOR GRAPHICS AND COPY ATTACHED TO A RECEIVER FRAME SYSTEM USING CLIPS, SPLINES, OR COMPARABLE METHOD. PROVIDE SYSTEM WITH MODULAR INCREMENTS OF HEIGHT AND WIDTH, PERMITTING ASSEMBLY OF UNITS WITH MULTIPLE INSERTS OF VARYING SIZE.
1. SIGN SIZE: AS INDICATED.
2. FABRICATE TACTILE SIGN PANEL USING A NYLON INTERIOR GRADE PHOTOPOLYMER WITH A NON-GLARE CLEAR (UV) ULTRAVIOLET RESISTANT (PETG) POLYETHYLENE TEREPHTHALATE GLYCOL SIGN BASE. USE MATERIAL THAT HAS AN OVERALL BASE THICKNESSES OF 0.040 INCHES. BACK PAINT TACTILE SIGN PANEL WITH AN ACRYLIC POLYURETHANE FINISH AND A UV RESISTANT CLEAR TOPCOAT. TEXT, PICTOGRAMS AND SYMBOL ARE RAISED WITH SURFACE APPLIED COLOR.
   a. INSTALL 0.118 INCH THICK PETG SIGN BASE INTO A 0.510 INCH THICK BLACK INJECTION MOLDED SIGN FRAME.
B. MOUNTING: MOUNT MODULAR SIGNS TO WALL SURFACES USING ADHESIVE OR TWO-FACED TAPE.

1.7 MATERIALS

A. ALUMINUM EXTRUSIONS: ASTM B221, ALLOY AND TEMPER RECOMMENDED BY ALUMINUM PRODUCER AND FINISHER FOR TYPE OF USE AND FINISH INDICATED.
B. VINYL FILM: UV-RESISTANT VINYL FILM OF NOMINAL THICKNESS INDICATED, WITH PRESSURE-SENSITIVE, PERMANENT ADHESIVE ON BACK; DIE CUT TO FORM COPY INDICATED ON DRAWINGS.

1.8 ACCESSORIES

A. FASTENERS AND ANCHORS: MANUFACTURER'S STANDARD AS REQUIRED FOR SECURE ANCHORAGE OF SIGNS, NONCORROSIVE AND COMPATIBLE WITH EACH MATERIAL JOINED. USE CONCEALED FASTENERS AND ANCHORS UNLESS INDICATED TO BE EXPOSED.
B. ADHESIVE: AS RECOMMENDED BY SIGN MANUFACTURER.
C. TWO-FACE TAPE: MANUFACTURER'S STANDARD HIGH-BOND, FOAM-CORE TAPE, 0.045 INCH THICK, WITH ADHESIVE ON BOTH SIDES.

1.9 FABRICATION

A. SURFACE-ENGRAVED GRAPHICS: MACHINE ENGRAVE CHARACTERS AND OTHER GRAPHIC DEVICES INTO INDICATED SIGN SURFACE TO PRODUCE PRECISELY FORMED COPY, INCISED TO UNIFORM DEPTH.
B. SUBSURFACE-APPLIED GRAPHICS: APPLY GRAPHICS TO BACK OF CLEAR FACE-SHEET MATERIAL TO PRODUCE PRECISELY FORMED IMAGE. IMAGE SHALL BE FREE OF ROUGH EDGES.
C. SUBSURFACE-ENGRAVED GRAPHICS: REVERSE ENGRAVE BACK OF CLEAR FACE-SHEET MATERIAL. FILL RESULTING COPY WITH MANUFACTURER'S STANDARD ENAMEL. APPLY OPAQUE MANUFACTURER'S STANDARD BACKGROUND COLOR COATING OVER ENAMEL-FILLED COPY.
D. SHOP- AND SUBSURFACE-APPLIED VINYL: ALIGN VINYL FILM IN FINAL POSITION AND APPLY TO SURFACE. FIRMLY PRESS FILM FROM THE MIDDLE OUTWARD TO OBTAIN GOOD BOND WITHOUT BLISTERS OR FISHMOUTHS.

1.10 INSTALLATION

A. INSTALL SIGNS USING MOUNTING METHODS INDICATED AND IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. ACCESSIBLE SIGNAGE: INSTALL IN LOCATIONS ON WALLS AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH THE ACCESSIBILITY STANDARDS.
C. ADHESIVES AND TAPES: CLEAN SUBSTRATE TO REMOVE MATERIALS THAT WOULD ADVERSELY AFFECT BOND. USE MATERIALS AND QUANTITIES SUFFICIENT TO SUPPORT WEIGHT OF SIGN AFTER CURE WITHOUT SLIPPAGE. KEEP ADHESIVES AND TAPES AWAY FROM EDGES TO PREVENT VISIBILITY AT SIGN EDGES.

SPECIFICATIONS CONTINUE ON SHEET A592

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REVISION

△	DATE	DESCRIPTION

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SWIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
ARCHITECTURAL SPECIFICATIONS

DATE:	PROJECT NO:
06/01/2026	41354
DRAWN: SO	SCALE: AS INDICATED

SHEET NO:
A591

SPECIFICATIONS CONTINUE FROM SHEET A591

SECTION 102800 – TOILET, BATH, AND LAUNDRY ACCESSORIES

1.1 SECTION REQUIREMENTS

A. SUBMITTALS: PRODUCT DATA.

1.2 TOILET AND BATH ACCESSORIES

A. PROVIDE ACCESSORIES INDICATED.

B. UNDERLAVATORY GUARD:
1. DESCRIPTION: INSULATING PIPE COVERINGS FOR SUPPLY AND DRAIN PIPING ASSEMBLIES, WHICH PREVENT DIRECT CONTACT WITH AND BURNS FROM PIPING AND ALLOW SERVICE ACCESS WITHOUT REMOVING COVERINGS.
2. MATERIAL AND FINISH: ANTIMICROBIAL, MOLDED PLASTIC, WHITE.

1.3 MATERIALS

A. STAINLESS STEEL: ASTM A 666, TYPE 304, NO. 4 FINISH (SATIN), 0.031-INCH MINIMUM NOMINAL THICKNESS UNLESS OTHERWISE INDICATED.

B. MIRRORS: ASTM C 1503, MIRROR GLAZING QUALITY, CLEAR-GLASS MIRRORS, NOMINAL 6.0 MM THICK.

C. FASTENERS: SCREWS, BOLTS, AND OTHER DEVICES OF SAME MATERIAL AS ACCESSORY UNIT, TAMPER AND THEFT RESISTANT WHEN EXPOSED, AND OF GALVANIZED STEEL WHEN CONCEALED.

D. KEYS: PROVIDE UNIVERSAL KEYS FOR INTERNAL ACCESS TO ACCESSORIES FOR SERVICING AND RESUPPLYING. PROVIDE MINIMUM OF SIX KEYS TO OWNER'S REPRESENTATIVE.

1.4 INSTALLATION

A. INSTALL ACCESSORIES USING FASTENERS APPROPRIATE TO SUBSTRATE INDICATED AND RECOMMENDED BY UNIT MANUFACTURER. INSTALL UNITS LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS AND AT HEIGHTS INDICATED.
1. INSTALL GRAB BARS TO WITHSTAND A DOWNWARD LOAD OF AT LEAST 250 LBF, WHEN TESTED ACCORDING TO METHOD IN ASTM F 446.

B. ADJUST ACCESSORIES FOR UNENCUMBERED, SMOOTH OPERATION, AND VERIFY THAT MECHANISMS FUNCTION PROPERLY. REPLACE DAMAGED OR DEFECTIVE ITEMS. REMOVE TEMPORARY LABELS AND PROTECTIVE COATINGS.

SECTION 104400 - FIRE PROTECTION SPECIALTIES

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA.

1.2 FIRE-PROTECTION CABINETS
A. FIRE-PROTECTION CABINETS: ENAMELED-STEEL, SEMIRECESSED CABINETS FOR FIRE EXTINGUISHER.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
A. GUARDIAN FIRE EQUIPMENT, INC.
B. JL INDUSTRIES, INC.; A DIVISION OF THE ACTIVAR CONSTRUCTION PRODUCTS GROUP.
C. LARSENS MANUFACTURING COMPANY.
D. NYSTROM, INC.

B. CABINET CONSTRUCTION: NONRATED.
C. CABINET AND TRIM MATERIAL AND STYLE: SEMI-RECESSED.
a. TRIM: RETURNED TO WALL SURFACE, WITH 2-1/2 INCH PROJECTION, 1-3/4 INCH WIDE ROLLED FACE.
b. FORM CABINET ENCLOSURE WITH RIGHT ANGLE INSIDE CORNERS AND SEAMS. FORM PERIMETER TRIM AND DOOR STILES. WELD, FILL, AND GRIND COMPONENTS SMOOTH.
c. METAL: FORMED PRIMED STEEL SHEET; 0.036 INCH THICK BASE METAL.
d. DOOR: 0.036 INCH THICK, REINFORCED FOR FLATNESS AND RIGIDITY; LATCH, HINGE DOORS FOR 180 DEGREE OPENING WITH CONTINUOUS PIANO HINGE. PROVIDE NYLON CATCH.
e. DOOR GLAZING: FULL GLASS, CLEAR, 1/8 INCH THICK HEAT STRENGTHENED. SET IN RESILIENT CHANNEL GASKET
f. GLAZING.
g. CABINET MOUNTING HARDWARE: APPROPRIATE TO CABINET. PRE-DRILL FOR ANCHORS.
h. FINISH OF CABINET EXTERIOR TRIM AND DOOR: MANUFACTURER'S STANDARD FINISH TO ACCEPT FIELD PAINTING
i. UNDER SECTION 099000.
j. FINISH OF CABINET INTERIOR: WHITE ENAMEL.

1.3 FIRE EXTINGUISHERS AND BRACKETS
A. PORTABLE FIRE EXTINGUISHERS: NFPA 10, LISTED AND LABELED FOR THE TYPE, RATING, AND CLASSIFICATION OF EXTINGUISHER.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
A. ANSUL INCORPORATED; TYCO INTERNATIONAL.
B. BADGER FIRE PROTECTION.
C. GUARDIAN FIRE EQUIPMENT, INC.
D. JL INDUSTRIES, INC.; A DIVISION OF THE ACTIVAR CONSTRUCTION PRODUCTS GROUP.
E. KIDDE RESIDENTIAL AND COMMERCIAL DIVISION.
F. LARSENS MANUFACTURING COMPANY.
2. MULTIPURPOSE DRY-CHEMICAL TYPE: UL-RATED 3-A:40-B:C, 6-LB NOMINAL CAPACITY, IN ENAMELED-STEEL CONTAINER.
3. PURPLE-K DRY-CHEMICAL TYPE IN ALUMINUM CONTAINER: UL-RATED 30-B:C, 5-LB NOMINAL CAPACITY, WITH POTASSIUM BICARBONATE-BASED DRY CHEMICAL IN ENAMELED-ALUMINUM CONTAINER.

B. MOUNTING BRACKETS: MANUFACTURER'S STANDARD STEEL, DESIGNED TO SECURE FIRE EXTINGUISHER TO WALL OR STRUCTURE, OF SIZES REQUIRED FOR FIRE EXTINGUISHERS INDICATED, WITH PLATED OR BAKED-ENAMEL FINISH.

1.4 INSTALLATION
A. INSTALL CABINETS AT HEIGHTS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
B. INSTALL PURPLE-K TYPE EXTINGUISHERS IN KITCHEN LOCATIONS WHERE INDICATED.
C. FIRE-RATED HOSE OR VALVE CABINETS: INSTALL CABINET WITH NOT MORE THAN 1/16-INCH TOLERANCE BETWEEN PIPE OD AND KNOCKOUT OD. SEAL THROUGH PENETRATIONS WITH FIRESTOPPING SEALANT.
D. IDENTIFICATION: APPLY VINYL LETTERING TO CABINETS AT LOCATIONS INDICATED.
E. INSTALL MOUNTING BRACKETS IN LOCATIONS INDICATED AT HEIGHTS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
F. INSTALL FIRE EXTINGUISHERS IN MOUNTING BRACKETS AND CABINETS WHERE INDICATED.

SECTION 122413 - ROLLER WINDOW SHADES

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA AND SAMPLES.

1.2 ROLLER WINDOW SHADES
A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ROLLER SHADE TYPE RAS-4BPL BY ROLL-A-SHADE OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
1. DRAPER INC.
2. HUNTER DOUGLAS CONTRACT.
3. MECHOSHADE SYSTEMS, INC.

B. PROVIDE SHADEBAND MATERIAL PASSING FLAME-RESISTANCE TESTING ACCORDING TO NFPA 701.
C. FABRICATION: COMPLY WITH WCMA A 100.1. FABRICATE SHADEBANDS WITHOUT BATTENS OR SEAMS TO EXTENT POSSIBLE EXCEPT AS FOLLOWS:
1. WHERE WIDTH-TO-LENGTH RATIO OF SHADEBAND IS EQUAL TO OR GREATER THAN 1:4, PROVIDE BATTENS AND SEAMS AT UNIFORM SPACINGS ALONG SHADEBAND LENGTH.
D. MANUALLY OPERATING ROLLER SHADES: CHAIN-AND-CLUTCH WITH SPRING LIFT-ASSIST.
E. INSTALLATION ACCESSORIES:
1. FRONT FASCIA.
2. EXPOSED HEADBOX.
3. ENDCAP COVERS.
4. RECESSED SHADE POCKET.
5. CLOSURE PANEL AND WALL CLIP.
6. SIDE CHANNELS AND BOTTOM (SILL) CHANNEL OR ANGLE WITH LIGHT SEAL.
7. COLOR AND FINISH: AS SELECTED FROM MANUFACTURER'S FULL RANGE.

1.3 INSTALLATION
A. INSTALL ROLLER SHADES LEVEL, PLUMB, AND ALIGNED WITH ADJACENT UNITS ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
B. ADJUST ROLLER SHADES TO OPERATE SMOOTHLY AND EASILY THROUGHOUT ENTIRE OPERATIONAL RANGE.

SECTION 313116 - TERMITE CONTROL

1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA AND PRODUCT CERTIFICATES. INCLUDE EPA-REGISTERED LABEL.
B. INSTALLER QUALIFICATIONS: A SPECIALIST WHO IS LICENSED ACCORDING TO REGULATIONS OF AUTHORITIES HAVING JURISDICTION TO APPLY TERMITE-CONTROL TREATMENT AND PRODUCTS IN JURISDICTION WHERE PROJECT IS LOCATED, AND WHO EMPLOYS WORKERS TRAINED AND APPROVED BY MANUFACTURER TO INSTALL MANUFACTURER'S PRODUCTS, AND WHO IS ACCREDITED BY MANUFACTURER.

1.2 TERMITE-CONTROL PRODUCTS
A. SOIL TREATMENT TERMITICIDE: EPA-REGISTERED TERMITICIDE ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, IN AN AQUEOUS SOLUTION.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. BAYER ENVIRONMENTAL SCIENCE.
b. MASTER BUILDERS SOLUTIONS.
c. SYNGENTA.
2. SERVICE LIFE OF TREATMENT: SOIL TREATMENT TERMITICIDE THAT IS EFFECTIVE FOR NOT LESS THAN FIVE YEARS AGAINST INFESTATION OF SUBTERRANEAN TERMITES.

1.3 INSTALLATION
A. GENERAL: COMPLY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND WITH MANUFACTURER'S EPA-REGISTERED LABEL FOR PRODUCTS.
B. SOIL TREATMENT APPLICATION: PROVIDE A CONTINUOUS HORIZONTAL AND VERTICAL TERMITICIDAL BARRIER OR TREATED ZONE AROUND AND UNDER BUILDING CONSTRUCTION:
1. AT FOUNDATIONS.
2. UNDER CONCRETE FLOOR SLABS-ON-GRADE.
3. UNDER BASEMENT FLOOR SLABS.
4. AT HOLLOW MASONRY.
5. AT EXPANSION AND CONTROL JOINTS AND SLAB PENETRATIONS.
6. AT CRAWLSPACES: TREAT SOIL UNDER AND ADJACENT TO FOUNDATIONS. TREAT ADJACENT AREAS, INCLUDING AROUND ENTRANCE PLATFORM, PORCHES, AND EQUIPMENT BASES.

C. POST WARNING SIGNS IN AREAS OF SOIL TREATMENT APPLICATION.
D. REAPPLY SOIL TERMITICIDE TREATMENT SOLUTION TO AREAS DISTURBED BY SUBSEQUENT EXCAVATION OR OTHER CONSTRUCTION ACTIVITIES FOLLOWING APPLICATION.

1.4 MAINTENANCE SERVICE
A. CONTINUING SERVICE: PROVIDE 12 MONTHS' CONTINUING SERVICE, INCLUDING MONITORING, INSPECTION, AND RE-TREATMENT FOR OCCURRENCES OF TERMITE ACTIVITY.

END OF SPECIFICATIONS

zebra
ZEBRA ARCHITECTURE, PLLC.
14614 N KIERLAND BLVD, SUITE N300
SCOTTSDALE, AZ 85254
PHONE: 480.912.1169 zbr.global
CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
ARCHITECTURAL SPECIFICATIONS

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A592

FINISH SCHEDULE

1. CHECK ALL LEAD TIMES ON ALL FINISHES. SOME MAY HAVE 6-8 WEEK LEAD TIME.
2. TILE INSTALLER TO VERIFY ALIGNMENT OF GROUT JOINTS OF WALL AND FLOOR TILE PRIOR TO INSTALLATION.
3. THE GENERAL CONTRACTOR IS TO PROVIDE CONTROL SAMPLES FOR ALL FINISHES AND MILLWORK TO ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
4. ALL PAINT TO BE LATEX BASED U.N.O. ALL EXTERIOR PAINT TO BE EXTERIOR GRADE. ALL METAL PAINT, INTERIOR OR EXTERIOR, TO BE ALKYD BASED.
5. ALL INTERIOR WALLS IN THE FRONT OF HOUSE TO BE EGGSHELL/SATIN FINISH U.N.O. ALL CEILING FINISHES TO BE FLAT/MATTE FINISH. ALL PAINT IN RESTROOMS TO BE SEMI-GLOSS. EACH FACE AND JAMB OF DOORS TO MATCH DOOR FRAME. ALL EXTERIOR METAL TO BE SEMI-GLOSS FINISH.
6. PAINT SHEEN TO BE AS FOLLOWS:
   a.SEMI-GLOSS - DOORS, FRAMES, WINDOW TRIM
   b. EGGSHELL – WALLS
   c. FLAT - CEILINGS
7. POLISHED CONCRETE
   -PATCH LARGE HOLES AND SPALLS WITH CEMENTITIOUS PATCHING MATERIALS.
   -1 PASS 80 GRIT METAL BOND PAD (TO ACHIEVE SALT & PEPPER)
   -1 PASS 150 GRIT METAL BOND PAD
   -1 PASS 100 GRIT RESIN BOND PAD
   -1 PASS 200 GRIT RESIN BOND PAD
   -1 PASS 400 GRIT RESIN BOND PAD
   -1 PASS 800 GRIT RESIN BOND PAD
   -CONSOLIDECK POLISHED GUARD PROTECTIVE COATING
   -CLEAR CONCRETE SEALER; CURECRETE CHEMICAL ASHFORD FORMULA, ONE COAT; ZERO VOC'S

REFER TO MATERIAL CERTIFICATIONS FOR FULL SUSTAINABLE PRODUCT INFORMATION.

TILE FINISHES

T-2	MANUFACTURER:	CREATIVE MATERIALS CORP
	DESCRIPTION:	CERAMIC TILE
	COLLECTION:	INTENT
	COLOR:	HUNTER GREEN
	SIZE:	2.5" X 9"
	THICKNESS:	7.2 MM
	FINISH:	MATTE
	GROUT JOINT:	1/8"
	GROUT:	GR-1
	INSTALLATION:	VERTICAL STACK
	LOCATION:	REFER TO ELEVATIONS
	PRICE:	$4.99/SF
	LEAD TIME:	1-2 WEEKS
	SUSTAINABLE:	YES
	CONTACT:	DOUG SALATINO #518.713.5371 DSALATINO@CREATIVEMATERIALSCORP.COM ALLISON PICHE #518.713.5395 APICHE@CREATIVEMATERIALSCORP.COM
T-3	MANUFACTURER:	CREATIVE MATERIALS CORP
	DESCRIPTION:	CERAMIC TILE
	COLLECTION:	INTENT
	COLOR:	BLACK
	SIZE:	2.5" X 9"
	THICKNESS:	7.2 MM
	FINISH:	MATTE
	GROUT JOINT:	1/8"
	GROUT:	GR-1
	INSTALLATION:	HORIZONTAL STACK, REFER TO ELEVATIONS
	LOCATION:	REFER TO ELEVATIONS
	PRICE:	$4.99/SF
	LEAD TIME:	1-2 WEEKS
	SUSTAINABLE:	YES
	CONTACT:	DOUG SALATINO #518.713.5371 DSALATINO@CREATIVEMATERIALSCORP.COM ALLISON PICHE #518.713.5395...
T-4	MANUFACTURER:	CREATIVE MATERIALS CORP
	DESCRIPTION:	CERAMIC TILE
	COLLECTION:	AGELESS
	COLOR:	WHITE
	SIZE:	2" X 12"
	THICKNESS:	7MM
	FINISH:	GLOSSY
	GROUT JOINT:	1/8"
	GROUT:	GR-1
	INSTALLATION:	HORIZONTAL STACK, REFER TO ELEVATIONS
	LOCATION:	REFER TO ELEVATIONS
	PRICE:	$1.98/SF
	LEAD TIME:	1-2 WEEKS
	SUSTAINABLE:	YES
	CONTACT:	DOUG SALATINO #518.713.5371 DSALATINO@CREATIVEMATERIALSCORP.COM ALLISON PICHE #518.713.5395...
T-5	MANUFACTURER:	CREATIVE MATERIALS CORP
	DESCRIPTION:	CERAMIC TILE
	COLLECTION:	OMNI
	COLOR:	WHITE ICE
	SIZE:	3" X 6"
	THICKNESS:	7 MM
	FINISH:	GLOSSY
	GROUT JOINT:	1/8"
	GROUT:	GR-1
	INSTALLATION	HORIZONTAL STACK
	LOCATION:	RESTROOM, REFER TO ELEVATIONS
	PRICE:	$2.70/SF
	LEAD TIME:	2-3 WEEKS
	SUSTAINABLE:	NO
	CONTACT:	DOUG SALATINO #518.713.5371 DSALATINO@CREATIVEMATERIALSCORP.COM ALLISON PICHE #518.713.5395...
T-6	MANUFACTURER:	CREATIVE MATERIALS CORP
	DESCRIPTION:	CERAMIC TILE
	COLLECTION:	OMNI
	COLOR:	KELLY GREEN
	SIZE:	3" X 6"
	THICKNESS:	7 MM
	FINISH:	GLOSSY
	GROUT JOINT:	1/8"
	GROUT:	GR-1
	INSTALLATION:	HORIZONTAL STACK
	LOCATION:	RESTROOM, REFER TO ELEVATIONS
	PRICE:	$2.70/SF
	LEAD TIME:	2-3 WEEKS
	SUSTAINABLE:	NO
	CONTACT:	DOUG SALATINO #518.713.5371 DSALATINO@CREATIVEMATERIALSCORP.COM ALLISON PICHE #518.713.5395...

FLOORING FINISHES

FL-1	MANUFACTURER:	CONSOLIDECK POLISHGUARD
	DESCRIPTION:	CONCRETE POLISH FINISH
	NOTES:	PATCH LARGE HOLES AND SPALLS WITH CEMENTITIOUS PATCHING MATERIALS SEE NOTE 7
FL-3	MANUFACTURER:	DUR-A-FLEX
	DESCRIPTION:	POLYCRETE FLOOR FINISH
	COLLECTION:	POLY-CRETE MDB
	COLOR:	DARK GRAY
	FINISH:	COLOR FAST TOP COAT
	THICKNESS:	1/4"
	LOCATION:	VERIFY PER DRAWINGS
	PRICE:	$2.50/SF
	LEAD TIME:	2 WEEKS
	SUSTAINABLE:	YES
	NOTES:	INTEGRATE 6" EPOXY COVE BASE WITH URETHANE TOP COAT
	INSTALLATION:	INSTALLATION BY DUR-A-FLEX CERTIFIED INSTALLER ONLY. "APPROVED CONTRACTOR LETTER" TO BE PROVIDED AT TIME OF SUBMITTAL. POLYCRETE MDB WITH A FINAL TOPCOAT OF POLYCRETE TF PLUS (DARK GREY) 1/4" THICKNESS.
	CONTACT:	SAM SACKS - DUR-A-FLEX SAMS@DUR-A-FLEX.COM; 401.369.6564
FL-4	MANUFACTURER:	PROVIDED BY G.C.
	DESCRIPTION:	CONCRETE FINISH
	FINISH:	BROOM NOT USED
	LOCATION:	PATIO
	CONTACT:	PROVIDED BY G.C.
FL-5	MANUFACTURER:	CURACRETE
	DESCRIPTION:	CHEMICAL ASHFORD FORMULA
	LEAD TIME:	IN-STOCK
	CONTACT:	CUSTOMERCARE@CURECRETE.COM ; 901.489.5663; 800.998.5664

BASE

T-1	MANUFACTURER:	CREATIVE MATERIAL CORP.
	DESCRIPTION:	TILE BASE
	COLLECTION:	CEMENTING
	COLOR:	BLACK
	SIZE:	6X24
	FINISH:	HONED
	THICKNESS:	9MM
	GROUT JOINT:	1/16"
	GROUT:	GR-1
	INSTALLATION:	STRAIGHT LAY; QUARTER TURN
	PRICE:	TBD
	LEAD TIME:	1-2 WEEKS IN STOCK 6-8 WEEKS WHEN NOT IN STOCK
	CONTACT:	DOUG SALATINO #518.713.5371 DSALATINO@CREATIVEMATERIALSCORP.COM ALLISON PICHE #518.713.5395...

GROUT FINISHES

GR-1	MANUFACTURER:	LATICRETE
	DESCRIPTION:	SPECTRA LOCK PRO PREMIUM
	COLOR:	DUSTY GREY
	NUMBER:	60
	APLLICATION:	EPOXY GROUT: -PRODUCT: LATICRETE SPECTRALOCK@ PRO PREMIUM GROUT. -USE: RESTROOM WALL TILE; KITCHEN WALL TILE; AND TILE FLOORS CEMENTITIOUS GROUT: -PRODUCT: LATICRETE PERMACOLOR@ GROUT -USE: WALL TILE OUTSIDE OF RESTROOMS AND KITCHEN; EXTERIOR WALL TILE. -UNSANDED FOR JOINT GROUT
	CONTACT	JODY CUSHING - 480.332.70233 JODYCUSHING@GMAIL.COM

LANDLORD NOTE

FINISH PLAN COMMENTS:

•TENANT SHALL PROVIDE A FINISH SAMPLE BOARD OR SIMILAR TO THE LANDLORD FOR APPROVAL.

•ALL FLOORING TRANSITIONS MUST BE SMOOTH AND FLUSH. THE USE OF PLASTIC, VINYL, OR RUBBER TRANSITIONS STRIPS IS STRICTLY PROHIBITED. TENANTS MUST UTILIZE A HARD SURFACE TRANSITION.

•TENANT IS REQUIRED TO INSTALL A WATERPROOF MEMBRANE IN ALL WET AREAS (RESTROOMS, KITCHENS, FOOD SERVICES, ETC…) OF THE SPACE. TENANT SHALL USE A 30 MIL POLYETHYLENE CLEAVAGE MEMBRANE (EQUAL TO NOBLESEAL TS) INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ANSI A108. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 6" OR EQUAL TO THE HEIGHT OF THE FLOOR BASE.

•NO RUBBER OR VINYL BASE IS PERMITTED IN THE SALES AREA OF THE PREMISES.

•SLAB REQUIREMENTS:

SLAB ON GRADE: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATION TEAM PRIOR TO ANY SLAB MODIFICATIONS OR REMOVAL. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

ELEVATED SLABS: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATIONS TEAM PRIOR TO ANY SLAB MODIFICATION OR REMOVAL. IF ANY ELEVATED SLAB IS TO BE MODIFIED IN ANYWAY (DRILLED, CORED, OR PENETRATED), TENANT SHALL PROVIDE STAMPED AND CERTIFIED DRAWINGS BY A LICENSED STRUCTURAL ENGINEERED CERTIFIED IN THE LOCAL JURISDICTION. ALL PENETRATIONS SHALL BE CORE BORED ONLY. SAW CUTTING, JACK HAMMERING, AND TRENCHING IS STRICTLY PROHIBITED. ALL PENETRATIONS SHALL BE SLEEVED, SEALED, FIRE STOPPED, AND WATERPROOFED. THE PENETRATION SLEEVE SHALL EXTEND A MINIMUM OF 4" ON EITHER SIDE OF THE SLAB AND BE LABELED WITH THE REQUIRED NFPA RATING. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

PAINT FINISHES

PT-1	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	INTERIOR WOOD PAINT
	PRODUCT:	PRO INDUSTRIAL PRE-CATALYZED WATER BASED
	COLOR:	IRON ORE
	NUMBER:	SW7069
	LRV:	6
	FINISH:	LOW SHEEN
	PRIMER:	PRIME WOOD WITH PROBLOCK
	SUSTAINABLE:	YES
	LOCATION:	INTERIOR WOOD C-CHANNEL
	CONTACT:	MIKE P.BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
PT-2	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	INTERIOR PAINT
	PRODUCT:	PROMAR 200
	COLOR:	PURE WHITE
	NUMBER:	SW7005
	LRV:	84
	FINISH:	CEILING - FLAT WALLS - EGGSHELL
	SUSTAINABLE:	YES
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
PT-3	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	INTERIOR PAINT
	PRODUCT:	PROMAR 200
	COLOR:	PASSIVE
	NUMBR:	SW7064
	LRV:	60
	FINISH:	WALLS-EGGSHELL
	SUSTAINABLE:	YES
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
	NOTES:	2 COATS OF PAINT
PT-4	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	METAL INTERIOR PAINT
	PRODUCT:	PRO INDUSTRIAL WATERBASED ALKYD URETHANE
	COLOR:	INLAND
	NUMBER:	SW6452
	LRV:	22
	FINISH:	WALL-EGGSHELL
	PRIMER:	PRO INDUSTRIAL PRO-CRL PRIMER
	SUSTAINABLE:	YES
	LOCATION:	EXPOSED COLUMNS - REFER TO INTERIOR ELEVATIONS
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
	NOTES:	2 COATS OF PAINT
PT-5	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	INTERIOR PAINT
	PRODUCT:	PROMAT 200
	COLOR:	INLAND
	NUMBER:	SW6452
	LRV:	21
	FINISH:	WALLS-EGGSHELL
	SUSTAINABLE:	YES
	LOCATION:	INTERIOR ACCENT WALL, REFER INTERIOR ELEVATIONS
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
PT-6	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	METAL INTERIOR PAINT
	PRODUCT:	PRO INDUSTRIAL WATERBASED ALKYD URETHANE
	COLOR:	IRON ORE
	NUMBER:	SW7069
	LRV:	6
	FINISH:	WALL-EGGSHELL
	PRIMER:	PRO INDUSTRIAL PRO-CRL PRIMER
	SUSTAINABLE:	YES
	LOCATION:	EXPOSED COLUMNS - REFER TO INTERIOR ELEVATIONS
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
PT-7	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	INTERIOR METAL PAINT
	PRODUCT:	PRO INDUSTRIAL WATERBASED ALKYD URETHANE
	COLOR:	PURE WHITE
	NUMBER:	SW7005
	LRV:	84
	FINISH:	WALL-EGGSHELL
	PRIME:	PRO INDUSTRIAL PRO-CRYL PRIMER
	SUSTAINABLE:	YES
	LOCATION:	EXPOSED STRUCTURE JOIST
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
PT-8	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	INTERIOR PAINT
	PRODUCT:	PROMAR 200
	COLOR:	IRON ORE
	NUMBER:	SW7069
	LRV:	6
	FINISH:	WALL-EGGSHELL
	SUSTAINABLE:	YES
	LOCATION:	B.O. SOFFIT
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949

EXTERIOR PAINT FINISHES

PT-101	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	EXTERIOR METAL PAINT
	PRODUCT:	PRO INDUSTRIAL WATERBASED ALKYD URETHANE
	COLOR:	IRON ORE
	NUMBER:	SW7069
	LRV:	6
	FINISH	LOW SHEEN
	PRIMER:	PRO INDUSTRIAL PRO-CRYL PRIMER
	SUSTAINABLE:	YES
	LOCATION:	COPING
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
PT-102	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	EXTERIOR PAINT
	PRODUCT:	A-100 EXTERIOR LATEX A12 SERIES
	COLOR:	GARDEN GROOVE
	NUMBER:	SW6445
	LRV:	18
	FINISH:	WALLS-EGGSHELL
	PRIME:	LOXON MASONRY PRIMER / SEALER
	SUSTAINABLE:	YES
	LOCATION:	EXTERIOR
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949

WALL PANELS

PT-103	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	EXTERIOR PAINT
	PRODUCT:	A-100 EXTERIOR LATEX A12 SERIES
	COLOR:	CREAMY
	NUMBER:	SW7012
	LRV:	81
	FINISH:	WALLS-EGGSHELL
	PRIME:	LOXON MASONRY PRIMER / SEALER
	SUSTAINABLE:	YES
	LOCATION:	EXTERIOR
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
PT-104	MANUFACTURER:	SHERWIN WILLIAMS
	DESCRIPTION:	EXTERIOR PAINT
	PRODUCT:	A-100 EXTERIOR LATEX A12 SERIES
	COLOR:	TAUPE TONE
	NUMBER:	SW7633
	LRV:	36
	FINISH:	MODERN GRAY
	PRIMER:	PRIME WOOD WITH PROBLOCK
	SUSTAINABLE:	YES
	LOCATION:	INTERIOR WOOD C-CHANNEL
	CONTACT:	MIKE P BARDON; SHERWIN WILLIAMS; MICHAEL.P.BARDEN@SHERWIN.COM; 480.244.0949
WP-1C	MANUFACTURER:	FACILITY CONCEPTS INC
	DESCRIPTION:	WALL PANEL - PANEL OPTION A
	WOOD SPECIES:	RED OAK
	SIZE:	REFER TO DRAWINGS
	FINISH:	CASK
	SEALER:	3 COATS OF WATER BASED, CLEAR MATTE TOP COAT
	INSTALLATION:	PER MANUFACTURERS RECOMMENDATION
	LOCATION:	BOOTH NOOK, REFER TO FINISH PLAN AND INTERIOR ELEVATIONS
	PRICE:	TBD
	LEAD TIME:	TBD
	NOTES:	GC TO PROVIDE FINISHED SAMPLE FOR ARCH/OWNER APPROVAL - PROVIDE SHOP - APPLIED CLASS A FLAME SPREAD RETARDANT.
	CONTACT:	WILLIAM DAY; FACILITY CONCEPTS INC; WDAY@FCIUS.COM; 800.915.8890 EXT 117
WD-2C	MANUFACTURER:	FACILITY CONCEPTS INC
	DESCRIPTION:	CHAIR RAIL
	WOOD SPECIES:	RED OAK
	COLOR:	CASK
	SIZE:	1 3/8" X 3/4", LENGTH VARIES
	INSTALLATION:	PER MANUFACTURER RECOMMENDATIONS
	LOCATION:	WAINSCOT AND TRIM/CAP, REFER TO INTERIOR ELEVATIONS
	NOTES:	GC TO PROVIDE FINISHED SAMPLE FOR ARCH/OWNER APPROVAL - PROVIDE SHOP-APPLIED CLASS A FLAME SPREAD RETARDANT. PROVIDE CLEAR SHERWIN WILLIAMS "CLASS A VARNISH SYSTEM" FLAMES SPREAD RETARDANT, G.C. TO APPLY F.R. PER MANUFACTURER'S RECOMMENDATION ON ALL SIDES OF PANELS PRIOR TO SEALER, G.C. TO TEST PRIOR TO INSTALLATION.
	CONTACT:	WILLIAM DAY; FACILITY CONCEPTS INC; WDAY@FCIUS.COM; 800.915.8890 EXT 117
WD-4C	MANUFACTURER:	FACILITY CONCEPTS INC
	DESCRIPTION:	WALL CAP
	WOOD SPECIES:	RED OAK
	SIZE:	3/4" HIGHT X 7 5/8" WIDTH
	FINISH:	CASK
	SEALER:	3 COATS OF WATER BASED, CLEAR MATTE TOP COAT
	INSTALLATION:	PER MANUFACTURERS RECOMMENDATION
	LOCATION:	WAINSCOT AND TRIM/CAP, REFER TO INTERIOR ELEVATIONS
	NOTES:	GC TO PROVIDE FINISHED SAMPLE FOR ARCH/OWNER APPROVAL - PROVIDE SHOP-APPLIED CLASS A FLAME SPREAD RETARDANT. PROVIDE CLEAR SHERWIN WILLIAMS "CLASS A VARNISH SYSTEM" FLAMES SPREAD RETARDANT, G.C. TO APPLY F.R. PER MANUFACTURER'S RECOMMENDATION ON ALL SIDES OF PANELS PRIOR TO SEALER, G.C. TO TEST PRIOR TO INSTALLATION.
	CONTACT:	WILLIAM DAY; FACILITY CONCEPTS INC; WDAY@FCIUS.COM; 800.915.8890 EXT 117
WC-1	MANUFACTURER:	KOROSEAL
	DESCRIPTION:	WALL COVERING
	STYLE/MODEL:	VINYL WALL COVERING, TYPE II CD210270, BACKING: NON-WOMEN, CLASS A FIRE RATING
	COLOR:	CUSTOM PRINTED GRAPHIC
	LEAD TIME:	2-5 WEEKS
	NOTES:	OWNER TO PROVIDE ARTWORK GRAPHIC

SS-1	MANUFACTURER:	PROVIDED BY VENDOR
	DESCRIPTION:	BRUSHED STAINLESS STEEL PANEL
	GAUGE:	18
	TYPE:	304
	SIZE:	1/2" W TRIM 2" W CORNER
	SUSTAINABLE:	NO
	CONTACT:	PROVIDED BY VENDOR
	NOTES:	1. G.C. TO PROVIDE SAMPLES TO INTERIOR DESIGN FOR APPROVAL PRIOR TO PURCHASE AN INSTALL. 2. SHEET METAL SHALL BE FREE OF RUST, SCRATCHES, OR BLEMISHES.
FRP-1	MANUFACTURER:	MARLITE
	DESCRIPTION:	FIBERGLASS REINFORCED PANEL
	COLLECTION:	STANDARD FRP
	COLOR:	WHITE #S100G
	FINISH:	SMOOTH SURFACE
	RATING:	CLASS A
	LOCATION:	BOH
	LEAD TIME:	4-6 WEEKS
	SUSTAINABLE:	YES
	NOTES:	-FRP TO BE FULL HEIGHT OF THE WALL -G.C. TO PROVIDE ALL MATCHING MOLDING TRIMS, AND ACCESSORIES ACCORDINGLY. SILICONE USED SHALL MATCH PANEL COLOR. -ALL SEAMS TO BE HORIZONTAL. -INSTALLATION PER MANUFACTURER'S SPECIFICATIONS
MP-1	MANUFACTURER:	ATAS
	DESCRIPTION:	METAL WALL PANEL
	COLLECTION:	METAFOR PANELS (MFP 120)
	COLOR:	BONE WHITE 26
	SIZE:	12" X 36"
	THICKNESS:	.032"
	PRICE:	-
	LEAD TIME:	2-4 WEEKS
	SUSTAINABLE:	YES
	CONTACT:	MARK BROWN - ATAS MBROWN@ATAS.COM; 484.221.6346

CEILING FINISHES

CL-1	MANUFACTURER:	USG
	DESCRIPTION:	ACOUSTICAL CEILING TILE
	STYLE:	VINYL WRAPPED SHEETROCK BRAND LAY-IN GYPSUM CEILING PANELS / CLIMAPLUS PERFORMANCE
	SIZE:	24" X 48"
	PROFILE:	SQUARE EDGE
	ITEM NUMBER:	#3200
	COLOR:	WHITE
	GRID:	WHITE DONN BRAND DXLA 15/16"
	LEAD TIME:	3-6 WEEKS
	LOCATION:	BOH, OPEN KITCHEN & MANAGER'S OFFICE
	SUSTAINABLE:	YES
	CONTACT:	MEGAN PETERS - USG MEPETERS@USG.COM; 904.252.9013
CL-2	MANUFACTURER:	ARMSTRONG
	DESCRIPTION:	TECTUM CEILING PANELS
	STYLE:	DIRECT ATTACH PANELS
	SIZE:	24" X 48"
	THICKNESS:	1"
	COLOR:	WHITE
	LEAD TIME:	3-6 WEEKS
	LOCATION:	DINING AREA
	SUSTAINABLE:	YES
	CONTACT:	WILL HOLLIS - ARMSTRONG WHOLLIS@ARMSTRONGCEILINGS.COM; 717.396.3068

COUNTERTOP

CT-1	MANUFACTURER:	PROVIDED BY VENDOR
	DESCRIPTION:	STAINLESS STEEL COUNTERTOP
	GAUGE:	18
	TYPE:	304
	FINISH:	SATIN STAINLESS STEEL
	LOCATION:	INTERIOR ORDER COUNTER
	CONTACT	PROVIDED BY VENDOR
CT-3	MANUFACTURER	CORIAN
	DESCRIPTION:	SOLID SURFACE
	COLOR:	DOVE
	FINISH:	POLISHED
	THICKNESS:	1/2"
	EDGE:	1/8 SQUARE EASED EDGE
	LOCATION:	RESTROOMS

zebra

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14614 N KIERLAND BLVD, SUITE N300
SCOTTSDALE, AZ 85254

PHONE: 480.912.1169 zbr.global

CONSULTANT LOGO:

STORE NO:
FL, #1794

SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
FINISH SCHEDULE

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A601

LANDLORD NOTE

DISPLAY FIXTURES, RACKS, SHELVING, AND STORAGE UNIT REQUIREMENTS:

•TENANT SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND USE OF ANY DISPLAY OR STORAGE SYSTEM(S) WITHIN THE PREMISE INCLUDING ALL COMPLIANCE WITH APPLICABLE BUILDING CODES, FIRE CODES AND THE REQUIREMENTS OF ANY INSURANCE RATING BUREAUS. IF ANYTHING DONE, OMITTED TO BE DONE OR SUFFERED TO BE DONE BY TENANT IN, UPON OR ABOUT THE PREMISES IN REGARD TO SUCH DISPLAY OR STORAGE SYSTEM(S) SHALL RESULT IN A FIRE CODE VIOLATION(S) AND THE TENANT FAILS TO TAKE CORRECTIVE ACTION AND / OR PAY THE ASSOCIATED FINE, REGARDLESS OF WHETHER ASSESSED AGAINST TENANT OR LANDLORD, WITHIN THE PRESCRIBED TIME PERIOD, THEN TENANT SHALL BE LIABLE FOR ALL COSTS AND EXPENSES RESULTING FROM SUCH VIOLATION(S) AND LANDLORD SHALL HAVE THE RIGHT TO CORRECT ANY SUCH CONDITION(S) AT TENANT'S EXPENSE.

•TENANT DISPLAY FIXTURES IN THE RETAIL SPACE AND RACK / SHELVING / STORAGE UNITS IN THE STOCKROOM SHALL BE DESIGNED TO PROVIDE ADEQUATE CLEARANCE FOR THE AUTOMATIC (FIRE) SPRINKLER SYSTEM. NO DISPLAYS OR STORAGE SHOULD EXCEED 12FT AND CEILINGS MUST BE INSTALLED TO PROVIDE A MINIMUM OF 18" OF CLEARANCE BETWEEN THE TOP OF THE STORAGE SYSTEM AND SPRINKLER DEFLECTORS.

•TENANT DISPLAYS OR STORAGE HIGHER THAN 12'-0" ARE CLASSIFIED AS "HIGH PILED STORAGE", WHICH REQUIRES HIGH HAZARDOUS AUTOMATIC (FIRE) SPRINKLER PROTECTION DESIGNED PER FM GLOBAL LOSS PREVENTION DATA SHEET AND NFPA REQUIREMENTS FOR THE STORAGE OF "GROUP A PLASTIC" COMMODITIES. HIGH PILED STORAGE ALSO REQUIRES A MINIMUM OF 36" OF CLEARANCE BETWEEN THE TOP OF STORAGE AND SPRINKLER DEFLECTORS.

•TENANT MOBILE / COMPACT STORAGE SYSTEMS SHALL BE CONSTRUCTED OF WIRE MESH SHELVES. HOWEVER, IF CONSTRUCTED WITH SOLID SHELVES (WOOD OR STEEL), THE UNITS SHALL BE INSTALLED WITH A MINIMUM OF A 3" SPACER TO PROVIDE SPACE BETWEEN UNITS AT MAXIMUM 5'-0" INTERVALS.

•TENANT'S ARCHITECT AND GENERAL CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION TO THE MALL REQUIRED SPRINKLER CONTRACTOR REGARDING STOCK / STORAGE AREA:

- O TYPE OF STORAGE SYSTEM(S). (INCLUDING DETAILS OF THE STORAGE SYSTEM(S).
- O TYPE OF SHELVING. (WIRE MESH / SOLID WOOD / SOLID STEEL, ETC.)
- O TYPE OF COMMODITIES. (PLASTICS, AEROSOL'S, CLOTHING, ETC)
- O ELEVATION OF HIGHEST SHELF / CEILING HEIGHT.

•LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

FURNITURE SCHEDULE

APP SHELF

FC-B-1	MANUFACTURER:	RAKKS
	DESCRIPTION:	(1 BAY) FLOOR TO CEILING SHELVING
	PART NUMBER:	PC2BL-1BFM-036-18B
	ITEM DETAILS:	PC2/BL- COUNTER TO CEILING COMPRESSION SHELVING
	FRAME FINISH:	BLACK ANODIZE FINISH
	SHELF FINISH:	BLACK ANODIZE FINISH
	SIZE:	36" X 18" ONE BAY
	QTY OF SHELVES:	2
	LOCATION:	DINING AREA
	CONTACT:	CARA CULLEN - RACKS CARA@RACKS.COM 781.691.0597

UMBRELLA

UMB-1	MANUFACTURER:	BAMBRELLA
	DESCRIPTION:	OUTDOOR UMBRELLA
	COLLECTION:	COMMERCIAL GRADE SANTA ANA CENTER POLE SQUARE
	FABRIC:	GREEN
	FRAME FINISH:	GREEN
	POLE SIZE:	1.5"
	SIZE:	6.5'X 6.5' SQUARE
	BASE:	110 LB FLAT STEEL BASE
	LOCATION:	PATIO
	CONTACT:	GARY ECOFF - BAMBRELLA GE@BAMBRELLAUSA.COM; 561-288-8655

PLANTS

FP-1	MANUFACTURER:	PLANTSCAPE
	DESCRIPTION:	INTERIOR FAUX PLANT
	STYLE:	AUSTRALIAN LAUREL VINE
	ITEM NUMBER:	LAA612
	COLOR:	GREEN
	SIZE:	10"-12"
	INSTALLATION:	AFFIXED INTO STYROFOAM SECTIONS, TOP DRESSED WITH IFR MOSS CLOTH FOLIAGE.
	RESISTANCE:	FIRE-RETARDANT THERMALEAF
	LOCATION:	DINNING AREA
	CONTACT:	CASEY EMANS CASEY@PLANTSCAPEINC.COM 952.200.7007

TRASH RECEPTACLE

T-2-STR	MANUFACTURER:	FACILITY CONCEPTS INC
	DESCRIPTION:	STANDARD: 2-STREAM UNIT
	STYLE:	TBD
	FINISH:	TBD
	SIZE:	TBD
	LOCATION:	DINING ROOM
	CONTACT:	WILLIAM DAY - FACILITY CONCEPTS INC WDAY@FCIUS.COM, 800.915.8890 X 117
E-TRSH	MANUFACTURER:	FACILITY CONCEPTS INC
	DESCRIPTION:	EXTERIOR TRASH RECEPTACLE
	STYLE:	TBD
	FINISH:	TBD
	SIZE:	TBD
	LOCATION:	PATIO
	CONTACT:	WILLIAM DAY - FACILITY CONCEPTS INC WDAY@FCIUS.COM, 800.915.8890 X 117
E-RCYL	MANUFACTURER:	FACILITY CONCEPTS INC
	DESCRIPTION:	EXTERIOR RECYCLE UNIT
	STYLE:	TBD
	FINISH:	TBD
	SIZE:	TBD
	LOCATION:	PATIO
	CONTACT:	WILLIAM DAY - FACILITY CONCEPTS INC WDAY@FCIUS.COM, 800.915.8890 X 117

ROLLER SHADE

WS-1	MANUFACTURER:	ROLL-A-SHADE
	COLLECTION:	SIGNATURE SERIES 5% OPENNESS
	COLOR:	BLACK I GRAY
	OPERATION SYSTEM:	MANUAL
	FASCIA COLOR:	BLACK
	FASCIA SIZE:	4"
	INSTALLATION:	INSTALLED ON THE FACE OF THE MULLION (OUTSIDE MOUNT) TO GIVE THE FASCIA A FLUSHED LOOK
	CONTACT:	SANDY MCCOY - ROLL-A-SHADE ESTIMATES@ROLLASHADE.COM; 951.459.0375

KIOSK TABLE

K-124-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	WALL MOUNT KIOSK W/4 POS, 124"W
	ITEM NUMBER:	27458-33
	SIZE:	14"W x 124"L x3-1/2"H
	TOP FINISH:	RED OAK PLYWOOD - PLAIN SLICED
	STAIN FINISH:	CASK RED OAK
	BASE FINISH:	RAL 9011 GRAPHITE BLACK - SEMI-GLOSS FINISH
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248

CONDIMENT STATION

CNDMT	MANUFACTURER:	FACILITY CONCEPTS INC
	DESCRIPTION:	CONDIMENT STATION
	ITEM NUMBER:	-
	LOCATION:	DINING ROOM
	NOTES:	GC INSTALLED
	CONTACT:	WILLIAM DAY - FACILITY CONCEPTS INC WDAY@FCIUS.COM 800.915.8890X117

TABLE (EXTERIOR)

ET-1	MANUFACTURER:	FERMOB
	DESCRIPTION:	OUTDOOR DINING HEIGHT TABLE
	ITEM NUMBER:	4134 PEDESTAL TABLE
	FRAME FINISH:	CACTUS
	SIZE:	31.5" X 31.5" X 29"H
	LOCATION:	PATIO
	CONTACT:	KAYLA THURMOND KTHURMOND@FERMOBUSA.COM 470.345.3005
ET-2	MANUFACTURER:	FERMOB
	DESCRIPTION:	OUTDOOR DINING TABLE (ADA)
	WOOD FINISH:	4133 TABLE
	FRAME FINISH:	CEDAR GREEN
	SIZE:	31.5" X 56.5" X 29"H
	LOCATION:	PATIO
	CONTACT:	KAYLA THURMOND KTHURMOND@FERMOBUSA.COM 470.345.3005

BOOTH

BOO-C30-1-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	30" INDOOR SINGLE BOOTH
	ITEM NUMBER:	27458-13
	FINISH:	RED OAK WOOD, CASK RED WOOD - SEMI-GLOSS FINISH
	SIZE:	30"L x 21-1/4"D x 42-15/16"H
	FRAME FINISH:	RAL 9011 GRAPHITE BLACK
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
BOO-C30-2-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	30" INDOOR DOUBLE BOOTH
	ITEM NUMBER:	27458-16
	FINISH:	RED OAK WOOD, CASK RED WOOD - SEMI-GLOSS FINISH
	SIZE:	30"L x 42-1/2"D x 42-15/16"H
	FRAME FINISH:	RAL 9011 GRAPHITE BLACK
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
BOO-C30-FB-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	INDOOR SINGLE SIDED SLATTED BOOTH ITH FINISHED BACK, 30"
	ITEM NUMBER:	27458-16
	FINISH:	RED OAK WOOD, CASK RED WOOD - SEMI-GLOSS FINISH
	SIZE:	30"L x 42-1/2"D x 42-15/16"H
	FRAME FINISH:	RAL 9011 GRAPHITE BLACK
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
BOO-C48-1-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	48" INDOOR SINGLE BOOTH
	ITEM NUMBER:	27458-14
	FINISH:	RED OAK WOOD, CASK RED WOOD - SEMI-GLOSS FINISH
	SIZE:	48"L x 21-1/4"D x 42-15/16"H
	FRAME FINISH:	RAL 9011 GRAPHITE BLACK
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
BOO-C48-2-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	48" INDOOR DOUBLE BOOTH
	ITEM NUMBER:	27458-17
	FINISH:	RED OAK WOOD, CASK RED WOOD
	SIZE:	48"L X 42-1/2"D X 42-15/16"H
	FRAME FINISH:	RAL 9011 GRAPHITE BLACK - SEMI GLOSS FINISH
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
BOO-C48-FB-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	48" INDOOR SINGLE BOOTH W/FINISHED BACK
	ITEM NUMBER:	27458-8
	FINISH:	RED OAK WOOD, CASK RED WOOD - SEMI-GLOSS FINISH
	SIZE:	48"L x 21-1/4"D x 42-15/16"H
	FRAME FINISH:	RAL 9011 GRAPHITE BLACK
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
BOO-C30-FB-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	30" INDOOR SINGLE BOOTH W/FINISHED BACK
	ITEM NUMBER:	27458-7
	FINISH:	48"L x 21-1/4"D x 42-15/16"H
	SIZE:	30"Lx 21-1/4"D x 42-15/16"H
	FRAME FINISH:	RAL 9011 GRAPHITE BLACK
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248

CHAIR

CH-2-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	INDOOR CHAIR
	ITEM NUMBER:	27458-2
	FRAME COLOR:	RAL 9011 GRAPHITE BLACK
	SEAT:	CASK WHITE OAK
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
ECH-1 (PATIO)	MANUFACTURER:	FERMOB
	DESCRIPTION:	OUTDOOR METAL CHAIR
	ITEM NUMBER:	4101-CHAIR
	FRAME COLOR:	CACTUS
	SEAT:	19.5" X 22.5"X35"
	LOCATION:	PATIO
	CONTACT:	KAYLA THURMOND KTHURMOND@FERMOBUSA.COM 470.345.3005
ECH-2 (PATIO)	MANUFACTURER:	FERMOB
	DESCRIPTION:	OUTDOOR METAL CHAIR
	ITEM NUMBER:	4101-CHAIR
	FRAME COLOR:	CEDAR GREEN
	SEAT:	19.5" X 22.5"X35"
	LOCATION:	PATIO
	CONTACT:	KAYLA THURMOND KTHURMOND@FERMOBUSA.COM 470.345.3005

TABLE TOP

TT-C-1-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	24" X 24" INDOOR TABLE TOP
	ITEM NUMBER:	27458-27
	TABLE FINISH	RED OAK WOOD, CASK WOOD
	SIZE:	24"W x 24"L x 1-3/4"Th
	BASE:	TB-8
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
TT-C-2-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	24" X 30" INDOOR TABLE TOP
	ITEM NUMBER:	27458-28
	TABLE FINISH	RED OAK WOOD, CASK WOOD
	SIZE:	24"W x 30"L x 1-3/4"Th
	BASE:	TB-8
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
TT-C-3-RO	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	24" X 48" INDOOR TABLE TOP
	ITEM NUMBER:	27458-29
	TABLE FINISH:	RED OAK WOOD, CASK WOOD
	SIZE:	24"W x 48"L x 1-3/4"Th
	BASE:	TB-9/ TB-10
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248

TABLE BASE

TB-8	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	STOCK X-BASE
	ITEM NUMBER:	-
	FINISH:	RAL 9011 GRAPHITE BLACK - SEMI GLOSS
	HEIGHT:	DINING HEIGHT
	TABLE TOP:	TT-C-1-RO
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
TB-9	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	STOCK T-BASE
	ITEM NUMBER:	-
	TABLE FINISH:	RAL 9011 GRAPHITE BLACK - SEMI GLOSS
	HEIGHT:	DINING HEIGHT
	TABLE TOP:	TT-C-3-RO (2 BASES PER TOP)
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248
TB-10	MANUFACTURER:	PLYMOLD
	DESCRIPTION:	STOCK FIXED POST BASE
	ITEM NUMBER:	-
	FINISH:	RAL 9011 GRAPHITE BLACK - SEMI GLOSS
	HEIGHT:	DINING HEIGHT
	TABLE TOP:	TT-C-3-RO (2 BASES PER TOP)
	LOCATION:	DINING ROOM
	CONTACT:	EMILY PUGACZEWSKI - PLYMOLD EPUGACZEWSKI@PLYMOLD.COM 651.363.0248

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REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
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STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
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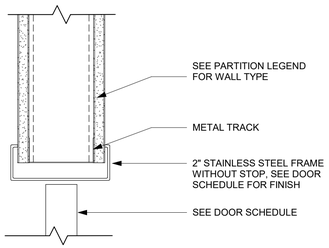
SHEET NAME:
FURNITURE SCHEDULE

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

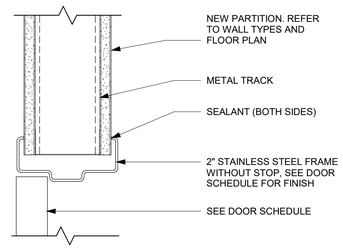
SHEET NO:
A602

DOOR SCHEDULE

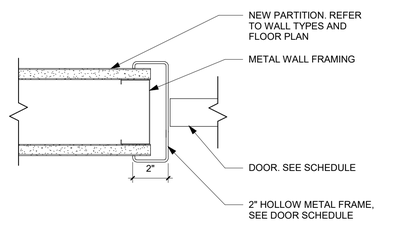
DOOR #	LOCATION	WIDTH	HEIGHT	THICKNESS	PANEL TYPE	PANEL MATERIAL	PANEL FINISH	FRAME TYPE	FRAME FINISH	HARDWARE	COMMENTS
100	DINING AREA	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	1	EXISTING TO REMAIN, UPGRADE HARDWARE AS REQUIRED TO ALIGN WITH SHSK STANDARDS
103	BOH	EXISTING	EXISTING	EXISTING	EXISTING	HOLLOW METAL	IRON ORE	EXISTING	IRON ORE	6	EXISTING TO REMAIN, UPGRADE HARDWARE AS REQUIRED TO ALIGN WITH SHSK STANDARDS. FRP TO BE INSTALLED ON ENTIRE INTERIOR FACE.
103b	HALLWAY	3' - 0"	7' - 0"	0' - 1 3/4"	E	BY MANUFACTURER	BY MANUFACTURER	3	STAINLESS STEEL	BY MANUFACTURER	MODEL: SCP-3, REFER TO ARCHITECTURAL SPECIFICATIONS
104	MANAGER'S OFFICE	3' - 0"	7' - 0"	0' - 1 3/4"	D	HOLLOW METAL	IRON ORE	2	IRON ORE	4	KICK PLATE TO BE INSTALLED ON PUSH SIDE.
105	HALLWAY	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	2	EXISTING TO REMAIN, UPGRADE HARDWARE AS REQUIRED TO ALIGN WITH SHSK STANDARDS
105b	BROOM CLOSET	1' - 6"	7' - 0"	0' - 1 3/4"	H	HOLLOW METAL	IRON ORE	2	IRON ORE	9	
106	ALL GENDER RESTROOM	3' - 0"	7' - 0"	0' - 1 3/4"	C	HOLLOW METAL	IRON ORE	2	IRON ORE	3	PROVIDE 1" DOOR UNDERCUT.
107	ALL GENDER RESTROOM	3' - 0"	7' - 0"	0' - 1 3/4"	C	HOLLOW METAL	IRON ORE	2	IRON ORE	3	PROVIDE 1" DOOR UNDERCUT.



DOUBLE ACTING DOOR HEADER C5

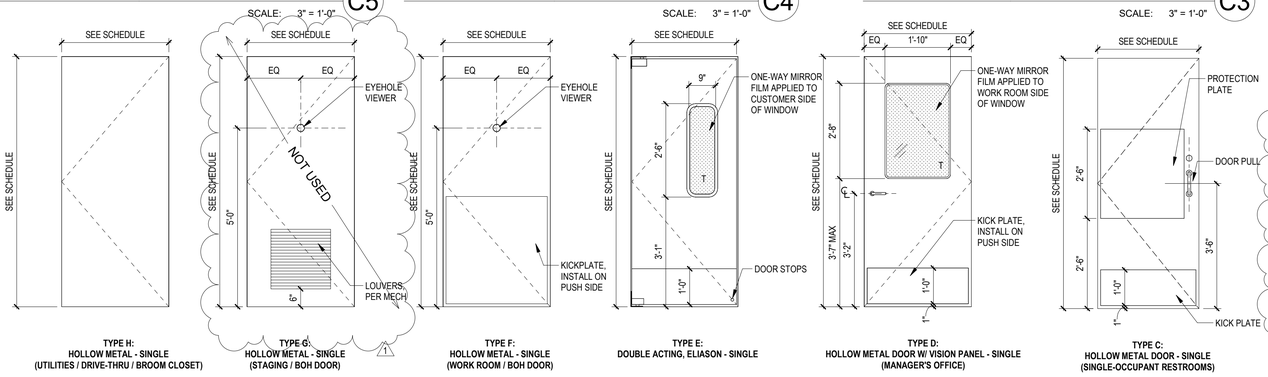


HOLLOW METAL DOOR HEAD/JAMB C4



DOUBLE ACTING DOOR JAMB C3

SCALE: 3" = 1'-0"



TYPE H:
HOLLOW METAL - SINGLE
(UTILITIES / DRIVE-THRU / BROOM CLOSET)

TYPE G:
HOLLOW METAL - SINGLE
(STAGING / BOH DOOR)

TYPE F:
HOLLOW METAL - SINGLE
(WORK ROOM / BOH DOOR)

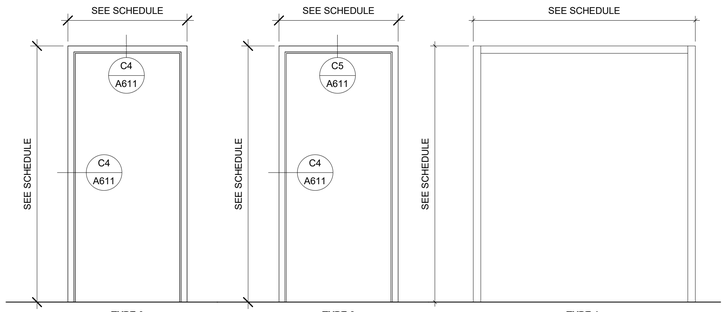
TYPE E:
DOUBLE ACTING, ELIASON - SINGLE

TYPE D:
HOLLOW METAL DOOR W/ VISION PANEL - SINGLE
(MANAGER'S OFFICE)

TYPE C:
HOLLOW METAL DOOR - SINGLE
(SINGLE-OCCUPANT RESTROOMS)

DOOR PANEL TYPES B3

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



TYPE 3
STAINLESS STEEL FRAME
DOUBLE ACTING DOOR

TYPE 2
HOLLOW METAL FRAME

TYPE 1
STOREFRONT FRAME
(SINGLE & DOUBLE)

DOOR FRAME TYPES A3

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

DOOR HARDWARE

HARDWARE GROUP NO. 01
FOR USE ON DOOR # (S):
100
PROVIDE EACH SGL DOOR (S) WITH THE FOLLOWING:

QTY	UNIT	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	THRESHOLD	655A	A	ZERO
2	EA	CONT.HINGE	700	630	IVE
2	EA	OH STOP & HOLDER	100H ADJ	630	GLY
2	EA	PANIC HARDWARE	CD25R510 NL	US26D	FAL
2	EA	FLUSH CEILING MTG PLT	4040XP-18G	695	LCN
2	EA	SURFACE CLOSER	4040XP	695	LCN
2	EA	CYLINDER	INSTA-KEY	313	INSTA-KEY
1	EA	REMAINING GASKETING			
2	EA	DOOR SWEEP	8192AA	AA	ZER

HARDWARE GROUP NO. 02
FOR USE ON DOOR # (S):
105
PROVIDE EACH SGL DOOR (S) WITH THE FOLLOWING:

QTY	UNIT	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	THRESHOLD	655A	A	ZERO
1	EA	CONT.HINGE	700	630	IVE
1	EA	OH STOP & HOLDER	100H ADJ	630	GLY
1	EA	PANIC HARDWARE	CD25R510 NL	US26D	FAL
1	EA	FLUSH CEILING MTG PLT	4040XP-18G	695	LCN
1	SET	SURFACE CLOSER	4040XP	695	LCN
1	EA	CYLINDER	INSTA-KEY	313	INSTA-KEY
1	EA	REMAINING GASKETING			
1	EA	DOOR SWEEP	8192AA	AA	ZER

HARDWARE GROUP NO. 03
FOR USE ON DOOR # (S):
106; 107
PROVIDE EACH SGL DOOR (S) WITH THE FOLLOWING:

QTY	UNIT	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	3CB1HW 4.5X4.5	630	IVE
1	EA	PRIVACY LOCK	L9040 06A L583-363 L283-722	630	SCH
1	EA	SURFACE CLOSER	4041DEL	689	LCN
2	EA	PUSH PLATE	8400 30"X6" LESS DOOR WIDTH	630	IVE
2	EA	KICK PLATE	8400 12"X2" LESS DOOR WIDTH	630	IVE
1	EA	DOOR STOP			
1	EA	SEALS	488S	S-BK	ZER

NOTE: KICKPLATE 12" HEIGHT. PUSH PLATE 30" HEIGHT, MOUNTED AS SHOWN ON DOOR ELEVATIONS. CLOSER TO BE PULL SIDE MOUNTED

HARDWARE GROUP NO. 04
FOR USE ON DOOR # (S):
104
PROVIDE EACH SGL DOOR (S) WITH THE FOLLOWING:

QTY	UNIT	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	3CB1HW 4.5X4.5	630	IVE
1	EA	STOREROOM LOCK	L9080L 06L	630	SCH
1	EA	CYLINDER AS REQ.	INSTA-KEY	US26D	INSTA-KEY
1	EA	SURFACE CLOSER	4040XP H	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LESS DOOR WIDTH	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	SEALS	488S	S-BK	ZER

NOTE: CLOSER PUSH SIDE MOUNTED.

HARDWARE GROUP NO. 06
FOR USE ON DOOR # (S):
103
PROVIDE EACH SGL DOOR (S) WITH THE FOLLOWING:

QTY	UNIT	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	700	630	IVE
1	EA	PANIC HARDWARE	CD25R 510 NL	626	FAL
1	EA	CYLINDER AS REQ.	INSTA-KEY	US26D	INSTA-KEY
1	EA	SURFACE CLOSER	4040XP SHCUSH	689	LCN
1	EA	KICK PLATE	8400 12"X2" LESS DOOR WIDTH	630	IVE
1	EA	SEALS	429	A	ZER
1	EA	DOOR SWEEP	819AA	AA	ZER
1	EA	THRESHOLD	655A	A	ZER

NOTE: CLOSER PUSH SIDE MOUNTED.

HARDWARE GROUP NO. 09
FOR USE ON DOOR # (S):
105b
PROVIDE EACH SGL DOOR (S) WITH THE FOLLOWING:

QTY	UNIT	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	3CB1HW 4.5 X 4.5	630	IVE
1	EA	PASSAGE SET	L9010 06B	630	SCH
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	SEALS	488S	S-BK	ZER

NOTE: CLOSER PUSH SIDE MOUNTED. DOOR VIEWER BY DOOR-SCOPE MOUNTING PER DOOR ELEVATIONS

GENERAL NOTES

1. SEE SHEET A001 FOR ADDITIONAL GENERAL NOTES
2. THIS DRAWING IS PART OF A COORDINATED SET OF DOCUMENTS. DO NOT SEPARATE BOUND SETS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IN THE EVENT OF INCONSISTENCIES BETWEEN ARCHITECTURAL AND CONSULTANT BASE PLANS THE ARCHITECTURAL SHEET SHALL TAKE PRECEDENCE. REPORT DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
4. VISIT SITE. VERIFY EXISTING CONDITIONS AND SITE CONTROL DIMENSIONS PRIOR TO SUBMITTING BIDS.
5. VERIFY LOCATIONS OF ALL UTILITY POINTS OF CONNECTION. NOTIFY ARCHITECT OF ANY AND ALL DISCREPANCIES FROM THE CONTRACT DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION.
6. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS OR TOLERANCES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS. REQUEST CLARIFICATION IN WRITING PRIOR TO PROCEEDING.
7. VERIFY ALL BY MEASUREMENTS TAKEN AT THE JOB SITE. TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND OR PERFORM THE WORK PROPERLY. REPORT DISCREPANCIES
8. DIMENSIONS ARE TO CRITICAL FACE OF FRAMING, FACE OF MASONRY, CENTERLINE OF OPENING OR CENTERLINE OF COLUMN UNLESS NOTED OTHERWISE
9. AREAS, CALCULATIONS AND TALLIES INDICATED ARE FOR THE CONVENIENCE OF THE OWNER AND THE LOCAL APPROVAL AGENCIES. THEY ARE NOT TO BE USED FOR BID TAKEOFFS, ESTIMATES, CONSTRUCTION OR ANY OTHER PURPOSE.
10. REFER TO STRUCTURAL DRAWINGS FOR CONCRETE DETAILING, MIX DESIGN & REINFORCING
11. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE UNLESS NOTED OTHERWISE; ALLOW FOR CONCRETE SHRINKAGE.
12. ALL TARGET ELEVATIONS ARE TAKEN FROM T.O. CONCRETE SLAB

DOOR NOTES

A. GC TO INSTALL TEMERED GLASS IN ALL DOORS AS REQUIRED.

B. TEMPERED GLASS REQUIRED IF GLAZING IS LESS THAN 18" AFF OR ADJACENT TO DOORS.

C. GC TO VERIFY ALL THRESHOLD CONDITIONS IN THE FIELD.

D. HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE. LEVER OPERATED MECHANISM, PUSH TYPE MECHANISMS AND U-SHAPED HANDLES ARE ACCEPTABLE DESIGNS. HARDWARE REQUIRED FOR ACCESSIBLE DOOR PASSAGE SHALL BE MOUNTED BETWEEN 34" AND 44" AFF.

E. IF A DOOR HAS A CLOSER, THEN THE SWEEP PERIOD OF THE CLOSER SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE DOOR WILL TAKE AT LEAST 5 SECONDS TO MOVE TO A POINT 12" FROM THE LATCH, MEASURED TO THE LEADING EDGE OF THE DOOR.

F. A.THE MAXIMUM FORCE FOR PUSHING AND PULLING OPEN A DOOR SHALL BE AS FOLLOWS:
a.FIRE DOORS SHALL HAVE THE MINIMUM OPENING FORCE ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, NO TO EXCEES 15 LBS.
b.OTHER DOORS:
•EXTERIOR HINGED DOOR, 5 LB MAX.
•INTERIOR HINGED DOOR, 5 LB MAX.
•SLIDING OR FOLDING DOOR, 5 LB MAX.
•THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT MAY HOLD THE DOOR IN A CLOSED POSITION.

G. ALL DOORS OPENING TO THE OUTSIDE MUST BE SELF-CLOSING AND RODENT PROOF.

H. SWINGING DOOR AND GATE SURFACES WITHIN 10" OF FINISHED FLOOR (MEASURED VERTICALLY) SHALL HAVE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR OR GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS ON THESE SURFACES SHALL BE WITHIN 1/16" OF THE SAME PLANE AS THE OTHER, AND FREE OF SHARP OR ABRASIVE EDGES. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CAPPED.

HARDWARE NOTES

A. GC TO PROVIDE AND INSTALL NEW INSTAKEY CONTROL KEYS & CYLINDERS TO SHAKE SHACK AT TURNOVER FROM NATIONAL ACCOUNT, SECURITY SOURCE.

B. ALL KEYED DOORS IN THE RESTAURANT TO BE PART OF THE SAME INSTAKEY KEY CONTROL SYSTEM - WHETHER PROVIDED BY LANDLORD, GC, OR VENDOR. GC TO CONFIRM WITH ARCHITECT AND OWNER PRIOR TO ORDERING AND INSTALLING.

C. MASTER KEY
a.OPENS ALL DOORS IN THE RESTAURANT
•EXTERIOR DOORS (LANDLORD AND SHAKE SHACK PROVIDED)
•MANAGER'S OFFICE
•RESTROOMS
•OTHER INTERIOR DOORS (MECHANICAL ROOM, DRY STORAGE, ETC.)
b.GC TO PROVIDE SIX (6) MASTER KEYS AND ONE (1) NEW RE-KEY INSTAKEY SET.

D. VENDOR KEY
a.OPENS ALL DOOR IN THE RESTAURANT EXCEPT THE MANAGER'S OFFICE
b.GC TO PROVIDE FOUR (4) VENDOR KEYS AND ONE (1) NEW RE-KEY INSTAKEY SET DELIVERED TO SHAKE SHACK OPERATIONS TEAM ON-PREMISES.

E. NO EXPOSED FASTENERS ALLOWED AT FRONT OF HOUSE CLOSERS AND EXIT HARDWARE. PROVIDE INTERNAL BLOCKING IN DOOR FOR CONCEALED ATTACHMENT.

F. INSTALL DOOR SILENCERS FOR ALL DOOR FRAMES (HAGER #307D)

KEY PROGRAM NOTES

A. GC TO PROVIDE AND INSTALL NEW INSTAKEY KEY CONTROL KEYS & CYLINDERS TO SHAKE SHACK AT TURNOVER FROM NATIONAL ACCOUNT VENDOR FOR INSTAKEY KEY CONTROL & LOCKS. GC REFER TO T002 FOR VENDOR CONTACT INFORMATION.

B. ALL KEYED DOORS IN THE RESTAURANT TO BE PART OF THE SAME INSTAKEY KEY CONTROL SYSTEM - WHETHER PROVIDED BY GC OR VENDOR. GC TO INSTALL PER PLANS AND SPECS.

C. MASTER KEY
- OPENS ALL DOORS IN RESTAURANT:
- EXTERIOR DOORS
- MANAGER'S OFFICE
- RESTROOMS
- OTHER DOORS AS NOTED IN HARDWARE SCHEDULE (MECHANICAL ROOM, DRY STORAGE, ETC.)
- G.C. TO PROVIDE (6) MASTER KEYS DELIVERED TO SHAKE SHACK OPERATIONS TEAM ON-PREMISES
- (6) MASTER KEYS AND (5) NEW RE-KEY INSTAKEY SET OPERATIONS TEAM ON PREMISES.

D. VENDOR KEY
- OPENS ALL DOORS IN RESTAURANT EXCEPT MANAGER'S OFFICE
- GC TO PROVIDE (4) VENDOR KEYS AND (2) NEW RE-KEY INSTAKEY SET DELIVERED TO SHAKE SHACK OPERATIONS TEAM ON-PREMISES

zebra

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SHAKE SHACK
COCONUT POINT, FL
23181 VILLAGE SHOPS WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

STATE OF FLORIDA
ZACHARY BRIAN SHIRK
AR99089
REGISTERED ARCHITECT
08/28/2026

FIELD VERIFICATION:
The contractor shall verify all figured dimensions and condition at the project site and notify Zebra Architecture, PLLC. of any dimensional errors, or omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
DOOR / WINDOW / HARDWARE SCHEDULE

DATE: 06/01/2026
PROJECT NO: 41354
DRAWN: SO
SCALE: AS INDICATED

SHEET NO:
A611

ABBREVIATIONS

ABBREV1

NOTE: ABBREVIATIONS MAY OR MAY NOT HAVE PERIODS, BUT SHALL BE READ AS SAME.

A.B.	ANCHOR BOLT
A.B.C.	AGGREGATE BASE COURSE
ACI	AMERICAN CONCRETE INSTITUTE
A/C	AIR CONDITIONER
A.F.F.	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ALT.	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
ARCH'L	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
A.W.T.S.	AUTOMATIC WELDED THREADED STUDS
BM	BEAM
B.F.F	BELOW FINISHED FLOOR
BLK	BLOCK
B.O.B.	BOTTOM OF BEAM
B.O.D.	BOTTOM OF DECK
B.O.F.	BOTTOM OF FOOTING
BRG	BEARING
C	CAMBER
C.C.	CENTERLINE TO CENTERLINE
CFS	COLD FORMED STEEL
C.G.	CENTER OF GRAVITY
C.I.P.	CAST IN PLACE
C.L.	CENTERLINE
C.L.B.	CENTERLINE OF BEAM
C.L.C.	CENTERLINE OF COLUMN
C.L.F.	CENTERLINE OF FOOTING
C.L.W.	CENTERLINE OF WALL
CLR	CLEAR
CONC	CONCRETE
CONC C.J.	CONCRETE CONTROL JOINT
CONC S.J.	CONCRETE SAWCUT JOINT
C.M.U.	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONT	CONTINUOUS
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
D.F. (D.F.L.)	DOUGLAS FIR LARCH
DL	DEAD LOAD
DIA	DIAMETER
DN	DOWN
DWG(S)	DRAWING(S)
E.C.	END TO CENTERLINE
E.E.	END TO END
E.O.S.	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EXP. BOLT (E.B.)	EXPANSION BOLT
EXP. JT (E.J.)	EXPANSION JOINT
E.W.	EACH WAY
(E)	EXISTING
F.F.	FINISHED FLOOR
F.O.M.	FACE OF MEMBER
F.O.S.	FACE OF STEEL
F.O.W.	FACE OF WALL
GA	GAGE (UNIT OF MEASUREMENT)
GALV	GALVANIZED
G.S.N.	GENERAL STRUCTURAL NOTES
GLB (GLULAM)	GLUED-LAMINATED BEAM
H.F.	HEM FIR
HORIZ	HORIZONTAL REINFORCING
H.S.	HEADED STUDS
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
ICF	INSULATED CONCRETE FORMS
I.F.W.	INSIDE FACE OF WALL
I.O.D.	INTERPRETATION OF DRAWINGS
JST	JOIST
K(KIP)	1000 POUNDS
KLF	KIPS PER LINEAR FOOT
LBS (#)	POUNDS
LGR	LEDGER
LGS	LIGHT GAGE STEEL
LGSEA	LIGHT GAGE STEEL ENGINEERS ASSOCIATION
L.O.D.	LOCATION OF DETAILS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAS	MASONRY
MAS C.J.	MASONRY CONTROL JOINT
MAX	MAXIMUM
MBMA	METAL BUILDING MANUFACTURERS ASSOCIATION
MECH'L	MECHANICAL
MFR'D	MANUFACTURED
MFR'(S)	MANUFACTURER('S)
MIN	MINIMUM
N/A	NOT APPLICABLE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.F.W.	OUTSIDE FACE OF WALL
OPP	OPPOSITE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PCI	PRECAST/PRESTRESSED CONCRETE INSTITUTE
P.C.	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PLF	POUNDS PER LINEAR FOOT
±	PLUS OR MINUS
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSIONED
PTI	POST-TENSIONING INSTITUTE
REINF	REINFORCING
SDI	STEEL DECK INSTITUTE
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SJI	STEEL JOIST INSTITUTE
SIM	SIMILAR
SQ.	SQUARE
SSMA	STEEL STUD MANUFACTURERS ASSOCIATION
STD	STANDARD
STL	STEEL
TL	TOTAL LOAD
T.O.B.	TOP OF BEAM
T.O.C.T.	TOP OF CONCRETE TOPPING
T.O.D.	TOP OF DECK
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PLATE
T.O.P.C.	TOP OF PRECAST CONCRETE
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TPI	TRUSS PLATE INSTITUTE
TYP	TYPICAL
T&G	TONGUE AND GROOVE
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL REINFORCING
WCLA	WEST COAST LUMBER ASSOCIATION
WCLIB	WEST COAST LUMBER INSPECTION BUREAU
W.W.F.	WELDED WIRE FABRIC
WWPA	WESTERN WOOD PRODUCTS ASSOCIATION
W/C	WATER TO CEMENT RATIO
W/O	WITHOUT

GENERAL STRUCTURAL NOTES

Applies unless noted otherwise on drawings

BUILDING CODE:

FLORIDA BUILDING CODE 8TH EDITION (2023) AND STANDARDS REFERENCED WITHIN.

LOADS:

ROOF:
EXISTING DEAD LOAD=18 PSF
EXISTING LIVE LOAD =20 PSF

LATERAL:

WIND:
BASIC DESIGN WIND SPEED (3-SECOND GUST), V(ult) = 158 MPH.
RISK CATEGORY, II.
EXPOSURE C.

SEISMIC:

RISK CATEGORY, II
SEISMIC IMPORTANCE FACTOR, I = 1.0.
MAPPED SHORT PERIOD SPECTRAL ACCELERATION, Ss =0.046.
MAPPED ONE SECOND SPECTRAL ACCELERATION, S1 = 0.023.
SOIL SITE CLASS, D.
DESIGN SHORT PERIOD SPECTRAL ACCELERATION, Sds = 0.049.
SEISMIC DESIGN CATEGORY, A.

COLD FORMED STRUCTURAL STEEL FRAMING:

GENERAL:

ALL COLD FORMED STEEL COMPONENTS INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE PER SSMA. COMPONENTS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE REFERENCED EDITION OF "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" BY THE AISI AND ICC ESR-3064P OR APPROVED ICC EQUIVALENT. STEEL FOR COLD FORMED MEMBERS SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI FOR 43 MIL THICKNESS AND LESS, AND MINIMUM YIELD STRENGTH OF 50 KSI FOR 54 MIL THICKNESS AND GREATER. STEEL FOR BRIDGING SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI. STEEL SHALL BE GALVANIZED AT LOCATIONS EXPOSED TO WEATHER AND WHEREVER NOTED.

ALL COLD FORMED LIGHT GAGE STEEL HORIZONTAL STRUCTURAL ELEMENTS (I.E.: JOISTS, BOXED BEAMS, HEADERS, ETC) SHALL BE FABRICATED FROM UNPUNCHED COMPONENTS.

WHERE WELDING IS SHOWN ON DRAWINGS IT SHALL BE PERFORMED BY WELDERS CERTIFIED IN LIGHT GAGE STRUCTURAL STEEL FRAMING WORK. DO NOT NOTCH FLANGES OF MEMBERS WITHOUT EXPRESSED APPROVAL OF THE ENGINEER OF RECORD.

SCREWED COLD FORMED TO COLD FORMED CONNECTIONS (I.E.: 97 MIL TO 97 MIL MAX) SHALL BE HILTI SELF-DRILLING AND SELF-PIERCING SCREWS PER ICC ESR-2196, OR APPROVED ICC EQUIVALENT. SCREW SIZE SHALL BE #10 X 3/4" MINIMUM AND MUST PROTRUDE THROUGH AND BEYOND THE CONNECTED STEEL MEMBERS A MINIMUM OF THREE FULL THREADS. SCREWS SHALL BE INSTALLED WITH A MINIMUM EDGE AND END DISTANCE OF THREE SCREW DIAMETERS.

MIL THICKNESS / GAGE NUMBER REFERENCE:

27 MIL ------- 22 GA	54 MIL ------- 16 GA
33 MIL ------- 20 GA	68 MIL ------- 14 GA
43 MIL ------- 18 GA	97 MIL ------- 12 GA

STRUCTURAL STEEL:

GENERAL:

ALL STEEL CONSTRUCTION SHALL BE PER THE REFERENCED AISC STEEL CONSTRUCTION MANUAL. ALL MISCELLANEOUS STEEL UNLESS NOTED OTHERWISE SHALL BE ASTM A36 (Fy = 36 KSI).

ALL STRUCTURAL ROLLED STEEL MEMBERS WITH Fy GREATER THAN 36 KSI ARE TO BE IDENTIFIED WITH AN ASTM SPECIFICATION MARK OR TAG PER IBC SEC. 2202.

UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE ASTM A307. A325 BOLTS MAY BE SUBSTITUTED FOR A307 BOLTS AT THE CONTRACTOR'S OPTION, REVERSE SUBSTITUTION IS NOT PERMITTED. ALL BOLTS SHALL BE INSTALLED WITH STEEL WASHERS AT SHORT SLOTTED HOLES USING SNUG TIGHT INSTALLATION, UNLESS NOTED OTHERWISE.

WELDING:

UNLESS NOTED OTHERWISE, ALL SHOP AND FIELD WELDS PER REFERENCED EDITION OF THE AWS STANDARDS. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING DOCUMENTED CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING

CONCRETE:

SPECIFIED 28 DAY COMPRESSIVE STRENGTH F'c:

INTERIOR SLAB ON GRADE (NOT MOISTURE SENSITIVE) -- ---------- 3,000 PSI

GENERAL:

ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE REFERENCED EDITION OF THE ACI STANDARDS. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED UNLESS NOTED OTHERWISE. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED. NO OTHER ADMIXTURES PERMITTED WITHOUT APPROVAL. FOR CONCRETE WITHOUT PLASTICIZER, MAXIMUM SLUMP 4 1/2" AT POINT OF PLACEMENT U.N.O. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON STRUCTURAL ENGINEER'S APPROVAL.

FOR REINFORCING INFORMATION, SEE REINFORCING SECTION OF G.S.N., PLANS, SCHEDULES AND DETAILS.

UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE EMBEDMENT OF CONDUITS, PIPES, SLEEVES, ETC. OF ANY MATERIAL SHALL NOT BE PERMITTED WITHIN ANY CONCRETE STRUCTURAL ELEMENT (IE: COLUMNS, BEAMS, ELEVATED SLABS, ETC.) OR STRUCTURAL CONCRETE TOPPINGS WITHOUT THE EXPRESSED APPROVAL OF THE STRUCTURAL ENGINEER.

FLY ASH – IF PERMITTED BY ARCHITECTURAL SPECIFICATIONS, SHALL BE LIMITED TO 25% OF TOTAL CEMENTITIOUS MATERIALS BY WEIGHT. FLY ASH SHALL BE INCLUDED IN THE CALCULATION OF W/C RATIOS SPECIFIED ABOVE. FLY ASH ADDITIVES SHALL NOT BE USED ON SLABS WITH A BURNISHED OR ACID FINISH.

TEST DATA FOR EACH CONCRETE MIX SHALL BE SUBMITTED FOR REVIEW PER CHAPTER 5 OF ACI 318. REFERENCE FIGURE R5.3 FOR SUBMITTAL REQUIREMENTS AND OPTIONS. CONCRETE MIX DESIGNS THAT ARE SUBMITTED WITHOUT THE APPROPRIATE TEST DATA CANNOT BE REVIEWED.

SLABS ON GRADE:

MAXIMUM SLUMP WITHOUT PLASTICIZER AT POINT OF PLACEMENT SHALL BE 5 INCHES. MIX DESIGNS SHALL TAKE CARE TO PROVIDE THE LARGEST POSSIBLE SIZE OF COARSE AGGREGATE WHILE MAINTAINING CONCRETE WORKABILITY. NOMINAL MAXIMUM AGGREGATE SIZE SHALL NOT BE LESS THAN 3/4 INCH NOR MORE THAN 1/3 THE DEPTH OF THE SLAB.

FOR SLABS ON GRADE, PROVIDE CONCRETE WITH AN ULTIMATE SHRINKAGE LESS THAN 0.05% AT 28 DAYS. LABORATORY TEST RESULTS SHALL BE SUBMITTED INDICATING THAT THE CONCRETE SLAB ON GRADE MIX DESIGN (OR COMPARABLE) MEETS THE ULTIMATE SHRINKAGE REQUIREMENTS. SHRINKAGE VALUES FOR CONCRETE SPECIMENS SHALL BE TESTED PER ASTM C157 AND THE PROCEDURES IN ACI 209R TO PREDICT THE ULTIMATE DRYING SHRINKAGE.

CONCRETE SHALL BE MIXED, PLACED, FINISHED AND CURED PER REFERENCED EDITION OF ACI 302.1 FOR THE APPROPRIATE FLOOR CLASS TYPE PER TABLE 2.1 AND CHAPTER 7 AND 8. CURING COMPOUND SHALL BE COMPATIBLE WITH ARCHITECTURAL FLOOR FINISH. SLABS SHALL BE PLACED ON A FLAT, SMOOTH, FIRM, COMPACTED SUBGRADE.

ALL REINFORCING SHALL BE CHAIRED OR POSITIONED USING REBAR SPACERS TO ENSURE PROPER CLEARANCES. ALL REINFORCING SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT. SUPPORT OF SLAB ON GRADE REINFORCING SHALL BE SUPPORTED AND TIED FROM THE LOWER MAT OF REINFORCING SUCH THAT THE REINFORCING MAT'S DO NOT MOVE DURING CONCRETE PLACEMENT. SUPPORT OF SLAB ON GRADE REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE/CORROSION BY USE OF A PLASTIC OR CONCRETE CHAIR. DUCT-TAPE COVERED REINFORCING IS NOT AN ACCEPTABLE CHAIR.

SLABS ON GRADE SHALL BE VIBRATED ONLY AT TRENCHES, FLOOR DUCTS, TURNDOWNS, ETC. CAST CLOSURE POUR AROUND COLUMNS AFTER COLUMN DEAD LOAD IS APPLIED. UNLESS APPROVED OTHERWISE IN WRITING BY THE ARCHITECT, ALL CONCRETE SLABS ON GRADE SHALL BE BOUND BY CONTROL JOINTS (CONSTRUCTION OR SAW CUT) PER TYPICAL DETAILS, AS SHOWN ON THE FOUNDATION PLAN, SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 150 SQUARE FEET. CONSTRUCTION CONTROL JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING POURING. ALL OTHER JOINTS MAY BE SAW CUT. SLAB REINFORCING, WHERE SHOWN, SHALL NOT EXTEND MORE THAN 125 FEET WITHOUT STOPPING THE REINFORCEMENT AT A CONTROL JOINT.

VAPOR BARRIER, IF REQUIRED BY ARCHITECTURAL SPECIFICATION OR SOILS REPORT SHALL CONSIST OF A MINIMUM 15 MIL MATERIAL LAPPED A MINIMUM OF 6 INCHES AND TAPED PER MANUFACTURER RECOMMENDATIONS. ANY DAMAGE TO VAPOR BARRIER SHALL BE REPAIRED PRIOR TO CONCRETE PLACEMENT. THE FLOOR SLAB SHALL BE PLACED DIRECTLY ON THE VAPOR BARRIER. THE VAPOR BARRIER SHALL BE PLACED ON TOP OF A SMOOTH FOUR INCH LAYER OF COMPACTED AGGREGATE BASE COURSE. CARE SHALL BE TAKEN TO KEEP MOISTURE AWAY FROM THE COMPACTED SUBBASE. SAND IS NOT AN ALTERNATIVE FOR THE BASE COURSE.. GENERAL CONTRACTOR SHALL PROVIDE A LOW SHRINKAGE CONCRETE MIX DESIGN TO MINIMIZE POTENTIAL SLAB CURL. SLABS PLACED DIRECTLY ON VAPOR BARRIERS SHALL BE REINFORCED, SEE FOUNDATION PLAN.

REINFORCING:

ALL REINFORCING PER CRSI SPECIFICATIONS AND HANDBOOK. ASTM A615 (Fy = 60 KSI / GRADE 60) DEFORMED BARS FOR ALL BARS #5 AND LARGER. ASTM A615 (Fy = 40 KSI / GRADE 40) DEFORMED BARS FOR ALL BARS #4 AND SMALLER. WHERE SHOWN ON DRAWINGS ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706. WELDED WIRE REINFORCING AND WIRE PER ASTM A1064. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. REFERENCED ACI STANDARDS AND DETAILING MANUAL APPLY. CLEAR CONCRETE COVERAGES AS FOLLOWS:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ---------- 3"
EXPOSED TO EARTH OR WEATHER
#6 OR LARGER ---------- 2"
#5 AND SMALLER ---------- 1 1/2"
ALL REINFORCING SHALL BE CHAIRED OR POSITIONED USING REBAR SPACERS TO ENSURE PROPER CLEARANCES. ALL REINFORCING SHALL BE SECURED IN PLACE PRIOR TO CONCRETE PLACEMENT. SUPPORT OF FOUNDATION REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE/CORROSION BY USE OF A PLASTIC OR CONCRETE CHAIR. DUCT-TAPE COVERED REINFORCING IS NOT AN ACCEPTABLE CHAIR.

ALL DIMENSIONS REFERENCED IN DRAWINGS AS "CLEAR" SHALL BE FROM FACE OF STRUCTURE TO EDGE OF REINFORCING, AND SHALL NOT BE LESS THAN STATED, NOR GREATER THAN "CLEAR" DIMENSION PLUS 3/8". ALL OTHERS SHALL BE PLUS OR MINUS 1/4" TYPICAL UNLESS NOTED OTHERWISE.

FIELD BENDING OR STRAIGHTENING OF DEFORMED BARS SHALL BE LIMITED TO #5 BARS AND SMALLER AND SHALL BE FIELD BENT OR STRAIGHTENED ONLY ONCE. ANY BEND SHALL BE LIMITED TO 90 DEGREES. IF FIELD BENDING OR STRAIGHTENING OF #6 BARS OR LARGER IS REQUIRED, OR IF A SECOND BEND IS REQUIRED FOR #5 BARS AND SMALLER, HEAT SHALL BE APPLIED FOR BENDING OR STRAIGHTENING. CONTRACTOR SHALL SUBMIT PROCEDURE FOR APPLYING HEAT TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BENDING OR STRAIGHTENING BARS.

SHOP DRAWINGS:

SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS IN ADDITION TO ITEMS REQUIRED BY ARCHITECTURAL SPECIFICATIONS. CONTRACTOR SHALL PROVIDE A MINIMUM OF 2 HARD COPY SUBMITTAL SETS OF EACH ITEM TO CTS FOR REVIEW, UNLESS NOTED OTHERWISE IN ARCHITECTURAL SPECIFICATIONS. ELECTRONIC SUBMITTALS ARE ALSO ACCEPTABLE.

THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL. ITEMS NOT IN ACCORDANCE WITH CONTRACT DOCUMENTS SHALL BE FLAGED UPON CONTRACTOR'S REVIEW.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS.

MANUFACTURER OR FABRICATOR SHALL CLOUD ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM CONTRACT DOCUMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES, APPROVALS AND THE COORDINATION OF THE WORK WITH ALL RELATED TRADES AND SUPPLIERS. ANY OF THE AFOREMENTIONED WHICH ARE NOT CLOUDED OR FLAGGED BY SUBMITTING PARTIES, SHALL NOT BE CONSIDERED APPROVED AFTER ENGINEER'S REVIEW, UNLESS NOTED ACCORDINGLY.

THE ENGINEER HAS THE RIGHT TO APPROVE OR DISAPPROVE ANY CHANGES TO CONTRACT DOCUMENTS AT ANYTIME BEFORE OR AFTER SHOP DRAWING REVIEW.

THE SHOP DRAWINGS DO NOT REPLACE THE CONTRACT DOCUMENTS. ITEMS OMITTED OR SHOWN INCORRECTLY AND ARE NOT FLAGGED BY THE STRUCTURAL ENGINEER OR ARCHITECT SHALL NOT BE CONSIDERED CHANGES TO CONTRACT DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ITEMS ARE CONSTRUCTED TO CONTRACT DOCUMENTS.

THE ADEQUACY OF ENGINEERING DESIGNS AND LAYOUT PERFORMED BY OTHERS RESTS WITH THE DESIGNING OR SUBMITTING AUTHORITY.

REVIEWING IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR.

GENERAL NOTES:

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. EXCEPT WHERE NOTED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE REFERENCED EDITION AND/OR ADDENDA. ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF A REGISTERED ENGINEER RECOGNIZED BY THE BUILDING CODE JURISDICTION OF THIS PROJECT.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS. BUILDING DIMENSIONS AND ELEVATIONS, WHERE SHOWN, WERE PROVIDED BY THE ARCHITECT AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATE ALL DIMENSIONS PRIOR TO PROCEEDING WITH THE WORK. ANY DISCREPANCIES SHALL BE RESOLVED THROUGH THE ARCHITECT. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL ITEMS WITH THE APPROPRIATE TRADE DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS BUT APPLY UNLESS NOTED OTHERWISE.

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

OPTIONS AND SUBSTITUTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF AN OPTION OR SUBSTITUTION IS CHOSEN, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES, APPROVALS AND THE COORDINATION OF THE WORK WITH ALL RELATED TRADES AND SUPPLIERS.

SPECIAL INSPECTION – STRUCTURAL ONLY:

SPECIAL INSPECTIONS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A STATE REGISTERED STRUCTURAL ENGINEER WHO IS FAMILIAR WITH THE STRUCTURAL DESIGN OF THIS PROJECT. THE SUPERVISING STRUCTURAL ENGINEER SHALL SEAL THE SPECIAL INSPECTION CERTIFICATE.

SPECIAL INSPECTION IS TO BE PROVIDED FOR THE ITEMS LISTED BELOW IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE BUILDING JURISDICTION. "SPECIAL STRUCTURAL INSPECTION" SHALL NOT RELIEVE THE OWNER OR THEIR AGENT FROM REQUESTING THE BUILDING JURISDICTION INSPECTIONS REQUIRED BY SECTION 110 OF THE INTERNATIONAL BUILDING CODE. SPECIAL INSPECTION IS REQUIRED PER CHAPTER 17 FOR THE FOLLOWING:

CONCRETE CONSTRUCTION:

1. CONCRETE:
A. DURING THE TAKING OF TEST SPECIMENS.
B. CONTINUOUS INSPECTION DURING THE PLACEMENT OF ALL REINFORCED CONCRETE, UNLESS NOTED OTHERWISE.
D. NO INSPECTION IS REQUIRED FOR PLACEMENT OF SLAB ON GRADE CONCRETE. INSPECTION OF SLAB ON GRADE REINFORCING IS REQUIRED PER "REINFORCING STEEL" SECTION BELOW.

2. REINFORCING STEEL: INSPECTION OF IN-PLACE REINFORCING FOR CONFORMANCE PRIOR TO THE CLOSING OF FORMS OR THE DELIVERY OF CONCRETE TO THE JOBSITE FOR THE FOLLOWING:
A. REINFORCING FOR ALL CONCRETE REQUIRED TO HAVE INSPECTION NOTED ABOVE.
C. REINFORCING FOR SLABS ON GRADE.

STEEL CONSTRUCTION:

1. WELDING:
A. VERIFICATION OF VALID WELDER'S CERTIFICATES.
B. PERIODIC VISUAL INSPECTION OF ALL SHOP AND FIELD WELDS.
C. ALL STRUCTURAL STEEL FABRICATORS SHALL EMPLOY AN AWS CERTIFIED INDEPENDENT TESTING AGENCY TO PROVIDE SHOP WELD INSPECTIONS PER CODE. INSPECTION REPORTS AND REQUIRED DOCUMENTATION SHALL BE SUBMITTED TO ENGINEER OF RECORD PRIOR TO STEEL INSTALLATION.

DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

A. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.
B. THE SPECIAL INSPECTOR IS NOT AUTHORIZED TO APPROVE DEVIATIONS FROM THE DESIGN DRAWINGS OR SPECIFICATIONS, AND ALL DEVIATIONS MUST BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO PROCEEDING WITH THE WORK. ALL REQUESTS FOR DEVIATIONS SHALL BE INITIATED BY THE CONTRACTOR VIA WRITTEN REQUEST FOR INFORMATION (RFI).
C. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE ENGINEER OR ARCHITECT OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE DESIGN AUTHORITY AND THE BUILDING OFFICIAL.

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PROJECT NUMBER	26-0081
PROJECT MANAGER	TRM
PROJECT ENGINEER	VVA
PROJECT DRAFTER	PET

FOR ADDITIONAL INFORMATION SHOWN BUT NOT NOTED, SEE GENERAL STRUCTURAL NOTES ON SHEET S101 AND TYPICAL DETAIL SHEETS.

THESE DRAWINGS/CALCULATIONS ARE CONSIDERED PRELIMINARY - NOT FOR CONSTRUCTION OR RECORDING UNLESS THE STRUCTURAL ENGINEER OF RECORD'S SEAL IS AFFIXED WITH WRITTEN SIGNATURE.

STORE NO.:
FL #1794

SHAKE SHACK®
COCONUT POINT
23181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

Digitally signed by Brady Notbohm
Date: 2026.08.27 10:14:48 -07:00

BRADY NOTBOHM No. 94726 STATE OF FLORIDA PROFESSIONAL ENGINEER

REVISIONS

△	DATE	DESCRIPTION

STATUS:
IFC SET

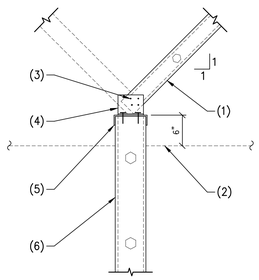
FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
GENERAL STRUCTURAL NOTES

DATE: 06/01/2026	PROJECT NO.: 41354
DRAWN: PET	SCALE:

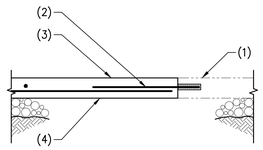
SHEET NO.:
S101



NOTES:

1. 362S162-33 AT 48" O.C. – ALTERNATE SIDES. SEE DETAIL 08 FOR TOP CONNECTION.
2. CEILING PER ARCH'L.
3. 4 #10 SCREWS.
4. 3"x3"x16 GA. CLIP ANGLE x 3" LONG WITH 6 #10 SCREWS TO TRACK.
5. CONTINUOUS TOP TRACK.
6. STEEL STUD WALL.

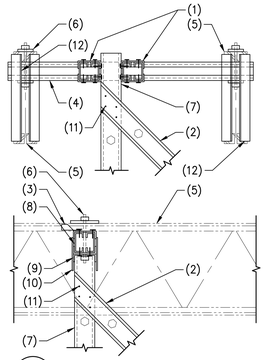
13 STUD WALL TOP CONNECTION — 26-0081 — NO SCALE



NOTES:

1. EXISTING SLAB ON GRADE.
2. #4 x 16" LONG AT 16" O.C. WITH EPOXY PER G.S.N. 4" EMBED.
3. CONCRETE SLAB ON GRADE.
4. VAPOR BARRIER BELOW SLAB.

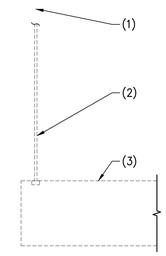
09 CONCRETE SLAB POURBACK — 1301-06M — NO SCALE



NOTES:

1. BOX BEAM (2) 362S162-54 WITH 362T125-54 TOP AND BOTTOM TRACK CONNECT WITH 2 #10 SCREWS AT 12" O.C. TOP AND BOTTOM. 2 #10 SCREWS ATTACHED TO STUDS INTO BOX BEAM AT 12" O.C.
2. SOFFIT BRACE PER DETAIL 04.
3. S/H2.5 WITH 0.157" DIA. HILTI X-U SHOT PINS TO JOIST. DO NOT LOCATE WITHIN 6" OF PANEL POINT.
4. BOX BEAM WITH (2) 362S162-54 WITH 362T125-54 TRACK TOP AND BOTTOM – SPACE AT 48" O.C. MAX.
5. EXISTING STEEL JOIST.
6. 3/8" DIA BOLT WITH 1/4"x2"x2" WASHER ON JOIST AND 1/4"x3"x3" WASHER AT BOX BEAM.
7. STEEL STUD PER DETAIL 04.
8. BOX BEAM (2) 362S162-54 MEMBERS WITH 362T125-54 TRACK TOP AND BOTTOM. CONNECT WITH #10 SCREWS AT 12" O.C. – TYP.
9. 18 GA. TRACK WITH #10 SCREWS AT 12" O.C.
10. LSTA9 EACH SIDE, EACH STUD, FILL ALL HOLES WITH #10 SCREWS.
11. 4 #12.
12. SEE DETAIL 06 FOR ADDITIONAL WEB INFORMATION.

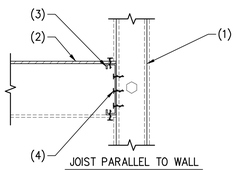
05 SOFFIT STUDS TO EXISTING STEEL JOIST — 26-0081 — NO SCALE



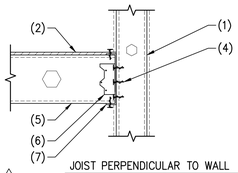
NOTES:

1. TOP CONNECTION PER DETAIL 02.
2. 1/2" DIA THREADED ROD.
3. HOOD BY OTHERS.

01 HOOD SUPPORT — 1305-03M — NO SCALE



JOIST PARALLEL TO WALL

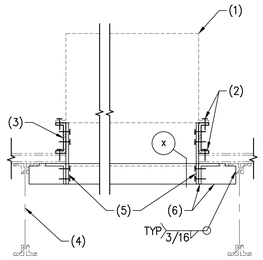


JOIST PERPENDICULAR TO WALL

NOTES:

1. STEEL STUD WALL.
2. 3/4" THICK PLYWOOD SHEATHING WITH #10 SCREWS AT 6" O.C. INTO FRAMING BELOW.
3. STEEL STUD LEDGER TO MATCH STEEL STUD JOIST SIZE.
4. 3 #10 SCREWS AT EACH VERTICAL STUD.
5. STEEL STUD JOIST.
6. SIMPSON L50.
7. CONTINUOUS 600T150-54 WITH 2 #10 SCREWS AT EACH STEEL STUD JOIST.

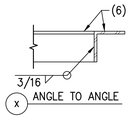
14 PLATFORM FRAMING AT STEEL STUD WALL — 26-0081 — NO SCALE



UNIT	STRAP SPACING
RTU	12" O.C. MINIMUM 3 EACH SIDE
EF, CU, HP	12" O.C. MINIMUM 1 EACH SIDE

NOTES:

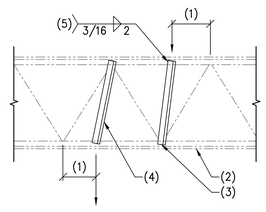
1. NEW RTU PER MECH'L.
2. #12 SCREWS AT 2 1/2" O.C. INTO CURB AND 10" O.C. INTO STEEL ROOF DECK ON ALL 4 SIDES.
3. CURB BY OTHERS – 16 GA. MIN.
4. EXISTING STEEL JOISTS. SEE DETAIL 03 FOR ADDITIONAL INFORMATION. EXISTING STEEL BEAM AT 10A.
5. SIMPSON ST2122 STRAP WITH MIN. OF 8 #10 SCREWS TOP AND BOTTOM OF STRAP.
6. 4"x4"x3/8" STEEL ANGLE PER PLAN.



ANGLE TO ANGLE

NOTE:
VERIFY EXISTING FRAMING IN FIELD AND NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES.

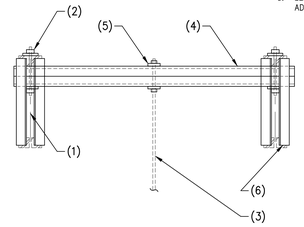
10 RTU CURB CONNECTION AT EXISTING ROOF – HIGH WIND
10A AS NOTED — 26-0081 — NO SCALE



NOTES:

1. ADDITIONAL MEMBER REQUIRED WHEN LOAD IS MORE THAN 3" FROM PANEL POINT.
2. EXISTING STEEL JOIST.
3. STEEL ANGLE 2"x2"x3/16" EACH SIDE FROM TOP CHORD TO NEAREST BOTTOM CHORD PANEL POINT.
4. STEEL ANGLE 2"x2"x3/16" EACH SIDE FROM BOTTOM CHORD TO NEAREST TOP CHORD PANEL POINT.
5. TYP EACH ANGLE EACH END.

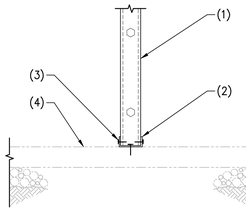
06 ADDITIONAL WEB MEMBERS FOR CONCENTRATED LOAD OCCURRING AWAY FROM JOIST PANEL POINT — 1301-05M — NO SCALE



NOTES:

1. EXISTING STEEL JOIST.
2. 1/2" DIA BOLT WITH 1/4"x2"x2" WASHER ON TOP AND BOTTOM.
3. THREADED ROD PER DETAIL 01.
4. UNISTRUT P1001.
5. 1/4"x2"x2" PLATE WASHER AND NUTS TOP AND BOTTOM.
6. SEE DETAIL 06 FOR ADDITIONAL WEB INFORMATION.

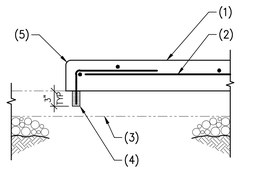
02 THREADED ROD AND BRACE AT EXISTING STEEL JOIST — 1305-30M — NO SCALE



NOTES:

1. STEEL STUD WALL.
2. CONTINUOUS STEEL TRACK TO MATCH STUD SIZE AND GAGE WITH 0.157" DIA. HILTI X-U SHOT PINS WITH 1" EMBEDMENT AT 16" O.C.
3. #10 SCREW CONNECTION AT EACH STUD EACH SIDE.
4. EXISTING CONCRETE SLAB ON GRADE.

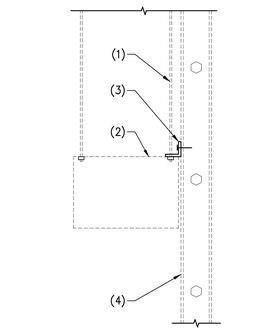
15 STEEL STUD WALL BASE CONNECTION — 26-0081 — NO SCALE



NOTES:

1. CONCRETE EQUIPMENT PAD.
2. #4 AT 16" O.C. EACH WAY.
3. EXISTING CONCRETE SLAB ON GRADE.
4. #4 BENT BAR AT 16" O.C. ATTACH TO SLAB WITH EPOXY PER G.S.N.
5. TOOL EDGE.

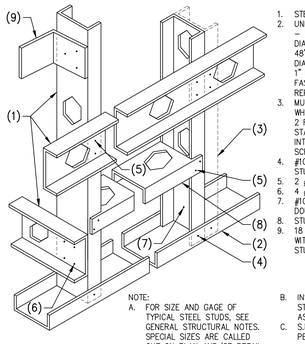
11 CONCRETE EQUIPMENT PAD AT EXISTING CONCRETE SLAB — 26-0081 — NO SCALE



NOTES:

1. THREADED ROD PER DETAIL 01.
2. HOOD.
3. 16 GA. ANGLE 3" VERTICAL LEG, HORIZONTAL LEG AS REQUIRED. USE #10 SCREW EACH STUD.
4. PROPOSED ARCHITECTURAL WALL.

07 HOOD TO STUD WALL — 13-0502M — NO SCALE



NOTE:
A. FOR SIZE AND GAGE OF TYPICAL STEEL STUDS, SEE GENERAL STRUCTURAL NOTES. SPECIAL SIZES ARE CALLED OUT ON PLAN AND/OR DETAIL.

NOTES:

1. STEEL STUD.
2. UNPUNCHED STEEL STUD TRACK – ATTACHMENT REQUIRED 1/2" DIA. EXPANSION ANCHORS AT 48" O.C. (2 MINIMUM) OR 0.157" DIA HILTI X-U SHOT PINS WITH 1" EMBEDMENT AT 12" O.C. FASTENER SHALL HAVE ICC REPORT FOR SAME INSTALLATION.
3. MULTIPLE OR INTERSECTING STUDS WHERE OCCUR. CONNECT WITH 2 ROWS #10 SCREWS AT 24" O.C. STAGGERED SPACING, AT INTERSECTING STUDS 1 ROW OF SCREWS.
4. #10 SCREWS EACH SIDE, EACH STUD.
5. 2 #10 SCREWS.
6. 4 #10 SCREWS.
7. #10 SCREWS AT 12" O.C. AT DOUBLE STUDS.
8. STUD BLOCKING.
9. 18 GA CLIP ANGLE BY STUD MFR WITH 3 #10 SCREWS AT EACH STUD WHERE SHOWN IN DETAILS.

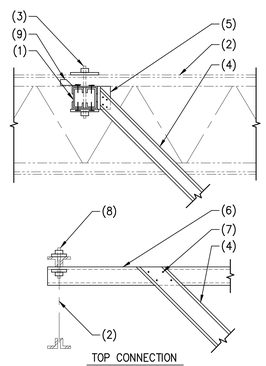
B. INSTALL ALL SCREWS PER STEEL STUD MANUFACTURES ASSOC. SPECIFICATIONS.
C. S.M. (SHEET METAL) SCREWS PER G.S.N.

03 TYPICAL STEEL STUD WALL – SCREW CONNECTION — 1301-01 — NO SCALE

NOTES:

1. #4 AT 16" O.C.
2. EXISTING SLAB ON GRADE.
3. #4 AT 16" O.C. ALTERNATING SIDES WITH SIMPSON "SET" EPOXY. 4" EMBED.
4. NEW 3000 PSI CONCRETE POURBACK.
5. VAPOR BARRIER BELOW SLAB.

12 SLAB POURBACK — 1301-06 — NO SCALE

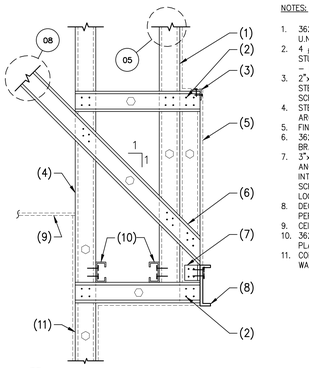


TOP CONNECTION

NOTES:

1. BOX BEAM 362S162-33 MEMBERS WITH 362T125-43 TRACK TOP AND BOTTOM. CONNECT WITH #10 AT 12" O.C. – TYP.
2. EXISTING STEEL JOIST.
3. 3/8" DIA BOLT WITH 1/4"x2"x2" WASHER ON JOIST AND 1/4"x3"x3" WASHER AT BOX BEAM.
4. BRACE.
5. CLIP ANGLE L3"x3"x12 GA. WITH 6 #10 TO BOX BEAM AND 4 #10 TO BRACE.
6. 362S162-33 EACH BRACE.
7. 4 #10 SCREWS.
8. 3/8" DIA BOLT WITH 1/4"x2"x2" WASHER ON TOP AND 1/4"x1"x2" WASHER AT STUD JOIST.
9. S/H2.5 WITH 0.157" DIA. HILTI X-U SHOT PINS TO JOIST. DO NOT LOCATE WITHIN 6" OF PANEL POINT.

08 BRACE TO EXISTING JOIST — 13-0160 — NO SCALE



NOTES:

1. 362S162-33 AT 16" O.C .– U.N.O.
2. 4 #10 SCREWS AT EACH STUD TO STUD CONNECTION – TYP.
3. 2"x2"x 16 GA CONTINUOUS STEEL ANGLE WITH #10 SCREW AT EACH STUD.
4. STEEL STUD WALL PER ARCH'L DRAWINGS.
5. FINISH PER ARCH'L.
6. 362S162-33 STEEL STUD BRACE AT 48" O.C.
7. 3"x3"x1/8" x 3" LONG STEEL ANGLE WITH 4 #10 SCREWS INTO STUD AND 4 #10 WOOD SCREWS INTO CHANNEL. LOCATE AT 48" O.C.
8. DECORATIVE WOOD CHANNEL PER ARCH'L DRAWINGS.
9. CEILING PER ARCH'L.
10. 362S162-33 STEEL STUD PER PLAN AT 04A.
11. CONTINUOUS STEEL STUD AT WALL FRAMING AS OCCURS.

04 SOFFIT FRAMING AT FRONT COUNTER
04A AS NOTED — 26-0081 — NO SCALE

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PROJECT NUMBER	26-0081
PROJECT MANAGER	TRM
PROJECT ENGINEER	VVA
PROJECT DRAFTER	PET

FOR ADDITIONAL INFORMATION SHOWN BUT NOT NOTED, SEE GENERAL STRUCTURAL NOTES ON SHEET S101 AND TYPICAL DETAIL SHEETS.

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STATE OF FLORIDA PROFESSIONAL ENGINEER

REVISIONS

△	DATE	DESCRIPTION
1	06/26/26	REVISION 1

STATUS:
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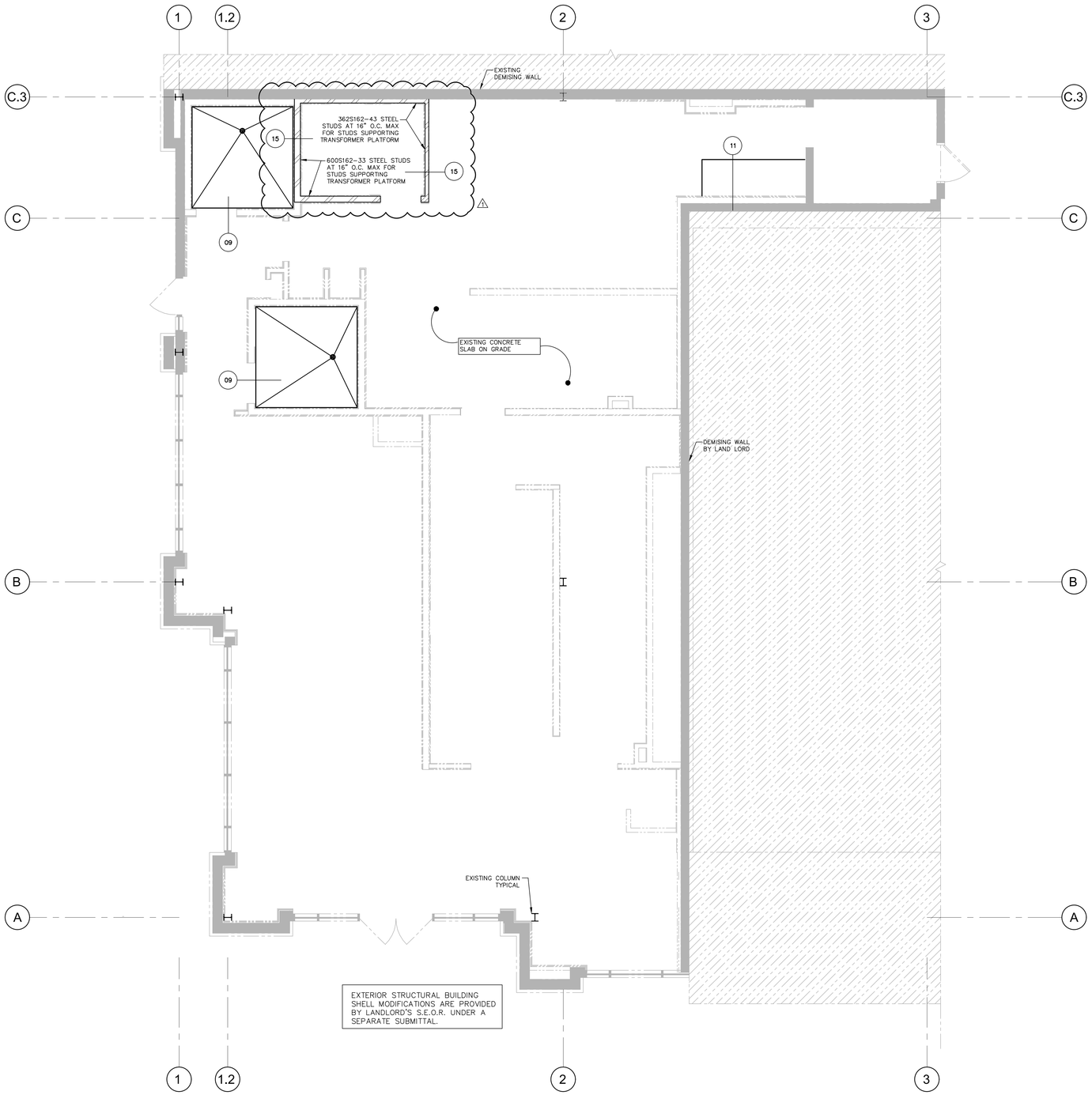
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SHEET NAME:
DETAILS

DATE:	PROJECT NO.:
06/01/2026	41354
DRAWN: PET	SCALE:

SHEET NO.:
S102



FOUNDATION PLAN

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

PLAN NOTES – TYP U.N.O.:

1. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS. BUILDING DIMENSIONS AND ELEVATIONS, WHERE SHOWN, WERE PROVIDED BY THE ARCHITECT AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATE ALL DIMENSIONS PRIOR TO PROCEEDING WITH THE WORK. ANY DISCREPANCIES SHALL BE RESOLVED THROUGH THE ARCHITECT.
2. ⅌ – AS SHOWN ON PLAN INDICATES NON-STRUCTURAL ARCHITECTURAL WALL. FOR ADDITIONAL INFORMATION, SEE ARCH'L DRAWINGS, G.S.N. AND TYPICAL DETAILS, OR AS NOTED ON PLANS AND DETAILS.
3. ⅌ – AS SHOWN ON PLAN INDICATES EXISTING WALLS PER ARCHITECTURAL DRAWINGS.
4. BUILDING CONCRETE SLAB ON GRADE SHALL BE AS NOTED ON PLAN. VERIFY EXACT SIZE AND LOCATION OF DEPRESSED AND/OR RAISED SLABS WITH ARCH'L DRAWINGS. FOR SIDEWALK LOCATION, SEE ARCH'L DRAWINGS. FOR ADDITIONAL INFORMATION, SEE G.S.N. AND TYPICAL DETAILS.
5. VERIFY EXACT SIZE, WEIGHT AND LOCATION OF EQUIPMENT AND SUPPORTS INDICATED ON PLAN WITH ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, SPRINKLER AND THEIR RELATED DRAWINGS. EQUIPMENT INDICATED ARE ONLY THOSE THAT EXCEED LOADS SPECIFIED IN THE G.S.N. FOR SUPPORT OF EQUIPMENT, SEE TYPICAL DETAILS AND OTHER TRADES.
6. THE EXISTING CONDITIONS DEPICTED ON THESE DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER IMMEDIATELY.

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PROJECT NUMBER	26-0081
PROJECT MANAGER	TRM
PROJECT ENGINEER	VVA
PROJECT DRAFTER	PET

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REVISIONS

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
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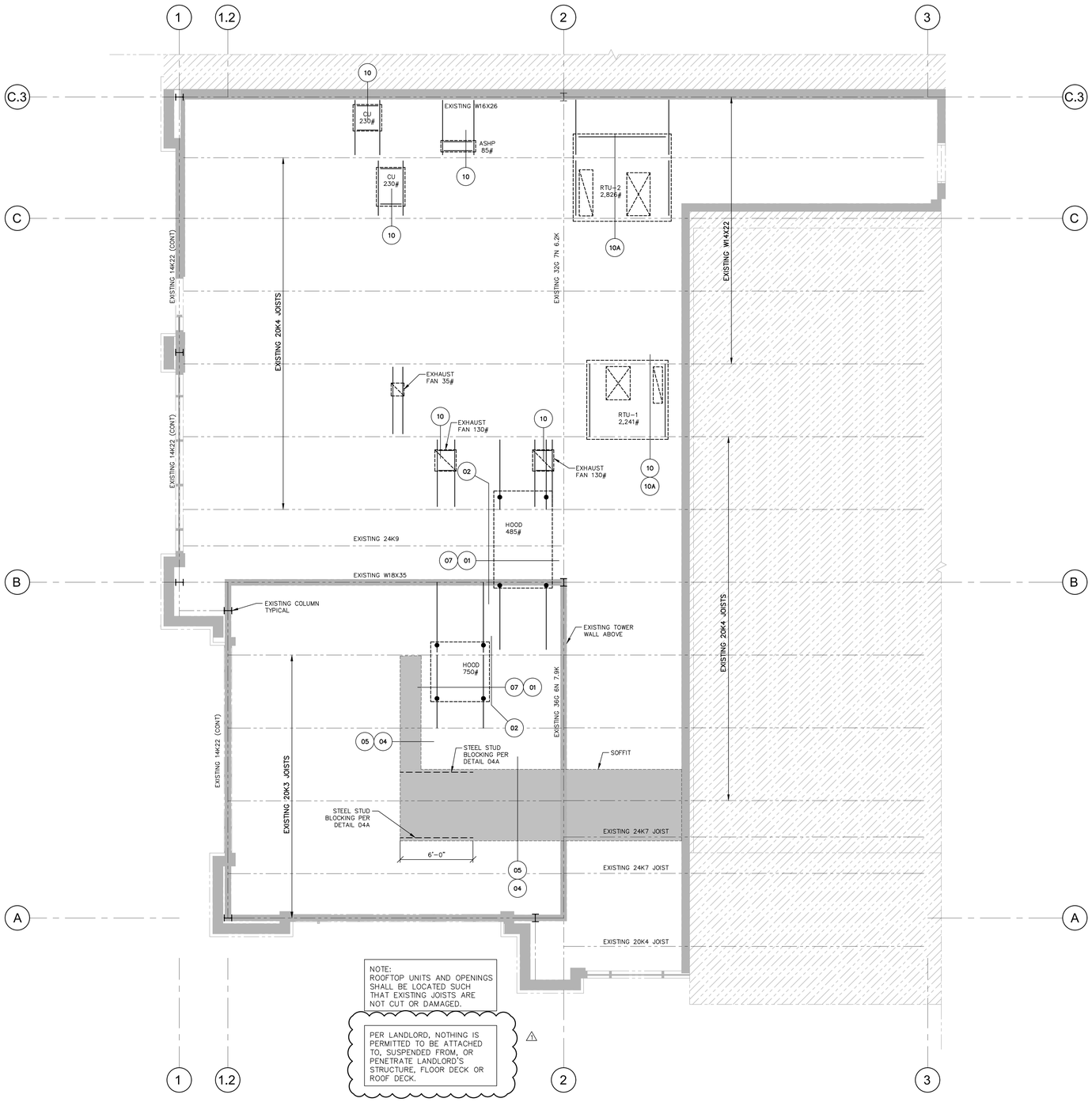
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SHEET NAME:
FOUNDATION PLAN

DATE: 06/01/2026	PROJECT NO.: 41354
DRAWN: PET	SCALE:

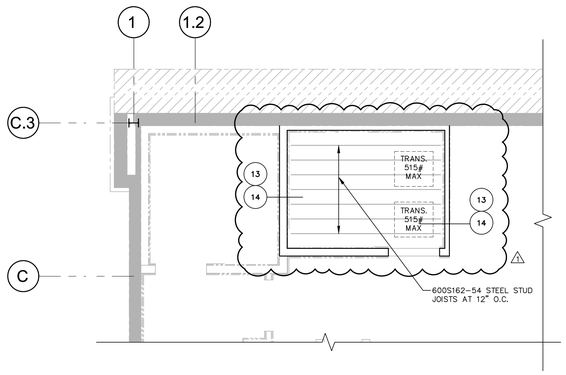
SHEET NO.:
S201



NOTE:
ROOFTOP UNITS AND OPENINGS SHALL BE LOCATED SUCH THAT EXISTING JOISTS ARE NOT CUT OR DAMAGED.

PER LANDLORD, NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK OR ROOF DECK. ⚠

ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



PLATFORM FRAMING PLAN
SCALE: 1/4" = 1'-0"

ROOF FRAMING NOTES – TYP U.N.O.:

1. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS. BUILDING DIMENSIONS AND ELEVATIONS, WHERE SHOWN, WERE PROVIDED BY THE ARCHITECT AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATE ALL DIMENSIONS PRIOR TO PROCEEDING WITH THE WORK. ANY DISCREPANCIES SHALL BE RESOLVED THROUGH THE ARCHITECT.
2. VERIFY EXACT SIZE, WEIGHT AND LOCATION OF EQUIPMENT AND SUPPORTS INDICATED ON PLAN WITH ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, SPRINKLER AND THEIR RELATED DRAWINGS. EQUIPMENT INDICATED ARE ONLY THOSE THAT EXCEED LOADS SPECIFIED IN THE G.S.N. FOR SUPPORT OF EQUIPMENT, SEE TYPICAL DETAILS AND OTHER TRADES.
3. THE EXISTING CONDITIONS DEPICTED ON THESE DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER IMMEDIATELY.

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PROJECT NUMBER	26-0081
PROJECT MANAGER	TRM
PROJECT ENGINEER	VVA
PROJECT DRAFTER	PET

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SHEET NAME:
ROOF FRAMIING PLAN

DATE:	PROJECT NO.:
08/01/2026	41354
DRAWN: PET	SCALE:

SHEET NO.:
S202

SHEET NUMBER	SHEET NAME
F001	FIRE PROTECTION ABBREVIATIONS AND SYMBOLS
F101	FIRE PROTECTION PLAN
F501	FIRE PROTECTION DETAILS
F590	FIRE PROTECTION SPECIFICATIONS
F591	FIRE PROTECTION SPECIFICATIONS

LANDLORD COMMENTS:

1. *SIMON REQUIRES ALL TENANTS TO USE ONE OF LANDLORD'S PRE-QUALIFIED SPRINKLER CONTRACTORS FOR TENANT'S SPRINKLER WORK. TENANT MAY COMPETITIVELY BID TO ONLY THOSE SPRINKLER CONTRACTORS PRE-QUALIFIED BY LANDLORD (CONTACT THE MALL MANAGER OR OPERATIONS DIRECTOR FOR A LIST PRE-QUALIFIED SPRINKLER CONTRACTORS).*
2. *THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL DRAWINGS, DOCUMENTATION AND FLOW CALCULATIONS TO THE LOCAL AUTHORITY HAVING JURISDICTION IN ORDER TO OBTAIN ALL PROPER PERMITS.*
3. *IF LOCAL FIRE DEPARTMENT AND/OR AHJ DETERMINES ADDITIONAL SPRINKLER HEADS AND FIRE ALARM DEVICES WILL BE REQUIRED BASED ON TENANT IMPROVEMENTS, IT IS THE TENANT'S RESPONSIBILITY TO HIRE THE LANDLORD REQUIRED FIRE ALARM & FIRE SPRINKLER CONTRACTOR FOR THIS WORK. TENANT IS RESPONSIBLE FOR ANY CODE REQUIRED CHANGES OR UPGRADES TO EXISTING CONDITIONS. EXISTING BUILDING MONITORING SYSTEM PULL STATIONS AND HORN/STROBES MUST BE KEPT CLEAR OF ALL OBSTRUCTIONS. TENANT OR ITS GENERAL CONTRACTOR MUST VERIFY EXISTING LOCATIONS, AND MAKE ANY APPLICABLE CHANGES PER THE LOCAL JURISDICTION.*
4. *SPRINKLER SYSTEM SHALL BE FULLY CHARGED AND OPERATIONAL WHENEVER CONTRACTOR IS NOT ON SITE.*
5. *FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING ALL PROGRAMMING OF ADDRESSABLE DEVICES, SYSTEMS, ETC., OF THE NEWLY INSTALLED FIRE ALARM DEVICES TO SATISFY THE REQUIREMENTS OF THE LOCAL AHJ.*
6. *FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL DRAWINGS, DOCUMENTATION, BATTERY CALCULATIONS, ETC. TO THE LOCAL AHJ TO OBTAIN ALL NECESSARY PERMITS.*
7. *PLAN SUBMISSIONS FOR SIMON TENANT IMPROVEMENT PROJECTS MUST BE EMAILED TO GLOBAL RISK CONSULTANTS (GRC) AT SIMONPROJECTS@TUVSUD.COM. THE EMAIL WILL NEED TO INCLUDE THE FOLLOWING INFORMATION IN THE EMAIL SUBJECT LINE:*
   COCONUT POINT:
   SIMON TPR – GRC FILE #: 1935-4696 – COCONUT POINT, ESTERO, FL
8. *IF YOU HAVE QUESTIONS REGARDING THE GRC REVIEW, PLEASE CONTACT:*
   NORA LONDON, DISTRICT MANAGER – FIRE PRACTICE
   SENIOR CONSULTANT/ACCOUNT ENGINEER/FIRE PROTECTION ENGINEERING
   OFFICE- 312-223-1523
   DIRECT- 630-418-6672
   EMAIL ADDRESS: NORA.LONDON@TUVSUD.COM
9. *TENANT DISPLAY FIXTURES IN THE RETAIL SPACE AND RACK / SHELVING / STORAGE UNITS IN THE STOCKROOM SHALL BE DESIGNED TO PROVIDE ADEQUATE CLEARANCE FOR THE AUTOMATIC (FIRE) SPRINKLER SYSTEM. NO DISPLAYS OR STORAGE SHOULD EXCEED 12FT AND CEILINGS MUST BE INSTALLED TO PROVIDE A MINIMUM OF 18" OF CLEARANCE BETWEEN THE TOP OF THE STORAGE SYSTEM AND SPRINKLER DEFLECTORS.*
10. *TENANT DISPLAYS OR STORAGE HIGHER THAN 12'-0" ARE CLASSIFIED AS "HIGH PILED STORAGE". WHICH REQUIRES HIGH HAZARDOUS AUTOMATIC (FIRE) SPRINKLER PROTECTION DESIGNED PER FM GLOBAL LOSS PREVENTION DATA SHEET AND NFPA REQUIREMENTS FOR THE STORAGE OF "GROUP A PLASTIC" COMMODITIES. HIGH PILED STORAGE ALSO REQUIRES A MINIMUM OF 36" OF CLEARANCE BETWEEN THE TOP OF STORAGE AND SPRINKLER DEFLECTORS.*
11. *TENANT SHALL NOT DRILL, WELD, SCREW, SHOOT, AND / OR PENETRATE LANDLORD'S BUILDING STRUCTURE, FLOOR DECK, AND / OR ROOF DECK. TENANT MAY NON-DESTRUCTIVELY ATTACH OR SUSPEND FROM, UTILIZING ALTERNATIVE METHODS OF ATTACHMENT, THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS WITHIN THE PREMISES WITH AN EVALUATION COMPLETED BY THE TENANT'S STRUCTURAL ENGINEER OF THE EXISTING STRUCTURE AND DETERMINATION THAT IT IS SUFFICIENT FOR THE ADDITIONAL LOAD IN ACCORDANCE WITH THE BUILDING CODE THAT HAS BEEN ADOPTED BY THE AUTHORITIES HAVING JURISDICTION (AHJ). REFER TO STRUCTURAL MODIFICATION REQUIREMENTS*
12. *ALL LANDLORD EQUIPMENT, COMPONENT, AND / OR SERVICES FEEDING OTHER TENANT(S) THAT ARE EXISTING IN THE SPACE SHALL REMAIN VISIBLE AND ACCESSIBLE TO THE LANDLORD. TENANT SHALL INSTALL ACCESS PANELS AS REQUIRED TO MAINTAIN ACCESS AND SHALL BE LABELED TO PROPERLY IDENTIFY SYSTEMS. TENANT SHALL COORDINATE LOCATION WITH MALL OPERATIONS TEAM.*

DESCRIPTION	FURNISHED: GENERAL CONTRACTOR	FURNISHED: OWNER	FURNISHED: LANDLORD	FURNISHED: FIRE ALARM CONTRACTOR	INSTALLED: GENERAL CONTRACTOR	INSTALLED: OWNER	INSTALLED: LANDLORD	INSTALLED: FIRE ALARM CONTRACTOR	REMARKS
DIVISION 21: FIRE SUPPRESSION									
21.1 FIRE SUPPRESSION IDENTIFICATION									
21.1.1 PIPING SYSTEM IDENTIFICATION	X				X				
21.1.2 VALVE TAGS	X				X				
21.2 SPRINKLER STANDPIPE	X				X				
21.2.1 BACKFLOW PREVENTER	X				X				
21.2.2 ISOLATION VALVE	X				X				
21.2.3 ADDITIONAL APPURTEANCES (E.G. TAMPER SWITCH)	X				X				
21.3 AUTOMATIC SPRINKLER SYSTEM									
21.3.1 SYSTEM ENGINEERING (E.G. STAMPED PLANS AND CALUCATIONS)	X				X				
21.3.2 SPRINKLER COVERAGE	X				X				
21.3.3 SPRINKLER GRID APPURTENANCES (E.G. AIR VALVES AND DRAINS)	X				X				
21.4 ANSUL FIRE PROTECTION SYSTEM		X				X			GENERAL CONTRACTOR TO SCOPE OF WORK REFERENCED IN DIVISION 23
DIVISION 28: ELECTRONIC SAFETY AND SECURITY									
28.4 FIRE ALARM SYSTEM									
28.4.1 SYSTEM ENGINEER	X				X				
28.4.2 CONNECTION TO BASE BUILDING SYSTEM			X					X	
28.4.3 DEVICES	X				X				

CX SUBMITTAL MATRIX

GENERAL CONTRACTORS TO ALSO REVIEW ARCHITECTRUAL SPECIFICATIONS AS NOTED IN PLANS IN PLAN SECTION 700 OF THE ARCHITECTURAL PACKAGE FOR REQUIRED SUBMITTALS THAT MIGHT NOT BE LISTED BELOW.

SUBMITTAL DECRIPTION	Required Review Time (Business Days)	Architect of Record	Shake Shack	Physical Sample Required	Submittal for Approval	Submittal for Record Only
Anchor Bolts Shops	5	X			X	
ATAS–Detailed Shop DWGS(Submitted by Owner Vendor to Owner/AOR prior to const.)	5	X				X
Concrete Mix Design	5	X			X	
Construction Prefunctional Checklists	5	X				X
Decorative Metal Shop Drawings	5	X				
Diffusers, Grills & Registers	5	X			X	
Doors, Frames & Hardware	7	X			X	
Ductwork Layout (if there are signifcant changes in field)	5	X			X	
Electrical Distribution Equipment	5	X				
Elevator & Vertical Transportation Shop Drawings	5	X				X
Epoxy Floor	5	X				X
Fire Alarm Shop Drawings & Device Cut Sheets	5	x			X	
Fire Sprinkler Shop Drawings, Hydraulic Calculations & Device Cut Sheets	5	x				X
HVAC Equipment(if Carrier – Submitted by Owner Vendor to Owner/AOR prior to const.)	5	x			X	
Light Fixtures(Submitted by Owner Vendor to Owner/AOR prior to construction)	5	X			X	
MEP Tests, Start–Up, and Programming Reports	5	X			X	
Millwork – Material Submittals (if differs from spec)	5	X	X	X		
Millwork – Shop Drawings (custom items & design features only)	5	X				
Restroom Partitions	5	X			X	
Plumbing Fixtures	5	X			X	
Railing Shop Drawings	5	X				X
Rebar	5	X			X	
Stair Shop Drawings	5	X				X
Structural Steel Shop Drawings	7	X			X	
Storefront – product data Submittal (if different from specified)	5	X				
Storefront – Shop Drawings	5	X				
Tile (if differs from spec)	5	X			X	
Window Film	5	X				

CX MATRIX

Division	System / Equipment	Flush & Clean / Sanitize	Pneumatic Pressure Test	Hydrostatic Pressure Test	Duck Leak Test	Insulation Resistance (Megger) Test	Current Testing	Startup
21	Fire Suppression Wet Sprinkler System	X		X				
28	Fire Alarm System Devices							

CxA SCOPE OF WORK

Division 21 - Fire Protection Commissioning Requirements

Scope of Work

- Verify the fire suppression system, equipment, instrumentation, and control systems have been completed and calibrated according to the Contract Documents and approved submittals.
- Validate the system is operable by setting the fire suppression system into operating mode to be tested according to approved test procedures (for example; normal shutdown, normal auto position, normal manual position, alarm conditions, etc.).

Prefunctional Construction Checklists

- Fire suppression system piping and appurtenances.
- Cooking Hood Suppression System provided on Mechanical sheets.
- Fire alarm system and devices.

FIRE ALARM SYMBOL LEGEND (SOME MAY NOT BE USED)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
FACU	FIRE ALARM CONTROL UNIT	F	FIRE ALARM BELL
EVAC	VOICE EVACUATION CONTROL UNIT	S	FIRE ALARM STROBE
FAA	FIRE ALARM ANNUNCIATOR	F	FIRE ALARM HORN
NAC	FIRE ALARM NOTIFICATION APPLIANCE POWER SUPPLY	CS	FIRE ALARM COMBINATION HORN AND STROBE
FATC	FIRE ALARM TERMINAL CABINET	F	FIRE ALARM SPEAKER
F	FIRE ALARM MANUAL PULL STATION/FIRE ALARM BOX	CS	FIRE ALARM COMBINATION SPEAKER AND STROBE
(P)XX	SMOKE DETECTOR, WALL MOUNTED, PHOTOELECTRIC UNLESS INDICATED OTHERWISE (XX = MODIFIER)	HFSS	HOOD FIRE SUPPRESSION SYSTEM
(P)XX	SMOKE DETECTOR, CEILING MOUNTED, PHOTOELECTRIC UNLESS INDICATED OTHERWISE (XX = MODIFIER)	M	HOOD FIRE SUPPRESSION SYSTEM MANUAL PULL STATION
(P)—	DUCT SMOKE DETECTOR	MM	ADDRESSABLE MONITOR MODULE
RTS	DUCT SMOKE DETECTOR REMOTE ANNUNCIATOR/TEST STATION #RTS151KEY WHEN SUPERVISED BY CONTROL UNIT #RTS2-AOS WHEN STAND-ALONE	RM	ADDRESSABLE RELAY MODULE
		CM	ADDRESSABLE CONTROL MODULE
(H)XX	HEAT DETECTOR, WALL MOUNTED, FIXED TEMPERATURE UNLESS INDICATED OTHERWISE (XX = MODIFIER)	IM	ADDRESSABLE ISOLATION MODULE
(H)XX	HEAT DETECTOR, CEILING MOUNTED, FIXED TEMPERATURE UNLESS INDICATED OTHERWISE (XX = MODIFIER)	R	RELAY
(S)XX	FLAME DETECTOR (XX = TYPE)	EOL	END OF LINE RESISTOR
WF	FIRE SPRINKLER WATERFLOW SWITCH	KB	FIRE ALARM KEY REPOSITORY (KNOX BOX)
VS	FIRE SPRINKLER VALVE SUPERVISORY SWITCH (TAMPER SWITCH)		MAGNETIC DOOR HOLDER
PIV	FIRE SPRINKLER POST INDICATOR VALVE WITH VALVE SUPERVISORY SWITCH (TAMPER SWITCH)		FIRE FIGHTER'S PHONE
	FIRE ALARM SYSTEM JUNCTION BOX		
GAS DETECT: GDMP XX	GAS DETECTION MONITORING PANEL (XX = GAS TYPE)	GAS DETECTION TYPE: CH4 METHANE; CO CARBON MONOXIDE; COA CARBON MONOXIDE ALARM (KIDDE #KN-COB-IC OR EQUAL); CO2 CARBON DIOXIDE	
XX	WALL MOUNTED GAS DETECTOR (XX = GAS TYPE)		
	CEILING MOUNTED GAS DETECTOR (XX = GAS TYPE)		

FIRE ALARM ABBREVIATIONS AND MODIFIERS (SOME MAY NOT BE USED)

GENERAL
- WP WEATHERPROOF

SMOKE DETECTORS
- AC ABOVE CEILING
- AS AIR SAMPLING
- BR BEAM RECEIVER
- BT BEAM TRANSMITTER
- I IONIZATION
- ID IN DUCT
- SA SMOKE ALARM (120V WITH BATTERY)

HEAT DETECTORS
- R RATE OF RISE
- R/C RATE COMPENSATION
- R/F COMBINATION FIXED TEMPERATURE AND RATE OF RISE

FLAME DETECTORS
- IR INFRARED
- UV ULTRAVIOLET
- UV/IR COMBINATION INFRARED AND ULTRAVIOLET
- VR VISIBLE RADIATION

NOTIFICATION APPLIANCES
- C CEILING MOUNTED
- LF LOW-FREQUENCY (520 HZ)
- M MINI HORN

SYMBOLS

FIRE PROTECTION

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ELEVATION CHANGE		BALL VALVE		FIRE DEPARTMENT CONNECTION
	PIPE CAP		CHECK VALVE	FH	FIRE HYDRANT
	PIPE COUPLING		PRESSURE REGULATING VALVE (PRV)	HV	FIRE HOSE VALVE
	HYDRAULIC NODE POINT		POST INDICATOR VALVE	C.I.	CAST IRON
A.F.F.	FINISHED CEILING ELEVATION		RISER NIPPLE <RN>	I.E.	INVERT ELEVATION
			VALVE IN RISE	EX	EXISTING
				FDC	FIRE DEPARTMENT CONNECTION

SPRINKLER HEAD TYPES

MANUF.	MODEL	TYPE	ORIFICE	"K" FACTOR	TEMP. (DEG. F.)	SYMBOL	FINISH	ESCUTCHEON
VIKING	VK300	QRSS UPR	1/2	5.6	175°		BRASS	N/A
VIKING	VK302	QRSS PEND	1/2	5.6	175°		WHITE	RECESSED
VIKING	VK176	DRY PEND	1/2	5.6	175°		WHITE	RECESSED

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REVISIONS

△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0046442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
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SHEET NAME: **FIRE PROTECTION ABBREVIATIONS AND SYMBOLS**

DATE: 08/01/2026 | PROJECT NO.: 41354

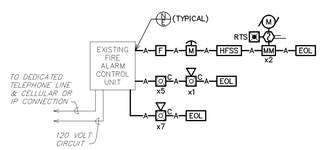
DRAWN: EMC | SCALE: AS NOTED

SHEET NO.: **F001**

SE_JOB# 295519

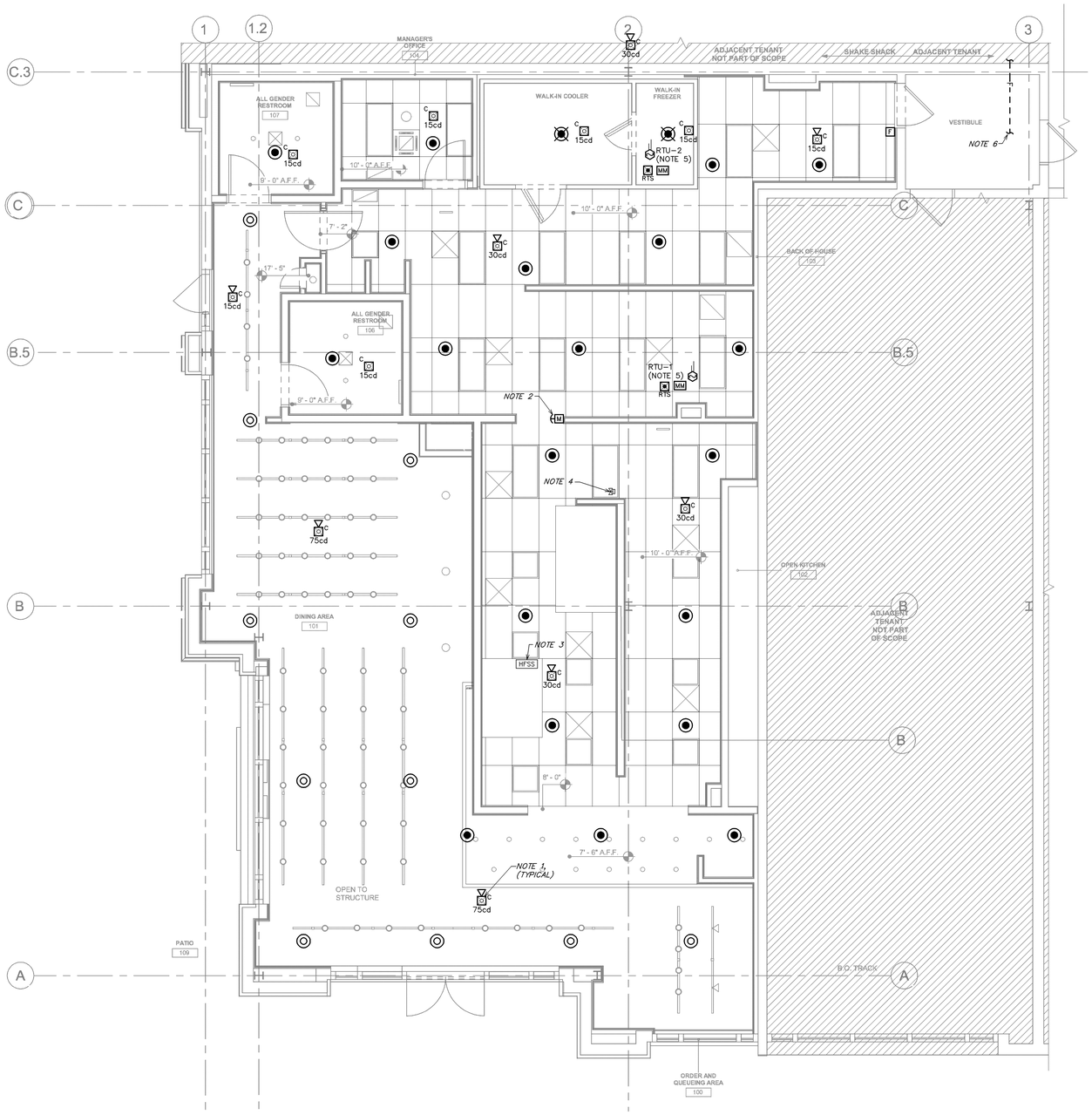
FOR REFERENCE ONLY:
FIRE ALARM PLANS, DETAILS, AND SPECIFICATIONS PROVIDED BY SCHNACKEL ENGINEERS, INC. ARE CONTRACT DOCUMENTS ONLY. SAID DOCUMENTS ARE NOT INTENDED TO BE SUBMITTED FOR FIRE ALARM WORK PERMITTING. THE LICENSED INSTALLING FIRE ALARM CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS TO THE AUTHORITY HAVING JURISDICTION, INCLUDING CALCULATIONS AND MANUFACTURER CUT SHEETS, AS REQUIRED FOR APPROVAL UNDER A DEFERRED SUBMITTAL. CONTRACTOR IS RESPONSIBLE FOR FINAL ALARM DEVICE QUANTITIES AND LOCATIONS.

FOR REFERENCE ONLY:
FIRE SPRINKLER PLANS, DETAILS, AND SPECIFICATIONS PROVIDED BY SCHNACKEL ENGINEERS, INC. ARE CONTRACT DOCUMENTS ONLY. SAID DOCUMENTS ARE NOT INTENDED TO BE SUBMITTED FOR FIRE SPRINKLER WORK PERMITTING. THE LICENSED INSTALLING FIRE SPRINKLER CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS TO THE AUTHORITY HAVING JURISDICTION, INCLUDING HYDRAULIC CALCULATIONS, AS REQUIRED FOR APPROVAL UNDER A DEFERRED SUBMITTAL. CONTRACTOR IS RESPONSIBLE FOR FINAL SPRINKLER HEAD QUANTITIES, LOCATIONS, AND TEMPERATURES.



WIRE LEGEND
A: #14 AWG FPL

2 FIRE ALARM RISER DIAGRAM
SCALE: NOT TO SCALE



1 FIRE PROTECTION PLAN
SCALE: 1/4" = 1'-0"

N

LEGEND
- EXISTING
- NEW WORK
- NEW TO EXISTING CONNECTION

GENERAL FIRE SPRINKLER NOTES:

A. FIRE SPRINKLER CONTRACT DOCUMENTS FOUND HEREWITH ARE TO ESTABLISH THE SCOPE OF WORK AND PERFORMANCE SPECIFICATIONS OF THE SYSTEM ONLY. DETAILED FIRE SPRINKLER SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE PROVIDED BY THE INSTALLING CONTRACTOR UNDER A DEFERRED SUBMITTAL.
B. PERFORM WORK IN ACCORDANCE WITH LANDLORD CONSTRUCTION REQUIREMENTS, INCLUDING ANY TENANT CRITERIA MANUALS AND LEASE EXHIBITS, WHERE APPLICABLE. FIRE SPRINKLER CONTRACTOR SHALL OBTAIN ALL APPLICABLE MANUALS PRIOR TO BIDDING.
C. FIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN STRICT CONFORMITY WITH ALL LATEST REQUIREMENTS OF THE STATE BUILDING CODE, THE LOCAL FIRE DEPARTMENT, ALL LOCAL RULES AND REGULATIONS AS DEFINED BY THE AUTHORITY HAVING JURISDICTION AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
D. TESTING OF SYSTEM SHALL BE IN ACCORDANCE WITH NFPA REQUIREMENTS. CONTRACTOR SHALL RUN AND PAY FOR ALL TESTS REQUIRED TO ENSURE THE SYSTEM HAS ADEQUATE FLOW AND PRESSURE.
E. PROVIDE ALL CODE REQUIRED SIGNAGE FOR FIRE SPRINKLER SYSTEM.
F. SPARE HEAD CABINETS SHALL BE PROVIDED WITH THE APPROPRIATE NUMBER OF SPRINKLERS AND WRENCHES IN ACCORDANCE WITH NFPA REQUIREMENTS.
G. PROVIDE ALL CODE REQUIRED CLEARANCE ABOVE AND AROUND ELECTRICAL EQUIPMENT.
H. COORDINATE SPRINKLER HEAD LOCATIONS WITH ALL TRADES PRIOR TO FABRICATION OR INSTALLATION. LOCATIONS OF FIRE SPRINKLER HEADS AND PIPES ARE SHOWN FOR GRAPHICAL REPRESENTATION ONLY. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPLETE FIRE SPRINKLER COVERAGE BASED ON ACTUAL CONDITIONS AT NO ADDITIONAL COST TO THE OWNER. SPRINKLER PIPING SHALL ROUTE AROUND, PROVIDE PROPER CLEARANCES FOR, AND AVOID CONFLICT WITH BUILDING EQUIPMENT AND SYSTEMS.
I. ENTIRE FIRE SPRINKLER SYSTEM SHALL BE INSTALLED LEVEL OR SLOPED TOWARD THE SERVICE ENTRANCE TO FACILITATE DRAIN DOWN UNLESS NOTED OTHERWISE. DRAINS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH LOCAL AND NFPA CODES. ALL FLOATING MAINS SHALL BE PROVIDED WITH AN AUXILLARY DRAIN ROUTED TO THE EXTERIOR.
J. ALL SPRINKLER LINES 2" AND SMALLER SHALL BE SCHEDULE 40 WITH THREADED FITTINGS OR ROLL GROVED CONNECTIONS. ALL SPRINKLER LINES AND MAINS 2-1/2" AND LARGER SHALL BE SCHEDULE 10 WITH ROLL GROOVE CONNECTIONS UNLESS NOTED OTHERWISE. THE USE OF WELD-O-LETS IS ACCEPTABLE. UNDERGROUND PIPING SHALL BE DUCTILE IRON WITH PVC WRAP TO PROVIDE PROTECTION FROM CORROSIVE SOILS.
K. SEE ELECTRICAL/FIRE ALARM PLANS FOR FIRE ALARM BELL LOCATION AND INFORMATION.
L. SPRINKLER HEAD DEFLECTORS SHALL BE INSTALLED SO THAT THE DISTANCE MEASURED FROM THE DEFLECTOR TO TOP OF STRUCTURE IS IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION AND NFPA REQUIREMENTS.
M. AUTOMATIC SPRINKLERS SHALL BE OF THE OPERATING TEMPERATURE AS REQUIRED BY THE SPRINKLER LOCATION. FINAL HEAD TEMPERATURES SHALL BE IN ACCORDANCE WITH NFPA 13 TO COMPENSATE FOR FIELD CONDITIONS.
N. SPRINKLER DESIGN IS BASED ON LIMITED FIELD INFORMATION. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL FIELD CONDITIONS AND PROVIDING A FULLY COMPLIANT SPRINKLER SYSTEM AT NO ADDITIONAL EXPENSE TO THE OWNER.
O. THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOVER TO A SPRINKLER, SPRINKLER DROP, OR SPRIG-UP, AND THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE, SHALL NOT EXCEED THE LIMITS AS ALLOWED FOR BY NFPA 13.
P. THE DISTANCE BETWEEN A HANGER AND THE CENTERLINE OF AN UPRIGHT SPRINKLER SHALL NOT BE LESS THAN 3 INCHES.
Q. ANY EXISTING SPRINKLER HEAD OUTLETS THAT ARE NO LONGER REQUIRED SHALL BE PLUGGED.
R. NO MORE THAN TWO SPRINKLER HEADS SHALL BE FED FROM ANY ONE EXISTING SPRINKLER OUTLET.
S. THE ENTIRE AREA UNDER CONSTRUCTION SHALL BE PROVIDED WITH A COMPLETE FIRE SPRINKLER SYSTEM IN ALL RESPECTS. RELOCATE/ADD NEW SPRINKLER DROPS TO EXISTING SYSTEMS WHERE REQUIRED TO PROVIDE COMPLETE COVERAGE THROUGH THE AREA OF CONSTRUCTION. COORDINATE FIRE SPRINKLER PIPING AND HEAD LOCATIONS WITH ALL TRADES PRIOR TO FABRICATION OR INSTALLATION. IF CONFLICTS OCCUR BETWEEN FIRE SPRINKLER PIPING/HEADS AND LIGHTS, DIFFUSERS, DUCTWORK, ETC., THE FIRE SPRINKLER PIPING/HEADS SHALL BE RELOCATED OR REROUTED AT NO ADDITIONAL EXPENSE TO THE PROJECT. AN ADEQUATE SUPPLY OF EXTRA PIPING AND FITTINGS SHALL BE MAINTAINED ON SITE TO ALLOW FOR FIELD MODIFICATIONS. APPROVED SHOP DRAWINGS DO NOT PRECLUDE REROUTING IF SO REQUIRED BY THE ARCHITECT/ENGINEER.

GENERAL FIRE ALARM NOTES:

A. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS (INSTALLATION DOCUMENTS) COMPLYING WITH NFPA 72 SECTION 7.4 BASED ON THE MANUFACTURER-SPECIFIC EQUIPMENT AND COMPONENTS INTENDED TO BE INSTALLED.
B. INFORMATION ON THE DRAWINGS SERVES AS DESIGN (LAYOUT) DOCUMENTATION PER NFPA 72 SECTION 7.3 PRIMARILY FOR THE PURPOSE OF BIDDING, ESTABLISHING PERFORMANCE CRITERIA, CONVEYING INTENT, AND PRELIMINARY PERMIT APPROVAL. AS SUCH, THE DRAWINGS MAY NOT SHOW EVERY COMPONENT REQUIRED FOR A COMPLETE INSTALLATION. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS REQUIRED FOR A COMPLETE, CODE-COMPLIANT DESIGN AND INSTALLATION IN THE SHOP DRAWINGS (INSTALLATION DOCUMENTS).
C. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS (INSTALLATION DOCUMENTS) TO THE AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL.
D. INCLUDE ALL COSTS ASSOCIATED WITH THE DEVELOPMENT OF THE SHOP DRAWINGS (INSTALLATION DOCUMENTS) AND ALL PERMIT FEES IN THE BID.
E. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
F. IF A NEW FIRE ALARM CONTROL UNIT IS REQUIRED, THE CONTRACTOR SHALL FURNISH AND INSTALL THE MONITORING PANEL AND CELLULAR DIALER. EVERON TO ASSIST IN PROGRAMMING AND MONITORING OF FIRE ALARM SERVICES, WHEN REQUIRED, IN ACCORDANCE WITH THE IBC, IFC, NFPA 1, NFPA 101, AND NFPA 72.
G. NEW FIRE ALARM CONTROL UNIT, IF REQUIRED, MUST BE SOLD OVER THE COUNTER VIA WHOLESALE DISTRIBUTION TO A STATE LICENSED FIRE ALARM CONTRACTOR. THE OWNER'S ACCEPTABLE FIRE ALARM CONTROL UNIT MANUFACTURERS ARE: POTTER AFC CONTROL UNITS, NAPCO, KIDDE FX CONTROL UNITS, FIRE-LITE, SILENT KNIGHT, AND DIGITAL MONITORING PRODUCTS (DMP). PANEL MANUFACTURERS NOT LISTED HERE MAY ONLY BE USED WITH THE PRIOR WRITTEN APPROVAL OF SHAKE SHACK'S CONSTRUCTION PROJECT MANAGER.
H. CELLULAR DIALERS MUST BE COMPATIBLE WITH EVERON'S CENTRAL STATION. THE OWNER'S PREFERRED DIALER IS STAR-LINK SOLE PATH DIALERS #A73AA. APPROVED COMPATIBLE DEVICES INCLUDE: #SLE-LTEA-FIRE, #SLE-LTEV-FIRE, #SLE-LTEA-CFB, AND #SLE-LTEV-CFB. IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION, PROVIDE AN IP BACKUP FOR DUAL-PATH. OWNER'S APPROVED ALTERNATE CELLULAR DIALER IS TELEGUARD #TG-7. CELL DIALERS NOT LISTED HERE MAY ONLY BE USED WITH THE PRIOR WRITTEN APPROVAL OF SHAKE SHACK'S CONSTRUCTION PROJECT MANAGER.
I. ALL NEW FIRE ALARM INITIATING DEVICES SHALL CONNECT TO EXISTING BUILDING FIRE ALARM CONTROL UNIT. COORDINATE WITH LANDLORD'S FIRE ALARM CONTRACTOR.
J. ALL NEW FIRE ALARM NOTIFICATION APPLIANCES SHALL EITHER CONNECT DIRECTLY TO THE EXISTING BUILDING FIRE ALARM CONTROL UNIT OR CONNECT TO A NEW NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY (NAC). THE NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY SHALL CONNECT TO THE EXISTING BUILDING FIRE ALARM CONTROL UNIT. COORDINATE WITH LANDLORD'S FIRE ALARM CONTRACTOR FOR REQUIREMENTS AND CONNECTIONS.

KEYED FIRE ALARM NOTES:

1. CONTRACTOR SHALL PROVIDE COMPLETE INSTALLATION OF NOTIFICATION APPLIANCE IN THE BASE BID AS SHOWN AND PROVIDE A UNIT PRICE ON THE BID FORM FOR THE COST TO PROVIDE AN ADDITIONAL NOTIFICATION APPLIANCE BEYOND THOSE SHOWN AND CONNECT IT TO THE FIRE ALARM SYSTEM.
2. PROVIDE 4" OCTAGONAL JUNCTION BOX WITH SCREW THREADS SET AT THE 2 AND 8 O'CLOCK POSITIONS FOR THE GREASE HOOD FIRE SUPPRESSION SYSTEM PULL STATION. PROVIDE A 1/2" CONDUIT FROM THE JUNCTION BOX TO 6" ABOVE THE ACCESSIBLE CEILING AND TERMINATE WITH A CONDUIT BUSHING. COORDINATE EXACT LOCATION WITH THE GREASE HOOD FIRE SUPPRESSION SYSTEM INSTALLER AND THE FIRE MARSHAL PRIOR TO ROUGH-IN.
3. INTERLOCK GREASE HOOD FIRE SUPPRESSION SYSTEM WITH FIRE ALARM SYSTEM SUCH THAT FIRE SUPPRESSION SYSTEM ACTIVATION ACTIVATES THE FIRE ALARM SYSTEM. COORDINATE EXACT LOCATION OF THE GREASE HOOD FIRE SUPPRESSION SYSTEM CONTROL PANEL WITH THE OWNER AND FIRE MARSHAL PRIOR TO ROUGH-IN.
4. INTERLOCK GAS SOLENOID VALVE WITH GREASE HOOD FIRE SUPPRESSION SYSTEM SUCH THAT GAS SOLENOID VALVE CLOSES UPON GREASE HOOD FIRE SUPPRESSION SYSTEM DISCHARGE. COORDINATE ALL REQUIREMENTS WITH PLUMBING CONTRACTOR AND GREASE HOOD FIRE SUPPRESSION SYSTEM MANUFACTURER PRIOR TO ROUGH-IN.
5. FURNISH DUCT SMOKE DETECTOR AND RELAY FOR HVAC UNIT SUPPLY FAN SHUTDOWN, FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. PROVIDE A REMOTE KEYED TEST STATION WITH VISUAL STATUS ANNUNCIATOR AND COORDINATE INSTALLATION LOCATION WITH AUTHORITY HAVING JURISDICTION AND OWNER PRIOR TO ROUGH-IN. DUCT SMOKE DETECTORS ASSOCIATED WITH HVAC UNITS THAT SHARE A COMMON AIR PLENUM SHALL BE INTERLOCKED WITH ONE ANOTHER SUCH THAT ACTIVATION OF ANY ONE OF THE ASSOCIATED DUCT SMOKE DETECTORS WILL SHUT DOWN SUPPLY FANS OF ALL HVAC UNITS SHARING THE COMMON AIR PLENUM. PROVIDE ALL FINAL WIRING FOR A COMPLETE AND FUNCTIONAL SYSTEM.
6. EXISTING FIRE SPRINKLER MAIN FROM LANDLORD RISER.

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REVISIONS

	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

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SHEET NAME: FIRE PROTECTION PLAN

DATE: 08/01/2026
PROJECT NO.: 41354
DRAWN: EMC
SCALE: AS NOTED

SHEET NO.: F101

SE-2026 28519

SPARE SPRINKLER CABINET CONTENTS					
SIZE OF FACILITY	MIN HEAD QTY	MIN HEADS PER TYPE	WRENCH PER HEAD TYPE	LIST OF SPRINKLERS INSTALLED	SPRINKLER ESCUTCHEONS PER TYPE
0–300 SPRINKLERS	6	2	1	1	2
300–1000 SPRINKLERS	12	2	1	1	2
+1000 SPRINKLERS	24	2	1	1	2

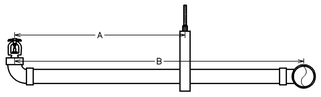
NOTE: SPRINKLERS SHALL BE KEPT WHERE TEMPERATURE DOES NOTE EXCEED 100°F.

MAXIMUM PROTECTION AREAS AND MAXIMUM SPACING FOR STANDARD SPRAY UPRIGHT & PENDENT HEADS				
CONSTRUCTION TYPE	SYSTEM TYPE	PROTECTION AREA MAX (SQ.FT.)	MAX SPACING	MAX DISTANCE TO WALL (FT)
LIGHT HAZARD:				
NONCOMBUSTIBLE OBSTRUCTED + UNOBSTRUCTED & COMBUSTIBLE UNOBSTRUCTED WITH MEMBERS 3FT OR MORE O.C.	PIPE SCHEDULE	200	15'–0"	7'–6"
	HYD. CALC.	225	15'–0"	7'–6"
COMBUSTIBLE OBSTRUCTED WITH MEMBERS 3FT OR MORE O.C.	ALL	168	15'–0"	7'–6"
COMBUSTIBLE OBSTRUCTED + UNOBSTRUCTED WITH MEMBERS LESS THAN 3FT O.C.	ALL	130	15'–0"	7'–6"
COMBUSTIBLE CONCEALED SPACE UNDER A PITCHED ROOF HAVING COMBUSTIBLE WOOD JOIST OR WOOD TRUSS CONSTRUCTION WITH MEMBERS LESS THAN 3FT O.C. WITH SLOPES HAVING A PITCH OF 4:12 OR GREATER	ALL	120	15'–0" PARALLEL TO SLOPE 10'–0" PERP. TO SLOPE	7'–6" PARALLEL TO SLOPE 5'–0" PERP. TO SLOPE
ORDINARY HAZARD:				
ALL	ALL	130	15'–0"	7'–6"
EXTRA HAZARD:				
ALL	PIPE SCHEDULE	90	12'–0"	6'–0"
	HYD. CALC. DENSITY= .25+	100	12'–0"	6'–0"
	HYD. CALC. DENSITY<.25	130	15'–0"	7'–6"

HANGER LOCATIONS (MAX PRESSURE < 100 PSI)			
PIPE SIZE	A (MAX)	A (MIN)	B (MAX)
1"	36"	3"	24"
1 1/4"	48"	3"	24"
≥1 1/2"	60"	3"	24"

HANGER ROD SIZES	
PIPE SIZE	DIAMETER
UP TO 4"	3/8"
5" TO 8"	1/2"
10" & 12"	5/8"

HANGER LOCATIONS (MAX PRESSURE > 100 PSI)			
PIPE SIZE	A (MAX)	A (MIN)	B (MAX)
1"	12"	3"	12"
1 1/4"	12"	3"	12"
≥1 1/2"	12"	3"	12"



STEEL PIPE ONLY

MAXIMUM DISTANCE BETWEEN HANGERS (FT. – IN.)												
PIPE TYPE	NOMINAL PIPE SIZE (IN)											
	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8
STEEL PIPE EXCEPT THREADED LIGHT–WALL	N/A	12–0	12–0	15–0	15–0	15–0	15–0	15–0	15–0	15–0	15–0	15–0
THREADED LIGHT WALL STEEL PIPE	N/A	12–0	12–0	12–0	12–0	12–0	12–0	N/A	N/A	N/A	N/A	N/A

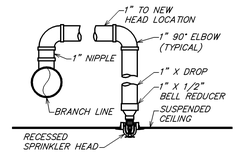
FIRE SPRINKLER TEMPERATURE RATINGS			
TEMPERATURE OF SPRINKLERS BASED ON DISTANCE FROM HEAT SOURCES			
TYPE OF HEAT CONDITION	ORDINARY TEMPERATURE	INTERMEDIATE TEMPERATURE	HIGH TEMPERATURE
(1) HEATING DUCTS (A) ABOVE (B) SIDE & BELOW (C) DIFFUSER	MORE THAN 2'–6" MORE THAN 1'–0" ANY DISTANCE NOT SHOWN UNDER INTERMEDIATE COLUMN	2'–6" OR LESS 1'–0" OR LESS DOWNWARD DISCHARGE: CYLINDER WITH 1'–0" RADIUS FROM EDGE EXTENDING 1'–0" BELOW & 2'–6" ABOVE HORIZONTAL DISCHARGE: SEMICYLINDER WITH 2'–6" RADIUS IN DIRECTION OF FLOW EXTENDING 1'–0" BELOW & 2'–6" ABOVE	
(2) UNIT HEATER (A) HORIZONTAL DISCHARGE		DISCHARGE SIDE: 7'–0" TO 20'–0" RADIUS PIE–SHAPED CYLINDER EXTENDING 7'–0" ABOVE & 2'–0" BELOW HEATER; ALSO 7'–0" RADIUS CYLINDER MORE THAN 7'–0" ABOVE UNIT HEATER	7'–0" RADIUS CYLINDER EXTENDING 7'–0" ABOVE & 2'–0" BELOW UNIT HEATER
(B) VERTICAL DOWNWARD DISCHARGE		7'–0" RADIUS CYLINDER EXTENDING UPWARD FROM AN ELEVATION 7'–0" ABOVE UNIT HEATER	7'–0" RADIUS CYLINDER EXTENDING FROM THE TOP OF THE UNIT HEATER TO AN ELEVATION OF 7'–0" ABOVE UNIT HEATER
(3) STEAM MAINS (UNCOVERED) (A) ABOVE (B) SIDE & BELOW (C) BLOWOFF VALVE	MORE THAN 2'–6" MORE THAN 1'–0" MORE THAN 7'–0"	MORE THAN 2'–6" MORE THAN 1'–0"	MORE THAN 7'–0"
RATINGS OF SPRINKLERS IN SPECIFIED LOCATIONS			
SKYLIGHTS ATTICS PEAKED ROOF: METAL OR THIN BOARDS, CONCEALED OR NOT CONCEALED, INSULATED OR UNINSULATED FLAT ROOF: METAL, NOT CONCEALED FLAT ROOF: METAL, CONCEALED, INSULATED OR UNINSULATED SHOW WINDOWS	VENTILATED VENTILATED VENTILATED OR UNVENTILATED VENTILATED VENTILATED	GLASS OR PLASTIC UNVENTILATED UNVENTILATED NOTE: FOR UNINSULATED ROOF, CLIMATE AND INSULATED OR UNINSULATED OCCUPANCY CAN REQUIRE INTERMEDIATE SPRINKLERS. CHECK ON JOB. UNVENTILATED UNVENTILATED	

FIRE ALARM SYSTEM INPUT/OUTPUT MATRIX

SYSTEM OUTPUTS: CONTROL UNIT ANNUCIATION | REMOTE ANNUNCIATOR | NOTIFICATION | FIRE SAFETY CONTROL

SYSTEM INPUTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	
1 OPEN CIRCUIT					●	●						●	●				●											1
2 GROUND FAULT					●	●						●	●				●											2
3 WIRE–TO–WIRE SHORT CIRCUIT					●	●						●	●				●											3
4 SYSTEM AC POWER FAILURE			●	●					●	●					●													4
5 SYSTEM LOW BATTERY					●	●						●	●				●											5
6 SMOKE DETECTOR: OPEN AREA	●	●					●	●	●					●	●			●	●	●		●	●	●				6
7 SMOKE DETECTOR: SMOKE/FIRE DOORS	●	●					●	●	●					●	●			●	●	●		●	●	●				7
8 SMOKE DETECTOR: DUCT–MOUNTED			●	●			●			●	●			●		●				●		●						8
9 HEAT DETECTOR	●	●					●	●	●					●	●			●	●			●	●	●				9
10 MANUAL PULL STATION	●	●					●	●	●					●	●			●	●			●		●				10
11 HOOD FIRE SUPPRESSION SYSTEM ACTIVATION	●	●					●	●	●					●	●			●	●	●		●	●	●	●	●	●	11
12 FIRE SPRINKLER FLOW SWITCH	●	●					●	●	●					●	●			●	●			●		●				12
13 FIRE SPRINKLER TAMPER SWITCH			●	●			●			●	●			●		●				●		●						13

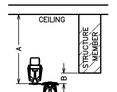
SYSTEM OUTPUTS: SHUTDOWN AIR–HANDLING UNITS & FANS; RETURN PLENUM SUPPLY FANS ON INDIVIDUAL AIR–HANDLING UNITS 2000 CFM OR GREATER; SHUTDOWN SUPPLY FANS ON ALL AIR–HANDLING UNITS SHARING COMMON AREA WITH AGGREGATE CAPACITY OF 2000 CFM OR MORE; SHUTDOWN SUPPLY FANS ON ALL AIR–HANDLING UNITS SERVING CLOSE SMOKE SENSITIVE AREA WITH AGGREGATE CAPACITY OF 2000 CFM OR MORE; ACTIVATE AUDIBLE NOTIFICATION APPLIANCES; SHUTDOWN ELEVATORS; RECALL ELEVATORS TO DESIGNATED FLOOR; ACTIVATE SIGNAL TO CENTRAL STATION; TRANSMIT ALARM SIGNAL TO CENTRAL STATION; TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION; TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION; ACTIVATE SIGNAL ON REMOTE ANNUNCIATOR; ACTIVATE TROUBLE SIGNAL ON REMOTE ANNUNCIATOR; ACTIVATE SUPERVISORY SIGNAL ON REMOTE ANNUNCIATOR; DISPLAY ALARM ZONE OR DEVICE ADDRESS IN ALARM; DISPLAY TROUBLE ZONE OR DEVICE ADDRESS IN TROUBLE; DISPLAY SUPERVISORY ZONE OR DEVICE ADDRESS IN SUPERVISORY; ACTIVATE ALARM SIGNAL AT CONTROL UNIT; ACTIVATE TROUBLE SIGNAL AT CONTROL UNIT; ACTIVATE SUPERVISORY SIGNAL AT CONTROL UNIT; DISPLAY ZONE OR DEVICE ADDRESS IN ALARM; DISPLAY ZONE OR DEVICE ADDRESS IN TROUBLE; DISPLAY ZONE OR DEVICE ADDRESS IN SUPERVISORY; VISUAL ALARM SIGNAL AT CONTROL UNIT; AUDIBLE ALARM SIGNAL AT CONTROL UNIT; VISUAL TROUBLE SIGNAL AT CONTROL UNIT; AUDIBLE TROUBLE SIGNAL AT CONTROL UNIT; VISUAL SUPERVISORY SIGNAL AT CONTROL UNIT; AUDIBLE SUPERVISORY SIGNAL AT CONTROL UNIT; VISUAL ALARM SIGNAL AT ANNUNCIATOR; AUDIBLE ALARM SIGNAL AT ANNUNCIATOR; VISUAL TROUBLE SIGNAL AT ANNUNCIATOR; AUDIBLE TROUBLE SIGNAL AT ANNUNCIATOR; VISUAL SUPERVISORY SIGNAL AT ANNUNCIATOR; AUDIBLE SUPERVISORY SIGNAL AT ANNUNCIATOR



6 RECESSED ARMOVER DETAIL
NOT TO SCALE

TYPE OF CONSTRUCTION	DISTANCE BELOW CEILING (A)	DISTANCE BELOW STRUCTURAL MEMBER (B)
UNOBSTRUCTED	1" – 12"	N/A
OBSTRUCTED	22" MAX.	1" – 6"

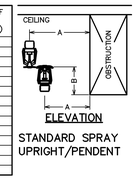
NOTE: OR IN ACCORDANCE WITH SPECIFIC SPRINKLER HEAD MANUFACTURER LISTING



UPRIGHT/PENDENT ELEVATION

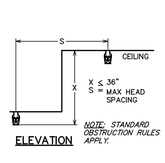
5 DEFLECTOR DISTANCE
NOT TO SCALE

DISTANCE FROM SPRINKLER TO SIDE OF OBSTRUCTION (A)	MAXIMUM DISTANCE OF DEFLECTOR ABOVE OBSTRUCTION (in.) (B)
< 1'–0"	0
1'–0" < 1'–6"	2.5
1'–6" < 2'–0"	3.5
2'–0" < 2'–6"	5.5
2'–6" < 3'–0"	7.5
3'–0" < 3'–6"	9.5
3'–6" < 4'–0"	12
4'–0" < 4'–6"	14
4'–6" < 5'–0"	16.5
5'–0" < 5'–6"	18
5'–6" < 6'–0"	20
6'–0" < 6'–6"	24
6'–6" < 7'–0"	30
7'–0" < 7'–6"	35

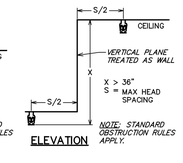


ELEVATION
STANDARD SPRAY UPRIGHT/PENDENT

10 OBSTRUCTION RULE
NOT TO SCALE

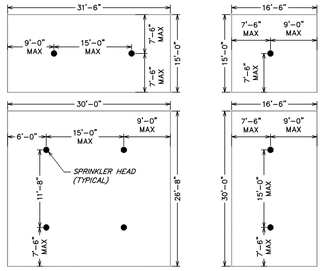


ELEVATION NOTE: STANDARD OBSTRUCTION RULES APPLY.



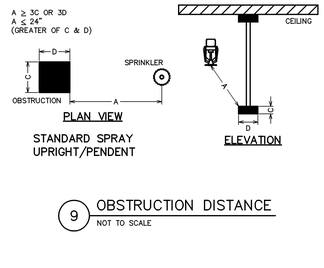
ELEVATION NOTE: STANDARD OBSTRUCTION RULES APPLY.

4 VERTICAL CEILING CHANGE RULE
NOT TO SCALE



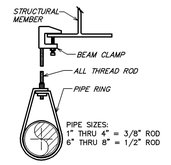
NOTE: LIGHT HAZARD OCCUPANCY ONLY, 800 SQFT MAXIMUM

12 SMALL ROOM RULE SPACING
NOT TO SCALE

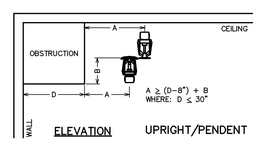


STANDARD SPRAY UPRIGHT/PENDENT

9 OBSTRUCTION DISTANCE
NOT TO SCALE

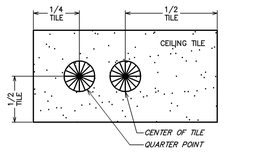


3 PIPE HANGER BEAM CLAMP
NOT TO SCALE

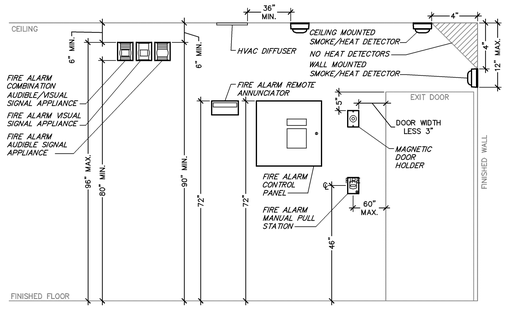


ELEVATION UPRIGHT/PENDENT

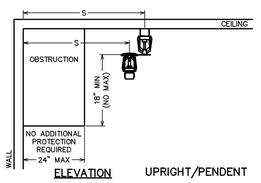
8 SOFFIT OBSTRUCTION RULE
NOT TO SCALE



2 SPRINKLER LOCATION
NOT TO SCALE

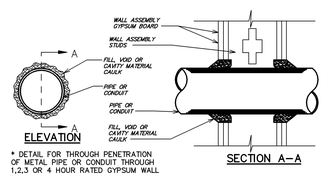


11 TYPICAL DEVICE ELEVATION DETAIL
NOT TO SCALE



ELEVATION UPRIGHT/PENDENT

7 OBSTRUCTION AGAINST WALL
NOT TO SCALE



ELEVATION * DETAIL FOR THROUGH PENETRATION OF METAL PIPE OR CONDUIT THROUGH 1,2,3 OR 4 HOUR RATED GYPSUM WALL SECTION A–A

1 RATED PENETRATION DETAIL
NOT TO SCALE

zebra
ZEBRA ARCHITECTURE, PLLC
14614 N KIERLAND BLVD., SUITE N300
SCOTTSDALE, ARIZONA 85254
PHONE: 480.912.1169 zbr.global

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SHAKE SHACK
COCONUT POINT, FL
3181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISIONS		
△	DATE	DESCRIPTION
1	09/26/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date: 08/27/26 COA#: 28403

FIELD VERIFICATION: The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME: FIRE PROTECTION DETAILS

DATE: 06/01/2026 | PROJECT NO.: 41354

DRAWN: EMC | SCALE: AS NOTED

SHEET NO.: F501

SS JOB# 29519

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SECTION 210548 - VIBRATION AND SEISMIC CONTROLS FOR FIRE SUPPRESSION PIPING AND EQUIPMENT
SECTION 210553 - IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT
SECTION 210596 - FIRE STOPPING FOR FIRE SUPPRESSION SYSTEMS
SECTION 211300 - FIRE SUPPRESSION SPRINKLER SYSTEMS

SECTION 21000 - FIRE SUPPRESSION GENERAL CONDITIONS

PART 1 GENERAL

1.01 APPLICABILITY
A. This section supplements all sections of the Specifications for Division 21 and shall apply to all phases of work hereinafter specified, shown on the Drawings, or required to provide a complete installation of approved fire suppression systems.
B. The Drawings, General Conditions and General Provisions of the Contract apply to this Section and the other Sections of Division 21 of the specifications. Where conflicts arise between these documents, the more stringent provision will be applicable, subject to the interpretation of the Engineer.
C. Furnish all labor, material, services, and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all materials and electrical equipment specified herein, or shown or noted on the Drawings, and its delivery to the Owner, complete in all respects and ready for use.
D. Products furnished but not installed under this section:
1. Where plans indicate fixtures or equipment will be furnished by this Contractor for installation by other Contractors, this Contractor shall furnish all such equipment, complete in all respects and ready for installation.
2. Drawings, instructions, and manuals supplied with equipment furnished under Division 21, but installed under other Divisions shall be carefully preserved and turned over to the installing Contractor.
E. Products installed but not furnished under this section:
1. Where plans indicate fixtures or equipment will be furnished by others, this Contractor shall provide all rough-in and supplies and shall connect such equipment to the fire suppression systems.
2. Drawings, instructions, and manuals supplied with equipment furnished under separate Divisions but installed under Division 22 shall be carefully preserved and turned over to the Architect.

1.02 DEFINITIONS
A. "Work" is hereby defined as, "The construction and services required by the Contract Documents whether completed or partially completed and includes all labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project."
B. "Furnish" is hereby defined as, "To supply and deliver, unload, and inspect for damage."
C. "Install" is hereby defined as, "To unpack, assemble, erect, apply, place, finish, cure, protect, clean, connect, and place into operation into the work."
D. "Provide" is hereby defined as, "To furnish and install."
E. "Connect" is hereby defined as, "To bring service to the equipment and make final attachment including necessary switches, outlets boxes, terminations, etc."
F. "Concealed" is hereby defined as, "Hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction, in crawl spaces, or buried."
G. "Exposed" is hereby defined as, "Not installed underground nor concealed as defined by the Specifications."
H. "Drawings" is hereby defined as, "All plans, details, equipment schedules, diagrams, sketches, etc. issued for the construction of the work."
I. Subgrade Elevations: 4 inches below finish grade elevations indicated on drawings, unless otherwise indicated.
J. Finish Grade Elevations: 4 inches above subgrade elevations indicated on drawings, unless otherwise indicated.

1.03 CODES AND STANDARDS
A. Perform work in accordance with the applicable Building Code, Electrical Code, Fire Code, Mechanical Code, Plumbing Code, Energy Code, and all other applicable codes, amendments, and ordinances. Also perform all work in accordance with the Americans with Disabilities Act (ADA) and the Authority Having Jurisdiction (AHJ) including Fire Marshall(s).
B. Perform work in accordance with Shake Shack design directive requirements where applicable.
C. Perform work in accordance with the applicable utility companies serving the project. Make all arrangements with the utility companies for proper coordination of the work.
D. Recognized Standards: Design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these Specifications shall conform to the latest publications or standard rules of National Fire Protection Association (NFPA), Factory Mutual Global, where applicable (FMG), Underwriters Laboratories, Inc., (UL.), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), National Electrical Code (NEC), and National Electrical Safety Code (NESC)
E. The Contract Documents shall take precedence where the Contract Documents exceed code, Landlord, utility, or recognized standards requirements.

1.04 PERMITS AND FEES
A. Permits, licenses, fees, inspections and arrangements required for the work under this Contract shall be obtained by the Contractor at his expense, unless otherwise indicated.
B. All fees and scheduling associated with obtaining an accurate water flow test shall be at the Contractor's expense.

1.05 CONTRACT DRAWINGS
A. The Contractor is responsible to obtain, fully understand, and coordinate the work with the complete set of Contract Documents. Any required corrections, including all associated costs, arising from issues caused by the Contractor's failure to understand and/or coordinate the work with the complete set of Contract Documents are the Contractor's sole responsibility.
B. Work under these sections is diagrammatic unless indicated otherwise and is intended to convey the scope of work and indicate the general arrangement of piping, equipment, and accessories. Follow these drawings in laying out the work and verify spaces for the installation of these materials and equipment. Wherever a question exists as to the exact intended location of pipe, sprinklers, or equipment, obtain instructions from the Architect before proceeding with the work.
C. Notify the Architect/Engineer for resolution if a discrepancy is discovered within the Contract Documents. Failure of the Contractor to notify the Architect/Engineer of discrepancies shall result in the resolution becoming the Contractor's responsibility and subject to the Architect/Engineer's review and possible rejection. Should the Architect/Engineer reject a discrepancy resolution of which they were not notified, the Contractor is fully responsible to correct the installation, including all associated costs, until approval of the installation is given by the Architect/Engineer.

1.06 EXISTING CONDITIONS
A. Verify all existing conditions prior to beginning work.
B. Any existing conditions indicated in the Contract Documents are based on information drawings provided by others and possibly limited field verification. The Contractor shall adjust for actual field conditions at no additional expense to the Owner.
C. The Contractor shall visit the project site, review existing conditions against the Contract Documents, and familiarize himself with the work prior to bidding and start of the work. By signing the Contract, the Contractor acknowledges the site visit has been completed and the existing conditions are accepted.
D. The Contractor shall notify the Architect of major discrepancies in writing so the appropriate modifications to the design can be made without delay to the project. The Contractor assumes full responsibility of adjusting for discrepancies of which the Architect is not informed.
F. The Owner shall have first salvage right on all demolished equipment and materials. The Contractor shall dispose of all demolished equipment and materials the Owner rejects.
G. The Contractor shall notify the Architect/Engineer of field discrepancies in writing so the appropriate modifications to the design can be made without delay to the project. The Contractor assumes full responsibility of adjusting for discrepancies of which the Architect/Engineer is not informed.
H. Where connections are made between new work and existing work, the connections shall be made by using materials and methods to suit the actual conditions.
I. Where existing conditions are shown to be removed, by means of a hatched pattern, on the Drawings, this Contractor shall perform all work required for same. Existing pipe run-outs shall be removed all the way back to mains and capped using appropriate methods.
J. Where existing work is to be modified, it shall be done in conformance with these specifications. Materials used shall be same as existing except where specified otherwise.

1.07 SUBMITTALS
A. Shop Drawings:
1. Furnish the Architect/Engineer shop drawing portfolios containing names of manufacturer and cut sheets of equipment to be used on the project. Use manufacturer's specification sheets identified by number indicated on drawings or schedules. Indicate catalog number on the cut sheet. As applicable, provide construction data, weight and dimensional data, performance data and listing data as part of the shop drawing submittal. Provide shop drawings for:
a. Fire Protection fixtures and equipment.
b. Fire Protection materials and accessories.
c. Product Data: Provide manufacturers catalogue information. Indicate valve data and ratings.
2. Submittals are reviewed only for general compliance with the Contract Documents. Dimensions, quantities and details are not checked during submittal review. Review of the submittals does not relieve the Contractor of the responsibility for providing all materials, equipment and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the Contract Documents. The responsibility for coordination of substituted materials and equipment lies solely with the substituting Contractor.
3. Approval shall not relieve the Contractor from responsibility for errors on the shop drawings.
4. If the shop drawings deviate from the contract documents, the Contractor shall advise the Engineer of the deviations in writing accompanying the shop drawings, including the reasons for the deviations.
B. Project Record Documents: Record actual locations of components and tag numbering.
C. Operation and Maintenance Data: Include installation instructions and spare parts lists.
D. Maintenance Data: Include assembly drawings, bearing data including replacement sizes, and lubrication instructions.

1.08 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years experience.
B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years experience, approved by manufacturer.
C. Products:
1. Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
2. Listed and classified by the local Department of Buildings and furnished with an acceptance number, where applicable.
3. Listed and classified by the Landlord's and/or Owner's insurance carrier, where applicable.
D. All equipment and components shall be free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced without any change in the Contract amount.
E. Equipment performance and accessories shall be as scheduled on the Drawings and specified herein. Inclusion in both locations is not a prerequisite to inclusion in the Contract. Equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system, including all required components reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents.
F. Code or utility company requirements shall supersede any conflicting requirements of this section.
G. Fill Composition Test Reports: Results of laboratory tests on actual materials used; Compaction Density Test Reports.

1.09 DELIVERY, STORAGE, AND HANDLING
A. Deliver and store valves in shipping containers, with labeling in place.
B. Provide temporary protective coating on cast iron and steel valves.
C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
D. Protect motors stored on site from weather and moisture by maintaining factory covers and suitable weather-proof covering. For extended outdoor storage, remove motors from equipment and store separately.
E. Equipment: Protect equipment from physical damage by storing off site until the project is ready for immediate installation. Provide temporary caps on all pipes to prevent debris from entering the pipe.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS
A. The manufacturers listed are listed to set minimum standards for quality, design, and functionality. The products of other manufacturers may be submitted, at the Contractor's option, during shop drawing review unless indicated otherwise. The products of other manufacturers must meet all requirements of the Drawings and Contract Documents. The Contractor accepts all responsibility for costs and coordination issues arising out of the substitution of materials or equipment, and the coordination of such substitutions with all other contractors and subcontractors.
B. Sprinkler Systems: Conform work to NFPA 13 and all local requirements.
C. Standpipe and Hose Systems: Conform to NFPA 14 and all local requirements.
D. Welding Materials and Procedures: Conform to ASME Code.

PART 3 EXECUTION

3.01 COORDINATION OF WORK
A. Examine the Contract Documents as a whole for the work of other trades. Coordinate all work accordingly.
B. Work lines and established heights shall be in strict accordance with architectural drawings and specifications insofar as these drawings and specifications extend. Verify all dimensions shown and establish all elevations and detailed dimensions not shown.
C. Promptly report to the Architect any delay or difficulties encountered in the installation of the work, which might prevent proper and complete installation, or make it unsuitable to connect with or receive the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.
D. Plan, lay out, and coordinate the work with all trades well enough in advance so that it proceeds with a minimum of interference to work that has not been completed and work that is in progress. Inform all trades of openings required for the work and provide all special frames, sleeves, and anchor bolts as required. The fire suppression system layout may be altered to suit the conditions, prior to the installation of any work and without additional cost to the Owner. Conflicts arising from lack of coordination shall be this Contractor's responsibility.
E. Wherever pipes runs or ducts are installed or run, the Contractor shall arrange the run of pipe in such a manner that it does not interfere with grilles, diffusers, outlet boxes, luminaires, or other ceiling mounted items.
F. Install systems, materials and equipment as required for maximum headroom, where no ceiling height is established or indicated on the Drawings. Maintain access to equipment requiring service when selecting mounting elevations.
G. Install systems, materials and equipment level and plumb, parallel and perpendicular to building lines where exposed to view, unless otherwise indicated.
H. Conflicts arising from lack of coordination shall be this Contractor's responsibility. The Fire Suppression Contractor shall pay for all extra cutting and patching made necessary by his failure to properly direct such work at the correct time.
I. Perform all work in conformity with the Contract Documents and afford other trades reasonable opportunity for the execution of their work. Properly connect and coordinate this work with the work of other trades at the proper time and in such a manner as not to delay or interfere with their work.
J. Manufacturer's instruction sheets shall be followed explicitly in the installation of all equipment. Where manufacturer's instruction sheets conflict with requirements of these specifications or the Drawings, such conflicts shall be brought to the attention of the Architect/Engineer for clarification.
K. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of a non-authorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.
L. Although all such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
M. Verify and coordinate all requirements and installation details of all materials and equipment that are to be furnished under other divisions and installed or connected under Division 22 prior to rough-in. Conflicts arising from lack of coordination shall be this Contractor's responsibility. As such, the Contractor is responsible to:
1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
2. Determine connection locations and requirements.
3. Sequence rough-in of fire suppression connections to coordinate with installation of equipment.

3.02 COORDINATION DRAWINGS
A. Prepare coordination drawings to a scale of 1/4"=1'-0" or larger; detailing major elements, components, and systems of fire suppression equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the work, including (but not necessarily limited to) the following:
1. Indicate the proposed locations of conduits, equipment, and materials. Include the following:
a. Clearances required for maintaining Code required working space.
b. Equipment connections and support details.
c. Exterior wall and foundation penetrations.
d. Fire-rated wall and floor penetrations.
e. Sizes and location of required concrete pads and bases.
f. Indicate scheduling, sequencing, movement, and positioning of large equipment into the building during construction.
g. Prepare floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.

3.03 EXAMINATION
A. Verify field measurements are as indicated on the Drawings.
B. Verify all pipe locations and sizes in field prior to fabrication or installation.
C. Verify all equipment locations in field prior to installation. Coordinate final locations with all trades.

3.04 INTERFACE WITH OTHER PRODUCTS
A. Install all pipe, equipment, and accessories to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

3.05 FIELD QUALITY CONTROL
A. Provide tests as necessary to establish the adequacy, quality, safety, completed status, and suitable operation of each system. Tests shall be conducted under the supervision of the Architect.
B. Install all equipment, devices, pipe, and materials securely and in a neat and workmanlike manner in accordance with all applicable standards and codes.
C. Install all equipment, pipe, and materials plumb and level and align and adjust for satisfactory operation.
D. Install all equipment, pipe, and materials in accordance with the manufacturer's instructions and recommendations.
E. Inspect all equipment, pipe, and materials for defects.

3.06 ERECTION
A. Rigging:
1. The Fire Suppression Contractor shall arrange for all labor and equipment required for the proper installation of the Fire Suppression equipment in the locations indicated on the Drawings. Where crane rental or other erection is required, such costs shall be included in the Fire Suppression Contract, unless specific arrangements are made with the General Contractor to cover these costs.
B. Supplemental Framing:
1. Provide the design, fabrication, and erection of supplementary structural framing required for attachment of hangers or other devices supporting Fire Suppression equipment. Provide framing members of standard rolled steel shapes, A-36 steel. Provide members welded to structural members equal to the specification for the main structural member. Provide "simple beam" type framing with end connections welded or bolted for shear loads. Use cantilevers when detailed or specifically approved by the Architect/Engineer. The Architect/Engineer's approval is required for location of supplementary framing. Use only certified welders. Design framing members for their actual loads, with allowable stresses specified by AISC, without excessive deflection and with consideration for rigidity under vibration, in accordance with standard structural practices. Show on shop drawing supplementary framing, including design loads, member size and location.

3.07 CUTTING, PATCHING, AND PIERCING
A. Cutting of openings and installation of sleeves or frames through walls and surfaces shall be done in a neat workmanlike manner. Openings shall be cut only as large as required for the installation; sleeves and/or frames installed flush with finished surfaces and properly finished. Surfaces around openings shall be left smooth and finished to match surrounding surface.
B. Obtain written permission of the Architect/Engineer before cutting or piercing structural members. Use craftsmen skilled in their respective trades for cutting, fitting, repairing, patching of plaster, and finishing of materials including carpentry work, metal work or concrete work required for this work.
C. Do not weaken walls, partitions, or floors with cutting. Holes required to be cut in floors must be drilled without breaking out around the holes. The Architect/Engineer will determine suitability of patching and/or refinishing requirements.
D. The Fire Suppression Contractor is responsible for patching of all openings resulting from the installation or removal of fire Suppression equipment or materials.
E. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
F. Patch existing finished surfaces and building components using new materials matching existing materials and experienced Subcontractors.
G. Fire and Smoke Partition Penetrations: The Contractor shall familiarize himself with all fire rated construction and install his work so as to maintain the integrity of the fire code rating. Maintain rating of fire rated and smoke rated construction. Seal annular space around conduits. For fire and smoke rated floors, walls and partitions, use UL listed material that maintains fire rated wall and floor integrity.

3.08 CLEANING AND REPAIR
A. Clean fire suppression parts to remove harmful materials.
B. Clean exposed surfaces of all pipe, equipment, and accessories of all dirt, debris, splatter, and other deleterious materials. Follow the manufacturer's recommendations for cleaning as applicable.
C. Repair or replace damaged pipe, equipment, and accessories, as directed by and to the satisfaction of the Architect, where marring or disfigurement has occurred. All pipe, equipment, and accessories shall be new.

3.09 TESTING AND INSPECTION
A. Upon completion, the entire system shall be tested under operating conditions.
1. All equipment shall be tested under service conditions and proven to operate properly and noiselessly.
2. All additional tests as required throughout this Specification shall be completed with results reported back to the Architect/Engineer for review.
B. Operate all equipment, after installation and connection. Inspect for improper connections and operation and correct deficiencies as required.
C. Inspection:
1. Upon completion of the work, the Contractor shall obtain certificates of inspection and approval from all City and State Authorities Having Jurisdiction.

3.10 PROJECT CLOSEOUT
A. Project Record Documents: At project closeout, provide one printed copy and one electronic copy of project record drawings to the Owner. Information contained on project record drawings shall include, as a minimum,:
1. Actual locations of all pipe, equipment, accessories, etc.
2. Actual pipe sizes and elevations.
3. Actual routing of all underfloor or below grade piping.
4. Hydraulic calculation remote area data and associated flow test information.
B. Operation and Maintenance Data: At project closeout, submit to the Architect two copies of descriptive literature, maintenance and operation data for all piping, equipment, accessories, and materials used. Include maintenance procedures, intervals, and parts list of each item installed under this contract. Include all manufacturer's guarantees and warranties. Also include:

END OF SECTION

SECTION 210500 - COMMON WORK RESULTS FOR FIRE SUPPRESSION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Pipe, fittings, valves, and connections for systems as applicable to this project. Sprinkler systems: New systems; Dry pipe systems; Wet pipe systems; Standpipe/hose systems; Below ground piping; Above ground piping.

PART 2 PRODUCTS

2.01 FIRE PROTECTION SYSTEMS
A. Water Supply Testing for All Systems: Perform tests of all supply water sources to determine the potential for corrosion in the fire protection system including tests for microbes most commonly associated with Microbiologically Influenced Corrosion (MIC). Water samples shall be collected as directed by the product instructions of the testing organization. Samples shall be delivered to the approved testing laboratory within 72 hours of the time the water sample is obtained. Test results shall be forwarded to the Owner and Engineer along with a report summarizing the recommended corrective action to mitigate the potential for MIC or other types of corrosion.
B. The Contractor may use any of the following piping materials, at his option, provided the selected material meets with the approval of all State, local authorities having jurisdiction, and Owner requirements. Verification of compliance of the selected piping material is the sole responsibility of the installing Contractor.

2.02 BURIED PIPING
A. Copper Tube: ASTM B 75 (ASTM B 75M) or ASTM B 88 (ASTM B 88M), 060 or 050 temper: Type: Type K (A); Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze, solder joint, pressure type; Joints: ANSI A5.8 Classification BCuP-3 or BCuP-4 copper/silver braze or ASTM B 32, alloy Sn95 solder.
B. Cast Iron Pipe: AWWA C151/A21.51: Fittings: AWWA C110, standard thickness; Joints: AWWA C111, rubber gasket, Mechanical Couplings: Shaped composition sealing gasket, steel bolts, nuts, and washers.

2.03 ABOVE GROUND PIPING
A. Steel Pipe: ASTM A 795 Schedule 10, ASTM A 53 Schedule 40, ASTM A 135 Schedule 10, ASTM A 135 G, listed light wall pipe, or ASTM A 795 Schedule 40, black: Steel Fittings: ASME B16.9, wrought steel, buttwelded, ASME B16.5, buttweld ends, ASTM A 234/A 234M, wrought carbon steel or alloy steel, ASME B16.5, steel flanges and fittings, or ASME B16.11, forged steel socket welded and threaded; Mechanical Grooved Couplings: Malleable iron housing clamps to engage and lock, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers; galvanized for galvanized pipe; Mechanical Formed Fittings: Carbon steel housing with integral pipe stop and O-ring gasket grooved and O-ring, uniformly compressed into permanent mechanical engagement onto pipe; Schedule 10 steel pipe will not be allowed on any dry pipe sprinkler systems, no exceptions; Threaded or cut groove fittings will not be allowed on any Schedule 10 systems, no exceptions.
B. Copper Tube: ASTM B 75 (ASTM B 75M) or ASTM B 88 (ASTM B 88M), H58 drawn temper: Type: Type M (C): Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze solder joint, pressure type; Joints: AMS A5.8 Classification BCuP-3 or BCuP-4 copper/silver braze or ASTM B 32, alloy Sn95 solder.

2.04 PIPE HANGERS AND SUPPORTS
A. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
B. Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
C. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
D. Wall Support for Pipe Sizes to 3 inches: Cast iron hook.
E. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.
F. Vertical Support: Steel riser clamp.
G. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
H. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

2.05 GATE VALVES
A. Up to and including 2 inches: Bronze body, bronze trim, rising stem, handwheel, solid wedge or disc, threaded ends.
B. Over 2 inches: Iron body, bronze trim, rising stem pre-grooved for mounting tamper switch, handwheel, OS&Y, and mechanical joint end or flanged or grooved ends.
C. Over 4 inches: Iron body, bronze trim, non-rising stem with bolted bonnet, solid wedge, flanged ends, iron body indicator post assembly.

2.06 BUTTERFLY VALVES
A. Bronze Body: Stainless steel disc, resilient replaceable seat, threaded or grooved ends, extended neck, handwheel and gear drive and integral indicating device, and built-in tamper proof switch rated 10 amp at 115 volt AC.
B. Cast or Ductile Iron Body: Cast iron or ductile iron, chrome or nickel plated ductile iron or aluminum bronze disc, resilient replaceable EPDM seat, water, lug, or grooved ends, extended neck, handwheel and gear drive and integral indicating device, and internal tamper switch rated 10 amp at 115 volt AC.

2.07 CHECK VALVES
A. Up to and including 2 inches: Bronze body and swing disc, rubber seat, threaded ends.
B. Over 2 inches: Iron body, bronze trim, swing check with rubber disc, renewable disc and seat, flanged ends.
C. 4 inches and Over: Iron body, bronze disc, stainless steel spring, resilient seal, threaded, wafer, or flanged ends.

2.08 DRAIN VALVES
A. Compression Stop: Bronze with hose thread nipple and cap.
B. Ball Valve: Brass with cap and chain, 3/4 inch hose thread.

PART 3 EXECUTION

3.01 PREPARATION
A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe. Remove scale and foreign material; from inside and outside, before assembly. Prepare piping connections to equipment with flanges or unions.

3.02 INSTALLATION
A. Install sprinkler system and service main piping, hangers, and supports in accordance with NFPA 13.
B. Install standpipe piping, hangers, and supports in accordance with NFPA 14.
C. Comply with all materials, design and installation requirements of Factory Mutual.
D. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
E. Install piping to conserve building space, to not interfere with use of space and other work.
F. Group piping whenever practical at common elevations.
G. Sleeve pipes passing through partitions, walls, and floors.
H. Install piping to permit expansion and contraction without stressing pipe, joints, or connected equipment.
I. Inserts: Provide inserts for placement in concrete formwork; Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams; Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches; Where concrete slabs form finished ceiling, locate inserts flush with slab surface; Where inserts are omitted, drill through concrete slab from below and provide with reinforced square steel plate and nut recessed into and grouted flush with slab.
J. Pipe Hangers and Supports: Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work; Place hangers within 12 inches of each horizontal elbow; Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe; Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping; Where general piping is indicated, install in parallel and at same elevation, provide multiple or trapeze hangers; Provide copper plated hangers and supports for copper piping.
K. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
L. Where exposed to view in finished areas, prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape and brush clean, and apply one coat of zinc rich primer to welding.
M. Do not penetrate building structural members unless indicated or where approval from the project Structural Engineer has been given in writing.
N. Provide sleeves when penetrating footings and floors. Seal and fire stop pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required.
O. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
P. Install valves with stems upright or horizontal, not inverted. Remove protective coatings prior to installation.
Q. Provide drain valves at main shut-off valves, low points of piping and apparatus.

END OF SECTION

SECTION 210502 - TRENCHING AND BACKFILL FOR FIRE SUPPRESSION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Backfilling and compacting for utilities inside and outside the building.

1.02 PROJECT CONDITIONS
A. Provide sufficient quantities of fill to meet project schedule and requirements. Obtain written permission of the Architect/Engineer before cutting or piercing structural members. Use craftsmen skilled in their respective trades for cutting, fitting, repairing, patching of plaster, and finishing of materials including carpentry work, metal work or concrete work required for this work.
B. When fill materials need to be stored on site, locate stockpiles where designated. Separate differing materials with dividers or stockpile separately to prevent intermixing. Prevent contamination; Protect stockpiles from erosion and deterioration of materials.
C. Verify that survey bench marks and intended elevations for the Work are as indicated.
D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

PART 2 PRODUCTS

2.01 FILL MATERIALS
A. General Fill: Subsoil excavated on-site: Graded; Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
B. Structural Fill: Subsoil excavated on-site: Graded; Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris
C. Granular Fill - Gravel: Pit run stone; free of shale, clay, friable material and debris.
D. Granular Fill - Pea Gravel: Natural stone; free of clay, shale, organic matter.
E. Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter.
F. Topsoil: Topsoil excavated on-site: Select; Free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds and foreign matter; Acidity range (pH) of 5.5 to 7.5; Containing a minimum of 4 percent and a maximum of 25 percent inorganic matter.

PART 3 EXECUTION

3.01 EXAMINATION
A. Identify required lines, levels, contours, and datum locations.
B. Locate, identify, and protect utilities and construction that remains and protect from damage.
C. Notify utility company to remove and relocate utilities not required by new construction.

3.02 TRENCHING
A. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
B. Do not interfere with 45 degree bearing splay of foundations.
C. Remove large stones and other hard matter which could damage piping or impede consistent backfilling or compaction.
D. Stockpile excavated material to be re-used in area designated on site.
E. Remove excess excavated material from site.

3.03 PREPARATION FOR UTILITY PLACEMENT
A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

3.04 BACKFILLING
A. Backfill to contours and elevations indicated using unfrozen materials.
B. Fill up to finish grade or slab elevations unless otherwise indicated.
C. Employ a placement method that does not disturb or damage other work.
D. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
E. Maintain optimum moisture content of fill materials to attain required compaction density.
F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 8 inches compacted depth.
G. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
H. Thrust bearing surfaces: Fill with concrete.
I. Compaction Density Unless Otherwise Specified or Indicated: Under paving, slabs-on-grade, and similar construction: 97 percent of maximum dry density; At other locations: 95 percent of maximum dry density.

3.05 BEDDING AND FILL AT SPECIFIC LOCATIONS
A. Use general fill unless otherwise specified or indicated.
B. Utility Piping, Conduits, and Duct Bank: Bedding: Use granular fill; Cover with general fill; Fill up to finish grade elevation; Compact in maximum 8 inch lifts to 95 percent of maximum dry density.

3.06 TOLERANCES
A. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.
B. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.

3.07 FIELD QUALITY CONTROL
A. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D3017.
B. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D 698 ("standard Proctor"), ASTM D 1557 ("modified Proctor"), or AASHTO T 180.
C. If tests indicate work does not meet specified requirements, remove work, replace and retest.
D. Frequency of Tests: Every two feet.

3.08 CLEAN-UP
A. Leave unused materials in a neat, compact stockpile.
B. Remove unused materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
C. Leave borrow area in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

SECTION 210548 - VIBRATION AND SEISMIC CONTROLS FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Concrete housekeeping pads; Inertia bases for fire pumps; Vibration isolators; Seismic restraints.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Kinetics Noise Control, Inc; Kinetics Noise Control, Inc; Mason Industries.

2.02 SEISMIC RESTRAINTS
A. Type: Non-directional and double acting unit consisting of interlocking steel members restrained by neoprene elements.
B. Restraints: Replaceable neoprene, minimum of 0.75 inch thick with minimum 1/8 inch air gap.
C. Capacity: 4 times load assigned to mount groupings at 0.4 inch deflection.
D. Attachment Points and Fasteners: Capable of withstanding 3 times rated load capacity of seismic snubber.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. On closed spring isolators, adjust so side stabilizers are clear under normal operating conditions.
C. Support piping connections to equipment mounted on isolators using isolators or resilient hangers for scheduled distance: Up to 4 Inches Pipe Size: First three points of support; 5 to 8 Inches Pipe Size: First four points of support; 10 inches Pipe Size and Over: First six points of support; Select three hangers closest to vibration source for minimum 1.0 inch static deflection or static deflection of isolated equipment. Select remaining isolators for minimum 1.0 inch static deflection or 1/2 static deflection of isolated equipment.

3.02 FIELD QUALITY CONTROL
A. Inspect isolated equipment after installation and submit report. Include static deflections.

3.03 SCHEDULES
A. Pipe Isolation Schedule.
1. 1 Inch Pipe Size: Isolate 120 diameters from equipment.
2. 2 Inch Pipe Size: Isolate 90 diameters from equipment.
3. 3 Inch Pipe Size: Isolate 80 diameters from equipment.
4. 4 Inch Pipe Size: Isolate 75 diameters from equipment.
5. 6 Inch Pipe Size: Isolate 60 diameters from equipment.
6. 8 Inch Pipe Size: Isolate 60 diameters from equipment.

END OF SECTION

SECTION 210553 - IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Nameplates; Tags; Stencils; Pipe Markers.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Brady Corporation; Champion America, Inc; Seton Identification Products.

2.02 NAMEPLATES
A. Description: Laminated three-layer plastic with engraved letters: Letter Color: White; Letter Height: 1/4 inch; Background Color: Black.

2.03 TAGS
A. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

2.04 STENCILS
A. Stencils: With clean cut symbols and letters of following size:
1. 3/4 to 1-1/4 inch Outside Diameter of Insulation or Pipe: 8 inch long color field, 1/2 inch high letters.
2. 1-1/2 to 2 inch Outside Diameter of Insulation or Pipe: 8 inch long color field, 3/4 inch high letters.
3. 2-1/2 to 6 inch Outside Diameter of Insulation or Pipe: 12 inch long color field, 1-1/4 inch high letters.
4. 8 to 10 inch Outside Diameter of Insulation or Pipe: 24 inch long color field, 2-1/2 inch high letters.
5. Equipment: 2-1/2 inch high letters.
B. Semi-gloss enamel, colors conforming to ASME A13.1.

2.05 PIPE MARKERS
A. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
B. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install plastic and plastic tape pipe markers in accordance with manufacturer's instructions.
B. Identify pumps and valves with plastic nameplates. Small devices, such as in-line pumps, may be identified with tags.
C. Identify valves in main and branch piping with tags.

END OF SECTION

SECTION 210596 - FIRE STOPPING FOR FIRE SUPPRESSION SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Firestopping materials and Firestopping of all penetrations and interruptions to fire rated assemblies, whether indicated on the Drawings, and other openings indicated.

PART 2 PRODUCTS

2.01 FIRESTOPPING ASSEMBLIES
A. Firestopping: Any material meeting requirements: Fire Ratings: Use any system listed by UL or FM or tested in accordance with ASTM E 814 or ASTM E 119 that has F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and that meets all other specified requirements.

2.02 MATERIALS
A. Elastomeric Silicone Firestopping: Single or multiple component silicone elastomeric compound and compatible silicone sealant; conforming to the following: Durability and Longevity: Permanent; Color

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SECTION 280000 - FIRE ALARM GENERAL CONDITIONS
SECTION 284600 - FIRE ALARM SYSTEMS

SECTION 280000 - FIRE ALARM GENERAL CONDITIONS

1.01 SUMMARY
A. This section supplements Section 284600 and shall apply to all phases of work hereinafter specified, shown on the drawings, or required to provide a complete installation of approved electrical, communications, and electronic safety and security systems.
B. All drawings and specifications, including drawings and specifications related to other divisions, apply to the work. Where conflicts arise between documents, the more stringent requirement will apply, subject to the interpretation of the Engineer.
C. Furnish all labor, material, services, and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all equipment, materials, and components specified herein, or shown or noted on the drawings, and its delivery to the Owner, complete in all respects and ready for use.
D. Products furnished but not installed under this section:
1. Where plans indicate equipment, materials, or components will be furnished by this Contractor for installation by other Contractors, this Contractor shall furnish all such equipment, materials, or components, complete in all respects and ready for installation.
2. Drawings, instructions, and manuals supplied with equipment, materials, or components furnished under this division but installed under other divisions shall be carefully preserved and turned over to the installing Contractor.
E. Products installed but not furnished under this section:
1. Where plans indicate equipment, materials, or components will be furnished by others, this Contractor shall provide all rough-in and supplies and shall connect equipment, materials, or components.
2. Drawings, instructions, and manuals supplied with equipment, materials, or components furnished under separate divisions shall be carefully preserved, existing building code, fuel gas code, mechanical code, plumbing code, and fire district code.
5. Code, Administrative: The administrative code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
6. Code, Building: The building code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
7. Code, Electrical: The electrical code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
8. Code, Energy Conservation Code: The energy conservation code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
9. Code, Existing Building: The existing building code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
10. Code, Fire: The fire code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
11. Code, Fuel Gas: The fuel gas code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
12. Code, Mechanical: The mechanical code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
13. Code, Plumbing: The plumbing code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
14. Code, Residential: The residential code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
15. Conduct: To bring service to the equipment and make final attachment including necessary switches, outlets, boxes, terminations, etc.
16. Contract Documents: All drawings, specifications, specified reference standards, applicable codes, manufacturer's installation instructions, and executed legal documents related to the project.
17. Contractor: The contractor(s) or subcontractor(s) responsible for performing the work associated with Section 284600, and ultimately the General Contractor.
18. Drawings: All plans, details, schedules, diagrams, sketches, etc. issued for the construction of the work.
19. Exposed: Not concealed.
20. Furnish: To supply and deliver, unload, and inspect for damage.
21. Install: To unpack, assemble, erect, apply, connect, finish, clean, protect, clean, connect, and place into operation into the work.
22. Owner: The entity, including authorized representatives, to which the work is being provided.
23. Provide: To furnish and install.
24. Work: The construction and services, including all labor, materials, and equipment, required by the contract documents to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project.

1.03 CODES AND STANDARDS
A. Perform work in accordance with code requirements.
B. Perform work in accordance with:
1. Occupational Safety and Health Administration (OSHA) Regulations.
2. Americans with Disabilities Act (ADA).
3. The Authority Having Jurisdiction (AHJ).
4. All applicable NECA standards.
5. Manufacturer's instructions.
6. Instructions associated with the component's listing agency's requirements.
7. Landlord requirements including Tenant Criteria Manuals and Lease Exhibits.
C. All Referenced Standards identified in the specifications apply to the work as if they were incorporated into the specifications in their entirety. It shall not be necessary to specifically reference one of these Referenced Standards for the requirements of the Referenced Standards to apply to the work. If there is a conflict between the requirements of a Referenced Standard and the drawings or specifications, it is the responsibility of this Contractor to notify the Engineer of the discrepancy and obtain direction as to which standard applies prior to proceeding.
D. Code and Landlord requirements supersede any requirements of the contract documents.
E. The contract documents take precedence where the contract documents exceed code, Landlord, or referenced standards requirements.

1.04 PERMITS AND FEES
A. Permits, licenses, fees, inspections and arrangements required for the work shall be obtained by the Contractor at his expense.

1.05 PREPARATION
A. The Contractor is responsible to obtain, fully understand, and coordinate the work with the complete set of contract documents. Any required corrections, including all associated costs, arising from issues caused by the Contractor's failure to understand and/or coordinate the work with the complete set of contract documents are the Contractor's sole responsibility.
B. Work under these sections is diagrammatic and is intended to convey the scope of work and indicate the general arrangement of equipment, conduit, and outlets. Obtain instructions from the Architect/Engineer prior to rough-in wherever a question exists as to the exact intended location of outlets or equipment.
C. Promptly report any discrepancies discovered within the contract documents. Failure of the Contractor to report discrepancies shall result in the resolution becoming the Contractor's responsibility and subject to the Architect/Engineer's review and possible rejection. Should the Architect/Engineer reject a discrepancy resolution of which they were not notified, the Contractor is fully responsible to correct the installation, including all associated costs, until approval of the installation is given by the Architect/Engineer.

1.06 EXISTING CONDITIONS
A. Verify all existing conditions prior to beginning work.
B. Any existing conditions indicated are based on information provided by others and possible limited field verification.
C. Visit the project site, review existing conditions against the contract documents, and become familiar with the work prior to bidding and start of the work.
1. Adjust for actual field conditions at no additional expense to the Owner.
2. If major discrepancies are found, the Contractor shall advise the Architect/Engineer of such deviations in writing so that the appropriate modifications to the design can be made without delay to the project.
a. The Contractor assumes full responsibility of adjusting for discrepancies of which the Architect/Engineer is not informed.
3. Signing the contract is an acknowledgement that the site visit has been completed and the existing conditions are accepted.
D. Verify field measurements and circuiting arrangements are as indicated.
E. Verify that removed wiring and equipment serve only abandoned facilities.
F. Where connections are made between new work and existing work, the connections shall be made by using materials and methods to suit the actual conditions.
G. Where existing work is to be modified, it shall be done in conformance with these specifications. Materials used shall be same as existing except where specified otherwise.

1.07 SUBMITTALS
A. Furnish the Architect/Engineer product data and/or shop drawings, as specified.
B. Indicate all proposed catalog numbers. Product data and/or shop drawings submitted without catalog numbers will be returned without Engineer review.
C. Product data shall consist of manufacturer's standard catalog pages and/or cut-sheets.
D. Submittals shall be concise and to the point, demonstrating the key performance parameters indicated in the contract documents, major dimensions, and identifying the materials used to manufacture the products. Submittals shall directly address the specific requirements of the contract documents. Unnecessary, superfluous information such as non-applicable catalog pages, non-applicable cut sheets, and/or sales brochures. Submittals that are deemed overly voluminous and/or non-specific to the requirements of the contract documents will be returned without Engineer review.
E. The Architect/Engineer's review shall not relieve the Contractor from responsibility for errors within the submittals.

1.08 QUALITY ASSURANCE
A. All Products:
1. Listed, classified, and labeled by an organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to Authority Having Jurisdiction as suitable for the purpose specified and indicated.
2. Listed and classified by the local Department of Buildings and furnished with an acceptance number, where applicable.
3. Listed and classified by the Landlord's and/or Owner's insurance carrier (FM, IRI, etc.), where applicable.
B. All equipment, materials, and components shall be free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced at no additional cost to the Owner.
C. Unless otherwise indicated, all equipment, materials, and components of the same type or classification and used for the same purpose shall be products of the same manufacturer.
D. Use only new, un-weathered, and unused equipment, materials, and components, unless indicated otherwise.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION
3.01 COORDINATION OF WORK
A. Examine the contract documents as a whole for the work of other trades and coordinate all work accordingly.
B. Work lines and established heights shall be in strict accordance with the contract documents. Verify all dimensions shown and establish all elevations and detailed dimensions not shown.
C. Promptly report to the Architect/Engineer any delay or difficulties encountered in the installation of the work which might prevent prompt and proper installation or make it unsuitable to connect with or receive the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.
D. Plan, lay out, and coordinate the work with all trades well enough in advance so that it proceeds with a minimum of interference to work that has not been completed and work that is in progress.
1. Inform all trades of openings required for the work and provide all special frames, sleeves, and anchor bolts required.
2. Perform all work in compliance with the contract documents and afford other trades reasonable opportunity for the execution of their work.
3. Properly connect and coordinate this work with the work of other trades at such time and in such a manner as not to delay or interfere with their work.
4. Conflicts arising from lack of coordination shall be the Contractor's responsibility.
5. The Contractor shall pay for all extra cutting and patching made necessary by his failure to properly direct such work at the correct time.
E. Install equipment, materials, and components to provide for maximum headroom. Maintain access to equipment requiring service when selecting mounting elevations.
F. Install equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, coordinate to limit ease of disconnecting, with minimum of interference with other installations.
G. Install equipment, materials, and components level and plumb, parallel and perpendicular to building lines unless indicated or noted otherwise or indicated.
H. Verify and coordinate all requirements and installation details of all equipment, materials, and components that are to be furnished by other trades and installed or connected by the Contractor prior to rough-in. Conflicts arising from lack of coordination shall be the Contractor's responsibility. As such, the Contractor is responsible to:
1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment, materials, and components furnished under other sections.
2. Determine exact connection locations and requirements.
3. Sequence rough-in of connections to coordinate with installation of equipment.
4. Sequence connections to coordinate with start-up of equipment.
I. Where crane rental or other erection is required, such costs shall be included in the Subcontractor's proposal unless specific arrangements are made with the General Contractor to cover these costs.

3.02 INTERFACES
A. Fire and Smoke Rated Assemblies:
1. The Contractor shall familiarize himself with all fire and smoke rated construction and install his work so as to maintain the integrity of the fire and smoke rating.
2. Install all equipment, materials, and components to preserve fire resistance rating of partitions and other elements, using materials and methods specified.
3. Seal annular space around conduits.
4. Seal openings around electrical equipment to maintain fire rated wall and floor integrity.

3.03 FIELD QUALITY CONTROL
A. Explicitly follow manufacturer's instruction sheets for the installation of all equipment, materials, and components. Where manufacturer's instruction sheets conflict with requirements of the drawings or specifications, such conflicts shall be brought to the attention of the Architect/Engineer for clarification.
B. Although all such work is not specifically indicated, provide all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
C. Provide tests as necessary to establish the adequacy, quality, safety, completed status, and suitable operation of each system.
D. Seal equipment, materials, and components exposed to the weather and make weather-tight and insect-proof.
E. Surface Preparation:
1. Prepare all conduit, fittings, supports, and equipment enclosures exposed to the weather for painting by removing therefrom all oil, grease and dirt. Employ the most satisfactory methods to prevent scratching or defacing of all apparatus and equipment.
2. Provide hot dip galvanized components for ferrous materials exposed to the weather. Provide a minimum of one coat of rust inhibiting paint for all materials after fabrication, color as selected by the Architect.
3. Degrease and clean all surfaces of equipment, materials, and components that are to be painted or are to receive nameplates or labels.
F. All equipment, materials, and components located on exterior walls or on the roof where exposed to view from the ground shall be finish painted to match the surrounding surfaces. Paint colors shall be as selected by the Architect. The above provisions shall apply to all exposed equipment and materials on walls from 6'-0" above grade from any property line. The Architect may, at his sole option, elect to paint any item of equipment acceptable in appearance.
G. All equipment, materials, and components shall be connected providing circuit continuity in accordance with applicable codes whether or not each component is shown between such items and the point of circuit origin.

3.04 ACCESS TO EQUIPMENT
A. Install all equipment and boxes so that all parts are easily accessible for inspection, operation, maintenance and repair. If concealed, provide access doors. Provide fire rated access doors where required by the fire resistance rating of the wall or ceiling in which the door is installed.

3.05 EQUIPMENT CLEARANCES
A. Working Spaces: Install all equipment which is likely to require examination, adjustment, servicing, or maintenance, such that all working spaces required by NFPA 70 are maintained.

3.06 CUTTING, PATCHING, AND PIERCING
A. Cutting of openings and installation of sleeves or frames through walls and surfaces shall be done in a neat workmanlike manner. Openings shall be cut only as large as required for the installation; sleeves and/or frames installed flush with finished surfaces and grouted in place. Surfaces around openings shall be left smooth and finished to match surrounding surface.
B. Obtain written permission of the Architect/Engineer before cutting or piercing structural members. Use craftsmen skilled in their respective trades for cutting, fitting, repairing, and patching of plaster, and finishing materials including carpentry work, metal work, or concrete work required for this work.
C. Do not weaken walls, columns, or floors with cutting. Holes required to be cut in floors must be drilled without breaking out around the holes. The Architect/Engineer will determine suitability of patching and/or refinishing requirements.
D. Patch all openings resulting from the installation or removal of equipment, materials, and components.
E. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
F. Patch existing finished surfaces and building components using new materials matching existing materials and experienced subcontractors.

END OF SECTION

SECTION 284600 - FIRE ALARM SYSTEMS

PART 1 GENERAL
1.01 COORDINATION
A. Coordinate with the architectural plans to determine occupancy classification, occupant loads, and fire-rated and smoke-rated construction locations and ratings.
B. Coordinate locations of all smoke curtains, smoke shutters, fire curtains, fire shutters, magnetic door hold-opens, etc. with the architectural plans. Include all costs in the bid.
C. Coordinate locations of all required duct smoke detectors, including duct smoke detectors which are furnished by others, such as smoke dampers, with the Mechanical Contractor. Include all costs in the bid.
D. Coordinate division of responsibility of duct smoke detector installation and all wiring with both the Electrical and Mechanical Contractors. Include all costs in the bid.
E. Coordinate locations of all fire suppression system monitoring components including flow switches, valve supervisory switches, pressure switches, corrosion monitoring systems, fire valves, sidewinding appliances located in the fire sprinkler contractor. Include all costs in the bid.
F. Coordinate all required elevator interface controls with the Elevator Contractor. Include all costs in the bid.
G. Coordinate all required access control system interface controls with the Security Contractor. Include all costs in the bid.
H. Coordinate with the Electrical Contractor to provide 120 VAC circuits for equipment and required locations and ratings required for fire alarm circuitry. Include all costs in the bid.
I. Coordinate with the Contractor(s) responsible for all other systems that may require fire alarm interfaces. Include all costs in the bid.
J. Coordinate the locations of all wall-mounted notification appliances with the architectural plans to ensure notification appliances do not conflict with architectural features.
1. Obtain the Architect's approval of all wall-mounted notification appliance locations.
K. Change orders resulting from a lack of coordination will not be considered.

1.02 SYSTEM DESIGN
A. Prepare shop drawings (installation documents) complying with NFPA 72 section 7.4 based on this project-specific equipment and components intended to be installed.
B. Information on the drawings serves as design (layout) documentation per NFPA 72 section 7.3 for only the purpose of bidding, establishing performance criteria, and conveying intent. As such, the drawings may not indicate every component required for a complete installation. The Contractor shall include all components required for a complete, code-compliant design and installation in the shop drawings (installation documents).
C. Submit shop drawings (installation documents) to the Authority Having Jurisdiction for review and approval.
D. Include all costs associated with the development of the shop drawings (installation documents) and all permit fees within the bid.
E. Coordinate with all associated disciplines/trades noted above to ensure a coordinated set.
F. Ensure voice intelligibility per NFPA 72 requirements.

1.03 PRE-INSTALLATION MEETINGS
A. Conduct meeting with the Electrical Contractor to determine rough-in locations for all equipment and devices, raceway and wire/cable requirements, and locations where 120 VAC circuits will be required.
B. Conduct meeting with the Mechanical Contractor to determine required mechanical system interfaces and sequences of operation.
C. Conduct meeting with the Fire Sprinkler Contractor to determine required fire sprinkler system interfaces and sequences of operation.
D. Conduct meeting with the Elevator Contractor to determine required elevator system interfaces and sequences of operation.
E. Conduct meeting with the Security Contractor to determine required access control interfaces and sequences of operation.
F. Conduct meeting(s) with any other Contractors to determine required interfaces and sequences of operation for other systems that require fire alarm interfaces.

1.04 SUBMITTALS
A. Provide the following for Architect/Engineer review, after obtaining approval from the Authority Having Jurisdiction:
1. Shop Drawings (Installation Documents): Submit all information required by the Authority Having Jurisdiction for plan review and permitting, including circuiting arrangement, riser diagram, battery calculations, voltage drop indicated on the floor plans, input/output matrix, battery calculations, notification appliance circuit voltage drop calculations, and manufacturer's detailed data sheet for each component.
2. Record of approval by the Authority Having Jurisdiction.
B. Submittals are reviewed only for general compliance with the contract documents. Dimensions, quantities, and details are not reviewed during submittal review. Review of the submittals does not relieve the Contractor of the responsibility for providing all materials, equipment, and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the contract documents. The responsibility for coordination of substituted materials and equipment lies solely with the substituting Contractor.

1.05 QUALITY ASSURANCE
A. Designer Qualifications: Experience designing fire alarm systems within the Authority Having Jurisdiction's area and be a NICET level III or IV (3 or 4) certified fire alarm technician, a registered professional fire protection or electrical engineer, an employee of the fire alarm control unit manufacturer, or a licensed fire alarm contractor.
B. Code requirements supersede any requirements of this section.
C. Equipment materials and accessories shall be as indicated on the drawings and specified herein. Inclusion in both locations is not a requisite to inclusion in the contract; equipment and accessories indicated in either location shall be included in the contract. Provide all necessary accessories and connections as required for a complete, functional system, including all required components reasonably inferred to as necessary although such components may or may not be specifically indicated in the contract documents.

1.06 WARRANTY
A. Provide control panel manufacturer's warranty that system components other than wire and conduit are free from defects and will remain so for 1 year after date of Substantial Completion.
B. Provide installer's warranty that the installation is free from defects and will remain so for 1 year after date of Substantial Completion.

PART 2 PRODUCTS
2.01 FIRE ALARM SYSTEM
A. Provide all components and programming required for a complete, operational, code-compliant system, whether or not indicated in contract documents.
B. Comply with the following where requirements conflict, the most stringent requirement shall apply:
1. ADA Standards.
2. The requirements of the Fire Marshal.
3. The requirements of the local Authority Having Jurisdiction.
4. Applicable local codes.
5. NFPA 72; consider any provision where the word "should" is used to be a mandatory requirement.
6. The contract documents.
C. Means of Transmission to Remote Supervising Station: Digital alarm communicator transmitter (DACT), 2 telephone lines.
1. Cellular and/or internet protocol (IP) transmitters are permitted if accepted by the Authority Having Jurisdiction.
2. Notification method and code signal per local requirements. Coordinate requirements with supervising station vendor.
D. Circuits:
1. Survivability of All Circuit Pathways: Level 0 unless indicated otherwise or otherwise required by the Authority Having Jurisdiction.
2. Initiating Device Circuits (IDC): Class B unless otherwise required to achieve required survivability or otherwise required by the Authority Having Jurisdiction.
3. Signaling Line Circuits (SLC) Within Single Building: Class B unless otherwise required to achieve required survivability or otherwise required by the Authority Having Jurisdiction.
4. Signaling Line Circuits (SLC) Between Buildings: Class A unless otherwise required to achieve required survivability or otherwise required by the Authority Having Jurisdiction.
5. Notification Appliance Circuits (NAC): Class B unless otherwise required to achieve required survivability or otherwise required by the Authority Having Jurisdiction.
6. Smoke Control Circuits: Class C unless otherwise required to achieve required survivability or otherwise required by the Authority Having Jurisdiction.
7. Releasing Device Circuits: Class D unless otherwise required to achieve required survivability or otherwise required by the Authority Having Jurisdiction.
8. Fire Alarm Network Communication Cabling: Class X unless otherwise required to achieve required survivability or otherwise required by the Authority Having Jurisdiction.
E. Spare Capacity:
1. Initiating Device Circuits: Minimum 25 percent spare capacity.
2. Notification Appliance Circuits: Minimum 25 percent spare capacity.
3. Speaker Amplifiers: Minimum 25 percent spare capacity.
4. Fire Alarm Control Units: Capable of handling all circuits utilized to capacity without requiring additional components other than plug-in control modules.
5. Auxiliary Power Supplies: Minimum 25 percent spare capacity.
F. Power Sources:
1. Primary: Dedicated branch circuits of the facility power distribution system.
2. Secondary: Storage batteries.
3. Capacity: Provide to operate entire system for period specified by NFPA 72 plus 25 percent spare capacity.

2.02 EXISTING COMPONENTS
A. Existing Fire Alarm System: Remove existing components as required for the new work and incorporate remaining components into new system, under warranty as if they are new, do not take existing components out of service until new portions are fully operational, tested, and connected to existing system.
B. Provide all necessary panel, expansion card, power supply and annunciator updates required to support the new system.
C. Coordinate new notification appliances with the existing notification appliances.
1. Match (1) manufacturer with existing notification appliances within the same area.
2. New Audible Notification Appliances: Match existing tones and sound pressure characteristics, provided those tones and sound pressure characteristics comply with current codes.
3. New Visual Notification Appliances: Match existing type and synchronization with the existing visual devices.

2.03 FIRE SAFETY SYSTEMS INTERFACES
A. Supervision: Provide supervisory signals in accordance with NFPA 72 and local requirements of the Authority Having Jurisdiction, including but not necessarily limited to each of the following, when present:
1. Fire suppression system control valves, pressure switches, and corrosion monitoring probes per NFPA 13, 13R, and 72.
2. Dry-pipe fire suppression system pressure.
3. Fire pump(s).
4. Elevator shut-down control circuits.
5. Duct smoke detectors, unless Authority Having Jurisdiction requires duct smoke detectors to provide an alarm signal.
B. Alarm: Provide alarm initiation in accordance with NFPA 72 and local requirements of the Authority Having Jurisdiction, including but not necessarily limited to each of the following, when present:
1. Fire suppression system flow.
2. Kitchen hood suppression activation.
3. Elevator lobby, machine room/hoistway, and elevator machine room, machine space, control room, and control space smoke detectors.
4. Duct smoke detectors where Authority Having Jurisdiction will not permit duct smoke detectors to provide a supervisory signal.
C. Elevators: Provide elevator interfaces in accordance with code and local requirements of the Authority Having Jurisdiction, including but not necessarily limited to each of the following, when present:
1. Smoke Detector Located in Elevator Lobbies, Hoistways, Machine Rooms, Machine Spaces, Control Rooms, and Control Spaces: Initiate fire fighters' service Phase I Emergency Recall Operation.
2. Heat Detectors Located in Hoistways, Pits, Machine Rooms, Machine Spaces, Control Rooms, and Control Spaces: Shut down elevator main line power prior to sprinkler water activation, except for fire service access elevator(s) and occupant evacuation elevators (OEEs).
D. Carbon Monoxide Detectors: Shut down fuel source to carbon monoxide-producing equipment when required by local codes or the Authority Having Jurisdiction.
E. Heating, Ventilation, and Air-Conditioning (HVAC) Systems: Provide HVAC system interfaces in accordance with code and local requirements of the Authority Having Jurisdiction, including but not necessarily limited to each of the following, when present:
1. Duct Smoke Detectors:
a. Close smoke damper(s).
b. Shut down supply fan of associated HVAC equipment when individual equipment is rated equal to or greater than 2,000 cubic feet per minute (0.9 cubic meters per second).
c. Shut down supply fans of all associated HVAC equipment serving an area when total aggregate capacity serving the area is equal to or greater than 2,000 cubic feet per minute (0.9 cubic meters per second).
d. Shut down supply fans of all HVAC equipment which shares a common return air plenum when the total circulation is equal to or greater than 2,000 cubic feet per minute (0.9 cubic meters per second).
2. High Volume, Low Speed (HVLS) Ceiling Fans: Shut down all HVLS ceiling fans measuring 6 feet (1.8 m) or greater in diameter upon a fire suppression system water flow alarm.
F. Kitchen Hood Fire Suppression Systems:
1. Disconnect power to all appliances located under hood.
2. Close gas valve(s) serving appliances located under hood.
3. Shut down all supply air fan(s).
4. Start hood exhaust fan(s) if not already running.
G. Music Systems: Shut down music systems upon activation of audible notification appliances.
H. Doors:
1. Magnetic Door Holders: Release upon activation of smoke detectors in smoke zone on either side of door, upon alarm from manual pull station on same floor, and upon sprinkler activation on same floor.
2. Electromagnetic Door Locks on Egress Doors: Unlock upon activation of any alarm initiating device or suppression system in smoke zone that doors serve as egress from.
I. Smoke and Fire Curtains and Shutters: Release upon activation of smoke detectors in smoke zone on either side of door, upon alarm from manual pull station on same floor, and upon sprinkler activation on same floor.

2.04 COMPONENTS
A. General:
1. Provide flush mounted units where installed in finished areas; in unfinished areas, surface mounted unit are acceptable.
2. Provide lockable, permanent labels for each control device using identifiers used in control unit programming.
B. Fire Alarm Control Units:
1. General Requirements:
a. UL 864 microprocessor based control unit capable of monitoring, communicating with, and controlling all required initiating devices, notification appliances, and addressable modules required to accomplish the required fire safety systems interfaces.
b. Two, minimum, configurable on-board notification appliance circuits.
c. History buffer, 1800 event, minimum, with dedicated 600 event alarm event buffer.
2. Central Microprocessor:
a. Communicate, control, and monitor all external devices.
b. Custom operating parameters for the system stored in non-volatile memory to prevent loss during power outages.
c. Equipped with real-time clock to denote actual time of occurrence of system events for the display, history buffers, and external reporting devices.
3. Display:
a. Fifty character, minimum, LCD display to annunciate system conditions and program and sequences of operation parameters.
b. Eight status LEDs: AC Power, Fire Alarm, Pre-Alarm Warning, Supervisory, Trouble, Alarm Silence, Supervisory Silence, and Trouble Silence.
4. Keypad:
a. All keys provided with tactile operational feedback.
b. Minimum of 12 alpha-numeric keys, four (4) cursor keys, and ENTER key.
c. Separate keys dedicated to System Reset, Step, Alarm Silence, Acknowledge, and Drill.
d. Used to provide all control and programming functions for the system.
5. Signaling Line Circuits (SLC):
a. Provide power and communication with up to 127, minimum, analog or addressable devices on each SLC.
b. Polling scheme interrupted by a device in alarm.
c. Address of alarming device annunciated at the control system display.
6. Enclosures:
a. Flush-mounted in finished or public areas, surface mounted in unfinished areas.
b. Finish:
1. Corrosion protective, hardened finish.
2. Red when installed in unfinished areas, gray or beige when installed in finished or public areas.
7. Power Supplies:
a. Primary Power: 120 VAC, 60 Hertz.
b. Secondary Power: Storage battery and battery charger capable of operating entire system for period of time specified by NFPA 72 plus 25 percent spare capacity.
c. Provide a minimum of 5.0 amps at 24 VDC for use on notification appliance circuits or auxiliary power circuits.
d. Provide auxiliary power supplies where required to meet the requirements of the system design.
e. Provide battery charger capacity to sufficiently recharge a depleted set of batteries within 48 hours.
f. Provide auxiliary power output circuits for four wire detectors or addressable control modules.
g. Provide separate circuit to allow resetting the auxiliary power during a system reset.
h. All auxiliary power circuits shall be power limited.
8. Remote Station Signal Transmitter: Electrically supervised digital alarm communicator transmitter, capable of transmitting alarm and trouble signals over telephone lines to central station receiver.
a. Cellular and/or internet protocol (IP) transmitters are permitted if accepted by the Authority Having Jurisdiction.
C. Voice/Alarm Control Units: UL 864 microprocessor based control unit capable of distributing and controlling emergency voice messages to all associated speakers with the following minimum features:
1. Capability to interface with Local Operator Console (LOC), distributed audio amplifiers, remote paging units, remote microphones, and fire fighters' telephone units.
2. Expandable integral audio amplifier.
3. Integral digital message generator capable of producing fourteen unique messages, up to 60 seconds per message.
4. Custom message recording capability using the local microphone, USB port, or external audio input.
5. Integral tone generator with field-selectable leading and trailing tones.
6. Field-selectable repeat cycles.
7. Integral supervised microphone.
8. Push Button Controls for All Call, System Control, Speaker Zone Select, Message Select, Diagnostic Select, and Lamp Test.
9. Color-coded system status LEDs to indicate Fire System Active, System Control, System In Use, Speaker Zone Active, Speaker Zone Fault, Ok to Page, Microphone Trouble, Message Active, Remote Amplifier Fault, Main Console Fault, AC Power, Ground Fault, Charger Fault, Battery Fault, Data Bus Fault, NAC Fault, NAC Active, System Trouble, and Audio Riser Fault.
10. One on-board notification appliance circuit (NAC).
11. Primary Power: 120 VAC, 60 Hertz.
12. Secondary Power: Storage battery and battery charger capable of operating entire system for period of time specified by NFPA 72 plus 25 percent spare capacity.
13. Audio Amplifier Modules: As required for speakers served.
D. Remote Annunciators:
1. Remote annunciator including audible and visual indication of fire alarm by zone, and audible and visual indication of system trouble.
2. Compatible with the control unit; coordinate finish color with the Architect.
3. Provide at a location approved by the Authority Having Jurisdiction when indicated on the drawings or when control unit is installed at a location other than the First Responder's primary point of entry.
E. Addressable Modules:
1. Provide addressable modules suitable for connection to fire alarm control unit signaling line circuits.
2. Use addressable modules only in clean, dry, indoor, nonhazardous locations.
3. Monitor Modules: Unless devices are explicitly permitted to be connected together as zone, provide separate addressable monitor module for each conventional dry-contact input device in order to be individually identified by addressable fire alarm control unit.
4. Control Modules: Provide as indicated or as required for selective control of notification appliances.
5. Releasing Control Modules: Provide as indicated or as required for control of listed solenoids in releasing applications.
6. Relay Modules: Provide as indicated or as required to perform necessary functions via dry-contact interface. Where load exceeds module contact rating, provide accessory power isolation relays suitable for load as required.
7. Signaling Line Circuit (SLC) Isolating Modules: Provide as required to automatically isolate short circuits on connected sections of SLC loops and capacity to restart such sections of circuit normally. Provide automatic reset upon correction of short circuit.
F. Initiating Devices:
1. General: All initiating devices shall be compliant with NFPA 72 requirements.
2. Manual Stations: Dual-action; semi-flush mounted in all finished areas and surface mounted with appropriate backbox in unfinished areas.
3. Spot Heat Detectors: Combination rate-of-rise and fixed temperature, rated 135 degrees F (57 degrees C) and temperature rate of rise of 15 degrees F (8.3 degrees C), with appropriate mounting base suitable for installation on 4-inch (100 mm) outlet box.
a. Provide relay base when heat detector is used to activate a shunt trip.
4. Spot Smoke Detectors: Low-profile photoelectric smoke detector with adjustable sensitivity, unless indicated otherwise, with appropriate mounting base suitable for installation on 4-inch (100 mm) outlet box.
a. Provide relay base when smoke detector is used for releasing service.
b. Provide low frequency sounder bases for smoke detectors installed within sleeping units.
5. Duct Smoke Detectors:
a. Comply with:
1. Provide for each HVAC unit rated equal to or greater than 2,000 cubic feet per minute (0.9 cubic meters per second).
2. Provide for all HVAC units serving the same room or area where the total aggregate capacity of the units is equal to or greater than 2,000 cubic feet per minute (0.9 cubic meters per second).
3. Provide for all HVAC units that share a common return air plenum where the total aggregate capacity of the units is equal to or greater than 2,000 cubic feet per minute (0.9 cubic meters per second).
4. Provide as required for control of each smoke damper.
5. All other locations required by code or the Authority Having Jurisdiction.
b. Detector: Photoelectric smoke detector suitable for use in air velocities from 100 to 4,000 feet per minute (0.5 to 20.32 meters per second) with visual indication of detector activation and capabilities for remote testing.
c. Housing: As required for the duct smoke detector.
d. Sampling Tube: As required for the duct size.
e. Remote Test Stations: Keyed remote test station with green POWER and RED ALARM status indicators. Provide for each duct smoke detector.
f. Multi-Signaling Accessories: Keyed remote test station with audible alarm signal, add-on strobe, green POWER status indicator, and red ALARM status indicator unless indicated otherwise. Provide for each duct smoke detector that is not connected to a fire alarm control unit.
6. Carbon Monoxide Detectors:
a. UL 2075 carbon monoxide detector with appropriate mounting base suitable for installation on 4-inch (100 mm) outlet box.
1. Provide with integral sounder base when required by local code or the Authority Having Jurisdiction.
b. Sensitivity: Per UL 2034 requirements.
G. Notification Appliances:
1. General:
a. All notification appliances shall be compliant with NFPA 72 requirements.
b. All notification appliances shall be from the same manufacturer.
c. All notification appliances shall be semi-flush mounted in all finished areas; notification appliances are permitted to be surface mounted in unfinished areas.
d. All notification appliances installed within damp or wet locations shall be weatherproof.
e. Color: As selected by the Architect.
2. Strobes:
a. Description: Flash tube with clear lens and reflector, suitable for ceiling or wall-mounting as indicated on the drawings, and field-selectable candela settings.
b. Provide strobe synchronization modules when more than one strobe is located within a viewing area.
3. Horns: Rated at 88 dBA at 16 volts, suitable for ceiling or wall-mounting as indicated on the drawings, field-selectable horn tones, and field-selectable volume settings.
4. Combination Horn/Strobes: An integrated appliance consisting of a horn unit and strobe unit meeting the specified individual requirements of both horns and strobes.
5. Speakers: Frequency range from 400 Hz to 4.0 kHz, high-fidelity, high-volume, field-selectable speaker voltage, and field-selectable power settings.
6. Combination Speaker/Strobes: An integrated appliance consisting of a horn unit and strobe unit meeting the specified individual requirements of both horns and strobes.
7. Weatherproof: Provide for notification appliances located in gymnasiums and where otherwise subject to physical damage.
H. Auxiliary Devices:
1. Door Holders: 24 volt coil and 40 pounds of holding force unless indicated otherwise; coordinate selection of door holders with architectural hardware requirements and verify required clearances, sizes, and locations to operate properly with the doors and hardware specified.
2. Notification Appliance Circuit Power Supplies: As required for a complete operational system.
3. Isolator Modules: As recommended by the manufacturer.
I. Non-System Alarm Devices:
1. Smoke Alarms: UL 217 dual-sensor (photoelectric and ionization) smoke alarm with audible and visual alarm indicators, integral test switch, low battery alarm; 120 VAC hardwired with 10-year Lithium ion battery backup; capable of stand-alone operation (single station) or interlocked with other smoke alarms (multiple station).
2. Carbon Monoxide Alarms: UL 2034 electromechanical type with green power LED, red alarm LED, audible alarm indicator, integral test switch, low battery alarm, and end-of-life alarm; 120 VAC hardwired with 10-year lithium ion battery backup; capable of stand-alone operation (single station) or interlocked with other carbon monoxide alarms (multiple station).
3. Combination Smoke/Carbon Monoxide Alarms: An integrated appliance consisting of a smoke alarm and carbon monoxide alarm meeting the specified individual requirements of both smoke alarms and carbon monoxide alarms.
J. Conduit: Electrical metallic tubing (EMT); painted red.
K. Boxes: NEMA OS 1 sheet-steel boxes; 4 inch square by 1-1/2 inch deep or as otherwise required for the component; painted red.
L. Wire and Cable:
1. Where permitted by local codes and the Authority Having Jurisdiction, fire alarm system wiring is permitted to be installed without conduit where accessible and not subject to physical damage.
a. All wiring installed in exposed or inaccessible locations shall be installed in conduit, including wiring installed inside walls.
2. Riser Cabling: Unshielded Type FPLR when installed in conduit and Type FPLP when not installed in conduit unless indicated otherwise or otherwise required; red jacket.
3. Horizontal Cabling: Unshielded Type FPL when installed in conduit and Type FPLP when not installed in conduit unless indicated otherwise or otherwise required; red jacket.
4. Number and size of conductors shall be as recommended by the manufacturer, but shall be not less than 18 AWG for initiating device and signaling line circuits, and 14 AWG for notification appliance circuits.
M. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70:
1. Equipment Connected to Alternating Current Circuits: Maximum let through voltage of 350 VAC, line-to-neutral, and 350 VAC, line-to-line; do not use fuses.
2. Initiating Device Circuits, Notification Appliance Circuits, and Communications Circuits: Provide surge protection at each point where circuit exits or enters a building; rated to protect applicable equipment; for 24 VDC maximum dc clamping voltage of 36 VDC, line-to-ground, and 72 VDC, line-to-line.
3. Signaling Line Circuits: Provide surge protection at each point where circuit exits or enters a building; rated to protect applicable equipment.
N. Document Holder: Steel 14 inch (350 mm) wide by 14 inch (350 mm) high by 3 inch (75 mm) deep system document box with red baked enamel finish.

2.05 SEQUENCE OF OPERATION
A

FOODSERVICE ABBREVIATIONS (SECTION 114000)

AFF	ABOVE FINISHED FLOOR	INCL	INCLUDE
ALT	ALTERNATE	INSUL	INSULATE(ION)
AMP	AMPERE	INT	INTERIOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	IW	INDIRECT WASTE
		JB	JUNCTION BOX
BLDG	BUILDING	JBH	JUNCTION BOX - HORIZONTALLY MOUNTED
BTC	BRANCH TO CONNECTION		
BTU	BRITISH THERMAL UNIT	JBW	JUNCTION BOX - WALL MOUNTED
C&P	CORD AND PLUG		
CFM	CUBIC FEET PER MINUTE	KEC	KITCHEN EQUIPMENT CONTRACTOR
CL	CENTER LINE		
CLG	CEILING	KW	KILOWATT HOUR
CLR	COOLER	LAM	LAMINATE
CMU	CONCRETE MASONRY UNIT	LBS	POUNDS
COL	COLUMN	MBTU	1000 BTU/HOUR
CW	COLD WATER	MECH	MECHANICAL
DC	DROP CORD	MTD	MOUNTED
DFA	DOWN FROM ABOVE	N/A	NOT APPLICABLE
DIA	DIAMETER	NIC	NOT IN CONTRACT
DIM	DIMENSION	NTS	NOT TO SCALE
DIV	DIVISION	OC	ON CENTER
DR	DUPLEX RECEPTACLE	OD	OUTSIDE DIAMETER
DW	DIRECT WASTE	PC	PLUMBING CONTRACTOR
DWG	DRAWING	PH	PHASE
EA	EACH	PLAM	PLASTIC LAMINATE
EC	ELECTRICAL CONTRACTOR	PLYWD	PLYWOOD
EQ	EQUAL	PSI	POUNDS PER SQUARE INCH
EXT	EXTERIOR		
FD	FLOOR DRAIN	QR	QUAD RECEPTACLE
FIN	FINISH(ED)	QT	QUARRY TILE
FLR	FLOOR	QTY	QUANTITY
FW	FILTERED WATER	RAD	RADIUS
GA	GAUGE	RCP	REFLECTED CEILING PLAN
GAL	GALLON	REQD	REQUIRED
GALV	GALVANIZED	SP	SPECIAL RECEPTACLE
GC	GENERAL CONTRACTOR	SR	SINGLE RECEPTACLE
GFCI	GROUND FAULT CIRCUIT INTERUPTER	SS	STAINLESS STEEL
		STD	STANDARD
GPM	GALLONS PER MINUTE	STP	STATIC PRESSURE
HGT	HEIGHT	TYP	TYPICAL
HP	HORSEPOWER	UDS	UTILITY DISTRIBUTION SYSTEM
HVAC	HEATING, VENTILATING, AIR CONDITIONING	VAC	VACUUM
		VERT	VERTICAL
HW	HOT WATER	WP	WEATHER PROOF
ID	INSIDE DIAMETER		
IN	INCH		

GENERAL CONDITIONS

1. THESE DOCUMENTS ARE AN INSTRUMENT OF PROFESSIONAL SERVICE PROVIDED BY THE KITCHEN DESIGN CONSULTANT. MODIFICATION TO THESE DOCUMENTS WITHOUT PRIOR WRITTEN AUTHORIZATION IS EXPRESSLY PROHIBITED.
2. THE KITCHEN DESIGN CONSULTANT IS NOT LICENSED OR CERTIFIED TO PROVIDE ARCHITECTURAL, MECHANICAL, ELECTRICAL, HVAC, OR STRUCTURAL ENGINEERING SERVICES AND EXPRESSLY DISCLAIMS ANY RESPONSIBILITY AND LIABILITY THEREFOR. THESE DOCUMENTS ARE INTENDED TO BE INCORPORATED INTO THE CONSTRUCTION DOCUMENTS OF A LICENSED ARCHITECT OR ENGINEER.
3. ANY FEES ASSOCIATED WITH DOCUMENT SUBMITTALS, INCLUDING BUILDING PERMITS THAT MAY BE REQUIRED UNDER FEDERAL, STATE, AND/OR LOCAL LAWS/CODES ARE EXPRESSLY NOT INCLUDED BY THE KITCHEN DESIGN CONSULTANT.
4. GENERAL CONTRACTOR, SUBDIVISIONS, AND/OR OWNER(S) SHALL NOTIFY THE KITCHEN DESIGN CONSULTANT OF ANY DISCREPANCIES BETWEEN THESE DOCUMENTS AND FIELD VERIFIED BUILDING CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. EQUIPMENT LISTED AS EXISTING, BY OTHERS, OR BY OWNER MUST BE VERIFIED BY THE GENERAL CONTRACTOR AND/OR SUBDIVISIONS FOR FINAL CONFIRMATION OF UTILITY, INSTALLATION, AND SIZE REQUIREMENTS.

GENERAL FOODSERVICE AND HEALTH CODE REQUIREMENTS

1. FOODSERVICE EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE CURRENT EDITION OF CODES, RULES, AND REGULATIONS OF THE GOVERNING HEALTH DEPARTMENT AUTHORITIES AND SHALL BE MANUFACTURED IN STRICT COMPLIANCE WITH AND, IF APPLICABLE, BEAR THE SEAL OF UL, NEMA, ASME, NSF, NSF7, ETL, AGA, OSHA AND NFPA. ACCEPTANCE OF FOODSERVICE AREAS IS SUBJECT TO FINAL INSPECTION BY THE GOVERNING HEALTH DEPARTMENT.
2. CEILING AND WALL SURFACES ADJACENT TO OR ABOVE ANY FOODSERVICE AREA, RESTROOM, AND ANTE-ROOM SHALL BE SMOOTH, NON-ABSORBENT, EASILY CLEANABLE, AND LIGHT IN COLOR. ANY MATERIALS NOT CLEARLY CONSISTENT WITH THIS REQUIREMENT SHOULD BE SUBMITTED TO THE GOVERNING HEALTH DEPARTMENT FOR PRIOR APPROVAL OF USE. LAY-IN CEILING TILE MUST BE NON-POROUS AND NON-FISSURED PANELS ONLY. A CORROSION RESISTANT SUSPENSION SYSTEM IS RECOMMENDED.
3. FLOORING IN ANY FOODSERVICE AREA, RESTROOM, AND ANTE-ROOM SHALL BE SMOOTH, NON-ABSORBENT, AND EASILY CLEANABLE WITH MINIMUM 3/8" COVE BASE EXTENDING UPWARD MINIMUM 6" AT WALLS OR AS DIRECTED BY THE GOVERNING HEALTH DEPARTMENT.
4. WHERE MOP SINKS ARE INDICATED, DO NOT PROVIDE FINISH FLOORING OR COVE BASE ON WALLS BEHIND OR THE AREA DIRECTLY BENEATH SINK. UNIT SHALL INSTALL FLUSH TO ADJACENT WALLS WITH COVE BASE AT ALL EXPOSED EXTERIOR SIDES OF MOP SINK.
5. BUILDING SURFACES AT AND AROUND FOODSERVICE COUNTERS IN PUBLIC SERVING AREAS SHALL MEET THE FINISH REQUIREMENTS OF THE GOVERNING HEALTH DEPARTMENT.
6. CONSTRUCT PARTITION WALLS BETWEEN FOODSERVICE AREAS AND PUBLIC AREAS FOR MAXIMUM SOUND CONTROL WHERE APPLICABLE.
7. LIGHTING IN FOODSERVICE AREAS SHALL MEET THE MINIMUM FOOT-CANDLE REQUIREMENTS ESTABLISHED BY THE AUTHORITIES HAVING JURISDICTION.
8. LIGHTING AND INFRARED/HEAT LAMPS IN AREAS OVER FOOD CONTACT SHALL HAVE LAMP GUARDS/SLEEVES, SOLID PLASTIC LENSES, OR APPROVED SHATTER RESISTANT COATED BULBS.
9. BACKSPLASHES, WHEN PROVIDED WITH EQUIPMENT, SHALL BE SEALED TO WALLS WITH SILICONE IN A NEAT WORKMANLIKE MANNER OR AS DIRECTED BY THE GOVERNING HEALTH DEPARTMENT. SEALANT MUST BE APPROVED BY THE NATIONAL SANITATION FOUNDATION (NSF).
10. SEAMS AND GAPS BETWEEN NON-PORTABLE FOODSERVICE EQUIPMENT AND ADJACENT STRUCTURES SHALL BE PROPERLY SEALED AGAINST THE ENTRANCE OF FOOD PARTICULATES AND VERMIN WITH NSF APPROVED SILICONE SEALANT AND/OR TRIM OR AS DIRECTED BY THE GOVERNING HEALTH DEPARTMENT.
11. EQUIPMENT PLACED ON TABLES AND COUNTERS SHALL BE COMPLETELY SEALED TO WORK SURFACE OR MOUNTED ON LEGS NO LESS THAN 4 INCHES IN HEIGHT IF EQUIPMENT WEIGHS MORE THAN 75 POUNDS.
12. ALL FOODSERVICE EQUIPMENT RESTING ON THE FLOOR SHALL BE COMPLETELY SEALED TO FLOOR, MOUNTED ON MINIMUM 6" HIGH LEGS, MOUNTED ON CASTERS, INSTALLED ON A RAISED CURB WITH COVED BASE, OR INSTALLED AS DIRECTED BY THE GOVERNING HEALTH DEPARTMENT.
13. EMPLOYEE LOCKERS SHALL HAVE MINIMUM 6" HIGH ROUND METAL LEGS OR MOUNTED TO THE WALL WITH MINIMUM 6" AFF CLEAR.
14. UNDERBAR SINKS SHALL COMPLY WITH THE REQUIREMENTS OF THE GOVERNING HEALTH DEPARTMENT.
15. WAREWASH SINKS SHALL HAVE THREE COMPARTMENTS SIZED TO SUBMERGE THE LARGEST KITCHEN VESSEL AND MINIMUM 18" DRAINBOARD ON BOTH ENDS. SPLASHGUARDS SHALL BE PROVIDED AS REQUIRED BY THE GOVERNING HEALTH DEPARTMENT.
16. DISHWASHERS SHALL BE CHEMICAL OR HIGH TEMPERATURE SANITIZING. HIGH TEMPERATURE MACHINES MUST BE DESIGNED WITH A FINAL RINSE TEMPERATURE OF 180°F AND WASH CYCLE TEMPERATURE OF 160°F.
17. ALL REFRIGERATION EQUIPMENT SHALL HAVE THERMOMETERS WHICH ARE EASILY READABLE, IN PROPER WORKING CONDITION, AND ACCURATE WITHIN PLUS OR MINUS 2°.
18. VACUUM BREAKERS, WHEN REQUIRED, SHALL BE A MINIMUM OF 6 INCHES ABOVE THE FLOOD LEVEL RIM WITH NO SHUT OFF DEVICES BEYOND THE DISCHARGE OF THE VACUUM BREAKER.
19. WATER FILTRATION DEVICES SHALL NOT BE LOCATED DIRECTLY ABOVE FOODSERVICE EQUIPMENT OR FIXTURES WHERE DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.
20. DEDICATED HANDWASHING FACILITIES SHALL BE LOCATED WITHIN REQUIRED PROXIMITY AND ACCESSIBILITY OF ALL FOODSERVICE AREAS.
21. UTILITY FAUCETS AT MOP SINK(S) SHALL HAVE BACKFLOW PROTECTION AND SHALL BE THREADED FOR HOSE ATTACHMENT.CHEMICAL DISPENSING SYSTEMS SHALL NOT BE PLUMBED TO THE FAUCET.
22. AIR CURTAIN(S) SHALL HAVE MINIMUM 1600 CFM VELOCITY MEASURED 3'-0" AFF AND SHALL OPERATE VIA DOOR ACTIVATED MICROSWITCH.

GENERAL CONTRACTOR REQUIREMENTS (DIVISION 3, 6, 7, & 9)

1. GENERAL CONTRACTOR, ARCHITECT, ENGINEER(S), AND/OR OWNER SHALL NOTIFY THE KEC (SECTION 114000) OF ALL ADDENDUMS, BULLETINS, AND CHANGES TO THE BUILDING SPACE WITHIN AND AROUND ANY FOODSERVICE AREA(S) PRIOR TO CONSTRUCTION.
2. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL NOTIFY THE KEC (SECTION 114000) OF ANY DISCREPANCY BETWEEN DRAWINGS, CONSTRUCTION, AND CODE REQUIREMENTS WITH POTENTIAL IMPACT TO THE INSTALLATION OR FABRICATION OF FOODSERVICE EQUIPMENT.
3. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE ACCESS AND PATH OF DELIVERY FOR FOODSERVICE EQUIPMENT TO FINAL LOCATION. COORDINATE REQ'S WITH KEC (SECTION 114000).
4. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE OPENINGS THRU FLOORS, CEILINGS, WALLS, AND ROOFS FOR UTILITY ACCESS, CONDUIT, REFRIGERATION LINES, RISERS, AND DUCTWORK UNLESS SPECIFIED OTHERWISE. OPENINGS SHALL BE DRILLED, CORE-BORED, OR CUT BY AN APPROVED METHOD.
5. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE FIRESTOP AT ALL FIRE-RATED BUILDING PENETRATIONS, SHAFTS, AND ASSEMBLIES AS DIRECTED BY CODE UNLESS SPECIFIED OTHERWISE.
6. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE ACCESS PANELS IN HARD LID CEILINGS FOR ACCESS TO EXHAUST CLEANOUTS, FIRE SUPPRESSION GAS VALVES, PULL BOXES, ETC.
7. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL FURNISH AND INSTALL WALL BLOCKING WHERE WALLS REQUIRE REINFORCEMENT. LENGTHS OF WALL BLOCKING ARE NOMINAL: ALWAYS EXTEND TO THE NEXT STUD IN EACH DIRECTION.
8. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL VERIFY AND PROVIDE STRUCTURAL REINFORCEMENT TO BUILDING AS REQ'D FOR HANGING AND/OR MOUNTING OF KEC (SECTION 114000) FURNISHED EQUIPMENT. COORDINATE EQUIPMENT LOCATION(S) WITH KEC (SECTION 114000) AND PROVIDE CLEAR ACCESS FROM HANGING LOCATION(S) ON EQUIPMENT TO SUPPORT STRUCTURE ABOVE FOR INSTALLATION OF THREADED ROD.
9. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE ADDITIONAL ROOF BRACING AND STRUCTURAL SUPPORT AS REQ'D FOR KEC (SECITON 114000) FURNISHED ROOFTOP REFRIGERATION UNITS, EXHAUST/MAKE-UP AIR FANS, ETC.
10. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE TRAPEZE HANGING SUPPORT FROM BUILDING STRUCTURE TO WITHIN 6'-0" ABOVE ALL EXHAUST HOOD(S) WHERE REQ'D.
11. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE FIRE-RATED SHAFTS AND DUCT WRAP IN ACCORDANCE WITH CODE UNLESS SPECIFIED OTHERWISE.
12. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE NON-COMBUSTIBLE WALL CONSTRUCTION OF MINIMUM 16 GA. METAL STUDS WITHIN 18" OF EXHAUST HOOD(S) OR AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.
13. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE SPRINKLER PROTECTION IN WALK-IN REFRIGERATION UNITS AS REQ'D BY CODE. FOAM & SEAL INSIDE AND OUTSIDE OF PENETRATION(S) THRU WALK-IN AND PROTECT SPRINKLER SYSTEM AGAINST FREEZING. COORDINATE FINAL SPRINKLER LOCATIONS WITH CEILING MOUNT LIGHTS INSTALLED BY ELECTRICAL CONTRACTOR (DIVISION 26).
14. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE FIRE EXTINGUISHERS AS REQ'D BY CODE UNLESS SPECIFIED AS FURNISHED BY KEC (SECTION 114000).
15. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE SMOOTH CONCRETE SLAB FOR TRASH AND DUMPSTER AREA(S) AS LOCATED BY THE ARCHITECTURAL DRAWINGS.

PLUMBING GENERAL REQUIREMENTS (DIVISION 22)

1. FOODSERVICE DRAWINGS INDICATE PLUMBING ROUGH-IN/CONNECTION POINTS ONLY FOR EQUIPMENT SPECIFIED UNDER THE KITCHEN EQUIPMENT (SECTION 114000) CONTRACT. ADDITIONAL PLUMBING REQUIREMENTS ARE NOT INDICATED ON FOODSERVICE DRAWINGS. THE PLUMBING CONTRACTOR (DIVISION 22) SHALL FURNISH AND INSTALL PRESSURE REDUCING VALVES, FLOW CONTROLS, BACK FLOW PREVENTION, RPZ (REDUCED PRESSURE ZONE) VALVES, WATER HAMMER ARRESTOR, GATE VALVES, FOR WATER CONNECTIONS AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
2. DIMENSIONS ARE SHOWN FROM FINISHED FLOORS, FINISHED WALLS, AND/OR COLUMN CENTERLINES TO CENTER OF ROUGH-IN. HEIGHTS ARE SHOWN FROM FINISHED FLOOR (NOT FINISHED CURB) TO CENTER OF ROUGH-IN. A ROUGH-IN "STUB-UP" SHALL EXIT FINISHED FLOOR OR CURB TO HEIGHT AND LOCATION INDICATED.
3. ROUGH-INS, FIELD INTERCONNECTIONS (EXPOSED AND UNEXPOSED), AND FINAL CONNECTIONS TO ALL FOODSERVICE EQUIPMENT SHALL BE PROVIDED BY PLUMBING CONTRACTOR (DIVISION 22).
4. PLUMBING TO BE CONCEALED WITHIN WALLS, CEILINGS, AND FLOORS WHERE POSSIBLE.
5. REUSE PLUMBING SERVICES WHERE APPLICABLE IN EXISTING/REMODELED FOODSERVICE AREAS. CAP OR REMOVE EXISTING SERVICE(S) MADE OBSOLETE BY NEW CONSTRUCTION AS DIRECTED BY CODE.
6. THE PLUMBING CONTRACTOR (DIVISION 22) SHALL VERIFY AND COORDINATE THE EXACT PLUMBING REQUIREMENTS FOR ALL NIC EQUIPMENT OUTSIDE OF THE KEC (SECTION 114000) SCOPE PRIOR TO FINAL ROUGH-IN.
7. DIRECT AND INDIRECT WASTES ARE INDICATED IN FOODSERVICE AREAS. ADDITIONAL DRAINS MAY BE REQUIRED UNDER DIVISION 22.
8. FLOOR SINKS SHALL BE INSTALLED AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.
9. PROVIDE REMOVABLE GRATES OR COVERS ON PARTIALLY AND FULLY EXPOSED FLOOR SINKS.
10. FLOOR SINKS FOR DISHWASHERS, SCULLERY SINKS, AND WATER-WASH HOODS TO BE A MINIMUM 10" DEEP WITH 3" DRAIN WHERE APPLICABLE.
11. PROVIDE AND ROUTE DRAIN LINES FROM EQUIPMENT TO FLOOR SINKS WITH A MINIMUM 1/4" PER 1'-0" SLOPE. INSULATE DRAIN LINES SUSCEPTIBLE TO CONDENSATION (ICE BINS, REFRIGERATION UNITS, ETC).
12. SUPPORT ALL PLUMBING TIGHT AGAINST UNDERSIDE OF EQUIPMENT TO ALLOW SPACE FOR CLEANING.
13. KEC (SECTION 114000) SHALL FURNISH FAUCETS, BASKET WASTES, TWIST/LEVER WASTES, GAS HOSES, RESTRAINING CABLES, AND VACUUM BREAKER/SAFETY REGULATORS AS SPECIFIED. PLUMBING CONTRACTOR (DIVISION 22) SHALL INSTALL FAUCETS, BASKET WASTES, TWIST/LEVER WASTES, GAS HOSES, RESTRAINING CABLES, AND VACUUM BREAKER/SAFETY REGULATORS WITH THE NECESSARY COMPONENTS AND SUPPLY NIPPLES TO MAKE FINAL CONNECTIONS: INCLUDING THE INSTALLATION OF COMPONENTS NOT SHOWN OR SHIPPED LOOSE.
14. FLOOR AND WALL PENETRATIONS MUST BE SEALED WATER-TIGHT AND VERMIN PROOF.
15. FOODSERVICE EQUIPMENT DRAIN(S) ARE TO BE PIPED TO GREASE TRAP/INTERCEPTOR(S) AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION. FURNISH AND INSTALL GREASE TRAP/INTERCEPTOR(S) AS SPECIFIED BY THE PLUMBING ENGINEER.
16. POTABLE WATER PRESSURE TO FOODSERVICE EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
17. INCOMING GAS PRESSURE AT POINTS OF USE MUST MEET MANUFACTURER'S SPECIFIED WATER COLUMN REQUIREMENTS. INSTALL KEC (SECTION 114000) FURNISHED PRESSURE REGULATORS WHEN SHIPPED LOOSE WITH EQUIPMENT.
18. WATER HEATER(S) SHALL BE SIZED BY THE PLUMBING ENGINEER TO MEET THE CONSUMPTION REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
19. PROVIDE 110 DEGREE F HOT WATER SUPPLY AT THREE-COMPARTMENT SINK(S) OR AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.
20. UNLESS SPECIFIED AS FURNISHED BY KEC (SECTION 114000), PLUMBING CONTRACTOR (DIVISION 26) SHALL FURNISH AND INSTALL TEMPERATURE REDUCING DEVICES ON DRAIN LINES WHERE DISCHARGE WATER EXCEEDS MAXIMUM ALLOWABLE TEMPERATURE AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.
21. ALL STEAM AND CONDENSATE CONNECTIONS SHALL BE INSTALLED AS DIRECTED BY CODE. PROVIDE PRESSURE REDUCING VALVES, STEAM TRAPS, SAFETY VALVES, SHUT-OFF VALVES, STRAINERS, WRAP, AND INSULATION AS REQ'D.

ELECTRICAL GENERAL REQUIREMENTS (DIVISION 26)

1. FOODSERVICE DRAWINGS INDICATE ELECTRICAL ROUGH-IN/CONNECTION POINTS ONLY FOR EQUIPMENT SPECIFIED UNDER THE KITCHEN EQUIPMENT (SECTION 114000) CONTRACT. ADDITIONAL ELECTRICAL REQUIREMENTS ARE NOT INDICATED ON FOODSERVICE DRAWINGS.
2. ROUGH-INS, INTERWIRING, AND FINAL CONNECTIONS TO ALL FOODSERVICE EQUIPMENT SHALL BE COMPLETED BY ELECTRICAL CONTRACTOR (DIVISION 26).
3. FURNISH AND INSTALL ALL NECESSARY COMPONENTS TO MAKE FINAL CONNECTIONS; INCLUDING THE INSTALLATION OF COMPONENTS NOT SHOWN OR SHIPPED LOOSE.
4. VERIFY AVAILABLE BUILDING SERVICES WITH ELECTRICAL REQUIREMENTS OF ALL FOODSERVICE EQUIPMENT.
5. COVER PLATES IN FOODSERVICE AREAS SHALL BE STAINLESS STEEL UNLESS NOTED OTHERWISE.
6. COUNTERTOP HEIGHT RECEPTACLES IN FOODSERVICE AREAS SHALL BE INSTALLED HORIZONTALLY.
7. PROVIDE DEDICATED CIRCUITS FOR FOODSERVICE EQUIPMENT.
8. REUSE ELECTRICAL SERVICE WHERE APPLICABLE IN EXISTING/REMODELED FOODSERVICE AREAS. CAP OR REMOVE EXISTING SERVICE(S) MADE OBSOLETE BY NEW CONSTRUCTION AS DIRECTED BY CODE.
9. THE ELECTRICAL CONTRACTOR (DIVISION 26) SHALL VERIFY AND COORDINATE THE EXACT ELECTRICAL REQUIREMENTS FOR ALL NIC EQUIPMENT OUTSIDE OF THE KEC (SECTION 114000) SCOPE PRIOR TO FINAL ROUGH-IN.
10. DIMENSIONS ARE SHOWN FROM FINISHED FLOORS, FINISHED WALLS, AND/OR COLUMN CENTERLINES TO CENTER OF ROUGH-IN. HEIGHTS ARE SHOWN FROM FINISHED FLOOR (NOT FINISHED CURB) TO CENTER OF ROUGH-IN. A ROUGH-IN "STUB-UP" SHALL EXIT FINISHED FLOOR OR CURB TO HEIGHT AND LOCATION INDICATED.
11. ALL ELECTRICAL CONDUIT TO BE CONCEALED WITHIN WALLS, CEILINGS, AND FLOORS WHERE POSSIBLE.
12. PROVIDE GFCI PROTECTION IN FOODSERVICE AREAS AS DIRECTED BY CODE. GFCI SHALL MEET THE MOTOR RATING AS REQ'D.
13. UNLESS SPECIFIED AS FURNISHED BY KEC (SECTION 114000), ELECTRICAL CONTRACTOR (DIVISION 26) SHALL FURNISH AND INSTALL ACCEPTABLE MEANS OF DISCONNECT FOR ALL ITEMS AS DIRECTED BY CODE.
14. PROVIDE LIQUID TIGHT CONDUIT WHERE EXPOSED IN FOODSERVICE AREAS UNLESS DIRECTED OTHERWISE BY CODE.
15. PROVIDE MINIMUM 6'-0" FLEXIBLE CONDUIT WHIP ON ALL MOBILE OR UNFASTENED FOODSERVICE EQUIPMENT WITH DIRECT CONNECTION(S).
16. INSTALL KEC (SECTION 114000) FURNISHED LIGHTS SHIPPED LOOSE WHERE INDICATED IN THE DOCUMENTS. COORDINATE FINAL LOCATIONS OF CEILING MOUNT WALK-IN LIGHTS WITH GENERAL CONTRACTOR AND FIRE SPRINKLER CONTRACTOR (DIVISION 21) PRIOR TO INSTALLATION.
17. CONDUIT PENETRATING WALK-IN REFRIGERATION UNITS SHALL BE INSULATED OR OF MATERIAL TO PREVENT THERMAL TRANSFER. FOAM & SEAL INSIDE AND OUTSIDE OF PENETRATION(S) THRU WALK-IN TO PREVENT CONDENSATION.
18. INSTALL KEC (SECTION 114000) FURNISHED AIR CURTAIN(S) AND MICRO SWITCH(S) WHERE SPECIFIED.

FOODSERVICE SHEET LIST

NO.	SHEET NAME
GENERAL	
K001	FOODSERVICE GENERAL NOTES, LEGENDS, SHEET INDEX
EQUIPMENT PLANS	
K101	FOODSERVICE EQUIPMENT PLAN
SPECIAL CONDITIONS	
K102	FOODSERVICE SPECIAL CONDITIONS PLAN
DETAILS AND ELEVATIONS	
K201	FOODSERVICE ELEVATIONS
EQUIPMENT PLANS	
K601	FOODSERVICE SCHEDULES
K602	FOODSERVICE SCHEDULES
K603	FOODSERVICE UTILITY SCHEDULES
ELECTRICAL ROUGH-INS	
KE101	FOODSERVICE ELECTRICAL ROUGH-IN PLAN
PLUMBING ROUGH-INS	
KP101	FOODSERVICE PLUMBING IN-SLAB ROUGH-IN PLAN
KP102	FOODSERVICE PLUMBING ABOVE SLAB ROUGH-IN PLAN

REFRIGERATION GENERAL REQUIREMENTS

1. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE FLOOR REQUIREMENTS AND/OR SLAB RECESS(ES) AT WALK-IN COOLERS AND FREEZERS AS SPECIFIED.
2. EVAPORATOR CONDENSATE INDIRECT WASTE(S) SHALL BE REFRIGERATION GRADE HARD COPPER USING 1" STANDOFFS AND SHALL EXTEND TO DESIGNATED FLOOR SINK(S). FLOOR SINK(S) PROVIDED BY OTHERS. "P" TRAP WASTE OUTSIDE WALK-IN COMPARTMENT(S) WITH AIR GAP AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION. PROVIDE AND INSTALL SLEEVES THRU WALK-IN AND BUILDING WALLS FOR WASTE(S). FOAM & CAULK AROUND SLEEVES AND WASTE(S). WRAP WITH DRAIN LINE HEATER AND INSULATION WHERE SUBJECT TO FREEZING TEMPERATURES.
3. KEC (SECTION 114000) SHALL FURNISH AND INSTALL METAL CLOSURE PANELS & TRIM TO MATCH WALK-IN FACING WHERE WALK-IN ABUTS BUILDING WALLS AND CEILINGS.
4. BUILDING FLOOR UNDER WALK-IN MUST BE SMOOTH AND LEVEL WITHIN PLUS OR MINUS 1/8".
5. REFRIGERATION CONTRACTOR SHALL VERIFY LOCATION OF CONDENSING UNIT(S) PRIOR TO INSTALLATION.
6. INDOOR RACK SYSTEMS SHALL REQUIRE MECHANICAL VENTILATION OF NOT LESS THAN 800 CFM PER H.P. FOR AIR-COOLED UNITS AND 250 CFM PER H.P. FOR WATER-COOLED UNITS UNLESS DIRECTED OTHERWISE BY MANUFACTURER'S RECOMMENDATIONS.
7. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL COORDINATE CLEARANCE REQUIREMENTS OF ROOFTOP REFRIGERATION UNIT(S) FROM BUILDING EDGES AND OTHER ROOFTOP MECHANICAL UNITS AS DIRECTED BY CODE.
8. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE STRUCTURAL REINFORCEMENT TO BUILDING AS REQUIRED FOR HANGING AND/OR MOUNTING OF REFRIGERATION EQUIPMENT. COORDINATE EQUIPMENT LOCATION(S) WITH REFRIGERATION CONTRACTOR.
9. ALL ROOF MATERIAL/FLASHING AND REQUIRED ROOF PENETRATION(S) FOR REFRIGERATION SYSTEMS ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND/OR SUBDIVISIONS.
10. REFRIGERATION CONTRACTOR SHALL PITCH OR SEAL PENETRATIONS THRU PIPE CURB(S) WITH TAR UPON INSTALLATION OF REFRIGERATION LINES.
11. REFRIGERATION CONTRACTOR SHALL FURNISH REFRIGERATION PIPING AND INSTALL CONDENSERS, CONDENSING UNITS, AND EVAPORATOR COILS. REFRIGERATION CONTRACTOR TO CHARGE, START-UP, RUN, AND CHECK FOR PROPER OPERATING TEMPERATURES.
12. REFRIGERATION CONTRACTOR SHALL FURNISH AND INSTALL FLEXIBLE CLOSED CELL INSULATION ON REFRIGERATION LINES TO PREVENT CONDENSATION.
13. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL COORDINATE ACCESSIBILITY OF REFRIGERATION PIPING TO CONDENSING UNITS (THRU MULTIPLE FLOORS WHERE REQ'D) WITH REFRIGERATION CONTRACTOR.
14. REFRIGERATION LINES TO BE CONCEALED WITHIN WALLS, ABOVE CEILINGS, AND BENEATH FLOORS WHERE POSSIBLE. REFRIGERATION CONTRACTOR TO INSTALL LINE SETS IN WALLS DURING FRAMING.
15. REFRIGERATION CONTRACTOR SHALL FOAM & SEAL INSIDE AND OUTSIDE OF ALL REFRIGERATION PENETRATIONS THRU WALK-IN COOLER/FREEZER(S) AND REMOTE REFRIGERATION UNITS.
16. REFRIGERATION CONTRACTOR SHALL FOAM AND SEAL BOTH ENDS OF CONDUIT (WHERE SPECIFIED) UPON INSTALLATION OF REFRIGERATION LINES.
17. PULL BOXES FOR REFRIGERATION LINES (WHERE SPECIFIED) SHALL BE MINIMUM 12" X 12".
18. KEC (SECTION 114000) FURNISHED REMOTE CONDENSERS/CONDENSING UNITS FOR ICE MACHINES SHALL BE INSTALLED NO FURTHER THAN 75'-0" FROM UNIT OR WITHIN MANUFACTURER'S RECOMMENDED MAXIMUM DISTANCE.
19. REFRIGERATION CONTRACTOR SHALL INSTALL REFRIGERATION LINE SETS FOR ICE MACHINES.

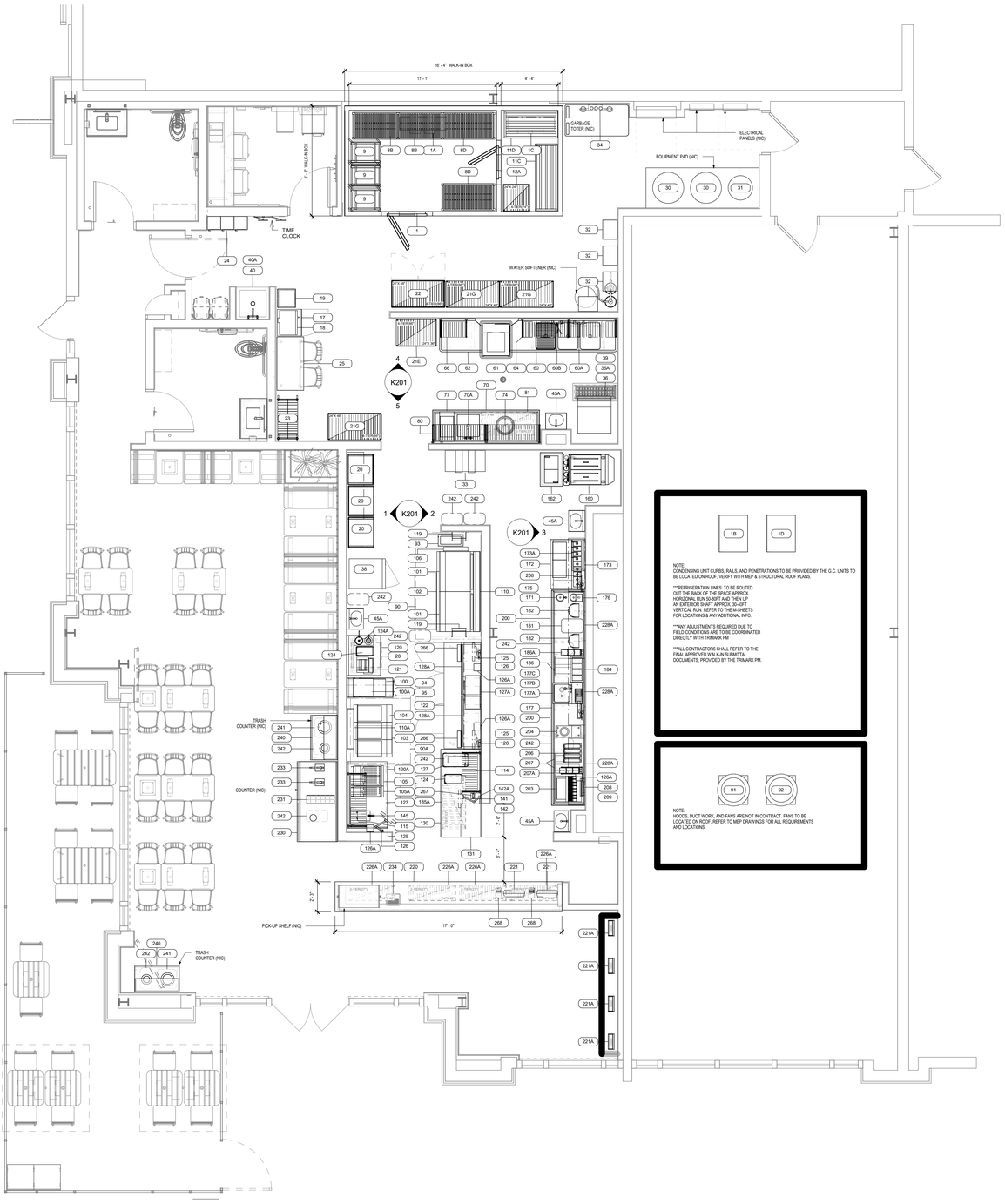
CUSTOM FABRICATION GENERAL REQUIREMENTS

1. THESE NOTES APPLY TO ITEMS LISTED AS "CUSTOM" FABRICATION AND DO NOT APPLY TO STAINLESS STEEL BUY-OUT ITEMS WITH A MANUFACTURER/BRAND AND MODEL NUMBER.
2. STAINLESS STEEL SHALL BE 18-8, TYPE 304 UNLESS NOTED OTHERWISE.
3. COUNTERTOPS AND SINKS SHALL BE 14 GAUGE UNLESS NOTED OTHERWISE.
4. UNDERSHELVES AND OVERSHELVES SHALL BE 18 GAUGE UNLESS NOTED OTHERWISE.
5. ENCLOSED CABINET BASES SHALL BE 18 GAUGE. DOORS SHALL BE DOUBLE WALL CONSTRUCTION WITH 18 GAUGE EXTERIOR.
6. LEGS SHALL BE 16 GAUGE, 1-5/8" O.D. TUBING WITH STAINLESS STEEL BULLET SHAPED FEET. CROSS-RAILS SHALL BE 16 GAUGE, 1-1/4" O.D. TUBING. ALL JOINTS BETWEEN LEGS, CROSS BRACES, AND UNDERSHELVES TO BE FULLY WELDED, GROUND, AND POLISHED SMOOTH. SPACING BETWEEN LEGS NOT TO EXCEED 5'-0" O.C.
7. REINFORCE TOPS, SHELVES, AND CABINET BASES WITH 14 GAUGE CHANNEL: ONE CENTER CHANNEL UP TO 36" WIDE AND TWO CHANNELS WHEN OVER 36" WIDE. CHANNEL SHALL BE STAINLESS STEEL IN WET AREAS OR WHERE EXPOSED.

FLOOR CURB AND DEPRESSION GENERAL REQUIREMENTS (DIVISION 3, 6, 7, & 9)

1. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE FLOOR RECESS(ES) AND RAISED CONCRETE CURB(S) AS SPECIFIED.
2. FLOOR SLAB RECESS(ES) AND RAISED CONCRETE CURB(S) MUST BE SMOOTH AND LEVEL WITHIN PLUS OR MINUS 1/8".
3. DIMENSIONS ARE SHOWN FROM FINISHED FLOORS, FINISHED WALLS, AND/OR COLUMN CENTERLINES TO FINISHED EDGE OF RAISED CURB AND/OR FLOOR RECESS. HEIGHTS ARE SHOWN FROM FINISHED FLOOR TO FINISHED SURFACE OF RAISED CURB AND/OR FLOOR RECESS.
4. OFFSET CURB 3" MINIMUM AROUND PERIMETER OF FLOOR SINKS WHEN SHOWN WITHIN RAISED CURB(S).
5. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL BACKFILL FLOOR RECESS(ES) AND EXPOSED OPENINGS IN CONCRETE CURBS UPON INSTALLATION OF FOODSERVICE EQUIPMENT.
6. KEC (SECTION 114000) SHALL CONFIRM RAISED CURB FRAMING PRIOR TO POURING OF CONCRETE BY GENERAL CONTRACTOR AND/OR SUBDIVISIONS.
7. GENERAL CONTRACTOR AND/OR SUBDIVISIONS TO FURNISH AND INSTALL INTEGRAL COVE BASE ON RAISED CONCRETE CURB(S) PRIOR TO INSTALLATION OF FOODSERVICE EQUIPMENT.
8. KEC (SECTION 114000) TO PROVIDE MINIMUM 1/2" BORIC ACID IN ENCLOSED CURBS OF FR

IFC SET
08-28-2026



1 FOODSERVICE EQUIPMENT PLAN
1/4" = 1'-0"

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STORE NO:
FL #1794

SHAKE SHACK
COCONUT POINT
23181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

FIELD VERIFICATION:

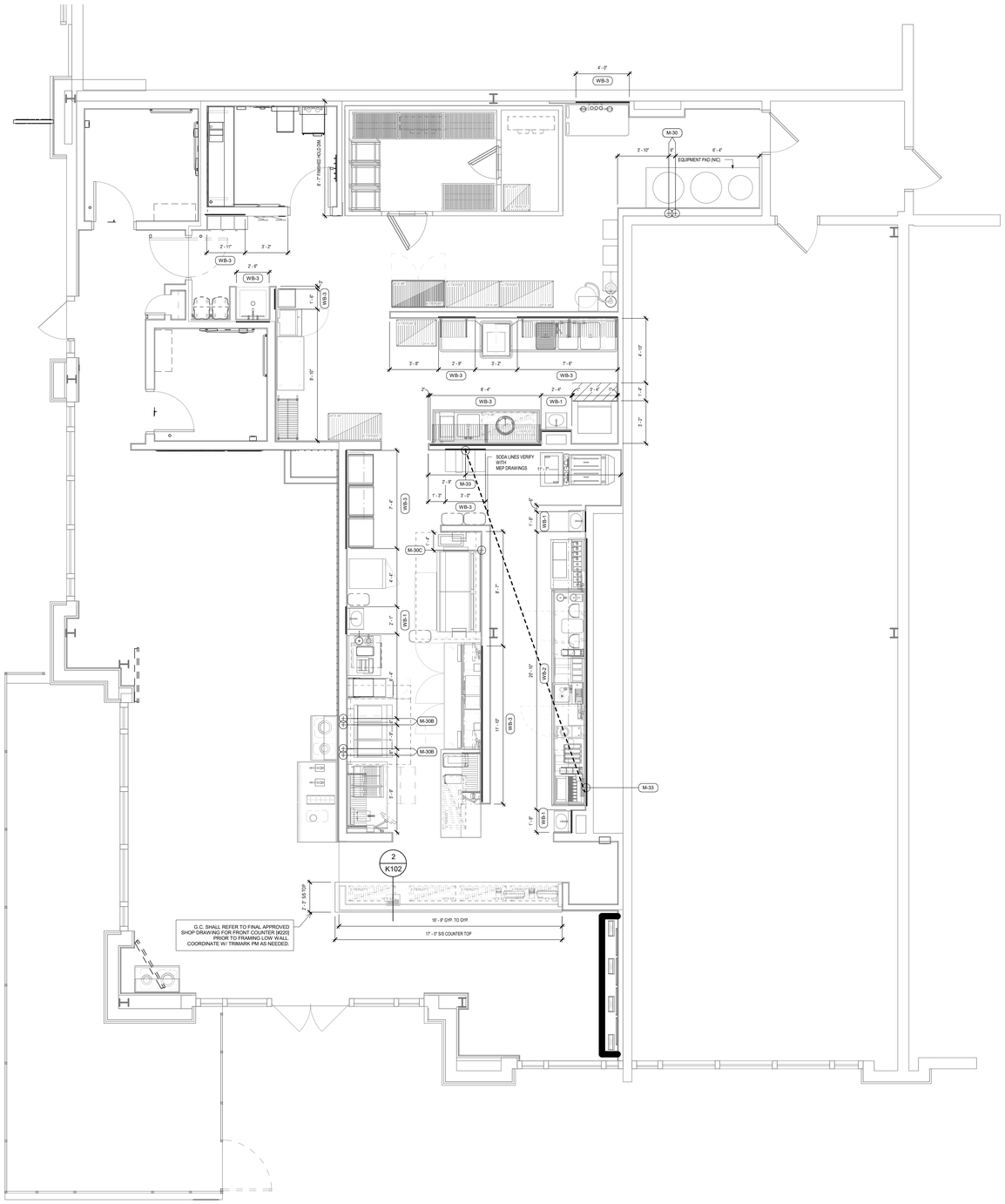
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SHEET NAME:
FOODSERVICE EQUIPMENT PLAN

DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
K101

IFC SET
08-28-2026



1 FOODSERVICE SPECIAL CONDITIONS PLAN
1/4" = 1'-0"

SPECIAL CONDITIONS LEGEND

- BEVERAGE CONDUIT STUB UP
- REFRIGERATION LINE SET
- WALL BLOCKING
- ENGINEERED STRUCTURAL SUPPORT
- NON COMBUSTIBLE WALL

M-30 RTI OIL FILL BOX BY OTHERS/VENDOR. PIPE FROM EXTERIOR FILL BOX TO FILL & RETURN TANKS LOCATED IN BOH. REFER TO MEP DRAWINGS FOR DETAILS.

M-30B RTI OIL FILL AND RETURN PIPING BY OTHERS/VENDOR. STUB OUT FROM WALL AND CONNECT TO FRYERS. PIPE FROM FILL OIL TANK TO FRYERS, AND FROM FRYERS TO RETURN TANK. REFER TO MEP DRAWINGS FOR DETAILS.

M-30C RTI OIL RETURN PIPING BY OTHERS/VENDOR. STUB OUT AT WALL, AND CONNECT TO COLLECTOR/FUNNEL (#93) LOCATED IN KITCHEN. PIPE FROM FUNNEL TO RETURN TANK. REFER TO MEP DRAWINGS FOR DETAILS.

M-31 CO2 TANK, FILL BOX, AND PIPING BY VENDOR. PIPE FROM FILL BOX TO TANK, AND FROM TANK TO BIB RACK (#33) LOCATED IN BOH. REFER TO MEP DRAWINGS FOR DETAILS.

M-33 SODA TRUNK LINE FROM BIB RACK (#33) LOCATED IN BOH, TO BOTTOM OF SODA DISPENSER (#203) LOCATED AT COLDLINE. LINE TO BE RUN ABOVE CEILING, DROP DOWN IN-WALL.

SP-1 4" DEEP DEPRESSION BY G.C. TO BE SMOOTH & LEVEL. ALL WATERPROOFING, GROUTING, & FINISHED FLOOR WORK TO BE PROVIDED BY THE G.C.

WB-1 WALL BLOCKING FROM 24" TO 72" AFF

WB-2 WALL BLOCKING FROM 30" TO 96" AFF

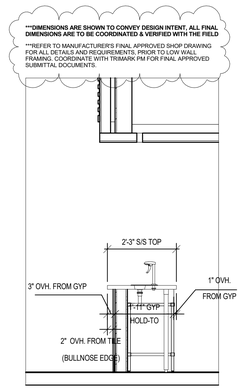
WB-3 WALL BLOCKING FROM 24" TO 96" AFF

WB-4 WALL BLOCKING FROM 48" TO CEILING

WB-5 WALL BLOCKING FROM 0" TO TOP OF WALL

WB-6 WALL BLOCKING FROM TOP OF WINDOW TO FINISHED CEILING

NOTE: ALL WALL BLOCKING TO BE 5/8" FIRE RATED/TREATED PLYWOOD MINIMUM OR 18 GAUGE METAL WHERE REQUIRED AND IS TO BE IN WALL BETWEEN STUDS.



2 FRONT COUNTER
1/2" = 1'-0"

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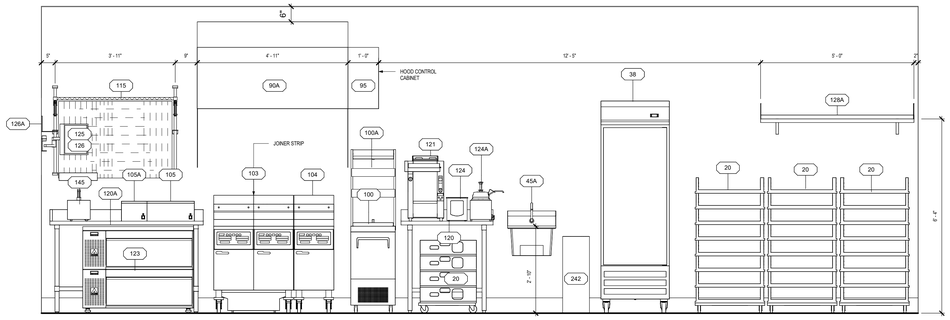
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FOODSERVICE SPECIAL CONDITIONS PLAN

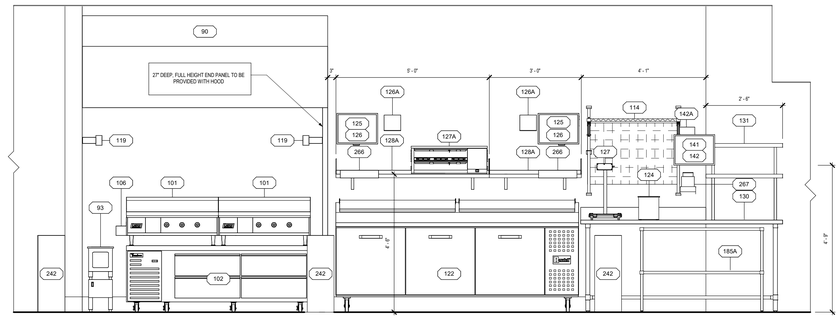
DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
K102

IFC SET
08-28-2026



1 ELEVATION - FRY LINE
1/2" = 1'-0"



2 ELEVATION - MAKE LINE
1/2" = 1'-0"

3 ELEVATION - COLDLINE
1/2" = 1'-0"

4 ELEVATION- WARE WASH
1/2" = 1'-0"

5 ELEVATION - PREP AREA
1/2" = 1'-0"

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STORE NO:
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COCONUT POINT
23181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISION

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SHEET NAME:
FOODSERVICE ELEVATIONS

DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
K201

UTILITY SCHEDULE

						ELECTRICAL							PLUMBING							
REV	ITEM NO.	QTY	ITEM DESCRIPTION	MFR	MODEL	VOLTS	PHASE	AMPS	HP	KW	CONN.	NEMA	CW	HW	IW	DW	GAS	MBTUH	REMARKS	ITEM NO.
	1	1	WALK-IN COOLER/FREEZER COMBO	THERMALRITE	CUSTOM C/F	(2) 120	1	(2) 15.0			JBH								REFER TO MANUFACTURER'S FINAL APPROVED SHOP DRAWING FOR ALL FINAL DETAILS AND REQUIREMENTS - COORDINATE WITH TRIMARK PM FOR WALK-IN COOLER SUBMITTAL DOCUMENTS.	1
	1A	1	COOLER EVAPORATOR	THERMALRITE	COOLER EVAPORATOR	115	1	15.0			JBH				3/4"				REFER TO MANUFACTURER'S SHOP DRAWINGS FOR DETAILS	1A
	1B	1	AIR-COOLED COOLER CONDENSING UNIT	THERMALRITE	COOLER CONDENSING UNIT	208-230	3	20.0	0.75		JBH								AIR - COOLED, REFER TO MANUFACTURER'S SHOP DRAWINGS FOR DETAILS	1B
	1C	1	FREEZER EVAPORATOR	THERMALRITE	FREEZER EVAPORATOR	208-230	1	15.0			JBH				3/4"				REFER TO MANUFACTURER'S SHOP DRAWINGS FOR DETAILS	1C
		1	DRAIN LINE HEAT TRACE - BY E.C.	NIC	DRAIN LINE HEAT TRACE	120	1	5.0			DR	5-15P							PROVIDED BY E.C.	
	1D	1	AIR-COOLED FREEZER CONDENSING UNIT	THERMALRITE	FREEZER CONDENSING UNIT	208-230	1	20.0	1.5		JBH								AIR - COOLED, REFER TO MANUFACTURER'S SHOP DRAWINGS FOR DETAILS	1D
	2-8	1	SPARE NUMBERS	CUSTOM																2-8
1	8B	2	PLASTIC SHELVING UNIT	CAMBRO	EXA244272V4480															8B
1	8D	2	PLASTIC SHELVING UNIT	CAMBRO	EXU244872V4480															8D
1	8H	4	DUNNAGE RACK, PARTS & ACCESSORIES	CAMBRO	CSDS24H6480															8H
1	8J	1	SECURITY ENCLOSURE KIT	CAMBRO	CSSC244818000														MOUNTED ON ITEM 8D	8J
	9	3	UNIVERSAL PAN RACK	EAGLE GROUP	3000120															9
	10-11	1	SPARE NUMBERS	CUSTOM	CUSTOM															10-11
	11C	1	DUNNAGE RACK	CHANNEL	ADE2060															11C
	11D	1	DUNNAGE RACK	CHANNEL	ADE2448															11D
	12	1	SPARE NUMBER	CUSTOM																12
	12A	1	WIRE SHELVES EPOXY	EAGLE FOR SHAKE SHACK	SHELVING UNIT														4-TIER UNIT WITH 74" POST; SIZES PER PLAN	12A
	13-16	1	SPARE NUMBER	CUSTOM																13-16
	17	1	MICROWAVE	NIC	BY OTHERS	120	1	15.0			DR	5-20P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	17
	18	1	REFRIGERATOR	NIC	BY OTHERS	120	1	15.0			DR	5-20P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	18
	19	2	STORAGE LOCKER	NIC	MINI STANDARD SOIL														NOT IN CONTRACT - BY OTHERS. TWO (2) UNITS STACKED VERTICALLY, G.C. TO PROVIDE WALL BLOCKING	19
	20	3	BREAD RACK DOLLY	NIC	BY OTHERS														NOT IN CONTRACT, PROVIDED W/ PRODUCT FOR STORAGE. (4) ON PLAN, (1) STORED BELOW TABLE ITEM # 120.	20
1	21E	1	WIRE SHELVES EPOXY	1880 HOSPITALITY	SHELVING UNIT														4-TIER UNITS WITH 86" POST; SIZES PER PLAN	21E
1	21G	3	WIRE SHELVES EPOXY	1880 HOSPITALITY	SHELVING UNIT														4-TIER UNITS WITH 86" POST; SIZES PER PLAN	21G
	22	1	SECURITY UNIT	EAGLE FOR SHAKE SHACK	CUSTOM														CONSISTING OF (4) 2448VG SHELVES, (4) P86-VG POSTS AND (2) SECM2448E SECURITY UNITS	22
	23	1	MOBIL GARMENT RACK	EAGLE FOR SHAKE SHACK	MOBIL GARMENT RACK														CONSISTS OF (3) 1836VG-X WIRE SHELVES, (4) P86-VG-CO POSTS, (1) CH36 HANGER RAIL, (4) CASTERS	23
	24	1	LOCKER	WINHOLT	WL-618														G.C. TO PROVIDE WALL BLOCKING.	24
	25	1	WORK TABLE, STAINLESS STEEL TOP	EAGLE GROUP	T2448STB														30" H LEGS.	25
	26-29	1	SPARE NUMBERS	CUSTOM																26-29
	30	2	RTI OIL TANK	NIC	BY OTHERS	110	1	20.0			JBW								ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	30
	31	1	CO2 TANK	NIC	BY OTHERS														ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	31
	32	4	TANKLESS WATER HEATER (NIC)	NIC	BY OTHERS														ALL TRADES TO VERIFY UTILITY REQUIREMENTS. REFER TO MEP DRAWINGS FOR EQUIPMENT SPECIFICATIONS.	32
	33	1	BAG N BOX	NIC	BY OTHERS	120	1	20.0			DR	5-20P	1/2"		X				ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	33
	34	1	WATER FILTRATION SYSTEM	EVERPURE	EV932806								3/4"		X				G.C. TO PROVIDE WALL BLOCKING. P.C. TO INTERPIPE TO ICE MAKER/COFFEE MAKER; GC TO PROVIDE WALL BLOCKING	34
	35	1	SPARE NUMBER	CUSTOM																35
	36	1	ICE MAKER, CUBE-STYLE	MANITOWOC	IYT1200AX	208-230	1	14.2			JBW		3/8"		1/2"					36
	36A	1	ICE BIN FOR ICE MACHINES	MANITOWOC	D570										3/4"					36A
	37	1	SPARE NUMBERS	CUSTOM																37
	38	1	REACH-IN FREEZER	KELVINATOR COMMERCIAL	KCHRI27R1DFE	115	1	8	1	.8	DR	5-15P								38
	39	1	FLOOR TROUGH	NIC	BY OTHERS											4"			ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	39
	40	1	MOP SINK	NIC	EAGLE YSHK-MOP-2424-0001-00											X			TO BE PROVIDED BY THE PLUMBER WITH BACKFLOW PREVENTION, AND R/L/BACK SPLASH KIT.	40
	40A	1	SERVICE FAUCET	T&S BRASS	B-0658								1/2"	1/2"					G.C. TO PROVIDE WALL BLOCKING.	40A
	41	1	SPARE NUMBER	CUSTOM																41
	42-45	1	SPARE NUMBER	CUSTOM																42-45
	45A	4	HAND SINK	EAGLE FOR SHAKE SHACK	HSA-10-FKP-LRS								1/2"	1/2"		1-1/2"			MOUNT 34" AFF TO RIM. G.C. TO PROVIDE WALL BLOCKING.	45A
	46-59	1	SPARE NUMBERS	CUSTOM																46-59
	60	1	DISHTABLE, WITH POTSINKS	EAGLE FOR SHAKE SHACK	YSHK-SDTL-96-001-00										(3)2"				O.A. SIZE 8'-0" L X 30"D. LOCATED TO THE LEFT SIDE OF MACHINE. WITH (3) 18"W X 24" X 14"D INTERGRAL SINKS, (2) WITH COVERS, (1) WITH RACK SLIDES & PRERINSE BASKET, 8"H BACKSPLASH WITH (2) 8" O.C. SPLASH MOUNT FAUCET HOLES. REFER TO MANUFACTURER'S FINAL APPROVED SHOP DRAWING.	60
	60A	1	WALL / SPLASH MOUNT FAUCET	T&S BRASS	B-0231-CC-CR								1/2"	1/2"						60A
	60B	1	MINI PRE-RINSE FAUCET ASSEMBLY	T&S BRASS	MPZ-8WLN-08								1/2"	1/2"					WITH ADD ON FAUCET AND WALL BRACKET, G.C. TO PROVIDE WALL BLOCKING.	60B
	60C	3	DRAIN, LEVER / TWIST WASTE	FISHER	22209														NOT SHOWN ON PLAN.	60C
	60D	1	FAUCET, PARTS	T&S BRASS	B-TEE-EZK														NOT SHOWN ON PLAN.	60D
	61	1	DISHMACHINE, VENTLESS	NIC	XLRW-VV	208	3	18.7	1	4.1	JBW		1/2"	1/2"	1-1/2"				WITH BUILT IN HOT WATER BOOSTER, 3PH/SINGLE POINT CONNECTION, 4-WIRE PLUS GROUND.	61
	62	1	CLEAN DISHTABLE	EAGLE GROUP	YSHK-CDTR-38-0001-00/MOD SPLASH														O.A. SIZE 3'2" L X 30"D, LOCATED TO THE RIGHT SIDE OF MACHINE,WITH 8"H BACKSPLASH AND RACK SLIDES BELOW.	62
	63	1	SPARE NUMBER	CUSTOM																63
	64	1	WALL GRID SYSTEM (POT SINK)	EAGLE FOR SHAKE SHACK	CUSTOM														(1) 2-TIER UNIT, (1) 1-TIER UNIT WITH WALL MAT, 33" POST AND WALL BRACKETS; SIZES PER PLAN. G.C. TO PROVIDE WALL BLOCKING.	64
	65	1	SPARE NUMBERS	CUSTOM																65
	66	1	WALL GRID SYSTEM (CLEAN SIDE)	EAGLE FOR SHAKE SHACK	CUSTOM														(1) 2-TIER UNIT, (1) 1-TIER UNIT WITH WALL MAT, 33" POST AND WALL BRACKETS; SIZES PER PLAN. G.C. TO PROVIDE WALL BLOCKING.	66
	67-69	1	SPARE NUMBERS	CUSTOM																67-69
	70	1	PREP TABLE WITH SINK	EAGLE GROUP	CUSTOM										2"				WITH (1) 20" X 20" SINK BOWL, (1) FISHER 22209 LEVER WASTE, FAUCET AND SINK COVER.	70
	70A	1	DECK MOUNT FAUCET	T&S BRASS	B-0227-CR								1/2"	1/2"						70A
	70C	1	DRAIN, LEVER / TWIST WASTE	FISHER	22209														NOT SHOWN ON PLAN.	70C
	71-73	1	SPARE NUMBERS	CUSTOM																71-73
	74	1	VEGETABLE DRYER	DYNAMIC USA	E004														WITH SSB-1 STABILIZING BASE.	74
	75	1	SPARE NUMBERS	CUSTOM																75
	76	1	SPARE NUMBER	CUSTOM																76
	77	1	RETHERMALIZER, WATER TANK, ELECTRIC	PITCO FOR SHAKE SHACK	CRTE/SHACK	208	1	29.8		6.0	SP	L6-30P			3/8"				E.C. SHALL PROVIDE OUTLET TO ACCEPT SHROUDED L6-30P, REFER TO SPEC.	77
	78-79	1	SPARE NUMBERS	CUSTOM																78-79
	80	1	WALL GRID SYSTEM	EAGLE FOR SHAKE SHACK	YSHAKE-GRID-0001-00														(1) 2-TIER UNIT, (1) 1-TIER UNIT WITH WALL MAT, 33" POST AND WALL BRACKETS; SIZES PER PLAN. G.C. TO PROVIDE WALL BLOCKING.	80
	81	1	WIRE SHELVES EPOXY	EAGLE FOR SHAKE SHACK	SHELVING UNIT														2-TIER UNIT WITH 33" POST; SIZES PER PLAN	81
	82-89	1	SPARE NUMBERS	CUSTOM																82-89
	90	1	EXHAUST HOOD	NIC	BY OTHERS	X	X	X			JBH								* ALL TRADES MUST VERIFY UTILITY REQUIREMENTS WITH FINAL APPROVED MANUFACTURER'S SHOP DRAWINGS.	90
	90A	1	FRYER EXHAUST HOOD	NIC	BY OTHERS	X	X	X			JBH								* ALL TRADES MUST VERIFY UTILITY REQUIREMENTS WITH FINAL APPROVED MANUFACTURER'S SHOP DRAWINGS.	90A
	91	1	EXHAUST FAN	NIC	BY OTHERS	X	X	X			X								* ALL TRADES MUST VERIFY UTILITY REQUIREMENTS WITH FINAL APPROVED MANUFACTURER'S SHOP DRAWINGS.	91
	92	1	SUPPLY FAN	NIC	BY OTHERS	X	X	X			X								* ALL TRADES MUST VERIFY UTILITY REQUIREMENTS WITH FINAL APPROVED MANUFACTURER'S SHOP DRAWINGS.	92
	93	1	GREASE COLLECTOR	NIC	BY OTHERS	120	1	20.0			DR	5-20P							* ALL TRADES MUST VERIFY UTILITY REQUIREMENTS WITH VENDOR'S SPEC.	93
	94	1	FIRE SUPPRESSION TANK CABINET	NIC	BY OTHERS	120	1	15.0			JBH								E.C. INTERWIRE TO BLDG ALARM SYSTEM AND FOR EQUIPMENT SHUT-DOWN. ALL TRADES MUST VERIFY UTILITY REQUIREMENTS WITH PROVIDING VENDOR.	94
	95	1	HOOD CONTROL CABINET	NIC	BY OTHERS	120	1	15.0			JBH								E.C. INTERWIRE TO BLDG ALARM SYSTEM AND FOR EQUIPMENT SHUT-DOWN. ALL TRADES MUST VERIFY UTILITY REQUIREMENTS WITH PROVIDING VENDOR.	95
	96-99	1	SPARE NUMBERS	CUSTOM																96-99
	100	3	SANDWICH / SALAD PREPARATION REFRIGERATOR	ATOSA USA, INC.	MSF17GR-NTCV	115	1	2.9	1/5		DR	5-15P								100
1	100A	1	FREEZER RACK SHELF	FRANKE FOODSERVICE	18037071															100A
	101	2	GAS COUNTERTOP GRIDDLE	LANG	9K-236SC-NATSH	120	1	2.0			DR	5-15P					3/4"	81.0		101
	101A	1	GAS CONNECTOR HOSE KIT / ASSEMBLY	T&S BRASS	HG-4D-48SK														NOT SHOWN ON PLAN.	101A
	102	1	EQUIPMENT STAND, REFRIGERATED BASE	RANDELL FOR SHAKE SHACK	LPRES1R2-SS72	115	1	7.4	1/3		DR	5-15P							ON CASTERS, RIGHT SIDE COMPRESSOR.	102
	103	1	FRYER BATTERY, GAS	PITCO FOR SHAKE SHACK	SSH55-2FD	115	1	1.7			DR	5-15P					1"	160.0	WITH FILTER DRAWER, DIGITAL CONTROLS, CASTERS, DOUBLE BASKET HANGERS.	103
		1	FILTER CONNECTION	PITCO FOR SHAKE SHACK		115	1	7.0	1/3		DR	5-15P								
	103A	1	GAS CONNECTOR HOSE KIT / ASSEMBLY	T&S BRASS	HG-4E-48SK														NOT SHOWN ON PLAN.	103A
	104	1	FRYER BATTERY, GAS	PITCO	SSH55-1FD	115	1	1.7			DR	5-15P					3/4"	80.0		104
		1	FILTER CONNECTION	PITCO		115	1	7.0	1/3		DR	5-15P								
	104A	1	GAS CONNECTOR HOSE KIT / ASSEMBLY	T&S BRASS	HG-4D-48SK														NOT SHOWN ON PLAN.	104A
	105	1	FRENCH FRY WARMER	MERCO	MCG1827NNN	120	1	15.9			DR	5-15P							MOUNTED TO LEFT OF UNIT #105.	105
	105A	1	FRENCH FRY WARMER	MERCO	MCG1027NNN	120	1	8.0			DR	5-15P							MOUNTED TO RIGHT OF UNIT #105A.	105A
	106	2	SPEED RAIL / RACK	EAGLE GROUP	500778															106
	107	1	BREADING STATION	EAGLE FOR SHAKE SHACK	YCOUNTER-0520-00															107
	107A	1	SIDE SPLASH	EAGLE FOR SHAKE SHACK	SIDE SPLASH															107A
	108-109	1	SPARE NUMBERS	CUSTOM																108-109
	110	1	STANDOFF SHELF	EAGLE FOR SHAKE SHACK	YWS672-0001-00														ALL S/S 6" X 72".	110

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COCONUT POINT
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REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

FIELD VERIFICATION:

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SHEET NAME:
FOODSERVICE SCHEDULES

DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
K601

UTILITY SCHEDULE

REV	ITEM NO.	QTY	ITEM DESCRIPTION	MFR	MODEL	ELECTRICAL VOLTS	PHASE	AMPS	HP	KW	CONN.	NEMA	PLUMBING CW	HW	IW	DW	GAS	MBTUH	REMARKS	ITEM NO.
	110A	1	STANDOFF SHELF	EAGLE FOR SHAKE SHACK	YWS636-0001-00														ALL S/S 6" X 36".	110A
	111	1	TIMER, ELECTRONIC	COOPER-ATKINS	TFS4-01														NOT SHOWN ON PLAN.	111
	112-113	1	SPARE NUMBERS	CUSTOM																112-113
	114	1	WALL GRID SYSTEM	EAGLE FOR SHAKE SHACK	CUSTOM														(1) 1-TIER UNIT WITH WALL MAT, 33" POST AND WALL BRACKETS; SIZES PER PLAN. G.C. TO PROVIDE WALL BLOCKING.	114
	115	1	WALL GRID SYSTEM	EAGLE FOR SHAKE SHACK	CUSTOM														(1) 1-TIER UNIT WITH WALL MAT, 33" POST AND WALL BRACKETS; SIZES PER PLAN. G.C. TO PROVIDE WALL BLOCKING.	115
	116-118	1	SPARE NUMBERS	CUSTOM																116-118
	119	2	GRIDDLE TIMER	FAST / KITCHEN BRAINS	TRACK2X3SS	120	1	1.0			DR	5-15P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	119
	120	1	BUN TOASTER TABLE	EAGLE GROUP	T3036STB-BS														30" D X 36" W.	120
	120A	1	WORK TABLE, STAINLESS STEEL TOP	EAGLE GROUP	T3660STB-BS														WITH RIGHT SIDE SPLASH.	120A
	121	1	TOASTER, CONTACT GRILL, CONVEYOR TYPE	ANTUNES	VCTM-2-9211042	208-230	1	20		3.1	SP	6-20P							MODEL IS PRE-PROGRAMMED AT FACTORY FOR SHAKE SHACK SPECIFIC USE.	121
	122	1	PIZZA PREPARATION REFRIGERATOR	RANDELL	8395N-290	115	1	5.8	(2) 1/4		DR	5-15P							WITH 16" D EXTENDED CUTTING BOARD.	122
1	123	1	REFRIGERATOR/FREEZER PREP WORK SYSTEM	RANDELL FOR SHAKE SHACK	FX-2WSA-290	115	1	3.4	(2) 1/4		DR	5-15P								123
	124	2	FOOD PAN WARMER/RETHERMALIZER, COUNTERTOP	SERVER PRODUCTS	86090	120	1	4.2		.5	DR	5-15P								124
1	124A	1	FOOD TOPPING WARMER, COUNTERTOP	SERVER PRODUCTS	81220	120	1	8.3		1.0	DR	5-15P							WITH (2)94009 S/S JARS.	124A
	125	3	KDS SCREEN	NIC	BY OTHERS	(2) 120	1	(2) 15.0			DR	5-15P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS. E.C. TO PROVIDE ISOLATED GROUND.	125
	126	3	BRACKET	NIC	NCR RADIAL ARM														G.C. TO PROVIDE WALL BLOCKING	126
	126A	3	BRACKET, POWER CONDITION	EAGLE GROUP	YJ-2990-00														NOT SHOWN ON PLAN, PAIR WITH ITEM #126 BRACKET. G.C. TO PROVIDE WALL BLOCKING.	126A
	127	1	FRENCH FRY WARMER	HATCO	UGFFB	120	1	8.3		1	DR	5-15P								127
	127A	1	HEATED HOLDING / WARMING BIN	MERCO	MHG23SST1T	120	1			1.2	DR	5-15P							WALL MOUNTED, WITH 12 PANS, G.C. TO PROVIDE WALL BLOCKING AS REQUIRED	127A
	128	1	SPARE NUMBER	CUSTOM																128
	128A	1	SHELVING, WALL-MOUNTED	EAGLE FOR SHAKE SHACK	YWS1860-16/4														WITH UP-TURN BRACKETS. G.C. TO PROVIDE WALL BLOCKING.	128A
	128B	1	SHELVING, WALL-MOUNTED	EAGLE FOR SHAKE SHACK	YWS1836-16/4														WITH UP-TURN BRACKETS. G.C. TO PROVIDE WALL BLOCKING.	128B
	129	1	SPARE NUMBER	CUSTOM																129
	130	1	WORK TABLE, STAINLESS STEEL TOP	EAGLE GROUP	YT3079-0241-00														O.A. SIZE 6'-0" L X 36" D TABLE W/ PROVISIONS FOR #131 TABLE MOUNTED DOUBLE OVER SHELF, SPACE FOR #242 TRASH AS SHOWN REFER TO PLAN AND ELEVATIONS.	130
	131	1	DOUBLE OVERSHELF, TABLE MOUNT	EAGLE GROUP	DOS3018-16/4														DOUBLE OVERSHELF MOUNTED TO TABLE, ITEM #130. 30" D X 18" W X 30" H.	131
	132-140	1	SPARE NUMBERS	CUSTOM																132-140
	141	2	EXPO TOUCH SCREEN	NIC	BY OTHERS	2)120	1	2)15.0			DR	5-15P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS. E.C. TO PROVIDE ISOLATED GROUND.	141
	142	2	RADIAL ARM BRACKET	NIC	NCR RADIAL ARM														G.C. TO PROVIDE WALL BLOCKING.	142
	142A	2	BRACKET, POWER CONDITION	EAGLE GROUP	YJ-2990-00														NOT SHOWN ON PLAN, PAIR WITH ITEM #175 BRACKET. G.C. TO PROVIDE WALL BLOCKING.	142A
	143-144	1	SPARE NUMBER	CUSTOM																143-144
	145	1	FOOD TOPPING WARMER, COUNTERTOP	SERVER PRODUCTS	81195	120	1	4.3		0.517	DR	5-15P							WITH 94009 S/S JARS.	145
	146-159	1	SPARE NUMBERS	CUSTOM																146-159
	160	1	FROZEN CUSTARD MACHINE	STOELTING	M202-309COSPOR	(2) 208-230	(2) 3	(2) 20.0	(2) 3		(3) SP	VRFY	1/2"		1-1/2"				CUSTOM UNIT BUILT WITH BACKSIDE SHROUD, TO AVOID NEED FOR 24" BACKSIDE CLEARANCE. ALL TRADES SHALL REFER TO MANUFACTURER'S FINAL APPROVED SHOP DRAWING FOR DETAILS AND REQUIREMENTS.	160
	161	1	SPARE NUMBER	CUSTOM																161
	162	1	FROZEN CUSTARD DIPPING CABINET	C NELSON	NBS2SE-RB-HC/SHACK	115	1	15.0			DR	5-15P			1"					162
	163-169	1	SPARE NUMBERS	CUSTOM																163-169
	170	1	SHAKE SLEEVE TABLE	EAGLE GROUP	YUT3012-0010-00														ALL WELDED CONSTRUCTION AND TOP CUTOUT FOR ITEM 171.	170
	171	2	DIPPER WELL	T&S BRASS	B-2282-01								1/2"		1-1/2"				WITH FAUCET.	171
	172	1	DIPPING CABINET	RANDELL FOR SHAKE SHACK	DCST-44-SR9-SS	115	1	6.5	1/3		DR	5-15P								172
	173	1	SHELVING, WALL-MOUNTED	EAGLE FOR SHAKE SHACK	WS1548-16/4														G.C. TO PROVIDE WALL BLOCKING.	173
	173A	1	CONDIMENT SHELF	EAGLE FOR SHAKE SHACK	YRAIL-0026-00														G.C. TO PROVIDE WALL BLOCKING.	173A
	174	2	EXPO TOUCH SCREEN	NIC	BY OTHERS	(2) 120	1	(2) 15.0			DR	5-15P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS. E.C. TO PROVIDE ISOLATED GROUND.	174
	175	2	RADIAL ARM BRACKET	NIC	NCR RADIAL ARM														G.C. TO PROVIDE WALL BLOCKING.	175
	176	2	BRACKET, POWER CONDITION	EAGLE GROUP	YJ-2990-00														NOT SHOWN ON PLAN, PAIR WITH ITEM #175 BRACKET. G.C. TO PROVIDE WALL BLOCKING.	176
	177	1	SHAKE TABLE W/ SINK	EAGLE FOR SHAKE SHACK	CUSTOM														ALL S/S CONSTRUCTION SIZE AS PER PLAN WITH PROVISIONS FOR), 16" X 14" X 10" DEEP INTEGRAL SINK W/ BASKET DRAIN (#177A), GOOSENECK FAUCET (#177B), AND RINSER (#177C), MARINE EDGES, BACK & RIGHT-SIDE SPLASH. FRONT APRON WITH PROVISIONS FOR (4) CUP DISPENSERS (#186), SPACE BELOW FOR (1) 24" SHELF. SEE TO ELEVATION. REFER TO MANUFACTURER'S FINAL APPROVED SHOP DRAWING.	177
	177A	1	SINK	EAGLE FOR SHAKE SHACK	CUSTOM										1-1/2", 1"				CUSTOM SINK INTEGRAL TO MARINE EDGE SHAKE TABLE #177. SINK WITH 16"W X 14" X 10" D BOWL. DRAIN 4" FROM LEFT SIDE, HOLE FOR VITAMIX RINSER #177C 5" FROM RIGHT SIDE. HOLE FOR (1) GOOSENECK FAUCET #177B JUSTIFIED TO THE LEFT. RAISED DRAINBOARD AT REAR, 16-7/8"W X 11-1/5" L. REFER TO MANUFACTURER'S FINAL APPROVED SHOP DRAWING.	177A
	177B	1	DECK MOUNT FAUCET	T&S BRASS	5F-2SLF05								1/2"	1/2"					P.C. TO INTERPIPE THIS CONNECTION FROM WATER FILTER, MOUNTED TO ITEM #177A.	177B
	177C	1	BLENDER CONTAINER RINSER	VITAMIX	001462								1/4"						P.C. SHALL MOUNT TO INTERIOR OF SINK BOWL ITEM #177A.	177C
	178-180	1	SPARE NUMBER	CUSTOM																178-180
	181	1	BEVERAGE DISPENSER, ELECTRIC (COLD)	GRINDMASTER-CECILWARE	B35-3	120	1	4.0		0.45	DR	5-15P							WITH CUP ACTIVATED HANDLE OPTION AND 11161M MILK IMPELLER.	181
	182	2	MIXER, DRINK / BAR	HAMILTON BEACH	HMD400R	120	1		(3) 1/3	0.9	DR	5-15P								182
	183	1	SPARE NUMBER	CUSTOM																183
	184	1	TOPPING DISPENSER, AMBIENT	SERVER PRODUCTS	82550														NOT SHOWN ON THE PLAN	184
	185	1	SPARE NUMBER	CUSTOM																185
	185A	1	WIRE SHELVING CHROME	EAGLE FOR SHAKE SHACK	SHELVING UNIT														2-TIER UNITS WITH 33" POST; SIZES PER PLAN	185A
	186	4	CUP DISPENSER	SAN JAMAR	C2410C														MOUNTED IN ITEM 177 COUNTER.	186
	186A	1	LID ORGANIZER	SAN JAMAR	C8503WF															186A
	187-199	1	SPARE NUMBERS	CUSTOM																187-199
	200	2	UNDERCOUNTER REFRIGERATOR	RANDELL	9404-290	115	1	2.4	1/4		DR	5-15P							WITH 3" CASTERS, DOOR HINGED AS PER PLAN	200
	201-202	1	SPARE NUMBERS	CUSTOM																201-202
	203	1	ICE CHEST & SODA TOWER	NIC	BY OTHERS	120	1	15.0			SR	5-20P			3/4"				ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	203
	204	1	TEA BREWER	NIC	BY OTHERS	120	1	14.4		1.7	SR	5-20P	1/4"						ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	204
	205	1	SPARE NUMBER	CUSTOM																205
	206	1	BEVERAGE DISPENSER, ELECTRIC (COLD)	VOLLRATH	VBBC4-37-A	115	1	4.9			DR	5-15P								206
	207	4	CUP DISPENSER	SAN JAMAR	C2410C														MOUNTED IN ITEM 177 COUNTER.	207
	207A	1	LID ORGANIZER	SAN JAMAR	C8503WF															207A
	208	1	KDS SCREEN	NIC	BY OTHERS	2)120	1	15.0			DR	5-15P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS. E.C. TO PROVIDE ISOLATED GROUND.	208
	209	1	BRACKET	NIC	1711461/SHACK														G.C. TO PROVIDE WALL BLOCKING	209
	210-219	1	SPARE NUMBERS	CUSTOM																210-219
	220	1	FRONT COUNTER W/ WATER FILLER	EAGLE FOR SHAKE SHACK	FABRICATE														S/S TOP SIZE PER PLAN, WITH CUTOUT FOR ITEM #234 WATER FILLER.	220
	221	2	P.O.S. TERMINALS	NIC	BY OTHERS	(2) 120	1	(2) 15.0			DR	5-20P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS. E.C. TO PROVIDE ISOLATED GROUND.	221
	221A	3	KIOSK TERMINAL	NIC	BY OTHERS	(2) 120	1	(2) 15.0			DR	5-15P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	221A
	222-226	1	SPARE NUMBERS	CUSTOM																222-226
	226A	4	WIRE SHELVING CHROME	EAGLE FOR SHAKE SHACK	SHELVING UNIT														2-TIER UNITS WITH 27" POST; SIZES PER PLAN	226A
	227	1	SPARE NUMBER	CUSTOM																227
	228A	3	SHELVING, WALL-MOUNTED	EAGLE FOR SHAKE SHACK	WS1560-16/4														G.C. TO PROVIDE WALL BLOCKING.	228A
	229	1	SPARE NUMBER	CUSTOM																229
	230	1	CONDIMENT COUNTER	NIC	CONDIMENT COUNTER															230
	231	1	CONDIMENT CADDY	CFS BRANDS	L2900															231
	232	1	SPARE NUMBER	CUSTOM	CUSTOM															232
	233	2	CONDIMENT DISPENSER	NEMCO	10961														(2) SHOWN ON PLAN, (2) BACKUP PUMPS.	233
	234	1	GLASS FILLER STATION	T&S BRASS	B-1230								1/2"		1-1/4"					234
	235	2	NAPKIN DISPENSER	NIC															NOT SHOWN ON PLAN.	235
	236-239	1	SPARE NUMBERS	CUSTOM																236-239
	240	2	TRASH UNIT	NIC	BY MILLWORK															240
	241	2	WASTE RECEPTACLE	NIC	BY OTHERS															241
	242	10	WASTE RECEPTACLE	NIC	BY OTHERS															242
	243-249	1	SPARE NUMBERS	CUSTOM																243-249
	250	1	WALL PANELS	EAGLE GROUP	WALL PANELS														NOT SHOWN ON PLAN, REFER TO ARCHITECTUAL PLAN FOR S/S LINEAR AMOUNT NEEDED, NOT SHOWN ON PLAN.	250
	251	1	CORNER GUARDS	EAGLE GROUP	CORNER GUARDS														NOT SHOWN ON PLAN, REFER TO ARCHITECTUAL PLAN FOR S/S LINEAR AMOUNT NEEDED, NOT SHOWN ON PLAN.	251
	252	1	WALL CAP	EAGLE GROUP	WALL CAP														NOT SHOWN ON PLAN, REFER TO ARCHITECTUAL PLAN FOR S/S LINEAR AMOUNT NEEDED, NOT SHOWN ON PLAN.	252
	253-256	1	SPARE NUMBERS	CUSTOM																253-256
	266	6	BUMP BARS	NIC	BY OTHERS	120	1	15.0			DR	5-20P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS.	266
	267	2	CHIT PRINTER	NIC	BIXOLON S300	120	1	15.0			DR	5-20P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS. E.C. TO PROVIDE ISOLATED GROUND.	267
	267A	1	CHIT PRINTER BRACKET	NIC	BY OTHERS														G.C. TO PROVIDE WALL BLOCKING.	267A
	268	2	P.O.S. PRINTER	NIC	BIXOLON S300	120	1	15.0			DR	5-20P							ALL TRADES TO VERIFY UTILITY REQUIREMENTS. E.C. TO PROVIDE ISOLATED GROUND.	268

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STORE NO:
FL #1794

SHAKE SHACK
COCONUT POINT
23181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

STATUS:
IFC SET

FIELD VERIFICATION:

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SHEET NAME:
FOODSERVICE SCHEDULES

DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
K602

ELECTRICAL SCHEDULE

REV	ITEM NO.	QTY	ITEM DESCRIPTION	VOLTS	PH	AMPS	HP	KW	CONN.	NEMA	STUB (-AFF)	ELECTRICAL REMARKS	ITEM NO.
	1	1	WALK-IN COOLER/FREEZER COMBO	(2) 120	1	(2) 15.0			JBH		D.F.A.	E.C. TO MOUNT AND INTERWIRE FROM SWITCH TO FLOURSCENT LIGHT FIXTURES.	1
	1A	1	COOLER EVAPORATOR	115	1	15.0			JBH		D.F.A.	INFORMATION SHOWN IS FOR COORDINATION AND IS TO BE VERIFIED WITH THE SHOP DRAWINGS. E.C. TO PROVIDE A DATA PORT WIRED BACK TO OFFICE.	1A
	1B	1	AIR-COOLED COOLER CONDENSING UNIT	208-230	3	20.0	0.75		JBH		D.F.A.	INFORMATION SHOWN IS FOR COORDINATION AND IS TO BE VERIFIED WITH THE SHOP DRAWINGS.	1B
	1C	1	FREEZER EVAPORATOR	208-230	1	15.0			JBH		D.F.A.	INFORMATION SHOWN IS FOR COORDINATION AND IS TO BE VERIFIED WITH THE SHOP DRAWINGS.E.C. TO PROVIDE A DATA PORT WIRED BACK TO OFFICE.	1C
		1	DRAIN LINE HEAT TRACE - BY E.C.	120	1	5.0			DR	5-15P	90"	E.C. SHALL COORDINATE PRIOR TO ROUGH-IN.	
	1D	1	AIR-COOLED FREEZER CONDENSING UNIT	208-230	1	20.0	1.5		JBH		D.F.A.	INFORMATION SHOWN IS FOR COORDINATION AND IS TO BE VERIFIED WITH THE SHOP DRAWINGS.	1D
	17	1	MICROWAVE	120	1	15.0			DR	5-20P	48"	OUTLET TO BE 48" AFF TO TOP OF OUTLET. E.C. SHALL COORDINATE PRIOR TO ROUGH-IN.	17
	18	1	REFRIGERATOR	120	1	15.0			DR	5-20P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET. E.C. SHALL COORDINATE PRIOR TO ROUGH-IN.	18
	30	2	RTI OIL TANK	110	1	20.0			JBW		90"	OUTLET TO BE 90" AFF TO TOP OF OUTLET.	30
	33	1	BAG N BOX	120	1	20.0			DR	5-20P	72"	E.C. TO VERIFY ALL UTILITY REQUIREMENTS WITH THE SODA VENDOR PRIOR TO ROUGH-IN, OUTLET HEIGHT TO BE VERIFIED WITH SODA VENDOR'S SPECIFICATIONS.	33
	36	1	ICE MAKER, CUBE-STYLE	208-230	1	14.2			JBW		72"	72" AFF TO TOP OF BOX.	36
	38	1	REACH-IN FREEZER	115	1	8	1	.8	DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	38
	61	1	DISHMACHINE, VENTLESS	208	3	18.7	1	4.1	JBW		66"	E.C. SHALL VERIFY DISHMACHINE PHASE WITH G.C. PRIOR TO ROUGH-IN, AS REQUIRED; REQUIRES 4 WIRES AND GROUND CONNECTION. OUTLET TO BE 66" AFF TO TOP OF OUTLET.	61
	77	1	RETHERMALIZER, WATER TANK, ELECTRIC	208	1	29.8		6.0	SP	L6-30P	54"	E.C. SHALL PROVIDE OUTLET TO ACCEPT SHROUDED L6-30P, REFER TO SPEC. OUTLET TO BE 54" AFF TO TOP OF OUTLET.	77
	90	1	EXHAUST HOOD	X	X	X			JBH		D.F.A.	STUB FROM CEILING, TO BE VERIFIED WITH OWNER PRIOR TO ROUGH-IN.	90
	90A	1	FRYER EXHAUST HOOD	X	X	X			JBH		D.F.A.	STUB FROM CEILING, TO BE VERIFIED WITH OWNER PRIOR TO ROUGH-IN.	90A
	91	1	EXHAUST FAN	X	X	X			X		D.F.A.	STUB FROM ROOF, TO BE VERIFIED WITH OWNER PRIOR TO ROUGH-IN.	91
	92	1	SUPPLY FAN	X	X	X			X		D.F.A.	STUB FROM ROOF, TO BE VERIFIED WITH OWNER PRIOR TO ROUGH-IN.	92
	93	1	GREASE COLLECTOR	120	1	20.0			DR	5-20P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	93
	94	1	FIRE SUPPRESSION TANK CABINET	120	1	15.0			JBH		D.F.A.	STUB FROM CEILING, TO BE VERIFIED WITH OWNER PRIOR TO ROUGH-IN, E.C. TO INTERWIRE TO BUILDING ALARM SYSTEM AND FOR EQUIPMENT SHUT DOWN.	94
	95	1	HOOD CONTROL CABINET	120	1	15.0			JBH		D.F.A.	STUB FROM CEILING, TO BE VERIFIED WITH OWNER PRIOR TO ROUGH-IN, E.C. TO INTERWIRE TO BUILDING ALARM SYSTEM AND FOR EQUIPMENT SHUT DOWN.	95
	100	3	SANDWICH / SALAD PREPARATION REFRIGERATOR	115	1	2.9	1/5		DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	100
	101	2	GAS COUNTERTOP GRIDDLE	120	1	2.0			DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	101
	102	1	EQUIPMENT STAND, REFRIGERATED BASE	115	1	7.4	1/3		DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	102
	103	1	FRYER BATTERY, GAS	115	1	1.7			DR	5-15P	16"	FOR CONTROLS - OUTLET TO BE 16" AFF TO TOP OF OUTLET.	103
		1	FILTER CONNECTION	115	1	7.0	1/3		DR	5-15P	16"	FILTER VOLTAGE - OUTLET TO BE 16" AFF TO TOP OF OUTLET.	
	104	1	FRYER BATTERY, GAS	115	1	1.7			DR	5-15P	16"	FOR CONTROLS - OUTLET TO BE 16" AFF TO TOP OF OUTLET.	104
		1	FILTER CONNECTION	115	1	7.0	1/3		DR	5-15P	16"	FILTER VOLTAGE - OUTLET TO BE 16" AFF TO TOP OF OUTLET.	
	105	1	FRENCH FRY WARMER	120	1	15.9			DR	5-15P	42"	OUTLET TO BE 42" AFF TO TOP OF OUTLET.	105
	105A	1	FRENCH FRY WARMER	120	1	8.0			DR	5-15P	42"	OUTLET TO BE 42" AFF TO TOP OF OUTLET.	105A
	119	2	GRIDDLE TIMER	120	1	1.0			DR	5-15P	66"	GRIDDLE TIMER POWER TO BE SUPPLIED BY GFCI OUTLET, FABRICATED WITHIN EXHAUST HOOD. E.C. SHALL VERIFY W/ FINAL APPROVED HOOD SHOP DRAWING, WALL OUTLET TO BE PROVIDED FOR TIMER IN LEIU OF HOOD OUTLET, IF NOT INCLUDED.	119
	121	1	TOASTER, CONTACT GRILL, CONVEYOR TYPE	208-230	1	20		3.1	SP	6-20P	48"	OUTLET TO BE 48" AFF TO TOP OF OUTLET.	121
	122	1	PIZZA PREPARATION REFRIGERATOR	115	1	5.8	(2) 1/4		DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	122
1	123	1	REFRIGERATOR/FREEZER PREP WORK SYSTEM	115	1	3.4	(2) 1/4		DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	123
	124	2	FOOD PAN WARMER/RETHERMALIZER, COUNTERTOP	120	1	4.2		.5	DR	5-15P	42"	ELECTRICAL OUTLET 42" AFF TO BOTTOM OF OUTLET, E.C. TO MOUNT OUTLET HORIZONTAL.	124
1	124A	1	FOOD TOPPING WARMER, COUNTERTOP	120	1	8.3		1.0	DR	5-15P	42"	ELECTRICAL OUTLET AT 42" AFF TO THE BOTTOM OF OUTLET, E.C. TO MOUNT OUTLET HORIZONTAL.	124A
	125	3	KDS SCREEN	(2) 120	1	(2) 15.0			DR	5-15P	62"	ELECTRICAL OUTLET AT 62" AFF TO THE BOTTOM OF OUTLET, E.C. TO VERIFY ALL REQUIREMENTS WITH IT VENDOR. E.C. TO PROVIDE ISOLATED GROUND.	125
	127	1	FRENCH FRY WARMER	120	1	8.3		1	DR	5-15P	42"	ELECTRICAL OUTLET 42" AFF TO BOTTOM OF OUTLET, E.C. TO MOUNT OUTLET HORIZONTAL.	127
	127A	1	HEATED HOLDING / WARMING BIN	120	1			1.2	DR	5-15P	60"	OUTLET TO BE 60" AFF TO BOTTOM OF OUTLET.	127A
	141	2	EXPO TOUCH SCREEN	2)120	1	2)15.0			DR	5-15P	62"	ELECTRICAL OUTLET 62" AFF TO BOTTOM OF OUTLET,	141
	145	1	FOOD TOPPING WARMER, COUNTERTOP	120	1	4.3		0.517	DR	5-15P	42"	ELECTRICAL OUTLET AT 42" AFF TO BOTTOM OF OUTLET	145
	160	1	FROZEN CUSTARD MACHINE	(2) 208-230	(2) 3	(2) 20.0	(2) 3		(3) SP	VRFY	16"	(2) CIRCUITS WITH OVER CURRENT PROTECTION DEVICE, OUTLET TO BE 16" AFF TO TOP OF OUTLET, E.C. TO PROVIDE CORD AND PLUG PER LOCAL CODES, ALL TO BE VERIFIED WITH MANUFACTURES SHOP DRAWINGS	160
	162	1	FROZEN CUSTARD DIPPING CABINET	115	1	15.0			DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	162
	172	1	DIPPING CABINET	115	1	6.5	1/3		DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	172
	174	2	EXPO TOUCH SCREEN	(2) 120	1	(2) 15.0			DR	5-15P	60"	OUTLET TO BE 60" AFF TO TOP OF OUTLET.. E.C. TO PROVIDE ISOLATED GROUND.	174
	181	1	BEVERAGE DISPENSER, ELECTRIC (COLD)	120	1	4.0		0.45	DR	5-15P	42"	ELECTRICAL OUTLET 42" AFF TO BOTTOM OF OUTLET, E.C. TO MOUNT OUTLET HORIZONTAL.	181
	182	2	MIXER, DRINK / BAR	120	1		(3) 1/3	0.9	DR	5-15P	42"	ELECTRICAL OUTLET 42" AFF TO BOTTOM OF OUTLET, E.C. TO MOUNT OUTLET HORIZONTAL.	182
	200	2	UNDERCOUNTER REFRIGERATOR	115	1	2.4	1/4		DR	5-15P	16"	OUTLET TO BE 16" AFF TO TOP OF OUTLET.	200
	203	1	ICE CHEST & SODA TOWER	120	1	15.0			SR	5-20P	16"	E.C. TO VERIFY ALL UTITILITY REQUIRMENTS WITH THE SODA VENDOR.	203
	204	1	TEA BREWER	120	1	14.4		1.7	SR	5-20P	42"	ELECTRICAL OUTLET 42" AFF TO BOTTOM OF OUTLET, E.C. TO MOUNTED OUTLET HORIZONTAL.	204
	206	1	BEVERAGE DISPENSER, ELECTRIC (COLD)	115	1	4.9			DR	5-15P	42"	ELECTRICAL OUTLET AT 42" AFF TO THE BOTTOM OF OUTLET, E.C. TO MOUNT OUTLET HORIZONTAL.	206
	208	1	KDS SCREEN	2)120	1	15.0			DR	5-15P	66"	ELECTRICAL OUTLET AT 66" AFF TO THE BOTTOM OF OUTLET, E.C. TO VERIFY ALL REQUIREMENTS WITH IT VENDOR. E.C. TO PROVIDE ISOLATED GROUND.	208
	221	2	P.O.S. TERMINALS	(2) 120	1	(2) 15.0			DR	5-20P	18"	E.C. TO VERIFY EXACT LOCATION WITH WITH CASH DRAWERS LOCATION WITH OWNER PRIOR TO ROUGHING IN. E.C. TO PROVIDE ISOLATED GROUND.	221
	221A	3	KIOSK TERMINAL	(2) 120	1	(2) 15.0			DR	5-15P	X	X - E.C. TO VERIFY EXACT LOCATION WITH ELCETRICAL, ARCHITECTUAL AND SHAKE SHACK PM PRIOR TO ROUGHING IN.E.C. TO PROVIDE ISOLATED GROUND.	221A
	266	6	BUMP BARS	120	1	15.0			DR	5-20P	60"	OUTLET TO BE 60" AFF TO BOTTOM OF OUTLET. E.C. TO VERIFY EXACT UTILITIES..	266
	267	2	CHIT PRINTER	120	1	15.0			DR	5-20P	24"	OUTLET TO BE 24" AFF TO BOTTOM OF OUTLET. E.C. TO PROVIDE ISOLATED GROUND AND VERIFY EXACT UTILITIES..	267
	268	2	P.O.S. PRINTER	120	1	15.0			DR	5-20P	24"	OUTLET TO BE 24" AFF TO BOTTOM OF OUTLET. E.C. TO PROVIDE ISOLATED GROUND AND VERIFY EXACT UTILITIES..	268

PLUMBING SCHEDULE

REV	ITEM NO.	QTY	ITEM DESCRIPTION	CW	CW STUB (-AFF)	HW	HW STUB (-AFF)	IW	DW	DW STUB (-AFF)	GAS SIZE	MBTUH	GAS STUB (-AFF)	PLUMBING REMARKS	ITEM NO.
	1A	1	COOLER EVAPORATOR					3/4"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	1A
	1C	1	FREEZER EVAPORATOR					3/4"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	1C
	33	1	BAG N BOX	1/2"	48"			X						P.C. TO INTERPIPE THIS COLD WATER CONNECTION FROM ITEM 34. VERIFY ALL UTILITY REQUIREMENTS WITH THE SODA VENDOR.	33
	34	1	WATER FILTRATION SYSTEM	3/4"	96""			X						P.C. TO INTERPIPE COLD WATER OUTLET TO ICE MAKER AND BEVERAGE EQUIPMENT.	34
	36	1	ICE MAKER, CUBE-STYLE	3/8"	72"			1/2"						P.C. TO INTERPIPE COLD WATER OUTLET TO ICE MAKER AND BEVERAGE EQUIPMENT. P.C. TO RUN I.W. TO FLOOR TROUGH AS REQUIRED.	36
	36A	1	ICE BIN FOR ICE MACHINES					3/4"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	36A
	39	1	FLOOR TROUGH						4"					STUB AT 7-1/2" BELOW FINISHED FLOOR. TROUGH TO BE PROVIDED BY OTHERS, P.C. TO VERIFY ALL REQUIREMENTS AND DIMENDIONS PRIOR TO ROUGH-INS.	39
	40	1	MOP SINK						X					MOP SINK TO BE PROVIDED BY OTHERS, P.C. TO VERIFY ALL REQUIREMENTS AND DIMENDIONS PRIOR TO ROUGH-INS.	40
	40A	1	SERVICE FAUCET	1/2"	36"	1/2"	36"								40A
	45A	4	HAND SINK	1/2"	26"	1/2"	26"		1-1/2"	24"					45A
	60	1	DISHTABLE, WITH POTSINKS					(3)2"						P.C. TO MANIFOLD SINKS AND PIPE WASTE TO GREASE TRAP AS REQUIRED BY LOCAL JURISDICTION, REFER TO P-SHEETS FOR GREASE TRAP INFORMATION.	60
	60A	1	WALL / SPLASH MOUNT FAUCET	1/2"	18"	1/2"	18"								60A
	60B	1	MINI PRE-RINSE FAUCET ASSEMBLY	1/2"	18"	1/2"	18"								60B
	61	1	DISHMACHINE, VENTLESS	1/2"	6"	1/2"	6"	1-1/2"						P.C. TO INTERPIPE TO FLOOR SINK. 120 DEGREE HOT WATER REQUIRED FROM BUILDING WATER SUPPLY. P.C. TO VERIFY IF DRAIN WATER TEMPERING KIT IS REQUIRED.	61
	70	1	PREP TABLE WITH SINK					2"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	70
	70A	1	DECK MOUNT FAUCET	1/2"	18"	1/2"	18"								70A
	77	1	RETHERMALIZER, WATER TANK, ELECTRIC					3/8"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	77
	101	2	GAS COUNTERTOP GRIDDLE								3/4"	81.0	18"	P.C. TO CONNECT THRU QUICK DISCONNECT HOSE.	101
	103	1	FRYER BATTERY, GAS								1"	160.0	18"	P.C. TO CONNECT THRU QUICK DISCONNECT HOSE.	103
	104	1	FRYER BATTERY, GAS								3/4"	80.0	18"	P.C. TO CONNECT THRU QUICK DISCONNECT HOSE.	104
	160	1	FROZEN CUSTARD MACHINE	1/2"	12"			1-1/2"						P.C. TO SUPPLY REDUCER , SHUT-OFF VALVE AND INTERPIPE TO EQUIPMENT FITTINGS; P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	160
	162	1	FROZEN CUSTARD DIPPING CABINET					1"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	162
	171	2	DIPPER WELL	1/2"	18"			1-1/2"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	171
	177A	1	SINK					1-1/2", 1"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	177A
	177B	1	DECK MOUNT FAUCET	1/2"	18"	1/2"	18"								177B
	177C	1	BLENDER CONTAINER RINSER	1/4"	18"									P.C. TO INSTALL RINSER WITHIN SINK #177A AND MAKE FINAL CONNECTION, PROVIDE BACKFLOW PREVENTION AS REQUIRED.	177C
	203	1	ICE CHEST & SODA TOWER					3/4"						P.C. TO RUN I.W. TO FLOOR SINK AS REQUIRED.	203
	204	1	TEA BREWER	1/4"	45"									P.C. TO INTERPIPE THIS COLD WATER CONNECTION FROM ITEM 34 WATER FILTER.	204
	234	1	GLASS FILLER STATION	1/2"	18"			1-1/4"						P.C. TO INTERPIPE THIS COLD WATER CONNECTION FROM ITEM 34 WATER FILTER.	234

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REVISION

△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

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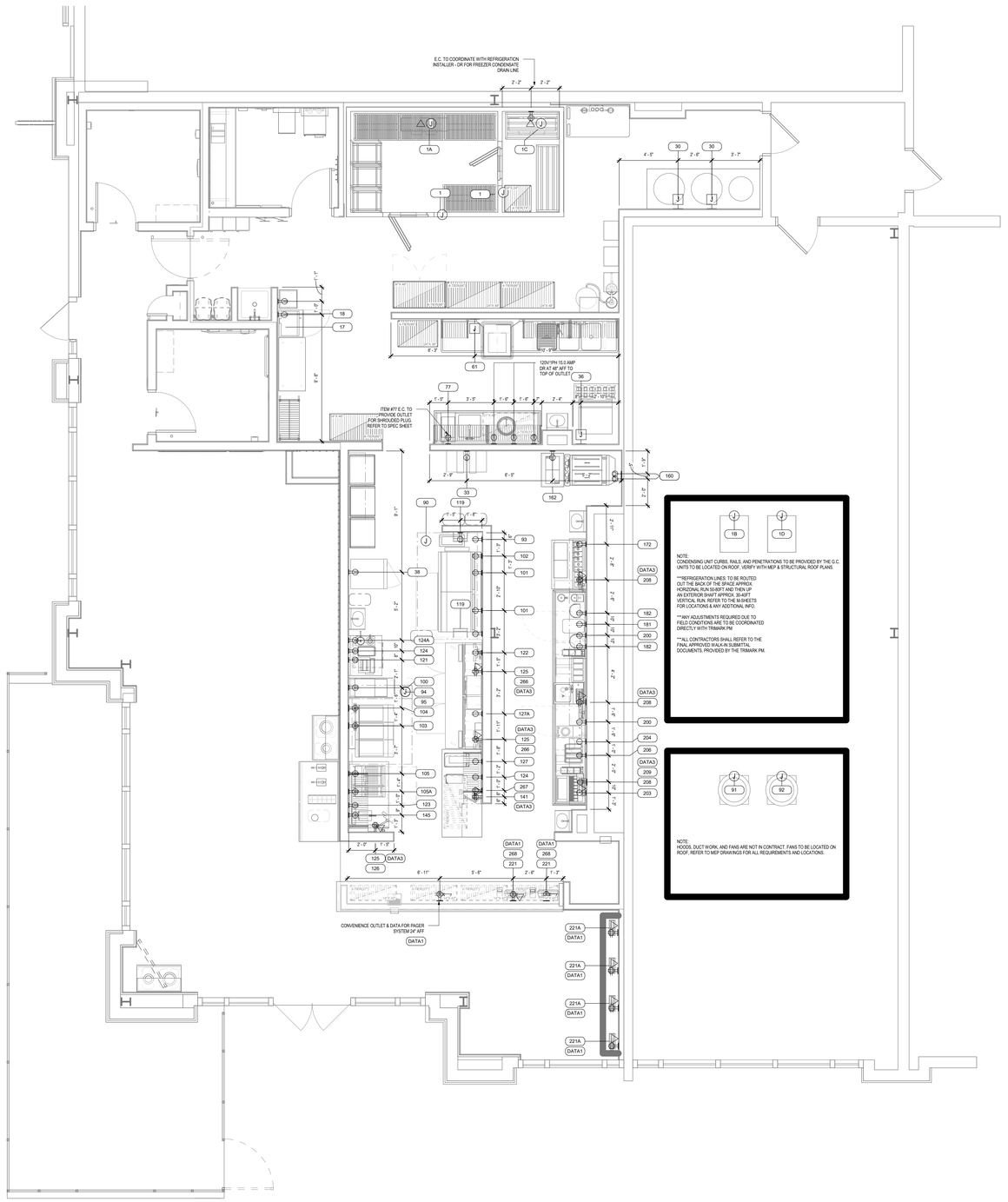
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SHEET NAME:
FOODSERVICE UTILITY SCHEDULES

DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
K603

IFC SET
08-28-2026



1 FOODSERVICE ELECTRICAL ROUGH-IN PLAN
1/4" = 1'-0"

FOODSERVICE DRAWINGS INDICATE ELECTRICAL ROUGH-IN/CONNECTION POINTS ONLY FOR EQUIPMENT SPECIFIED UNDER THE KITCHEN EQUIPMENT (SECTION 114000) CONTRACT. ANY ADDITIONAL ELECTRICAL REQUIREMENTS ARE NOT INDICATED ON FOODSERVICE DRAWINGS.

ELECTRICAL LEGEND

- DUPLEX RECEPTACLE
- WP — WEATHERPROOF RECEPTACLE
- SINGLE RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE
- QUAD RECEPTACLE
- FLUSH FLOOR MOUNT RECEPTACLE
- JUNCTION BOX - FLOOR/CLG MOUNTED
- JUNCTION BOX - WALL MOUNTED
- S — SWITCH
- DATA CONNECTION
- F — MANUAL FIRE PULL STATION
- CLG — DROP CORD MOUNTED FROM CEILING
- CONDUIT STUB LOCATION
- T — DEFROST TIME CLOCK
- DISCONNECT
- LIGHT - RECTANGULAR
- LIGHT - ROUND
- MOTOR
- SNSR — EXHAUST HOOD SENSOR
- TEMP — TEMPERATURE SENSOR
- PLUG MOLD

E-DATA1
DATA PORT AT 24" AFF TO TOP OF OUTLET FOR COMMUNICATING WITH RESTAURANT COMPUTER SYSTEM. E.C. TO PROIVDE AND INTERWIRE BACK TO OFFICE.

E-DATA2
DATA PORT AT 76" AFF TO TOP OF OUTLET FOR COMMUNICATING WITH RESTAURANT COMPUTER SYSTEM. E.C. TO PROIVDE AND INTERWIRE TO PORTS IN CHASE AND INTERWIRE BACK TO OFFICE.

E-DATA3
DATA PORT AT 66" AFF TO TOP OF OUTLET FOR COMMUNICATING WITH RESTAURANT COMPUTER SYSTEM. E.C. TO PROIVDE AND INTERWIRE BACK TO OFFICE.

E-DATA4
DATA PORT AT 33" AFF TO TOP OF OUTLET FOR COMMUNICATING WITH RESTAURANT COMPUTER SYSTEM. E.C. TO MOUNT OUTLET HORIZONTAL. E.C. TO PROIVDE AND INTERWIRE BACK TO OFFICE.

*ALL DATA REQUIREMENTS TO BE VERIFIED WITH OWNER

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△	DATE	DESCRIPTION
1	08/28/26	REVISION 1

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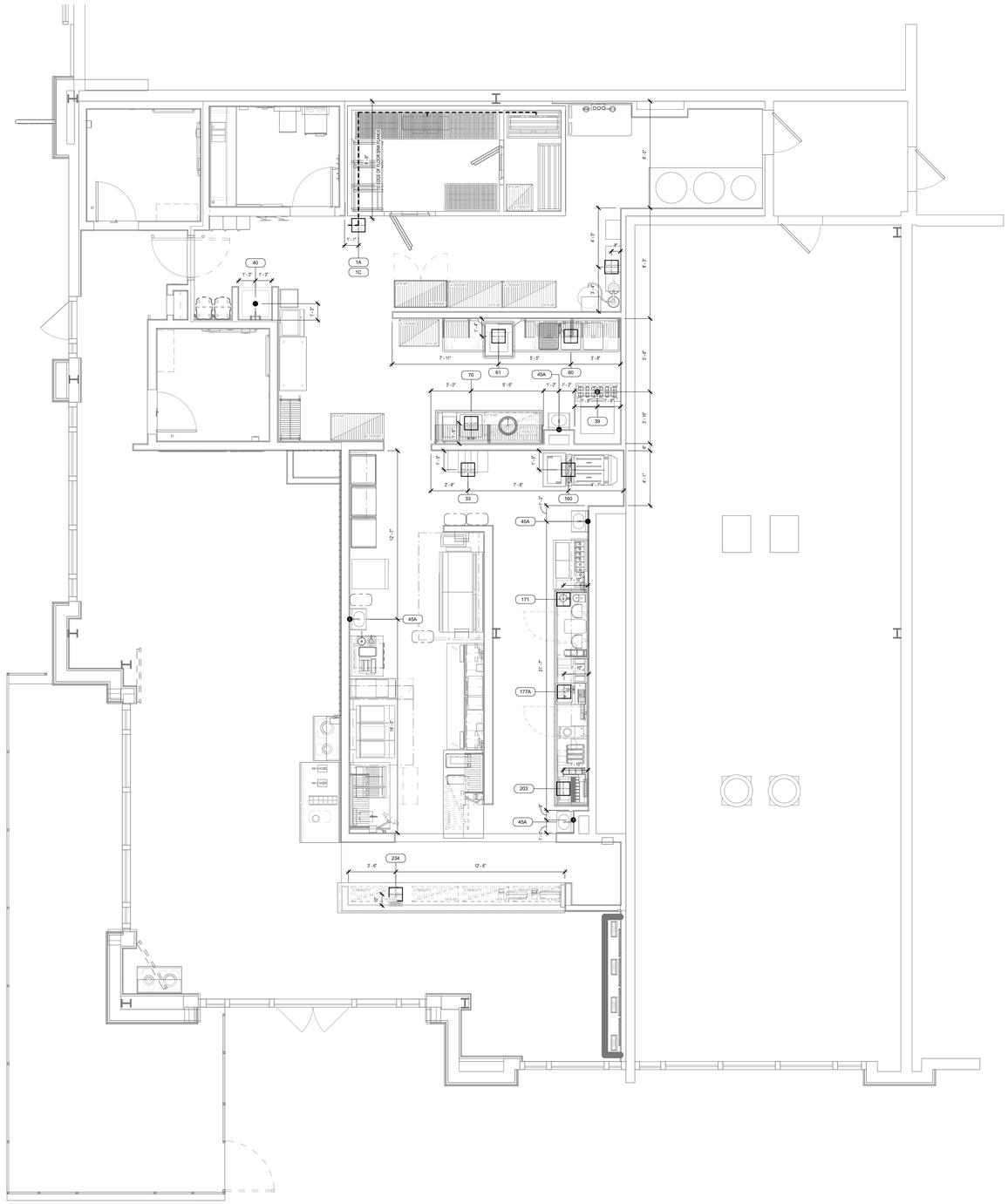
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SHEET NAME:
FOODSERVICE ELECTRICAL ROUGH-IN PLAN

DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
KE101

IFC SET
08-28-2026



1 FOODSERVICE PLUMBING IN-SLAB ROUGH-IN PLAN
1/4" = 1'-0"

PLUMBING LEGEND

+HW	HOT WATER
+S HW	HOT WATER - SOFTENED
+CW	COLD WATER
+S CW	COLD WATER - SOFTENED
+F CW	FILTERED WATER
+DW	DIRECT WASTE
	FLOOR SINK - THREE-QUARTER GRATE
	FLOOR SINK - HALF GRATE
	FLOOR SINK - NO GRATE
	FLOOR DRAIN
	FUNNEL FLOOR DRAIN
	HUB FLOOR DRAIN
	AREA FLOOR DRAIN - SLOPED PER CODE
+GD	GAS DROP FROM MANIFOLD
	FIRE SUPPRESSION GAS SHUT-OFF VALVE
+CW CS	CHILLED WATER
+CW CR	CHILLED WATER RETURN
+SS	STEAM SUPPLY
+CR	CONDENSATE RETURN

PLUMBING NOTES (DIVISION 22)

NOTE: THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR (DIVISION 22) AND SHALL BE APPLICABLE ONLY WHERE NOTED ON THE PLUMBING ROUGH-IN PLAN(S). THE PLUMBING CONTRACTOR (DIVISION 22) SHALL VERIFY AND COORDINATE THE EXACT PLUMBING REQUIREMENTS FOR ALL NIC EQUIPMENT PRIOR TO FINAL ROUGH-IN.

A. INSTALL KEC (SECTION 114000) FURNISHED FLOOR TROUGH(S).
B. INSTALL KEC (SECTION 114000) FURNISHED MOP SINK(S).
C. INSTALL KEC (SECTION 114000) FURNISHED FIRE SUPPRESSION SYSTEM GAS SHUT OFF VALVE. MUST BE ACCESSIBLE AND NOT CONCEALED IN WALL OR CEILING.
D. INSTALL KEC (SECTION 114000) FURNISHED DRAIN LINE TEMPERING KIT PER MANUFACTURER'S RECOMMENDATIONS.
E. MANIFOLD DRAINS TO SINGLE CONNECTION.
F. FURNISH AND INSTALL BALL VALVE IN DRAIN LINE. VALVE TO BE IN EASILY ACCESSIBLE LOCATION.
G. INTERPLUMB BETWEEN FILTER AND EQUIPMENT. PIPING FROM WATER FILTER OUTLET TO POINTS OF USE SHALL BE CONCEALED WITHIN WALLS AND CEILINGS. EXTEND DRAIN(S) TO FLOOR SINK/FLOOR DRAIN, IF REQUIRED.
H. CONNECT MIN. 110°F HOT WATER SUPPLY TO BUILT-IN OR EXTERNAL (70° RISE) BOOSTER HEATER. WHEN EXTERNAL, INSTALL TEMPERATURE/PRESSURE GAUGE(S) AS REQ'D AND EXTEND TO DISHWASHER INLET.
I. CONNECT CONDENSATE INDIRECT WASTE(S) WITH REFRIGERATION GRADE HARD COPPER USING 1" STANDOFFS. "P" TRAP WASTE OUTSIDE WALK-IN COMPARTMENT(S). PROVIDE AND INSTALL SLEEVES THRU WALK-IN AND BUILDING WALLS FOR WASTE(S). FOAM & CAULK AROUND SLEEVES AND WASTE(S). WRAP WITH DRAIN LINE HEATER AND INSULATION WHERE SUBJECT TO FREEZING TEMPERATURES.
J. REFRIGERATION CONTRACTOR SHALL PROVIDE WALK-IN EVAPORATOR CONDENSATE INDIRECT WASTE(S) PER REFRIGERATION GENERAL REQS.
K. PROVIDE GRAY WATER AND SLURRY PIPING TO AND FROM (SECTION 114000) FURNISHED PULPER, TROUGH, AND WATER EXTRACTOR. INSTALL KEC (SECTION 114000) FURNISHED TROUGH INLET NOZZLES AND PROVIDE SHUT OFF VALVE AT EACH NOZZLE.
L. PROVIDE "TEE" IN HOT WATER LINE AND CAP FOR FUTURE INSTALLATION OF CHEMICAL DISPENSING SYSTEM BY OTHERS.
M. PROVIDE CHROME PLATED PIPE AND FITTINGS WHERE EXPOSED.
N. PROVIDE AND INSTALL 3" MIN. DRAIN LINE TO 12"X12"X10" DEEP FLOOR SINK.
O. VERIFY EXACT LOCATION AND QUANTITY OF AREA FLOOR DRAIN(S) WITH THE PLUMBING ENGINEER.
P. STUB UP WASTE WITHIN WALL. ROUTE WASTE THRU WALL TO ROUGH-IN LOCATION(S) INDICATED FOR DIRECT CONNECTION TO EQUIPMENT.

FOODSERVICE DRAWINGS INDICATE PLUMBING ROUGH-IN/CONNECTION POINTS ONLY FOR EQUIPMENT SPECIFIED UNDER THE KITCHEN EQUIPMENT (SECTION 114000) CONTRACT. ANY ADDITIONAL PLUMBING REQUIREMENTS ARE NOT INDICATED ON FOODSERVICE DRAWINGS. THE PLUMBING CONTRACTOR (DIVISION 22) SHALL FURNISH AND INSTALL PRESSURE REDUCING VALVES, FLOW CONTROLS, BACK FLOW PREVENTION, RPZ (REDUCED PRESSURE ZONE) VALVES, WATER HAMMER ARRESTOR, GATE VALVES, FOR WATER CONNECTIONS AS REQUIRED PER LOCAL CODES.

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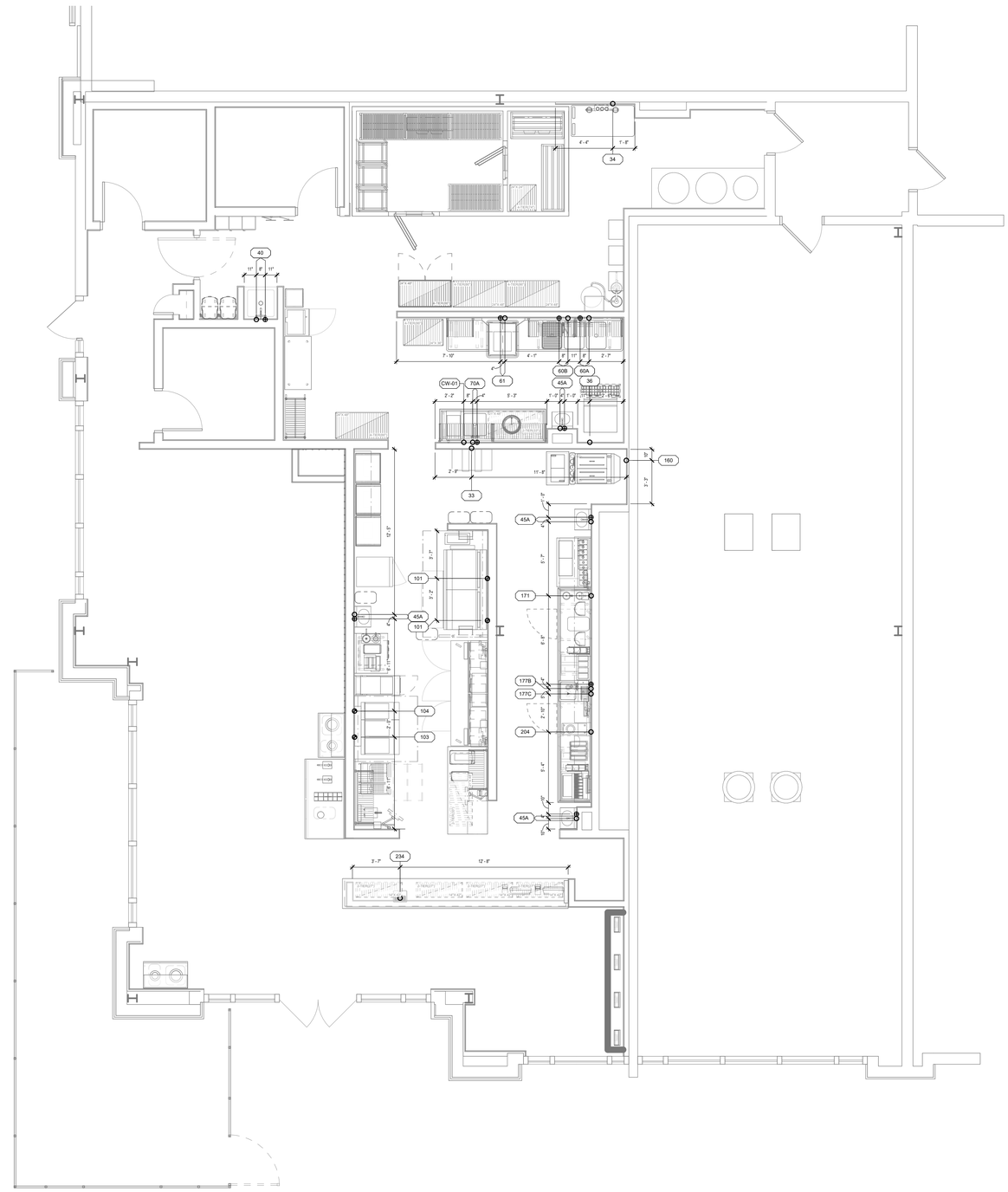
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SHEET NAME:
FOODSERVICE PLUMBING IN-SLAB ROUGH-IN PLAN

DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
KP101

IFC SET
08-28-2026



1 FOODSERVICE PLUMBING ABOVE-SLAB ROUGH-IN PLAN
1/4" = 1'-0"

PLUMBING LEGEND

	HOT WATER
S	HOT WATER - SOFTENED
	COLD WATER
S	COLD WATER - SOFTENED
F	FILTERED WATER
	DIRECT WASTE
	FLOOR SINK - THREE-QUARTER GRATE
	FLOOR SINK - HALF GRATE
	FLOOR SINK - NO GRATE
	FLOOR DRAIN
	FUNNEL FLOOR DRAIN
	HUB FLOOR DRAIN
	AREA FLOOR DRAIN - SLOPED PER CODE
	GAS DROP FROM MANIFOLD
	FIRE SUPPRESSION GAS SHUT-OFF VALVE
CS	CHILLED WATER
CR	CHILLED WATER RETURN
SS	STEAM SUPPLY
CR	CONDENSATE RETURN

PLUMBING NOTES (DIVISION 22)

NOTE: THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR (DIVISION 22) AND SHALL BE APPLICABLE ONLY WHERE NOTED ON THE PLUMBING ROUGH-IN PLAN(S). THE PLUMBING CONTRACTOR (DIVISION 22) SHALL VERIFY AND COORDINATE THE EXACT PLUMBING REQUIREMENTS FOR ALL NIC EQUIPMENT PRIOR TO FINAL ROUGH-IN.

A. INSTALL KEC (SECTION 114000) FURNISHED FLOOR TROUGH(S).
B. INSTALL KEC (SECTION 114000) FURNISHED MOP SINK(S).
C. INSTALL KEC (SECTION 114000) FURNISHED FIRE SUPPRESSION SYSTEM GAS SHUT OFF VALVE. MUST BE ACCESSIBLE AND NOT CONCEALED IN WALL OR CEILING.
D. INSTALL KEC (SECTION 114000) FURNISHED DRAIN LINE TEMPERING KIT PER MANUFACTURER'S RECOMMENDATIONS.
E. MANIFOLD DRAINS TO SINGLE CONNECTION.
F. FURNISH AND INSTALL BALL VALVE IN DRAIN LINE. VALVE TO BE IN EASILY ACCESSIBLE LOCATION.
G. INTERPLUMB BETWEEN FILTER AND EQUIPMENT. PIPING FROM WATER FILTER OUTLET TO POINTS OF USE SHALL BE CONCEALED WITHIN WALLS AND CEILINGS. EXTEND DRAIN(S) TO FLOOR SINK/FLOOR DRAIN, IF REQUIRED.
H. CONNECT MIN. 110°F HOT WATER SUPPLY TO BUILT-IN OR EXTERNAL (70° RISE) BOOSTER HEATER. WHEN EXTERNAL, INSTALL TEMPERATURE/PRESSURE GAUGE(S) AS REQ'D AND EXTEND TO DISHWASHER INLET.
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L. PROVIDE "TEE" IN HOT WATER LINE AND CAP FOR FUTURE INSTALLATION OF CHEMICAL DISPENSING SYSTEM BY OTHERS.
M. PROVIDE CHROME PLATED PIPE AND FITTINGS WHERE EXPOSED.
N. PROVIDE AND INSTALL 3" MIN. DRAIN LINE TO 12"X12"X10" DEEP FLOOR SINK.
O. VERIFY EXACT LOCATION AND QUANTITY OF AREA FLOOR DRAIN(S) WITH THE PLUMBING ENGINEER.
P. STUB UP WASTE WITHIN WALL. ROUTE WASTE THRU WALL TO ROUGH-IN LOCATION(S) INDICATED FOR DIRECT CONNECTION TO EQUIPMENT.

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SHEET NAME:
FOODSERVICE PLUMBING ABOVE SLAB ROUGH-IN PLAN

DATE: 03/03/2026
PROJECT NO: 25-263
DRAWN: MVS
SCALE: AS NOTED

SHEET NO:
KP102

SHEET NUMBER	SHEET NAME
M001	MECHANICAL ABBREVIATIONS & SYMBOLS
MD100	MECHANICAL DEMOLITION FLOOR AND ROOF PLANS
MD200	MECHANICAL DEMOLITION SPECIFICATIONS
M101	MECHANICAL FLOOR PLAN
M102	MECHANICAL REFRIGERATION PIPING AND LAYOUT PLAN
M150	MECHANICAL ROOF PLAN
M501	MECHANICAL DETAILS
M502	MECHANICAL DETAILS
M590	MECHANICAL SPECIFICATIONS
M591	MECHANICAL SPECIFICATIONS
M592	MECHANICAL SPECIFICATIONS
M601	MECHANICAL SCHEDULES
M701	CAPTIVEAIRE DRAWINGS
M702	CAPTIVEAIRE DRAWINGS
M703	CAPTIVEAIRE DRAWINGS
M704	CAPTIVEAIRE DRAWINGS
M705	CAPTIVEAIRE DRAWINGS
M706	CAPTIVEAIRE DRAWINGS
M707	CAPTIVEAIRE DRAWINGS
M708	CAPTIVEAIRE DRAWINGS
M709	CAPTIVEAIRE DRAWINGS

LANDLORD COMMENTS - APPLIES TO ALL SHEETS

ROOF TOP EQUIPMENT COMMENTS:

- ROOF EQUIPMENT, INCLUDING BUT NOT LIMITED TO HVAC EQUIPMENT, KITCHEN EQUIPMENT, DUCTS, AND PIPING SHALL BE SHOWN ON A ROOF PLAN TO BE INCLUDED IN TENANT'S DRAWINGS SUBMISSION, SHALL NOT BE VISIBLE FROM THE OUTER RING ROAD OR FROM MALL SKYLIGHTS, LOCATED WITHIN THE ROOF AREA OF THE PREMISES AND MINIMUM OF 5'-0" FROM THE VERTICAL PLANE OF ANY DEMISING PARTITION LOCATED, AND SHALL BE COORDINATE WITH THE MALL OPERATIONS TEAM PRIOR TO THE START OF ANY WORK. EQUIPMENT SCREENS OR SCREEN WALLS MAYBE REQUIRED AND SHALL BE APPROVED IN WRITING BY LANDLORD UNDER SEPARATE COVER.
- TENANT SHALL PROVIDE A STRUCTURAL ENGINEER EVALUATION OF THE EXISTING CONSTRUCTION / STRUCTURE AND DETERMINES THAT IT IS SUFFICIENT FOR THE ADDITIONAL LOADS OF ALL NEW ROOF TOP EQUIPMENT IN ACCORDANCE WITH THE BUILDING CODE THAT HAS BEEN ADOPTED BY THE AUTHORITIES HAVING JURISDICTION (AHJ) AT TENANT'S SOLE EXPENSE. STRUCTURAL DETAILS ARE TO INCLUDE REFERENCE OF APPLICABLE BUILDING CODE(S), EXISTING BUILDING LOADS, AND ADDITIONAL LOADS THAT WILL BE ADDED TO THE STRUCTURE AND ANY REINFORCING THAT IS REQUIRED. STRUCTURAL DETAILS ARE TO BE SIGNED, SEALED, AND SUBMIT TO THE LANDLORD FOR THEIR RECORDS BY A LICENSED STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION IN THE STATE IN WHICH THE PROJECT IS LOCATED. LANDLORD RESERVE THE RIGHT TO HAVE'S 3RD PARTY ENGINEER REVIEW TENANT'S DESIGN AND MAY REQUIRE TENANT TO PROVIDE DOCUMENTATION BY A 3RD PARTY INSPECTOR TO VERIFY THAT STRUCTURAL INSTALLATION HAS BEEN INSTALLED CORRECTLY.
- ROOF EQUIPMENT REQUIRING DECK PENETRATION SHALL BE SET ON A FACTORY SUPPLIED CURB AND MUST EXTEND A MINIMUM OF 12" ABOVE HIGHEST ROOF MATERIAL. RE-USE OF EXISTING CURBS OR THE USE OF CURB ADAPTERS IS STRICTLY PROHIBITED. TENANT SHALL RE-SLOPE ROOF TO MAIN PROPER DRAINAGE AND PROVIDE ROOFING, FLASHING, AND WATERPROOFING FOR INSTALLATION OF NEW CURB PER LANDLORD'S CRITERIA TENANT'S SOLE EXPENSE.
- ALL CONDENSATION, ELECTRICAL, AND DUCTWORK SHALL BE SET INSIDE THE PERIMETER OF THE CURB. CONDENSATE SHALL DRAIN INTO AN INTERIOR FLOOR DRAIN OR MOP SINK WITHIN THE PREMISES. DAYLIGHTING CONDENSATE LINES DIRECTLY ONTO THE ROOF, DOWNSPOUT OR ROOF DRAIN IS STRICTLY PROHIBITED.
- TENANT SHALL PROVIDE "ROOF TRAFFIC / WALKWAY PADS" AROUND ALL ROOF TOP EQUIPMENT AND SHALL INDICATE LOCATION OF PADS ON A ROOF PLAN TO BE INCLUDED IN TENANT'S DRAWINGS SUBMISSION. COORDINATE FINAL LOCATION, MATERIAL, AND INSTALLATION OF PADS WITH THE MALL OPERATIONS TEAM PRIOR TO THE START OF ANY WORK
- TENANT SHALL LABEL ALL ROOF TOP EQUIPMENT INDICATING: TENANT NAME, SPACE NUMBER, AND EQUIPMENT IDENTIFICATION (RTU-1, EF-1) PER LANDLORD'S DESIGN CRITERIA.
- EQUIPMENT THAT UTILIZES CONDENSER COILS SHALL BE EQUIPPED WITH HAIL GUARDS. LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.
- TENANT TO INSTALL GREASE EXHAUST ROOF PROTECTION: THE ROOF AREA AROUND THE EXHAUST FAN SHALL BE PROTECTED WITH A GREASE-GUARD G-2, GREASE COLLECTION SYSTEM, AS MANUFACTURED BY FACILITEC CORPORATION, 1-800-284-8273
- ALL ROOF WORK SHALL BE COORDINATED IN ADVANCE WILL MALL OPS TEAM AND PERFORMED BY LANDLORD'S DESIGNATED ROOFER. CONTACT PROPERTY MANAGEMENT FOR PREFERRED VENDOR CONTACT INFORMATION.

MECHANICAL COMMENTS:

- ANY CHANGES AND/ OR UPGRADES TO TENANT'S EXISTING MECHANICAL SYSTEMS SHALL COMPLY WITH ALL CODES AND MALL CRITERIA. EXISTING SYSTEMS SHALL POSSESS THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.
- NO PITCH POCKETS ARE PERMITTED ON THE ROOF FOR ANY CONDENSATE DRAINS, REFRIGERANT PIPING, POWER OR CONTROL WIRING. ALL CONNECTIONS ARE TO BE MADE INSIDE THE EQUIPMENT CURB OR THROUGH PRE-MANUFACTURED PIPING CURB.
- NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK, OR ROOF DECK. YOU MAY ATTACH, NON-DESTRUCTIVELY, TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHING TO LANDLORD'S STRUCTURE, DO NOT DRILL, WELD, SCREW, OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY, NOTHING TO DAMAGE LANDLORD'S BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS, BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS, FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.
- ALL PENETRATIONS TO ROOF MUST BE APPROVED BY LANDLORD. ALL RELATED ROOF WORK MUST BE DONE BY MALL'S DESIGNATED ROOFTOP CONTRACTOR, AT TENANT'S EXPENSE. COORDINATE ALL WORK WITH PROPERTY MANAGEMENT ON SITE.
- TENANT MUST REMOVE ALL ABANDONED ROOFTOP AND/ OR MECHANICAL EQUIPMENT ABOVE THE LEASED PREMISES AND WITHIN THE LEASED PREMISES, AT TENANT EXPENSE. PATCH AND REPAIR ROOF AS NEEDED.
- TENANT'S GC TO LABEL ALL ROOF TOP EQUIPMENT WITH TENANT NAME SPACE NUMBER AND EQUIPMENT IDENTIFICATION (RTU-1, EF-1). PER MALL SPECIFICATIONS/ STANDARDS.
- ALL PIPING ON ROOF SHALL BE SUPPORTED ON PRE-MANUFACTURED PIPE SUPPORTS INSTALLED ON CARRY TREAD, SPACED PROPERLY TO SUPPORT PIPING. TREATED WOOD SUPPORTS ARE NOT PERMITTED.
- ALL UNEXPOSED SUPPLY AIR AND OUTSIDE AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 1 1/2" THICK FOIL FACE INSULATION. INTERNALLY LINED DUCTWORK MAY BE USED FOR ACOUSTIC PURPOSES ONLY, NOT AS A SUBSTITUTE FOR EXTERNAL INSULATION.
- ALL DUCTWORK SHALL BE SHEET METAL. FLEX DUCT MAY ONLY BE USED IN RUNS OF 4'-0" OR LESS.
- AT CONCLUSION OF PROJECT, HVAC SYSTEM MUST BE TESTED AND BALANCED BY A LICENSED CONTRACTOR. COPY OF BALANCE REPORT MUST BE PROVIDED TO PROPERTY MANAGEMENT OFFICE ON-SITE.
- LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

DESCRIPTION	FURNISHED			INSTALLED			REMARKS
	GENERAL CONTRACTOR	OWNER	LANDLORD	GENERAL CONTRACTOR	OWNER	LANDLORD	
DIVISION 23: HEATING, VENTILATING, AND AIR CONDITIONING							
23.1 HVAC DUCTWORK AND PIPING IDENTIFICATION							
23.1.1 HVAC DUCTWORK SYSTEM IDENTIFICATION	X			X			
23.1.2 PIPING SYSTEM IDENTIFICATION	X			X			
23.1.3 UTILITY SHUT OFF IDENTIFICATION IN KITCHEN	X			X			
23.1.4 VALVE TAGS AND CHART	X			X			
23.1.5 HVAC DAMPER IDENTIFICATION	X			X			
23.2 ROOF CURBS							
23.2.1 EXHAUST FAN CURBS	X			X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.2.2 ROOFTOP UNIT CURBS	X			X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.2.3 CONDENSING UNIT CURBS	X			X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.2.4 MAKE UP AIR AND DOAS UNIT CURBS		X		X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.2.5 KITCHEN EXHAUST FAN CURBS		X		X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING, CURBS, AND ACCESSORIES
23.3 HVAC DUCTWORK SYSTEM COMPONENTS							
23.3.1 HVAC DUCTWORK	X			X			
23.3.2 INSULATION AND FIRE WRAP	X			X			GENERAL CONTACTOR SCOPE OF WORK TO INCLUDE TENANT FIT OUT FROM LANDLORD POINT OF CONNECTION
23.3.3 DAMPERS	X			X			
23.3.4 SMOKE DETECTORS	X			X			
23.3.5 SUPPLY, RETURN, AND EXHAUST GRILLS AND REGISTERS	X			X			
23.4 MECHANICAL PIPING SYSTEM COMPONENTS							
23.4.1 WALK-IN COOLER AND FREEZER REFRIGERATION		X			X		WALK-IN COOLER AND FREEZER SUPPLIED BY VENDOR NO. 103 GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE PIPING INSTALLATION AND FINAL CONNECTION
23.4.2 REFRIGERATION FOR OTHER HVAC EQUIPMENT	X			X			
23.4.3 CHILLED WATER	X			X			
23.4.4 CONDENSER WATER	X			X			
23.4.5 HEATING HOT WATER	X			X			
23.4.6 VALVES AND ACCESSORIES (E.G. AIR VENTS)	X			X			
23.5 HVAC EQUIPMENT							GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE RIGGING FOR ALL ROOFTOP EQUIPMENT
23.5.1 SUPPLY FAN	X			X			
23.5.2 TOILET EXHAUST FAN	X			X			
23.5.3 KITCHEN EXHAUST FAN		X		X			SUPPLIED BY VENDOR NO. 102
23.5.4 DUCTED AND NON-DUCTED HEATING AND COOLING UNITS	X			X			
23.5.5 MAKE UP AIR AND DOAS UNITS		X		X			SUPPLIED BY VENDOR NO. 102
23.5.6 ELECTRIC PATIO HEATERS	X			X			
23.5.7 HVAC CONDENSING UNITS	X			X			
23.5.8 REFRIGERATION CONDENSING UNITS		X		X			
23.5.9 RGF PHI SYSTEM	X			X			GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 7 VENDOR SUBSTITUTION IS NOT PERMITTED
23.6 KITCHEN EXHAUST WITH FIRE SUPPRESSION SYSTEM							
23.6.1 HOOD CONTROL PANEL		X		X			SUPPLIED BY VENDOR NO. 102
23.6.2 KITCHEN EXHAUST HOOD		X		X			SUPPLIED BY VENDOR NO. 102
23.6.3 STRUCTURAL SUPPORT	X			X			
23.6.4 ELECTRICAL AND CONTROL WIRING	X			X			
23.6.5 ANSUL OR TANK FIRE SUPPRESSION SYSTEM		X		X			SUPPLIED BY VENDOR NO. 102 GENERAL CONTRACTOR TO COORDINATE AND FACILITATE SYSTEM SIGN-OFF
23.6.6 ANSUL OR TANK WIRING AND UTILITIES CONNECTION	X			X			
23.6.7 ANSUL OR TANK GAS VALVE		X		X			SUPPLIED BY VENDOR NO. 102
23.7 COMMISSIONING ACTIVITIES							
23.7.1 GREASE EXHAUST WATER LEAKAGE TEST	X			X			GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 6 VENDOR SUBSTITUTION IS NOT PERMITTED
23.7.2 TESTING AIR BALANCE (TAB) REPORT	X			X			GENERAL CONTRACTOR TO PURCHASE FROM VENDOR NO. 7 VENDOR SUBSTITUTION IS NOT PERMITTED

SYMBOLS

HEATING - VENTILATING - AIR CONDITIONING

SYMBOL	DESCRIPTION
STEAM (LOW PRESSURE)	
STEAM (MEDIUM PRESSURE)	
STEAM (HIGH PRESSURE)	
CONDENSATE (LOW PRESSURE)	
CONDENSATE (MEDIUM PRESSURE)	
CONDENSATE (HIGH PRESSURE)	
HWS	HOT WATER SUPPLY (HEATING)
HWR	HOT WATER RETURN (HEATING)
EGS	ETHYLENE GLYCOL SUPPLY
EGR	ETHYLENE GLYCOL RETURN
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
D	CONDENSATE OR VACUUM PUMP DISCHARGE
H	HUMIDIFICATION LINE
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
G	GAS LINE
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE
HG	REFRIGERANT HOT GAS DISCHARGE LINE
C	CONDENSER WATER
CR	CONDENSER WATER RETURN
BBO	BOILER BLOW OFF
ES	EXHAUST STEAM
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	UNION
	STRAINER
	EXPANSION JOINT
	THERMOMETER
	PRESSURE GAGE

SYMBOL	DESCRIPTION
	AUTOMATIC CONTROL VALVE
	PRESSURE REGULATING VALVE (PRV)
S OR P	SAFETY RELIEF VALVE
	BLOW OFF VALVE
2"HR	F AND T TRAP (CAP. #/HR)
	THERMOSTATIC TRAP
S.P.	STATIC PRESSURE
	CIRCUIT SETTER FLOW CONTROL VALVE
	AIR BLEEDER VALVE (RADIANT PANEL)
	AIR ELIMINATOR
	AUTOMATIC BALANCING VALVE
	SOLENOID VALVE (REFRIGERANT)
	THERMOSTATIC EXPANSION VALVE (RSTR.)
	BACK PRESSURE VALVE
	SIGHT GLASS
	ROUND DUCT RISER
FD-1	FAN COIL UNIT AND MARK
UH-1	UNIT HEATER-PROPELLER TYPE & MARK
CUH-1	CABINET UNIT HEATER & MARK
FIN TUBE	FIN TUBE, MARK AND CAPACITY
	CONVECTOR AND MARK
UV-1	UNIT VENTILATOR AND MARK
7.75	RECTANGULAR DUCT FIRST FIGURE IS SIDE SHOWN
12"Ø	ROUND DUCT
	CANVAS CONNECTION
	VOLUME DAMPER (ELEV AND PLAN)
	TURNING VANES
	EXTRACTOR

SYMBOL	DESCRIPTION
	SUPPLY OR FRESH AIR DUCT (SA OR FA)
	RETURN OR EXHAUST DUCT (RA OR EA)
ST	SOUND TRAP
CFM SIZE	SUPPLY REGISTER OR GRILLE (R OR G)
CFM SIZE	RETURN REGISTER OR GRILLE (R OR G)
CFM SIZE	FRESH AIR INTAKE (FA)
	ROUND CEILING DIFFUSER (SUPPLY)
	ROUND CEILING DIFFUSER (SUPPLY AND RETURN)
	SQUARE CEILING DIFFUSER (SUPPLY)
	SQUARE CEILING DIFFUSER (SUPPLY AND RETURN)
	SQUARE CEILING DIFFUSER THREE WAY THROW
	SQUARE CEILING DIFFUSER TWO WAY THROW
	GRAVITY DAMPER
MD	MOTORIZED DAMPER
FD	FIRE DAMPER
SD	SMOKE DAMPER
FSD	FIRE AND SMOKE DAMPER
BD	BASEBOARD DIFFUSER
1	HEATING RISER NUMBER
1	EXHAUST FAN RISER NUMBER
BR	BASEBOARD RADIATION
S	REMOTE SENSOR
T	THERMOSTAT

NOT ALL ITEMS SHOWN WITHIN THE SYMBOLS LEGENDS ARE USED WITHIN THE DRAWINGS.

SUBMITTAL MATRIX

GENERAL CONTRACTORS TO ALSO REVIEW ARCHITECTRUAL SPECIFICATIONS AS NOTED IN PLANS IN PLAN SECTION 700 OF THE ARCHITECTURAL PACKAGE FOR REQUIRED SUBMITTALS THAT MIGHT NOT BE LISTED BELOW.

SUBMITTAL DECRIPTION	Required Review Time (Business Days)	Architect of Record	Shake Shack	Physical Sample Required	Submittal for Review	Submittal for Record or Shown for Record Only
Anchor Bolts Shops	5	X			X	
ATAS-Detailed Shop DWGS(Submitted by Owner Vendor to Owner/AOR prior to const.)	5	X				X
Concrete Mix Design	5	X			X	
Construction Prefunctional Checklists	5	X				X
Decorative Metal Shop Drawings	5	X				
Diffusers, Grills & Registers	5	X			X	
Doors, Frames & Hardware	7	X			X	
Ductwork Layout (if there are signifcant changes in field)	5	X			X	
Electrical Distribution Equipment	5	X				
Elevator & Vertical Transportation Shop Drawings	5	X				X
Epoxy Floor	5	X				X
Fire Alarm Shop Drawings & Device Cut Sheets	5	x			X	
Fire Sprinkler Shop Drawings, Hydraulic Calculations & Device Cut Sheets	5	x				X
HVAC Equipment(if Carrier - Submitted by Owner Vendor to Owner/AOR prior to const.)	5	X			X	
Light Fixtures(Submitted by Owner Vendor to Owner/AOR prior to construction)	5	X			X	
MEP Tests, Start-Up, and Programming Reports	5	X			X	
Millwork - Material Submittals (if differs from spec)	5	X	X	X		
Millwork - Shop Drawings (custom items & design features only)	5	X				
Restroom Partitions	5	X			X	
Plumbing Fixtures	5	X			X	
Railing Shop Drawings	5	X				X
Rebar	5	X			X	
Stair Shop Drawings	5	X				X
Structural Steel Shop Drawings	7	X			X	
Storefront - product data Submittal (if different from specified)	5	X				
Storefront - Shop Drawings	5	X				
Tile (if differs from spec)	5	X			X	
Window Film	5	X				

zebra
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SHAKE SHACK
COCONUT POINT, FL
3181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISIONS

	DATE	DESCRIPTION
1	08/26/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#:28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

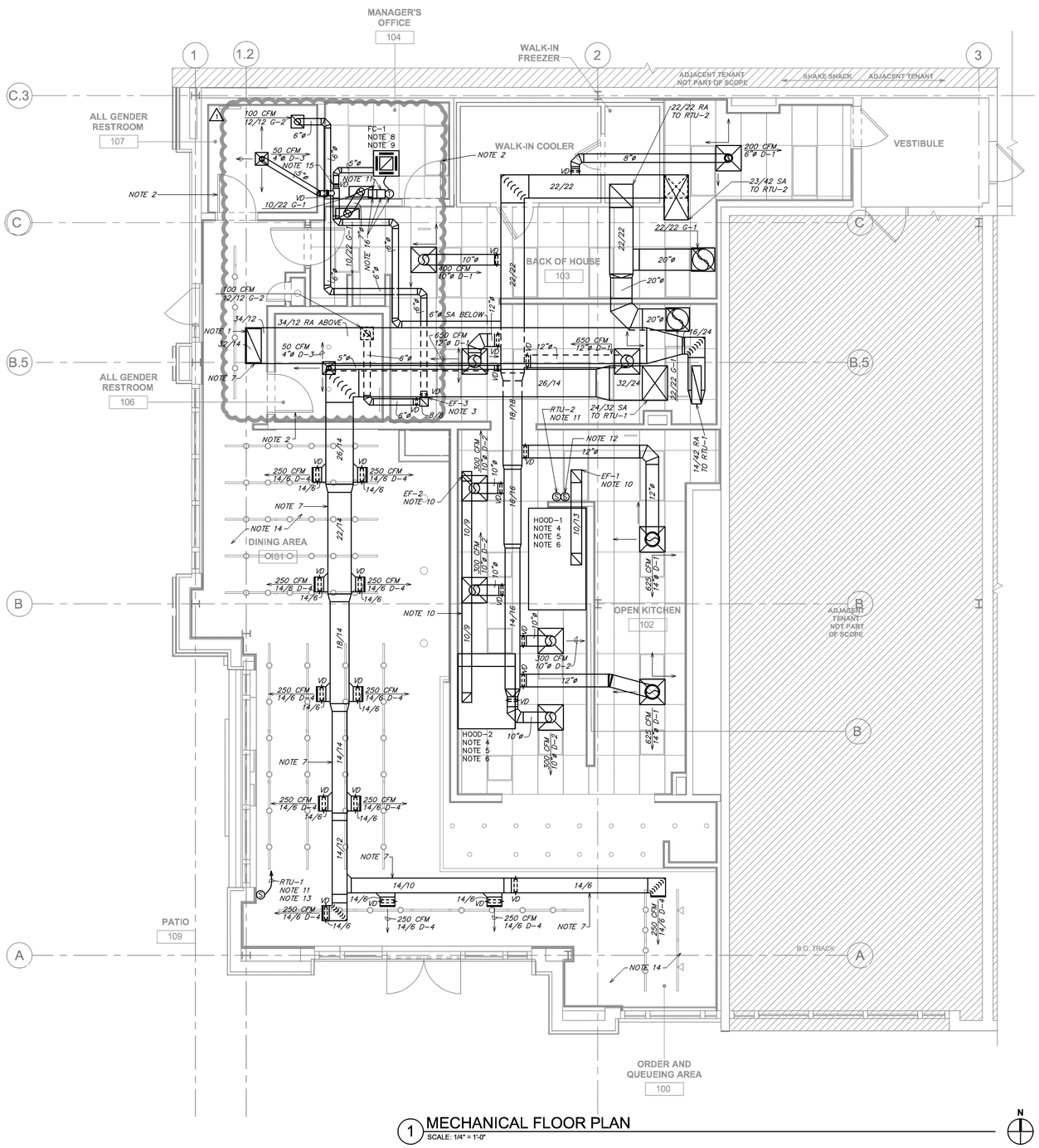
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SHEET NAME: **MECHANICAL ABBREVIATIONS AND SYMBOLS**

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN:
SCALE: AS NOTED

SHEET NO.: **M001**

SE JOB# 295519



1 MECHANICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

N

GENERAL NOTES:

A. EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS PROVIDED BY THE OWNER AND/OR LIMITED FIELD VERIFICATION BY OTHERS. CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
B. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER FOR RESOLUTION.
C. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH DEMOLITION WORK PRIOR TO BIDDING AND START OF WORK. CONTRACTOR IS RESPONSIBLE TO DEMOLISH ALL EXISTING AS REQUIRED FOR INSTALLATION/CONSTRUCTION OF NEW WORK.
D. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENT AND LOCAL CODES.
E. MECHANICAL CONTRACTOR SHALL FIELD COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL POWER REQUIREMENTS.
F. ALL CONTRACTORS SHALL REVIEW A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF ALL EQUIPMENT MAY BE PROPERLY COORDINATED.
G. ALL EQUIPMENT FURNISHED SHALL FIT THE SPACE AVAILABLE WITH CONNECTIONS IN THE REQUIRED LOCATIONS AND WITH ADEQUATE SPACE FOR OPERATING AND SERVICING. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE INTENT OF THE INSTALLATION WHILE THE SPECIFICATIONS AND EQUIPMENT LIST DENOTE THE TYPE AND QUALITY OF MATERIAL AND WORKMANSHIP TO BE USED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE HIGHER AND/OR MORE COSTLY STANDARD WILL APPLY. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER WHOSE DECISION SHALL BE FINAL. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS REGARD ON BEHALF OF THE CONTRACTOR AFTER AWARD OF THE CONTRACT.
H. COORDINATE DUCT ROUTING AND HEIGHTS WITH GENERAL CONTRACTOR. VERIFY ALL CLEARANCES BEFORE STARTING WORK.
I. THE CONTRACTOR SHALL INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT AS REQUIRED TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE CEILING HEIGHTS AND HEADROOM AND MAKE ALL EQUIPMENT REQUIRING MAINTENANCE OR REPAIR ACCESSIBLE.
J. ALL DUCT CONNECTIONS TO HVAC EQUIPMENT MUST BE MADE WITH FLEXIBLE CONNECTORS.
K. DO NOT ATTACH ANYTHING TO DECK ABOVE. ATTACH TO STRUCTURE (i.e. BEAMS, JOISTS) ONLY. DUCT HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE. ALL CONNECTIONS TO JOISTS SHALL BE MADE AT THE TOP CORD.
L. ALL DUCT DIMENSIONS INDICATED ARE CLEAR INSIDE DIMENSIONS. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER OR WRAPPED WITH 1-1/2" THICK FIRE RETARDANT FIBERGLASS WITH A REINFORCED ALUMINUM FOIL JACKET AND SHALL BE APPROVED FOR USE BY SMACNA AND NAIMA. RETURN AIR TRANSFER DUCTS AND RETURN DUCTWORK WITHIN 10 FEET OF THE UNIT FAN SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER.
M. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK VISIBLE TO THE PUBLIC SHALL BE INTERNALLY LINED AND PAINTED TO MATCH THE SURROUNDING AREA. DUCT WRAP INSULATION IS NOT PERMITTED IN THESE AREAS.
N. ALL EXPOSED DUCTWORK SHALL BE INSTALLED TIGHT TO THE BOTTOM OF THE STRUCTURE.
O. PROVIDE REMOTE VOLUME DAMPER CONTROL MANUFACTURED BY YOUNG REGULATOR OR UNITED ENERTECH FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS. LOCATE CONTROLLER ABOVE ACCESSIBLE CEILING LOCATION.
P. REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
Q. TENANT'S CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL UTILITY RUNS AND/OR OTHER IMPROVEMENTS LOCATED ON THE PREMISES PRIOR TO BIDDING. TENANT'S CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL COSTS RELATING TO THE RELOCATION OF, DAMAGE TO, REPAIR OF ANY EXISTING UTILITY RUNS AND/OR IMPROVEMENTS WHICH ARE DAMAGED AS A RESULT OF TENANT'S WORK IN OR AROUND THE PREMISES.
R. ALL ROOFING WORK SHALL BE PERFORMED BY LANDLORD'S APPROVED ROOFING CONTRACTOR AT TENANT'S EXPENSE, IF REQUIRED IN LEASE OR TENANT CRITERIA MANUAL.
S. ROOF MOUNTED EQUIPMENT SHALL BE LABELED WITH THE TENANT NAME AND SPACE NUMBER WITH 3" HIGH WEATHER PROOF LETTERS.
T. ALL GREASE EXHAUST DUCTWORK SHALL BE PROVIDED WITH 3" FOIL FACED THERMAL-CERAMIC INSULATION FOR GREASE DUCTS. INSULATION SHALL MEET NFPA 96 AND ASTM E 2336 REQUIREMENTS.
Y. GREASE DUCT LEAKAGE TESTING MUST BE PERFORMED PRIOR TO CONCEALMENT OF THE DUCTWORK.
V. MECHANICAL CONTRACTOR SHALL PROVIDE TENANT WITH A WRITTEN ONE (1) YEAR MANUFACTURER'S WARRANTY ON ALL HVAC EQUIPMENT PROVIDED AND / OR INSTALLED. THE WARRANTY SHALL INCLUDE ALL LABOR, MATERIALS AND THREE (3) ROUTINE SERVICES INCLUDING FILTER CHANGES DURING A ONE (1) YEAR PERIOD.
W. AT THE COMPLETION OF CONSTRUCTION AN NEBB, AABC OR TABB CERTIFIED AIR BALANCE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND LANDLORD. PRIOR TO SCHEDULING BALANCING, COORDINATE WITH LANDLORD'S FIELD REPRESENTATIVE FOR THE VENDOR LISTED BELOW. IF APPROVED, THE BALANCING SHALL BE COMPLETED BY NATION TAB. CONTACT BRI BIGGS AT SHAKESHACK@NATIONALTAB.COM OR 513-889-7219.
X. PARTS OF THE BASE BUILDING SYSTEMS THAT FALL INTO LEASE LINE SHALL REMAIN UNDISTURBED UNLESS NOTED OTHERWISE.
Y. PROVIDE ALL NECESSARY WIRING, RELAYS, DETECTORS, COMPONENTS, ETC., FOR FIRE ALARM OR CONTROL SYSTEM INTERLOCK IF APPLICABLE. VERIFY WITH BUILDING PERSONNEL BEFORE BID.

HVAC NOTES:

1. TOP OPEN RETURN AIR DUCT. PROVIDE OPENING WITH 1/4" MESH GALVANIZED SCREEN.
2. CONTRACTOR SHALL UNDERCUT DOOR 3/4".
3. PROVIDE 8/8 EXHAUST AIR DUCT UP TO EF-3 ON ROOF.
4. NEW CAPTIVEAIRE GREASE EXHAUST HOOD TO BE FURNISHED BY OWNER FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. SEE CAPTIVEAIRE SHEETS FOR ADDITIONAL INFORMATION. BALANCE HOOD EXHAUST AS NOTED ON CAPTIVEAIRE SHEETS. VERIFY ALL MANUFACTURER AND CODE REQUIRED CLEARANCES ARE MAINTAINED. NOTIFY ARCHITECT IF ANY CONFLICTS OCCUR.
5. TRANSITION FROM HOOD EXHAUST AND EXTEND KITCHEN HOOD GREASE EXHAUST DUCTWORK COLLAR AS INDICATED ON PLANS UP TO CORRESPONDING GREASE EXHAUST FAN ON ROOF. SEE SHEET M150 FOR CONTINUATION. GREASE DUCT SHALL BE WRAPPED WITH TWO (2) LAYERS OF THERMAL CERAMICS FAST WRAP XL, 1 1/2" THICK WITH 3" PERIMETER AND LONGITUDINAL OVERLAPS OR EQUIVALENT U.L. LISTED GREASE DUCT WRAP FOR ZERO CLEARANCE TO COMBUSTIBLES. REFER TO SHEET M501, DETAIL 1, FOR ADDITIONAL INFORMATION. TYPICAL OF GREASE EXHAUST DUCTWORK.
6. HOOD MANUFACTURER TO PROVIDE A "KIT" TO FASTEN THE BOTTOM FLANGE OF THE HOOD TO THE WALL, WITH ONE FASTENER PER STUD WALL. SIL-BOND RTV 4500 ALUMINUM SILICONE SEALANT OR APPROVED SIMILAR, TO BE APPLIED BY GENERAL CONTRACTOR /HOOD INSTALLER FOR ANY REMAINING SMALL GAPS. HOOD FASTENING "KIT" DETAIL TO BE INCLUDED IN MANUFACTURER DRAWINGS. REFERENCE SHEET M501, DETAIL 10, FOR ADDITIONAL INFORMATION.
7. DUCTWORK TO BE TO BE INSTALLED AS HIGH AS CONDITIONS ALLOW. COORDINATE ROUTING AND MOUNTING HEIGHT WITH LIGHTING FIXTURES. NOTIFY THE ARCHITECT OF ANY CONFLICTS AND COORDINATE WITH THE CONSTRUCTION MANAGER.
8. PROVIDE NEW FC UNIT AS NOTED ON PLANS AND AS SCHEDULED ON SHEET M601.
9. PROVIDE REFRIGERANT LINES FROM ASHP-1 ON ROOF TO FC-1 IN KITCHEN OFFICE. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
10. PROVIDE CLEANOUTS ON GREASE DUCTWORK AS REQUIRED BY CODE. WHERE GREASE DUCT CLEANOUT POINTS ARE REQUIRED, DUCTMATE ULTIMATE GREASE EXHAUST ACCESS PANELS SHALL BE UTILIZED. TYPICAL OF GREASE EXHAUST DUCTWORK. REFERENCE SHEET M501, DETAIL 2, FOR ADDITIONAL INFORMATION
11. COORDINATE WITH CAPTIVEAIRE ON REMOTE SENSORS AND COMFORT CONTROLS PACKAGE THAT IS TO BE INSTALLED IN THE OFFICE. VERIFY CONTROLS ARE A FULLY DIGITAL 7 DAY PROGRAMMABLE TYPE THERMOSTAT WITH REMOTE SENSING CAPABILITIES, AUTO CHANGE OVER AND AUTO SET BACK. MOUNT CONTROLS AT 48" ABOVE FINISHED FLOOR. LOCATE REMOTE TEMPERATURE SENSORS AS INDICATED ON PLAN. COORDINATE LOCATION WITH CONSTRUCTION MANAGER AND WALL GRAPHICS LAYOUT. REFERENCE CAPTIVEAIRE SHEETS FOR ADDITIONAL INFORMATION.
12. MOUNT TEMPERATURE CAPTIVEAIRE ROOM TEMPERATURE SENSOR FURNISHED WITH KITCHEN HOODS ON WALL AS INDICATED ON THE PLANS AND AS SPECIFIED BY THE MANUFACTURER.
13. PROVIDE WITH INSULATED BACK PAN.
14. COORDINATE FINAL COLOR/FINISH OF EXPOSED DUCTWORK AND DIFFUSERS/GRILLES WITH ARCHITECT AND CONSTRUCTION MANAGER. TYPICAL THROUGHOUT SPACE.
15. BALANCE VOLUME DAMPER TO 50 CFM.
16. VERIFY FINAL INSTALLATION LOCATION OF CONTROLS IN OFFICE WITH ARCHITECTURAL PLANS, SHEET A401.

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REVISIONS

	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

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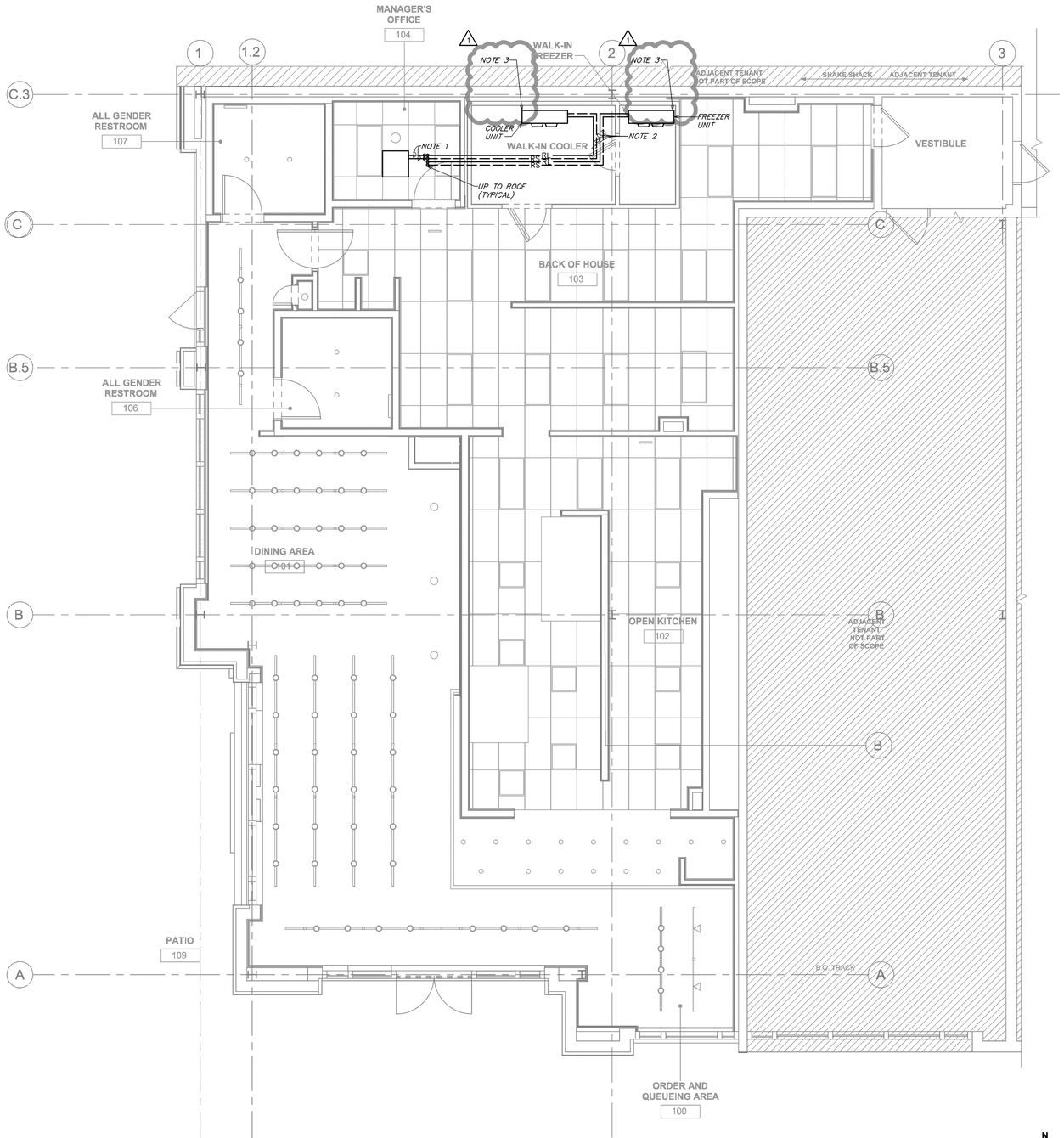
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SHEET NAME: MECHANICAL FLOOR PLAN

DATE: 08/01/2026
PROJECT NO.: 41354
DRAWN:
SCALE: AS NOTED

SHEET NO.: M101

SE JOB# 28519



1 MECHANICAL REFRIGERANT PIPING LAYOUT PLAN
SCALE: 1/4" = 1'-0"

N

GENERAL NOTES:

A. EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS PROVIDED BY THE OWNER AND/OR LIMITED FIELD VERIFICATION BY OTHERS. CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
B. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER FOR RESOLUTION.
C. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH DEMOLITION WORK PRIOR TO BIDDING AND START OF WORK. CONTRACTOR IS RESPONSIBLE TO DEMOLISH ALL EXISTING AS REQUIRED FOR INSTALLATION/CONSTRUCTION OF NEW WORK.
D. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENT AND LOCAL CODES.
E. MECHANICAL CONTRACTOR SHALL FIELD COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL POWER REQUIREMENTS.
F. ALL CONTRACTORS SHALL REVIEW A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF ALL EQUIPMENT MAY BE PROPERLY COORDINATED.
G. ALL EQUIPMENT FURNISHED SHALL FIT THE SPACE AVAILABLE WITH CONNECTIONS IN THE REQUIRED LOCATIONS AND WITH ADEQUATE SPACE FOR OPERATING AND SERVICING. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE INTENT OF THE INSTALLATION WHILE THE SPECIFICATIONS AND EQUIPMENT LIST DENOTE THE TYPE AND QUALITY OF MATERIAL AND WORKMANSHIP TO BE USED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE HIGHER AND/OR MORE COSTLY STANDARD WILL APPLY. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER WHOSE DECISION SHALL BE FINAL. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS REGARD ON BEHALF OF THE CONTRACTOR AFTER AWARD OF THE CONTRACT.
H. COORDINATE DUCT ROUTING AND HEIGHTS WITH GENERAL CONTRACTOR. VERIFY ALL CLEARANCES BEFORE STARTING WORK.
I. THE CONTRACTOR SHALL INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT AS REQUIRED TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE CEILING HEIGHTS AND HEADROOM AND MAKE ALL EQUIPMENT REQUIRING MAINTENANCE OR REPAIR ACCESSIBLE.
J. ALL DUCT CONNECTIONS TO HVAC EQUIPMENT MUST BE MADE WITH FLEXIBLE CONNECTORS.
K. DO NOT ATTACH ANYTHING TO DECK ABOVE. ATTACH TO STRUCTURE (i.e. BEAMS, JOISTS) ONLY. DUCT HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE. ALL CONNECTIONS TO JOISTS SHALL BE MADE AT THE TOP CORD.
L. ALL DUCT DIMENSIONS INDICATED ARE CLEAR INSIDE DIMENSIONS. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER OR WRAPPED WITH 1-1/2" THICK FIRE RETARDANT FIBERGLASS WITH A REINFORCED ALUMINUM FOIL JACKET AND SHALL BE APPROVED FOR USE BY SMACNA AND NAIMA. RETURN AIR TRANSFER DUCTS AND RETURN DUCTWORK WITHIN 10 FEET OF THE UNIT FAN SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER.
M. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK VISIBLE TO THE PUBLIC SHALL BE INTERNALLY LINED AND PAINTED TO MATCH THE SURROUNDING AREA. DUCT WRAP INSULATION IS NOT PERMITTED IN THESE AREAS.
N. ALL EXPOSED DUCTWORK SHALL BE INSTALLED TIGHT TO THE BOTTOM OF THE STRUCTURE.
O. PROVIDE REMOTE VOLUME DAMPER CONTROL MANUFACTURED BY YOUNG REGULATOR OR UNITED ENERTECH FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS. LOCATE CONTROLLER ABOVE ACCESSIBLE CEILING LOCATION.
P. REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
Q. TENANT'S CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL UTILITY RUNS AND/OR OTHER IMPROVEMENTS LOCATED ON THE PREMISES PRIOR TO BIDDING. TENANT'S CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL COSTS RELATING TO THE RELOCATION OF, DAMAGE TO, REPAIR OF ANY EXISTING UTILITY RUNS AND/OR IMPROVEMENTS WHICH ARE DAMAGED AS A RESULT OF TENANT'S WORK IN OR AROUND THE PREMISES.
R. ALL ROOFING WORK SHALL BE PERFORMED BY LANDLORD'S APPROVED ROOFING CONTRACTOR AT TENANT'S EXPENSE, IF REQUIRED IN LEASE OR TENANT CRITERIA MANUAL.
S. ROOF MOUNTED EQUIPMENT SHALL BE LABELED WITH THE TENANT NAME AND SPACE NUMBER WITH 3" HIGH WEATHER PROOF LETTERS.
T. ALL GREASE EXHAUST DUCTWORK SHALL BE PROVIDED WITH 3" FOIL FACED THERMAL-CERAMIC INSULATION FOR GREASE DUCTS. INSULATION SHALL MEET NFPA 96 AND ASTM E 2336 REQUIREMENTS.
Y. GREASE DUCT LEAKAGE TESTING MUST BE PERFORMED PRIOR TO CONCEALMENT OF THE DUCTWORK.
V. MECHANICAL CONTRACTOR SHALL PROVIDE TENANT WITH A WRITTEN ONE (1) YEAR MANUFACTURER'S WARRANTY ON ALL HVAC EQUIPMENT PROVIDED AND / OR INSTALLED. THE WARRANTY SHALL INCLUDE ALL LABOR, MATERIALS AND THREE (3) ROUTINE SERVICES INCLUDING FILTER CHANGES DURING A ONE (1) YEAR PERIOD.
W. AT THE COMPLETION OF CONSTRUCTION AN NEBB, AABC OR TABB CERTIFIED AIR BALANCE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND LANDLORD. PRIOR TO SCHEDULING BALANCING, COORDINATE WITH LANDLORD'S FIELD REPRESENTATIVE FOR THE VENDOR LISTED BELOW. IF APPROVED, THE BALANCING SHALL BE COMPLETED BY NATION TAB. CONTACT BRI BIGGS AT SHAKESHACK@NATIONALTAB.COM OR 513-889-7219.
X. PARTS OF THE BASE BUILDING SYSTEMS THAT FALL INTO LEASE LINE SHALL REMAIN UNDISTURBED UNLESS NOTED OTHERWISE.
Y. PROVIDE ALL NECESSARY WIRING, RELAYS, DETECTORS, COMPONENTS, ETC., FOR FIRE ALARM OR CONTROL SYSTEM INTERLOCK IF APPLICABLE. VERIFY WITH BUILDING PERSONNEL BEFORE BID.

HVAC NOTES:

1. PROVIDE REFRIGERANT LINES FROM ASHP-1 ON ROOF TO FC-1 IN KITCHEN OFFICE AS NOTED ON PLANS. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE. ADJUST ROUTING AS NECESSARY IN FIELD FOR ANY OBSTACLES. COORDINATE EXACT LOCATION AND ROUTING WITH CONSTRUCTION MANAGER.
2. KITCHEN EQUIPMENT CONTRACTOR TO PROVIDE REFRIGERANT LINES FROM CONDENSING UNIT ON ROOF TO KITCHEN EQUIPMENT AS NOTED ON PLANS. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE. ADJUST ROUTING AS NECESSARY IN FIELD FOR ANY OBSTACLES. COORDINATE EXACT LOCATION AND ROUTING WITH CONSTRUCTION MANAGER.
1 3. COOLER/FREEZER EVAPORATOR SHOWN FOR REFERENCE ONLY. CONFIRM FINAL INSTALLATION LOCATION WITH KITCHEN DRAWINGS AND KITCHEN EQUIPMENT SUPPLIER.

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REVISIONS

△	DATE	DESCRIPTION
1	06/26/2026	REVISION 1

STATUS: IFC SET

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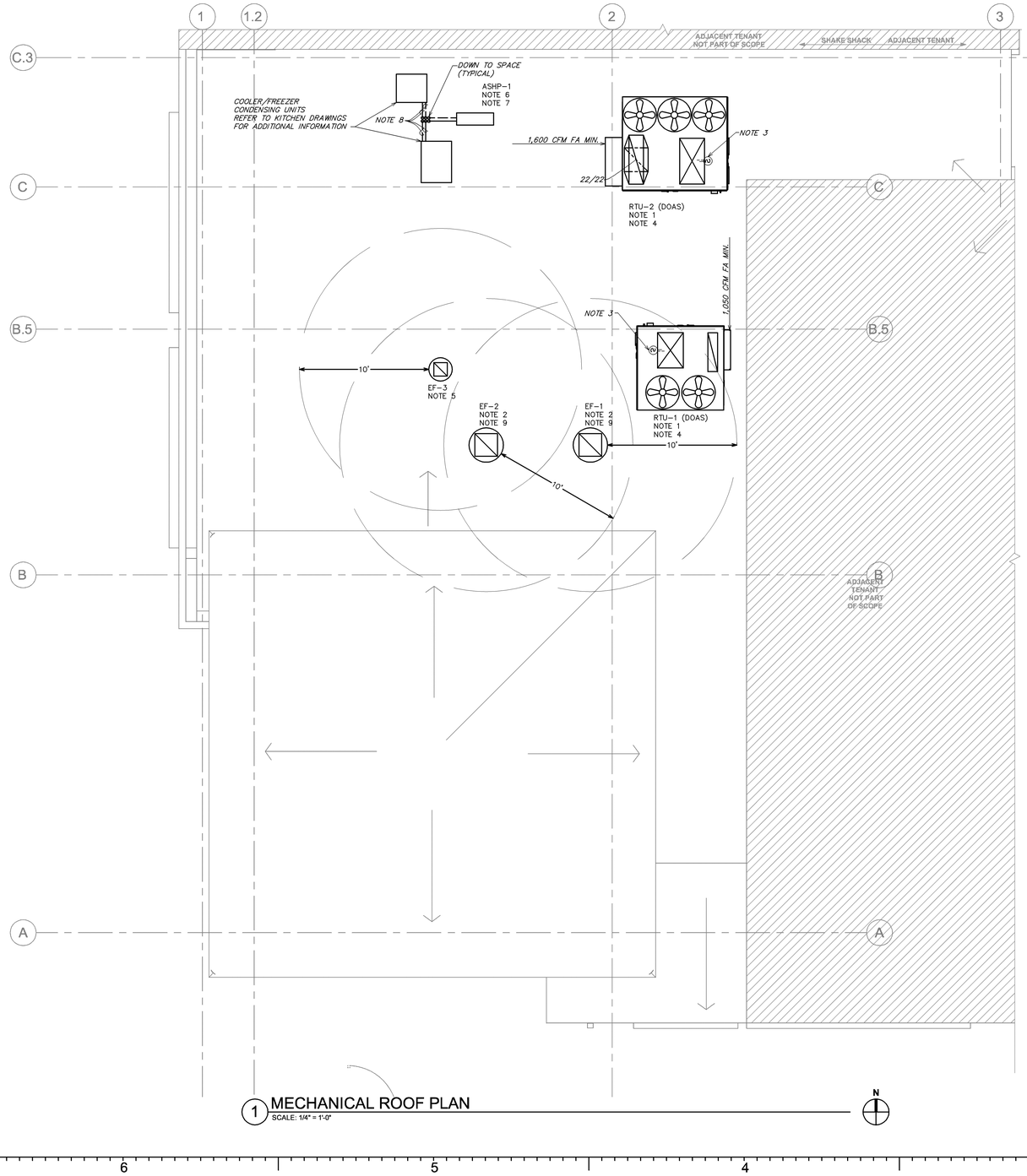
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SHEET NAME: **MECHANICAL REFRIGERANT PIPING LAYOUT PLAN**

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN:
SCALE: AS NOTED

SHEET NO.: **M102**

SS_JOB#: 29519



1 MECHANICAL ROOF PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS PROVIDED BY THE OWNER AND/OR LIMITED FIELD VERIFICATION BY OTHERS. CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
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F. ALL CONTRACTORS SHALL REVIEW A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF ALL EQUIPMENT MAY BE PROPERLY COORDINATED.
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H. COORDINATE DUCT ROUTING AND HEIGHTS WITH GENERAL CONTRACTOR. VERIFY ALL CLEARANCES BEFORE STARTING WORK.
I. THE CONTRACTOR SHALL INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT AS REQUIRED TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE CEILING HEIGHTS AND HEADROOM AND MAKE ALL EQUIPMENT REQUIRING MAINTENANCE OR REPAIR ACCESSIBLE.
J. ALL DUCT CONNECTIONS TO HVAC EQUIPMENT MUST BE MADE WITH FLEXIBLE CONNECTORS.
K. DO NOT ATTACH ANYTHING TO DECK ABOVE. ATTACH TO STRUCTURE (i.e. BEAMS, JOISTS) ONLY. DUCT HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE. ALL CONNECTIONS TO JOISTS SHALL BE MADE AT THE TOP CORD.
L. ALL DUCT DIMENSIONS INDICATED ARE CLEAR INSIDE DIMENSIONS. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER OR WRAPPED WITH 1-1/2" THICK FIRE RETARDANT FIBERGLASS WITH A REINFORCED ALUMINUM FOIL JACKET AND SHALL BE APPROVED FOR USE BY SMACNA AND NAIMA. RETURN AIR TRANSFER DUCTS AND RETURN DUCTWORK WITHIN 10 FEET OF THE UNIT FAN SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER.
M. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK VISIBLE TO THE PUBLIC SHALL BE INTERNALLY LINED AND PAINTED TO MATCH THE SURROUNDING AREA. DUCT WRAP INSULATION IS NOT PERMITTED IN THESE AREAS.
N. ALL EXPOSED DUCTWORK SHALL BE INSTALLED TIGHT TO THE BOTTOM OF THE STRUCTURE.
O. PROVIDE REMOTE VOLUME DAMPER CONTROL MANUFACTURED BY YOUNG REGULATOR OR UNITED ENERTECH FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS. LOCATE CONTROLLER ABOVE ACCESSIBLE CEILING LOCATION.
P. REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE.
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R. ALL ROOFING WORK SHALL BE PERFORMED BY LANDLORD'S APPROVED ROOFING CONTRACTOR AT TENANT'S EXPENSE, IF REQUIRED IN LEASE OR TENANT CRITERIA MANUAL.
S. ROOF MOUNTED EQUIPMENT SHALL BE LABELED WITH THE TENANT NAME AND SPACE NUMBER WITH 3" HIGH WEATHER PROOF LETTERS.
T. ALL GREASE EXHAUST DUCTWORK SHALL BE PROVIDED WITH 3" FOIL FACED THERMAL-CERAMIC INSULATION FOR GREASE DUCTS. INSULATION SHALL MEET NFPA 96 AND ASTM E 2336 REQUIREMENTS.
Y. GREASE DUCT LEAKAGE TESTING MUST BE PERFORMED PRIOR TO CONCEALMENT OF THE DUCTWORK.
V. MECHANICAL CONTRACTOR SHALL PROVIDE TENANT WITH A WRITTEN ONE (1) YEAR MANUFACTURER'S WARRANTY ON ALL HVAC EQUIPMENT PROVIDED AND / OR INSTALLED. THE WARRANTY SHALL INCLUDE ALL LABOR, MATERIALS AND THREE (3) ROUTINE SERVICES INCLUDING FILTER CHANGES DURING A ONE (1) YEAR PERIOD.
W. AT THE COMPLETION OF CONSTRUCTION AN NEBB, AABC OR TABB CERTIFIED AIR BALANCE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND LANDLORD. PRIOR TO SCHEDULING BALANCING, COORDINATE WITH LANDLORD'S FIELD REPRESENTATIVE FOR THE VENDOR LISTED BELOW. IF APPROVED, THE BALANCING SHALL BE COMPLETED BY NATION TAB. CONTACT BRI BIGGS AT SHAKESHACK@NATIONALTAB.COM OR 513-889-7219.
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Y. PROVIDE ALL NECESSARY WIRING, RELAYS, DETECTORS, COMPONENTS, ETC., FOR FIRE ALARM OR CONTROL SYSTEM INTERLOCK IF APPLICABLE. VERIFY WITH BUILDING PERSONNEL BEFORE BID.

HVAC NOTES:

1. NEW CAPTIVEAIRE RTU TO BE FURNISHED BY OWNER FOR INSTALLATION BY MECHANICAL CONTRACTOR. SEE CAPTIVEAIRE SHEETS FOR ADDITIONAL INFORMATION. FIELD VERIFY EXACT LOCATION.
2. NEW CAPTIVEAIRE GREASE EXHAUST FAN TO BE FURNISHED BY OWNER FOR INSTALLATION BY MECHANICAL CONTRACTOR. SEE CAPTIVEAIRE SHEETS FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL FIELD VERIFY THAT THE LOCATION SHOWN IS A MINIMUM OF 10'-0" FROM ANY OUTDOOR AIR INTAKE.
3. DUCT SMOKE DETECTOR ON SUPPLY SIDE DUCT AND SHUTDOWN RELAY SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. ALL WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.
4. RPG ENVIRONMENTAL GROUP, INC. AIR PURIFICATION SYSTEM TO BE PROVIDED BY NTAB. REFER TO RESPONSIBILITY MATRIX ON SHEET M001 FOR ADDITIONAL INFORMATION, SHEET M601 FOR SCHEDULE, AND SHEET M592 FOR SPECIFICATIONS.
5. PROVIDE NEW EXHAUST FAN AS NOTED ON PLANS AND SCHEDULED ON SHEET M601. THE CONTRACTOR SHALL FIELD VERIFY THAT THE LOCATION SHOWN IS A MINIMUM OF 10'-0" FROM ANY OUTDOOR AIR INTAKE.
6. PROVIDE ASHP AS NOTED ON PLANS AND SCHEDULED ON SHEET M601.
7. PROVIDE REFRIGERANT LINES FROM ASHP-1 ON ROOF TO FC-1 IN KITCHEN OFFICE. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE. ADJUST ROUTING AS NECESSARY IN FIELD FOR ANY OBSTACLES. COORDINATE EXACT LOCATION AND ROUTING WITH CONSTRUCTION MANAGER AND LANDLORD. PROVIDE WITH ALUMINUM HURRICANE RATED STAND FOR MOUNTING TO THE ROOF. PRECISION ALUMINUM PRODUCTS OR SIMILAR MANUFACTURER. STANDS SHOULD BE MIAMI-DADE COUNTY RATED. MOUNTING LOCATION OF UNITS SHALL COMPLY WITH FBC M-306.5 (EQUIPMENT AND APPLIANCES ON ROOFS OR ELEVATED STRUCTURES) AND ANY LOCAL BUILDING CODE REQUIREMENTS.
8. KITCHEN EQUIPMENT CONTRACTOR TO PROVIDE REFRIGERANT LINES FROM CONDENSING UNIT ON ROOF TO KITCHEN EQUIPMENT AS NOTED ON PLANS. LINES SHALL BE SIZED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL ACCESSORIES AS REQUIRED BY MANUFACTURER FOR COMPLETE WORKING SYSTEM, INCLUDING ANY ACCESSORIES ASSOCIATED WITH LONG LENGTH APPLICATIONS WHERE APPLICABLE. ADJUST ROUTING AS NECESSARY IN FIELD FOR ANY OBSTACLES. COORDINATE EXACT LOCATION AND ROUTING WITH CONSTRUCTION MANAGER AND LANDLORD. PROVIDE WITH ALUMINUM HURRICANE RATED STAND FOR MOUNTING TO THE ROOF. PRECISION ALUMINUM PRODUCTS OR SIMILAR MANUFACTURER. STANDS SHOULD BE MIAMI-DADE COUNTY RATED. MOUNTING LOCATION OF UNITS SHALL COMPLY WITH FBC M-306.5 (EQUIPMENT AND APPLIANCES ON ROOFS OR ELEVATED STRUCTURES) AND ANY LOCAL BUILDING CODE REQUIREMENTS.
9. PROVIDE WITH GREASE-GUARD G-2 GREASE COLLECTION SYSTEM, AS MANUFACTURED BY FACILITEC COPRORATION. COORDINATE WITH LANDLORD AS REQUIRED.

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REVISIONS

△	DATE	DESCRIPTION
1	08/26/2026	REVISION 1

STATUS:
IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

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SHEET NAME:
MECHANICAL ROOF PLAN

DATE:	PROJECT NO.:
06/01/2026	41354
DRAWN:	SCALE: AS NOTED

SHEET NO.:
M150

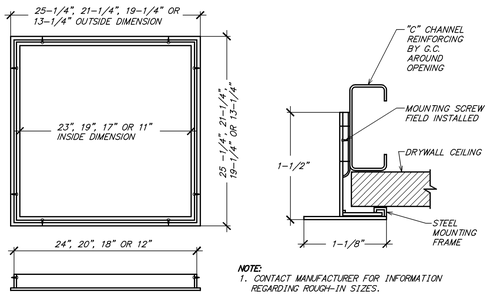
SE JOB#: 26519

MAXIMUM HALF OF DUCT PERIMETER	PAIR AT 10 FT. SPACING		PAIR AT 8 FT. SPACING		PAIR AT 5 FT. SPACING		PAIR AT 4 FT. SPACING	
	STRAP	WIRE/ ROD	STRAP	WIRE/ ROD	STRAP	WIRE/ ROD	STRAP	WIRE/ ROD
P/2 = 30"	1" x 22 GA.	10 GA. (.135")	1" x 22 GA.	10 GA. (.135")	1" x 22 GA.	12 GA. (.106")	1" x 22 GA.	12 GA. (.106")
P/2 = 72"	1" x 18 GA.	3/8"	1" x 20 GA.	1/4"	1" x 22 GA.	1/4"	1" x 22 GA.	1/4"
P/2 = 96"	1" x 16 GA.	3/8"	1" x 18 GA.	3/8"	1" x 20 GA.	3/8"	1" x 22 GA.	1/4"
P/2 = 120"	1 1/2" x 16 GA.	1/2"	1" x 16 GA.	3/8"	1" x 18 GA.	3/8"	1" x 20 GA.	1/4"
P/2 = 168"	1 1/2" x 16 GA.	1/2"	1 1/2" x 16 GA.	1/2"	1" x 16 GA.	3/8"	1" x 18 GA.	3/8"
P/2 = 192"	---	1/2"	1 1/2" x 16 GA.	1/2"	1" x 16 GA.	3/8"	1" x 16 GA.	3/8"
P/2 = 193" UP	SPECIAL ANALYSIS REQUIRED							

WHEN STRAPS ARE LAP JOINED USE THESE MINIMUM FASTENERS:	SINGLE HANGER MAXIMUM ALLOWABLE LOAD	
	STRAP	WIRE OR ROD (DIA.)
1" x 18, 20, 22 GA. – TWO #10 OR ONE 1/4" BOLT 1" x 16 GA. – TWO 1/4" DIA. 1" x 16 GA. – TWO 3/8" DIA. PLACE FASTENERS IN SERIES, NOT SIDE BY SIDE.	1" x 22 GA. – 260 LBS. 1" x 20 GA. – 320 LBS. 1" x 18 GA. – 420 LBS. 1" x 16 GA. – 700 LBS. 1 1/2" x 16 GA. – 1100 LBS.	0.106" – 80 LBS. 0.135" – 120 LBS. 0.162" – 160 LBS. 1/4" – 270 LBS. 3/8" – 680 LBS. 1/2" – 1250 LBS. 5/8" – 2000 LBS. 3/4" – 3000 LBS.

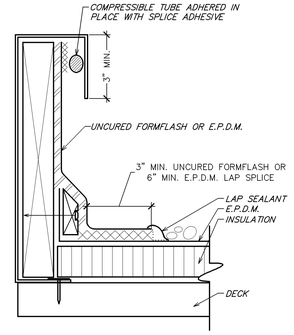
NOTES:
1. DIMENSIONS OTHER THAN GAUGE ARE IN INCHES.
2. TABLES ALLOW FOR DUCT WEIGHT, 1 LB./SF INSULATION WEIGHT AND NORMAL REINFORCEMENT AND TRAPEZE WEIGHT, BUT NO EXTERNAL LOADS.
3. STRAPS ARE GALVANIZED STEEL; OTHER MATERIALS ARE UNCOATED STEEL.
4. ALLOWABLE LOADS FOR P/2 ASSUME THAT DUCTS ARE 16 GA. MAXIMUM, EXCEPT THAT WHEN MAXIMUM DUCT DIMENSION (W) IS OVER 60" THEN P/2 MAXIMUM IS 1.25 W.
5. 12, 10 OR 8 GA. WIRE IS STEEL OF BLACK ANNEALED, BRIGHT BASIC OR GALVANIZED TYPE.
6. DUCTS SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 10 FEET.

7 RECTANGULAR DUCT HANGER TABLE
NOT TO SCALE



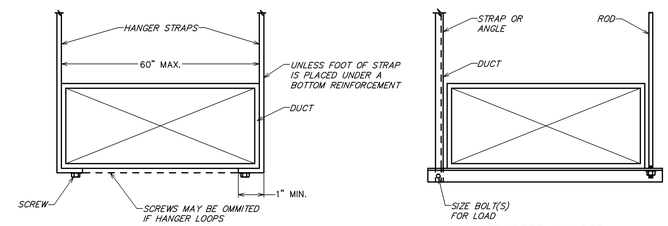
NOTE:
1. CONTACT MANUFACTURER FOR INFORMATION REGARDING ROUGH-IN SIZES.

2 TYPICAL DRYWALL MOUNTING FRAME DETAIL
NOT TO SCALE



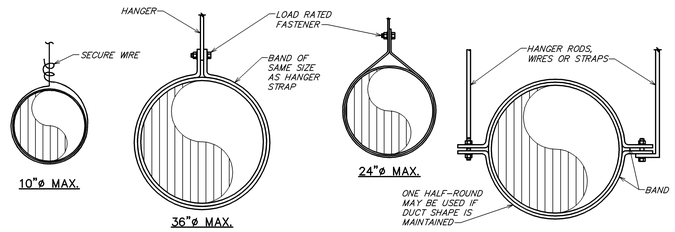
9 CURB FLASHING DETAIL
NOT TO SCALE

10 HOOD FASTENING DETAIL
NOT TO SCALE



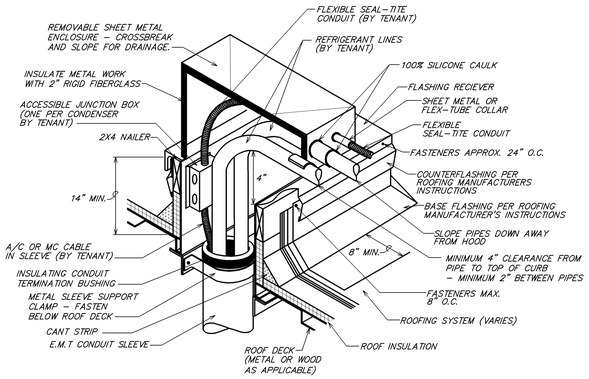
STRAP HANGER

TRAPEZE HANGER

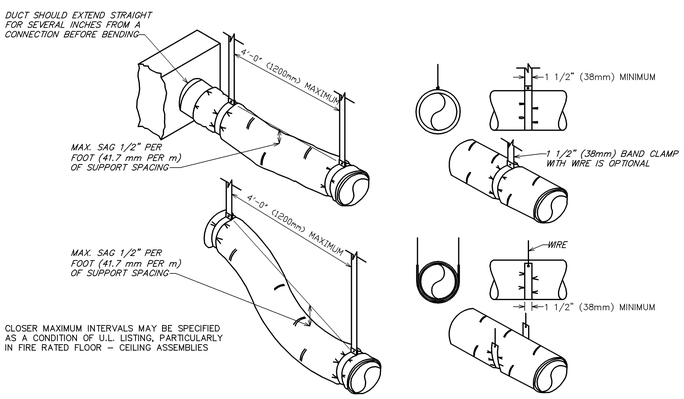


NOTE: HANGERS MUST NOT DEFORM DUCT SHAPE

4 DUCT HANGER DETAIL
NOT TO SCALE

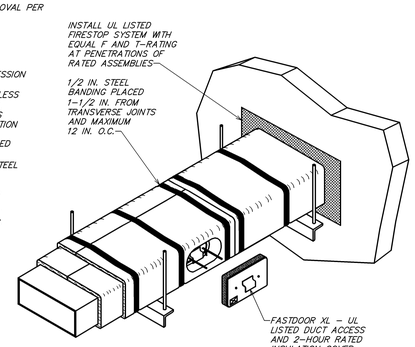


5 CONDENSER REFRIGERANT LINE PIPING AND POWER THROUGH ROOF DECK
NOT TO SCALE



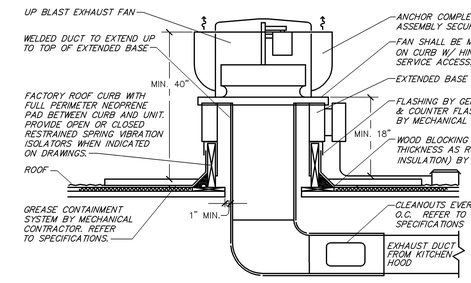
6 FLEXIBLE DUCT SUPPORTS
NOT TO SCALE

NOTES:
1. THERMAL CERAMICS FIREMASTER FASTWRAP XL IS TESTED TO ASTM E2336 AND UL LISTED PER HNKT.G18 TO PROVIDE ZERO CLEARANCE TO COMBUSTIBLES AND TO PROVIDE A 1 OR 2 HOUR EXPOSURE. THROUGH PENETRATIONS FIRESTOP SYSTEMS ARE TESTED IN ACCORDANCE WITH ASTM E 814 (UL 1479). ICC–ES APPROVAL PER REPORT ESR 2213 OR EST 2832.
2. COMPLIANT TO THE FOLLOWING CODES:
   NFPA 96
   INTERNATIONAL MECHANICAL CODES
   UNIFORM MECHANICAL CODE
   CALIFORNIA MECHANICAL CODE
3. INSULATION APPLIED IN TWO LAYERS WITH TIGHT COMPRESSION JOINT ON BOTH LAYERS AT ALL JOINTS.
4. MINIMUM 16 GAUGE CARBON STEEL (OR 18 GAUGE STAINLESS STEEL) RECTANGULAR OR ROUND GREASE EXHAUST DUCT.
5. INSTALL UL LISTED AND LIQUID TIGHT THERMAL CERAMICS FASTDOOR XL ACCESS DOORS AT ALL CHANGES IN DIRECTION AND AT MINIMUM EVERY 20 FT ON HORIZONTAL RUNS.
6. SUPPORT HANGER SYSTEMS DO NOT NEED TO BE WRAPPED PROVIDED THE HANGER RODS ARE MINIMUM OF 3/8" IN. DIAMETER AND SUPPORTS ARE MINIMUM 2 2 X 1/8 IN. STEEL ANGLE OR SMACNA EQUIVALENT SUPPORT SYSTEM.
7. THERMAL CERAMICS DUCT WRAP SHALL BE INSTALLED DIRECTLY ONTO THE DUCT AND APPLIED FROM THE HOOD CONNECTION TO THE CONNECTION OF THE FAN.
8. THERMAL CERAMICS DUCT ENCLOSURE SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND UL LISTINGS.

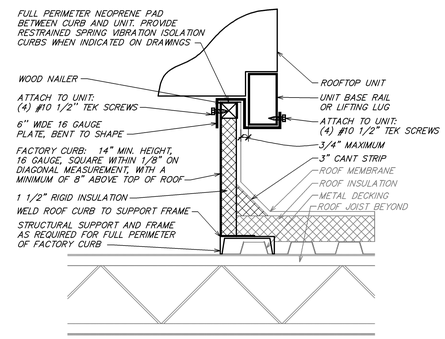


** DETAIL COURTESY OF MORGAN THERMAL CERAMICS.

1 FIREMASTER FASTWRAP XL DETAIL
NOT TO SCALE



2 KITCHEN HOOD EXHAUST FAN
NOT TO SCALE



NOTES:
1. USE A MINIMUM OF (1) PLATE PER SIDE OF UNIT.
2. PLATE MUST BE PAINTED WHERE IT CONTACTS RAIL.
3. USE (8) SCREWS TO SECURE PLATE. NO SMALLER THAN #10x1/2''
4. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF, AND COMPLIANCE WITH ALL LOCAL CODES

3 ROOF TOP UNIT HURRICANE TIE DOWN DETAIL
NOT TO SCALE

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REVISIONS

	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0046442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

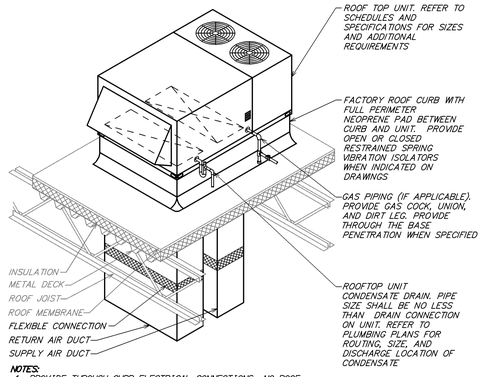
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SHEET NAME: MECHANICAL DETAILS

DATE: 08/01/2026
PROJECT NO.: 41354
DRAWN:
SCALE: AS NOTED

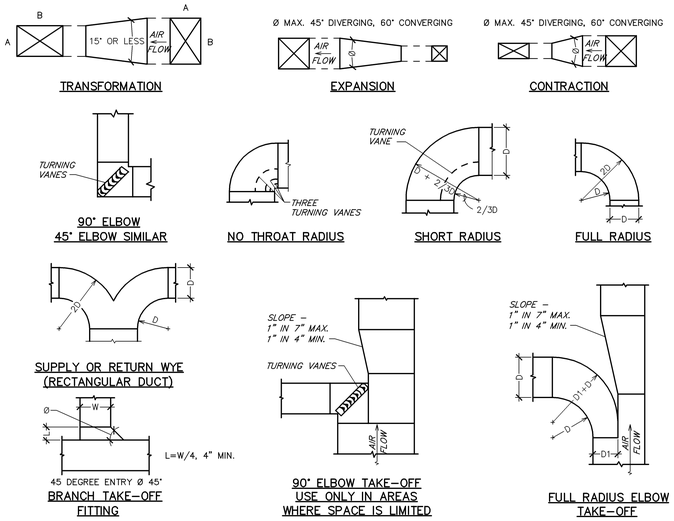
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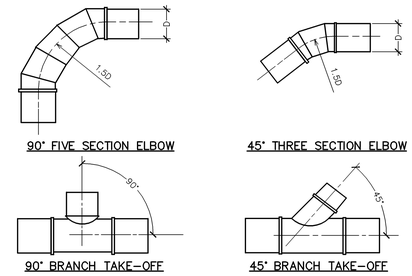
SE_JOB# 26519



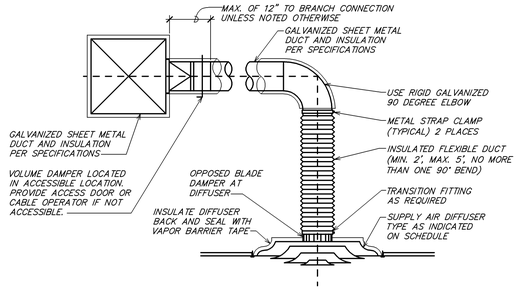
NOTES:
1. PROVIDE THROUGH CURB ELECTRICAL CONNECTIONS. NO ROOF PENETRATIONS OF ELECTRICAL CONDUITS WILL BE ACCEPTABLE.
2. DUCT SMOKE DETECTOR SHALL BE MOUNTED AND INSTALLED PER LOCAL CODES.

9 TYPICAL ROOF TOP UNIT DETAIL
NOT TO SCALE

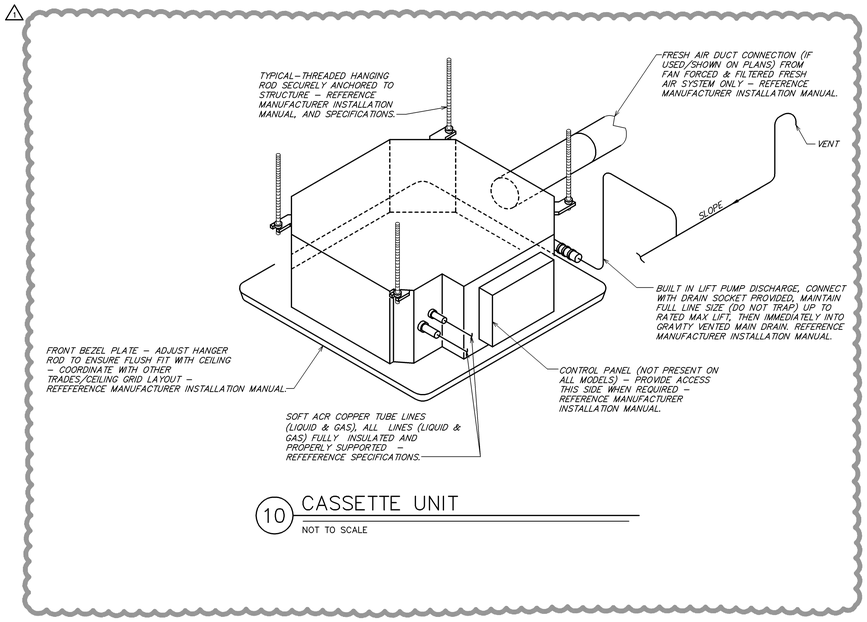




1 TYPICAL ROUND DUCT FITTINGS
NOT TO SCALE

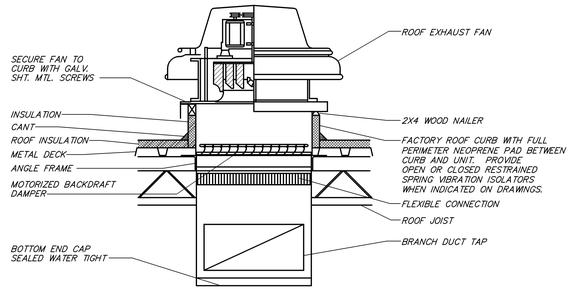


2 TYPICAL DIFFUSER CONNECTION
NOT TO SCALE

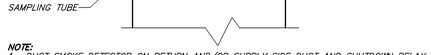


10 CASSETTE UNIT
NOT TO SCALE

5 DUCTWORK DETAILS
NOT TO SCALE

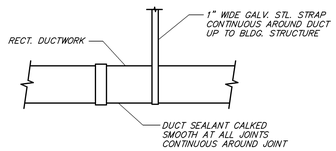


6 ROOF EXHAUST FAN DETAIL
NOT TO SCALE



NOTE:
1. DUCT SMOKE DETECTOR ON RETURN AND/OR SUPPLY SIDE DUCT AND SHUTDOWN RELAY SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. ALL WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.

3 DUCT SMOKE DETECTOR DETAIL
NOT TO SCALE

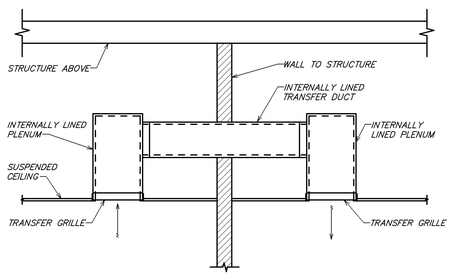


8 EXPOSED RECTANGULAR DUCT SUPPORT DETAIL
NOT TO SCALE

DIA.	WIRE DIA.	ROD	STRAP
10" DN	ONE 12 GA.	1/4"	1" x 22 GA.
11–18"	TWO 12 GA. OR ONE 8 GA.	1/4"	1" x 22 GA.
19–24"	TWO 10 GA.	1/4"	1" x 22 GA.
25–36"	TWO 8 GA.	3/8"	1" x 20 GA.
37–50"	–	TWO 3/8"	TWO 1" x 20 GA.
51–60"	–	TWO 3/8"	TWO 1" x 18 GA.
61–84"	–	TWO 3/8"	TWO 1" x 16 GA.
85–96"	–	TWO 1/2"	TWO 1 1/2" x 16 GA.

NOTES:
1. STRAPS ARE GALVANIZED STEEL; RODS ARE UNCOATED OR GALVANIZED STEEL; WIRE IS BLACK ANNEALED, BRIGHT BASIC OR GALVANIZED STEEL. ALL ARE ALTERNATIVES.
2. TABLE ALLOWS FOR CONVENTIONAL WALL THICKNESS, AND JOINT SYSTEMS PLUS ONE LB/SF OF INSULATION WEIGHT. IF HEAVIER DUCTS ARE TO BE INSTALLED, ADJUST HANGER SIZES TO BE WITHIN THEIR LOAD LIMITS.

7 ROUND DUCT HANGER TABLE
NOT TO SCALE



4 RETURN AIR TRANSFER
NOT TO SCALE

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REVISIONS

△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL – LICENSE – No PE 0046442 – STATE OF FLORIDA – PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME: **MECHANICAL DETAILS**

DATE: 08/01/2026 | PROJECT NO.: 41354
DRAWN: | SCALE: AS NOTED

SHEET NO.: **M502**

SE_JOB# 26519

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SECTION 230548 – VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT
SECTION 230593 – TESTING, ADJUSTING, AND BALANCING FOR HVAC
SECTION 230713 – DUCT INSULATION
SECTION 230713.13 – GREASE DUCT FIREPROOFING
SECTION 230719 – HVAC PIPING INSULATION
SECTION 230800 – COMMISSIONING OF HVAC
SECTION 230993 – SEQUENCE OF OPERATIONS FOR HVAC CONTROLS
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– AIR PURIFICATION DEVICES
SECTION 233423 – HVAC POWER VENTILATORS
SECTION 233700 – AIR OUTLETS AND INLETS
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SECTION 238127 – SMALL SPLIT-SYSTEM HEATING AND COOLING

SECTION 230000 – HVAC GENERAL CONDITIONS

PART 1 GENERAL

1.01 APPLICABILITY
A. This section supplements all sections of the Specifications for Division 23 and shall apply to all phases of work hereinafter specified, shown on the Drawings, or required to provide a complete installation of approved HVAC systems.

1.02 DEFINITIONS
A. "Work" is hereby defined as, "The construction and services required by the Contract Documents whether completed or partially completed and includes all labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project."
B. "Furnish" is hereby defined as, "To supply and deliver, unload, and inspect for damage."
C. "Install" is hereby defined as, "To unpack, assemble, erect, apply, place, finish, cure, protect, clean, connect, and place into operation into the work."
D. "Provide" is hereby defined as, "To furnish and install."
E. "Connect" is hereby defined as, "To bring service to the equipment and make final attachment including necessary ductwork, piping, wiring, etc."
F. "Concealed" is hereby defined as, "Hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction, in trenches or buried."
G. "Exposed" is hereby defined as, "Not installed underground nor concealed as defined by the Specifications."
H. "Drawings" is hereby defined as, "All plans, details, equipment schedules, diagrams, sketches, etc. issued for the construction of the work."

1.03 CODES AND STANDARDS
A. Perform work in accordance with the applicable Building Code, Electrical Code, Fire Code, Mechanical Code, Plumbing Code, Energy Code, and all other applicable codes, amendments, and ordinances. Also perform all work in accordance with the Americans with Disabilities Act (ADA) and the Authority Having Jurisdiction (AHJ) including Fire Marshal(s).
B. Perform work in accordance with Landlord requirements, including any Tenant Criteria Manuals and Lease Exhibits, where applicable.
C. Perform work in accordance with the applicable utility companies serving the project. Make all arrangements with the utility companies for proper coordination of the work.
D. Recognized Standards: Design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these Specifications shall conform to the latest publications or standard rules of Underwriters Laboratories, Inc. (U.L.), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), and National Electrical Code (NEC), National Fire Protection Association (NFPA), American Society of Heating, Refrigerating and Air–Conditioning Engineers (ASHRAE), and the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA).
E. The Contract Documents shall take precedence where the Contract Documents exceed code, Landlord, utility, or recognized standards requirements.

1.04 PERMITS AND FEES
A. Permits, licenses, fees, inspections and arrangements required for the work under this Contract shall be obtained by the Contractor at his expense, unless otherwise indicated.

1.05 CONTRACT DRAWINGS
A. The Contractor is responsible to obtain, fully understand, and coordinate the work with the complete set of Contract Documents. Any required corrections, including all associated costs, arising from issues caused by the Contractor's failure to understand and/or coordinate the work with the complete set of Contract Documents are the Contractor's sole responsibility.
B. Work under these sections is diagrammatic unless indicated otherwise and is intended to convey the scope of work and indicate the general arrangement of ductwork, piping, equipment, and accessories. Follow these drawings in laying out the work and verify spaces for the installation of these materials and equipment. Wherever a question exists as to the exact intended location of ductwork, piping, or equipment, obtain instructions from the Architect before proceeding with the work.
C. Notify the Architect for resolution if a discrepancy is discovered within the Contract Documents. Failure of the Contractor to notify the Architect of discrepancies shall result in the resolution becoming the Contractor's responsibility and subject to the Architect's review and possible rejection. Should the Architect reject a discrepancy resolution of which they were not notified, the Contractor is fully responsible to correct the installation, including all associated costs, until approval of the installation is given by the Architect.

1.06 EXISTING CONDITIONS
A. Verify all existing conditions prior to beginning work.
B. Any existing conditions indicated in the Contract Documents are based on information drawings provided by others and possibly limited field verification. The Contractor shall adjust for actual field conditions at no additional expense to the Owner.
C. The Contractor shall visit the project site, review existing conditions against the Contract Documents, and familiarize himself with the work prior to bidding and start of the work. By signing the Contract, the Contractor acknowledges the site visit has been completed and the existing conditions are accepted.
D. The Contractor shall notify the Architect of major discrepancies in writing so the appropriate modifications to the design can be made without delay to the project. The Contractor assumes full responsibility of adjusting for discrepancies of which the Architect is not informed.

1.07 SUBMITTALS
A. Shop Drawings:
1. Furnish the following submittals to the Architect for review by the Engineer:
a. Provide product data and shop drawings for vibration isolation.
b. Provide balancing firm qualifications and final test report for Testing, Adjusting, and Balancing.
c. Provide product data for duct insulation.
d. Provide product data for grease duct fireproofing (if specified).
e. Provide product data for HVAC piping insulation.
f. Provide product data for refrigerant piping.
g. Provide product data and shop drawings for HVAC ductwork.
h. Provide product data for air duct accessories.
i. Provide product data and shop drawings for HVAC power ventilators.
j. Provide product data and shop drawings for air outlets and inlets.
k. Provide product data and shop drawings for condensing units and heat pumps.
l. Provide product data and shop drawings for air handling and fan coil units.
2. Submittals other than those listed above will not be reviewed and will be returned stating as such.
3. Shop drawings shall be prepared by a manufacturer's representative, and shall contain names of the manufacturer and cut sheets of equipment to be used on the project. Use manufacturer's specification sheets identified by number indicated on drawings or schedules. Indicate catalog number on the cut sheets. As applicable, provide construction data, weight and dimensional data, voltage ratings, performance data, listing data, pump curves, fan curves and sound data as part of the shop drawing submittal.
4. Submittals are reviewed only for general compliance with the Contract Documents. Dimensions, quantities and details are not checked during submittal review. Review of the submittals does not relieve the Contractor of the responsibility for providing all materials, equipment and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the Contract Documents. The responsibility for coordination of substituted materials and equipment lies solely with the contributing Contractor.
5. Electrical Characteristics: Verify that proper power supply is available prior to ordering equipment. Verify proper voltage, phase and current rating of power supply and inform Engineer of any deviations prior to order, connection of equipment or start–up. Responsibility for verification of proper power supply voltage and any product returns or damage resulting from incorrect connections shall rest with this Contractor.
B. Test Reports: Provide Testing, Adjusting, and Balancing (TAB) and Commissioning reports to the Architect for review by the Engineer. All other reports shall be provided to the Owner.

1.08 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years experience.
B. Installer Qualifications: Company specializing in performing the work of this section, with minimum five years experience.
C. Products:
1. Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
D. All equipment and components shall be free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced without any change in the Contract amount.
E. Equipment performance and accessories shall be as scheduled on the Drawings and specified herein. Inclusion in both locations is not a prerequisite to inclusion in the Contract. Equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system, including all required components reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents.
F. Code or utility company requirements shall supersede any conflicting requirements of this section.

1.09 DELIVERY, STORAGE, AND HANDLING
A. Rooftop Equipment: Protect units from physical damage by storing off site until roof mounting curbs are in place, ready for immediate installation of units.
B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.
C. Protect dampers and accessories from damage to operating linkages, blades and finishes.
D. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
E. Protect motors stored on site from weather and moisture by maintaining factory covers and suitable weather–proof covering. For extended outdoor storage, remove motors from equipment and store separately.

1.10 WARRANTY AND GUARANTEE
A. Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
B. Provide one year manufacturer warranty for pumps.
C. Provide three year manufacturers warranty for solid state ignition modules.
D. Provide five year manufacturers warranty for compressors, heat exchangers, condensing units, and electronic air cleaners.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS
A. The manufacturers listed are listed to set minimum standards for quality, design, and functionality. The products of other manufacturers may be submitted, at the Contractor's option, during shop drawing review unless indicated otherwise. The products of other manufacturers shall meet or exceed all requirements of the Contract Documents. The Contractor accepts all responsibility for costs and coordination issues arising out of the substitution of materials or equipment, and the coordination of such substitutions with all other contractors and subcontractors.
B. The Contractor may use any of the following ductwork, piping or insulation materials at his option, provided the selected material meets with the approval of all State, local authorities and any utility company requirements. Verification of compliance of the selected material is the sole responsibility of the installing Contractor.

PART 3 EXECUTION

3.01 COORDINATION OF WORK
A. Examine the Contract Documents as a whole for the work of other trades. Coordinate all work accordingly.
B. Promptly report to the Architect any delay or difficulties encountered in the installation of the work, which might prevent prompt and proper installation, or make it unsuitable to connect with or receive the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.
C. Plan, lay out, and coordinate the work with all trades well enough in advance so that it proceeds with a minimum of interference to work that has not been completed and work that is in progress. Inform all trades of openings required for the work and provide all special frames, sleeves, and anchor bolts required. The HVAC system layout may be altered to suit the conditions with engineer approval, prior to the installation of any work and without additional cost to the Owner. Conflicts arising from lack of coordination shall be this Contractor's responsibility.
D. Perform all work in conformity with the Contract Documents and afford other trades reasonable opportunity for the execution of their work. Properly connect and coordinate this work with the work of other trades at such time and in such a manner as not to delay or interfere with their work.
E. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.
F. All temperature control wiring, thermostat wiring, damper interlock wiring, control panel interlock wiring and miscellaneous low voltage work associated with the equipment furnished or installed under this contract shall be furnished and installed by the mechanical contractor or his sub–contractor. All wiring installed under this contract shall be in full compliance with the National Electrical Code, all State and local codes and requirements of the Electrical Specifications for this project.

3.02 EXAMINATION
A. Verify field measurements are as indicated on the Drawings.
B. Verify all equipment locations prior to rough–in. Maintain adequate equipment service clearance per manufacturer and code.
C. Verify routing of all ductwork and piping in field prior to fabrication or installation. Verify adequate clearance with structure, light fixtures, and ceiling heights.
D. Verify that proper fuel and power supply is available for connection.

3.03 INTERFACE WITH OTHER PRODUCTS
A. Install all ductwork, pipe, equipment, and accessories to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

3.04 FIELD QUALITY CONTROL
A. Provide tests as necessary to establish the adequacy, quality, safety, completed status, and suitable operation of each system. Tests shall be conducted under the supervision of the Architect.

3.05 CLEANING AND REPAIR
A. Clean fire suppression parts to remove harmful materials.
B. Clean exposed surfaces of all ductwork, piping, equipment, and accessories of all dirt, debris, splatter, and other deleterious materials. Follow the manufacturer's recommendations for cleaning as applicable.
C. Repair or replace damaged ductwork, pipe, equipment, and accessories, as directed by and to the satisfaction of the Architect, where marring or disfigurement has occurred. All pipe, equipment, and accessories shall be new.

3.06 PROJECT CLOSEOUT
A. Project Record Documents: At project closeout, provide one printed copy and one electronic copy of the project record documents to the Owner. Record documents will not be reviewed by the Engineer.
B. Record Drawings: Information contained on project record drawings shall include, as a minimum:
1. Actual locations of all equipment, ductwork, air inlets/outlets, accessories, etc.
2. Actual routing of ductwork with sizes and elevations.
3. Actual locations of control devices including valves and volume dampers.
C. Operation and Maintenance Data: Provide descriptive literature, maintenance and operation data for all hvac equipment, control systems, accessories, and materials used. Include maintenance procedures, intervals, and parts list of each item installed under this contract. Include all manufacturer's guarantees and warranties.
D. Maintenance Materials: At project closeout, furnish to the Owner the following:
1. One set of replacement filters for all hvac equipment.
2. The maintenance contract for the hvac system, if applicable.
E. Test Reports: Submit to the Owner all testing reports.

END OF SECTION

SECTION 230548 – VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Vibration Isolators.
B. Equipment:
1. Fans, axial and centrifugal
2. Condensing units and air source heat pumps
3. Furnaces and fan coil units
4. Packaged roof top equipment

1.02 SUBMITTALS
A. Product Data: Provide schedule of vibration isolator type with location and load on each.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Isolation Technology, Inc.; Kinetics Noise Control, Inc.; Mason Industries.

2.02 VIBRATION ISOLATORS
A. Spring Hanger:
1. Springs: Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection. Color code springs for load carrying capacity.
2. Housings: Incorporate neoprene isolation pad meeting requirements for neoprene pad isolators or rubber hanger with threaded insert.
3. Misalignment: Capable of 20 degree hanger rod misalignment.
4. For Exterior and Humid Areas: Hot dipped galvanized housings and neoprene coated springs.
B. Neoprene Pad Isolators:
1. Rubber or neoprene waffle pads.
a. Hardness: 30 durometer.
b. Thickness: Minimum 1/2 inch.
c. Maximum Loading: 50 psi.
d. Rib Height: Maximum 0.7 times width.
2. Configuration: Single layer.
C. Rubber Mount or Hanger: Molded rubber designed for 0.4 inch deflection with threaded insert.
D. Glass Fiber Pads: Neoprene jacketed pre–compressed molded glass fiber.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Provide flexible connections on all piping and ductwork connections to equipment. Refer to other sections of this Specification for the acceptable types of flexible connectors to be used.
C. Selection of type, thickness and deflection of vibration isolation shall be by the vibration control manufacturer based on the specific equipment type and size, as scheduled on the Drawings and indicated below.

3.02 SCHEDULES
A. Equipment Isolation Schedule: (Minimum deflection as sized by the isolation equipment manufacturer.)
1. Fans, axial and centrifugal.
a. Small fans up to 22" diameter wheel:
1. Rubber Mount or Hanger
2. Condensing units and air source heat pumps.
a. Slab on grade:
1. Base: Concrete Housekeeping Pad.
2. Isolation: Neoprene Pad, Rubber Mount or Glass Fiber Pad.
b. Above grade floor or roof structures:
1. Base: Plastic or Fiber Cement Pad.
2. Isolation: Neoprene Pad, Rubber Mount or Glass Fiber Pad.
3. Furnaces and fan coil units.
a. Floor mounted (all locations):
1. Base: Concrete Housekeeping Pad.
2. Isolation: Neoprene Pad, Rubber Mount or Glass Fiber Pad.
b. Suspended:
1. Isolation: Rubber or Spring Hanger.
4. Packaged roof top equipment:
a. Above grade roof structures:
1. Base: Roof curb.
2. Isolation: Full perimeter Neoprene Pad between curb and units. Provide restrained spring vibration isolation curbs when indicated on the Drawings.

END OF SECTION

SECTION 230593 – TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Testing, adjustment, and balancing of air systems:
1. Air handling units (Packaged heating and/or cooling equipment; Fans. (Exhaust and supply); Coils; Terminal equipment; Air inlets and outlets. (Diffusers, grilles, louvers, etc.)
B. Measurement of final operating condition of HVAC systems.
C. Independent agency requirements.

1.02 SUBMITTALS
A. Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract. Provide TAB Agency qualifications.
B. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
1. Submit to the Construction Manager within two weeks after completion of testing, adjusting, and balancing.
2. Provide reports in bound manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat and equipment locations.
3. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
4. Form of Test Reports: Where the TAB standard being followed recommends a form, use that; otherwise, follow ASHRAE Std 111.
5. Include the following on the title page of each report:
a. Name, address and telephone number of Testing, Adjusting, and Balancing Agency.
b. Project: Name; location; Engineer; Contractor, Report date.

1.03 WARRANTY
A. The Balancing Contractor shall be prepared to return to the site at no additional cost to re–adjust air quantities as required to provide uniform temperatures, eliminate drafts and objectionable noises during the first year of occupancy, including one full heating and one full cooling season, after the acceptance of the final balancing report.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS
A. Perform total system balance in accordance with one of the following:
1. AABC MN–1, AABC National Standards for Total System Balance.
2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air–Conditioning, and Refrigeration Systems.
3. NEBB Procedural Standards for Testing Adjusting Balancing of Environmental Systems.
4. SMACNA HVAC Systems Testing, Adjusting, and Balancing.
B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the Project.
C. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.
D. TAB Agency Qualifications:
1. Company specializing in the testing, adjusting, and balancing of systems specified in this Section with a minimum of five years experience.
2. Certified by one of the following:
a. AABC, Associated Air Balance Council; upon completion submit AABC National Performance Guaranty.
b. NEBB, National Environmental Balancing Bureau.
c. TABB, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute.
3. The TAB Agency must be a completely independent, third party balancing contractor with no financial, common owners or other ties to the installing contractors.
E. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.

3.02 ADJUSTMENT TOLERANCES
A. Air Handling Systems; Air Outlets and Inlets; Hydronic Systems: Adjust to within plus or minus 15 percent of design.

3.03 RECORDING AND ADJUSTING
A. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
B. Mark on the Drawings the locations where traverse and other critical measurements were taken and cross reference the location in the final report.

3.04 AIR SYSTEM PROCEDURE
A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities.
B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
C. Measure air quantities at air inlets and outlets.
D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
E. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters. Do not use diffuser, grille or register integral dampers for balancing adjustments unless the plans do not indicate duct mounted devices.
F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required at no additional expense to the Owner. Vary branch air quantities by damper regulation.
G. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.
H. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions in all operating modes as indicated in the sequence of control.
I. Measure temperature conditions across outside air, return air, and exhaust dampers and to check leakage.
J. Where modulating dampers are provided, take measurements and balance at extreme conditions and at all intermediate operating conditions specified in the sequence of control. Balance variable volume systems at maximum air flow rate, full cooling, and at minimum air flow rate, full heating.

3.05 SCOPE
A. Equipment Requiring Testing, Adjusting, and Balancing (if present on the project):
1. HVAC Units: Packaged Rooftop Units; All Air Handling Equipment; All Packaged heating and/or Cooling Equipment; All Coil; All Heat Exchangers; Terminal Heat Transfer Units; Air Terminal Units; Air Inlets and Outlets

3.06 MINIMUM DATA TO BE REPORTED
A. Report (as applicable to the project):
1. Summary Comments:
a. Design versus final performance
b. Notable characteristics of system
c. Summary of outdoor and exhaust flows to indicate amount of building pressurization
d. Nomenclature used throughout report and test conditions.
B. Electric Motors and drives:
1. Manufacturer; Model/Frame; HP/BHP; Phase, voltage, amperage; nameplate, actual, no load; RPM; Service factor; Sheave Make/Size/Bore.
2. V–Belt Drives: Identification/location; Required driven RPM; Driven sheave, diameter and RPM; Belt, size and quantity;
C. Cooling and Heating Coils:
1. Identification/number; Manufacturer
2. Air flow, design and actual
3. Air pressure drop, design and actual
4. Entering and leaving air DB and WB temperature, design and actual
5. Water flow, design and actual
6. Water pressure drop, design and actual (if applicable)
7. Entering and leaving water temperature, design and actual (if applicable)
D. Air Moving Equipment:
1. Manufacturer; Model number; Serial number; Arrangement/Class/Discharge
2. Air flow, specified and actual
3. Inlet; Discharge; Total static pressure (total external), specified and actual
E. Air Distribution Tests:
1. Air terminal number
2. Room number/location
3. Terminal type
4. Terminal size
5. Area factor
6. Design velocity
7. Design air flow
8. Test (final) velocity
9. Test (final) air flow
10. Percent of design air flow

END OF SECTION

SECTION 230713 – DUCT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Duct insulation.
B. Duct liner.
C. Insulation jackets.
D. Supply, return or exhaust ducts in ceiling spaces.
E. Supply, return or exhaust ducts in interior unconditioned areas.
F. Supply, return or exhaust ducts in exposed locations.

1.02 FIELD CONDITIONS
A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION
A. Surface Burning Characteristics: Flame spread/Smoke developed Index of 25/50, maximum, when tested in accordance with ASTM E 84, NFPA 255, or UL 723.
B. Manufacturer: Knauf Fiber Glass; Johns Manville Corporation; Owens Corning Corp.; CertainTeed Corporation.

2.02 GLASS FIBER, FLEXIBLE
A. Insulation: ASTM C 553; flexible, noncombustible blanket.
1. 'K' value: 0.31 at 75 degrees F, when tested in accordance with ASTM C 518.
2. Maximum Service Temperature: 450 degrees F.
3. Maximum Water Vapor Sorption: 5.0 percent by weight.
B. Vapor Barrier Jacket:
1. Kraft paper with glass fiber yarn and bonded to aluminized film.
2. Moisture Vapor Permeability 0.029 ng/Pa s m (0.02 perm inch), when tested in accordance with ASTM E 96/E 96M.
3. Secure with pressure sensitive tape.
C. Vapor Barrier Tape:
1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.
D. Outdoor Vapor Barrier Mastic:
1. Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
E. Tie Wire: Annealed steel, 16 gage.

2.03 DUCT LINER
A. Insulation: Incombustible glass fiber complying with ASTM C 1071; flexible blanket, rigid board, and preformed round liner board; impregnated surface and edges coated with acrylic polymer shown to be fungus and bacteria resistant by testing to ASTM G 21.
1. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F.
2. Service Temperature: Up to 250 degrees F.
3. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.
4. Minimum Noise Reduction Coefficients:
a. 1/2 Inch Thickness: 0.30.
b. 1 Inch Thickness: 0.45.
c. 1–1/2 inches Thickness: 0.60.
d. 2 Inch Thickness: 0.70
B. Adhesive: Waterproof, fire–retardant type.
C. Liner Fasteners: Galvanized steel, self–adhesive pad or impact applied with integral, or press–on head.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions and NAIMA National Insulation Standards.
B. Insulated ducts conveying air below ambient temperature:
1. Provide insulation with vapor barrier jackets.
2. Finish with tape and vapor barrier jacket.
3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
C. Insulated ducts conveying air above ambient temperature:
1. Provide with or without standard vapor barrier jacket.
2. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.
D. External Duct Insulation Application:
1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
2. Secure insulation without vapor barrier with staples, tape, or wires.
3. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.
4. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
5. Stop and paint insulation around access doors and damper operators to allow operation without disturbing wrapping.
E. Duct and Plenum Liner Application:
1. Adhere insulation with adhesive for 90 percent coverage.
2. Secure insulation with mechanical liner fasteners. Refer to SMACNA HVAC Duct Construction Standards – Metal and Flexible for spacing.
3. Seal and smooth joints. Seal and coat transverse joints.
4. Seal liner surface penetrations with adhesive.
5. Duct dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for insulation thickness.

3.02 SCHEDULES
A. The Contractor may use any of the following insulating materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected insulating material and thickness with all State and local codes and utility company requirements is the sole responsibility of the installing Contractor.
B. Supply air ducts in ceiling spaces:
1. Flexible Glass Fiber Duct Insulation: 1–1/2 inches thick.
2. Flexible Glass Fiber Duct Liner Insulation: 1 Inches thick.
C. Supply, return or exhaust air ducts in crawl spaces, attics or other unconditioned areas:
1. Flexible Glass Fiber Duct Insulation: 3 inches thick.
D. Supply air ducts exposed in finished areas:
1. Flexible Glass Fiber Duct Liner Insulation: 1 inches thick.
E. Return or exhaust air ducts exposed in finished areas: None.

END OF SECTION

SECTION 230713.13 – GREASE DUCT FIREPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Fire resistant duct wrap for kitchen hood exhaust ventilation ducts (grease ducts).
B. Firestopping at duct penetrations through fire rated walls and floors.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Acceptable Manufacturer: 3M Fire Protection Products, Inc.; Unifrax FyreWrap; Morgan Thermal Ceramics.

2.02 MATERIALS
A. Grease Duct Fireproofing: Material applied directly to metal ducts and achieving two–hour fire rated separation when tested in accordance with UL 2221 or ASTM E2336 by independent testing agency.
1. Surface Burning Characteristics: Flame spread Index of 0 and smoke developed Index of 0, when tested in accordance with ASTM E 84, both blanket and foil.
2. Combustibility: Non–combustible, when tested in accordance with ASTM E 136.
3. Flexibility: Capable of being formed around corners and shapes by hand.
4. Surface: Foil or other damage resistant surface; fiber not exposed after installation.
5. Accommodation For Duct Access Doors and Panels: Capable of being installed to achieve fire rating without impeding access.
6. Acceptable Product: 3M Fire Barrier Duct Wrap; fire resistant inorganic blanket encapsulated with scrim–reinforced foil facing.
B. Fasteners: Non–combustible; use one or both of the following to attach fireproofing to ducts:
1. Banding: Steel or stainless steel, 1/2 inch wide, minimum, and 0.015 inch thick, minimum; with steel banding clips.
2. Insulation Pins: Copper–coated steel impalement pins, minimum 12 gage, for welded attachment, with galvanized steel self–locking washers, 1–1/2 inch square or diameter; or equivalent sized cup–head pins.
C. Access Panel Hardware: Galvanized threaded rods, sleeves, washers, and wing nuts as specified in manufacturer's instructions.
D. Tape: Aluminum foil tape for sealing exposed fiber edges and repairing tears in facing.
E. Firestopping: Material tested in conjunction with fireproofing, in accordance with ASTM E 814, to achieve fire rated penetration seal at duct penetrations through fire rated assemblies.
1. Fire Rating: Same or greater than rating of penetrated assembly.
2. Acceptable Products: 3M Fire Barrier 1000 N/S, 1003 S/L, and 2000+ Silicone Sealants, as required by tested assembly.

PART 3 EXECUTION

3.01 EXAMINATION
A. Do not begin installation until substrates have been properly prepared.
B. If substrate preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding.

3.02 PREPARATION
A. Clean surfaces thoroughly prior to installation.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION
A. Install in strict accordance with manufacturer's instructions and as indicated on the Drawings.
B. Perform all required regulatory duct leakage and weld tests in the presence of the code official, including but not limited to light tests and smoke tests, to demonstrate the integrity of the duct construction prior to the installation of any insulation that prevents visual inspection of the ductwork on all sides.
C. Install fireproofing on entire surface of ducts indicated, except where Contract Documents explicitly indicate 3–sided or 2–sided installation.
D. At penetrations of ducts through fire rated assemblies (walls, floors, roofs), extend fireproofing through the opening and seal annular space between fireproofing and edge of opening with firestopping.
E. Fasten fireproofing to ducts using either banding or insulation pins welded directly to surface of duct; do not use adhesives.
F. Install fireproofing on supports and hangers unless hanger rods are at least 3/8 inch in diameter, spaced not more than 60 inches on center along length of duct, and horizontal supports are at least 2 by 2 by 1/4 inch steel angle or equivalent SMACNA support system.
G. Access Panels: Do not block access; install fireproofing so that panel can be removed and reinstalled without damaging fireproofing.
H. Seal all cut edges and ends and repair tears in facing using aluminum foil tape.

END OF SECTION

SECTION 230719 – HVAC PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Cooling condensate drain piping insulation.
B. Refrigerant piping insulation.

PART 2 PRODUCTS

2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION
A. Surface Burning Characteristics: Flame spread/Smoke developed Index of 25/50, maximum, when tested in accordance with ASTM E 84, NFPA 255, or UL 723.
B. The Contractor may use any of the following insulating/jacketing materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected insulating/jacketing material is the sole responsibility of the installing Contractor.

2.02 GLASS FIBER
A. Manufacturers: Knauf Insulation; Johns Manville Corporation; Owens Corning Corp.; CertainTeed Corporation.
B. Insulation: ASTM C 547 and ASTM C 795; rigid molded, noncombustible.
1. 'K' value: ASTM C 177, 0.24 at 75 degrees F.
2. Maximum service temperature: 850 degrees F.
3. Maximum moisture absorption: 0.2 percent by volume.
C. Insulation: ASTM C 547 and ASTM C 795; semi–rigid, noncombustible, end grain adhered to jacket.
1. 'K' value: ASTM C 177, 0.24 at 75 degrees F.
2. Maximum service temperature: 650 degrees F.
3. Maximum moisture absorption: 0.2 percent by volume.
D. Vapor Barrier Jacket: White kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E 96/E 96M of 0.02 perm–inches.
E. Vapor Barrier Lap Adhesive: Compatible with insulation.
F. Insulating Cement/Mastic: ASTM C 195; hydraulic setting on mineral wool.
G. Fibrous Glass Fabric:
1. Cloth: Untreated; 9 oz/sq yd weight.
2. Blanket: 1.0 lb/cu ft density.
3. Weave: 5x5.
H. Indoor Vapor Barrier Finish:
1. Cloth: Untreated; 9 oz/sq yd weight.
2. Vinyl emulsion type acrylic, compatible with insulation, black color.
I. Insulating Cement: ASTM C 449/C 449M.

2.03 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
A. Manufacturer: Armacell International.
B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C 534 Grade 3, use molded tubular material wherever possible.
1. Minimum Service Temperature: –40 degrees F.
2. Maximum Service Temperature: 220 degrees F.
3. Connection: Waterproof vapor barrier adhesive.
C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

2.04 JACKETS
A. PVC Plastic.
1. Manufacturers: Knauf Fiber Glass; Johns Manville Corporation; Owens Corning Corp.; CertainTeed Corporation.
2. Jacket: One piece molded type fitting covers and sheet material, off–white color.
a. Minimum Service Temperature: 0 degrees F.
b. Maximum Service Temperature: 150 degrees F.
c. Moisture Vapor Permeability: 0.002 perm inch, maximum, when tested in accordance with ASTM E 96/E 96M.
d. Thickness: 10 mil.
e. Connections: Brush on welding adhesive.
3. Covering Adhesive Mastic: Compatible with insulation.
B. ABS Plastic:
1. Jacket: One piece molded type fitting covers and sheet material, off–white color.
a. Minimum Service Temperature: –40 degrees F.
b. Maximum Service Temperature: 180 degrees F.
c. Moisture Vapor Permeability: 0.012 perm inch, when tested in accordance with ASTM E 96/E 96M.
d. Thickness: 30 mil.
e. Connections: Brush on welding adhesive.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Install in accordance with NAIMA National Insulation Standards.
C. Inserts and Shields:
1. Application: Piping 2 inches diameter or larger.
2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
3. Insert location: Between support shield and piping and under the finish jacket.
4. Insert configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
5. Insert material: Hydraus calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.
D. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions.
E. Exposed Piping: Locate insulation and cover seams in least visible locations.

3.02 SCHEDULE
A. Cooling Systems:
1. Cold Condensate Drains:
a. Glass Fiber Insulation:
1. Pipe Size Range: All Sizes.
a. Thickness: 1/2 inch.
b. Flexible Elastomeric Cellular Foam Insulation:
1. Pipe Size Range: All Sizes.
a. Thickness: 1/2 inch.
B. Refrigerant Suction:
a. Glass Fiber Insulation:
1. Pipe Size Range: All Sizes.
a. Thickness: 3/4 inch.
b. Flexible Elastomeric Cellular Foam Insulation:
1. Pipe Size Range: All Sizes.
a. Thickness: 3/4 inch.
C. Refrigerant Hot Gas:

C. The Commissioning Authority (CA) directs and coordinates all commissioning activities and provides Pre-functional Checklists and Functional Test Procedures for Contractor's use.
D. The entire HVAC system is to be commissioned, including commissioning activities for the following specific items:
1. Control system.
2. Major and minor equipment items.
3. Piping systems and equipment.
4. Ductwork and accessories.
5. Terminal units.
6. Sound control devices.
7. Vibration control devices.
8. Variable frequency drives.
9. Special Ventilation: Hoods, pressurization, exhaust, etc.
10. Other equipment and systems explicitly identified elsewhere in Contract Documents as requiring commissioning.
11. Indoor Air Quality Procedures: The Commissioning Authority will coordinate; Contractor will execute; see Section 01 5719.
E. The Pre-functional Checklist and Functional Test requirements specified in this section are in addition to, not a substitute for, inspection or testing specified in other sections.

1.02 RELATED REQUIREMENTS
A. Section 23 0993 – Sequence of Operations for HVAC Controls.
B. Section 23 0593 – Testing, Adjusting, and Balancing for HVAC.

1.03 REFERENCE STANDARDS
A. ASHRAE Guideline 1.1 – The HVAC Commissioning Process; 2012.

1.04 SUBMITTALS
A. Updated Submittals: Keep the Commissioning Authority informed of all changes to control system documentation made during programming and setup; revise and resubmit when substantial changes are made.
B. DRAFT Pre-functional Checklists and Functional Test Procedures for Control System: Detailed written plan indicating the procedures to be followed to test, checkout and adjust the control system prior to full system Functional Testing; include at least the following for each type of equipment controlled:
1. System name.
2. List of devices.
3. Step-by-step procedures for testing each controller after installation, including:
a. Process of verifying proper hardware and wiring installation.
b. Process of downloading programs to local controllers and verifying that they are addressed correctly.
c. Process of performing operational checks of each controlled component.
d. Plan and process for calibrating valve and damper actuators and all sensors.
e. Description of the expected field adjustments for transmitters, controllers and control actuators should control responses fall outside of expected values.
4. Copy of proposed log and field checkout sheets to be used to document the process; include space for initial and final read values during calibration of each point and space to specifically indicate when a sensor or controller has "passed" and is operating within the contract parameters.
5. Description of the instrumentation required for testing.
6. Indicate what tests on what systems should be completed prior to TAB using the control system for TAB work. Coordinate with the Commissioning Authority and TAB contractor for this determination.
C. Startup Reports, Pre-functional Checklists, and Trend Logs: Submit for approval of Commissioning Authority.
D. HVAC Control System O&M Manual Requirements. In addition to documentation specified elsewhere, compile and organize at minimum the following data on the control system:
1. Specific step-by-step instructions on how to perform and apply all functions, features, modes, etc. mentioned in the controls training sections of this specification and other features of this system. Provide an index and clear table of contents. Include the detailed technical manual for programming and customizing control loops and algorithms.
2. Full as-built set of control drawings.
3. Full as-built sequence of operations for each piece of equipment.
4. Full points list; in addition to the information on the original points list submittal, include a listing of all rooms with the following information for each room:
a. Floor.
b. Room number.
c. Room name.
d. Air handler unit ID.
e. Reference drawing number.
f. Air terminal unit tag ID.
g. Heating and/or cooling valve tag ID.
h. Minimum air flow rate.
i. Maximum air flow rate.
5. Full print out of all schedules and set points after testing and acceptance of the system.
6. Full as-built print out of software program.
7. Electronic copy on disk of the entire program for this facility.
8. Marking of all system sensors and thermostats on the as-built floor plan and HVAC drawings with their control system designations.
9. Maintenance instructions, including sensor calibration requirements and methods by sensor type, etc.
10. Control equipment component submittals, parts lists, etc.
11. Warranty requirements.
12. Copies of all checkout tests and calibrations performed by the Contractor (not commissioning tests).
13. Organize and subdivide the manual with permanently labeled tabs for each of the following data in the given order:
a. Sequences of operation.
b. Control drawings.
c. Points lists.
d. Controller and/or module data.
e. Thermostats and timers.
f. Sensors and DP switches.
g. Valves and valve actuators.
h. Dampers and damper actuators.
i. Program setups (software program printouts).
E. Project Record Documents:
1. Submit updated version of control system documentation, for inclusion with operation and maintenance data.
2. Show actual locations of all static and differential pressure sensors (air, water and building pressure) and dif-flow stations on project record drawings.
F. Draft Training Plan:
1. Follow the recommendations of ASHRAE Guideline 1.1.
2. Control system manufacturer's recommended training.
3. Demonstration and instruction on function and overrides of any local packaged controls not controlled by the HVAC control system.
G. Training Manuals:
1. Provide three extra copies of the controls training manuals in a separate manual from the O&M manuals.
H. Submittals are reviewed only for general compliance with the Contract Documents. Dimensions, quantities and details are not checked during submittal review. Review of the submittals does not relieve the Contractor of the responsibility for providing all materials, equipment and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the Contract Documents. The responsibility for coordination of substituted materials and equipment lies solely with the substituting Contractor.

PART 2 PRODUCTS

2.01 TEST EQUIPMENT
A. Provide all standard testing equipment required to perform startup and initial checkout and required functional performance testing; unless otherwise noted such testing equipment will NOT become the property of Owner.
B. Equipment-Specific Tools: Where special testing equipment, tools and instruments are specific to a piece of equipment, are only available from the vendor, and are required in order to accomplish startup or Functional Testing, provide such equipment, tools, and instruments as part of the work at no extra cost to Owner; such equipment, tools, and instruments are to become the property of Owner.

PART 3 EXECUTION

3.01 PREPARATION
A. Cooperate with the Commissioning Authority in development of the Pre-functional Checklists and Functional Test Procedures.
B. Furnish additional information requested by the Commissioning Authority.
C. Prepare a preliminary schedule for HVAC pipe and duct system testing, flushing and cleaning, equipment start-up and testing, adjusting, and balancing; start and completion for use by the Commissioning Authority; update the schedule as appropriate.
D. Notify the Commissioning Authority when pipe and duct system testing, flushing, cleaning, startup of each piece of equipment and testing, adjusting, and balancing will occur; when commissioning activities not yet performed or not yet scheduled will delay construction notify ahead of time and be proactive in seeing that the Commissioning Authority has the scheduling flexibility needed to efficiently execute the commissioning process.
E. Put all HVAC equipment and systems into operation and continue operation during each working day of testing, adjusting, and balancing and commissioning, as required.
1. Include cost of sheaves and belts that may be required for testing, adjusting, and balancing.
F. Provide test holes in ducts and plenums where directed to allow air measurements and air balancing; close with an approved plug.
G. Provide temperature and pressure taps in accordance with the Contract Documents.

3.02 INSPECTING AND TESTING – GENERAL
A. Submit startup plans, startup reports, and Pre-functional Checklists for each item of equipment or other assembly to be commissioned.
B. Perform the Functional Tests directed by the Commissioning Authority for each item of equipment or other assembly to be commissioned.
C. Provide two-way radios for use during the testing.
D. Valve/Damper Stroke Setup and Check:
1. For all valve/damper actuator positions checked, verify the actual position against the control system readout.
2. Set pump/fan to normal operating mode.
3. Command valve/damper closed; visually verify that valve/damper is closed and adjust output zero signal as required.
4. Command valve/damper open; verify position is full open and adjust output signal as required.
5. Command valve/damper to a few intermediate positions.
6. Verify proper operational of Normally Open or Normally closed positions of all valves/dampers by means of normal operating mode tests plus removal of power to confirm proper closure or opening upon failure of power or control signal.
7. Perform valve/damper leakage testing on all dampers by applying normal operating pressure with the valve/damper in the closed position and measure either the delta T across coils or airflow through dampers to confirm compliance with specification requirements for dampers and zero leakage for valves.
8. If actual valve/damper position does not reasonably correspond, replace actuator.

3.03 TAB COORDINATION
A. TAB: Testing, adjusting, and balancing of HVAC.
B. Coordinate commissioning schedule with TAB schedule.
C. Review the TAB plan to determine the capabilities of the control system toward completing TAB.
D. Provide all necessary unique instruments and instruct the TAB technicians in their use; such as handheld control system interface for setting terminal unit boxes, etc.
E. Have all required Pre-functional Checklists, calibrations, startup and component Functional Tests of the system completed and approved by the Commissioning Authority prior to starting TAB.
F. Provide a qualified control system technician to operate the controls to assist the TAB technicians or provide sufficient training for the TAB technicians to operate the system without assistance.

3.04 CONTROL SYSTEM FUNCTIONAL TESTING
A. Pre-functional Checklists for control system components will require a signed and dated certification that all system programming is complete as required to accomplish the requirements of the Contract Documents and the detailed Sequences of Operation documentation submittal.
B. Do not start Functional Testing until all controlled components have themselves been successfully Functionally Tested in accordance with the Contract Documents.
C. Using a skilled technician who is familiar with this building, execute the Functional Testing of the control system as required by the Commissioning Authority.
D. Functional Testing of the control system constitutes demonstration and trend logging of control points monitored by the control system.
1. The scope of trend logging is partially specified; trend log up to 50 percent more points than specified at no extra cost to Owner.
2. Perform all trend logging specified in Pre-functional Checklists and Functional Test procedures.
E. Functionally Test integral or stand-alone controls in conjunction with the Functional Tests of the equipment they are attached to, including any interlocks with other equipment or systems; further testing during control system Functional Test is not required unless specifically indicated below.
F. Demonstrate the following to the Commissioning Authority during testing of controlled equipment; coordinate with commissioning of equipment.
1. Setpoint changing features and functions.
2. Sensor calibrations.
G. Demonstrate to the Commissioning Authority:
1. That all specified functions and features are set up, debugged and fully operable.
2. That scheduling features are fully functional and setup, including holidays.
3. That all graphic screens and value readouts are completed.
4. Correct date and time setting in central computer.
5. That field panels read the same time as the central computer; sample 10 percent of field panels; if any of those fail, sample another 10 percent; if any of those fail test all remaining units at no extra cost to Owner.
6. Functionality of field panels using local operator keypads and local ports (plug-ins) using portable computer/keypad; demonstrate 100 percent of panels and 10 percent of ports; if any ports fail, sample another 10 percent; if any of those fail, test all remaining units at no extra cost to Owner.
7. Power failure and battery backup and power-up restart functions.
8. Global commands features.
9. Security and access codes.
10. Occupant over-rides (manual, telephone, key, keypad, etc.).
11. O&M schedules and alarms.
12. Occupancy sensors and controls.
13. "After hours" use tracking and billing.
14. Communications to remote sites.
15. Fire alarm interlocks and response.
16. Fire protection and suppression systems interfaces.
17. Security system interlocks.
18. That points that are monitored only, having no control function, are reporting properly to the control system.
19. All control strategies and sequences not tested during controlled equipment testing.
20. Trend logging and graphing features that are specified.
21. Other integrated tests specified in the Contract Documents
22. That control system features that are included but not specified to be setup are actually installed.
H. Perform and submit trend logging on the following using the control system, for minimum period of 5 days including one weekend, if the control points are monitored by the control system:
1. Duty cycling, if specified.
2. Demand limiting, including over-ride of limiting.
3. Sequential staging ON of equipment; optionally demonstrate manually.
4. Optimum start-stop functions.
5. Miscellaneous equipment current or status for duty cycling and demand limiting.
6. Equipment or building kW or current for demand limiting.
7. Equipment optimum start/stop functions.
I. If the control system, its central components, or related equipment do not respond to changing conditions and parameters appropriately as expected, as specified and according to acceptable design practices, under any of the conditions, sequences, or modes tested, correct all systems, equipment, components, or software required at no additional cost to Owner.

3.05 OPERATION AND MAINTENANCE MANUALS
A. Add design intent documentation furnished by Engineer to manuals prior to submission to Owner.
B. Submit manuals related to items that were commissioned to Commissioning Authority for review; make changes recommended by Commissioning Authority.
C. Commissioning Authority will add commissioning records to manuals after submission to Owner.

3.06 DEMONSTRATION AND TRAINING
A. Demonstrate operation and maintenance of HVAC system to Owner' personnel; if during any demonstration, the system fails to perform in accordance with the information included in the O&M manual, stop demonstration, repair or adjust, and repeat demonstration. Demonstrations may be combined with training if appropriate.
B. These demonstrations are in addition to, and not a substitute for, Pre-functional Checklists and demonstrations to the Commissioning Authority during Functional Testing.
C. Provide classroom and hands-on training of Owner's designated personnel on operation and maintenance of the HVAC system, control system, and all equipment furnished to be commissioned. Return for follow up training not less than 30 days after initial training and not more than 6 months after initial training.
D. Provide professional digital video recording of all instruction sessions and deliver two copies on DVD's to the Owner for future reference.
E. TAB Review: Instruct Owner's personnel for minimum eight hours, after completion of TAB, on the following:
1. Review final TAB report, explaining the layout and meanings of each data type.
2. Discuss any outstanding deficient items in control, ducting or design that may affect the proper balancing of air or water.
3. Identify and discuss any terminal units, duct runs, diffusers, coils, fans and pumps that are close to or are not meeting their design capacity.
4. Discuss any temporary settings and steps to finalize them for any areas that are not finished.
5. Other salient information that may be useful for facility operations, relative to TAB.
F. HVAC Controls System Training: Perform training in at least three phases:
1. Phase 1 – Basic Control System: Provide minimum of 16 hours of actual training on the control system itself. Upon completion of training, each attendee, using appropriate documentation, should be able to perform elementary operations and describe general hardware architecture and functions of the system.
a. This training may be held on-site or at the manufacturer's facility.
b. If held off-site, the training may occur prior to final completion of the system installation.
c. For off-site training, Contractor shall pay expenses of up to two attendees.
2. Phase 2 – Integrating with HVAC Systems: Provide minimum of 16 hours of on-site, hands-on training after completion of Functional Testing. Include instruction on:
a. The specific hardware configuration of installed systems in this facility and specific instruction for operating the installed system, including interfaces with other systems, if any.
b. Security levels, alarms, system start-up, shut-down, power outage and restart strategies, changing setpoints and alarms and other typical changed parameters, overrides, freeze protection, manual operation of equipment, optional control strategies that can be considered, energy savings strategies and set points that if changed will adversely affect energy consumption, energy accounting, procedures for obtaining vendor assistance, etc.
c. Trend logging and monitoring features (values, change of state, totalization, etc.), including setting up, executing, downloading, viewing both tabular and graphically and printing trends; provide practice in setting up trend logging and monitoring during training session.
d. Every display screen, allowing time for questions.
e. Use of keypad or plug-in laptop computer at the zone level.
f. Use of remote access to the system via phone lines or networks.
g. Setting up and changing an air terminal unit controller.
h. Graphics generation.
i. Point database entry and modifications.
j. Understanding DDC field panel operating programming, when applicable.
3. Phase 3 – Post-Occupancy: Six months after occupancy conduct minimum of 16 hours of training. Tailor training session to questions and topics solicited beforehand from Owner. Also be prepared to address topics brought up and answer questions concerning operation of the system.
G. Provide the services of manufacturer representatives to assist instructors where necessary.
H. Provide the services of the HVAC controls instructor at other training sessions, when requested, to discuss the interaction of the controls system as it relates to the equipment being discussed.

END OF SECTION

SECTION 230993 – SEQUENCE OF OPERATIONS FOR HVAC CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. This Section defines the manner and method by which controls function. Requirements for each type of control system operation are specified. Equipment, devices, and system components required for control systems are specified in other sections.
B. This Section provides the intended sequence of operation for each piece of controlled equipment. Sections of this Specification indicate the requirements for direct digital control systems, energy management systems, packaged factory controls or conventional analog control systems. Equipment, devices, and system components required for control systems are specified in other Sections. Wherever the sequences contained herein indicate control by a thermostat or EMS sensor/controller, the Temperature Control Contractor shall furnish EMS sensor/controllers for digital control systems or a thermostat for conventional analog control systems as specified in other sections of this Specification.
C. Sequence of operation for:
1. Fan coil units.
a. Heat pump heating/cooling.
b. Automatic changeover.
c. Variable speed supply fan.
d. Freeze protection.
2. Exhaust fans.
a. General duty building exhaust fans
b. Specific duty exhaust fans.
3. Control of package HVAC equipment containing factory mounted controls.
a. Single Zone Systems.
4. Heat pump systems.
a. Heat pump unit controls.

1.02 RELATED REQUIREMENTS
A. Section 23 0913 – Instrumentation and Control Devices for HVAC.

1.03 SYSTEM DESCRIPTION
A. Equipment performance, controls and accessories shall be as scheduled on the Drawings and specified herein. Inclusion in both locations is not a prerequisite to include in the Contract. Equipment, controls and accessories specified in either location shall be included in the Contract. Provide all necessary controls, accessories and connections as required for a complete, functional system for all systems indicated on the Drawings.
B. All wiring of control systems including connections to controlled devices external to the control systems shall be included in the temperature controls contract as a part of the Mechanical Contract. The Electrical Contractor will only furnish power connection to devices at the locations indicated on the Electrical Drawings. Review the Electrical Drawings for locations where power connections will be provided. This Contractor shall provide all additional necessary power and control wiring for a complete and functional system.
C. Provide all conduit and electrical wiring where required. Wiring shall be installed in conduit wherever wiring is concealed in inaccessible areas of ceilings, walls, attics and floors. Conduit shall be installed in all locations required by applicable local and national codes. Other locations may be installed utilizing plenum rated cabling without conduit, provided that all cabling is neatly and adequately supported independent of all other systems, equipment, ductwork, etc. Where cable trays exist, all wiring shall utilize the cable tray path, except at direct run outs to equipment or control connections.
D. All control settings and set points shall be individually adjustable. Set points specified in this Section shall be used as a guide for initial setup and may require subsequent adjustment to achieve the desired system functionality and performance.

1.04 SUBMITTALS
A. Sequence of Operation Documentation: Submit written sequence of operation for entire HVAC system and each piece of equipment.
1. Preface: 1 or 2 paragraph overview narrative of the system describing its purpose, components and function.
2. State each sequence in small segments and give each segment a unique number for referencing in Functional Test procedures; provide a complete description regardless of the completeness and clarity of the sequences specified in the Contract Documents.
3. Include at least the following sequences:
a. Start-up.
b. Warm-up mode.
c. Normal operating mode.
d. Unoccupied mode.
e. Shutdown.
f. Capacity control sequences and equipment staging.
g. Temperature and pressure control, such as setbacks, setups, resets, etc.
h. Detailed sequences for all control strategies, such as economizer control, optimum start/stop, staging, optimization, demand limiting, etc.
i. Effects of power or equipment failure with all standby component functions.
j. Sequences for all alarms and emergency shut downs.
k. Seasonal operational differences and recommendations.
l. Interactions and interlocks with other systems.
4. Include initial and recommended values for all adjustable settings, setpoints and parameters that are typically set or adjusted by operating staff; and any other control settings or fixed values, delays, etc. that will be useful during testing and operating the equipment.
5. For packaged controlled equipment, include manufacturer's furnished sequence of operation amplified as required to describe the relationship between the packaged controls and the control system, indicating which points are adjustable control points and which points are only monitored.
B. Control System Diagrams: Submit graphic schematic of the control system showing each control component and each component controlled, monitored, or enabled.
1. Label with settings, adjustable range of control and limits.
2. Include flow diagrams for each control system, graphically depicting control logic.
3. Include the system and component layout of all equipment that the control system monitors, enables or controls, even if the equipment is primarily controlled by packaged or integral controls.
4. Include draft copies of graphic displays indicating mechanical system components, control system components, and controlled function status and value.
5. Include all monitoring, control and virtual points specified in elsewhere.
6. Include a key to all abbreviations.
C. Points List: Submit list of all control points indicating at least the following for each point.
1. Name of controlled system.
2. Point abbreviation.
3. Point description; such as dry bulb temperature, airflow, etc.
4. Display unit.
5. Control point or setpoint (Yes / No); i.e. a point that controls equipment and can have its setpoint changed.
6. Monitoring point (Yes / No); i.e. a point that does not control or contribute to the control of equipment but is used for operation, maintenance, or performance verification.
7. Intermediate point (Yes / No); i.e. a point whose value is used to make a calculation which then controls equipment, such as space temperatures that are averaged to a virtual point to control reset.
8. Calculated point (Yes / No); i.e. a "virtual" point generated from calculations of other point values.
D. Project Record Documents: Record actual locations of components and setpoints of controls, including changes to sequences made after submission of shop drawings.

1.05 QUALITY ASSURANCE
A. Design system under direct supervision of a Professional Engineer experienced in design of this work and licensed at the State in which the Project is located.
B. Code or utility company requirements shall supersede any conflicting requirements of this Section.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 FAN COIL UNITS
A. Time Schedule: Control fan coil units based on the programmed time schedule as determined by the Owner's operating personnel. Provide occupied/unoccupied mode control with night setback of temperatures, where applicable.
B. Supply fan shall run continuously during the occupied period and cycle during the unoccupied period based on a demand for heating or cooling.
C. Dual temperature thermostat or EMS sensor/controller set at 75 degrees F (24 degrees C) maintains constant space temperature during the occupied mode and 10 degrees F (6 degrees C) warmer/cooler during the unoccupied mode by cycling refrigeration compressors and operating reversing valve on a call for heating.
D. Provide automatic change over from heating to cooling based on room demand.
E. Automatic Start Capabilities: Controls shall be capable of automatically adjusting the daily start time of the HVAC system in order to bring each space to the desired occupied temperature immediately prior to scheduled occupancy.
F. Freeze Protection: Stop fans and close outside air dampers and open heating coil valves (if any) to 100% open if temperature ahead of coils is below 37 degrees F (3 degrees C); signal alarm. (Except pre-heat coils.)

3.02 EXHAUST FANS
A. General building exhaust fans
1. Time Schedule: Start and stop exhaust fan based on the programmed time schedule as determined by the Owner's operating personnel.
B. Specific purpose exhaust fans shall be interlocked with the respective equipment as indicated on the Drawings. Provide necessary sensors and relays to allow control system to accurately sense equipment operation and activate fan systems accordingly. Interlock make up air units/fans and exhaust fans providing make up air for exhaust systems as required to provide 100% make up air to all operating exhaust fans.

3.03 CONTROL OF PACKAGED HVAC EQUIPMENT CONTAINING FACTORY MOUNTED CONTROLS.
A. Single Zone Systems
1. Time Schedule: Control HVAC equipment based on the programmed time schedule as determined by the Owner's operating personnel. Provide occupied/unoccupied mode control with adjustable night setback of temperatures, where applicable.
2. Maintain the integrity of the packaged control equipment and sequences. The packaged unit controls shall operate such functions as the economizer operations, burner modulation, high limit and low limit safeties, etc. All set point, occupancy, staging and shut-down capabilities shall be controlled by the temperature control system.
3. The control system shall monitor and indicate at the operators console the status of the unit including:
a. System on/off status.
b. System on/off command status.
c. Supply fan status.
d. Return fan status (if present).
e. Exhaust fan status (if present).
f. System operating mode (heating/cooling/ventilation).
g. Discharge air temperature.
h. Discharge air temperature setpoint (where applicable).
i. Mixed air temperature.
j. Outdoor air temperature and humidity.
k. Return air temperature and humidity.
l. Space temperature (where applicable).
m. Space temperature setpoint (where applicable).
n. Compressor status, individually by compressor.
4. Control system shall be able to control any of the following functions:
a. Turn the system on or off.
b. Control the number of stages of heating or cooling to be utilized based on room or duct temperature conditions.
c. Change occupied or unoccupied temperature setpoints.
d. Change equipment operating mode (heating/cooling/off).
e. Modify occupancy schedules by unit.

3.04 HEAT PUMP SYSTEMS
A. Heat Pump Unit Controls: Control system for the individual heat pump units shall be furnished by the equipment manufacturer. The program clock or energy management functions listed below must be integrated with the packaged controls furnished by the heat pump manufacturer. During the occupied mode as indicated by the program clock or EMS controller, the unit shall provide heating and cooling functions as specified by the unit manufacturer. During the unoccupied mode, the unit shall provide heating only at the night setback temperature as set by the room set/back thermostat or EMS sensor/controller. Heat pump control (heat, cool, occupied or unoccupied) shall be individually addressable for each heat pump unit. Heat pump supply fans shall run continuously during the occupied mode. This feature shall be individually programmable for each heat pump.

END OF SECTION

SECTION 232300 – REFRIGERANT PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Piping.
B. Refrigerant.
C. Valves and liquid indicators.
D. Filter-driers.
E. Expansion valves.

1.02 SYSTEM DESCRIPTION
A. Where more than one piping system material is specified ensure system components are compatible and joined to ensure the integrity of the system is not jeopardized. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
B. Provide pipe hangers and supports in accordance with ASME B31.5 unless indicated otherwise.
C. Liquid Indicators:
1. Use line size liquid indicators in main liquid line leaving condenser.
2. If receiver is provided, install in liquid line leaving receiver.
3. Use line size on leaving side of liquid solenoid valves.
D. Refrigerant Charging (Packed Angle) Valve: Use in liquid line between receiver shut-off valve and expansion valve.
E. Filter-Driers:
1. Use a filter-drier immediately ahead of liquid-line controls, such as thermostatic expansion valves, solenoid valves, and moisture indicators.
2. Use a filter-drier on suction line just ahead of compressor.

1.03 REGULATORY REQUIREMENTS
A. Conform to ASME B31.9 for installation of piping system.
B. Welding Materials and Procedures: Conform to ASME (BPV IX) and applicable state labor regulations.
C. Welders Certification: In accordance with ASME (BPV IX).

PART 2 PRODUCTS

2.01 PIPING
A. Copper Tube: ASTM B 280, H58 hard drawn or O60 soft annealed.
1. Fittings: ASME B16.22 wrought copper.
2. Joints: Braze, AWS A5.8 BCuP silver/phosphorus/copper alloy.
B. Copper Tube to 7/8 inch OD: ASTM B 88 (ASTM B 88M), Type K (A), annealed.
1. Fittings: ASME B16.26 cast copper.
2. Joints: Flared.
C. Pipe Supports and Anchors:
1. Conform to ASME B31.5, ASTM F 708, MSS SP-58, MSS SP-69, and MSS SP-89.

2.02 REFRIGERANT
A. Provide refrigerant as specified by the manufacturer of the refrigeration equipment.

2.03 MOISTURE AND LIQUID INDICATORS
A. Manufacturers:
1. Henry Technologies; Parker Hannifin/Refrigeration and Air Conditioning; Sporlan Valve Company.
B. Indicators: Single port type, UL listed, with copper or brass body, flared or solder ends, sight glass, color coded paper moisture indicator with removable element cartridge and plastic cap; for maximum temperature of 200 degrees F and maximum working pressure of 500 psi.

2.04 FILTER-DRIERS
A. Manufacturers:
1. Flow Controls Division of Emerson Electric; Parker Hannifin/Refrigeration and Air Conditioning; Sporlan Valve Company.
B. Performance:
1. Flow Capacity – Liquid Line: As required by capacities indicated on the Drawings, minimum, rated in accordance with ARI 710.
2. Flow Capacity – Suction Line: As required by capacities indicated on the Drawings, minimum, rated in accordance with ARI 730.
3. Pressure Drop: 2 psi, maximum, when operating at full connected evaporator capacity.
4. Design Working Pressure: 350 psi, minimum.
C. Cores: Molded or loose-fill molecular sieve desiccant compatible with refrigerant, activated alumina, activated charcoal, and filtration to 40 microns, with secondary filtration to 20 microns; of construction that will not pass into refrigerant lines.
D. Construction: UL listed.
1. Replaceable Core Type: Steel shell with removable cap.
2. Sealed Type: Copper shell.
3. Connections: As specified for applicable pipe type.

2.05 EXPANSION VALVES
A. Manufacturers:
1. Flow Controls Division of Emerson Electric; Parker Hannifin/Refrigeration and Air Conditioning; Sporlan Valve Company.
B. Angle or Straight Through Type: ARI 750; design suitable for refrigerant, brass body, internal or external equalizer, bleed hole, adjustable superheat setting, replaceable inlet strainer, with non-replaceable capillary tube and remote sensing bulb.
C. Selection: Evaluate refrigerant pressure drop through system to determine available pressure drop across valve. Select valve for maximum load at design operating pressure and minimum 10 degrees F superheat. Select to avoid being undersized at full load and excessively oversized at part load.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install refrigeration specialties in accordance with manufacturer's instructions.
B. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.
C. Follow ASHRAE Std 15 procedures for charging and purging of systems and for disposal of refrigerant.
D. Fully charge completed system with refrigerant after testing.

3.02 FIELD QUALITY CONTROL
A. Test refrigeration system in accordance with ASME B31.5.

END OF SECTION

SECTION 233100 – HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Metal ductwork.
B. Nonmetal ductwork.
C. Round spiral ductwork.
D. Kitchen hood ductwork, Type 1 grease hoods.
E. Duct cleaning.

1.02 PERFORMANCE REQUIREMENTS
A. No variation of duct configuration or sizes permitted except by written permission. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts, only after approval of the Engineer. Sizes shown on design drawings are air dimensions. Contractor may increase duct size without engineer approval, provided all ceiling and shaft clearances can be maintained. Additional charges for increased duct size will not be accepted by the owner.
B. Report all conflicts with structure or other obstructions, prior to fabrication of any ductwork. Suitable adjustments in the sizes of ducts shall be accommodated without any additional expense to the Owner.

1.03 SUBMITTALS
A. Shop Drawings: Indicate duct fittings, particulars such as gages, sizes, welds, and configuration prior to start of work for all systems. No ductwork shall be fabricated until engineer approved shop drawings have been received by the Contractor. Identify on ductwork shop drawings any deviations in sizes or shapes made necessary by the obstructions of other trades.
B. Test Reports: Indicate pressure tests performed. Include date, section tested, test pressure, and leakage rate, following SMACNA (LEAK) – HVAC Air Duct Leakage Test Manual.

1.04 REGULATORY REQUIREMENTS
A. Construct ductwork to NFPA 90A, NFPA 90B, and NFPA 96 standards.
B. Code or utility company requirements shall supersede any conflicting requirements of this Section.

1.05 FIELD CONDITIONS
A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS

2.01 MATERIALS
A. Galvanized Steel Ducts: Hot-dipped galvanized steel sheet, ASTM A 653/A 653M FS Type B, with G90/Z275 coating.
B. Steel Ducts: ASTM A 1008/A 1008M, Designation CS, cold-rolled commercial steel.
C. Aluminum Ducts: ASTM B 209 (ASTM B 209M); aluminum sheet, alloy 3003–H14. Aluminum Connectors and Bar Stock: Alloy 6061–T651 or of equivalent strength.
D. Insulated Flexible Ducts:
1. The Contractor may use any of the following ductwork materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected ductwork material is the sole responsibility of the installing Contractor.
2. Two ply vinyl film supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
a. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
b. Maximum Velocity: 4000 fpm.
c. Temperature Range: –10 degrees F to 160 degrees F.
d. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
3. Black polymer film supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
a. Pressure Rating: 4 inches WG positive and 0.5 inches WG negative.
b. Maximum Velocity: 4000 fpm.
c. Temperature Range: –20 degrees F to 175 degrees F.
d. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
4. Multiple layers of aluminum laminate supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
a. Pressure Rating: 10 inches WG positive and 1.0 inches negative.
b. Maximum Velocity: 4000 fpm.
c. Temperature Range: –20 degrees F to 210 degrees F.
d. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
5. UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
a. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
b. Maximum Velocity: 4000 fpm.
c. Temperature Range: –20 degrees F to 210 degrees F.
d. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
6. UL 181, Class 0, interlocking spiral of aluminum foil; fiberglass insulation; aluminized vapor barrier film.
a. Pressure Rating: 8 inches WG positive or negative.
b. Maximum Velocity: 5000 fpm.
c. Temperature Range: –20 degrees F to 250 degrees F.
d. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
E. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
2. VOC Content: Not more than 250 g/L, excluding water.
3. Surface Burning Characteristics: Flame spread of zero, smoke developed of zero, when tested in accordance with ASTM E 84.
4. For Use With Flexible Ducts: UL labeled.
5. Ductwork Exposed to the Weather: Hard cast VersaGrip 102, (VG–102), UL 181–AM compliant duct joint sealer, as manufactured by Carlisle, with fiberglass scrim tape reinforcement on all seams and joints, lateral and longitudinal.
F. Hanger Rod: ASTM A 36/A 36M; steel; threaded both ends, threaded one end, or continuously threaded.

2.02 DUCTWORK FABRICATION
A. Fabricate, support and seal in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
B. Construct T's, bends, and elbows with radius of not less than 1–1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide turning vanes. Where acoustical lining is indicated, provide turning vanes of perforated metal with glass fiber insulation.
C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
D. Fabricate continuously welded round and oval duct fittings two gages heavier than duct gages indicated in SMACNA Standard. Joints shall be minimum 4 inch cemented slip joint, brazed or electric welded. Prime coat welded joints.
E. Provide standard 45 degree lateral wye takeoffs unless otherwise indicated where 90 degree conical tee connections may be used.
F. Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver frame, provide blank-out panels sealing louver area around duct. Use same material as duct, painted black on exterior side; seal to louver frame and duct.

2.03 DUCT MANUFACTURERS
A. Metal-Fab, Inc.; SEMCO incorporated; United McGill Corporation.

2.04 MANUFACTURED METAL DUCTWORK AND FITTINGS
A. Manufacture in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
B. Round Spiral Ducts: Machine made from round spiral lockseam duct with light reinforcing corrugations; fittings manufactured of at least two gages heavier metal than duct.
C. Double Wall Insulated Round Ducts: Round spiral lockseam duct with galvanized steel outer wall, 1 inch thick fiberglass insulation, perforated galvanized steel inner wall; fitting with solid inner wall.
D. Transverse Duct Connection System: SMACNA "E" rated rigidly class connection, interlocking angle and duct edge connection system with sealant, gasket, cleats, and corner clips.

2.05 KITCHEN HOOD EXHAUST DUCTWORK, TYPE 1
A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and NFPA 96.
B. Construct of 16 gage carbon steel or 18 gage stainless steel, using continuous external welded joints.

PART 3 EXECUTION

3.01 EXAMINATION
A. Examine bindings for the Architectural, Structural, Electrical and all other trades prior to preparation of ductwork shop drawings and prior to the fabrication of any ductwork.
B. Resolve any conflicts encountered with the Engineer prior to fabrication.
C. Identify on ductwork shop drawings any deviations in sizes or shapes made necessary by the obstructions of other trades.

3.02 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
C. Install and seal metal and flexible ducts in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible.
D. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
E. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
F. Use crimp joints with or without bead for joining round duct sizes 8 inch and smaller with crimp in direction of air flow.
G. Use double nuts and lock washers on threaded rod supports.
H. Connect flexible ducts to metal ducts with draw bands.
I. Support flexible duct runs every five feet in the horizontal direction to avoid dips and sags.
J. Connect terminal units to supply ducts with one foot maximum length of flexible duct. Do not use flexible duct to change direction.

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K. Connect diffusers to low pressure ducts directly or with 5 feet maximum length of flexible duct held in place with strap or clamp. Longer duct lengths are acceptable if depicted on the design drawings and allowed per local code. A maximum of one 90 degree bend, or equivalent, will be allowed in flexible duct runs.
L. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
M. All exposed ducts in finished areas must be completely free from all debris or imperfections in the galvanized coating and shall be sealed CAREFULLY AND NEATLY with duct sealer completely contained within the joint. Duct wrap will not be permitted in exposed locations.
N. Kitchen hood exhaust, Type 1: Use stainless steel for ductwork exposed to view and stainless steel or carbon steel for ducts where concealed.
O. For all hood systems, perform all required regulatory duct leakage and weld tests in the presence of the code official, including but not limited to light tests and smoke tests, to demonstrate the integrity of the duct construction prior to the installation of any insulation that prevents visual inspection of the ductwork on all sides.
P. Provide residue traps in kitchen hood exhaust ducts at base of vertical risers with provisions for clean out.
Q. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.

3.03 CLEANING
A. Clean duct system and force air at high velocity through duct to remove accumulated dust or clean with high power vacuum machines. To obtain sufficient air, clean half the system at a time. Protect equipment which may be harmed by excessive dirt with temporary filters, or bypass during cleaning.

3.04 SCHEDULES
A. Ductwork Material:
B. The Contractor may use any of the following ductwork materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected piping material is the sole responsibility of the installing Contractor.
1. Low Velocity Supply (Heating Systems): Galvanized Steel, Aluminum.
2. Low Velocity Supply (System with Cooling Coils): Galvanized Steel, Aluminum.
3. Return and Relief: Galvanized Steel, Aluminum.
4. General Exhaust: Galvanized Steel, Aluminum.
5. Outside Air Intake: Galvanized Steel.
6. Kitchen Hood Exhaust, Type 1: Carbon Steel, Stainless Steel, Constructed per NFPA 96.
C. Ductwork Pressure Class:
1. Low Velocity Supply (Heating Systems): Scheduled System ESP+0.25", round up to next higher pressure class.
2. Low Velocity Supply (Systems with Cooling): Scheduled System ESP +0.5", round up to next higher pressure class.
3. Return and Relief: 1 inch.
4. General Exhaust: Scheduled System ESP +1.0", round up to next higher pressure class.
5. Outside Air Intake: 1 inch.
6. Kitchen Hood Exhaust: See drawings for maximum fan static pressure plus 50% additional.

END OF SECTION

SECTION 233300 – AIR DUCT ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Air turning devices/extractors.
B. Volume control dampers.
C. Flexible duct connections.
D. Duct access doors.

PART 2 PRODUCTS

2.01 AIR TURNING DEVICES/EXTRACTORS
A. Manufacturers: Krueger; Ruskin Company, Titus.
B. Multi-blade device with blades aligned in short dimension; steel or aluminum construction; with individually adjustable blades, mounting straps.

2.02 VOLUME CONTROL DAMPERS
A. Manufacturers: Louvers & Dampers, Inc.; Nailor Industries Inc.; Ruskin Company; Prefco Inc.
B. Fabricate in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and as indicated.
C. Single Blade Dampers: Fabricate for duct sizes up to 6 x 30 inch.
D. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 x 72 inch. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
E. End Bearings: Except in round ducts 12 inches and smaller, provide end bearings. On multiple blade dampers, provide oil-impregnated nylon or sintered bronze bearings.
F. The contractor shall provide either a mechanical or electrical cable operated system wherever dampers are located in non-accessible areas.
1. Mechanical cable operator system shall be similar and equal to Young Regulator Company, "Bowden Cable Control" system including damper, flexible cable with casing and concealed ceiling regulator control.
2. Electrically operated damper control system shall be similar and equal to United Enertech Corporation, "Power Balance" system including motor operated damper, RJ-11 plenum rated cabling and flush ceiling or wall mounted RJ-11 jack in remote plate. Include one hand held battery pack operator pack to be delivered to the Owner upon completion of the balancing.

2.03 FLEXIBLE DUCT CONNECTIONS
A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and as indicated.
B. Flexible Duct Connections: Fabric crimped into metal edging strip.
1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd.
a. Net Fabric Width: Approximately 2 inches wide.
2. Metal: 3 inches wide, 24 gage thick galvanized steel.

2.04 DUCT ACCESS DOORS
A. Manufacturers: Acudor Products Inc.; Nailor Industries Inc.; Ruskin Company; SEMCO Incorporated.
B. Fabricate in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and as indicated.
C. Fabrication: Rigid and close-fitting of galvanized steel with sealing gaskets and quick fastening locking devices. For insulated ducts, install minimum 1 inch thick insulation with sheet metal cover.
1. Less Than 12 inches Square: Secure with sash locks.
2. Up to 18 inches Square: Provide two hinges and two sash locks.
D. Access doors with sheet metal screw fasteners are not acceptable.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA HVAC Duct Construction Standards – Metal and Flexible. Duct construction and pressure class.
B. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, combination fire and smoke dampers, and elsewhere as indicated. Provide minimum 8 x 8 inch size for hand access, 18 x 18 inch size for shoulder access, and as indicated. Provide 4 x 4 inch for balancing dampers only. Review locations prior to fabrication.
C. Locate all dampers and control elements in accessible areas wherever possible to avoid access doors. Provide ceiling access doors for access to all dampers and control elements located above inaccessible ceiling areas. Provide minimum 12 x 12 inch size for hand access, 18 x 18 inch size for shoulder access, and as indicated. Provide 4 x 4 inch for balancing dampers only. Review locations prior to fabrication.
D. Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Install minimum 2 duct widths from duct take-off.
E. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly. Do not locate dampers closer than 5 feet or 10 duct diameters from the air terminal device, whichever is greater.
F. At fans and motorized equipment associated with ducts, provide flexible duct connections immediately adjacent to the equipment.
G. At equipment supported by vibration isolators, provide flexible duct connections immediately adjacent to the equipment.

AIR PURIFICATION DEVICES

Model: PHI–PKG14–24V Specifications

LISTING: UL 1598:2008 (3rd Edition)
FACTORY UV–PHI CELL
INSTALLATION: RTU PACKAGED UNIT / BLOWER CABINET

PART 1 GENERAL

1.01 SUMMARY
A. This section includes hydro–peroxide, Super–Oxide Ions, & Hydroxide Ion's delivered via PHI technology through packaged heating and cooling units capable of supplying 3,000 to 8,000 CFM of supply air to the indoor space.

1.02 QUALITY ASSURANCE
A. All models shall be UL listed and comply with safety standards UL 1598:2008 (3rd Edition) and CSA Standard C22.2 No. 250.0:2008.

1.03 WARRANTY
A. All units shall be provided with the following standard warranties:
1. 2–year or 18,000 hours from initial startup. National TAB provided service plan. The phi cell & UV light replacement 18,000 hour replacements are provide/installed at no cost if National TAB is providing Renew–Cx Service after initial installation.
B. This warranty shall not apply if:
1. The equipment is not installed by a qualified installer per the manufacturer's installation instructions shipped with the product.
2. The equipment is misused or neglected, or not maintained per the manufacturer's maintenance instructions.
3. The equipment is not operated within its published capacity.
4. The invoice is not paid within the terms of the sales agreement.

PART 2 PRODUCTS

2.01 GENERAL
A. MULTI–ZONE one piece packaged PHI Unit–Air Purification System.

2.02 HOUSING
A. Unit(s) shall be constructed of aluminum structural pop–rivets. All metal shall be CNC bent for precise assembly.
1. Quad Metallic Target
2. UV–C bulb
3. Electronic Enclosure (24VAC input power Jack)
4. Magnetic mounting feet for easy placement and installation in the Blower Cabinet.

END OF SECTION

SECTION 233423 – HVAC POWER VENTILATORS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Roof exhausters.
B. Kitchen range hood exhausters.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Greenheck; Loren Cook Company; PennBarry; CaptiveAire.

2.02 POWER VENTILATORS – GENERAL
A. Performance Ratings: Determined in accordance with AMCA 210 and bearing the AMCA Certified Rating Seal.
B. Sound Ratings: AMCA 301, tested to AMCA 300, and bearing AMCA Certified Sound Rating Seal.
C. Fabrication: Conform to AMCA 99.
D. UL Compliance: UL listed and labeled, designed, manufactured, and tested as suitable for the purpose specified and indicated.

2.03 ROOF EXHAUSTERS AND VENTILATORS
A. Fan Unit: V–belt or direct driven as indicated, with spun aluminum housing; resilient mounted motor; 1/2 inch mesh, 0.62 inch thick aluminum wire birdscreen; square base to suit roof curb with continuous curb gaskets.
B. Roof Curb: 20 inch high above the finished roof surface (compensate for roof insulation thickness at fan location) self–flashing of galvanized steel or aluminum construction with continuously welded seams, built–in cant strips, insulation and curb bottom, and factory installed nailer strip.
C. Disconnect Switch: Factory wired, non–fusible, in housing for thermal overload protected motor.
D. Backdraft Damper: Motor actuated (or gravity damper if depicted on design drawings), aluminum multiple blade construction, felt edged with offset hinge pin, nylon bearings, blades linked, and line voltage motor drive, power open, spring return.
E. Sheaves: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheave selected so required rpm is obtained with sheaves set at mid–position; fan shaft with self–aligning pre–lubricated ball bearings.
F. Kitchen hood exhausters shall be upblast with grease tray, ventilated double wall curb and hinged curb adapter base for cleaning. Hood exhausters shall comply with requirements of NFPA 96.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Provide sheaves required for final air balance at no additional expense to the project.
C. Secure roof and wall exhausters with cadmium plated steel lag screws to roof curb or structure.
D. Extend ducts to roof and wall exhausters into roof curb or wall structure. Counterflash duct to roof or wall opening.
E. Install backdraft dampers (gravity or motorized as depicted on design drawings) on inlet to roof and wall exhausters.
F. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.

END OF SECTION

SECTION 233700 – AIR OUTLETS AND INLETS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Rectangular ceiling diffusers.
B. Perforated face ceiling diffusers.
C. Grid core exhaust and return grilles.
D. Wall registers and grilles.

1.02 SUBMITTALS
A. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, accessories, and noise level.

1.03 QUALITY ASSURANCE
A. Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.
B. Test and rate louver performance in accordance with AMCA 500–L.
C. Code requirements shall supersede any conflicting requirements of this Section.

1.04 QUALIFICATIONS
A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this Section, with minimum five years of documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Titus; Krueger; Price Industries; Nailor Industries Inc.; Hart & Cooley; Ruskin, Greenheck.

2.02 RECTANGULAR CEILING DIFFUSERS
A. Type: Square, adjustable pattern, stamped, multi–core, or architectural plaque diffuser to discharge air in 360 degree pattern with sectorizing baffles where indicated.
B. Frame: Inverted T–bar type. In plaster ceilings, provide plaster frame and ceiling frame. (To allow lift–out removal of the diffuser without removal of the plaster frame.)
C. Fabrication: Steel with baked enamel off–white finish.
D. Accessories: Opposed blade damper and multi–louvered equalizing grid with damper adjustable from diffuser face.

2.03 PERFORATED FACE CEILING DIFFUSERS
A. Type: Perforated face with removable face.
B. Frame: Inverted T–bar type. In plaster ceilings, provide plaster frame and ceiling frame. (To allow lift–out removal of the diffuser without removal of the plaster frame.)
C. Fabrication: Steel with steel frame and baked enamel off–white finish.
D. Accessories: Opposed blade damper and multi–louvered equalizing grid with damper adjustable from diffuser face.

2.04 GRID CORE EXHAUST AND RETURN GRILLES
A. Type: Fixed grilles of 1/2 x 1/2 x 1 inch louvers.
B. Fabrication: Aluminum with factory off–white enamel finish.
C. Frame: 1–1/4 inch margin with countersunk screw mounting.
D. Frame: Channel lay–in frame for suspended grid ceilings where face size exceeds 18 x 18 inch.
E. Damper (if specified on drawings): Integral, gang–operated, opposed blade type with removable key operator, operable from face.

2.05 WALL SUPPLY REGISTERS/GRILLES
A. Type: Streamlined and individually adjustable blades, 3/4 inch minimum depth, 3/4 inch maximum spacing with spring or other device to set blades, horizontal face, double deflection.
B. Frame: 1–1/4 inch margin with countersunk screw mounting and gasket.
C. Fabrication: Steel with 20 gage minimum frames and 22 gage minimum blades, steel and aluminum with 20 gage minimum frame, or aluminum extrusions, with factory off–white enamel finish.
D. Damper: Integral, gang–operated opposed blade type with removable key operator, operable from face.
E. Rough Service: Provide front pivoted or welded in place blades, securely fastened to be immobile.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
C. Install diffusers to ductwork with air tight connection.
D. Provide balancing dampers on duct take–off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.
E. Paint ductwork visible behind air outlets and inlets matte black.

END OF SECTION

SECTION 237413 – PACKAGED OUTDOOR ROOF TOP UNITS – GAS FIRED

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Packaged roof top units.
B. Thermostat controls.
C. Roof mounting curb and base.
D. Economizer.
E. Power exhaust.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. CaptiveAire. No Exceptions.

2.02 AIR CONDITIONING UNITS
A. General: Roof mounted units having gas burner and electric refrigeration.
B. Description: Self–contained, packaged, factory assembled and prewired, consisting of cabinet and frame, supply fan, heat exchanger and burner, controls, air filters, refrigerant cooling coil and compressor, dry bulb economizer and power exhaust fan where indicated on the Drawings, condenser coil and condenser fan.
C. Electrical Characteristics: As scheduled on the Drawings.
D. Disconnect Switch: Factory mount disconnect switch on equipment.

2.03 FABRICATION
A. Cabinet: Steel with baked enamel finish, including access panels with screwdriver operated flush cam type fasteners or doors with piano hinges with locking handles. Structural members shall be minimum 18 gage, with access doors or panels of minimum 20 gage.
B. Insulation: one inch thick neoprene coated glass fiber with edges protected from erosion.
C. Heat Exchangers: Aluminized steel or stainless steel where indicated on the Drawings, of welded construction.
D. Supply Fan: Forward curved centrifugal type, resiliently mounted with V–belt drive, adjustable variable pitch motor pulley, and rubber isolated hinge mounted motor or direct drive as indicated. Isolate complete fan assembly.
1. Fans for units with a mechanical cooling capacity greater than or equal to 65,000 Btu/h shall have not fewer than two stages of fan control.
E. Air Filters: 2 inch thick disposable media in metal frames.
F. Roof Mounting Curb: Galvanized steel, channel frame, insulated with gaskets, nailer strips. Provide roof curb of adequate height to provide a unit mounting height of 12" or greater above the top of the roof surface with the curb mounted to the building structure. Roof curb height must compensate for the roof insulation thickness to meet this requirement.
G. Vibration Isolation Curb: Only when indicated on the Drawings.

2.04 BURNER
A. Gas Burner: Induced draft or forced draft type burner with adjustable combustion air supply, pressure regulator, gas valves, manual shut–off, intermittent spark or glow coil ignition, flame sensing device, and automatic 100 percent shut–off pilot.
B. Gas Burner Safety Controls: Energize ignition, limit time for establishment of flame, prevent opening of gas valve until pilot flame is proven, stop gas flow on ignition failure, energize blower motor, and after air flow proven and slight delay, allow gas valve to open.
C. High Limit Control: Temperature sensor with fixed stop at maximum permissible setting, de–energize burner on excessive bonnet temperature and energize burner if temperature drops to lower safe value.
D. Supply Fan Control: Temperature sensor sensing bonnet temperatures and independent of burner controls, with provisions for continuous fan operation.

2.05 EVAPORATOR COIL
A. Provide copper tube aluminum fin coil assembly with galvanized drain pan and connection.
B. Provide capillary tubes or thermostatic expansion valves for units of 6 tons capacity and less, and thermostatic expansion valves and alternate row circuiting for units 7.5 tons cooling capacity and larger.

2.06 COMPRESSOR
A. Provide hermetic or semi–hermetic compressors, 3600 rpm maximum, resiliently mounted with positive lubrication, crankcase heater, high and low pressure safety controls, motor overload protection, suction and discharge service valves and gage ports, and filter drier.
B. Five minute timed off circuit to delay compressor start.
C. Outdoor thermostat to energize compressor above 35 degrees F ambient.

2.07 CONDENSER COIL
A. Provide copper tube aluminum fin coil assembly with subcooling rows and coil guard.
B. Provide direct drive propeller fans, resiliently mounted with fan guard, motor overload protection, wired to operate with compressor.

2.08 MIXED AIR CASING
A. Dampers: Provide outside, return, and relief dampers with damper operator and control package to automatically vary outside air quantity. Outside air damper to fail to closed position. Relief dampers may be gravity balanced.
B. Gaskets: Provide tight fitting dampers with edge gaskets maximum leakage 5 percent at 2 inches pressure differential.
C. Damper Operator: 24 volt with gear train sealed in oil.
D. Damper Operator, Units 7.5 Ton Cooling Capacity and Larger: 24 volt with gear train sealed in oil with spring return on.
E. Mixed Air Controls: Maintain selected supply air temperature and return dampers to minimum position on call for heating and above 75 degrees F ambient, or when ambient air temperature exceeds return air temperature.

2.09 INTEGRATED ECONOMIZER:
A. Economizer shall be furnished and installed complete with outside air and relief dampers and controls.
B. Provide low–leakage, opposed blade dampers
1. Meet all leakage requirements of applicable energy code.
C. Economizer shall be capable of introducing up to 100% outdoor air for minimum ventilation as well as free cooling.
D. Damper actuator shall be electronic, fully modulating design.
E. Economizer outdoor hood shall be pre–painted and fully integrated with the unit.
F. Dry Bulb Control: Provide dry bulb sensor capable of measuring temperature of outdoor air and controlling economizer cut–in point at the most economical level. High level cutoff shall be set per applicable energy code.
1. Provide economizer Fault Detection and Diagnostics (FDD).

2.10 POWER EXHAUST:
A. Package shall include exhaust fan(s) and damper for units with economizer to control over–pressurization of building including integral pressure controls.

2.11 WATER LEVEL MONITORING DEVICE:
A. A water–level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Devices installed in the drain line shall not be permitted.

2.12

2.13 OPERATING CONTROLS
A. Provide low voltage, adjustable thermostat to control heater stages in sequence with delay between stages, compressor and condenser fan, and supply fan to maintain temperature setting.
1. Include system selector switch (off–heat–auto–cool) and fan control switch (auto–on).
2. The Mechanical Contractor shall provide all control wiring between thermostat and unit control panel and any required remote sensors.
3. Locate thermostat in room as shown.
4. Electric solid state microcomputer based room thermostat, located as indicated. Provide remote sensors when indicated on the Drawings.
a. Room thermostat shall incorporate:
1. Automatic switching from heating to cooling.
2. Preferential rate control to minimize overshoot and deviation from set point.
3. Automatic Start Capabilities: Controls shall be capable of automatically adjusting the daily start time of the HVAC system in order to bring each space to the desired occupied temperature immediately prior to scheduled occupancy.
4. Set–up for four separate temperatures per day.
5. Instant override of set point for continuous or timed period from one hour to 31 days.
6. Short cycle protection.
7. Programming based on weekdays, Saturday and Sunday.
8. Switch selection features including imperial or metric display, 12 or 24 hour clock, keyboard disable, remote sensor, fan on–auto.
b. Room thermostat display shall include:
1. Time of day.
2. Actual room temperature.
3. Programmed temperature.
4. Day of week.
5. System mode indication: heating, cooling, auto, off, fan auto, fan on.
6. Stage (heating or cooling) operation.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions and NFPA 90A.
B. Mount units on factory built roof mounting curb providing watertight enclosure to protect ductwork and utility services. Install roof mounting curb level. Install roof mounting curb so that it bears on the building structure, not on top of the roof deck or roofing materials. Provide restraints where required by local codes.
C. Provide cooling condensate drain piping (and overflow piping if required) to approved location. Condensate piping shall be Schedule 40 galvanized steel pipe, Type L copper tube, or PVC. Contractor shall verify the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected piping material is the sole responsibility of the installing Contractor.
1. Condensate piping located within the building shall be insulated with 1/2 inch thick glass fiber or flexible elastomeric cellular foam insulation. Only metallic piping systems will be allowed in return air plenum ceiling space.

END OF SECTION

SECTION 238127 – SMALL SPLIT–SYSTEM HEATING AND COOLING

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Air–source heat pumps.
B. Indoor ductless fan & coil units.
C. Controls.
1. Room thermostats.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Trane Inc. No Exceptions

2.02 SYSTEM DESIGN
A. Split–System Heating and Cooling Units: Self–contained, packaged, matched factory–engineered and assembled, pre–wired indoor and outdoor units; UL listed.
1. Provide refrigerant lines internal to units and between indoor and outdoor units, factory cleaned, dried, pressurized and sealed, with insulated suction line. Size as recommended by the manufacturer. All refrigerant line sizes indicated on the Drawings are approximate and shall be adjusted as required based on the actual equipment provided to meet the manufacturer's recommended line sizing at no additional expense to the project.
B. Performance Requirements:.
1. Equipment performance, efficiency and accessories shall be as scheduled on the Drawings and specified herein. Inclusion in both locations is not a prerequisite to inclusion in the Contract. Equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system. Efficiency shall not be less than requirements of the units specified or indicated on the drawings, or the applicable local energy code

2.03 INDOOR UNITS FOR DUCTLESS SYSTEMS
A. Indoor Units: Self–contained, packaged, factory assembled, pre–wired unit consisting of cabinet, supply fan, evaporator coil, and controls; wired for single power connection with control transformer.
B. Evaporator Coils: Copper tube aluminum fin assembly, galvanized or polymer drain pan sloped in all directions to drain, drain connection, refrigerant piping connections, restricted distributor or thermostatic expansion valve.
1. Construction and Ratings: In accordance with ARI 210/240 and UL listed.

2.04 OUTDOOR UNITS
A. Outdoor Units: Self–contained, packaged, factory assembled, pre–wired unit consisting of cabinet, with compressor and condenser.
1. Cabinet: Steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.
2. Construction and Ratings: In accordance with ARI 210/240 with testing in accordance with ASHRAE Std 23 and UL listed.
B. Compressor: ARI 520; hermetic, 3600 rpm, (multi–speed when indicated on the Drawings) resiliently mounted integral with condenser, with positive lubrication, crankcase heater, high pressure control, motor overload protection, service valves and drier. Provide time delay control to prevent short cycling.
C. Air Cooled Condenser: ARI 520; Aluminum fin and copper tube coil, with direct drive axial propeller fan resiliently mounted, galvanized fan guard.
D. Accessories: Filter drier, high pressure switch (manual reset), low pressure switch (automatic reset), service valves and gage ports, thermometer well (in liquid line).
1. Provide thermostatic expansion valves.
2. Provide heat pump reversing valves on all heat pump units.
E. Operating Controls:
1. Control by room thermostat to maintain room temperature setting.
2. Low Ambient Kit: On all systems not provided with economizer controls, provide refrigerant pressure switch to cycle condenser fan on when condenser refrigerant pressure is above 285 psig and off when pressure drops below 140 psig for operation to 0 degrees F.
F. Mounting Pad: Poured in place concrete, precast concrete or resin composite pad, minimum 4 inches thick, square.

2.05 ACCESSORY EQUIPMENT
A. Room Thermostat: Wall–mounted, electric solid state microcomputer based room thermostat with remote sensor to maintain temperature setting; low–voltage; with following features:
1. System selector switch (heat–off–cool) and fan control switch (auto–on).
2. Automatic switching from heating to cooling.
3. Preferential rate control to minimize overshoot and deviation from setpoint.
4. Automatic Start Capabilities: Controls shall be capable of automatically adjusting the daily start time of the HVAC system in order to bring each space to the desired occupied temperature immediately prior to scheduled occupancy.
5. Set–up for four separate temperatures per day.
6. Instant override of setpoint for continuous or timed period from one hour to 31 days.
7. Short cycle protection.
8. Programming based on every day of the week.
9. Selection features including degree F or degree C display, 12 or 24 hour clock, keyboard disable, remote sensor, fan on–auto.
10. Battery replacement without program loss.
11. Thermostat display:
a. Time of day.
b. Actual room temperature.
c. Programmed temperature.
d. Day of week.
e. System mode indication: heating, cooling, fan auto, off, and on, auto or on, off.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions and requirements of local authorities having jurisdiction.
B. Install in accordance with NFPA 90A and NFPA 90B as applicable.
C. Provide cooling condensate drain piping (and overflow piping if required) to approved location. Condensate piping shall be Schedule 40 galvanized steel pipe, Type L copper tube, or PVC pipe (non–plenum applications). Contractor shall verify the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected piping material is the sole responsibility of the installing Contractor. Only metallic piping systems will be allowed in return air plenum ceiling space.
D. Install refrigeration systems in accordance with ASHRAE Std 15. Provide filter dryer, sight glass and solenoid valve on outdoor units and sight glass and expansion valve on indoor units.
E. All thermostat, humidistat (if required), damper interlock and other low voltage control wiring shall be installed by the Mechanical Contractor. The Electrical Contractor will furnish only the power system connections shown on the Electrical Drawings. All other control and interlock wiring is the responsibility of the Mechanical Contractor.

END OF SECTION

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REVISIONS

△	DATE	DESCRIPTION
1	08/26/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0048442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME: MECHANICAL SPECIFICATIONS

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN:
SCALE: AS NOTED

SHEET NO.: M592

SE JOB#: 250519

CODE: 2021 INTERNATIONAL MECHANICAL CODE

SYSTEM 1

ROOM #	NAME	Az AREA (FT2)	TABLE 403.3.1.1 OCCUPANCY CATEGORY	TABLE 403.3.1.1 Rp PEOPLE OA (CFM/PER)	TABLE 403.3.1.1 Ra AREA OA (CFM/FT2)	TABLE 403.3.1.1 OCCUPANT DENSITY (#/1000 FT2)	Pz (#)	Rp*Pz	Ra*Az	Vbz (CFM)	TABLE 403.3.1.1.1.2 Ez	Voz (CFM)	Vpz MAX SUPPLY (CFM)	Vpzm MIN SUPPLY (CFM)	Zp	CALCULATED TABLE 403.3.1.1.2.3.2 Ev
101	QUEUE	395	SALES	7.5	0.12	15	6	45	47	92	0.80	116	1250	1250	0.092	1.00
102	DINING	812	CAFETERIA/FAST FOOD DINING	7.5	0.18	100	62	465	110	575	0.80	719	1500	1500	0.479	0.67
103	HALLWAY	101	CORRIDORS	0.0	0.06	0	0	0	6	6	0.80	8	150	150	0.051	1.00
104	ALL GENDER RESTROOM	72	NO LISTING	0.0	0.00	0	0	0	0	0	0.80	0	50	50	0.000	1.00
105	ALL GENDER RESTROOM	72	NO LISTING	0.0	0.00	0	0	0	0	0	0.80	0	50	50	0.000	1.00
106	KITCHEN	286	KITCHEN (COOKING)	7.5	0.12	20	6	45	34	79	0.80	99	1550	1550	0.064	1.00
107	COLD KITCHEN	214	KITCHEN (COOKING)	7.5	0.12	20	5	38	26	63	0.80	79	1100	1100	0.072	1.00
108	DISH ROOM	237	KITCHEN (COOKING)	7.5	0.12	20	5	38	28	66	0.80	82	1200	1200	0.069	1.00
109	UTILITIES	477	STORAGE ROOMS	0.0	0.12	0	0	0	57	57	0.80	72	600	600	0.119	1.00
110	MANAGERS OFFICE	76	OFFICE SPACES	5.0	0.06	5	2	10	5	15	0.80	19	455	455	0.040	1.00
		2,542					86	640	314	954		1192	7905	7905	0.479	0.67

OUTDOOR AIR CALCULATIONS PER EQUATION 4-1:

SYMBOL	VALUE	DESCRIPTION
Ps =	86	SYSTEM POPULATION
SPz =	86	ZONE POPULATION
D =	1.000	OCCUPANT DIVERSITY
Vou =	954	UNCORRECTED OUTDOOR AIR INTAKE
Zp (max) =	0.479	ZONE PRIMARY OUTDOOR AIR FRACTION (MAXIMUM)
Ev =	0.67	SYSTEM VENTILATION EFFICIENCY
SVpz =	7905	ZONE PRIMARY AIRFLOW
Vot =	1,422	CODE REQUIRED OUTDOOR AIRFLOW RATE, CFM
Vot =	2,650	DESIGN OUTDOOR AIRFLOW RATE, CFM

1 OUTSIDE AIR CALCULATIONS

Air System Sizing Summary for BlockLoad

Project Name: 250519hvac_HAP47_202602030939181 02/18/2026
Prepared by: Schnackel Engineers 01:59PM

Air System Information

Air System Name ..... **BlockLoad**
Equipment Class ..... **UNDEF**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2542.0** ft²
Location ..... **Fort Myers, Florida**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM ..... **Peak zone sensible load**
Space CFM ..... **Individual peak space loads**

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Central Cooling Coil Sizing Data

Total coil load	**20.0**	Tons	Load occurs at	**Jun 1600**	
Total coil load	**239.7**	MBH	OA DB / WB	**92.5 / 76.9**	°F
Sensible coil load	**176.4**	MBH	Entering DB / WB	**78.2 / 65.7**	°F
Coil CFM at Jun 1600	**7238**	CFM	Leaving DB / WB	**55.7 / 54.6**	°F
Max block CFM	**7238**	CFM	Coil ADP	**53.2**	°F
Sum of peak zone CFM	**7238**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.736**		Resulting RH	**51**	%
ft²/Ton	**127.3**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**94.3**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**47.97**	gpm	Max zone temperature deviation	**0.0**	°F

Central HeatingCoil Sizing Data

Max coil load	**68.1**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**7238**	CFM	BTU/(hr-ft²)	**26.8**	
Max coil CFM	**7238**	CFM	Ent. DB / Lvg DB	**68.1 / 76.8**	°F
Water flow @ 20.0 °F drop	**6.81**	gpm			

Supply Fan Sizing Data

Actual max CFM	**7238**	CFM	Fan motor BHP	**1.19**	BHP
Standard CFM	**7234**	CFM	Fan motor kW	**0.94**	kW
Actual max CFM/ft²	**2.85**	CFM/ft²	Fan static	**0.60**	in wg

2 LOAD CALCULATIONS

RTU/ACU CONTROL MATRIX

SETPOINT/CONTROL	RTU-1 DINING	RTU-2 KITCHEN	FC-1 OFFICE
SETPOINTS			
COOLING - OCCUPIED SETPOINT	75 F	75 F	75 F
COOLING - UNOCCUPIED SETPOINT	80 F	80 F	80 F
HEATING - OCCUPIED SETPOINT	70 F	70 F	70 F
HEATING - UNOCCUPIED SETPOINT	60 F	60 F	60 F
ECONOMIZER UPPER LIMIT SETPOINT	65 F	65 F	NA

ACCESSORIES			
HVAC SYSTEM OCCUPIED/UNOCCUPIED MODE - PROGRAMMABLE THERMOSTAT	YES	YES	YES
REMOTE TEMPERATURE SENSOR	YES	YES	NO
MOTORIZED OUTDOOR AIR DAMPER	YES	YES	NO
INTEGRATED ECONOMIZER	YES	YES	NO
ECONOMIZER FAULT DETECTION	YES	YES	NO
BAROMETRIC RELIEF	YES	NO	NO
POWERED EXHAUST RELIEF	NO	YES	NO
DEHUMIDIFICATION (HOT GAS REHEAT)	YES	YES	NO

SUPPLY FAN			
ON DURING OCCUPIED MODE	YES	YES	YES
VARIALBE VOLUME - MODULATE FAN SPEED	YES	YES	YES

SAFETIES AND INTERLOCKS			
SUPPLY AIR SMOKE DETECTOR	YES	YES	NO
LOW LIMIT FREEZESTAT	YES	YES	YES
FIRE ALARM CONTOL PANEL INTERLOCK	YES	YES	NO
KITCHEN EXHAUST SYSTEM INTERLOCK	YES	YES	NO

AIR BALANCE SCHEDULE

EQUIPMENT TAG	SUPPLY AIRFLOW (CFM)	OUTDOOR AIRFLOW (CFM)	RETURN AIRFLOW (CFM)	EXHAUST AIRFLOW (CFM)	OA/SA (%)	REMARKS
RTU-1	3,000	1,050	1,950		35%	FOH
RTU-2	4,500	1,600	2,900		36%	BOH
FC-1	405	0	405		0%	OFFICE
EF-1				1,385		HOOD-1
EF-2				685		HOOD-2
EF-3				200		RESTROOMS
TOTAL =	7,905	2,650	5,255	2,270		
RESULTING BUILDING PRESSURIZATION =				380 CFM		
PRESSURIZATION PERCENTAGE =				4.8 %		

TRANE EQUIPMENT SHALL BE OBTAINED THROUGH SHAKE SHACK NATIONAL ACCOUNT. CONTACT TRANE FOR PROPOSALS:
NANCY BRODEUR
TRANE NATIONAL ACCOUNTS
EMAIL: NANCY.BRODEUR@TRANE.COM
PHONE: 603-493-1710

DIFFUSERS, GRILLES AND REGISTERS

MARK	SERVICE	LOCATION	CEILING TYPE	MOUNTING TYPE	MANUFACTURER	MODEL NUMBER	REMARKS
D-1	SUPPLY	CEILING	AC TILE	LAY-IN	TITUS	TMS XX 24x24 3 26	[1,2,6]
D-2	SUPPLY	CEILING	AC TILE	LAY-IN	TITUS	PAR XX 24x24 3 26	[1,2,6]
D-3	SUPPLY	CEILING	GYP. BOARD	LAY-IN	TITUS	OMNI XX 12x12 3 26	[1,2,4,6,7]
D-4	SUPPLY	CEILING	DUCT	NA	SURFACE	300RL X X 1 26	[1,5,6]
G-1	VARIES	CEILING	AC TILE	LAY-IN	TITUS	50F X X 3 26	[1,3,5,6]
G-2	EXHAUST	CEILING	GYP. BOARD	SURFACE	TITUS	50F X X 1 26	[1,3-7]

REMARKS:
1. TITUS IS THE BASE OF DESIGN. KRUEGER, PRICE, NAILOR, CARNES ARE EQUAL. NO EXCEPTIONS.
2. SEE PLAN FOR NECK SIZE.
3. PROVIDE 1/2" X 1/2" X 1" CORE.
4. PROVIDE WITH MODEL TRM FRAME.
5. SEE PLAN FOR SIZE.
6. DIFFUSERS/GRILLES SHALL BE FINISHED TO MATCH CEILING/WALL/EXPOSED DUCT COLOR. COORDINATE WITH ARCHITECT.
7. PROVIDE DIFFUSERS AND GRILLES WITH NO EXPOSED MOUNTING SCREWS.

EXHAUST FANS

MARK	LOCATION	SERVICE	AIRFLOW (CFM)	EXTERNAL STATIC (IN H2O)	SONES	MOTOR DATA FAN (HP)	MOTOR DATA VOLT	MOTOR DATA PH	RPM	MANUFACTURER	MODEL NUMBER	REMARKS
EF-1	ROOF	HOOD 1	-	-	-	-	-	-	-	CAPTIVEAIRE	-	[5]
EF-2	ROOF	HOOD 2	-	-	-	-	-	-	-	CAPTIVEAIRE	-	[5]
EF-3	ROOF	RESTROOMS	200	0.50	7.3	1/10	115	1	1,500	GREENHECK	G-080-VG	[1-4]

REMARKS:
1. PROVIDE SOLID STATE SPEED CONTROL.
2. PROVIDE BACKDRAFT DAMPER.
3. PROVIDE MINIMUM 18 INCH HEIGHT ROOF CURB.
4. DEVICE SHALL BE FLORDIA PRODUCT APPROVAL #FL13225.1 AND MIAMI-DADE NOA #23-1120.06 RATED
5. REFERENCE CAPTIVEAIRE DRAWINGS FOR ADDITIONAL INFORMATION.

ROOF TOP UNITS

MARK	COOLING SEN (MBH)	COOLING TOT (MBH)	COOLING COOL (TON)	HEATING IN (MBH)	HEATING OUT (MBH)	SUPPLY AIR (CFM)	EXT. S.P. (IN)	FAN BHP	ELECTRICAL VOLT	ELECTRICAL PH	ELECTRICAL MCA	ELECTRICAL MOCP	WEIGHT (LBS)	SEER	EER	IEER	REFRIG TYPE	CAPTIVEAIRE MODEL	REMARKS
RTU-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,2
RTU-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,2

CAPTIVEAIRE IS THE BASIS OF DESIGN. NO EXCEPTIONS.
COOLING CAPACITIES ARE BASED ON AHRI STANDARD 210/240 OR 340/360: 80°F DB/ 67°F WB INDOOR ENTERING AIR TEMPERATURE, 95°F DB AIR ENTERING OUTDOOR FAN. SCHEDULED UNIT MAY DIFFER FROM AHRI STANDARD CFM.
1. PROVIDE EQUIPMENT WITH SCCR GREATER THAN THE AVAILABLE FAULT CURRENT AT THE EQUIPMENT OR UPSTREAM PANELBOARD. REFER TO THE ELECTRICAL ONE LINE DIAGRAM AND PANEL SCHEDULES FOR AVAILABLE FAULT CURRENT AT UPSTREAM PANELBOARD.
2. REFERENCE CAPTIVEAIRE DRAWINGS FOR SCHEDULE INFORMATION.

DUCTLESS SPLIT SYSTEMS

MARK	COOLING NOMINAL (TONS)	COOLING TOT (MBH)	COOLING SEN (MBH)	HEATING OUT (MBH)	SUPPLY AIR (CFM)	FAN (WATT)	ELECTRICAL VOLT	ELECTRICAL PH	ELECTRICAL MCA	ELECTRICAL MOCP	SEER2	EER2	IEER	REFRIG TYPE	TRANE MODEL NUMBER	REMARKS
FC-1	1.25	15.00	10.80	18.00	405	50	208	1	1.0	15	20.6	12.0	-	R454B	SLZ-AF15NL	1-3

TRANE IS THE BASIS OF DESIGN. NO EXCEPTIONS.
REMARKS:
1. INDOOR UNIT POWER PROVIDED FROM OUTDOOR UNIT.
2. PROVIDE NEW TRANE TAR-43MAAUB WIRED THERMOSTAT.
3. PROVIDE WITH GRILLE, SLP-18FAU.

AIR SOURCE HEAT PUMPS

MARK	LOCATION	SERVES	NOMINAL COOL (TONS)	HEATING AT 47F (MBH)	ELECTRICAL VOLT	ELECTRICAL PH	ELECTRICAL MCA	ELECTRICAL MOCP	SEER2	EER2	IEER	HSPF2	COP	REFRIG TYPE	MANUFACTURER	MODEL NUMBER	REMARKS
ASHP-1	ROOF	FC-1	1.25	18.0	208	1	17.0	29	20.6	12.0	-	10.1	3.3	R454B	TRANE	SUZ-AA15NL	1,2

TRANE IS THE BASIS OF DESIGN. NO EXCEPTIONS
REMARKS:
1. PROVIDE EQUIPMENT WITH SCCR GREATER THAN THE AVAILABLE FAULT CURRENT AT THE EQUIPMENT OR UPSTREAM PANELBOARD. REFER TO THE ELECTRICAL ONE LINE DIAGRAM AND PANEL SCHEDULES FOR AVAILABLE FAULT CURRENT AT UPSTREAM PANELBOARD.
2. PROVIDE LOW AMBIENT CONTROL.

AIR PURIFICATION SYSTEMS

UNIT NO.	PLACEMENT	PHI CELL MODEL #	UV/CELL SIZE	RANGE	INDOOR PPM TARGET	SIZE	TRANSFORMER	POWER	IN-VOLT	OUT-VOLT	MCA	WEIGHT (LBS.)
RTU-1	BLOWER CABINET	PHI-PKG14-24V	14"	3,000-8,000 CFM	< 0.02 PPM	2.25"W x 18.5"L x 1.75"D	SHIP LOOSE	11W	115 VAC	24 VAC	0.70A	2 LBS
RTU-2	BLOWER CABINET	PHI-PKG14-24V	14"	3,000-8,000 CFM	< 0.02 PPM	2.25"W x 18.5"L x 1.75"D	SHIP LOOSE	11W	115 VAC	24 VAC	0.70A	2 LBS

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REVISIONS

△	DATE	DESCRIPTION
1	09/26/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale drawings.

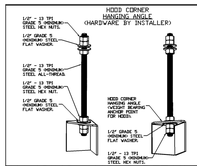
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SHEET NAME: **MECHANICAL SCHEDULES**

DATE: 06/01/2026 | PROJECT NO.: 41354
DRAWN: | SCALE: AS NOTED

SHEET NO.: **M601**

SE JOB# 250519



HANGING ANGLE DETAILS

HOOD STYLE / MODEL	450 DEGREES cfm/ft.	600 DEGREES cfm/ft.	700 DEGREES cfm/ft.
CANOPY ND-2	150	200	250
CANOPY ND-2 W/ END PANELS	105	140	175
SLOPED SND-2	228	294	–
ISLAND ND-2W	269	300	350
ISLAND ND-2I	346	422	475

ETL HOOD LISTING DETAIL

EXHAUST CFM = LENGTH OF HOOD X CFM/LIN.FT. (LOAD)

SUPPLY CFM = EXHAUST CFM X PERCENTAGE REQUIRED

TOTAL DUCT AREA (sq. in.) = 144 X $\frac{\text{CFM}}{\text{FPM(*)}}$

DUCT LENGTH = $\frac{\text{TOTAL DUCT AREA}}{\text{DUCT WIDTH}}$

* CAPTIVEAIRE VENTILATOR DUCT SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1400-1800 FPM AND A SUPPLY VELOCITY OF 1000 FPM.

CALCULATIONS UTILIZED

CAPTIVE-AIRE HOODS BUILT IN COMPLIANCE WITH:

ETL LISTED 3054804-001 & 3054804-002 — STANDARD 710 — Intertek — BUILT IN ACCORDANCE WITH NFPA No. 96

Listed under ETL File number 3054804-001/002

BUILDING CODES

CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:

MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

CLEARANCE TO COMBUSTIBLES

INSTALLATION

1. ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
2. ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
3. HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
4. ALL CONNECTIONS FROM CAPTIVEAIRE HOOD PER MECHANICAL CONTRACTOR'S PLANS.
5. COOKING EQUIPMENT TO SHUT OFF IN EVENT OF FIRE.
6. EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
7. ALL LIGHT FIXTURES SHOWN INSTALLED BY CAPTIVEAIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES ARE BY ELECTRICAL CONTRACTOR.
8. LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
9. SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
10. INSTALLING CONTRACTORS ASSUME ALL RELATED REPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

BALANCE

11. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
12. KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.
13. RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

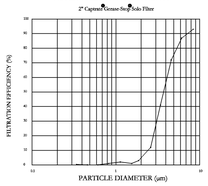
ADDITIONAL

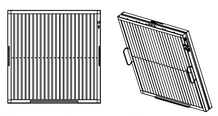
14. WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
15. SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

GENERAL NOTES

FILTER COLLECTION EFFICIENCY

2" Captrate Grease-Stop Baffle Filter





CaptiveAire Captrate Solo Filter
ETL Listed Grease Extracting Filters
Made From 430 Stainless Steel

FILTER DETAIL

FOR QUESTIONS, CALL THE
Eastern PA Mechanical
REGION 108
PHONE: (267) 504 - 4126
EMAIL: reg108@captiveaire.com

HOOD INFORMATION – JOB#8511005

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	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	Hood (Grill)	5430 ND-2	CAPTIVEAIRE	7' 11"	450 DEG	I	MEDIUM	175	1385	10"	13"	4"		1385	1534	-0.525"	430 SS WHERE EXPOSED	ALONE	ALONE
2	Hood (Fryer)	5430 ND-2	CAPTIVEAIRE	4' 11"	600 DEG	I	HEAVY	200	983	10"	9"	4"		983	1573	-0.599"	430 SS WHERE EXPOSED	ALONE	ALONE

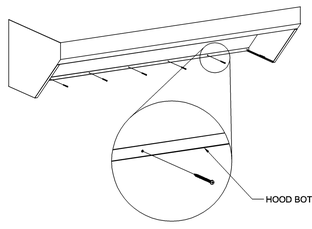
HOOD INFORMATION

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	SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	Hood (Grill)	CAPTRATE SOLO FILTER	5	20"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO							YES	471 LBS
2	Hood (Fryer)	CAPTRATE SOLO FILTER	3	20"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO	RIGHT	12"x54"x30"	TANK FS	4.0/4.0/4.0	SC-320110MA	1 LIGHT 1 FAN	YES	748 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	Hood (Grill)	FIELD WRAPPER 12.00" HIGH FRONT, LEFT, RIGHT.
		LEFT END STANDOFF (FINISHED) 1" WIDE 54" LONG INSULATED.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 6IN PLEN.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		GFCI DUPLEX OUTLET, 20A 125V - HOOD FRONT LEFT - VERTICAL - DIST FROM END: 3.50 DIST FROM BOTTOM: 4.00.
		GFCI DUPLEX OUTLET, 20A 125V - HOOD FRONT RIGHT - VERTICAL - DIST FROM END: 3.50 DIST FROM BOTTOM: 4.00.
		LEFT WALL AS END PANEL.
2	Hood (Fryer)	FIELD WRAPPER 12.00" HIGH FRONT, LEFT, RIGHT.
		RIGHT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS.
		LEFT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 6IN PLEN.

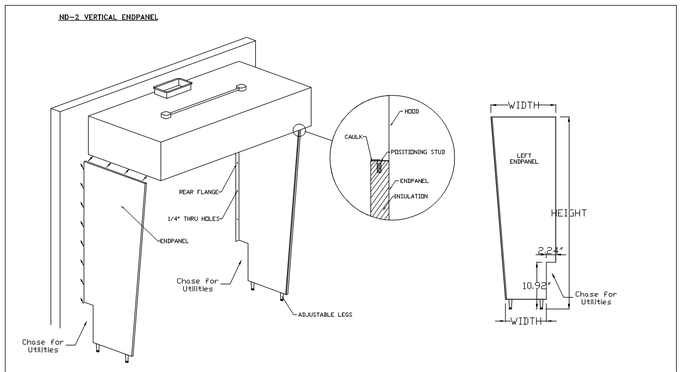
Bottom Flange Securing Detail

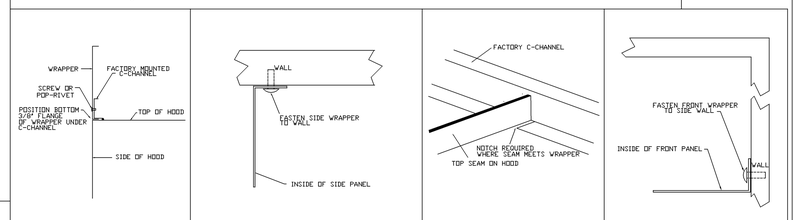


Secure the bottom of the hood to the rear wall using 1404 Evergreen Quik-Fastener. Use a minimum of 1 fastener every 16"on the bottom flange. For walls with metal studs, use a minimum of 1 fastener on the bottom flange at each stud

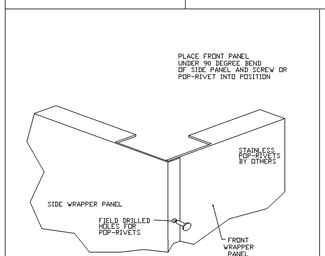
Only Use SIL-BOND RTV 4500 silicone sealent on hood

ND-2 VERTICAL ENDPANEL

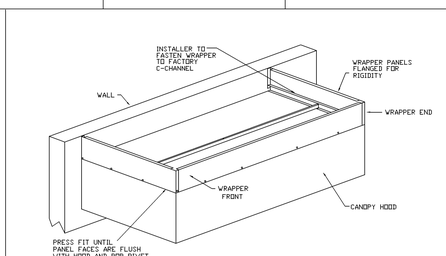




WRAPPER DETAIL — REAR WALL ATTACHMENT — TOP HOOD SEAM DETAIL — SIDE WALL ATTACHMENT



FRONT CORNER ASSEMBLY



COMPLETED WRAPPER ASSEMBLY

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Shake Shack-1794-Coconut Point Estero,FL(Kitchen)
ESTERO, FL, 33928

DATE: 2/17/2026

DWG.#: 8511005

DRAWN BY: joe.shilloa

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

MASTER DRAWING

SHEET NO. 1

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REVISIONS

	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

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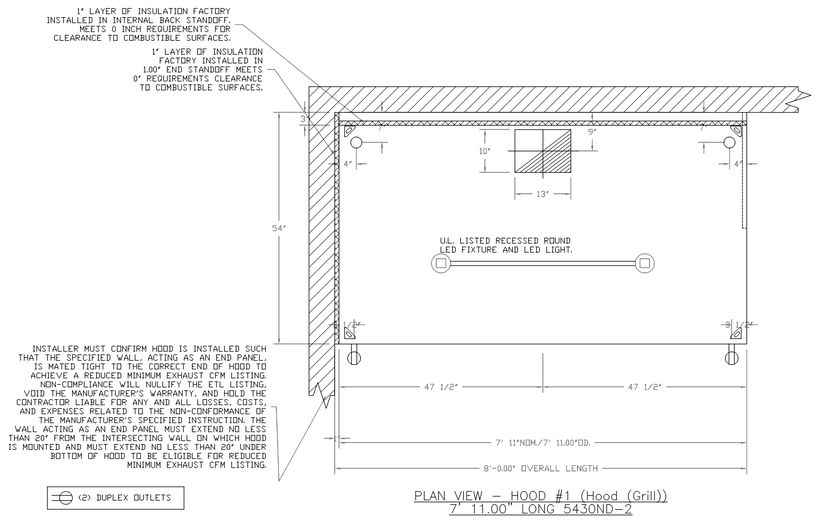
SHEET NAME: CAPTIVEAIRE DRAWINGS

DATE: 08/01/2026 | PROJECT NO.: 41354

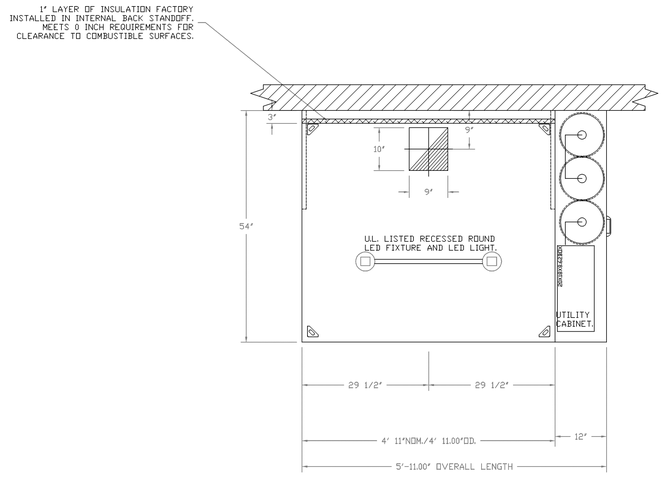
DRAWN: | SCALE: AS NOTED

SHEET NO.: M701

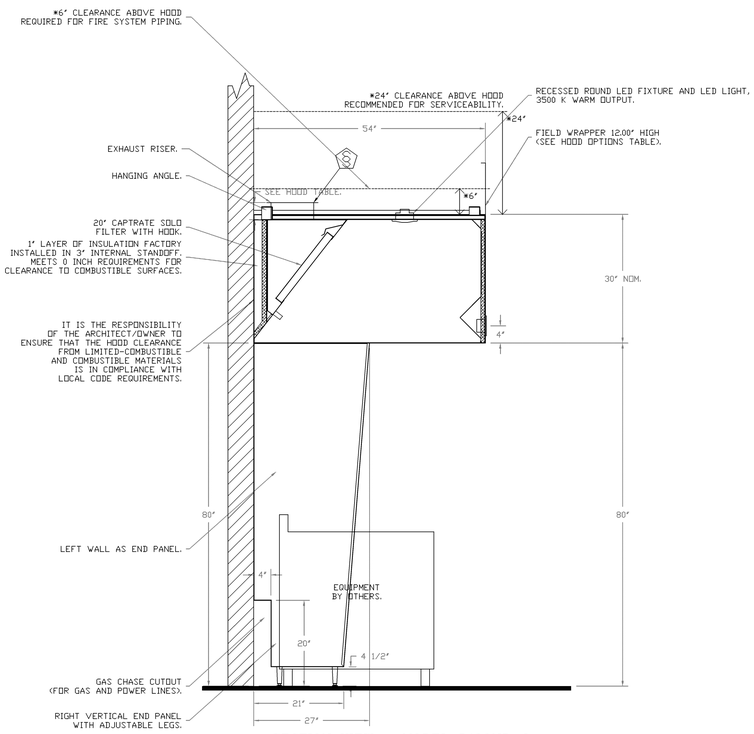
SE JOB# 28519



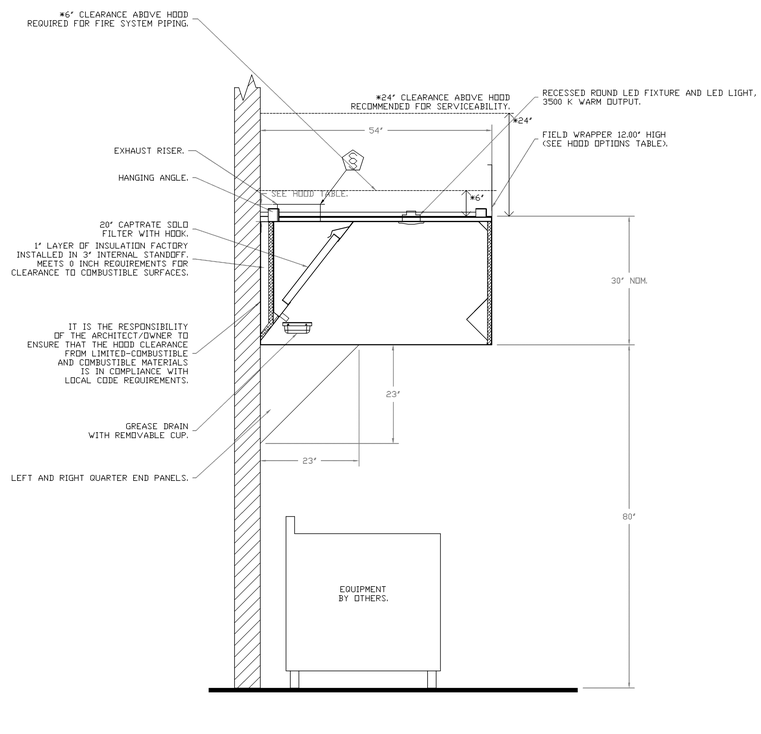
PLAN VIEW – HOOD #1 (Hood (Grill))
7' 11.00" LONG 5430ND-2



PLAN VIEW – HOOD #2 (Hood (Fryer))
4' 11.00" LONG 5430ND-2



SECTION VIEW – MODEL 5430ND-2
HOOD – #1 (Hood (Grill))



SECTION VIEW – MODEL 5430ND-2
HOOD – #2 (Hood (Fryer))

REVISIONS

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Shake Shack-1794-Coconut Point Estero,FL(Kitchen)
ESTERO, FL, 33928

DATE: 2/17/2026

DWG.#: 8511005

DRAWN BY: joe.shilba

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

MASTER DRAWING

SHEET NO. 2

SHAKE SHACK
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REVISIONS

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1	08/28/2026	REVISION 1

STATUS: IFC SET

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SHEET NAME: CAPTIVEAIRE DRAWINGS

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN:
SCALE: AS NOTED

SHEET NO.: M702

SI JOB#: 26019

FIRE SYSTEM INFORMATION – JOB#8511005

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0/4.0	60	46	FIRE CABINET RIGHT	RIGHT, HOOD 2

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 PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

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

JOB #: 8511005.
JOB NAME: SHAKE SHACK-1794-COCONUT POINT ESTERO,FL(KITCHEN).

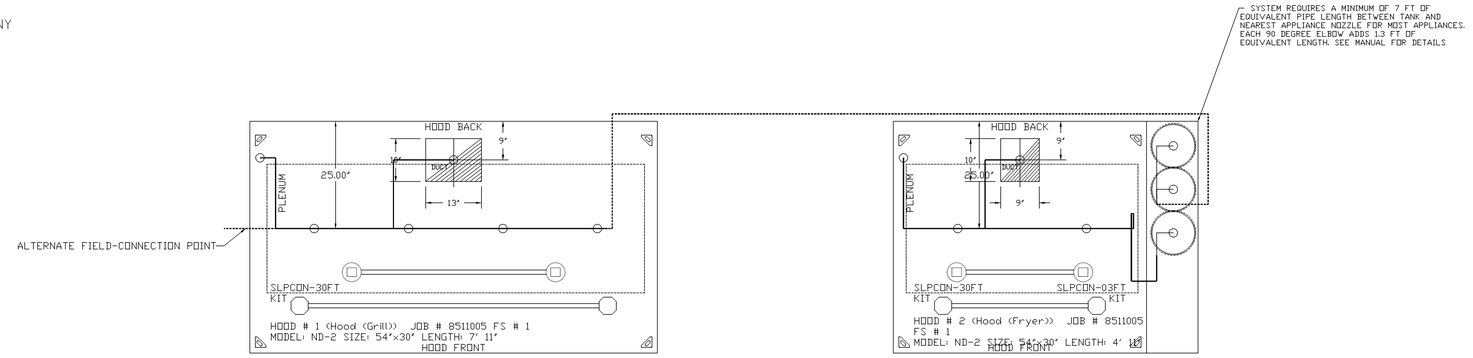
SYSTEM SIZE: TANK-SP-3 DESIGN FP: 46, MAXIMUM FP: 60.
HOOD # 1 7' 11.00" LONG x 54" WIDE x 30" HIGH.
RISER # 1 SIZE: 10" x 13".
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 4' 11.00" LONG x 54" WIDE x 30" HIGH.
RISER # 1 SIZE: 10" x 9".
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

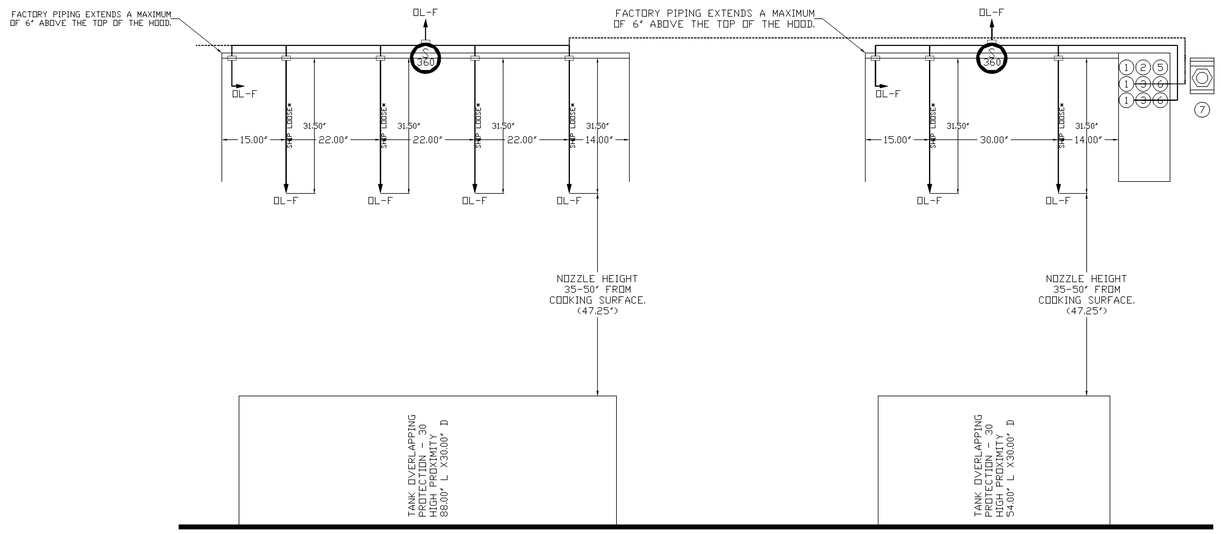
- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

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

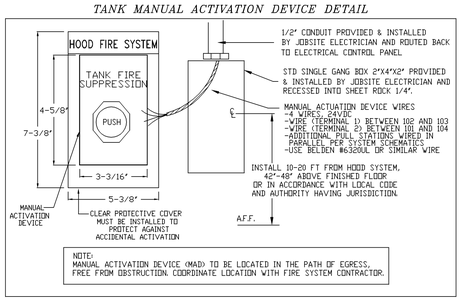
LEGEND – FIRE CABINET TANK SYSTEM

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.





TANK MANUAL ACTIVATION DEVICE DETAIL



SE JOB# 28519

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Shake Shack-1794-Coconut Point Estero,FL(Kitchen)
ESTERO, FL, 33928

DATE: 2/17/2026
DWG.#: 8511005
DRAWN BY: joe.shilba
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 3

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	DATE	DESCRIPTION
1	02/26/2026	REVISION 1

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SHEET NAME: CAPTIVEAIRE DRAWINGS

DATE: 08/01/2026
PROJECT NO.: 41354
DRAWN:
SCALE: AS NOTED

SHEET NO.: M703

EXHAUST FAN INFORMATION – JOB#8511005

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(GRILL)	1	DU85HFA	CAPTIVEAIRE	1385	1.250	1443	TEAO-ECM	1.000	0.6070	1	277	5.2	438 FPM	95	13.2
2	KEF(FRYER)	1	DU85HFA	CAPTIVEAIRE	983	1.250	1379	TEAO-ECM	1.000	0.4810	1	277	5.2	311 FPM	95	11.8

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF(GRILL)	YES						
2	KEF(FRYER)	YES						

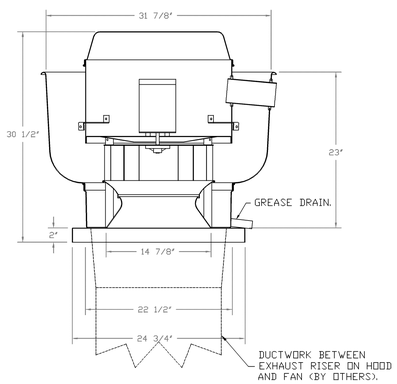
CURB ASSEMBLIES

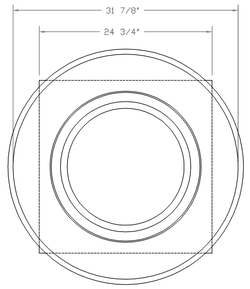
NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1	36 LBS	CURB	23.000"W X 23.000"L X 20.000"H HINGED.
2	# 2	KEF(FRYER)	36 LBS	CURB	23.000"W X 23.000"L X 20.000"H HINGED.

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF(GRILL)	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	EXHAUST FAN HEAT BAFFLE
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
2	KEF(FRYER)	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	EXHAUST FAN HEAT BAFFLE
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY

FANS #1 (KEF(GRILL)), #2 (KEF(FRYER)) - DU85HFA EXHAUST FAN





TOP VIEW

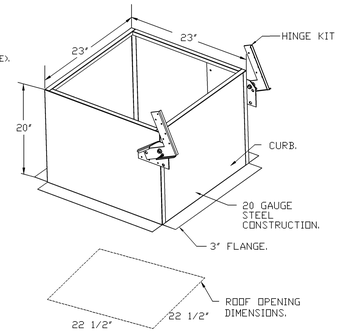
FEATURES:

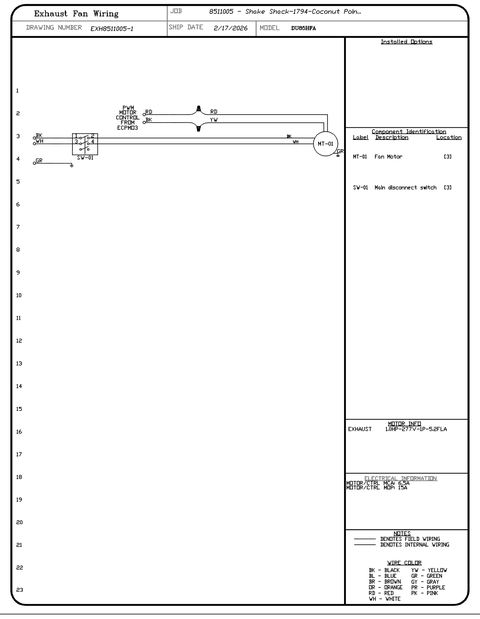
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT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

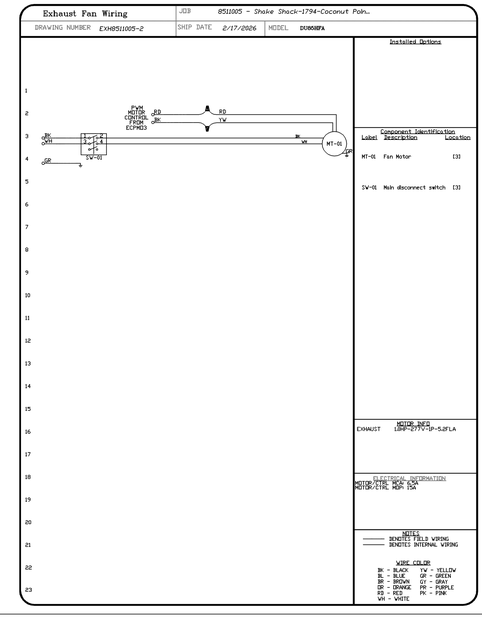
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

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.
- FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS.
- EXHAUST FAN HEAT BAFFLE.
- ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.







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Shake Shack-1794-Coconut Point Estero,FL(Kitchen)

ESTERO, FL, 33928

DATE: 2/17/2026

DWG.#: 8511005

DRAWN BY: joe.shilba

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

MASTER DRAWING

SHEET NO. 4

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SHEET NAME: CAPTIVEAIRE DRAWINGS

DATE: 06/01/2026

PROJECT NO.: 41354

DRAWN:

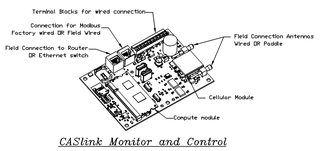
SCALE: AS NOTED

SHEET NO.: M704

SE JOB# 29519

ELECTRICAL PACKAGE – JOB#8511005

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		SC-320110MA	UTILITY CABINET RIGHT	UTILITY CABINET RIGHT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	KEF(Grill)	EXHAUST	1	1.000	277	5.2
				HOOD # 2	1 FAN		KEF(Fryer)	EXHAUST	1	1.000	277	5.2



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*
Fans 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*
Fans Button(s)	*MONITOR & CONTROL*
Lights Button(s)	*MONITOR & CONTROL*
Wash Button	*MONITOR & CONTROL*

JOB NO 8511005 | MODEL NUMBER SC-320110MA | JOB NAME Shake Shack-1794-Coconut Poin… | DRAWN BY | DATE 2/17/2026 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-1

DESCRIPTION OF OPERATION:
3 Phase w/ control for 2 Exhaust Fans. Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Force On/Off Thermostatically Controlled, Rate Temperature sensor shipped loose for Field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.

BREAKER PANEL TO PRIMARY CONTROL PANEL
Responsibility: Electrician
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED

BREAKER PANEL
BREAKER 1PH 120 V 15 A
CONTROL POWER. DO NOT TIE TO GFCI OR SHUNT TRIP BREAKER. 1ST HOOD LIGHT BREAKER SHARED W/ CONTROL POWER SWITCH #1
PRIMARY CONTROL PANEL
Hot, Neutral, Ground
H1 H2 N GND

BREAKER PANEL TO FANS
Responsibility: Electrician
BREAKER PANEL
BREAKER 1PH 277V MCA: 6.5A MOCP: 15A — KEF(Grill)
BREAKER 1PH 277V MCA: 6.5A MOCP: 15A — KEF(Fryer)
FANS
LINE, LINE, Ground — POWER TO ECM FANS

CONTROL PANEL TO FANS
Responsibility: Electrician
PRIMARY PANEL
PWM SPEED SIGNAL ECM-01 CONTROL PANEL TO ECM — PWM1, PWR1, GND1
PWM SPEED SIGNAL ECM-02 CONTROL PANEL TO ECM — PWM2, PWR2, GND2
FEED STP THROUGH INNER COOLING TUBE ALLOW FOR ENOUGH SLACK ON STP FOR PROPER WINDING. (EXHAUST ONLY) MOTO PWM SIGNAL IS POLARITY SENSITIVE. — SHIELD WIRE TO PWR
FANS
R3 TO R3 NIDEC MOTOR 3K TO GR TECO MOTOR 3K TO BR ZIEHL MOTOR 3K TO BR
KEF(Grill) — ECM-01 — FAN 01
KEF(Fryer) — ECM-02 — FAN 02

CONTROL PANEL TO ACCESSORY ITEMS
Responsibility: Electrician
CONTROL PANEL — COMPONENT
CONTROL PANEL TO SWITCHES — J4 — ALL SWITCHES FACTORY WIRED CAT-5 CONNECTION
CONTROL PANEL TO HOOD LIGHTS 1400 V MAX — L1, L2, GND — BLACK, WHITE, GREEN — HOOD LIGHTS 1
WIRE TO J-BOX ON TOP OF HOOD
CONTROL PANEL TO WORLD WIDE WEB — COMM — ROUTER
CAT-5 ETHERNET CONNECTION
WIRE DIRECTLY TO COMMUNICATION MODULE. NOT REQUIRED IN SHOP 2? UDP PORT 1444 & 1445 OPEN FOR OUTBOUND TRAFFIC ONLY.
CONTROL PANEL TO ROOM TEMP SENSOR — T1A, T1B — ROOM TEMP GROUP(S)
WIRE TO CONTROL BOARD. INSTALL SENSOR IN ROOM AWAY FROM HEAT SOURCES. DO NOT INSTALL SENSOR ON THE CEILING GRID, SEE MANUAL.
CONTROL PANEL TO CAPTURE VOLUME SENSOR — T2A, T2B — HOOD 2 CAPTURE 1
FACTORY WIRED TEMPERATURE SENSOR MOUNTED IN HOOD CAPTURE VOLUME.
CONTROL PANEL TO CAPTURE VOLUME SENSOR — T3A, T3B — HOOD 1 CAPTURE 1
WIRE TO CONTROL BOARD. SENSOR MOUNTED IN HOOD CAPTURE VOLUME.
CONTROL PANEL TO GAS VALVE 120V ONLY — GAS, NEUTRAL — GAS SOLENOID
HOT TO GAS VALVE
ONLY ENERGIZED THROUGH LCD HMI WHEN FIRE SYSTEM ARMED.
THE FOLLOWING CONNECTIONS MAY OR MAY NOT BE REQUIRED BASED ON JURISTIC SPECIFICATIONS
ST TERMINAL IS ENERGIZED IN FIRE CONDITION. — SHUNT COIL
HOT TO SHUNT COIL
NEUTRAL FROM SHUNT COIL
CONTROL PANEL SIGNAL FOR EXTERNAL SHUNT TRIP — ST, N — CONT.PLATES
HOT TO CONTACTOR COIL
NEUTRAL TO CONTACTOR COIL
CONTROL PANEL SIGNAL FOR EXTERNAL CONTACTOR COIL — KS, N — CONTACTOR_COIL
KS TERMINAL IS DE-ENERGIZED IN FIRE CONDITION.

CONTROL PANEL — COMPONENT
CONTROL PANEL TO DRY CONTACT ON/OFF WITH SUPPLY FAN GROUP 1 — SF1A, SF1B, SF2A, SF2B — COMMON, NORMALLY OPEN, COMMON, NORMALLY OPEN
SPARE CONTACTS WILL MAKE COMMON TO NORMALLY OPEN WHEN SUPPLY FAN IS ON.
CONTROL PANEL TO EXTERNAL SWITCH — H1, H2 — SIGNAL SWITCH THROUGH BMS WILL ACTIVATE ZONE1 FANS AND LIGHTS — BMS SWITCH
CONTROL PANEL TO DRY CONTACT ON/OFF WITH EXHAUST FAN GROUP 1 — EF1A, EF1B, EF2A, EF2B — COMMON, NORMALLY OPEN, COMMON, NORMALLY OPEN
SPARE CONTACTS WILL MAKE COMMON TO NORMALLY OPEN WHEN EXHAUST FAN IS ON.
CONTROL PANEL TO GAS VALVE 24V DC ONLY — GSV1, GSV2 — POSITIVE TO GAS VALVE, NEGATIVE — GAS SOLENOID
ONLY ENERGIZED THROUGH LCD HMI WHEN FIRE SYSTEM ARMED. MAY NEED TO BE USING 120V GAS VALVES.

CONTROL PANEL TO FIRE SYSTEM
Responsibility: ALARM CONTRACTOR
CONTROL PANEL — COMPONENT
CONTROL PANEL SIGNAL FOR BUILDING FIRE ALARM PANEL — J9 — ALL, ALI — BUILDING ALARM PANEL FIRE INPUT
WIRE DIRECTLY TO CORE CIRCUIT BOARD. ALI WILL MAKE ALI IN FIRE CONDITION.
CONTROL PANEL SIGNAL FOR BUILDING TROUBLE ALARM — TBC, TBC — NORMALLY CLOSED — BUILDING ALARM PANEL
TROUBLE RELAY CONTACTS WILL MAKE TBC TO TBL IN TROUBLE CONDITION.

JOB NO 8511005 | MODEL NUMBER SC-320110MA | JOB NAME Shake Shack-1794-Coconut Poin… | DRAWN BY | DATE 2/17/2026 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-2

DESCRIPTION OF OPERATION:
2 Phase w/ control for 2 Exhaust Fans. Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Force On/Off Thermostatically Controlled, Rate Temperature sensor shipped loose for Field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.

CONTROL PANEL TO FIRE SYSTEM
Responsibility: CERTIFIED INSTALLER
CONTROL PANEL — COMPONENT
CONTROL PANEL TO DUCT MOUNTED FIRE DETECTION STATION — 24VDC, 24VDC — FIRE STAT
FIRE STAT SUPERVISED LOOP – 2 WIRES BETWEEN FS AND Field wiring. See Installation Schematic. Multiple Fire sensors possible. 24VDC, 2.5mA, 2.5K EOL. (ILSR2R-x1) required for all Supervised Loop wiring in contact with a hood. All other wiring shall be FPL 6300UL, Belden or similar. — FS-01 Fire Stat, FS-02 Fire Stat
CONTROL PANEL TO FIRE SYSTEM PULL STATION — 24VDC, 24VDC — PULL STATION
MANUAL ACTUATION LOOP / REMOTE FIRE SYSTEM LOOP – Multiple manual actuation possible. Wire as supervised loop. Install as a Pull paper with wires from pull to pull. Pull stations shall be mounted or you remove the paper covering. Pull stations shall be mounted no more than 48" above finished floor. Alternative device is optional for fire system interlock. — MS-01 Micro SW, AUX-01 Adjacent FS that MS-01 is wired to, Manual Actuation Device
Auxiliary Interlock 4&5-NO: Wire NO-2 NO of adjacent Master FS Panel. Auxiliary Interlock 6&7-NO: For mechanical activation, see fire system drawings for more information.
CONTROL PANEL TO MASTER FS BOARD. — J3 — CAT-5 CONNECTION — CORE PCB — J5, J6
ADDITIONAL DEVICES MAY BE INLINE. PLACE END OF LINE PLUG IN EMPTY J6. IPL-PK EOL120A OR OTHER COMPONENT IN SERIES — EOL120A
INTERLOCK NETWORK CONTROL PANEL TO MASTER FS PANEL — CA, CB, CC — SHIELDED CAT5E PAIR — BLACK, RED, SHIELD — MASTER CORE — CA, CB, CC
WIRE TO LAST TERMINATED FS ALL SUBSEQUENT FS SHALL BE WIRED TO PREVIOUS FS'S MASTER FS ACTIVATES ALL FS'S IN SERIES WIRED IN SUPERVISED LOOP.
-USE BELDEN #6320UL OR SIMILAR WIRE
-SEE FIGURE 2A

JOB NO 8511005 | MODEL NUMBER SC-320110MA | JOB NAME Shake Shack-1794-Coconut Poin… | DRAWN BY | DATE 2/17/2026 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-3

DESCRIPTION OF OPERATION:
Fire System #1 TANK-FS - 42/48/60. Twin-tenant Fire Protection System equipped with Electronic Detection utilizing CORE Source as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.

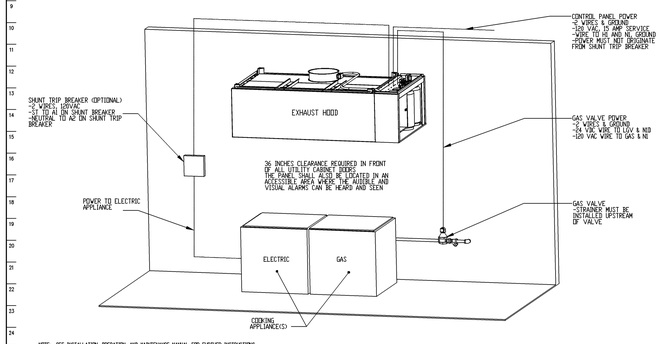
TANK PROTECTION ELECTRICAL DETAIL

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 & NI	BREAKER COIL (AI 1 & 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 & NI	KTS & NI	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AUI, AI2	SOLENOID	120 VAC	< 6 AMPS	120V TO AUI, AI2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	LGV & N2I (IF 24 VDC) GAS & N1 (IF 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 1.0 AMPS	IF 24 VDC – 2 WIRES & GROUND, N2 TO RED, LGV 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 8511005 | MODEL NUMBER SC-320110MA | JOB NAME Shake Shack-1794-Coconut Poin… | DRAWN BY | DATE 2/17/2026 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-4

DESCRIPTION OF OPERATION:
Fire System #1 TANK-FS - 42/48/60. Twin-tenant Fire Protection System equipped with Electronic Detection utilizing CORE Source as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.

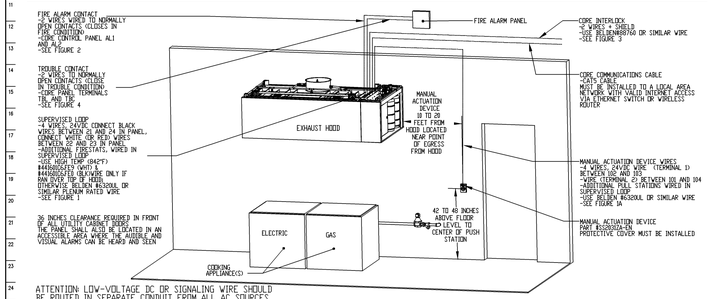
TANK PROTECTION LOW-VOLTAGE DETAIL

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. COMPLETE FINAL HOOKUP OF SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST
*REMOTE FIRESTAT(S) MAYBE BE REQUIRED DEPENDING ON THE DUCT LAYOUT AND HOOD TEMPERATURE RATING. REFERENCE MANUAL FOR LOCATION AND GUIDELINES.

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	< 1.0 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 SURFACE MOUNTED USE COVER EXTENSION SFP-SSSBB
REMOTE FIRESTAT SENSOR(S)	J1 AND J4 J2 AND J3	BLACK AND WHITE	24 VDC	< 1.0 AMPS	WIRE FIRE SENSOR WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS J2 AND J3 WIRE FIRE SENSOR BLACK WIRE BETWEEN HOOD CORE PANEL TERMINALS J1 AND J4 HIGH TEMP (HAZT) #4458005JTEN (WHT) & #4458005JTEN (BLK)WIRE OR SIMILAR ONLY IF RAN IN HOOD, OTHERWISE BELDEN #6320UL OR SIMILAR PLENUM RATED WIRE. SEE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	50V MAX (AC/DC)	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 (1) CA, TO CORE SYSTEM (2) CA. CORE SYSTEM (1) CB, TO CORE SYSTEM (2) CB. CORE SYSTEM (1) CC, TO CORE SYSTEM (2) CC. USE BELDEN 88760 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TBK	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

REVISIONS	
DESCRIPTION	DATE

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SHAKE SHACK

Shake Shack-1794-Coconut Point Estero,FL(Kitchen)
ESTERO, FL, 33928

SHAKE SHACK
COCONUT POINT, FL
3181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISIONS	
DATE	DESCRIPTION
08/26/2026	REVISION 1

DATE: 2/17/2026

DWG.#: 8511005

DRAWN BY: joe.shilloa

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

MASTER DRAWING

SHEET NO. 5

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#:28403

FIELD VERIFICATION:
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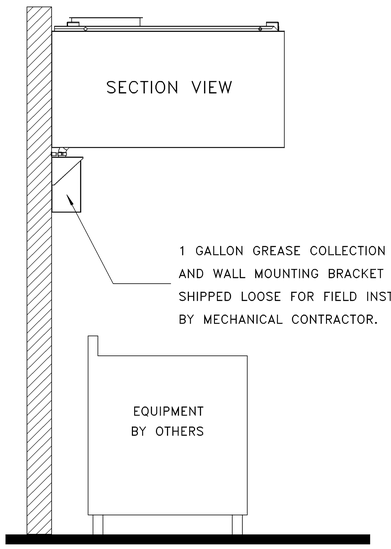
SHEET NAME: CAPTIVEAIRE DRAWINGS

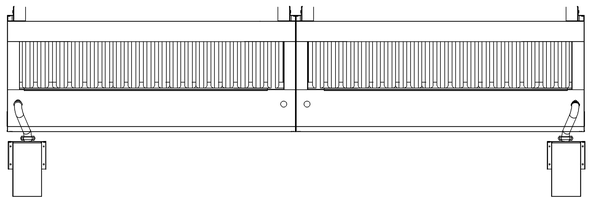
DATE: 06/01/2026 | PROJECT NO.: 41354

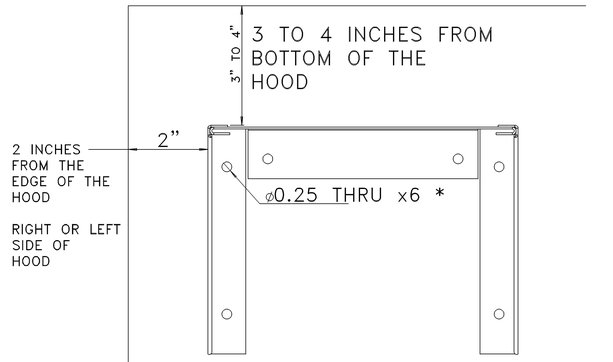
DRAWN: | SCALE: AS NOTED

SHEET NO.: M705

SE JOB# 28519

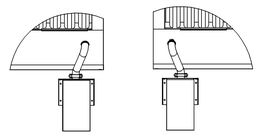


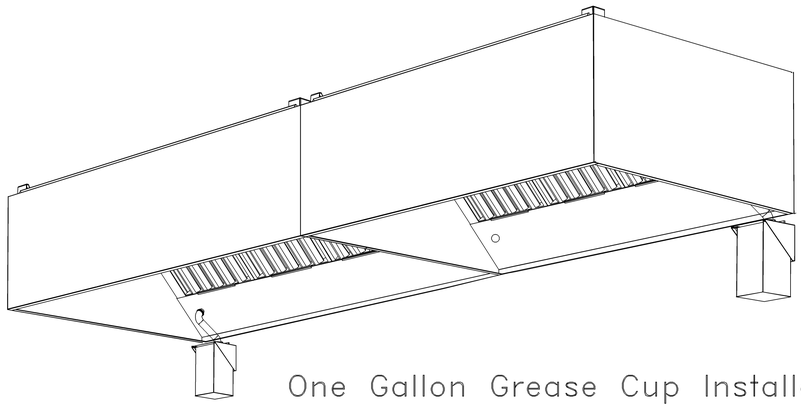




* Mounting hardware not included
**Must be mounted to stud or wall anchor

Left & Right hand Grease Cup Install



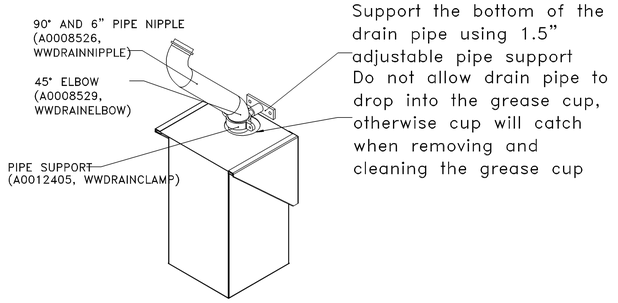


One Gallon Grease Cup Installation

Instructions below outline single, or dual, one gallon grease cup installation for ND–2 hood models.

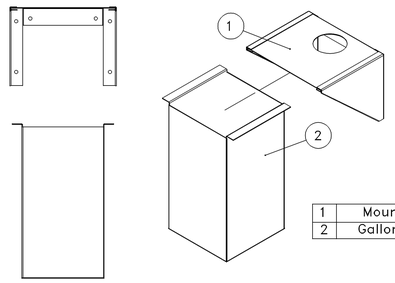
The one gallon grease cup comes as an assembly of stainless steel wall mounting bracket and one gallon cup. The mounting bracket should be installed 2" from the edge of the containment plenum and 3"–4" below the bottom of the hood.

Piping from the hood grease drain should route to the opening of the grease cup, but not into the cup, otherwise the cup will not be able to be removed and emptied.



Support the bottom of the drain pipe using 1.5" adjustable pipe support
Do not allow drain pipe to drop into the grease cup, otherwise cup will catch when removing and cleaning the grease cup

Gallon Grease Cup Assembly



1	Mounting Bracket
2	Gallon Grease Cup

1 GALLON GREASE COLLECTION BOX
AND WALL MOUNTING BRACKET
SHIPPED LOOSE FOR FIELD INSTALLATION
BY MECHANICAL CONTRACTOR.

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

CAPTIVEAIRE

Eastern PA Mechanical
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Shake Shack-1794-Coconut Point Estero,FL(Kitchen)
ESTERO, FL, 33928

DATE: 2/17/2026
DWG.#: 8511005
DRAWN BY: joe.shilba
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 6

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STORE NO.:

SHAKE SHACK
COCONUT POINT, FL
3181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISIONS

	DATE	DESCRIPTION
1	09/26/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0048442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
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SHEET NAME: CAPTIVEAIRE DRAWINGS

DATE: 06/01/2026 | PROJECT NO.: 41354
DRAWN: | SCALE: AS NOTED

SHEET NO.: M706

SE-JOB# 29519

DOAS/RTU FAN SCHEDULE - JOB#8511007

FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	TOTAL CFM	MAX OUTSIDE AIR CFM	RETURN AIR CFM	WEIGHT (LBS)	ESP	ELECTRICAL INFORMATION HP	PHASE	VOLT	MCA	MOCP	COOLING INFORMATION OUTSIDE AIR DB	OUTSIDE AIR WB	MIXED AIR DB	MIXED AIR WB	LEAVING AIR DB	LEAVING AIR WB	LEAVING AIR DP	CAPACITY TOTAL	CAPACITY SENS.	IEER	ISMRE2	REHEAT INFORMATION DISCHARGE DB	DISCHARGE WB	CAPACITY DESIRED	CAPACITY MAX	MOISTURE REMOVAL RATE	GAS HEAT INFORMATION GAS TYPE	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	A2L MINIMUM ROOM VOLUME ROOM AREA (FT2)	AIRFLOW (CFM)	HEIGHT (FT)	NOTES
1	RTU-1 (DINING)	1	CAS-HVAC2-L150-18-13T	CAPTIVEAIRE	18MF-2-RTU	3000	1150	1850	2137	0.800	5.00	3	460	41.5A	45A	86.5°F	80.2°F	80.6°F	69.8°F	53.4°F	53.3°F	53.2°F	156.0 MBH	88.8 MBH	14.2	5.8	70.0°F	59.9°F	56 MBH	103.2 MBH	58.9 LBS/HR	NATURAL	122277	99044	30°F	7 IN. W.C. - 14 IN. W.C.	411.2	740	7.2	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21
2	RTU-2 (KITCHEN)	1	CAS-HVAC3-L200-24-20T	CAPTIVEAIRE	24MF-3-RTU	4500	1700	2800	2704	0.800	7.50	3	460	48.1A	50A	86.5°F	80.2°F	79.4°F	70.1°F	51.5°F	51.5°F	51.5°F	255.5 MBH	136.2 MBH	18.2	7.9	70.0°F	59.0°F	93.9 MBH	129.6 MBH	108.3 LBS/HR	NATURAL	183415	148566	30°F	7 IN. W.C. - 14 IN. W.C.	572.7	1031	7.2	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24

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. 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 20GA EXTERIOR W/ 14GA BASE
11. 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
12. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
13. FULLY MODULATING HOT GAS REHEAT
14. 0°F LOW AMBIENT OPERATION
15. MIAMI DADE RATED
16. HAIL GUARD FOR CONDENSING COIL
17. RTU ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL
18. BAROMETRIC RELIEF DAMPER
19. DOWN DISCHARGE/DOWN RETURN
20. 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.
21. SCCR RATING OF 10kAMP
22. E-COATED CONDENSING COIL
23. E-COATED EVAPORATIVE COIL
24. E-COATED REHEAT COIL

FOR QUESTIONS, CALL THE
Eastern PA Mechanical
REGION 108
PHONE: (267) 504 - 4126
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CURB ASSEMBLIES

NO	ON FAN	TAG	R-VALUE	WEIGHT	ITEM	SIZE	
1	# 1	RTU-1 (DINING)	4.3	104 LBS	CURB	49.500"W X 75.000"L X 18.000"H	INSULATED.
2	# 2	RTU-2 (KITCHEN)	4.3	122 LBS	CURB	59.500"W X 91.000"L X 18.000"H	INSULATED.

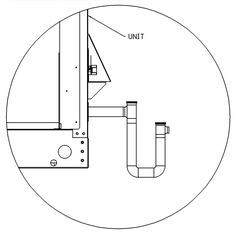
1" R4.3 FOIL FACED FIBERGLASS INSULATION. COMPLIES WITH UL/ULC,ASTM, & ASHRAE STANDARDS.

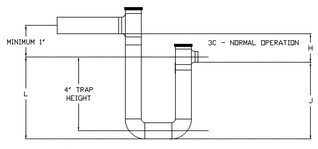
FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	RTU-1 (DINING)	1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	COOLING OVERRIDE
		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	RTU BLOWER DOOR SWITCH
		1	RTU2 DOWN DISCHARGE
		1	2" MERV 13 FILTERS FOR RTU2 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU2 (QTY. 4)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	BLOWER STOP DELAY, ALLOWS RESIDUAL HEAT TO BE TRANSFERRED INTO THE SUPPLY AIR AFTER HEATING HAS STOPPED. FACTORY SET AT: 90 SECS FOR IBT, 30 SECS FOR DF
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	RTU2 CURB DUCT HANGER
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS
		1	RTU2 MIAMI DADE CERTIFICATION
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI
		1	RTU2 CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J-BOX
		1	RTU ECONOMIZER - DIFFERENTIAL ENTHALPY CONTROL
		1	RTU INTAKE/RETURN DAMPER - DA PERCENTAGE CONTROL
		1	RTU2 ECONOMIZER BAROMETRIC RELIEF
		1	2" METAL MESH FILTERS FOR RTU2 OUTDOOR INTAKE
		1	RTU2 HAIL GUARD
		1	RTU2 DOWN RETURN
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED)
		1	LOAD REACTOR MOUNTED IN FAN
		1	13 TON MODULATING COOLING OPTION, 460/480V. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	LOW AMBIENT COOLING OPERATION - DOWN TO 0F AMBIENT
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	13 TON MODULATING REHEAT OPTION - SPACE DEWPOINT CONTROL - R454B
		1	ECOATING FOR RTU2 13T CONDENSER COIL
		1	ECOATING FOR RTU2 13T EVAP COIL
		1	ECOATING FOR RTU2 13T REHEAT COIL
		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

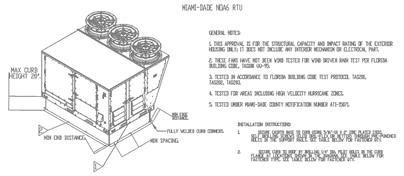
HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #1	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #1	HMI #2 - SPACE	DINING ROOM	AVERAGED	56
FAN #1	HMI #3 - SPACE	MANGERS OFFICE	NOT AVERAGED	57
FAN #2	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #2	HMI #2 - SPACE	KITCHEN	AVERAGED	56
FAN #2	HMI #3 - SPACE	MANAGERS OFFICE	NOT AVERAGED	57

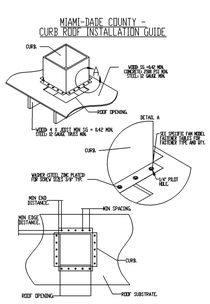
RTU CONDENSATE DRAIN TRAP DETAIL

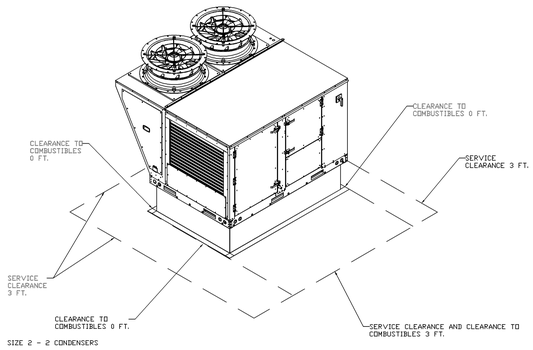




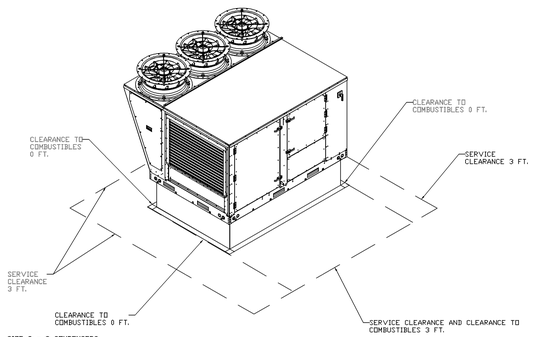
H = (1" FOR EACH 1" OF MAXIMUM NEGATIVE STATIC PRESSURE) + 1"
J = HALF OF H
L = H + J + PIPE DIAMETER + INSULATION







SIZE 2 - 2 CONDENSERS



SIZE 3 - 3 CONDENSERS

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

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Shake Shack - 1794- Coconut Point Estero, FL(HVAC)
ESTERO, FL, 33928

DATE: 2/20/2026
DWG.#: 8511007
DRAWN BY: joe.shilba
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 1

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REVISIONS

△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

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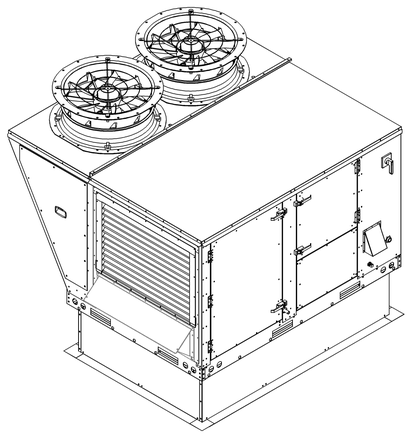
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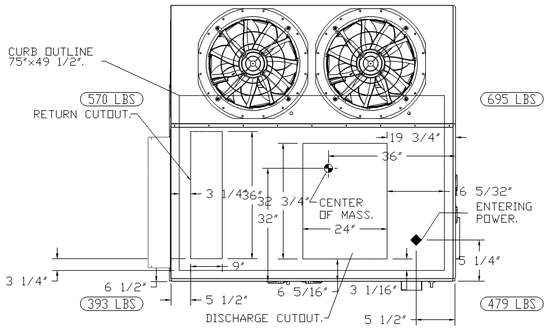
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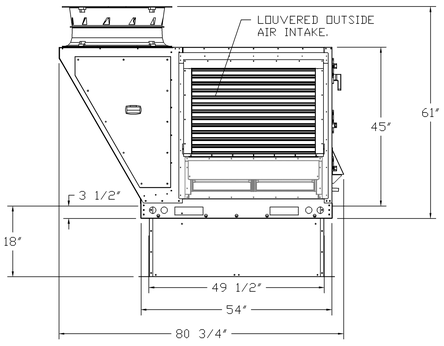
DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN:
SCALE: AS NOTED

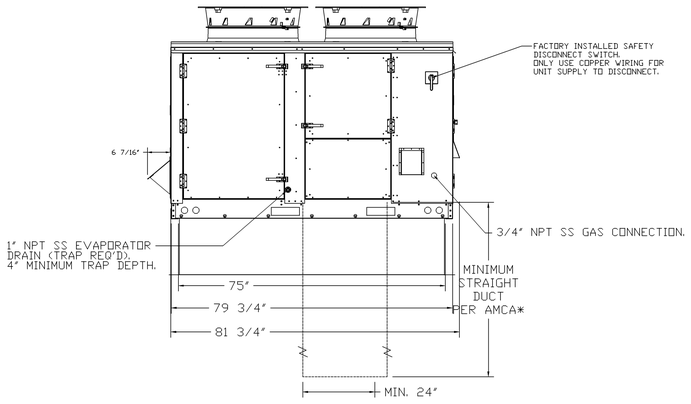
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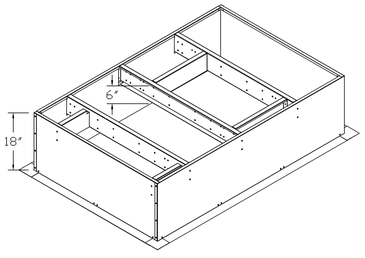
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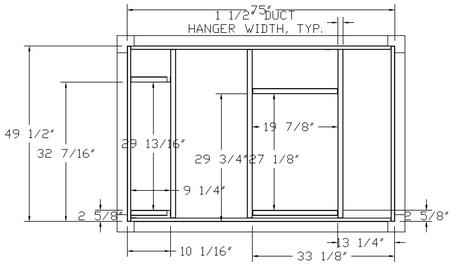


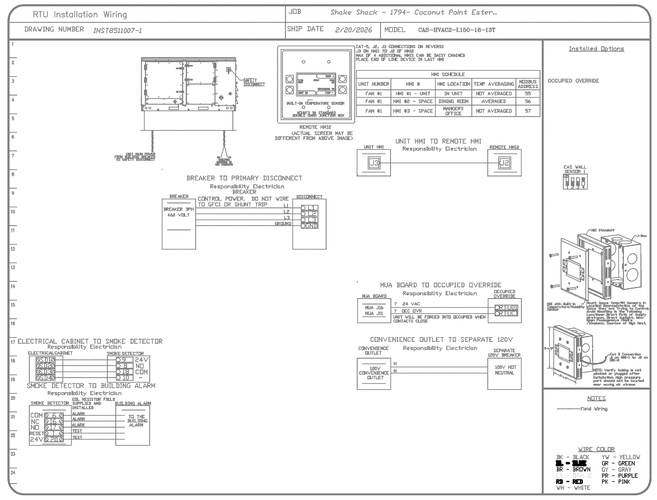


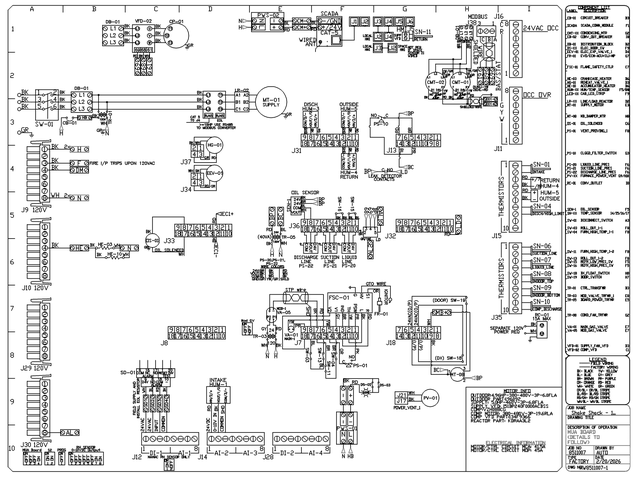












FAN #1 CAS-HVAC2-L150-18MF-13T - HEATER (RTU-1 (DINING))

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.

*NOTE: INTEGRAL CO2 MONITORING AND CONTROL CAPABILITIES FOR ALL SPACE MOUNTED THERMOSTATS.

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

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Shake Shack - 1794- Coconut Point Estero, FL(HVAC)
ESTERO, FL, 33928

DATE: 2/20/2026
DWG.#: 8511007
DRAWN BY: joe.shilba
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 3

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REVISIONS

	DATE	DESCRIPTION
1	08/26/2026	REVISION 1

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Date: 08/27/26 COA#: 28403

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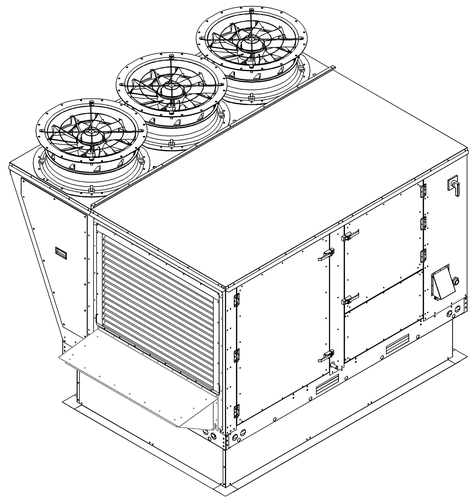
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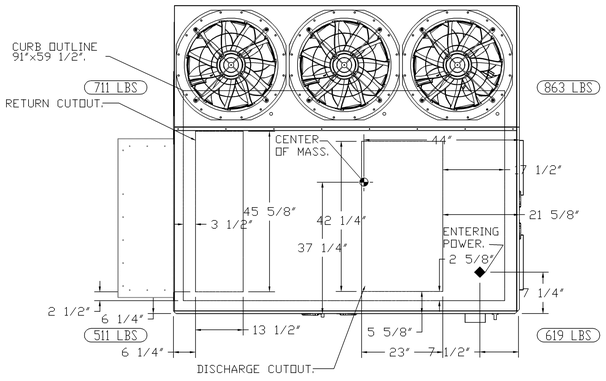
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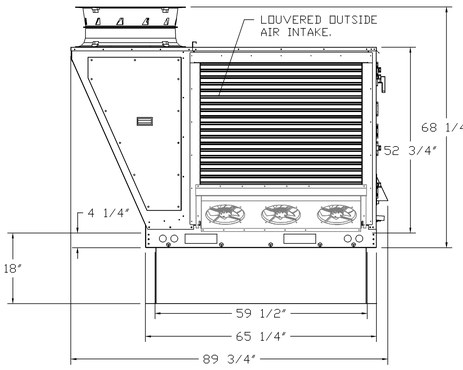
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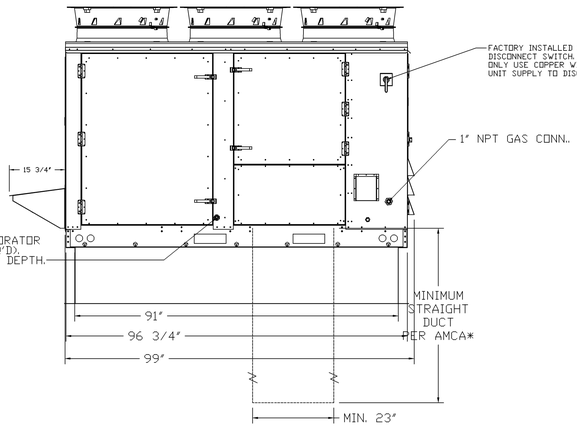
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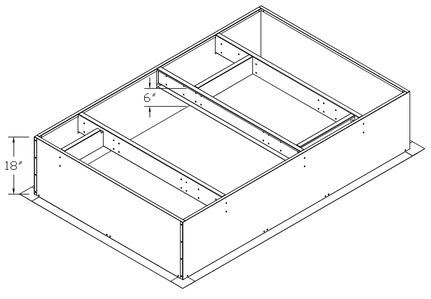
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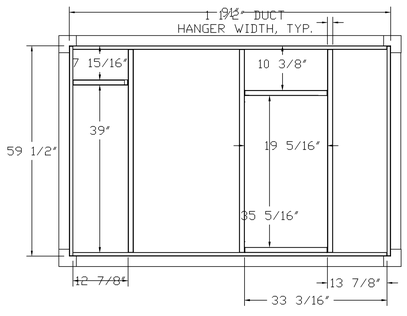


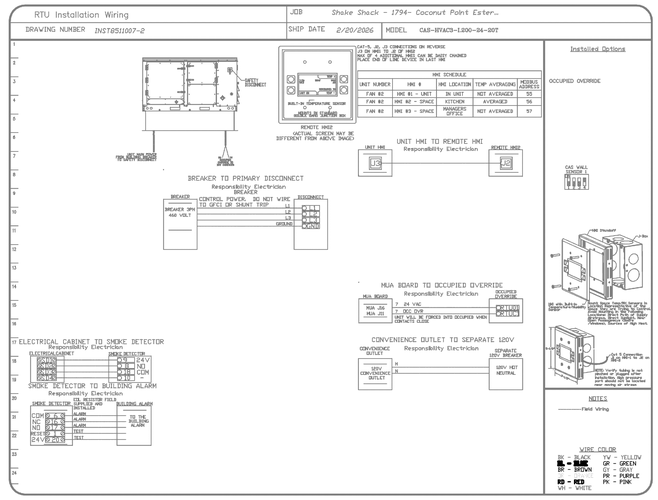


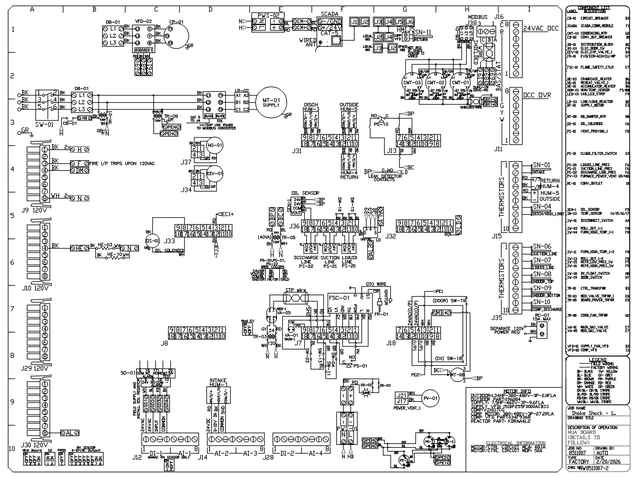











24VAC_DCC
DCC BVR
THERMISTORS
THERMISTORS
MT-01
SUPPLY
SV-01
OUTDOOR
RETURN
DISCHARGE
DISCHARGE SUCTION
SUCTION
OUTDOOR
SUCTION
DISCHARGE
SUCTION
DISCHARGE
SUCTION
DISCHARGE

SHEET NUMBER	SHEET NAME
P001	PLUMBING ABBREVIATIONS AND SYMBOLS
P101	PLUMBING WASTE & VENT PLAN
P120	PLUMBING WATER & GAS PLAN
P150	PLUMBING ROOF PLAN
P501	PLUMBING DETAILS
P502	PLUMBING DETAILS
P590	PLUMBING SPECIFICATIONS
P591	PLUMBING SPECIFICATIONS
P592	PLUMBING SPECIFICATIONS
P601	PLUMBING SCHEDULE
P901	PLUMBING RISER DIAGRAMS
P902	PLUMBING RISER DIAGRAMS

DESCRIPTION	FURNISHED			INSTALLED			REMARKS
	GENERAL CONTRACTOR	OWNER	LANDLORD	GENERAL CONTRACTOR	OWNER	LANDLORD	
DIVISION 22: PLUMBING							
22.1 PLUMBING IDENTIFICATION							
22.1.1 PIPING SYSTEM IDENTIFICATION	X			X			MATERIAL TO CONSIST OF 2" VINYL LETTERING, UNLESS OTHERWISE NOTED IN SPECIFICATIONS
22.1.2 UTILITY SHUT OFF IDENTIFICATION IN KITCHEN	X			X			MATERIAL TO CONSIST OF 2" VINYL RED LETTERING, UNLESS OTHERWISE NOTED IN SPECIFICATIONS
22.1.3 VALVE TAGS AND CHART	X			X			
22.2 DRAINS AND CLEANOUTS							
22.2.1 DRAINS AND FLOOR SINKS	X			X			
22.2.2 THROUGH DRAIN FOR ICE MACHINE	X			X			REFER TO KITCHEN AND PLUMBING SHEET FOR SPECIFICATION
22.3 PIPING SYSTEMS AND SPECIALITIES							
22.3.1 STORM DRAINAGE			X			X	
22.3.2 SANITARY WASTE	X			X			
22.3.3 DOMESTIC WATER	X			X			
22.3.4 GREASE WASTE	X			X			
22.3.5 CONDENSATE	X			X			
22.3.6 VENT	X			X			
22.3.7 NATURAL GAS	X			X			
22.3.8 PIPING FITTINGS	X			X			
22.3.9 VALVES AND SHUT OFF VALVES	X			X			
22.3.10 WATER BOOSTER PUMP	X			X			
22.3.11 GAS BOOSTER PUMP			X			X	
22.3.12 GREASE INTERCEPTOR			X			X	
22.4 INCOMING WATER FILTER SYSTEM		X		X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE FINAL UTILITY CONNECTIONS. SUPPLIED BY VENDOR NO. 43
22.5 WATER HEATER	X			X			
22.6 MOP SINK							
22.6.1 FLOOR MOUNTED MOP SINK	X			X			REFER TO KITCHEN AND PLUMBING SHEET FOR SPECIFICATION
22.6.2 SERVICE FAUCET FOR MOP SINK		X		X			SUPPLIED BY VENDOR NO. 27
22.7 PLUMBING FIXTURES							
22.7.1 TOILETS, URINAL, AND LAVORATORIES	X			X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE ALL NECESSARY FITTINGS (E.G. FLUSH VALVES, FAUCETS, AND FITTINGS)
22.7.2 KITCHEN FAUCETS		X		X			GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE FINAL UTILITY CONNECTIONS

⚠

LANDLORD PLAN NOTES (APPLICABLE THROUGH ALL PLUMBING SHEETS):

- ANY CHANGES AND/OR UPGRADES TO TENANT'S EXISTING PLUMBING SYSTEMS SHALL COMPLY WITH ALL CODES AND MALL CRITERIA. EXISTING SYSTEM SHALL POSSESS THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.
- ALL MAIN WATER LINES SHALL BE COPPER – PVC IS NOT PERMITTED. THERE SHALL BE NO PIPING JOINTS OR FITTINGS INSTALLED IN WATER PIPING BELOW THE FLOOR SLAB.
- ALL DRAIN, WASTE AND VENT FITTINGS ABOVE GRADE MUST BE CAST IRON PIPE.
- PLUMBING IS NOT PERMITTED IN ANY DEMISING PARTITIONS. FUR OUT THE WALL AS NECESSARY.
- EXHAUST AND PLUMBING VENTS SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ANY OUTSIDE AIR INTAKE, AND 5'-0" FROM ANY DEMISING WALL VERTICAL PLANE.
- ALL FLOOR DRAINS ARE REQUIRED TO HAVE TRAP PRIMERS.
- ANY UNUSED PLUMBING EQUIPMENT, PIPING, ETC., WITHIN OR SERVING THE PREMISES MUST BE COMPLETELY REMOVED TO POINT OF ORIGIN. DO NOT ABANDON IN PLACE.
- ALL FLOOR PENETRATIONS MUST BE CORE BORED, SLEEVED, GROUTED, SEALED AND MADE WATERPROOF. SLEEVES MUST EXTEND A MINIMUM OF 4" AFF.
- IF NOT ALREADY EXISTING, INSTALL A SHUT OFF VALVE ON DOMESTIC WATER LINE INSIDE SPACE.
- TENANT IS REQUIRED TO INSTALL A WATERPROOF MEMBRANE IN ALL WET AREAS OF THE SPACE. TENANT SHALL USE A 30 MIL POLYETHYLENE CLEAVAGE MEMBRANE (EQUAL TO NOBLESEAL TS) INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ASNI A108. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 6" OF EQUAL TO THE HEIGHT OF THE FLOOR BASE.

SLAB REQUIREMENTS:

- SLAB ON GRADE: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATION TEAM PRIOR TO ANY SLAB MODIFICATIONS OR REMOVAL. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.
- ELEVATED SLABS: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATIONS TEAM PRIOR TO ANY SLAB MODIFICATION OR REMOVAL. IF ANY ELEVATED SLAB IS TO BE MODIFIED IN ANYWAY (DRILLED, CORED, OR PENETRATED), TENANT SHALL PROVIDE STAMPED AND CERTIFIED DRAWINGS BY A LICENSED STRUCTURAL ENGINEERED CERTIFIED IN THE LOCAL JURISDICTION. ALL PENETRATIONS SHALL BE CORE BORED ONLY. SAW CUTTING, JACK HAMMERING, AND TRENCHING IS STRICTLY PROHIBITED. ALL PENETRATIONS SHALL BE SLEEVED, SEALED, FIRE STOPPED, AND WATERPROOFED. THE PENETRATION SLEEVE SHALL EXTEND A MINIMUM OF 4" ON EITHER SIDE OF THE SLAB AND BE LABELED WITH THE REQUIRED NFPA RATING. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

- LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

PLUMBING SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SANITARY DRAIN ABOVEGROUND		CLEAN OUT
	SANITARY DRAIN BELOWGROUND		GRADE CLEAN OUT
GW	GREASE WASTE ABOVEGROUND	WCO	WALL CLEAN OUT
GW	GREASE WASTE BELOWGROUND	N.I.C.	NOT IN CONTRACT
		VTR	VENT THROUGH ROOF
			BALL VALVE
	VENT LINE		CHECK VALVE
			PRESSURE REGULATING VALVE (PRV)
S	STORM DRAIN ABOVEGROUND		GAS COCK
S	STORM DRAIN BELOWGROUND		PRESSURE REGULATING VALVE (PRV) AND GAS COCK
OS	OVERFLOW STORM DRAIN		
	COLD WATER (CW)		MIXING VALVE
	HOT WATER (HW)		SOLENOID VALVE
	HOT WATER CIRCULATING (HWC)		VALVE IN RISE
140°	HOT WATER 140°		AUTOMATIC BALANCING VALVE
140°	HOT WATER CIRCULATING 140°		RUNNING TRAP
T	TEMPERED WATER	HB	HOSE BIBB
T	TEMPERED WATER CIRCULATING	WH	WALL HYDRANT
CS	COLD SOFT WATER	FH	FIRE HYDRANT
FW1	FILTERED WATER TO SODA MACHINE	V.C.P.	VITRIFIED CLAY PIPE
FW2	FILTERED WATER TO ICE, TEA, & CHILLED WATER	C.I.	CAST IRON
F	FIRE LINE	I.E.	INVERT ELEVATION
G	GAS LINE	B.F.F.	BELOW FINISHED FLOOR
			PLUMBING RISER NUMBER
			DOWNSPOUT NOZZLE
D	CONDENSATE DRAIN	RD	ROOF DRAIN/OVERFLOW ROOF DRAIN

LEGEND

- *EXISTING*
- *NEW WORK*
- *NEW TO EXISTING CONNECTION*

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REVISIONS		
	DATE	DESCRIPTION
1	08/28/2026	REVISION 1
2	09/21/2026	REVISION 2

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date: 09/21/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME: **PLUMBING ABBREVIATIONS & SYMBOL LEGEND**

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN: RMA
SCALE: AS NOTED

SHEET NO.: **P001**

SE JOB#: 255019

PLUMBING FIXTURE SCHEDULE	
Mark	
WC–1	WATER CLOSETS
LAV–1	LAVATORIES
WH–1	WALL HYDRANT
K–36	COMMERCIAL ICE MACHINE
K–40	FLOOR MOP SINK
K–45A	KITCHEN HAND SINK
K–46A	KITCHEN HAND SINK
K–60A	3–COMP SINK FAUCET
K–60B	3–COMP SINK FAUCET
K–61	DISHMACHINE
K–70A	PREP SINK
K–160	CUSTARD MACHINE
K–171	DIPPER WELL
K–177B	DECK MOUNT FAUCET
K–177C	BLENDER CONTAINER RINSER
K–204	TEA BREWER
K–234	GLASS FILLER STATION
3"FD–1	FLOOR DRAIN
3"FS–1	FLOOR SINK
4"FS–2	FLOOR SINK
FCO–1	CLEANOUT – FLOOR
WCO–1	WALL CLEANOUT
TP–1	TRAP PRIMER

*SEE PLUMBING SCHEDULE ON SHEET P601

GREASE INTERCEPTOR CALCULATION

FIXTURE	QTY.	FU	FU TOTAL
FLOOR SINK 3" TRAP	9	5	45
FLOOR SINK 4" TRAP	1	8	8
FLOOR DRAIN (EMERGENCY)	4	0	0
TRENCH DRAIN 4" TRAP	1	8	8
MOP SINK	1	2	2
HAND SINK	4	2	8
TOTAL			71 (39.5 GPM)

FIXTURE UNIT VALUE BASED ON IPC, SECTION 709

FLOW THROUGH TYPE GREASE INTERCEPTOR MINIMUM SIZE WILL BE 70 POUND GREASE CAPACITY PER IPC, TABLE 1003.5.1.

PEAK FLOW CALCULATION: (71*100)/180=39.5 GPM (LESS THAN HALF FLOW RATE) = PEAK GPM IS 50 GPM

GRAVITY TYPE GREASE INTERCEPTOR SIZE BASED ON 39.5 GPM WITH 30 MINUTE RETENTION TIME (39.5*30=1,185) TO BE SIZED AT 1,250 GALLONS MINIMUM. LANDLORD HAS PROVIDED AN EXISTING SHARED 7,000 GALLON GREASE INTERCEPTOR. CURRENTLY ONLY ONE TENANT IS CONNECTED TO THE SHARED INTERCEPTOR.

DRAINAGE FIXTURE UNITS TABLE

FIXTURE	QTY.	FU	FU TOTAL
FLOOR SINK 3" TRAP	10	5	50
FLOOR SINK 4" TRAP	1	8	8
FLOOR DRAIN (EMERGENCY)	4	0	0
TRENCH DRAIN 4" TRAP	1	8	8
MOP SINK	1	2	2
HAND SINK	4	2	8
WATER CLOSET	2	4	8
LAVATORY	2	1	2
TOTAL			86(47.7 GPM)

PEAK FLOW CALCULATION: (86*100)/180=47.7 GPM (LESS THAN HALF FLOW RATE) = PEAK GPM IS 50 GPM

GREASE PRODUCTION CALCULATION
VARIABLES:
- #MEALS: 400/Day = 33.3/hr
- #INDOOR SEATS: 42 Seats
- #OUTDOOR SEATS: 10 Seats
- #SEATS: 52 Seats
- G.P.V: 0.045 lbs
- POF: 60 Days
- HOURS OF OPERATION: 12 hr

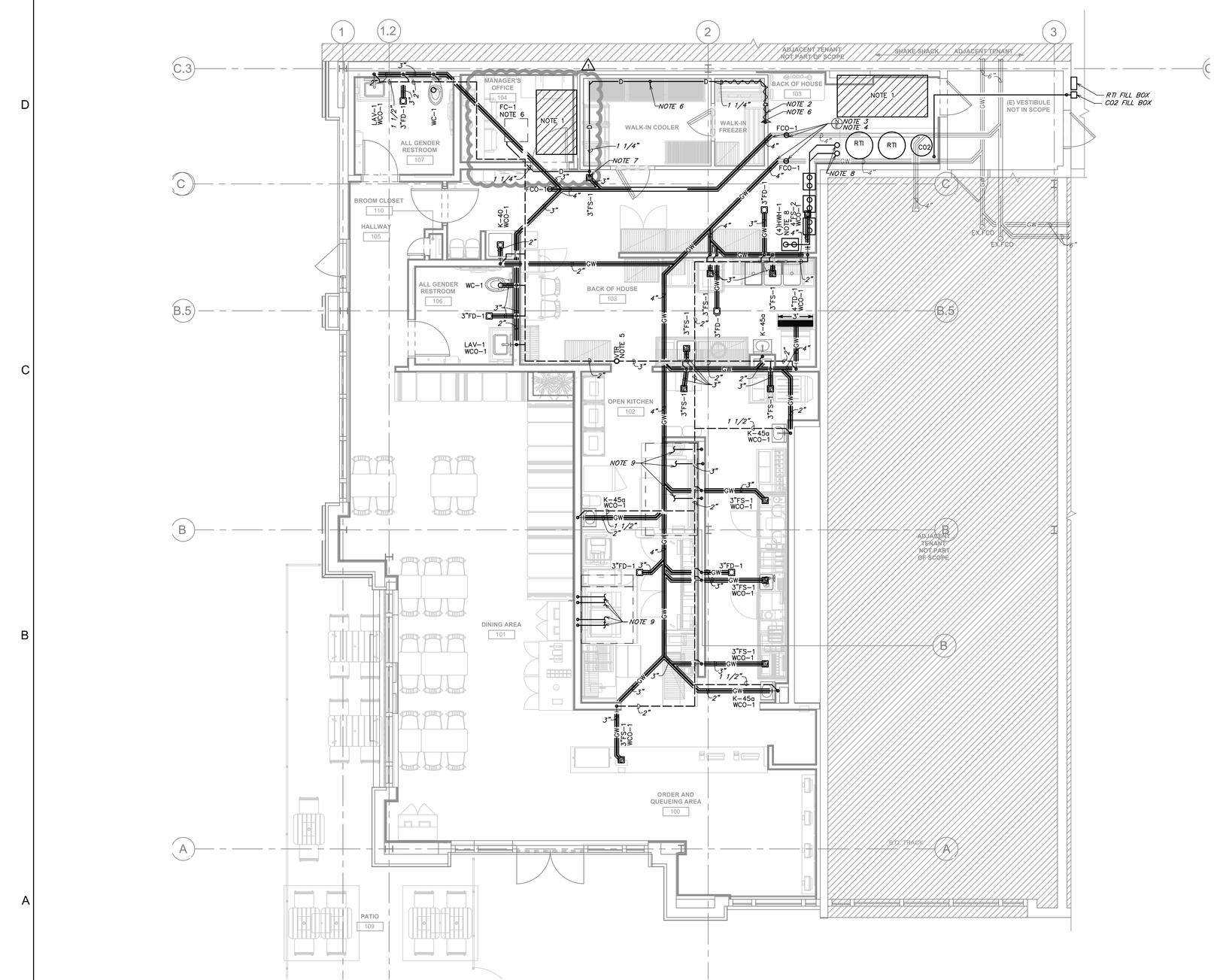
TOTAL GREASE PRODUCTION:
[#seats*(#meals/seat)/day*G.P.V.(per ASME)*POF (days)] = [52*(400/52)*.0455*60] = 1,092 lbs
INDOOR DINING:
[#indoor seats*(#meals/seat)/day*G.P.V.(per ASME)*POF (days)] = [42*(400/52)*.0455*60] = 882 lbs
OUTDOOR DINING:
[#outdoor seats*(#meals/seat)/day*G.P.V.(per ASME)*POF (days)] = [10*(400/52)*.0455*60] = 210 lbs
TAKE-OUT/DELIVERY:
[hours operation*(#meals/h)*G.P.V.(per ASME)*POF (days)] = [12*(33.3)*.0455*60] = 1,091 lbs

YELLOW GREASE GENERATION CALCULATION
FRYERS ARE 50lbs CAPACITY = 6.8 GALLONS PER TANK*3(TOTAL NUMBER OF FRYERS)=20.4 GALLONS OF COOKING OIL.

-RTI CLEAN TANK CAPACITY = 14001bs = 183 GALLONS OF CLEAN OIL

-RTI WASTE TANK CAPACITY = 14001bs = 183 GALLONS OF WASTE OIL

-EMPTYING FREQUENCY(DAYS) = EVERY 7 DAYS = 1 WEEK



1 PLUMBING WASTE & VENT PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. THE EXISTING CONDITIONS ARE BASED ON "AS-BUILT" DRAWINGS AND/OR LIMITED FIELD VERIFICATIONS. THE CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE AND/OR PREDETERMINATION OF EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION.
B. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE INCIDENTAL DEMOLITION WORK PRIOR TO BIDDING AND COMMENCEMENT OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL EXISTING EQUIPMENT AS REQUIRED FOR THE INSTALLATION/CONSTRUCTION OF NEW WORK.
C. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENTAL AND LOCAL CODE REQUIREMENTS.
D. PROVIDE ACCESS PANELS AS REQUIRED TO ALLOW ACCESS TO VALVES, EQUIPMENT, ETC. LOCATED ABOVE INACCESSIBLE CEILINGS AND WALL CAVITIES.
E. ALL SANITARY LINES AND PLUMBING FIXTURES ON THE PROJECT SHALL HAVE AN APPROVED MEANS OF SEWAGE BACKFLOW PREVENTION. FIXTURE SPECIFIC BACKFLOW PREVENTION INCLUDING AIR GAPS AND VACUUM BREAKERS ARE AN ACCEPTABLE MEANS OF BACKFLOW PREVENTION.
F. PIPE SIZES INDICATED ON THE PLANS ARE MINIMUM. THE CONTRACTOR SHALL PROVIDE PIPE SIZES EQUAL TO OR GREATER THAN THE SPECIFIED SIZES. THE CONTRACTOR MAY INCREASE PIPE SIZES AS REQUIRED AT NO ADDITIONAL EXPENSE TO THE PROJECT.
G. REFER TO THE PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE CONNECTION SIZE REQUIREMENTS.
H. COORDINATE ALL SLAB PENETRATIONS WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. MAINTAIN A MINIMUM OF 2" CLEARANCE FROM THE EDGE OF THE SLAB OPENING TO ANY STRUCTURAL MEMBERS AND PIPES.
I. SLEEVE OR CORE-DRILL FLOOR SLABS, WALLS, ETC. AS REQUIRED FOR PIPING AND FIRE-STOP OPENING AROUND PIPE. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING.
J. THE CONTRACTOR SHALL OBTAIN A COPY OF THE LANDLORD'S TENANT CRITERIA MANUAL PRIOR TO BIDDING. THE TENANT CRITERIA MANUAL REQUIREMENTS SHALL BE INCLUDED IN THE CONTRACTOR CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE LANDLORD REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
K. PROVIDE TEMPORARY COVERS, CAPS, OR PLUGS ON SANITARY SEWER SYSTEM THROUGHOUT THE DURATION OF CONSTRUCTION. RAG WADS, DUCT TAPE, OR OTHER SIMILAR METHODS OF TEMPORARY COVERS SHALL NOT BE UTILIZED. UPON COMPLETION OF CONSTRUCTION, COMPLETELY REMOVE ANY AND ALL OBSTRUCTIONS INSIDE THE ENTIRE SYSTEM BY SNAKING, RODING, OR JETTING THE SYSTEM IMMEDIATELY PRIOR TO PROJECT TURNOVER TO THE OWNER.
L. ALL BELOW GRADE SANITARY LINES SHALL BE A MINIMUM OF 2" OR IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
M. SANITARY TEE FITTINGS SHALL NOT BE INSTALLED IN DRAIN, WASTE, AND VENT (DWV) SYSTEMS.
N. INSTALL SANITARY PIPING 2 1/2" OR SMALLER AT A SLOPE OF 1/4" PER FOOT AND SANITARY PIPING 3" AND LARGER AT A SLOPE OF 1/8" PER FOOT.
O. INSTALL GREASE WASTE PIPING AT A SLOPE OF 1/4" PER FOOT.
P. THE PLUMBING CONTRACTOR SHALL PROVIDE HEAT TRACING TAPE AND INSULATION AS REQUIRED FOR ALL PIPING INSTALLED WITHIN WALK-IN FREEZERS TO PREVENT PIPING FROM FREEZING. COORDINATE THE INSTALLATION OF THE HEAT TRACING WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
Q. PROVIDE INDIRECT DRAINAGE ON ALL KITCHEN EQUIPMENT PER LOCAL JURISDICTION REQUIREMENTS. REFER TO FOOD SERVICE PLANS FOR ADDITIONAL DRAINAGE REQUIREMENTS.

PLUMBING NOTES:

1. THIS SPACE IS RESERVED FOR ELECTRICAL EQUIPMENT. NO PIPING SHALL PASS BELOW, ABOVE, OR AROUND ELECTRICAL EQUIPMENT. PROVIDE CODE REQUIRED MINIMUM CLEARANCE ABOVE ELECTRICAL EQUIPMENT ACCESS SPACE.
2. FURNISH AND INSTALL HEAT TRACE BEFORE PIPE INSULATION IS INSTALLED. HEAT TRACE SHALL BE CHROMALOX SRL AND SHALL BE INSTALLED WHERE SHOWN ON THE PLANS. COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR.
3. CONNECT THE NEW SANITARY SEWER TO THE EXISTING SANITARY SEWER OF EQUAL OR GREATER SIZE. FIELD VERIFY THE EXACT LOCATION, SIZE, AND INVERT ELEVATION OF THE EXISTING SANITARY SEWER PRIOR TO CONSTRUCTION. ADJUST THE NEW SANITARY SEWER AS REQUIRED TO ALLOW FOR CONNECTION TO THE EXISTING SANITARY SEWER SYSTEM. MAINTAIN CODE MINIMUM PIPE SLOPES.
4. CONNECT THE NEW GREASE WASTE TO THE EXISTING GREASE WASTE OF EQUAL OR GREATER SIZE. FIELD VERIFY THE EXACT LOCATION, SIZE, AND INVERT ELEVATION OF THE EXISTING GREASE WASTE PRIOR TO CONSTRUCTION. ADJUST THE NEW GREASE WASTE AS REQUIRED TO ALLOW FOR CONNECTION TO THE EXISTING GREASE WASTE SYSTEM. MAINTAIN CODE MINIMUM PIPE SLOPES.
5. UP TO 4" VENT THROUGH ROOF. INSTALL VENT THROUGH ROOF A MINIMUM DISTANCE OF 10'-0" FROM ALL FRESH AIR INLETS AND BUILDING OPENINGS.
6. PIPE GRAVITY PRIMARY CONDENSATE FROM EQUIPMENT TO CODE COMPLIANT DISPOSAL POINT. THE CONDENSATE SHALL BE CONNECTED TO THE EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. DISCHARGE SHALL BE THROUGH A CODE APPROVED AIR GAP. THE PIPE ROUTING INDICATED ON THE PLANS IS FOR REFERENCE ONLY. INSTALL THE PIPING AS HIGH AS POSSIBLE AND COORDINATE ROUTING WITH STRUCTURAL, MECHANICAL, ELECTRICAL, ETC. CONDENSATE SHALL NOT BE RUN OVER ELECTRICAL EQUIPMENT.
7. ROUTE CONDENSATE DRAIN TO DISCHARGE INTO SANITARY WASTE MAINTAINING A CODE APPROVED AIR GAP.
8. FURNISH AND INSTALL 4" DIAMETER PVC COMBUSTION AIR AND EXHAUST FROM THE WATER HEATER TO THE EXTERIOR. FURNISH AND INSTALL VENT TERMINAL AND MESH WIRE SCREEN ON INTAKE AND EXHAUST. THE TERMINATIONS SHALL BE A MINIMUM OF 36" APART AND SHALL BE A MINIMUM OF 36" HORIZONTALLY AND VERTICALLY FROM ANY BUILDING OPENINGS INCLUDING FRESH AIR INTAKES. EXTEND THE EXHAUST TERMINAL 6" PAST THE AIR INTAKE TERMINAL. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ALL APPLICABLE LOCAL AND STATE CODES. COORDINATE THE MAXIMUM ALLOWABLE EXHAUST AND VENT LENGTHS WITH THE MANUFACTURER'S REQUIREMENTS.
9. PROVIDE 3/4" NPT STAINLESS STEEL PIPE (SUPPLY PIPING) AND 3/4" NPT STEEL PIPE (RETURN PIPING) INSIDE WALL. STUB 18" IN FRONT OF HOOD FOR CONNECTIONS BY VENDOR. INSTALL PER VENDOR RECOMMENDATIONS.
10. PROVIDE 6" PVC SODA CHASE ABOVE CEILING AND 4" CHASE DOWN FURRED OUT WALLS. PROVIDE 4 90 DEGREE SWEEP WITH A MINIMUM OF 18" RADIUS. REFER TO K-SHEETS FOR MORE DETAILS.
11. RTI SYSTEM CONNECTION FROM RTI TANKS BY VENDOR. INSTALL PER VENDOR RECOMMENDATIONS.

⚠ LANDLORD COMMENT:
– ALL CORING, SAW CUTTING AND SLAB REMOVAL TO OCCUR OUTSIDE OF NORMAL BUSINESS HOURS. COORDINATE ALL WORK WITH OPERATIONS DIRECTOR PRIOR TO SCHEDULING WORK TO OCCUR.

CONTRACTOR SHALL JET AND CAMERA DRAIN LINES PRIOR TO PROJECT COMPLETION.

CONTRACTOR SHALL COORDINATE ALL KITCHEN EQUIPMENT UTILITY CONNECTIONS WITH MANUFACTURER INSTALLATION INSTRUCTIONS, OWNER, AND ARCHITECT PRIOR TO INSTALLATION.

- CONTRACTOR TO REFER TO FOOD SERVICE DRAWINGS FOR FINAL FLOOR SINK AND DRAIN LOCATIONS AND DIMENSIONS.
- SODA AND BEER LINES ARE NOT TO RUN IN THE OPEN CEILING.
- ALL ROOF PENETRATIONS TO BE COMPLETED BY LANDLORD PREFERRED VENDOR.

LEGEND
EXISTING
NEW WORK
NEW TO EXISTING CONNECTION

N

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REVISIONS		
⚠	DATE	DESCRIPTION
1	08/28/2026	REVISION 1
2	09/21/2026	REVISION 2

STATUS:
IFC SET

LICENSE
GREGORY BOYD SCHNACKEL
No PE 0048442
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Date: 09/21/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
PLUMBING WASTE & VENT PLAN

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN: RMA
SCALE: AS NOTED

SHEET NO.:
P101

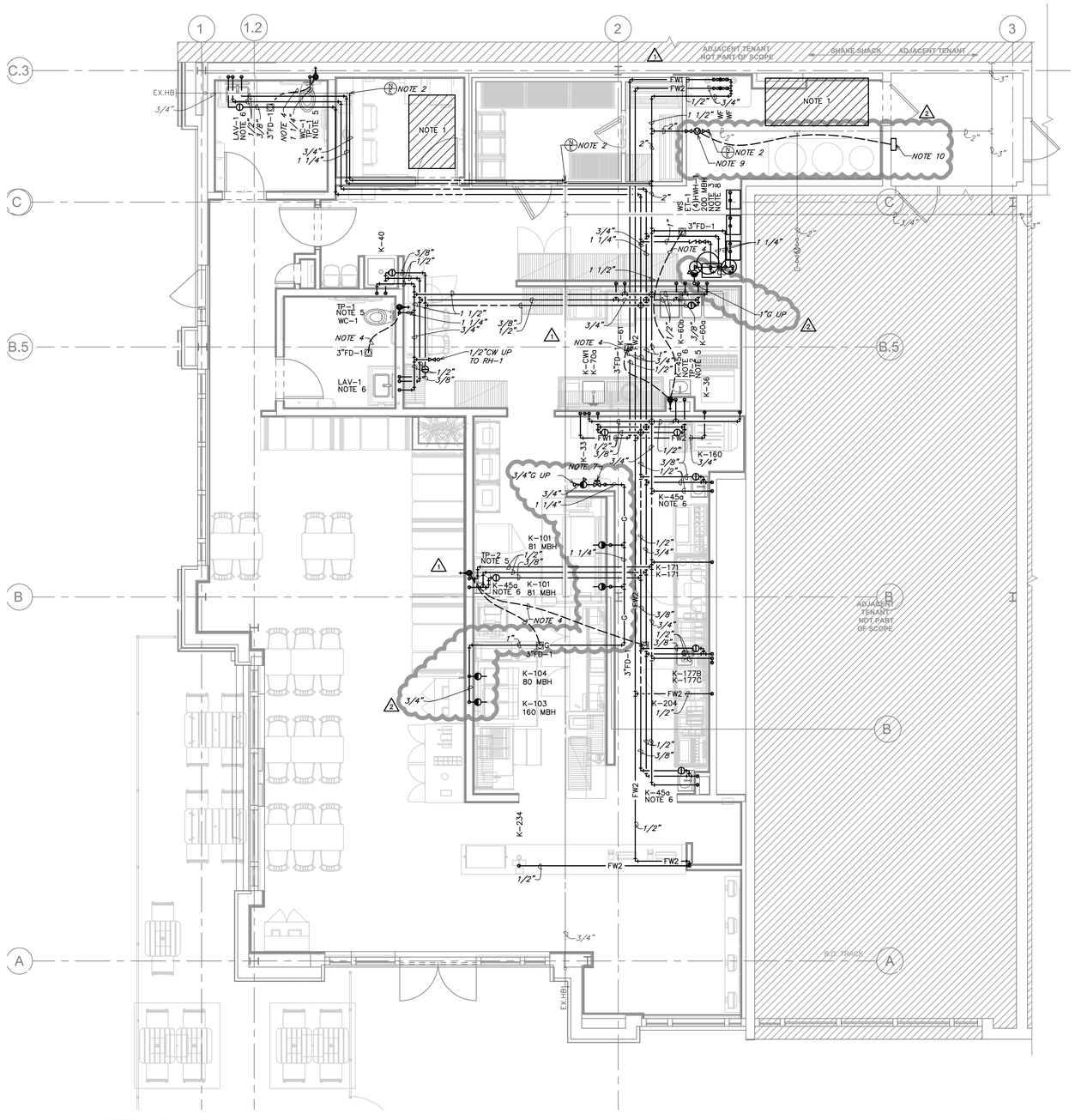
SE JOB#: 265519

PLUMBING FIXTURE SCHEDULE	
Mark	
WC-1	WATER CLOSETS
LAV-1	LAVATORIES
WH-1	WALL HYDRANT
K-36	COMMERCIAL ICE MACHINE
K-40	FLOOR MOP SINK
K-45A	KITCHEN HAND SINK
K-46A	KITCHEN HAND SINK
K-60A	3-COMP SINK FAUCET
K-60B	3-COMP SINK FAUCET
K-61	DISHMACHINE
K-70A	PREP SINK
K-160	CUSTARD MACHINE
K-171	DIPPER WELL
K-177B	DECK MOUNT FAUCET
K-177C	BLENDER CONTAINER RINSER
K-204	TEA BREWER
K-234	GLASS FILLER STATION
3"FD-1	FLOOR DRAIN
3"FS-1	FLOOR SINK
4"FS-2	FLOOR SINK
FCO-1	CLEANOUT - FLOOR
WCO-1	WALL CLEANOUT
TP-1	TRAP PRIMER

*SEE PLUMBING SCHEDULE ON SHEET P601

BACKFLOW PREVENTION ASSEMBLIES SCHEDULE	
Mark	
K-33	PROVIDE DOUBLE CHECK VAVLE (DCV)
K-36	PROVIDE REDUCED PRESSURE ZONE (RPZ)
K-61	PROVIDE AIR GAP (AG) OR ATMOSHPERIC VACUUM BREAKER (AVB)
K-160	PROVIDE REDUCED PRESSURE ZONE (RPZ)
K-171	PROVIDE AIR GAP (AG)
K-177C	PROVIDE REDUCED PRESSURE ZONE (RPZ)
K-204	PROVIDE DOUBLE CHECK VAVLE (DCV)
K-234	PROVIDE REDUCED PRESSURE ZONE (RPZ)

*CONTRACTOR SHALL PROVIDE BACKFLOW PREVENTION AS NOTED ABOVE. BACKFLOW DEVICE MUST BE COMPLIANT WITH LOCAL CODE, AHJ AND ASSE REQUIREMENTS (ASSE 1013, 1022, 1024)



1 PLUMBING WATER & GAS PLAN
SCALE: 1/4" = 1'-0"

N

GENERAL NOTES:

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B. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE INCIDENTAL DEMOLITION WORK PRIOR TO BIDDING AND COMMENCEMENT OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL EXISTING EQUIPMENT AS REQUIRED FOR THE INSTALLATION/CONSTRUCTION OF NEW WORK.
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D. PROVIDE ACCESS PANELS AS REQUIRED TO ALLOW ACCESS TO VALVES, EQUIPMENT, ETC. LOCATED ABOVE INACCESSIBLE CEILINGS AND WALL CAVITIES.
E. ALL SANITARY LINES AND PLUMBING FIXTURES ON THE PROJECT SHALL HAVE AN APPROVED MEANS OF SEWAGE BACKFLOW PREVENTION. FIXTURE SPECIFIC BACKFLOW PREVENTION INCLUDING AIR GAPS AND VACUUM BREAKERS ARE AN ACCEPTABLE MEANS OF BACKFLOW PREVENTION.
F. PIPE SIZES INDICATED ON THE PLANS ARE MINIMUM. THE CONTRACTOR SHALL PROVIDE PIPE SIZES EQUAL TO OR GREATER THAN THE SPECIFIED SIZES. THE CONTRACTOR MAY INCREASE PIPE SIZES AS REQUIRED AT NO ADDITIONAL EXPENSE TO THE PROJECT.
G. REFER TO THE PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE CONNECTION SIZE REQUIREMENTS.
H. COORDINATE ALL SLAB PENETRATIONS WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. MAINTAIN A MINIMUM OF 2" CLEARANCE FROM THE EDGE OF THE SLAB OPENING TO ANY STRUCTURAL MEMBERS AND PIPES.
I. SLEEVE OR CORE-DRILL FLOOR SLABS, WALLS, ETC. AS REQUIRED FOR PIPING AND FIRE-STOP OPENING AROUND PIPE. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING.
J. THE CONTRACTOR SHALL OBTAIN A COPY OF THE LANDLORD'S TENANT CRITERIA MANUAL PRIOR TO BIDDING. THE TENANT CRITERIA MANUAL REQUIREMENTS SHALL BE INCLUDED IN THE CONTRACTOR CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE LANDLORD REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
K. ALL HANDICAPPED ACCESSIBLE WATER CLOSETS SHALL HAVE THE FLUSHING HANDLE ON THE WIDE SIDE OF THE HANDICAPPED ACCESSIBLE STALL AS REQUIRED BY ADA REQUIREMENTS.
L. ALL PUBLIC USE LAVATORY FAUCETS SHALL HAVE AN AUTOMATIC SAFETY WATER MIXING DEVICE IN ACCORDANCE WITH ANSI/ASSE 1017 OR 1070 AS APPLICABLE.

PLUMBING NOTES:

1. THIS SPACE IS RESERVED FOR ELECTRICAL EQUIPMENT. NO PIPING SHALL PASS BELOW, ABOVE, OR AROUND ELECTRICAL EQUIPMENT. PROVIDE CODE REQUIRED MINIMUM CLEARANCE ABOVE ELECTRICAL EQUIPMENT ACCESS SPACE.
2. CONNECT THE NEW DOMESTIC COLD WATER LINE TO AN EXISTING COLD WATER LINE OF EQUAL OR GREATER SIZE. FIELD VERIFY THE EXACT LOCATION AND SIZE OF THE EXISTING WATER LINE PRIOR TO CONSTRUCTION. ADJUST THE NEW WATER LAYOUT AS REQUIRED TO ALLOW FOR CONNECTION TO THE EXISTING WATER SYSTEM.
3. FURNISH AND INSTALL (4) TANKLESS WATER HEATERS AND EXPANSION TANK ON AS INDICATED ON THE PLANS. REFER TO ARCHITECTURAL PLANS FOR EXACT WATER HEATER LOCATION. PIPE WATER HEATER PRESSURE/TEMPERATURE RELIEF DISCHARGE TO THE NEAREST FLOOR DRAIN BELOW THE WATER HEATER IN ACCORDANCE WITH LOCAL REQUIREMENTS. PROVIDE A CODE APPROVED AIR GAP ON THE DISCHARGE OF THE WATER HEATER PRESSURE/TEMPERATURE RELIEF. REFER TO DETAILS SHEET FOR ADDITIONAL INFORMATION.
4. 1/2" FLEXIBLE CONTINUOUS TYPE "K" COPPER TUBING BELOW GRADE FROM TRAP PRIMER TO FLOOR DRAIN. NO FITTINGS OR SPLICES ARE ALLOWED BELOW GRADE.
5. INSTALL TRAP PRIMER PER MANUFACTURER'S REQUIREMENTS. COORDINATE EXACT LOCATION IN THE FIELD. FURNISH AND INSTALL A LOCKABLE, METAL ACCESS PANEL AS NECESSARY TO MAINTAIN EQUIPMENT.
6. PROVIDE THERMOSTATIC MIXING VALVE, POWERS LFE480 OR EQUAL, BELOW FIXTURE. SET TEMPERATURE AS REQUIRED BY LOCAL JURISDICTION. THERMOSTATIC MIXING VALVE SHALL BE IN ACCORDANCE WITH ANSI/ASSE 1070.
7. FURNISH AND INSTALL A UL LISTED EMERGENCY NATURAL GAS SHUTOFF VALVE MOUNTED BELOW THE FINISHED CEILING IN AN ACCESSIBLE LOCATION. THE SHUTOFF VALVE SHALL BE INTERLOCKED WITH THE EXHAUST HOOD AND SHALL HAVE A MANUAL RESET. COORDINATE EXACT VALVE TYPE WITH HOOD MANUFACTURER. THE VALVE SHALL BE PROVIDED AND INSTALLED BY THE PLUMBING CONTRACTOR AND SHALL BE INTERCONNECTED BY THE FIRE ALARM CONTRACTOR. COORDINATE THE VALVE LOCATION WITH THE CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
8. CONNECT NATURAL GAS SERVICE TO UNIT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. REFER TO DETAIL SHEET FOR ADDITIONAL INFORMATION. VERIFY EXACT LOCATION OF NATURAL GAS CONNECTION ON UNIT WITH EQUIPMENT PRIOR TO PIPE INSTALLATION.
9. ELECTRONIC WATER METER. FURNISH AND INSTALL UNIONS ON EACH SIDE OF THE WATER METER FOR REMOVAL/REPLACEMENT. LOCATE METER AS INDICATED ON THE FLOOR PLAN. COORDINATE METER WITH LANDLORD AND/OR UTILITY COMPANY REQUIREMENTS. FURNISH AND INSTALL REMOTE READER WHERE INDICATED ON THE FLOOR PLANS.
10. REMOTE WATER METER READER. VERIFY EXACT PLACEMENT OF REMOTE METER READER WITH ARCHITECT, LANDLORD, AND UTILITY COMPANY PRIOR TO INSTALLATION.

WATER METER SPECIFICATION
- METERS AND ELECTRONIC (M&E): BRONZE PD40 (1.5" METER)
- ALL ROOF PENETRATIONS TO BE COMPLETED BY LANDLORD PREFERRED VENDOR.

LEGEND
- EXISTING
- NEW WORK
- NEW TO EXISTING CONNECTION

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REVISIONS

△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1
2	09/21/2026	REVISION 2

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA REGISTERED PROFESSIONAL ENGINEER
Date: 09/21/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME: PLUMBING WATER & GAS PLAN

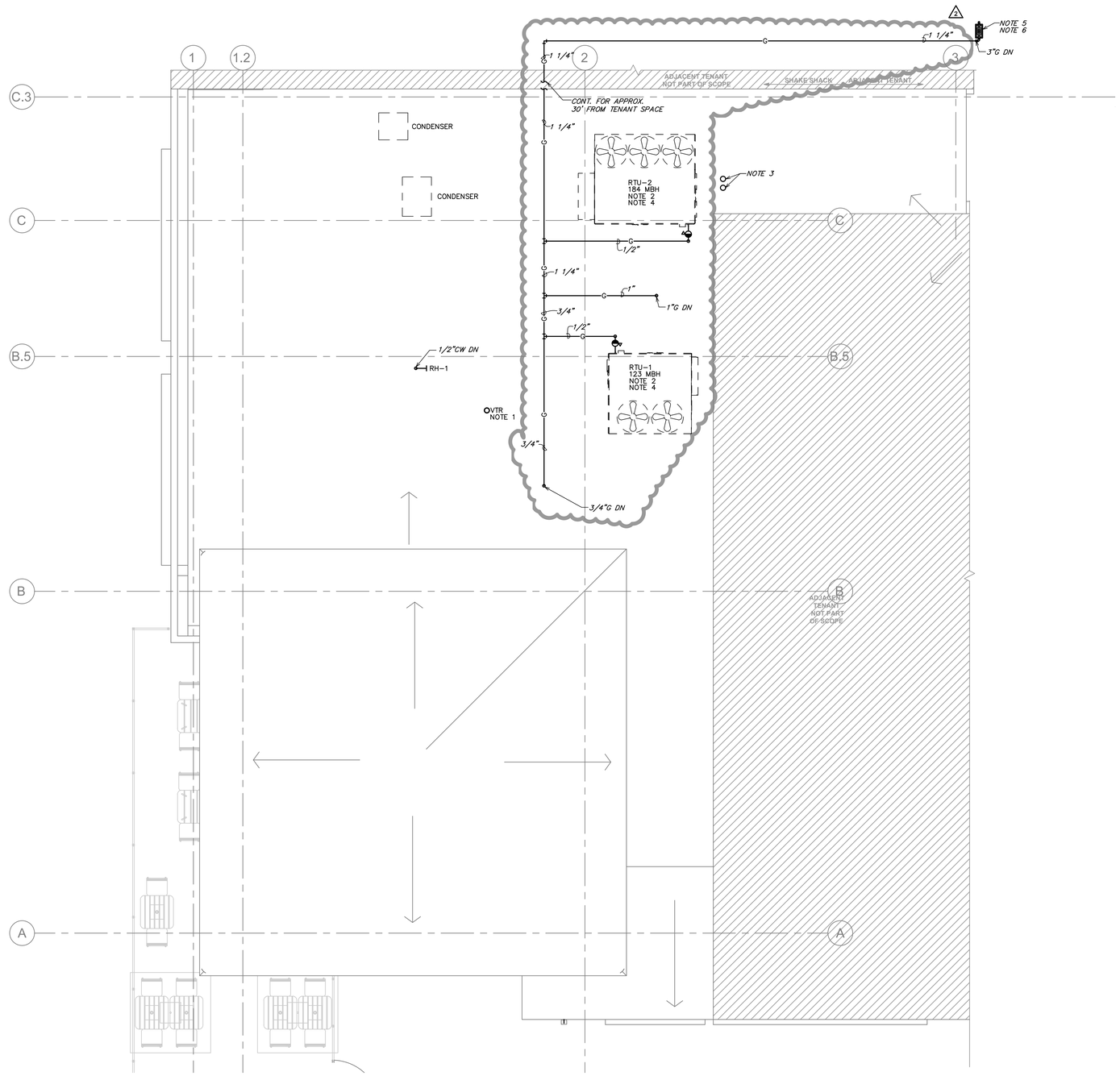
DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN: RMA
SCALE: AS NOTED

SHEET NO.: P120

SE JOB# 206919

PLUMBING FIXTURE SCHEDULE	
Mark	
WC-1	WATER CLOSETS
LAV-1	LAVATORIES
WH-1	WALL HYDRANT
K-36	COMMERCIAL ICE MACHINE
K-40	FLOOR MOP SINK
K-45A	KITCHEN HAND SINK
K-46A	KITCHEN HAND SINK
K-60A	3-COMP SINK FAUCET
K-60B	3-COMP SINK FAUCET
K-61	DISHMACHINE
K-70A	PREP SINK
K-160	CUSTARD MACHINE
K-171	DIPPER WELL
K-177B	DECK MOUNT FAUCET
K-177C	BLENDER CONTAINER RINSER
K-204	TEA BREWER
K-234	GLASS FILLER STATION
3"FD-1	FLOOR DRAIN
3"FS-1	FLOOR SINK
4"FS-2	FLOOR SINK
FCO-1	CLEANOUT - FLOOR
WCO-1	WALL CLEANOUT
TP-1	TRAP PRIMER

*SEE PLUMBING SCHEDULE ON SHEET P601



1 PLUMBING - ROOF PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. THE EXISTING CONDITIONS ARE BASED ON "AS-BUILT" DRAWINGS AND/OR LIMITED FIELD VERIFICATIONS. THE CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE AND/OR PREDETERMINATION OF EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION.
B. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE INCIDENTAL DEMOLITION WORK PRIOR TO BIDDING AND COMMENCEMENT OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL EXISTING EQUIPMENT AS REQUIRED FOR THE INSTALLATION/CONSTRUCTION OF NEW WORK.
C. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENTAL AND LOCAL CODE REQUIREMENTS.
D. PROVIDE ACCESS PANELS AS REQUIRED TO ALLOW ACCESS TO VALVES, EQUIPMENT, ETC. LOCATED ABOVE INACCESSIBLE CEILINGS AND WALL CAVITIES.
E. ALL SANITARY LINES AND PLUMBING FIXTURES ON THE PROJECT SHALL HAVE AN APPROVED MEANS OF SEWAGE BACKFLOW PREVENTION. FIXTURE SPECIFIC BACKFLOW PREVENTION INCLUDING AIR GAPS AND VACUUM BREAKERS ARE AN ACCEPTABLE MEANS OF BACKFLOW PREVENTION.
F. PIPE SIZES INDICATED ON THE PLANS ARE MINIMUM. THE CONTRACTOR SHALL PROVIDE PIPE SIZES EQUAL TO OR GREATER THAN THE SPECIFIED SIZES. THE CONTRACTOR MAY INCREASE PIPE SIZES AS REQUIRED AT NO ADDITIONAL EXPENSE TO THE PROJECT.
G. REFER TO THE PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE CONNECTION SIZE REQUIREMENTS.
H. COORDINATE ALL SLAB PENETRATIONS WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. MAINTAIN A MINIMUM OF 2" CLEARANCE FROM THE EDGE OF THE SLAB OPENING TO ANY STRUCTURAL MEMBERS AND PIPES.
I. SLEEVE OR CORE-DRILL FLOOR SLABS, WALLS, ETC. AS REQUIRED FOR PIPING AND FIRE-STOP OPENING AROUND PIPE. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING.
J. THE CONTRACTOR SHALL OBTAIN A COPY OF THE LANDLORD'S TENANT CRITERIA MANUAL PRIOR TO BIDDING. THE TENANT CRITERIA MANUAL REQUIREMENTS SHALL BE INCLUDED IN THE CONTRACTOR CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE LANDLORD REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
K. ALL HANDICAPPED ACCESSIBLE WATER CLOSETS SHALL HAVE THE FLUSHING HANDLE ON THE WIDE SIDE OF THE HANDICAPPED ACCESSIBLE STALL AS REQUIRED BY ADA REQUIREMENTS.
L. ALL PUBLIC USE LAVATORY FAUCETS SHALL HAVE AN AUTOMATIC SAFETY WATER MIXING DEVICE IN ACCORDANCE WITH ANSI/ASSE 1017 OR 1070 AS APPLICABLE.

PLUMBING NOTES:

1. UP TO 4" VENT THROUGH ROOF. INSTALL VENT THROUGH ROOF A MINIMUM DISTANCE OF 10'-0" FROM ALL FRESH AIR INLETS AND BUILDING OPENINGS.
2. ROUTE THE CONDENSATE PIPING ON THE ROOF FROM THE ROOFTOP UNIT TO THE NEAREST ROOF DRAIN OR GUTTER. THE CONDENSATE SHALL BE CONNECTED TO THE ROOFTOP UNIT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. VERIFY CONDENSATE REMOVAL REQUIREMENTS WITH LOCAL JURISDICTION PRIOR TO INSTALLATION. IF CONFLICTS OCCUR, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.
3. FURNISH AND INSTALL 4" DIAMETER PVC COMBUSTION AIR AND EXHAUST FROM THE WATER HEATER TO THE EXTERIOR. FURNISH AND INSTALL VENT TERMINAL AND MESH WIRE SCREEN ON INTAKE AND EXHAUST. THE TERMINATIONS SHALL BE A MINIMUM OF 36" APART AND SHALL BE A MINIMUM OF 36" HORIZONTALLY AND VERTICALLY FROM ANY BUILDING OPENINGS INCLUDING FRESH AIR INTAKES. EXTEND THE EXHAUST TERMINAL 6" PAST THE AIR INTAKE TERMINAL. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ALL APPLICABLE LOCAL AND STATE CODES. COORDINATE THE MAXIMUM ALLOWABLE EXHAUST AND VENT LENGTHS WITH THE MANUFACTURER'S REQUIREMENTS.
4. CONNECT NATURAL GAS SERVICE TO UNIT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. REFER TO DETAIL SHEET FOR ADDITIONAL INFORMATION. VERIFY EXACT LOCATION OF NATURAL GAS CONNECTION ON UNIT WITH EQUIPMENT PRIOR TO PIPE INSTALLATION.
5. NEW NATURAL GAS METER SERVING 1,509 MBH. THE SYSTEM DESIGN IS BASED ON 2 PSI DELIVERY PRESSURE WITH A PRESSURE DROP OF 1PSI AND A TOTAL DEVELOPED LENGTH OF 175 FEET. THE CONTRACTOR SHALL COORDINATE THE METER PLACEMENT, AVAILABLE PRESSURE, AND ANY NEW SERVICE REQUIREMENTS WITH THE LOCAL UTILITY PRIOR TO CONSTRUCTION. IF THE DELIVERY PRESSURE INDICATED IS NOT AVAILABLE FROM THE UTILITY COMPANY, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.
6. PROVIDE GAS TEST PORT TO TEST GAS PRESSURE PRIOR TO EQUIPMENT START UP. SEE DETAIL FOR MORE INFORMATION.

- ALL ROOF PENETRATIONS TO BE COMPLETED BY LANDLORD PREFERRED VENDOR.

LEGEND
EXISTING
NEW WORK
NEW TO EXISTING CONNECTION

N

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REVISIONS		
△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1
2	09/21/2026	REVISION 2

STATUS:
IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 09/21/26 COA#: 28403

FIELD VERIFICATION:
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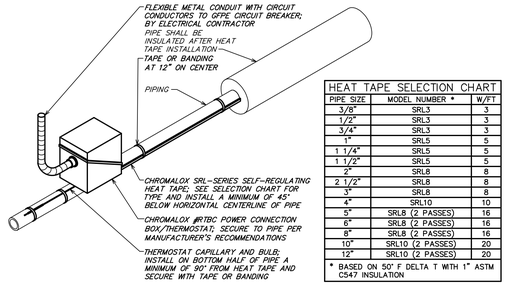
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SHEET NAME:
PLUMBING ROOF PLAN

DATE:	PROJECT NO.:
06/01/2026	41354
DRAWN: RMA	SCALE: AS NOTED

SHEET NO.:
P150

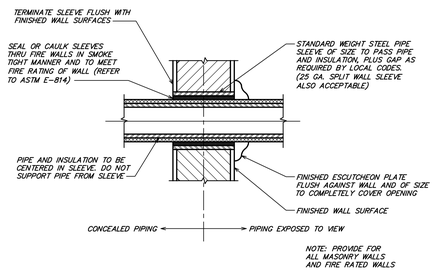
SE JOB#: 205519



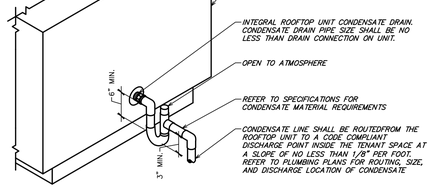
HEAT TAPE SELECTION CHART		
PIPE SIZE	MODEL NUMBER *	W/FT
3/8"	SRL3	3
1/2"	SRL3	3
3/4"	SRL3	3
1"	SRL5	5
1 1/4"	SRL5	5
1 1/2"	SRL5	5
2"	SRL8	8
2 1/2"	SRL8	8
3"	SRL8	8
4"	SRL10	10
5"	SRL8 (2 PASSES)	16
6"	SRL8 (2 PASSES)	16
8"	SRL8 (2 PASSES)	16
10"	SRL10 (2 PASSES)	20
12"	SRL10 (2 PASSES)	20

* BASED ON 50° F DELTA T WITH 1" ASTM C547 INSULATION

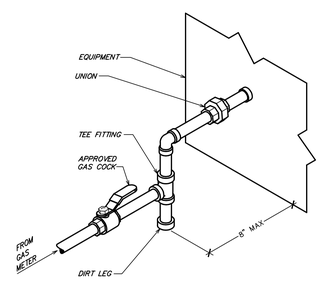
11 HEAT TRACE DETAIL
NOT TO SCALE



10 PIPE SLEEVE AT INTERIOR WALLS
NOT TO SCALE

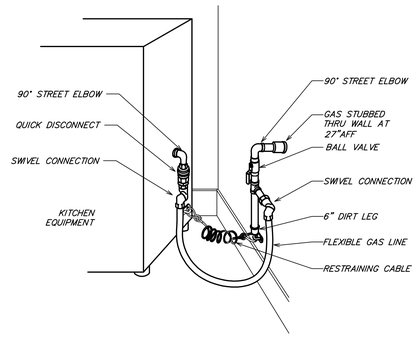


9 ROOFTOP UNIT CONDENSATE TRAP
NOT TO SCALE



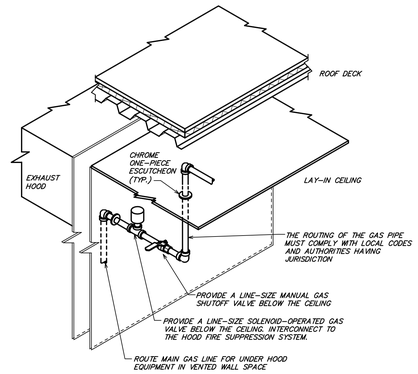
TYPICAL GAS PIPING CONNECTION DETAIL
8 NOT TO SCALE

FLOOR DRAIN TRAP PRIMER DETAIL
7 NOT TO SCALE



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.

5 COOKLINE GAS EQUIPMENT RESTRAINTS
NOT TO SCALE

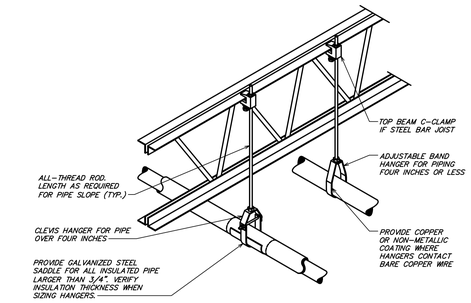


SEQUENCE OF OPERATIONS:

NORMAL MODE:
WHEN HOOD FAN IS ENERGIZED, SOLENOID VALVE IS TO OPEN. ON A LOSS OF POWER OR IF THE FAN IS DE-ENERGIZED THE VALVE IS TO CLOSE.

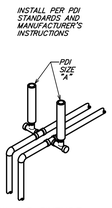
EMERGENCY MODE:
UPON ACTUATION OF THE FIRE SUPPRESSION SYSTEM OR A SIGNAL FROM THE FIRE ALARM, THE SOLENOID VALVE IS TO CLOSE

4 KITCHEN GAS SHUTOFF DETAIL
NOT TO SCALE



NOTE:
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 EXCEPT IN CHASES. 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 FOR FURTHER INFORMATION.

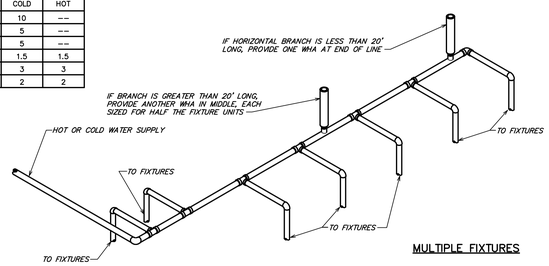
2 PIPE INSULATION DETAIL
NOT TO SCALE



SINGLE FIXTURE

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
SHOWER/BATHTUB	2	2

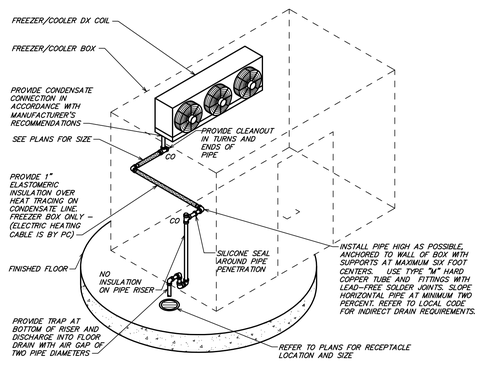
PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1--11
B	3/4"	12--32
C	1"	33--60
D	1-1/4"	61--113
E	1-1/2"	114--154
F	2"	155--330



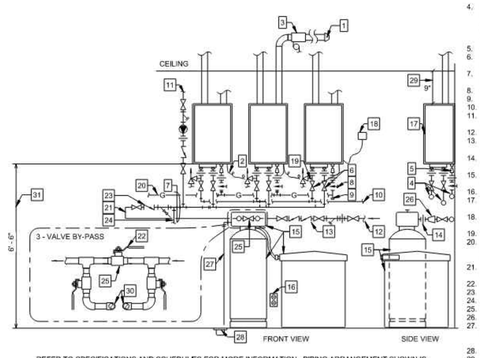
MULTIPLE FIXTURES

PLUMBING CONTRACTOR SHALL 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 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

6 WATER HAMMER ARRESTERS
NOT TO SCALE



WALK-IN COOLER/FREEZER CONDENSATE DETAIL
3 NOT TO SCALE



REFER TO SPECIFICATIONS AND SCHEDULES FOR MORE INFORMATION. PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. REFER TO FLOOR PLANS FOR PIPE SIZES. PROVIDE SEISMIC STRAP WHEN REQUIRED BY LOCAL AUTHORITIES. INSTALL BACKFLOW PREVENTER AT LOCATION AND ELEVATION PER LOCAL AUTHORITIES, WHERE IT CAN BE EASILY SERVICED AND TESTED.

NOTES:
1. CONTRACTOR TO REFER TO SHEET P120 & P902 FOR TOTAL NUMBER OF TANKLESS WATER HEATERS.

MULTIPLE TANKLESS WATER HEATER DETAIL
1 NOT TO SCALE

CODED NOTES

1. EXHAUST VENT TERMINATION, COMBUSTION AIR INTAKE, EXHAUST VENT SYSTEM PER MANUFACTURER. RE: MECHANICAL DRAWINGS (TYPICAL)
2. INTERLOCK CONTROL WIRING WITH QUICK CONNECT CORD FURNISHED WITH WATER HEATER PER MANUFACTURERS INSTALLATION INSTRUCTIONS (TYPICAL)
3. HORIZONTAL DRAIN TEE. RE: MECHANICAL DRAWINGS. PROVIDE PIG TAIL PER MANUFACTURERS INSTALLATION INSTRUCTIONS AND ROUTE TO FLOOR RECEPTOR (TYPICAL)
4. LINE SIZES: COLD WATER, HOT WATER, & GAS; RE: FLOOR PLANS. PROVIDE REDUCER AT EQUIPMENT CONNECTION IF REQUIRED. HOLD ALL PIPING TIGHT TO WALL. DO NOT ROUT ANY PIPING BEYOND FACE OF WATER HEATER. MAINTAIN ALL CLEARANCE REQUIREMENTS FOR SOFTENER.
5. GROUND JOINT UNION FOR GAS CONNECTION (TYPICAL)
6. INSTALL COMBINATION SHUTOFF VALVE, UNION AND DRAIN VALVE FURNISHED WITH WATER HEATER (TYPICAL)
7. HOLD PIPING CLOSE TO BOTTOM OF HEATERS. 24" MAX DISTANCE BETWEEN HEADER AND BOTTOM OF UNIT.
8. GAS COCK (TYPICAL)
9. LINE SIZE 3" LONG DIRT LEG
10. LINE SIZE HOT WATER HEADER TO FIXTURES, RE: FLOOR PLANS
11. HOT WATER RECIRCULATION, INTERLOCK RECIRCULATION PUMP WITH WATER HEATER SYSTEM AND POWER WIRING BY ELECTRICAL
12. COLD WATER SUPPLY WITH SHUT-OFF VALVE
13. BACKFLOW PREVENTER PER SPECIFICATIONS AND SCHEDULE. PROVIDE WHERE SHOWN ON PLANS FOR EASY ACCESS.
14. PROVIDE DIELECTRIC PIPE UNIONS FOR CONNECTION DISSIMILAR METALS (TYP)
15. SIMPLEX WATER SOFTENER WITH RESIN TANK, BRINE TANK AND CONTROLS. RE: FLOOR PLAN
16. RECEPTACLE PER DIVISION 26 FOR WATER SOFTENER CONTROLS PLUG
17. GAS-FIRED WATER HEATERS. RE: SCHEDULE AND SPECIFICATIONS. NUMBER OF HEATERS. RE: FLOOR PLANS
18. INSTALL SYSTEM REMOTE CONTROLLER FURNISHED WITH WATER HEATERS. RE: FLOOR PLANS
19. INSTALL VALVE COVERS FURNISHED WITH WATER HEATERS (TYPICAL)
20. LINE SIZE GAS HEADER TO WATER HEATERS. RE: FLOOR PLANS PROVIDE STRAINER WITH BLOWDOWN AND ROUTE TO FLOOR RECEPTOR. RE: SCHEDULE AND SPECIFICATIONS
21. SOFTENED COLD WATER TO FIXTURES AND/OR EQUIPMENT AS SHOWN ON PLANS
22. BALL VALVE (TYPICAL)
23. CHECK VALVE (TYPICAL)
24. COLD WATER TO EXPANSION TANK, RE: FLOOR PLANS
25. BYPASS VALVE: NORMALLY CLOSED
26. PROVIDE PIPE REDUCERS TO MATCH IF REQUIRED (TYPICAL)
27. BACKWASH DRAIN CONNECTION. PROVIDE A HARD COPPER BACKWASH DRAIN PIPE FULL SIZE OF OUTLET ROUTE TO NEAREST FLOOR DRAIN AND DISCHARGE WITH AIR GAP PER LOCAL CODE.
28. FLOOR DRAIN PER SPECIFICATION, RE: FLOOR PLAN
29. MAINTAIN MINIMUM OF 9" BETWEEN TOP OF UNIT AND CEILING WHERE CEILING IS PRESENT.
30. PIPING TO/FROM WATER SOFTNER. PIPE SIZE RE:FLOOR PLAN
31. BOTTOM OF TANKLESS WATER HEATERS TO BE LOCATED 6'-6" ABOVE FLOOR UNLESS OTHERWISE NOTED ON FLOOR PLAN.

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REVISIONS		
△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1
2	09/21/2026	REVISION 2

STATUS: IFC SET

OREGON ROY SCHACKEL LICENSE No PE 0048442 STATE OF OREGON PROFESSIONAL ENGINEER
Date: 09/21/26 COA#: 2B403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

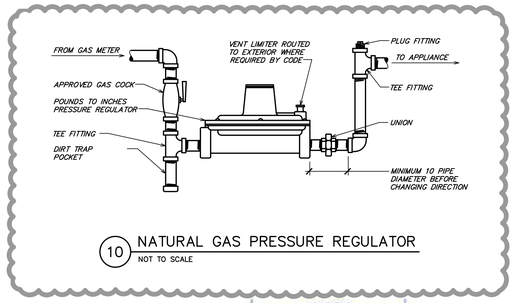
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SHEET NAME: PLUMBING DETAILS

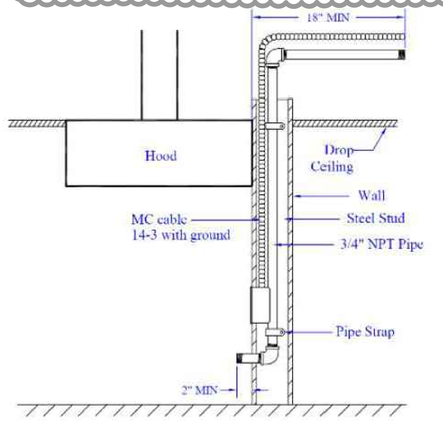
DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN: RMA
SCALE: AS NOTED

SHEET NO.: P501

SE JOB# 203519



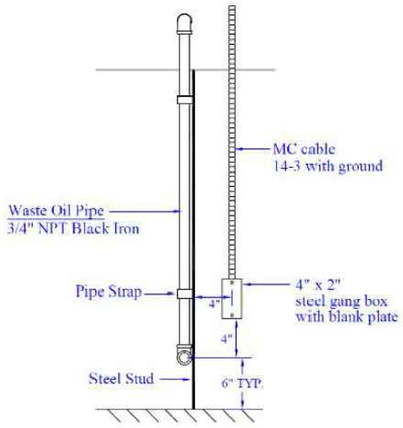
10 NATURAL GAS PRESSURE REGULATOR
NOT TO SCALE



Cut-away View
Right side
(Not to Scale)

GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR THE GRIDDLE GREASE UNIT.

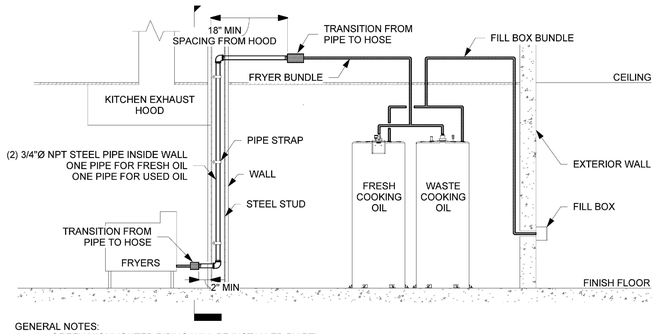
9 GRIDDLE RTI DETAIL
NOT TO SCALE



Front View
Inside Wall
(Not to Scale)

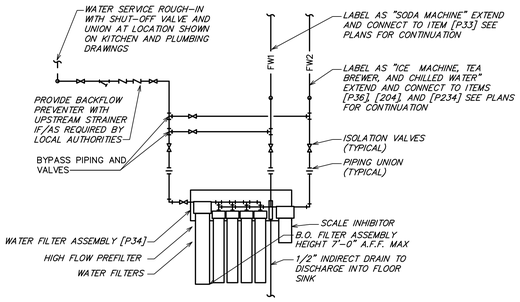
GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR THE GRIDDLE GREASE UNIT.

7 GRIDDLE RTI DETAIL
NOT TO SCALE



GENERAL NOTES:
1. GREEN HIGHLIGHTED PIPING WILL BE INSTALLED BY RTI.
2. IN STATES WHERE THE WALL THAT HOUSES THE RTI LINE IS REQUIRED TO BE FIRE RATED, THE GC SHALL ASSEMBLY THE PIPE USING LOCTITE 242 THREAD SEALANT ON ALL THREADED CONNECTIONS.

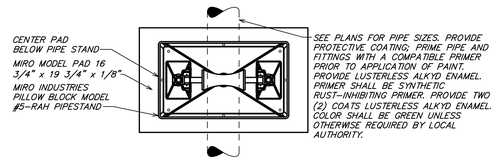
5 RTI SYSTEM DETAIL
NOT TO SCALE



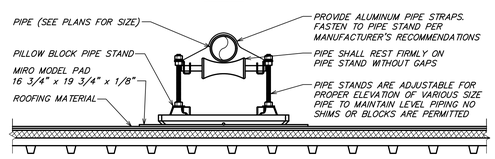
PIPING CONCEALED IN WALL IS SHOWN DASHED. PIPING EXPOSED IS SHOWN CONTINUOUS. PROVIDE ADAPTERS, FITTINGS, UNIONS, AND HARD COPPER TUBE AS REQUIRED. MOUNT FILTER ASSEMBLY ON WALL WHERE SHOWN ON KITCHEN DRAWINGS WHERE EASILY ACCESSIBLE FOR SERVCING. INSTALL BACKFLOW PREVENTER, IF REQUIRED, AT LOCATION AND ELEVATION PER LOCAL AUTHORITIES, WHERE IT CAN BE EASILY SERVICED AND TESTED. VERIFY FILTER CONNECTIONS WITH KITCHEN EQUIPMENT SUPPLIER.

3 WATER FILTER DETAIL
NOT TO SCALE

MINIMUM SPACING FOR PIPE SUPPORTS		
PIPE SIZE (in.)	SPACING (ft.)	MIN. ROD SIZE (in.)
HORIZONTAL		
1/2	6	3/8
3/4 TO 1 1/4	8	3/8
1 1/2 TO 3	10	1/2
VERTICAL		
3 1/2 TO 5	EACH FLOOR	



PLAN



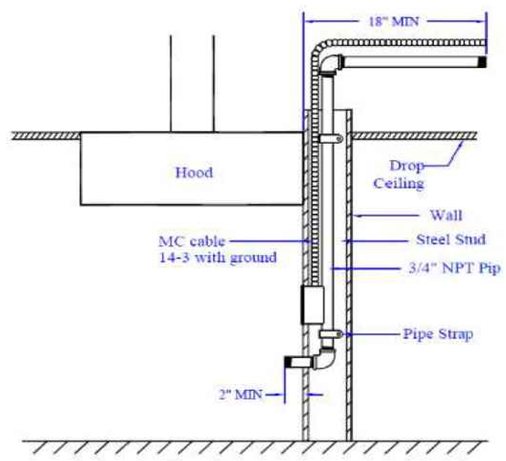
SECTION

2 ROOF MOUNTED PIPING SUPPORT
NOT TO SCALE

Cut-away View
Left side
(Not to Scale)

GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR EACH FRYER.

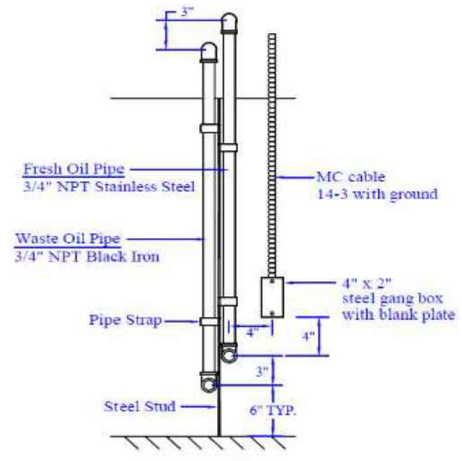
8 FRYER RTI DETAIL
NOT TO SCALE



Cut-away View
Right side
(Not to Scale)

GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR EACH FRYER.

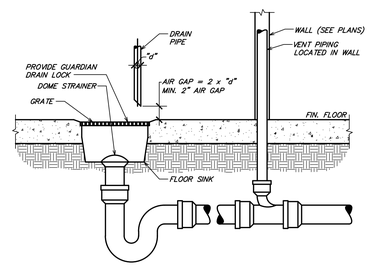
6 FRYER RTI DETAIL
NOT TO SCALE



Front View
Inside Wall
(Not to Scale)

GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR EACH FRYER.

4 FRYER RTI DETAIL
NOT TO SCALE



1 FLOOR SINK DETAIL
NOT TO SCALE

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REVISIONS		
	DATE:	DESCRIPTION:
1	08/28/2026	REVISION 1
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STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 09/21/26 COA#:28403

FIELD VERIFICATION:
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SHEET NAME: PLUMBING DETAILS

DATE: 06/01/2026 | PROJECT NO.: 41354
DRAWN: RMA | SCALE: AS NOTED

SHEET NO.: P502

SE JOB# 250519

SECTION 220000 - PLUMBING GENERAL CONDITIONS
SECTION 220501 - TRENCHING AND BACKFILL FOR PLUMBING SYSTEMS
SECTION 220516 - EXPANSION FITTINGS AND LOOPS FOR PLUMBING PIPING
SECTION 220519 - METERS AND GAUGES FOR PLUMBING PIPING
SECTION 220529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

SECTION 220000 - PLUMBING GENERAL CONDITIONS

PART 1 GENERAL
1.01 SUMMARY
A. This section supplements all sections of the Specifications for this Division and shall apply to all phases of work hereinafter specified, shown on the Contract Documents, or required to provide a complete installation of approved plumbing systems.
B. All drawings and specifications, including drawings and specifications related to other divisions, apply to the work. Where conflicts arise between documents, the more stringent requirement shall apply, subject to the interpretation of the Engineer.
C. Furnish all labor, material, services, and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all materials and plumbing equipment specified herein, or shown or noted on the Drawings, and its delivery to the Owner, complete in all respects and ready for use.
D. Products furnished but not installed under this section:
1. Where plans indicate fixtures or equipment will be furnished by this Contractor for installation by other Contractors, this Contractor shall furnish all such equipment, complete in all respects and ready for installation.
2. Drawings, instructions, and manuals supplied with equipment furnished under this Division, but not installed under other Divisions shall be carefully preserved and turned over to the installing Contractor.
E. Products installed but not furnished under this section:
1. Where plans indicate fixtures or equipment will be furnished by others, this Contractor shall provide all rough-in and supplies and shall connect such equipment to the plumbing systems.
2. Drawings, instructions, and manuals supplied with equipment furnished under separate Divisions but installed under this Division shall be carefully preserved and turned over to the Architect.

1.02 DEFINITIONS
A. The following definitions apply throughout the drawings and specifications associated with the work performed under this Division.
1. Authority Having Jurisdiction: All regulatory agencies, including but not limited to, plans examiners, fire marshals, inspectors, insurance carriers, and utility companies.
2. Concealed: Hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction, in crawl spaces, or underground.
3. Conduit: Conduit or tubing and all required fittings, pull boxes, hangers, and other supports and accessories related to such.
4. Code: All applicable codes, including but not limited to the administrative code, building code, electrical code, energy conservation code, existing building code, fire code, fuel gas code, mechanical code, plumbing code, and residential code.
5. Code, Administrative: The administrative code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
6. Code, Building: The administrative code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
7. Code, Electrical: The electrical code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
8. Code, Energy Conservation Code: The energy conservation code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
9. Code, Existing Building: The existing building code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
10. Code, Fire: The fire code, including all local amendments and reference standards, adopted and enforced by the AuThority Having Jurisdiction.
11. Code, Fuel Gas: The fuel gas code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
12. Code, Mechanical: The mechanical code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
13. Code, Plumbing: The plumbing code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
14. Code, Residential: The residential code, including all local amendments and reference standards, adopted and enforced by the Authority Having Jurisdiction.
15. Connect: To bring service to the equipment and make final attachment including necessary switches, outlets, boxes, terminations, etc.
16. Contract Documents: All drawings, specifications, specified reference standards, applicable codes; manufacturer's installation instructions, and executed legal documents related to the project.
17. Contractor: The contractor(s) or subcontractor(s) responsible for performing the work associated with Divisions 26, 27, and 28, and ultimately the General Contractor.
18. Drawings: All plans, details, equipment schedules, diagrams, sketches, etc. issued for the construction of the work.
19. Exposed: Not concealed.
20. Furnish: To supply and deliver, unload, and inspect for damage.
21. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, connect, and place into operation into the work.
22. Owner: The entity, including authorized representatives, to which the work is being provided.
23. Provide: To furnish and install.
24. Work: The construction and services, including all labor, materials, and equipment, required by the contract documents to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project.

1.03 CODES AND STANDARDS
A. Perform work in accordance with code requirements.
B. Perform work in accordance with:
1. Occupational Safety and Health Administration (OSHA) Regulations.
2. Americans with Disabilities Act (ADA).
3. The Authority Having Jurisdiction (AHJ).
4. Landlord requirements including Tenant Criteria Manuals and Lease Exhibits.
5. Utility company requirements. Work on all connections with the utility companies for proper coordination of the work.
C. All Referenced Standards identified in the specifications apply to the work as if they were incorporated into the specifications in their entirety. It shall not be necessary to specifically reference one of these Referenced Standards for the requirements of the Referenced Standards to apply to the work. If there is a conflict between the requirements of a Referenced Standard and the drawings or specifications, it is the responsibility of this Contractor to notify the Engineer of the discrepancy and obtain direction as to which standard applies prior to proceeding.
D. Code, Landlord, and utility company requirements supersede any requirements of the contract documents.
E. The contract documents take precedence where the contract documents exceed code, Landlord, utility, or referenced standards requirements.

1.04 PERMITS AND FEES
A. Permits, licenses, fees, inspections and arrangements required for the work under this Contract shall be obtained by the Contractor at his expense, unless otherwise indicated.
B. All fees and scheduling associated with obtaining an accurate water flow test shall be at the Contractor's expense.

1.05 PREPARATION
A. The Contractor is responsible to obtain, fully understand, and coordinate the work with the complete set of Contract Documents. Any required corrections, including all associated costs, arising from issues caused by the Contractor's failure to understand and/or coordinate the work with the complete set of Contract Documents are the Contractor's sole responsibility.
B. Work under these sections is diagrammatic unless indicated otherwise and is intended to convey the scope of work and indicate the general arrangement of piping, equipment, and accessories. Follow these drawings in laying out the work and verify spaces for the installation of these materials and equipment. Wherever a question exists as to the exact intended location of pipe, apparatus, or equipment, obtain instructions from the Architect before proceeding with the work.
C. Notify the Architect/Engineer for resolution if a discrepancy is discovered within the Contract Documents. Failure of the Contractor to notify the Architect/Engineer of discrepancies shall result in the resolution becoming the Contractor's responsibility and subject to the Architect/Engineer's review and possible rejection. Should the Architect/Engineer reject a discrepancy resolution of which they were not notified, the Contractor shall be responsible to correct the installation, including all associated costs, until approval of the installation is given by the Architect/Engineer.

1.06 EXISTING CONDITIONS
A. Verify all existing conditions prior to beginning work.
B. Any existing conditions indicated are based on information provided by others and possible limited field verification.
C. Visit the project site, review existing conditions against the contract documents, and become familiar with the work prior to bidding and start of the work.
1. Adjust for actual field conditions at no additional expense to the Owner.
2. If major discrepancies are found, the Contractor shall advise the Architect/Engineer of such deviations in writing so that the appropriate modifications to the design can be made without delay to the project.
a. The Contractor assumes full responsibility if adjusting for discrepancies of which the Architect/Engineer is not informed.
3. Signing the contract is an acknowledgement that the site visit has been completed and the existing conditions are accepted.
D. Verify field measurements are as indicated.
E. Verify all pipe locations and sizes in field prior to fabrication or installation.
F. Verify all equipment locations in field prior to installation. Coordinate final locations with all trades.
G. The Owner shall have first salvage right on all demolished equipment and materials. The Contractor shall dispose of all demolished equipment and materials the Owner rejects.
H. Where connections are made between new work and existing work, the connections shall be made by using materials and methods to suit the actual conditions.
I. Where existing conditions are shown to be removed, by means of a hatched pattern, on the Drawings, this Contractor shall perform all work required for removal. Existing pipe run-outs shall be removed all the way back to main and capped using appropriate methods.
J. Where existing work is to be modified, it shall be done in conformance with these specifications. Materials used shall be same as existing except where specified otherwise.

1.07 SUBMITTALS
A. Furnish the Architect/Engineer product data and/or shop drawings, as specified in the individual specification sections, for review.
1. Only submittals specifically required to be provided for Architect/Engineer review within the individual specification sections will be reviewed by the Engineer.
B. Indicate the corresponding equipment tag on each unique component or piece of equipment.
C. Indicate all proposed catalog numbers.
D. Product data shall consist of manufacturer's standard catalog pages and/or cut-sheets.
E. Submittals shall be concise and to the point, demonstrating the key performance parameters indicated in the contract documents, major dimensions, and identifying the materials used to manufacture the products. Submittals shall directly address the specific requirements of the contract documents without unnecessary, superfluous information such as non-applicable catalog pages, non-applicable cut sheets, and/or sales brochures. Submittals deemed overly voluminous and/or non-specific to the requirements of the contract documents will be returned without Engineer review.
F. The Architect/Engineer's review shall not relieve the Contractor from responsibility for errors within the submittals.
G. If a submittal deviates from the requirements of the contract documents, the Contractor shall advise the Architect/Engineer of the deviation in writing accompanying the submittal, including the reason for the deviation.
H. Submittals are reviewed only for general compliance with the Contract Documents. Dimensions, quantities and details are not checked during submittal review. Review of the submittals does not relieve the Contractor of the responsibility for providing all materials, equipment and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the Contract Documents. The responsibility for coordination of substituted materials and equipment lies solely with the entity Contracting for the work.

1.08 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years' experience.
B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years' experience. Approved by manufacturer.
C. All Products:
1. Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
2. Listed and classified by the local Department of Buildings and furnished with an acceptance number, where applicable.
3. Listed and classified by the Landlord's and/or Owner's insurance carrier, where applicable.
D. All equipment and components shall be free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced at no additional cost to the Owner.
E. Equipment performance and accessories shall be as scheduled on the Drawings and specified herein. Inclusion in both locations is not a prerequisite to inclusion in the Contract. Equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system, including all required components reasonably inferred to as necessary although such components may or may not be specifically indicated on the Drawings or within the Specifications.
F. Code or utility company requirements shall supersede any conflicting requirements of this section.
G. Fill Composition Test Reports: Results of laboratory tests on actual materials used. Composition Density Test Reports.

1.09 DELIVERY, STORAGE, AND HANDLING
A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions. Protect products from physical damage.
B. Provide temporary protective coating on cast iron and steel valves.
C. Provide temporary end caps and closure on piping and fittings. Maintain in place until installation.
D. Protect motors stored on site from weather and moisture by maintaining factory covers and suitable weatherproof covering. For extended outdoor storage, remove motors from equipment and store separately.

1.10 WARRANTY AND GUARANTEE
A. Provide a complete parts and labor warranty and guarantee on all systems installed for a period of one year from Owner acceptance of the completed facility. This warranty and guarantee shall cover all failures of any equipment, materials or installation, unless such failure is directly attributable to vandalism, or causes other than defects in material or workmanship.
B. Additional warranty and guarantee terms in excess of this requirement are specified within the individual sections of Division 22.

PART 2 PRODUCTS
2.01 SUBSTITUTIONS
A. The manufacturers listed are listed to set minimum standards for quality, design, and functionality. The products of other manufacturers may be submitted, at the Contractor's option, during shop drawing review unless indicated otherwise. The products of other manufacturers shall meet or exceed all requirements of the Contract Documents. The Contractor accepts all responsibility for costs and coordination issues arising out of the substitution of materials or equipment, and the coordination of such substitutions with all other contractors and construction issues.

2.02 Source Limitations: Furnish equipment and associated components and accessories produced by a single manufacturer and obtained from a single supplier.

PART 3 EXECUTION
3.01 COORDINATION OF WORK
A. Examine the Contract Documents as a whole for the work of other trades. Coordinate all work accordingly.
B. Work lines and established heights shall be in strict accordance with the contract documents. Verify all dimensions shown and establish all elevations and detailed dimensions not shown.
C. Promptly report to the Architect any delay or difficulties encountered in the installation of the work, which might prevent prompt and proper installation, or make it unsuitable to connect with or receive the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.
D. Plan, lay out, and coordinate the work with all trades well enough in advance so that it proceeds with a minimum of interference to work that has not been completed and work that is in progress.
1. Inform all trades of openings required for the work and provide all special frames, sleeves, and anchor bolts required.
2. The plumbing system layout may be altered to suit the conditions, prior to the installation of any work and without additional cost to the Owner.
3. Perform all work in compliance with the contract documents and afford other trades reasonable opportunity for the execution of their work.
4. Properly connect and coordinate this work with the work of other trades at such time and in such a manner as not to delay or interfere with their work.
5. Conflicts arising from lack of coordination shall be the Contractor's responsibility.
a. The Contractor shall pay for all extra cutting and patching made necessary by his failure to properly direct such work at the correct time.
E. Wherever pipe runs in or above ceilings or walls, the Contractor shall arrange the run of pipe in such a manner that it does not interfere with grilles, diffusers, outlet boxes, luminaires, or other ceiling mounted items.
F. Install systems, materials and equipment to provide for maximum headroom. Maintain access to equipment requiring service when selecting mounting elevations.
G. Install plumbing equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
H. Install systems, materials and equipment level and plumb, parallel and perpendicular to building lines where exposed to view, unless otherwise indicated.
I. Manufacturer's instruction sheets shall be followed explicitly in the installation of all equipment. Where manufacturer's instruction sheets conflict with requirements of these specifications or the Drawings, such conflicts shall be brought to the attention of the Architect/Engineer for clarification.
J. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.
K. Although all such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
L. Verify and coordinate all requirements and installation details of all materials and equipment that are to be furnished under this section, but installed in or connected under this Division prior to rough-in. Conflicts arising from lack of coordination shall be this Contractor's responsibility. As such, the Contractor is responsible to:
1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
2. Determine connection locations and requirements.
3. Sequence rough-in of plumbing connections to coordinate with installation of equipment.
M. Utilize galvanized steel hangers and supports in all wet, damp, and corrosive environments, including all exterior locations.
N. Where crane rental or other erection is required, such costs shall be included in the plumbing contract, unless specific arrangements are made with the General Contractor to cover these costs.
O. Verify that mounting surfaces are ready to receive support and attachment components.
P. Verify that conditions are satisfactory for installation prior to starting work.

3.02 COORDINATION DRAWINGS
A. Prepare coordination drawings to a scale of 1/4"=1'-0" or larger; detailing major elements, components, and systems of plumbing equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the work, including (but not necessarily limited to) the following:
1. Indicate the proposed locations of conduits, equipment, and materials. Include the following:
a. Clearances required for maintaining Code required working space.
b. Equipment connections and support details.
c. Exterior wall and foundation penetrations.
d. Fire-rated wall and floor penetrations.
e. Sizes and location of required concrete pads and bases.
f. Indicate scheduling, sequencing, movement, and positioning of large equipment into the building during construction.
g. Prepare floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to adjacent penetrations and installations.
2. Coordination drawings are for use between the different construction trades and will not be reviewed by the Architect/Engineer.

3.03 INTERFACES
A. Install all pipe, equipment, and accessories to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

3.04 FIELD QUALITY CONTROL
A. Provide tests as necessary to establish the adequacy, quality, safety, completed status, and proper operation of each system.
B. Install all equipment, devices, pipe, and materials securely and in a neat and workmanlike manner in accordance with all applicable standards and codes.
C. Install all equipment, pipe, and materials plumb and level and align and adjust for satisfactory operation.
D. Install all equipment, pipe, and materials in accordance with the manufacturer's instructions and recommendations.
E. Inspect all equipment, pipe, and materials for defects.

3.05 ERECTION
A. Rigging:
1. The Plumbing Contractor shall arrange for all labor and equipment required for the proper installation of the plumbing equipment in the locations indicated on the Drawings. Where crane rental or other erection is required, such costs shall be included in the Plumbing Contract, unless specific arrangements are made with the General Contractor to cover these costs.
B. Supplemental Framing:
1. Provide the design, fabrication, and erection of supplementary structural framing required for attachment of hangers or other devices supporting plumbing equipment. Provide framing members of standard rolled steel shapes, A-36 steel. Provide members welded to structural members equal to the specification for the main structural member. Provide "simple beam" type framing with ends and connections welded or bolted for rigidity. Provide cantilevers when detailed or specifically approved by the Architect/Engineer. The Architect/Engineer's approval is required for location of supplementary framing. Use only certified welders. Design framing members for their actual loads, with allowable stresses specified by AISC, without excessive deflection and with consideration of rigidity and vibration, in accordance with standard structural practices. Show on shop drawing supplementary framing, including design loads, member size and location.

3.06 CUTTING, PATCHING, AND PIERCING
A. Cutting of openings and installation of sleeves or frames through walls and surfaces shall be done in a neat workmanlike manner. Openings shall be cut only as large as required for the installation; sleeves and/or frames installed flush with finished surfaces and grouted in place. Surfaces around openings shall be left smooth and finished to match surrounding surface.
B. Obtain written permission of the Architect/Engineer before cutting or piercing structural members. Use craftsmen skilled in their respective trades for cutting, fitting, forming, patching of plaster, and finishing of holes including carpentry work, metal work or concrete work required for this work.
C. Do not weaken walls, partitions, or floors with cutting. Holes required to be cut in floors must be drilled without breaking out around the holes. The Architect/Engineer will determine suitability of patching and/or refinishing requirements.
D. The Plumbing Contractor is responsible for patching of all openings resulting from the installation or removal of plumbing equipment or materials.
E. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
F. Patch existing finished surfaces and building components using new materials matching existing materials and experienced Subcontractors.
G. Fire and Smoke Partition Penetrations: Submit to and shall familiarize himself with all fire rated construction and install his work so as to maintain the integrity of the fire code rating. Maintain rating of fire rated and smoke rated construction. Seal annular space around conduits. For fire and smoke rated floors, walls and partitions, use UL listed material that maintains fire rated wall and floor integrity.

3.07 CLEANING AND REPAIR
A. Clean building parts to remove harmful materials.
B. Clean exposed surfaces of all pipe, equipment, and accessories of all dirt, debris, splatter, and other deleterious materials. Follow the manufacturer's recommendations for cleaning as applicable.
C. Repair or replace damaged pipe, equipment, and accessories, as directed by and to the satisfaction of the Architect, where marring or disfigurement has occurred. All pipe, equipment, and accessories shall be new.

3.08 TESTING AND INSPECTION
A. Upon completion, the entire system shall be tested under operating conditions.
1. All equipment shall be tested under service conditions and proven to operate properly and noiselessly.
2. All additional tests as required throughout this Specification shall be completed with results reported back to the Architect/Engineer for review.
B. Operate all equipment, after installation and connection. Inspect for improper connections and operation and correct deficiencies as required.
C. Inspection:
1. Upon completion of the work, the Contractor shall obtain certificates of inspection and approval from all City and State Authorities Having Jurisdiction.

3.09 PROJECT CLOSEOUT
A. Project Record Documents:
1. Provide one printed copy and one electronic copy of project record drawings to the Owner.
2. These drawings shall remain at the construction site throughout construction and shall be updated on a daily basis.
3. These drawings shall be available for review by the Architect/Engineer at all times.
4. Include information required in the individual specification sections.
B. Operation and Maintenance Data:
1. Provide one printed copy and one electronic copy of operation and maintenance data to the Owner, including:
a. All submittals required in the individual specification sections.
b. All manufacturers' warranty information.
c. All certificates of compliance with testing or regulatory requirements.
d. All test reports.
2. Organize all information by specification section.

END OF SECTION

SECTION 220501 - TRENCHING AND BACKFILL FOR PLUMBING SYSTEMS

PART 1 GENERAL
1.01 DEFINITIONS
A. Subgrade Elevations: 4 inches (100 mm) below finish grade elevations indicated on drawings, unless otherwise indicated.
B. Finish Grade Elevations: 4 inches (100 mm) above subgrade elevations indicated on drawings, unless otherwise indicated.

1.02 SUBMITTALS
A. Submittals for Architect/Engineer review are not required.
B. Provide the following to the Owner upon project closeout:
1. Fill Composition Test Reports: Results of laboratory tests on actual materials used.
2. Compaction Density Test Reports.

1.03 PROJECT CONDITIONS
A. Provide sufficient quantities of fill to meet project schedule and requirements. When necessary, store materials on site in advance of need.
B. When fill materials need to be stored on site, locate stockpiles where designated.
1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
2. Prevent contamination.
3. Protect stockpiles from erosion and deterioration of materials.
C. Verify that survey bench marks and intended elevations for the Work are as indicated.
D. Protect plants, lawns, rock outcroppings, existing construction, and other features to remain as indicated.
E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
F. Code requirements shall supersede any conflicting requirements of this section.

PART 2 PRODUCTS
2.01 FILL MATERIALS
A. General Fill: Subsoil excavated on-site.
1. Graded.
2. Free of lumps larger than 3 inches (75 mm), rocks larger than 2 inches (50 mm), and debris.
B. Structural Fill: Subsoil excavated on-site.
1. Graded.
2. Free of lumps larger than 3 inches (75 mm), rocks larger than 2 inches (50 mm), and debris.
C. Granular Fill - Gravel : Pit run stone; free of shale, clay, friable material and debris.
D. Granular Fill - Pea Gravel : Natural stone; free of clay, shale, organic matter.
E. Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter.
F. Topsoil: Topsoil excavated on-site.
1. Graded.
2. Free of roots, rocks larger than 1/2 inch (12 mm), subsoil, debris, large weeds and foreign matter.
3. Acidity range (pH) of 5.5 to 7.5.
4. Containing a minimum of 4 percent and a maximum of 25 percent inorganic matter.

2.02 ACCESSORIES
A. Geotextile Fabric: Non-biodegradable, woven, standard grade.

PART 3 EXECUTION
3.01 EXAMINATION
A. Identify required lines, levels, contours, and datum locations.
B. Locate, identify, and protect utilities and construction that remains and protect from damage.

3.02 TRENCHING
A. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
B. Slope banks of excavations deeper than 4 feet (1.2 meters) to angle of repose or less until shored.
C. Do not interfere with 45 degree bearing splay of foundations.
D. Cut trenches wide enough to allow inspection of installed utilities.
E. Hand trim excavations. Remove loose matter.
F. Remove large stones and other hard matter which could damage piping or impede consistent backfilling or compaction.
G. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd (0.25 cu m) massed by volume.
H. Remove excavated material that is unsuitable for re-use from site.
I. Stockpile excavated material to be re-used in area designated on site .
J. Remove excess excavated material from site.

3.03 PREPARATION FOR UTILITY PLACEMENT
A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

3.04 BACKFILLING
A. Backfill to contours and elevations indicated using unfrozen materials.
B. Fill up to finish grade or slab elevations unless otherwise indicated.
C. Employ a placement method that does not disturb or damage other work.
D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
E. Maintain optimum moisture content of fill materials to attain required compaction density.
F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 8 inches (200 mm) compacted depth.
G. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches (200 mm) compacted depth.
H. Slope grade away from building minimum 2 inches in 10 ft (50 mm in 3 m), unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
I. Correct areas that are over-excavated.
J. Thrust bearing surfaces: Fill with concrete.
K. Other areas: Use general fill, flush to required elevation, compacted to minimum 95 percent of maximum dry density.
L. Compaction Density Unless Otherwise Specified or Indicated:
1. Under paving, slabs-on-grade, and similar construction: 97 percent of maximum dry density.
2. At other locations: 95 percent of maximum dry density.
M. Reshape and re-compact fills subjected to vehicular traffic.

3.05 BEDDING AND FILL AT SPECIFIC LOCATIONS
A. Use general fill unless otherwise specified or indicated.
B. Utility Piping, Conduits, and Duct Bank :
1. Bedding: Use granular fill.
2. Cover: Use general fill.
3. Fill up to finish grade elevation.
4. Compact in maximum 8 inch (200 mm) lifts to 95 percent of maximum dry density.
C. Over Subdrainage Piping at Foundation Perimeter and Under Slabs:
1. Drainage fill and geotextile fabric.
2. Cover drainage fill with general fill.
3. Fill up to finish grade elevation.
4. Compact to 95 percent of maximum dry density.

3.06 TOLERANCES
A. Top Surface of General Backfilling: Plus or minus 1 inch (25 mm) from required elevations.
B. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch (25 mm) from required elevations.

3.07 FIELD QUALITY CONTROL
A. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2017.
B. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D 698 ("standard Proctor"), ASTM D 1557 ("modified Proctor"), or AASHTO T 180.
C. If tests indicate work does not meet specified requirements, remove work, replace and retest.
D. Frequency of Tests: Every two feet.

3.08 CLEANUP
A. Leave unused materials in a neat, compact stockpile.
B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent free drainage from area.
C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

SECTION 220516 - EXPANSION FITTINGS AND LOOPS FOR PLUMBING PIPING

PART 1 GENERAL
1.01 SUBMITTALS
A. Provide the following for Architect/Engineer review:
1. Product Data:
a. Flexible Pipe Connectors: Indicate maximum temperature and pressure rating, face-to-face length, live length, hose wall thickness, hose convolutions per foot (meter) and per assembly, fundamental frequency of assembly, braid structure, and total number of wires in braid.
b. Expansion Joints: Indicate maximum temperature and pressure rating, and maximum expansion compensation.
2. Design Data: Indicate locations and calculations.
B. Provide the following to the Owner upon project closeout:
1. Manufacturer's Instructions: Indicate manufacturer's installation instructions, special procedures, and external controls.
2. Maintenance Data: Include adjustment instructions.
3. Project Record Documents: Record installed locations of flexible pipe connectors, expansion joints, anchors, and guides.

PART 2 PRODUCTS
2.01 FLEXIBLE PIPE CONNECTORS - STEEL PIPING
A. Inner Hose: Carbon steel.
B. Exterior Sleeve: Single braided, stainless steel.
C. Pressure Rating: 125 psi and 450 degrees F (862 kPa and 232 degrees C).
D. Joint: Flanged.
E. Size: Use pipe sized units.
F. Maximum offset: 3/4 inch (20 mm) on each side of installed center line.

2.02 FLEXIBLE PIPE CONNECTORS - COPPER PIPING
A. Inner Hose: Bronze.
B. Exterior Sleeve: Braided bronze.
C. Pressure Rating: 125 psi and 450 degrees F (862 kPa and 232 degrees C).
D. Joint: Flanged.
E. Size: Use pipe sized units.
F. Maximum offset: 3/4 inch (20 mm) on each side of installed center line.
G. Application: Copper piping.

PART 3 EXECUTION
3.01 INSTALLATION
A. Install in accordance with EJMA (Expansion Joint Manufacturers Association) Standards.
B. Install flexible pipe connectors on pipes connected to vibration isolated equipment. Provide line size flexible connectors.
C. Install flexible connectors at right angles to displacement. Install one end immediately adjacent to isolated equipment and anchor other end. Install in horizontal plane unless indicated otherwise.
D. Anchor pipe to building structure where indicated and as required to control detrimental movement of piping. Provide pipe guides so movement is directed along axis of pipe only. Erect piping such that strain and weight is not on connections or apparatus.
E. Provide support and equipment required to control expansion and contraction of piping. Provide loops, pipe offsets, and swing joints, or expansion joints where required.
F. Contractor may substitute grooved piping for vibration isolated equipment instead of flexible connectors. Grooved piping need not be anchored.

END OF SECTION

SECTION 220519 - METERS AND GAUGES FOR PLUMBING PIPING

PART 1 GENERAL
1.01 SUBMITTALS
A. Provide the following for Architect/Engineer review:
1. Product Data: Include list that indicates use, operating range, total range and accuracy for manufactured components.
B. Provide the following to the Owner upon project closeout:
1. Project Record Documents: Record actual locations of components and instrumentation.

PART 2 PRODUCTS
2.01 POSITIVE DISPLACEMENT METERS (LIQUID)
A. AWWA C700, positive displacement disc type suitable for fluid with bronze case and cast iron frost-proof, breakaway bottom cap, hermetically sealed register, remote reading.
B. Meter: Brass body turbine meter with magnetic drive register.
1. Accuracy: 1-1/2 percent.

2.02 PRESSURE GAUGES
A. Pressure Gauges: ASME B40.100, UL 393 drawn steel case, phosphor bronze bourdon tubes, rotary brass movement, brass socket, with front recalibration adjustment, black scale on white background.
1. Case: Steel with brass bourdon tube.
2. Size: 2 inch (50 mm) diameter.
3. Lens: Clear glass.
4. Mid-Scale Accuracy: Two percent.
5. Scale: Psi and kPa.

2.03 PRESSURE GAUGE FITTINGS
A. Gauge Cock: Tee or lever handle, brass for maximum 150 psi (1034 kPa).
B. Needle Valve: Brass, 1/4 inch (6 mm) MPT for minimum 150 psi (1034 kPa).
C. Pulsation Damper: Pressure snubber, brass with 1/4 inch (6 mm) connections.
D. Syphon: Steel; Schedule 40, 1/4 inch (6 mm) angle or straight pattern.

2.04 STEM TYPE THERMOMETERS
A. Thermometers - Adjustable Angle: Red- or blue-appearing non-toxic liquid in glass; ASTM E1; lens front tube, cast aluminum case with enamel finish, cast aluminum adjustable joint with positive locking device; adjustable 360 degrees in horizontal plane, 180 degrees in vertical plane.
1. Size: 7 inch (175 mm) scale.
2. Window: Clear Lexan.
3. Stem: 3/4 inch (20 mm) NPT brass.
4. Accuracy: 2 percent, per ASTM E77.
5. Calibration: Deg rees F.

2.05 TEST PLUGS
A. Test Plug: 1/4 inch (6 mm) or 1/2 inch (13 mm) brass fitting and cap for receiving 1/8 inch (3 mm) outside diameter pressure or temperature probe with Nordel core for temperatures up to 350 degrees F (176 degrees C).
B. Test Plug: 1/4 inch (6 mm) or 1/2 inch (13 mm) brass fitting and cap for receiving 1/8 inch (3 mm) outside diameter pressure or temperature probe with Viton core for temperatures up to 400 degrees F (204 degrees C).

PART 3 EXECUTION
3.01 INSTALLATION
A. Install positive displacement meters with isolating valves on inlet and outlet. Provide full line size valved bypass with globe valve for liquid service meters unless prohibited by local utility company.
B. Provide one pressure gauge per pump, installing taps before strainers and on suction and discharge of pump. Pipe to gauge.
C. Install thermometers in piping systems in sockets in short couplings. Enlarge pipes smaller than 2-1/2 inch (60 mm) for installation of thermometer sockets. Ensure sockets allow clearance from insulation.
D. Provide instruments with scale ranges selected according to service with largest approprlate scale.
E. Install gauges and thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees off vertical.
F. Adjust gauges and thermometers to final angle, clean windows and lenses, and calibrate to zero.
G. Locate test plugs where indicated or required for measurement and balancing of systems.

END OF SECTION

SECTION 220529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL
1.01 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
2. Coordinate the work with other trades to provide additional framing and materials as required for installation.
3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
B. Sequencing:
1. Do not install products on or provide attachment to concrete surfaces until concrete has fully cured in accordance with Section regarding cast in place concrete.

1.02 SUBMITTALS
A. Submittals for Architect/Engineer review are not required.

1.03 QUALITY ASSURANCE
A. Installer Qualifications for Powder-Actuated Fasteners (when specified): Certified by fastener system manufacturer with current operator's license.
B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS
2.01 SUPPORT AND ATTACHMENT COMPONENTS
A. General Requirements:
1. Comply with MSS SP-58.
2. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of plumbing work.
3. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
5. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
6. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
B. Metal Channel (Strut) Framing Systems:
1. Provide factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
2. Comply with MFMA-4.
3. Channel Material:
a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel or stainless steel.
4. Minimum Channel Thickness: Steel sheet, 14 gage, 0.0747 inch (1.90 mm).
5. Minimum Channel Dimensions: 1-1/2 inch (38 mm) width by 13/16 inch (21 mm) height.
C. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
1. Minimum Size, Unless Otherwise Indicated or Required:
a. Equipment Supports: 1/2 inch (13 mm) diameter.
b. Piping up to 1 inch (27 mm) nominal: 1/4 inch (6 mm) diameter.
c. Piping larger than 1 inch (27 mm) nominal: 3/8 inch (10 mm) diameter.
d. Trapeze Support for Multiple Pipes: 3/8 inch (10 mm) diameter.
D. Thermal Insulated Pipe Supports:
1. General Construction and Requirements:
a. Insulated pipe supports to be provided at hanger, support, and guide locations on pipe requiring insulation or additional support.
b. Surface Burning Characteristics: Flame spread index not exceeding developed index of 5/30, maximum, when tested in accordance with ASTM E84 or UL 723.
c. Pipe supports to be provided for nominally sized, 1/2 inch to 30 inch (12.7 mm to 762 mm) iron pipes.
d. Insulation inserts to consist of rigid polyisocyanurate (urethane) insulation surrounded by a 360 degree, PVC jacketing.
2. PVC Jacket:
a.

SECTION 220548 - VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT
SECTION 220565 - FIRESTOPPING FOR PLUMBING SYSTEMS
SECTION 220719 - PLUMBING PIPING INSULATION
SECTION 220720 - PIPING SAFETY COVERS
SECTION 221006 - PLUMBING PIPING
SECTION 221006 - PLUMBING PIPING SPECIALTIES
SECTION 223300 - PLUMBING EQUIPMENT
SECTION 224000 - PLUMBING FIXTURES

inch (228.6 by 384.1 mm) base (Model 5-R).

F. Adjustable Height Pipe Stands: Self-lubricating polycarbonate roller mounted on stainless steel or polycarbonate roller rod supported by two stainless steel threaded rods, with height adjustment up to 6-1/2 inches (165 mm) above roof surface.
1. 3-inch Nominal Pipe: 3 inch (76.2 mm) ID maximum pipe capacity, 3-7/8 inch (84. mm) OD maximum pipe capacity; polycarbonate resin base; glass filled nylon threaded rod for 5 inch (127 mm) height adjustment; total load up to 100 lb (45 kg); 7-1/2 by 10 inch (183.5 by 254 mm) base (Model 3-RAH).
2. 4-inch Nominal Pipe: 4 inch (101.6 mm) ID maximum pipe capacity, 5 inch (127 mm) OD maximum pipe capacity.
a. Base Material: Polycarbonate resin; total load up to 125 lb (57 kg); 7-1/2 by 10 inch (183.5 by 254 mm) base (Model 4-RAH).
b. Base Material: Stainless steel; total load up to 150 lb (68 kg); 12 by 16 inch (304.8 by 406.4 mm) base (Model 4-RAH SS).
c. Base Material: Hot dipped galvanized steel; total load up to 150 lb (68 kg); 12 by 16 inch (304.8 by 406.4 mm) base (Model 4-RAH HDG).
3. 5-Inch Nominal Pipe: 5 inch (127 mm) ID maximum pipe capacity, 6 inch (152.4 mm) OD maximum pipe capacity; polycarbonate resin base; total load up to 150 lb; 9 by 15-1/8 inch (228.6 by 384.1 mm) base (Model 5-RAH).
4. 6-Inch Nominal Pipe: 6 inch (152.4 mm) ID maximum pipe capacity, 7 inch (177.8 mm) OD maximum pipe capacity; total load up to 150 lb (68 kg).
a. Base Material: Stainless steel; 12 by 16 inch (304.8 by 406.4 mm) base (Model 6-RAH SS).
b. Base Material: Hot dipped galvanized steel; 12 by 16 inch (304.8 by 406.4 mm) base (Model 6-RAH HDG).

G. Strut-Type Supports: Single base with two threaded rods supporting hot dipped galvanized horizontal channel strut.
1. Size: 12 inch (304.8 mm) strut 1-5/8 by 13/16 inch (41.3 x 28.6 mm), pipe clearance variable up to 7 inch (177.8 mm). (Model 12 Base Strut).
2. Size: 16 inch (406.4 mm) strut 1-5/8 by 13/16 inch (41.3 x 28.6 mm), pipe clearance variable up to 7 inch (177.8 mm). (Model 16 Base Strut).
3. Base: Polycarbonate resin; total load up to 125 lb (56.8 kg); 7-1/2 by 10 inch (183.5 by 254 mm) or 9 by 15-1/8 inch (228.6 by 384.1 mm) base.

H. Support Pads: 15-3/4 by 19-3/4 inch (400 x 501.7 mm) square, 1/8 inch (3 mm) thick, flexible PVC with carbon black additive for UV stabilization.

I. Deck Plates: Square metal deck plate with curved up edges, to spread load and protect roof membrane.
1. Thickness: 18 gauge (1.2 mm).
2. Material: Hot dip galvanized.
3. Size: 12 x 12 inch (304.8 x 304.8 mm) square; total load up to 200 lb (90.6 kg) (Model DP-12).
4. Size: 18 x 18 inch (457.2 x 457.2 mm) square; total load up to 400 lb (181.2 kg) (Model DP-18).
5. Size: 24 x 24 inch (609.6 x 609.6 mm) square; total load up to 800 lb (361.4 kg) (Model DP-24).

J. Rollers:
1. Roller 3; 3 inch (76.2 mm) sturdy polycarbonate roller, shaft 5/8 inches (15.9 mm), end diameter 1-7/8 inches (47.6 mm). Roller surface has a 3 inch (76.2 mm) radius arch. Maximum load capacity may not exceed 150 lbs. (68 kg).
2. Roller 5; 5 inch (127 mm) sturdy polycarbonate roller, shaft 5/8 inches (15.9 mm), end diameter 2-7/16 inches (61.9 mm) Roller surface has a 5 inch (127 mm) radius arch. Maximum load capacity may not exceed 150 lbs. (68 kg).

PART 3 EXECUTION
3.01 INSTALLATION
A. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
B. Provide independent support from building structure. Do not provide support from piping, ductwork, conduit, or other systems.
C. Unless specifically indicated or approved by Engineer, do not provide support from suspended ceiling support system or ceiling grid.
D. Unless specifically indicated or approved by Engineer, do not provide support from roof deck.
E. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
F. Provide thermal insulated pipe supports complete with hangers and accessories. Install thermal insulated pipe supports during the installation of the piping system.
G. Equipment Support and Attachment:
1. Unless otherwise indicated, mount floor-mounted equipment on properly sized 3 inch (80 mm) high concrete pad constructed in accordance with Section regarding cast in place concrete.
H. Preset Concrete Inserts: Use manufacturer-provided closure strips to inhibit concrete seepage during concrete pour.
I. Secure fasteners according to manufacturer's recommended torque settings.
J. Determine that roof structure, roof insulation, and roof membrane are structurally adequate to support weight of pipe, duct, conduit, and supports and hangers.
K. Install supports at maximum spacing of 10 feet (3 m) unless closer spacing is required due to weight of pipe or conduit contents or greater spacing is specifically allowed by manufacturer; space and adjust to support an equal amount of weight; do not exceed manufacturer's recommended load limits.
L. Remove roofing aggregate from area 2 inches (50.8 mm) larger than support base; comply with roofing manufacturer's requirements to maintain roofing warranty.
M. Install an additional sheet of roofing material, support pad, or deck plate beneath each support base.
N. Support Pads:
1. Remove rock, aggregate, dirt and excess dust from area to be covered by pad.
2. Apply support pad on cleaned area.
3. Center base on top of support pads.
O. Deck Plates:
1. Required for loads greater than 100 pounds per support.
2. Locate centered under bases of pipe supports and hangers.
3. Remove rock, aggregate, dirt and excess dust from an area 2 inches (50.8 mm) larger than deck plate.
4. Install with curved edges up.
P. Pipe Supports: Support beneath pipe so that pipe is located squarely over and through cradle or hanger. Set pipe in support without dropping or causing undue impact.
Q. Adjustable Supports: Adjust height of each support to achieve proper height and level before installing supported item.
1. Level rollers or struts before installing pipe.
2. Make final height adjustments to provide even distribution of load on all supports.
R. Fixed Anchor Supports: Prior to installation of roof decking, insulation and roof membrane attach support to roof structure as indicated on Drawings.
1. After installation of roof decking, insulation and membrane, install pipe or roof top mechanical supports used in connection with fixed anchor supports.
2. Install piping or mechanical units on each support.
S. Remove temporary supports.

3.02 FIELD QUALITY CONTROL
A. Inspect support and attachment components for damage and defects.
B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
C. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

SECTION 220548 - VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL
1.01 DEFINITIONS
A. Plumbing Component: Where referenced in this section in regards to seismic controls, applies to any portion of the plumbing system subject to seismic evaluation in accordance with applicable codes, including distributed systems (e.g., piping).
B. Seismic Restraint: Structural members or assemblies of members or manufactured elements specifically designed and applied for transmitting seismic forces between components and the seismic force-resisting system of the structure.

1.02 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
1. Coordinate selection and arrangement of vibration isolation and/or seismic control components with the actual equipment to be installed.
2. Coordinate the work with other trades to provide additional framing and materials required for installation.
3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
4. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
B. Sequencing:
1. Do not install products on or provide attachment to concrete surfaces until concrete has fully cured in accordance with Section regarding cast in place concrete

1.03 SUBMITTALS
A. Provide the following for Architect/Engineer review:
1. Product Data: Provide manufacturer's standard catalog pages and data sheets for products, including materials, fabrication details, dimensions, and finishes.
a. Vibration Isolators: Include rated load capacities and deflections; include information on color coding or other identification methods for various element load capacities.
B. Provide the following to the Owner upon project closeout:
1. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

PART 2 PRODUCTS
2.01 VIBRATION ISOLATORS
A. General Requirements:
1. Resilient Materials for Vibration Isolators: Oil, ozone, and oxidant resistant.
2. Spring Elements for Spring Isolators:
a. Color code or otherwise identify springs to indicate load capacity.
b. Lateral Stability: Minimum lateral stiffness to vertical stiffness ratio of 0.8.
c. Designed to operate in the linear portion of their load versus deflection curve over deflection range of not less than 50 percent above specified deflection.
d. Designed to provide additional travel to solid of not less than 50 percent of rated deflection at rated load.
e. Selected to provide designed deflection of not less than 75 percent of specified deflection.
f. Selected to function without undue stress or overloading.
3. Seismic Snubbing Elements for Seismic Isolators:
a. Air Gap: Between 0.125 inches (3 mm) and 0.25 inches (6 mm) unless otherwise indicated.
b. Points of Contact: Cushioned with resilient material, minimum 0.25 inch (6 mm) thick; capable of being visually inspected for damage and replaced.
B. Vibration Isolators for Non-seismic Applications:
1. Resilient Material Isolator Pads:
a. Description: Single or multiple layer pads utilizing elastomeric (e.g., neoprene, rubber) or fiberglass isolator material.
b. Pad Thickness: As required for specified minimum static deflection; minimum 0.25 inch (6 mm) thickness.
c. Multiple Layer Pads: Provide bonded, galvanized sheet metal separation plate between each layer.
2. Resilient Material Isolator Mounts, Non-seismic:
a. Description: Mounting assemblies for bolting equipment to supporting structure utilizing elastomeric (e.g., neoprene, rubber) or fiberglass isolator material; foil-safe type.
3. Open (Unhoused) Spring Isolators:
a. Description: Isolator assembly consisting of single or multiple free-standing, laterally stable steel spring(s) without a housing.
b. Bottom Load Plate: Nonskid, molded, elastomeric isolator material or steel with nonskid elastomeric isolator pad with provisions for bolting to supporting structure as required.
c. Furnished with integral leveling device for positioning and securing supported equipment.
4. Spring Isolator Hangers, Non-seismic:
a. Description: Isolator assembly designed for installation in hanger rod suspension system utilizing single or multiple free-standing, laterally stable steel spring(s) in series with an elastomeric element for the lower hanger rod connection.
b. Designed to accommodate misalignment of bottom hanger rod up to 30 degrees (plus/minus 15 degrees) without short-circuiting of isolation.

2.02 BASES
A. Concrete Housekeeping Pad:
1. Construction: Concrete as specified for flooring.
2. Design: 4" high above the surrounding finished flooring and 4" greater in dimension that the equipment supported, or greater if detailed on the Drawings or when indicated.

PART 3 EXECUTION
3.01 INSTALLATION
A. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
B. Provide independent support from building structure. Do not provide support from piping, ductwork, conduit, or other systems.
C. Install flexible piping connections to provide sufficient slack for vibration isolation and/or seismic relative displacements as indicated or as required.
D. Vibration Isolation Systems:
1. Vibration-Isolated Equipment Support Bases:
a. Provide specified minimum clearance beneath base.
2. Spring Isolators:
a. Position equipment at operating height; properly tolerance blocking as required.
b. Lift equipment free of isolators prior to lateral repositioning to avoid damage to isolators.
c. Level equipment by adjusting isolators gradually in sequence to raise equipment uniformly such that excessive weight or stress is not placed on any single isolator.
3. Isolator Hangers:
a. Use precompressed isolator hangers where required to facilitate installation and prevent damage to equipment utility connection provisions.
b. Locate isolator hangers at top of hanger rods in accordance with manufacturer's instructions.
4. Clean debris from beneath vibration-isolated equipment that could cause short-circuiting of isolation.
5. Use elastomeric grommets for attachments where required to prevent short-circuiting of isolation.
6. Adjust isolators to be free of isolation short circuits during normal operation.
7. Do not overtighten fasteners such that resilient material isolator pads are compressed beyond manufacturer's maximum recommended deflection.

3.02 FIELD QUALITY CONTROL
A. Inspect vibration isolation and/or seismic control components for damage and defects.
B. Provide manufacturer representative or authorized technician services to assist with inspection and testing of vibration isolation systems and seismic controls. Submit a detailed copy of manufacturer recommended inspection, testing, and field report procedures.
C. Vibration Isolation Systems:
1. Verify isolator static deflections.
2. Verify resilient material integrity.
3. Verify vibration isolation performance during normal operation; investigate sources of isolation short circuits.
D. Seismic Controls:
1. Verify snubbing element air gaps.
E. Correct deficiencies and replace damaged or defective vibration isolation and/or seismic control components.
F. Submit detailed reports indicating inspection and testing results and corrective actions taken.

END OF SECTION

SECTION 220595 - FIRESTOPPING FOR PLUMBING SYSTEMS

PART 1 GENERAL
1.01 SUBMITTALS
A. Submittals for Architect/Engineer review are not required.

1.02 QUALITY ASSURANCE
A. Fire Testing: Provide firestopping assemblies of designs which provide the scheduled or specified fire ratings when tested in accordance with ASTM E 814 and ASTM E 119.
1. Listing in the current classification or certification books of UL or FM will be considered as constituting an acceptable test report.
2. Current evaluation reports published by CABO, ICBO, or BOCA will be considered as constituting an acceptable test report.
3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.
B. Installer Qualifications: Company specializing in performing the work of this section and:
1. Approved by Factory Mutual Research under FM Standard 4991, Approval of Firestop Contractors, or meeting any two of the following requirements:
a. With minimum five years documented experience installing work of this type.
b. Where required, licensed by authority having jurisdiction.
c. Approved by a firestopping manufacturer.
C. The Contractor shall examine the Drawings for the architectural work to identify all fire-rated, partitions, floors and assemblies and apply the appropriate fire stopping materials and systems to maintain the fire rating of the partition, floor or assembly penetrated based on the construction conditions depicted.

PART 2 PRODUCTS
2.01 FIRESTOPPING ASSEMBLIES
A. Firestopping: Any material meeting requirements.
1. Fire Ratings: Use any system listed by UL or FM or tested in accordance with ASTM E 814 or ASTM E 119 that has F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and that meets all other specified requirements.

2.02 MATERIALS
A. Elastomeric Silicone Firestopping: Single or multiple component silicone elastomeric compound and compatible silicone sealant; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Manufacturer's standard color.
B. Foam Firestopping: Single or multiple component foam compound; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Manufacturer's standard color.
C. Fibered Compound Firestopping: Formulated compound mixed with incombustible non-asbestos fibers; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Manufacturer's standard color.
D. Fiber Packing Material: Mineral or ceramic fiber packing insulation; conforming to the following:
1. Durability and Longevity: Permanent.
E. Firestop Devices: Mechanical device with incombustible or silicone elastomer filler and sheet stainless steel jacket, collar, and flanged stock; conforming to the following:
1. Durability and Longevity: Permanent; suitable for pedestrian traffic or vehicular traffic where necessary.
F. Intumescent Putty: Compound which expands on exposure to surface heat gain; conforming to the following:
1. Potential Expansion: Minimum 500 percent free expansion.
2. Durability and Longevity: Permanent.
3. Color: Manufacturer's standard color.
G. Firestop Pillows: Formed mineral fiber pillows; conforming to the following:
1. Durability and Longevity: Permanent.
H. Primers, Sleeves, Forms, and Accessories: Type required for tested assembly design.

PART 3 EXECUTION
3.01 EXAMINATION
A. Verify openings are ready to receive the work of this section.
3.02 PREPARATION
A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of fire-stopping material.
B. Remove incompatible materials which may affect bond.
C. Install backing materials to arrest liquid material leakage.
3.03 INSTALLATION
A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
B. Do not cover installed fire-stopping until inspected by authority having jurisdiction.
C. Install labeling required by code.
3.04 CLEANING AND PROTECTION
A. Clean adjacent surfaces of fire-stopping materials.
B. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 220719 - PLUMBING PIPING INSULATION

PART 1 GENERAL
1.01 SUBMITTALS
A. Provide the following for Architect/Engineer review:
1. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
B. Provide the following to the Owner upon project closeout:
1. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.02 FIELD CONDITIONS
A. Maintain ambient conditions required by manufacturers of each product.
B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS
2.01 JOINT SYSTEMS REQUIREMENTS
A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50 or less, when tested in accordance with ASTM E84 or UL 723.
B. The Contractor may use any of the following insulating/jacketing materials, at his option, provided the selected material meets with the approval of all State, local authority having and utility company requirements. The material selected for the selected insulating/jacketing material is the sole responsibility of the installing contractor.

2.02 GLASS FIBER
A. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
1. K (Ka) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
2. Maximum Service Temperature: 850 degrees F (454 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.
B. Insulation: ASTM C547 and ASTM C795; semi-rigid, noncombustible, and grain adhered to jacket.
1. K (Ka) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
2. Maximum Service Temperature: 650 degrees F (343 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.
C. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches (0.029 ng/Pa s m).
D. Vapor Barrier Lap Adhesive: Compatible with insulation.
E. Insulating Cement/Mastic: ASTM C195; hydraulic setting on mineral wool.
F. Fibrous Glass Fabric:
1. Cloth: Untreated; 9 oz/sq yd (305 g/sq m) weight.
2. Blanket: 1.0 lb/cu ft (16 kg/cu m) density.
3. Weave: 5 by 5.
G. Indoor Vapor Barrier Finish:
1. Vinyl emulsion type acrylic, compatible with insulation, white color.
H. Outdoor Vapor Barrier Mastic: Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
I. Outdoor Breather Mastic: Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
J. Insulating Cement: ASTM C449.

2.03 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
A. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C 534 Grade 1; use molded tubular material wherever possible.
1. Minimum Service Rating: Minus 40 degrees F (Minus 40 degrees C).
2. Maximum Service Temperature: 220 degrees F (104 degrees C).
3. Connection: Waterproof vapor barrier adhesive.
B. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

2.04 JACKETS
A. PVC Plastic.
1. Jacket: One piece molded type fitting covers and sheet material, off-white color.
a. Minimum Service Temperature: 0 degrees F (Minus 18 degrees C).
b. Maximum Service Temperature: 150 degrees F (66 degrees C).
c. Moisture Vapor Permeability: 0.002 perm inch (0.0029 ng/Pa s m), maximum, when tested in accordance with ASTM E96/E96M.
d. Thickness: 10 mil (0.25 mm).
e. Connections: Brush on welding adhesive.
2. Covering Adhesive Mastic: Compatible with insulation.
B. ABS Plastic:
1. Jacket: One piece molded type fitting covers and sheet material, off-white color.
a. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
b. Maximum Service Temperature: 180 degrees F (82 degrees C).
c. Moisture Vapor Permeability: 0.012 perm inch (0.018 ng/Pa s m), when tested in accordance with ASTM E96/E96M.
d. Thickness: 30 mil (0.76 mm).
e. Connections: Brush on welding adhesive.
C. Aluminum Jacket: ASTM B209 (ASTM B209M) formed aluminum sheet.
1. Thickness: 0.016 inch (0.40 mm) sheet.
2. Finish: Embossed.
3. Joining: Longitudinal slip joints and 2 inch (50 mm) laps.
4. Fittings: 0.016 inch (0.4 mm) thick die shaped fitting covers with factory attached protective liner.
5. Metal Jacket Bands: 3/8 inch (10 mm) wide; 0.015 inch (0.38 mm) thick aluminum.
6. Metal Jacket Bands: 3/8 inch (10 mm) wide; 0.010 inch (0.25 mm) thick stainless steel.
D. Stainless Steel Jacket: ASTM A666, Type 304 stainless steel.
1. Thickness: 0.010 inch (0.25 mm).
2. Finish: Smooth.
3. Metal Jacket Bands: 3/8 inch (10 mm) wide; 0.010 inch (0.25 mm) thick stainless steel.

PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that piping has been tested before applying insulation materials.
B. Verify that surfaces are clean and dry, with foreign material removed.
C. Verify that the installation of all heat trace systems have been completed and tested before applying insulation materials.

3.02 INSTALLATION
A. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.
B. Exposed Piping: Locate insulation and cover seams in least visible locations.
C. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
D. Glass fiber insulated pipes conveying fluids below ambient temperature:
1. Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch and expanding staples and vapor barrier mastic.
2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
3. Vapor barriers shall be continuous at all joints, fittings, valves, equipment and end caps. Seal all exposed ends or edges of insulation at all locations including hangers and supports with insulating cement to prevent vapor from entering insulation material beneath the vapor barrier jacket.
E. For hot piping conveying fluids 140 degrees F (60 degrees C) or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
F. For hot piping conveying fluids over 140 degrees F (60 degrees C), insulate flanges and unions at equipment.
G. Glass fiber insulated pipes conveying fluids above ambient temperature:
1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch and expanding staples.
2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
H. Inserts and Shields:
1. Application: Piping 2 inches (50 mm) diameter or larger.
2. Shields: Galvanized steel between pipe hangers or pipe hangers and inserts.
3. Insert Location: Between support shield and piping and under the finish jacket.
4. Insert Configuration: Minimum 6 inches (150 mm) long, of same thickness and contour as adjoining insulation; may be factory fabricated.
5. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.
I. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, fire stop penetrations to meet local code requirements.
J. Pipe Exposed in Finished Spaces (less than 10 feet (3 meters) above finished floor): Finish with Aluminum, Stainless Steel, ABS or PVC jacket and fitting covers.
K. Buried Piping: Provide factory fabricated assembly with inner all-purpose service jacket with self-sealing lap, and asphalt impregnated open mesh glass fabric, with one mil (0.025 mm) thick aluminum foil sandwiched between three layers of bituminous compound; outer surface faced with a polyester film.
L. Heat Traced Piping: Insulate fittings, joints, and valves with insulation of like material, thickness, and finish as adjoining pipe. Size large enough to enclose pipe and heat tracer. Cover with aluminum or stainless steel jacket with seams located on bottom side of horizontal piping. Do not use aluminum jackets on projects within 50 miles of a salt water body

3.03 SCHEDULES
A. Plumbing Systems:
1. Domestic Hot and Tempered Water Supply and Recirculation:
a. Glass Fiber Insulation:
1) Pipe Size Range: Within the first 8 feet of pipe from the fixture, up to 3/4 inch (19 mm) in size:
a) Thickness: 1/2 inch (12 mm).
2) All Other Pipe:
a) Thickness: 1 inch (25 mm).
b. Flexible Elastomeric Cellular Foam Insulation:
1) Pipe Size Range: Within the first 8 feet of pipe from fixture, up to 3/4 inch (19 mm) in size:
a) Thickness: 1/2 inch (12 mm).
2) All Other Pipe:
a) Thickness: 1 inch (25 mm).
2. Domestic Cold Water:
a. Glass Fiber Insulation:
1) Pipe Size Range: All Sizes.
a) Thickness: 1/2 inch (13 mm).
b. Flexible Elastomeric Cellular Foam Insulation:
1) Pipe Size Range: All Sizes.
a) Thickness: 1/2 inch (13 mm).
B. Roof Drain Piping:
1. Roof Drainage Above Grade: (Includes Roof Drain Bodies).
a. Glass Fiber Insulation:
1) Pipe Size Range: All Sizes.
a) Thickness: 1 inch (25 mm).
b. Flexible Elastomeric Cellular Foam Insulation:
1) Pipe Size Range: All Sizes.
a) Thickness: 1 inch (25 mm).
C. Cooling Systems:
1. Cold Condensate Drains:
a. Glass Fiber Insulation:
1) Pipe Size Range: All Sizes.
a) Thickness: 1/2 inch (13 mm).
b. Flexible Elastomeric Cellular Foam Insulation:
1) Pipe Size Range: All Sizes.
a) Thickness: 1/2 inch (13 mm).
D. Other Systems:
1. Piping Exposed to Freezing with Heat Tracing:
a. Glass Fiber Insulation:
1) Pipe Size Range: Up to 2 inch (50 mm):
a) Thickness: 2 1/2 inch (63 mm).
2) Pipe Size Range: 2 1/2 inch (63 mm) to 4 inch (100 mm):
a) Thickness: 3 inch (75 mm).
3) Pipe Size Range: 5 inch and larger:
a) Thickness: 3 1/2 inch (88 mm).

3.04 PIPING IDENTIFICATION
A. VALVE TAGS
1. Provide manufacturer's standard pre-printed, semi-rigid snap-on or permanent adhesive, pressure-sensitive vinyl pipe markers. Pipe markers shall be color-coded complying with ANSA A13.1.
2. Install pipe markers on each plumbing piping system and include arrows to show normal direction of flow.
3. Locate pipe markers and color bands wherever piping is exposed to view in occupied spaces, machine rooms, accessible maintenance spaces (shafts, tunnels, plenums) and exterior non-concealed locations.
4. Provide plastic laminate or brass valve tag on every valve, cock and control device in each plumbing piping system; exclude check valves, valves within factory-fabricated equipment units, plumbing fixture faucets, convenience and lawn-watering hose bibbs, and shut-off valves at plumbing fixtures and similar rough-in connections of end-use fixtures and units.

END OF SECTION

SECTION 220720 - PIPING SAFETY COVERS

PART 1 GENERAL
1.01 SUBMITTALS
A. Provide the following for Architect/Engineer review:
1. Product Data: Manufacturer's descriptive literature for products specified in this section.

PART 2 PRODUCTS
2.01 PIPING INSULATION ACCESSORIES
A. Provide products that comply with the following:
1. Americans With Disabilities Act (ADA), Article 4.19.4.
2. ANSI/ICC A117.1, American National Standard for Accessible Buildings and Facilities.
3. Requirements of applicable building code.
B. Piping Safety Covers: Truebro Lav-Guard.
1. Characteristics: Three-piece molded assembly, minimum 1/8 inch (3 mm) wall thickness, with internal ribs to provide air space between piping and piping insulation jacket, molded to receive manufacturer's snap-clip fasteners.
2. Vinyl Material: Impact-resistant and ultraviolet resistant molded closed-cell anti-microbial vinyl compound, UV-stable, non-fading, non yellowing; having the following performance characteristics:
a. Burning Characteristics: 0 seconds Average Time of Burning (ATB), 0 mm Area of Burning (AEB), when tested in accordance with ASTM D 635.
b. Thermal Conductivity: K-value 1.17 (2.02), when tested in accordance with ASTM C 177.
c. Indentation Hardness: 60, minimum, when tested in accordance with ASTM D 2240, using Type A durometer.
d. Trap Assembly Cover: Three-piece assembly, with removable clean-out nut enclosure.
e. Angle Stop Covers: Formed with hinged cap for access to valve without requiring cover removal.
f. Configurations: In accordance with manufacturer's product data for standard piping configurations indicated on Drawings.
g. Color: China White, gloss finish; paintable.
h. Fasteners: Manufacturer's standard re-usable snap-clip fasteners; wire-tie fasteners not permitted.

PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that piping configurations are correct type for piping cover component configurations specified.
3.02 PROTECTION OF INSTALLED PRODUCTS
A. Do not allow damage to installed products by subsequent construction activities; protect products until Substantial Completion. Replace any damaged products prior to occupancy.

END OF SECTION

SECTION 221005 - PLUMBING PIPING

PART 1 GENERAL
1.01 QUALITY ASSURANCE
A. Valves: Manufacturer's name and pressure rating marked on valve body.
B. Welding Materials and Procedures: Comply with ASME BPVC-IX and applicable state labor regulations.
C. Welder Qualifications: Certified in accordance with ASME BPVC-IX.
D. Identification: Marking including size, ASTM material classification, ASTM specification, potable water certification, and pressure rating.

1.02 FIELD CONDITIONS
A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS
2.01 GENERAL REQUIREMENTS
A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 THE CONTRACTOR MAY USE ANY OF THE FOLLOWING PIPING MATERIALS, AT HIS OPTION, PROVIDED THE SELECTED MATERIAL MEETS WITH THE APPROVAL OF ALL STATE AND LOCAL AUTHORITIES AND UTILITY COMPANY REQUIREMENTS. VERIFICATION OF COMPLIANCE OF THE SELECTED PIPING MATERIAL WITH LOCAL REQUIREMENTS IS THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. VERIFY THE USE OF PLASTIC PIPING SYSTEMS WITH THE LOCAL JURISDICTION. NON-METALLIC PIPING SYSTEMS MAY NOT BE USED IN ANY RETURN AIR PLENUM CEILING SPACES. FIRE-RATED OR NON-COMBUSTIBLE LOCATIONS, NO EXCEPTIONS.

2.03 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET (1500 MM) OF BUILDING
A. Cast Iron Pipe: ASTM A74 service weight.
1. Fittings: Cast iron.
2. Joints: Hub-and-spigot, CISPI HSN compression type with ASTM C564 neoprene gaskets or lead and oakum.
3. Encasement: Provide 8 mil minimum polyethylene encasement pipe wrap on all cast iron pipe installed in corrosive soils.
B. Cast Iron Pipe: ASTM A 888 and CISPI 301, hubless.
1. Fittings: Cast iron.
2. Joints: ASTM A 74 or CISPI 310, neoprene gasket and stainless steel clamp and shield assemblies.
3. Encasement: Provide 8 mil minimum polyethylene encasement pipe wrap on all cast iron pipe installed in corrosive soils.
4. Markings: All pipe and fittings shall be marked with CISPI and NSF trademark.
C. ABS Pipe: ASTM D2661.
1. Fittings: ABS.
2. Joints: Solvent welded with ASTM D2235 cement.
D. PVC Pipe: ASTM D 2665 or ASTM F 679.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement or Push-on, using ASTM F477 elastomeric gaskets.

2.04 SANITARY SEWER PIPING, ABOVE GRADE
A. Cast Iron Pipe: ASTM A74, service weight.
1. Fittings: Cast iron.
2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.
B. Cast Iron Pipe: ASTM A 888 and CISPI 301, hubless, service weight.
1. Fittings: Cast iron.
2. Joints: ASTM A 74 or CISPI 310, neoprene gasket and stainless steel clamp and shield assemblies.
3. Encasement: Provide 8 mil minimum polyethylene encasement pipe wrap on all cast iron pipe installed in corrosive soils.
4. Markings: All pipe and fittings shall be marked with CISPI and NSF trademark.
C. ABS Pipe: ASTM D2661.
1. Fittings: ABS.
2. Joints: Solvent welded with ASTM D2235 cement.
D. PVC Pipe: ASTM D 2665 or ASTM F 679.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement or Push-on, using ASTM F477 elastomeric gaskets.

2.05 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET (1500 MM) OF BUILDING
A. Copper Pipe: ASTM B42, hard drawn.
1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22 wrought copper and bronze.
2. Joints: ASTM B32, alloy Sn95 solder.
3. Joints: AWS A5.8M/A5.8, BCuP copper/silver braze.
4. Encasement: Provide 8 mil minimum polyethylene encasement pipe wrap on all copper pipe installed in corrosive soils.
B. Ductile Iron Pipe: AWWA C151/A21.51.
1. Fittings: Ductile or gray iron, standard thickness.
2. Joints: AWWA C111/A21.11, styrene butadiene rubber (SBR) or vulcanized SBR gasket with 3/4 inch (19 mm) diameter rods.
3. Encasement: Provide 8 mil minimum polyethylene encasement pipe wrap on all cast iron pipe installed in corrosive soils.

2.06 DOMESTIC WATER PIPING, ABOVE GRADE
A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
2. Joints: ASTM B32, alloy Sn95 solder.
3. Joints: Grooved mechanical couplings.

2.07 STORM WATER PIPING, BURIED WITHIN 5 FEET (1500 MM) OF BUILDING
A. Cast Iron Pipe: ASTM A74 service weight.
1. Fittings: Cast iron.
2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.
3. Encasement: Provide 8 mil minimum polyethylene encasement pipe wrap on all cast iron pipe installed in corrosive soils.
B. PVC Pipe: ASTM D2665, ASTM D3034, or ASTM F679.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement or Push-on, using ASTM F477 elastomeric gaskets.

2.08 STORM WATER PIPING, ABOVE GRADE
A. Cast Iron Pipe: ASTM A74 service weight.
1. Fittings: Cast iron.
2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.
B. Cast Iron Pipe: ASTM A888 and CISPI 301, hubless, service weight.
1. Fittings: Cast iron.
2. Joints: ASTM A74 or CISPI 310, Neoprene gaskets and stainless steel clamp-and-shield assemblies.
3. Markings: All pipe and fittings shall be marked with CISPI and NSF trademark.
C. PVC Pipe: ASTM D2665 or ASTM D3034.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.

SECTION 221006 - PLUMBING PIPING SPECIALTIES
SECTION 223000 - PLUMBING EQUIPMENT
SECTION 224000 - PLUMBING FIXTURES

Division 22 COMMISSIONING SPECIFICATION GUIDE

Section	Specification Title and Verbiage

22 05 00 Plumbing Identification

Identification:

Valves: Identify valves in piping systems with metal tags.

Valve Tag Materials

Metal Tags: Polished brass or anodized aluminum, 19 gauge with smooth edges and stamped letters; minimum size; 1 1/2 inch diameter. Each tag shall designage appropriate service (1/4 inch stampped black-filled letters) and appropriate valve number (1/2 inch stamped black-filled number).

Valve Chart and Schedule: Typed schedule giving service, location and number of each valve. Valve numbers shall correspond to those shown on Project Record Documents.

Installation

Metal Tags: Install with corrosive-resistant chain or s-hooks

Valve Chart and Schedule: Frame under glass and mount the charts where directed. These shall be submitted for approval prior to mounting. Install chart and schedule near water heaters in mechanical area. All charts shall be of permanent nature. Blueprint or blue line prints which fade shall not be used.

22 08 00 Commissioning of Plumbing System

Part 1 General

1.1 Summary

A. Section includes Cx process requirements for the following plumbing systems, assemblies, and equipment:

1. Sanitary, grease waste, and vent System
2. Domestic hot and cold water System
3. Condensate System
4. Natural gas System
5. Plumbing equipment
6. Plumbing pumps

B. Related Requirements:

1. Section 019113 "General Commissioning Requirements" for general Cx process requirement and CxA responsibilities.

1.2 Informational Submittals

A. Construction Checklists: Draft construction checklists will be created by CxA for Contractor review.

B. Construction Checklists: Installation and Performance test checklists for systems, assemblies, subsystems, equipment, and components to be part of the Cx process and according to requirement in Section 019113 "General Commissioning Requirement."

1. Sanitary, grease waste, and vent piping, including the following:
   a. Gravity and forced-main sewerage piping, fittings, and specialties.
2. Domestic water piping, including the following:
   a. Domestic cold and hot water piping, fittings, and specialties inside the building.
   b. Pumps, motors, accessories, and controls.
   c. Hot water generator and controls.
   d. Backflow preventers.
   e. Meters and gages.
   f. Condensate return.
   g. General duty and specialty valves.
3. Natural gas piping, including the following:
   a. Natural gas piping, fittings, and specialties.
   b. Meters and gages.

Part 3 Execution

3.1 Construction Checklists

A. Complete detailed construction checklists (prefunctional checklists) prepared by the CxA for plumbing systems, assemblies, subsystems, equipment, and components.

1. Sanitary, grease waste, and vent piping.
2. Domestic cold and hot water piping.
3. Natural gas piping.
4. Recirculation pumps.
5. Plumbing equipment, including the following:
   a. Water softeners.
   b. Water filtration equipment.
   c. Domestic water heating equipment.
   d. Plumbing fixtures.

3.2 Construction Checklist Review

A. Review and provide written commnets on draft construction checklists. CxA will create required draft construction checklists and provide item to Contractor.

B. Return draft construction checklist review comments within 5 days of receipt.

C. When review comments have been resolved, the CxA will provide final construction checklists marked "Approved for Use, (date)."

D. Use only construction checklists marked "Approved for Use, (date)."

3.3 Cx Testing Preparation

A. Certify that plumbing systems, subsystems, and equipment have been installed, calibrated, and started and that they are operating according to the Contract Documents and approved submittals.

B. Set systems, subsystems, and equipment into operating mode to be tested according to approved test procedures (for example, normal shutdown, normal auto position, normal manual position, unoccupied cycle, and alarm conditions).

3.4 Cx Tests Common to Plumbing Systems

A. Comply with construction checklist requirements, including installation checks, startup, and performance tests requirements for plumbing systems and equipment.

B. Measure capacities and effectiveness of systems, assemblie, subsystems, equipment and components, including operational and control functions, to verify compliance with acceptance criteria.

C. Coordinate schedule with, and perform Cx activities at the direction of CxA.

D. Provide technicians, instrumentation, tools, and equipment to perofrm and document the following:

1. Construction checklist verification tests.
2. Construction checklist verification tests demonstrations
3. Cx test demonstrations.

3.5 Cx Tests for Pumps

A. Pumps:

1. Prerequisites: Acceptance of results of construction checklists specified for recirculating pumps.
2. Scope:
   a. Recirculating pumps.
   b. Associated aquastats.
3. Purpose: Demonstrate operation of the hot water recirculating pumps.
4. Condition of the Test:
   a. Demonstrate all sequences of operations.
   b. Demonstrate aquastat function.
   c. Confirm monitoring.
   d. Confirm setpoints.

B. Start-Up Checks: Perofrm the following checks during start-up:

1. Check suction lines connections for tightness to avoid drawing air into the pump.
2. Clean and lubricate all bearings.
3. Clean associated strainers.
4. Verify that the integrity of the vibration isolation is maintained throughout the support and the connections.
5. Align pump within manufacturers recommended tolerances.

C. Start-Up Tests: Perform the following tests, measurements, or procedures during start-up:

1. Start the pump per the manufacturer's instructions.
2. Verify pump motor rotation.
3. Verify function of aquastat.

3.6 Cx Tests for Hot Water Generators

A. Hot Water Generators:

1. Prerequisites: Acceptance of results of construction checklists specified for hot water systems.
2. Scope:
   a. Hot Water Generators.
   b. Thermostatic mixing valves.
3. Purpose: Demonstrate operation of the hot water generators.
4. Condition of the Test:
   a. Demonstrate any lead/lag functions for the generators.
   b. Demonstrate all temperature setpoints.
   c. Verify abiility of system to maintain temperature under system demand.
   d. Confirm all setpoints.

1. ASCE 25, ANSI Z21.70, aluminum design, manual reset.

2.21 STRAINERS

A. Size 2 Inches (50 mm) and Under:
   1. Threaded brass body for 175 psi (1200 kPa) CWP, Y pattern with 1/32 inch (0.8 mm) stainless steel perforated screen.
   2. Class 150, threaded bronze body 300 psi (2070 kPa) CWP, Y pattern with 1/32 inch (0.8 mm) stainless steel perforated screen.
B. Size 1-1/2 inch (40 mm) to 4 inches (100 mm):
   1. Class 125, flanged iron body, Y pattern with 1/16 inch (1.6 mm) stainless steel perforated screen.
C. Size 5 inch (125 mm) and Larger:
   1. Class 125, flanged iron body, basket pattern with 1/8 inch (3.2 mm) stainless steel perforated screen.

2.22 ACCESS DOORS

A. Stealth access panel units as manufactured by Wind-lock, or equal, shall be prefabricated with high-density gypsum, reinforced with continuous random filament glass fiber mat and structural reinforcing as required. Access panel shall be designed to be flush, with no exposed hinges, catches, etc. and ready for any finishes, paint, or texturing to match the surrounding drywall surfaces. Access panels shall be taped and mudded into the drywall system to achieve a uniform, integral appearance with a minimum of visibility. Door panels shall be lift out type, unless in-ceiling clearances require a hinged application.
   1. Glass Content: 5 to 6 percent by weight
   2. Density: 103 to 112 pcf
   3. Shell Thickness: 1/8 to 3/16 inch (3 to 5 mm) nominal
   4. Flammability: Flame Spread Index of 0
   5. Smoke Development Index of 0
   6. Flexural Strength: 300-4000 PSI
   7. Compressive Strength: 7600 PSI
   8. Hardness (Barcol) 50
   9. Impact Resistance: 8.0 ft.-lb./in.2
B. Fire rated access doors as manufactured by Acudor Products Inc, or equal, shall be prefabricated, UL listed and fire rated as required to meet the fire resistance ratings indicated on the Architectural drawings or as required to meet the fire resistance ratings in the field. Provide stainless steel access doors in all wet, damp or corrosive environments.
   1. Door / Door Frame: Steel or Stainless Steel, 16 gage door, 16 gage frame, minimum.
   2. Mounting Frame: Steel or Stainless Steel, flush to frame with reinforced edges, flange to be 1" wide.
   3. Hinge: Concealed
   4. Standard Latch: Universal self-latching bolt, operated by either a knurled knob or flush key.
   5. Finish: Steel: 5 stage iron phosphate preparation with prime coat of white alkyd baked-on enamel. Stainless Steel: #4 satin polish.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
B. Remove scale and dirt, on inside and outside, before assembly.
C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

A. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
B. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
C. Install piping to maintain headroom, conserve space, and not interfere with use of space.
D. Group piping whenever practical at common elevations.
E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 22 0516.
F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
G. Locate all valves and control elements in accessible areas wherever possible to avoid access doors. Provide access where valves and controls are not exposed or located in accessible areas. Provide ceiling access doors for access to all valves and control elements located above inaccessible ceiling areas. Provide minimum 12 x 12 inch (300 x 300 mm) size for hand access, 18 x 18 inch (450 x 450 mm) size for shoulder access, and as indicated. Provide 4 x 4 inch (100 x 100 mm) for shut off valves only. Provide rated access doors where installed in fire rated construction. Review locations prior to fabrication.
H. Establish elevations of buried piping outside the building to ensure not less than the maximum local frost depth cover.' Install tracer wire on all plastic piping outside the building.
I. Install vent piping penetrating roofed areas to maintain integrity of roof assembly.
J. All sanitary vent system terminations shall be a minimum of ten feet from any fresh air intake and twenty-five feet on medical facilities (hospitals, clinics, etc.)
K. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer to welding.
L. Provide support for utility meters in accordance with requirements of utility companies.
M. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting.
N. Paint all exterior above grade piping with a minimum of two coats of paint, color to match roof or wall surface to which it is attached.
   1. Copper pipe Apply vinyl etch primer immediately following cleaning. EXT 5.5A Alkyd: Vinyl Wash Primer MPI #80, Alkyd MPI #5, 9 or 94, Semi-gloss.
   2. Steel pipe: Apply alkyd metal primer immediately following cleaning. EXT 5.1D Alkyd: Alkyd Metal Primer MPI #79, Alkyd MPI # 94, semi-gloss.
   3. Plastic pipe: Apply alkyd bonding primer immediately following cleaning. EXT 6.8B Alkyd: Bonding Primer MPI #17 or 69, Alkyd MPI #5, 9 or 94.
O. Excavate, bedding and backfill shall be in accordance with applicable sections of this Specification.
P. Pipe vents from gas pressure reducing valves to outdoors and terminate in weather proof hood, unless of the ventless design and approved by the local jurisdiction and the local utility company regulations.
Q. Provide dirt legs as detailed on the Drawings on all gas piping connections to appliances.
R. The use of sanitary tee fittings will not be permitted. Utilize wye fittings in lieu of tee fittings for all intersections of drainage piping.
S. Sleeve pipes passing through partitions, walls, and floors.
T. Provide sleeves when penetrating footings, masonry walls and floors. Seal and fire stop pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required. All penetrations through footings and floors shall be sealed water tight.
U. If piping is located within 1.5 inches (38 mm) of the nearest edge of studs, joists, rafters or similar members, provide minimum 0.062 inch (1.6 mm) thick steel protective shield plates extending 2" above and below the pipe being protected. Shield plates may be omitted on cast iron piping only.
V. Inserts:
   1. Provide inserts for placement in concrete formwork.
   2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
   3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches (100 mm).
   4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
   5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.
W. Pipe Hangers and Supports:
   1. Install in accordance with ASME B31.9.
   2. Support horizontal piping as indicated.
   3. Install hangers to provide minimum 1/2 inch (15 mm) space between finished covering and adjacent work.
   4. Place hangers within 12 inches (300 mm) of each horizontal elbow.
   5. Use hangers with 1-1/2 inch (40 mm) minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
   6. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
   7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
   8. Provide copper plated hangers and supports for copper piping.
   9. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
   10. Provide hangers adjacent to motor-driven equipment with vibration isolation; refer to Section 22 0548.
   11. Support cast iron drainage piping at every joint.
X. Manufactured Sleeve-Seal Systems:
   1. Install manufactured sleeve-seal systems in sleeves located in grade slabs and exterior concrete walls at piping entrances into building.
   2. Provide sealing elements of the size, quantity, and type required for the piping and sleeve inner diameter or penetration diameter.
   3. Locate piping in center of sleeve or penetration.
   4. Install field assembled sleeve-seal system components in annular space between sleeve and piping.
   5. Tighten bolting for a watertight seal.
   6. Install in accordance with manufacturer's recommendations.
Y. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

3.04 APPLICATION

A. Use grooved mechanical couplings and fasteners only in accessible locations.
B. Install unions downstream of valves and at equipment or apparatus connections.
C. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
D. Install ball or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.
E. Install globe, ball, or butterfly valves for throttling, bypass, or manual flow control services.
F. Provide lug and butterfly valves adjacent to equipment when provided to isolate equipment.
G. Provide spring-loaded check valves on discharge of water pumps.
H. Provide plug or gas service rated ball valves in natural gas systems for shut-off service.
I. Provide automatic flow controls valves in water recirculating systems where indicated. Utilize 0.5 gpm flow unless otherwise indicated on the drawings.

3.05 TOLERANCES

A. Interior Drainage Piping: Establish invert elevations within 1/2 inch (10 mm) vertically of location indicated and slope to drain at minimum of 1/4 inch per foot (1:50) slope, unless noted otherwise on the Drawings.
B. Water Piping: Slope at minimum of 1/32 inch per foot (1:400) and arrange to drain at low points.

3.06 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Prior to starting work, verify system is complete, flushed, and clean.
B. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
C. Inject disinfectant, free chlorine in liquid, powder, tablet, or gas form throughout system to obtain 50 to 80 mg/L residual.
D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
E. Maintain disinfectant in system for 24 hours.
F. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

3.07 SERVICE CONNECTIONS

A. Provide new water service complete with approved reduced pressure backflow preventer and water meter with by-pass valves (where permitted by local authorities), pressure reducing valve (where pressure exceeds 80 psi)
   1. Provide sleeve in wall for service main and support at wall with reinforced concrete bridge. Caulk enlarged sleeve and make watertight with pliable material. Anchor service main inside to concrete wall.
   2. Provide 18 gage (1.20 mm) galvanized sheet metal sleeve around service main to 2 inches (50 mm) above floor and 3 feet (900 mm) minimum below grade. Size for minimum of 2 inches (50 mm) of loose batt insulation stuffing.
B. Provide new gas services complete with gas meter and regulators. Gas service distribution piping shall have initial minimum pressure as indicated on the drawings. Provide appropriately sized regulators on each line serving gas appliances, sized in accordance with the manufacturers recommendations based on the sizing parameters indicated on the Drawings. The entire gas service and piping installation shall comply with the local jurisdiction and the regulations of the serving utility.

3.08 SCHEDULES

A. Pipe Hanger Spacing:
   1. Metal Piping:
      a. Pipe Size: 1/2 inches (15 mm) to 1-1/4 inches (32 mm):
         1. Maximum Hanger Spacing: 8.5 ft (2 m).
         2. Hanger Rod Diameter: 3/8 inches (9 mm);
      b. Pipe Size: 1-1/2 inches (40 mm) to 2 inches (50 mm):
         1. Maximum Hanger Spacing: 10 ft (3 m).
         2. Hanger Rod Diameter: 3/8 inch (9 mm).
      c. Pipe Size: 2-1/2 inches (65 mm) to 3 inches (75 mm):
         1. Maximum Hanger Spacing: 10 ft (3 m).
         2. Hanger Rod Diameter: 1/2 inch (13 mm).
      d. Pipe Size: 4 inches (100 mm) to 6 inches (150 mm):
         1. Maximum Hanger Spacing: 10 ft (3 m).
         2. Hanger Rod Diameter: 5/8 inch (15 mm).
   2. Plastic Piping:
      a. Pipe size: 1/2 inches (15 mm) to 6 inches (150 mm):
         1. Maximum Hanger Spacing: 6 ft (1.8 m).
         2. Hanger Rod Diameter: 3/8 inch (9 mm).

END OF SECTION

SECTION 221006 - PLUMBING PIPING SPECIALTIES

PART 1 GENERAL

1.01 SUBMITTALS

A. Provide the following for Architect/Engineer review:
   1. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
B. Provide the following to the Owner upon project closeout:
   1. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.
   2. Operation Data: Indicate frequency of treatment required for interceptors.
   3. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.
   4. Project Record Documents: Record actual locations of equipment, cleanouts, backflow preventers, water hammer arrestors.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.
B. Fixtures and accessories shall be as scheduled on the Drawings.

2.02 WATER HAMMER ARRESTORS

A. Stainless steel or copper construction, bellows type sized in accordance with PDI-WH 201, precharged suitable for operation in temperature range 34 to 250 degrees F (1 to 120 degrees C) and maximum 150 psi (1000 kPa) working pressure.

2.03 SUMPS

A. Glass fiber reinforced or precast concrete with required openings and drainage fittings.
B. Cover: 3/8 inch (9 mm) thick checkered steel plate with gasket seal frames and anchor bolts.

2.04 MIXING VALVES

A. Thermostatic Mixing Valves:
   1. Valve: Chrome plated cast brass body, stainless steel or copper alloy bellows, integral temperature adjustment.
   2. Accessories:
      a. Check valve on inlets.
      b. Strainer stop checks on inlets.
B. Pressure Balanced Mixing Valves:
   1. Valve: Chrome plated cast brass body, stainless steel cylinder, integral temperature adjustment.
   2. Accessories:
      a. Strainer stop checks on inlets.

2.05 RELIEF VALVES

A. Bronze body, teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, capacities ASME certified and labelled.

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide cleanouts as shown on construction documents and per local code requirements.
B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
C. Encase exterior cleanouts in concrete flush with grade.
D. Install floor cleanouts at elevation to accommodate finished floor for a completely flush installation.
E. Install approved potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, chemical cleaning systems, premise isolation, irrigation systems, flush valves, drink mixing stations, interior and exterior hose bibbs and all other locations required by Codes.
F. Pipe relief from backflow preventer to nearest drain.
G. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatory sinks, washing machine outlets, or quick-closing valves.

END OF SECTION

SECTION 223000 - PLUMBING EQUIPMENT

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

1.02 SUBMITTALS

A. Provide the following for Architect/Engineer review:
   1. Product Data:
      a. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
      b. Indicate pump type, capacity, power requirements.
      c. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
      d. Provide electrical characteristics and connection requirements.
B. Provide the following to the Owner upon project closeout:
   1. Project Record Documents: Record actual locations of components.
   2. Operation and Maintenance Data: Include operation, maintenance, and inspection data, replacement part numbers and availability, and service depot location and telephone number.

1.03 QUALITY ASSURANCE

A. Certifications:
   1. Water Heaters: NSF approved.
   2. Gas Water Heaters: Certified by CSA International to ANSI Z21.10.1, as applicable, in addition to requirements specified elsewhere.
   3. Electric Water Heaters: UL listed and labeled to UL 174.
   4. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.
B. Identification: Provide equipment with manufacturer's name, model number, and rating/capacity identified by permanently attached label.
C. Performance: Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, operate within 25 percent of midpoint of published maximum efficiency curve.

1.04 WARRANTY

A. Provide five year manufacturer warranty for domestic water heaters, water storage tanks, and packaged water heating systems.
B. Provide one year manufacturer warranty for pumps.

PART 2 PRODUCTS

2.01 COMMERCIAL GAS FIRED INSTANTANEOUS WATER HEATERS

A. Type: Automatic, natural gas-fired, fully modulating, tankless.
B. Performance:
   1. Maximum working pressure: 150 psig (1000 kPa).
C. Accessories: Brass or bronze water connections and waterways, integral flow regulator, and ASME rated temperature and pressure relief valve and heat trap fittings for hot and cold water connections.
   1. Water Connections: Brass.
   2. Coil: Copper.
   3. Burners: Stainless steel.
D. Certification: As automatic fully modulating tankless water heater and for operation at 180 degrees F (82 degrees C) for operation on combustible floors. All water heaters over 199 MBH input shall be ASME rated and bear an ASME label. All water heaters over 399 MBH shall be located in separate rooms and shall include CSD-1 controls.
E. Controls: Automatic water thermostat with temperature range adjustable from 110 to 180 degrees F (43 to 82 degrees C), automatic reset high temperature limiting thermostat factory at 195 degrees F (90 degrees C), gas pressure regulator, 100 percent safety shut-off pilot and thermocouple, flue baffle and draft hood.

2.02 WATER SOFTENERS

A. Performance:
   1. Electrical Characteristics:
      a. As indicated on the Drawings.
B. Softener Tank:
   1. Glassfiber reinforced plastic tank.
C. Brine Tank:
   1. Glassfiber reinforced plastic tank.
D. Microprocessor Based Control: Brass control valve cycled to regenerate after adjustable metered quantity of water flow.

2.03 IN-LINE CIRCULATOR PUMPS

A. Casing: Bronze, rated for 125 psig (860 kPa) working pressure, with stainless steel rotor assembly.
B. Impeller: Bronze.
C. Shaft: Alloy steel with integral thrust collar and two oil lubricated bronze sleeve bearings.
D. Seal: Carbon rotating against a stationary ceramic seat.
E. Drive: Flexible coupling.
F. Performance:
   1. Electrical Characteristics:
      a. As indicated on the Drawings.
      b. Verify that proper power supply is available prior to ordering equipment. Verify proper voltage, phase and current rating of power supply and inform Engineer of any deviations prior to order, connection of equipment or start-up. Responsibility for verification of proper power supply voltage and any product returns or damage resulting from incorrect connections shall rest with this Contractor.

2.04 ELECTRICAL WORK

A. Provide electrical motor driven equipment specified complete with motors, motor starters, controls, and wiring.
B. Electrical characteristics to be as specified or indicated.
C. Furnish motor starters complete with thermal overload protection and other appurtenances necessary for the motor control specified.
D. Supply manual or automatic control and protective or signal devices required for the operation specified, and any control wiring required for controls and devices not shown.

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide concrete equipment bases for all floor mounted plumbing equipment.
B. Coordinate with the plumbing piping and natural fuel piping, gas venting, and electrical work as applicable to achieve operating system.
C. Pumps:
   1. Ensure shaft length allows sump pumps to be located minimum 24 inches (600 mm) below lowest invert into sump pit and minimum 6 inches (150 mm) clearance from bottom of sump pit.
   2. Provide air cock and drain connection on horizontal pump casings.
   3. Provide line sized isolating valve and strainer on suction and line sized soft seated check valve and balancing valve on discharge.
   4. Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pumps such that no weight is carried on pump casings. Provide supports under elbows on pump suction and discharge line sizes 4 inches (100 mm) and over.
   5. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.
   6. Provide electrical interlocking from cooling condensate pump safety switch to associated HVAC unit(s) furnished under other Sections.
   7. Verify that proper power supply is available prior to ordering equipment. Verify proper voltage, phase and current rating of power supply and inform Engineer of any deviations prior to order, connection of equipment or start-up. Responsibility for verification of proper power supply voltage and any product returns or damage resulting from incorrect connections shall rest with this Contractor.
   8. Refer to vibration isolation requirements specified in Vibration Isolation section of this Specification.

END OF SECTION

SECTION 224000 - PLUMBING FIXTURES

PART 1 GENERAL

1.01 SUBMITTALS

A. Provide the following for Architect/Engineer review:
   1. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
B. Provide the following to the Owner upon project closeout:
   1. Manufacturer's Instructions: Indicate installation methods and procedures.
   2. Maintenance Data: Include fixture trim exploded view and replacement parts lists.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 FIXTURES AND ACCESSORIES SHALL BE AS SCHEDULED ON THE DRAWINGS.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
B. Verify that electric power is available and of the correct characteristics.
C. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.02 PREPARATION

A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.03 INSTALLATION

A. Install each fixture with trap, easily removable for servicing and cleaning.
B. Install each fixture using brass angle ball stop valves for hot and cold water connections as applicable. Non-metallic valves or non-ball valve type stops will not be accepted.
C. Provide chrome plated rigid or flexible supplies to fixtures with specified stops, reducers, and escutcheons.
D. Install components level and plumb.
E. Install and secure fixtures in place with wall carriers, wall supports and bolts.
F. Solidly attach floor mounted water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.
G. Install each fixture with trap, easily removable for servicing and cleaning.
H. Install fixtures and fittings in accordance with the manufacturer's instructions and in accordance with the IOC (IPC).
I. When fixtures require both hot water and cold water supplies, provide the hot water supply to the left of the cold water supply.
J. Install off-the-floor supports to conform to ASME A112.6.1W.
K. For floor drains/sink installations above slab on grade, provide adjustable collar with seepage slots, invertible non-puncturing membrane clamp, and 24" x 24" waterproof membrane.

3.04 INTERFACE WITH WORK OF OTHER SECTIONS

A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.05 ADJUSTING

A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.06 CLEANING

A. Clean plumbing fixtures and equipment.

3.07 PROTECTION

A. Protect installed products from damage due to subsequent construction operations.
B. Do not permit use of fixtures by construction personnel.
C. Repair or replace damaged products before date of Substantial Completion.

3.08 FIELD INSPECTION

A. Continue inspection during installation and testing.
B. A final inspection of the equipment shall be performed prior to installation to determine conformity to the type, class, grade, size, capacity, and other characteristics specified or indicated on the drawings.
C. Correct or replace all rejected equipment prior to installation.
D. Engineer or Architect reserves the right to inspect any and all equipment and fixtures prior to final occupancy and reject any fixtures which have been damaged, marred or otherwise defaced.

END OF SECTION

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REVISIONS

△	DATE	DESCRIPTION
1	08/26/2026	REVISION 1
2	09/21/2026	REVISION 2

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — STATE OF FLORIDA — PROFESSIONAL ENGINEER

Date: 09/21/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHAKE SHACK
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3181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

SHEET NAME:
PLUMBING SPECIFICATIONS SYMBOL LEGEND

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN: RMA
SCALE: AS NOTED

SHEET NO.:
P592

BE JOB# 250519

GAS FIRED INSTANTANEOUS WATER HEATERS

MARK	LOCATION	INPUT MBH	GPM @ 80 DEGREE RISE	STORAGE CAP	MANUFACTURER	REMARKS
HWH-1	SEE PLANS	199.9	4.9	0.65 GAL	NAVIEN	NPE-240A2

*NOTE: WATER HEATER SUPPLIED BY WATERHEATERMAN (NO ALTERNATE SUPPLIERS PERMITTED).

EXPANSION TANKS

MARK	LOCATION	SERVES	MAXIMUM ACCEPTANCE (GALLONS)	WORKING PRESS (PSI)	SIZE (APPROX)	MANUFACTURER	REMARKS
ET-1	BOH	DOM. HW	10.3	150	15"ø x 19"	AMTROL	MODEL ST-25V

*NOTE: CONTRACTOR SHALL ADJUST PRE-CHARGE OF EXPANSION TANK TO EQUAL INCOMING WATER PRESSURE PRIOR TO INSTALLATION.

VALVE SCHEDULE

TYPE	MANUFACTURER	THREADED/FLANGED PIPING 2" AND SMALLER	THREADED/FLANGED PIPING 2-1/2" AND LARGER	SOLDERED/BRAZED PIPING 3" AND SMALLER
GATE	JENKINS	47-C	651-C	1242-C
	MILWAUKEE	148	2885	115
	STOCKHAM	B-100	G-623	B-108
BALL	JENKINS	901A	---	902A
	MILWAUKEE	BA100	---	BA150
	STOCKHAM	S-216-BR1-R-T	---	S-216-BR1-R-S
CHECK	JENKINS	4092	624-C	4093
	MILWAUKEE	509	F2974	1509
	STOCKHAM	B-319	G-931	B-309
AUTOMATIC BALANCING	HAYS	N.A.	N.A.	2517LF - 0.5 GPM

NOTES:
1. VALVES MATERIAL (BODIES, DISC, GASKETS, LININGS, PACKINGS, ETC.) SHALL BE APPROVED FOR THE SERVICE IN WHICH THEY ARE INSTALLED.
2. VALVES SHALL BE LINE SIZE UNLESS OTHERWISE INDICATED.
3. VALVES SHALL BE EQUIPPED WITH ACCESSORIES AS REQUIRED.

PLUMBING FIXTURE SCHEDULE

Mark		DESCRIPTION	FINAL CONNECTIONS HW	CW	V	W	MANUFACTURER MODEL NUMBER
K-70A	PREP SINK	1/2" DOMESTIC HOT AND COLD WATER CONNECTIONS FOR PREP SINK, 140 DEG. F. HOT SUPPLY, SINGLE FAUCET ROUGH-IN, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE, (1) GREASE/WASTE CONNECTION(S)	1/2"	1/2"	-		
K-160	CUSTARD MACHINE	1/2" DOMESTIC COLD WATER CONNECTION FOR CUSTARD MACHINE PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION	-	1/2"	-	-	
K-171	DIPPER WELL	1/2" DOMESTIC COLD WATER CONNECTION FOR DIPPER WELL, PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE, PROVIDE CODE APPROVED AIR GAP	1/2"	-	-	-	
K-177	SHAKE TABLE W/ SINK	1/2" DOMESTIC HOT AND COLD WATER CONNECTIONS FOR SHAKE TABLE W/ SINK, 140 DEG. F. HOT SUPPLY, SINGLE FAUCET ROUGH-IN, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE, (1) GREASE/WASTE CONNECTION(S)	1/2"	1/2"	-	-	
K-177B	DECK MOUNTED FAUCET	1/2" HOT & COLD WATER CONNECTIONS FOR DECK MOUNTED FAUCET.	1/2"	1/2"	-	-	
K-177C	BLENDER CONTAINER RINSER	1/2" COLD WATER CONNECTION FOR BLENDER CONTAINER RINSER.	-	1/2"	-	-	
K-204	TEA BREWER	1/2" FILTERED WATER CONNECTION FOR TEA BREWER, PROVIDE DUAL CHECK VALVE FOR CARBONATED BEVERAGE MACHINES (WATTS SD-3 OR EQUAL), PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE	-	1/2"	-	-	
K-234	GLASS FILLER STATION	3/8" FILTERED WATER CONNECTION FOR GLASS FILLER STATION, PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION	-	3/8"	-	-	
K-CW1	VEGGIE WASH	1/2" COLD WATER CONNECTION FOR VEGGIE WASH FAUCET. PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION	-	1/2"	-	-	
3"FD-1	FLOOR DRAIN	STANDARD STRAINER, COATED CAST IRON, TWO-PIECE BODY, DOUBLE DRAINAGE FLANGE, ADJUSTABLE EXTENSION AS REQUIRED BY APPLICATION, ADJUSTABLE COLLAR WITH SEEPAGE SLOTS, INVERTIBLE NON-PUNCTURING MEMBRANE CLAMP, FLASHING CLAMP WITH 24"X24" 4 LB. LEAD FLASHING FOR FLOOR DRAINS INSTALLED ABOVE SLAB ON GRADE, BOTTOM OUTLET, OUTLET CONNECTION METHOD SHALL BE COMPATIBLE WITH PIPING MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS, POLISHED NICKEL BRONZE FINISH, 5" DIAMETER ROUND STRAINER, 1/2" TRAP PRIMER CONNECTION,	-	-	2"	3"	JR SMITH: 2010-NB ZURN: Z415B
3"FS-1	FLOOR SINK	3"FLOOR SINK DRAIN, 6" DEEP CAST IRON BODY WITH ACID RESISTING ENAMELED INTERIOR, ANCHOR FLANGE WITH SEEPAGE HOLES, CLAMP COLLAR, WHITE ABS SEDIMENT BUCKET, AND 8-1/2" SQUARE NICKEL BRONZE RIM AND HALF GRATE. USE PUSH-ON JOINT OF OUTLET SIZE AS SHOWN ON PLANS	-	-	2"	3"	J.R. SMITH: 3101L-12
	TRIM	GUARDIAN DRAIN LOCK (GDL) STRAINER SAME SIZE AS FLOOR SINK OUTLET. REFER TO PLANS FOR OUTLET SIZE.					
4"FS-2	FLOOR SINK	4" FLOOR SINK DRAIN, 6" DEEP CAST IRON BODY WITH ACID RESISTING ENAMELED INTERIOR, ANCHOR FLANGE WITH SEEPAGE HOLES, CLAMP COLLAR, WHITE ABS SEDIMENT BUCKET, AND 8-1/2" SQUARE NICKEL BRONZE RIM AND HALF GRATE. USE PUSH-ON JOINT OF OUTLET SIZE AS SHOWN ON PLANS	-	-	2"	4"	J.R. SMITH: 3101L-12
	TRIM	GUARDIAN DRAIN LOCK (GDL) STRAINER SAME SIZE AS FLOOR SINK OUTLET. REFER TO PLANS FOR OUTLET SIZE.					
FCO-1	CLEANOUT - FLOOR	ACID RESISTING COATED CAST IRON BODY, ADJUSTABLE, GAS AND WATER TIGHT ABS TAPERED THREADED INTERNAL CAST IRON PLUG, VANDAL-PROOF FASTENERS, OUTLET CONNECTION METHOD SHALL BE COMPATIBLE WITH PIPING MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS, MEDIUM DUTY, ROUND SCORIATED SECURED POLISHED BRONZE FRAME AND COVER WITH ANCHOR FLANGE, WITH "CO" IN COVER, INSTALLED FLUSH WITH FINISHED FLOOR. PROVIDE CARPET MARKERS WHERE INSTALLED BELOW CARPET	-	-	-	SEE PLANS	ZURN: ZB1400-VP-AR
WCO-1	WALL CLEANOUT	COATED CAST IRON CLEANOUT TEE, COUNTERSUNK BRONZE PLUG, ROUND STAINLESS STEEL SECURED ACCESS COVER, STANDARD FASTENERS	-	-	-	SEE PLANS	J.R. SMITH: 4710 WADE: 8480R ZURN: Z1446
TP-1	TRAP PRIMER	PRESSURE ACTIVATED TRAP PRIMER, BRASS CONSTRUCTION, PISTON OPERATED, ADJUSTMENT FOR VARIABLE PRESSURES, INSTALL TRAP PRIMER A MINIMUM OF 12" ABOVE THE TRAP BEING SERVED, PROVIDE AIR GAP FITTING WITH 1/2" MALE NPT INLET FITTING AND 1/2" FEMALE OUTLET FITTING, TWO TRAP APPLICATION, PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION	-	1/2"	-	-	PRECISION PRODUCTS: - P2-500
	TRAP PRIMER DISTRIBUTION UNIT	COPPER BODY DISTRIBUTION UNIT, 4 - 3/8" FPT BRASS DISCHARGE FITTINGS, 1/2" MALE NPT COMPOSITE INLET, PROVIDE PLUGS AS REQUIRED BY APPLICATION					PRECISION PRODUCTS: - DU-4
4"TD-1	TRENCH DRAIN	36" X 12" X 4" DEEP, WELDED 14 GAUGE 304 STAINLESS STEEL, STAINLESS STEEL BAR GRATE, AND 3" OUTLET. PROVIDE WITH SEEPAGE CONTROL FLANGES, WASTE CUP, AND REMOVABLE STAINLESS STEEL BASKET	-	-	2"	4"	EAGLE: FT-1236-SG
3"FD-2	FLOOR DRAIN	STANDARD STRAINER, COATED CAST IRON, TWO-PIECE BODY, DOUBLE DRAINAGE FLANGE, ADJUSTABLE EXTENSION AS REQUIRED BY APPLICATION, ADJUSTABLE COLLAR WITH SEEPAGE SLOTS, INVERTIBLE NON-PUNCTURING MEMBRANE CLAMP, FLASHING CLAMP WITH 24"X24" 4 LB. LEAD FLASHING FOR FLOOR DRAINS INSTALLED ABOVE SLAB ON GRADE, BOTTOM OUTLET, OUTLET CONNECTION METHOD SHALL BE COMPATIBLE WITH PIPING MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS, POLISHED NICKEL BRONZE FINISH, 5" DIAMETER ROUND STRAINER,	-	-	2"	3"	JR SMITH: 2010-NB ZURN: Z415B
1 TP-2	TRAP PRIMER	PRESSURE ACTIVATED TRAP PRIMER, BRASS CONSTRUCTION, PISTON OPERATED, ADJUSTMENT FOR VARIABLE PRESSURES, INSTALL TRAP PRIMER A MINIMUM OF 12" ABOVE THE TRAP BEING SERVED, PROVIDE AIR GAP FITTING WITH 1/2" MALE NPT INLET FITTING AND 1/2" FEMALE OUTLET FITTING, TWO TRAP APPLICATION	-	1/2"	-	-	J.R. SMITH: D2694
	TRAP PRIMER DISTRIBUTION UNIT	COPPER BODY DISTRIBUTION UNIT, 4 - 3/8" FPT BRASS DISCHARGE FITTINGS, 1/2" MALE NPT COMPOSITE INLET, PROVIDE PLUGS AS REQUIRED BY APPLICATION					J.R. SMITH: D2694DA

PLUMBING FIXTURE SCHEDULE

Mark		DESCRIPTION	FINAL CONNECTIONS HW	CW	V	W	MANUFACTURER MODEL NUMBER
WC-1	WATER CLOSETS	FLUSH VALVE OPERATION, VITREOUS CHINA, FULLY GLAZED TRAPWAY, 1.28 GALLONS PER FLUSH, FLOOR MOUNTED, BOTTOM OUTLET, 12" ROUGH-IN, 1 1/2" TOP INLET SPUD, 25 PSI MINIMUM WORKING PRESSURE, COLOR: WHITE	-	1"	2"	3"	KOHLER: HIGHCLIFF ULTRA K-96057-0
	WATER CLOSET FLUSHING SYSTEM	QUIET, EXPOSED, DIAPHRAGM TYPE, CHROME PLATED, LEFT OR RIGHT HAND SUPPLY, FIXED BYPASS, ADA COMPLIANT NON-HOLD-OPEN HANDLE, SCREWDRIVER BACK-CHECK ANGLE STOP, FREE SPINNING VANDAL-RESISTANT TOP CAP, ADJUSTABLE TAILPIECE, PRESSURE VACUUM BREAKER, SPUD COUPLING, NO EXTERNAL VOLUME ADJUSTMENT, FOR 1 1/2" TOP SPUD FOR WATER CLOSETS,					KOHLER: K-80TM00N10-CP
	WATER CLOSET SEAT	COMMERCIAL DUTY, EXTRA HEAVY WEIGHT, INJECTION MOLDED SOLID PLASTIC, LARGE MOLDED BUMPERS, STAINLESS STEEL POSTS, SELF-SUSTAINING, CONCEALED STAINLESS STEEL CHECK HINGE HOLDING SEAT IN ANY RAISED POSITION UP TO 11 DEG. BEYOND VERTICAL, OPEN FRONT, LESS COVER, COLOR: WHITE					KOHLER: K-4731-CA
LAV-1	LAVATORIES	RECTANGULAR UNDERMOUNT SINK, VITREOUS CHINA, FRONT OVERFLOW, RECTANGULAR SHAPED LAVATORY, SIZE: VITREOUS CHINA, FRONT OVERFLOW, LESS SOAP DISPENSER HOLE, ADA COMPLANT, COLOR: WHITE	3/8"	3/8"	1 1/4"	1 1/4"	KOHLER: K-2214
	LAVATORY FAUCET	0.5 GPM AERATOR, 3/8" THREADED MALE INLET SHANKS, SINGLE HANDLE, METAL GRID STRAINER, ONE-PIECE, SELF-CONTAINED CERAMIC DISC VALVE ALLOWS BOTH VOLUME AND TEMPERATURE CONTROL, STATIONARY SPOUT, SINGLE HOLE INSATLLATION					KOHLER: K-97283-4-CP
	LAVATORY SUPPLIES	CHROME PLATED ANGLE STOPS WITH LOOSE KEY HANDLE, CHROME PLATED FLEXIBLE BRASS RISER, INSULATE ALL EXPOSED WATER LINES AND VALVES					
	LAVATORY WASTE	GRID DRAIN STRAINER, 1 1/4" OFFSET TAILPIECE, 1 1/4" 17 GAUGE CHROME PLATED ADJUSTABLE BRASS P-TRAP WITH CLEANOUT PLUG, 1 1/4" CHROME PLATED BRASS WASTE TO WALL					
	LAVATORY PROTECTIVE PIPE COVERS	ADA COMPLIANT, CHINA WHITE, ANTI-BACTERIA/FUNGAL, MOLDED VINYL, P-TRAP COVER, TWO ANGLE VALVE AND SUPPLY COVERS, 5" OFFSET TAILPIECE WHEEL CHAIR STRAINER COVER					TRUEBRO: 103 E-Z PLUMBEREX: X4444
	LAVATORY MIXING VALVE	BELOW DECK THERMOSTATIC MIXING VALVE					POWERS: E480 SLOAN: MIX-135-A
RH-1	ROOF HYDRANT	ROOF NON-FREEZE POST HYDRANT, FREEZE PROOF POST HYDRANT MEETING ASSE #1057 WITH BLACK POWDER COATED CAST ALUMINUM WEATHER-GUARD DOME HANDLE, STAINLESS STEEL SHROUD WITH WELDED STAINLESS STEELFLANGE, UNDER DECK CLAMP, BRONZE GLOBE ANGLE VALVE, ¾" HOSE CONNECTION, QUICK DISCONNECT WITH BUILT-IN VACUUM BREAKER, STAINLESS STEEL RESERVOIR.	-	1/2"	-	-	MAPA PRODUCTS: MPH-24FP
	MOUNTING	MOUNTED FLUSH ABOVE FINISHED ROOF, PROVIDE FLASHING AS REQUIRED FOR A WATER TIGHT SEAL, ROUTE DRAIN TO NEAREST FLOOR SINK					
WH-1	WALL HYDRANT	NON-FREEZE WALL HYDRANT, SATIN NICKEL PLATEDBRASS 1" MALE INLET BY 3/4" FEMALE INLET, 3/4" THREADED HOSE CONNECTION, LOOSE KEY HANDLE, HYDRANT LENGTH AS REQUIRED FOR INSTALLED WALL THICKNESS, ADJUSTABLE WALL CLAMP, BRASS BOX WITH SATIN	-	1/2"	-	-	PRIER PRODUCTS: C-634NBX1
	MOUNTING HEIGHT	18" ABOVE FINISHED GRADE OR FLOOR					
K-33	KITCHEN, SODA BAG-N-BOX	1/2" FILTERED WATER CONNECTION FOR SODA FOUNTAIN BAG-N-BOX, PROVIDE DUAL CHECK VALVE FOR CARBONATED BEVERAGE MACHINES (WATTS SD-3 OR EQUAL), PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE	-	1/2"	-	-	
K-36	COMMERCIAL ICE MACHINE	1/2" FILTERED WATER CONNECTION FOR COMMERCIAL ICE MAKER, PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION, ROUTE ICE MACHINE DRAIN LINE FROM UNIT TO APPROVED DRAIN IN ACCORDANCE WITH MANUFACTURER AND LOCAL CODE REQUIREMENTS, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE, (1) SANITARY CONNECTION(S)	-	1/2"	-	-	
K-40	FLOOR MOP SINK	304 STAINLESS STEEL, PLAIN CURBS, ONE PIECE 29.5"X29.5"X16.5" RECTANGULAR BASIN	1/2"	1/2"	1 1/4"	2"	EAGLE: 312943
	FLOOR MOP SINK FAUCET	SEE FOOD SERVICE DRAWINGS					
	SUPPLIES	1/2" HOT AND COLD WATER WITH CONCEALED STOP WITH WHEEL HANDLE, 1/2" CHROME PLATED FLEXIBLE BRASS RISER, SPLASH KIT					EAGLE: 503097
K-45A	KITCHEN HAND SINK	1/2" DOMESTIC HOT AND COLD WATER CONNECTIONS FOR KITCHEN HAND SINK - FIXTURE, FAUCET, AND DRAIN BY OTHERS, PROVIDE CHROME PLATED ANGLE STOPS WITH LOOSE KEY HANDLE, CHROMATED PLATED FEXIBLE BRASS RISER, 1 1/2" 17 GAUGE CHROME PLATED ADJUSTABLE BRASS P-TRAP WITH CLEANOUT PLUG, 1 1/2" NICKEL PLATED BRASS TAILPIECE, RUN WASTE PARALLEL AND AS TIGHT TO WALL AS POSSIBLE, 110 DEG. F. HOT WATER, SINGLE FAUCET ROUGH-IN, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE, (1) 1 1/2" DRAIN SANITARY CONNECTION(S)	1/2"	1/2"	1 1/4"	1 1/2"	
K-60A	3-COMP SINK	1/2" DOMESTIC HOT AND COLD WATER CONNECTIONS FOR 3-COMPARTMENT SINK, PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION (WHERE APPLICABLE), PROVIDE CHEMICAL SANITATION CONNECTION IN ACCORDANCE WITH LOCAL REQUIREMENTS (WHERE APPLICABLE), 140 DEG. F. HOT SUPPLY, SINGLE FAUCET ROUGH-IN, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE,	1/2"	1/2"	-	-	
K-60B	3-COMP SINK	1/2" DOMESTIC HOT AND COLD WATER CONNECTIONS FOR 3-COMPARTMENT SINK, PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION (WHERE APPLICABLE), PROVIDE CHEMICAL SANITATION CONNECTION IN ACCORDANCE WITH LOCAL REQUIREMENTS (WHERE APPLICABLE), 140 DEG. F. HOT SUPPLY, SINGLE FAUCET ROUGH-IN, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE,	1/2"	1/2"	-	-	
K-61	DISHMACHINE	1/2" HOT AND COLD WATER CONNECTIONS FOR DISHMACHINE, PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH LOCAL REQUIREMENTS IN AN ACCESSIBLE LOCATION, 140 DEG. F. HOT SUPPLY, COORDINATE THE LOCATION AND SIZE OF ALL PLUMBING CONNECTIONS WITH KITCHEN CONNECTION PLANS, MANUFACTURER RECOMMENDATIONS, AND LOCAL REQUIREMENTS PRIOR TO ROUGH-IN. MAKE ANY ADJUSTMENTS NECESSARY TO PROVIDE A FULLY FUNCTIONING FIXTURE	1/2"	1/2"	-	-	

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REVISIONS

	DATE:	DESCRIPTION
1	09/26/2026	REVISION 1
2	09/21/2026	REVISION 2

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 09/21/26 COA#: 28403

FIELD VERIFICATION:
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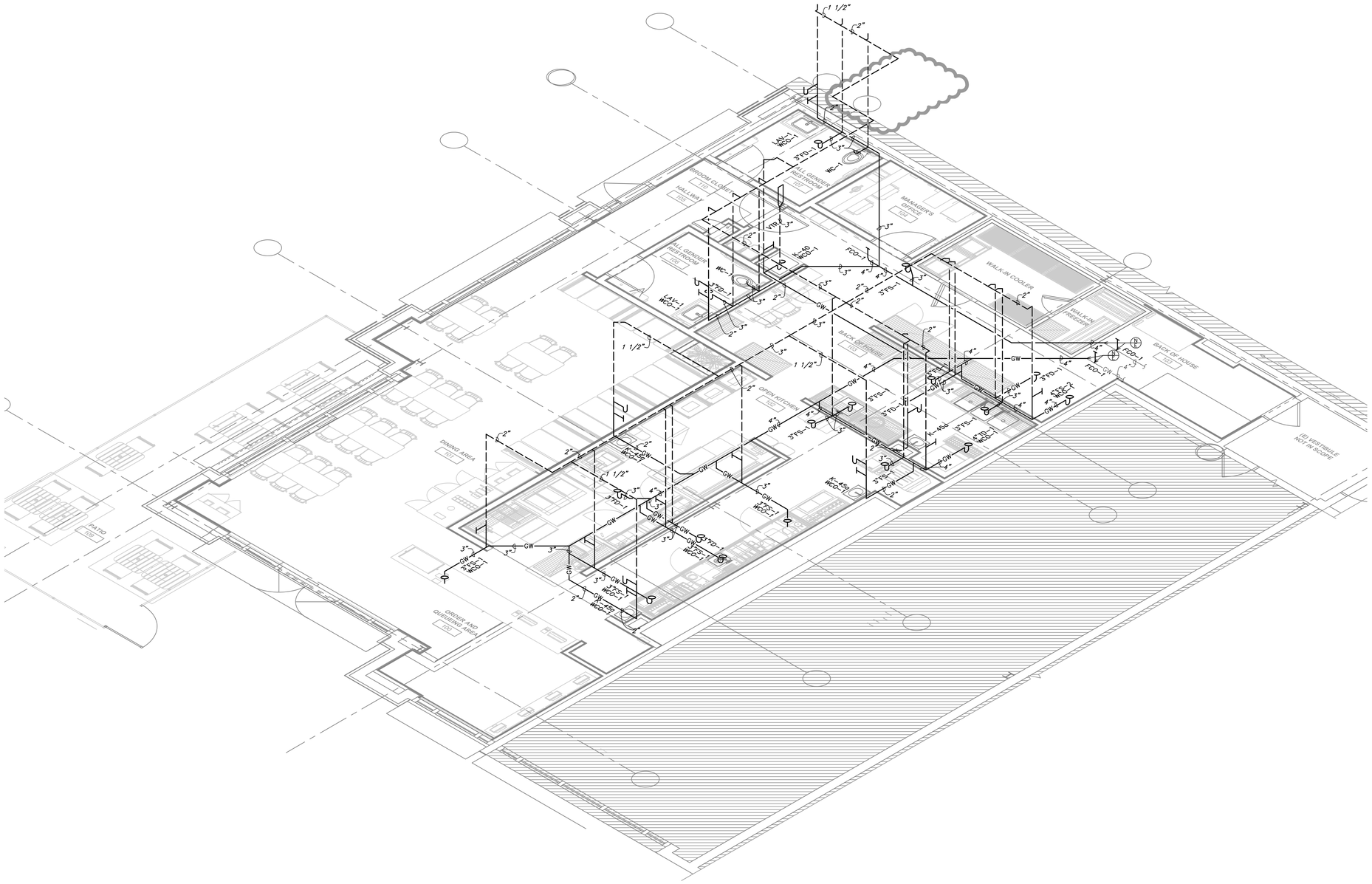
SHEET NAME: **PLUMBING SCHEDULES**

DATE: 06/01/2026 | PROJECT NO.: 41354

DRAWN: RMA | SCALE: AS NOTED

SHEET NO.: **P601**

SE JOB# 250519



1 SANITARY RISER DIAGRAM
NOT TO SCALE

SE JOB# 205019

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COCONUT POINT, FL

REVISIONS

	DATE	DESCRIPTION
1	08/28/2026	REVISION 1
2	09/21/2026	REVISION 2

STATUS:
IFC SET

GREGORY ROY SCHNACKEL
LICENSE
No PE 0048442
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Date: 09/21/26 COA#: 28403

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SHEET NAME:
PLUMBING RISER DIAGRAMS

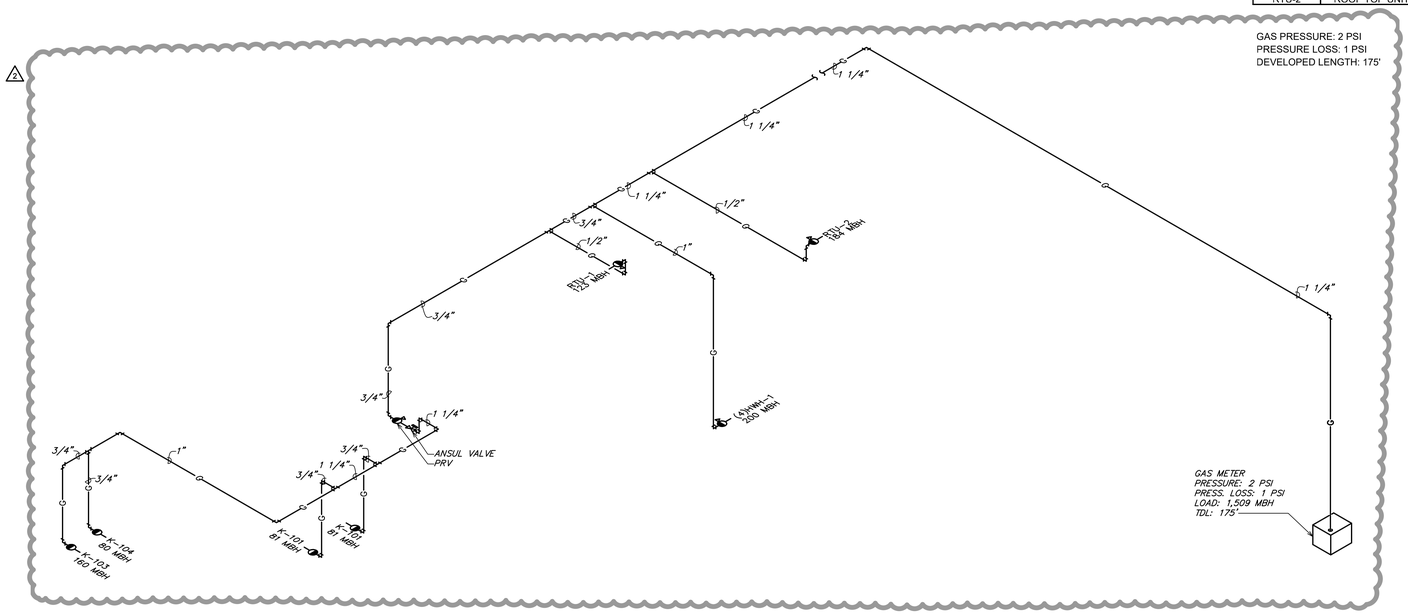
DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN: RMA
SCALE: AS NOTED

SHEET NO.:
P901

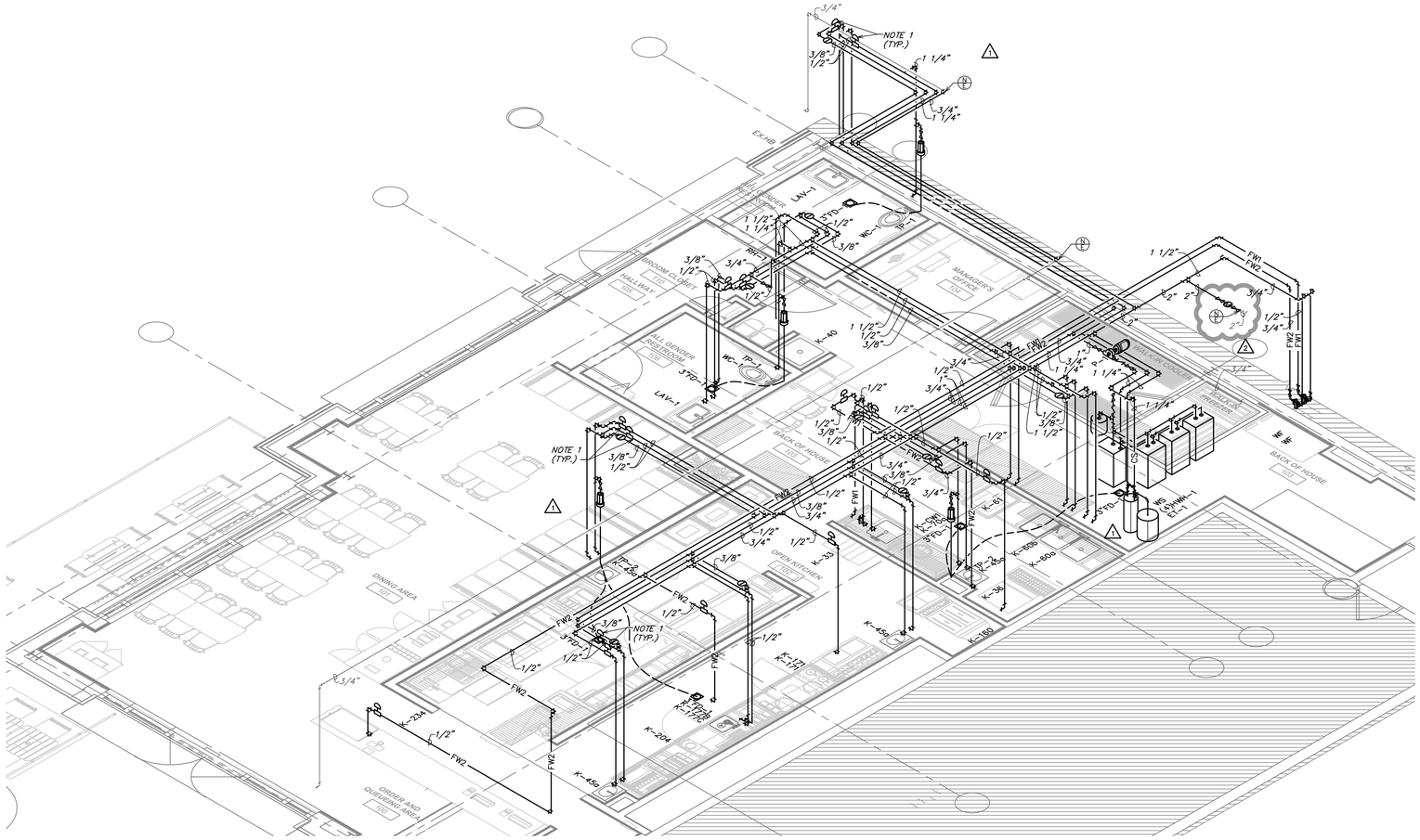
GAS LOAD CALCULATION				
ITEM	DISCRIPTION	COUNT	GAS INPUT (MBH)	TOTAL GAS LOAD (MBH)
101	GRIDDLE	2	81	162
103	FRYER	1	160	160
104	FRYER	1	80	80
HWH-1	WATER HEATER	4	200	800
RTU-1	ROOF TOP UNIT	1	123	123
RTU-2	ROOF TOP UNIT	1	184	184
			TOTAL GAS LOAD(MBH)	1,509

PLUMBING NOTES:

1. WATER HAMMER ARRESTORS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. LOCATIONS SHOWN ARE FOR REFERENCE PURPOSES ONLY.



2 GAS RISER DIAGRAM
NOT TO SCALE



1 WATER RISER DIAGRAM
NOT TO SCALE

LEGEND

- EXISTING
- NEW WORK
- NEW TO EXISTING CONNECTION

zebra

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	DATE	DESCRIPTION
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FIELD VERIFICATION:
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SHEET NAME: **PLUMBING RISER DIAGRAMS**

DATE:	PROJECT NO.:
06/01/2026	41354
DRAWN: RMA	SCALE: AS NOTED

SHEET NO.: **P902**

JE JOB#: 205519

SHEET NUMBER	SHEET NAME
E001	ELECTRICAL ABBREVIATIONS AND SYMBOL LEGEND
E101	ELECTRICAL POWER PLAN
E102	LOW VOLTAGE SYSTEMS PLAN
E120	ELECTRICAL LIGHTING PLAN
E150	ELECTRICAL ROOF PLAN
E501	ELECTRICAL DETAILS
E590	ELECTRICAL SPECIFICATIONS
E591	ELECTRICAL SPECIFICATIONS
E601	ELECTRICAL SCHEDULES AND ONE-LINE DIAGRAM
E620	LIGHTING SCHEDULES
E621	LUTRON VIVE ONE-LINE
E622	LUTRON VIVE ONE-LINE
E623	LUTRON VIVE ONE-LINE
E624	LUTRON VIVE ONE-LINE

LANDLORD ELECTRICAL COMMENTS:

1. *TENANT IS REQUIRED TO MAKE A FIELD SURVEY OF THE EXISTING ELECTRICAL SERVICE TO ENSURE THAT THE TOTAL CONNECTED LOAD DOES NOT EXCEED THE ELECTRICAL SERVICE. ANY/ ALL MODIFICATIONS OR UPGRADES NEEDED ARE SUBJECT TO LANDLORD'S PRIOR APPROVAL, AND WILL BE COMPLETED BY TENANT/ TENANT'S CO., AT TENANT'S SOLE EXPENSE.*
2. *EMT (ELECTRIC METALLIC TUBING) SHALL BE USED IN ALL DEMISING WALLS, HOME RUNS, AND BETWEEN J-BOXES AND PULL BOXES. MC CABLE MAY BE USED IN OTHER APPLICATION AS ALLOWED BY THE AUTHORITY HAVING JURISDICTION (AHJ). ALL EXPOSED CONDUIT, RIGID OR MC CABLE, SHALL BE INSTALLED IN TIGHT STRAIGHT LINES, PARALLEL OR IN RIGHT ANGLES TO THE BUILDING STRUCTURE. DO NOT LOOP EXCESS MC CABLE IN CEILING SPACE OR WALL CAVITY.*
3. *ALL FEEDERS SHALL BE COPPER. TYPE AC AND NM (ROMEX) CABLES ARE NOT ACCEPTABLE.*
4. *ALL PANELS SHALL BE UL LABELED WITH BOLT ON TYPE CIRCUIT BREAKERS. PANELS SHALL NOT BE RECESSED IN DEMISING AND SHALL BE MOUNTED ON PLYWOOD BACKER PANELS UNLESS RECESSED INTO A FURRED OUT OR INTERIOR WALL.*
5. *PANEL PHASE LOADS TO BE BALANCED WITHIN 10%.*
6. *ONLY 30 KVA AND SMALLER TRANSFORMERS MAY BE SUSPENDED FROM BUILDING STRUCTURE. ALL OTHER TRANSFORMERS MUST BE FLOOR SUPPORTED. STRUCTURAL SUPPORT DOCUMENTATION SHALL BE REQUIRED TO MEET AUTHORITIES HAVING JURISDICTION (AHJ).*
7. *NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK, OR ROOF DECK. YOU MAY ATTACH, NON-DESTRUCTIVELY, TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHING TO LANDLORD'S STRUCTURE, DO NOT DRILL, WELD, SCREW, OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY, NOTHING TO DAMAGE LANDLORD'S BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SCALED STRUCTURAL DRAWINGS, BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS, FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.*
8. *7 DAY, 24 HOUR TIME CLOCK IS REQUIRED TO CONTROL STOREFRONT ENTRY LIGHTS, SHOW WINDOW LIGHTS, SHOW WINDOW RECEPTACLES AND STOREFRONT SIGNAGE. ILLUMINATED STOREFRONT SIGNS MUST REMAIN LIT DURING ALL MALL BUSINESS HOURS.*
9. *ALL EQUIPMENT, DEVICES AND FIXTURES SHALL BE GROUNDED IN COMPLIANCE WITH NEC AND UL REQUIREMENTS.*
10. *SLAB REQUIREMENTS:*
    SLAB ON GRADE: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATION TEAM PRIOR TO ANY SLAB MODIFICATIONS OR REMOVAL. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.
    ELEVATED SLABS: TENANT'S GENERAL CONTRACTOR SHALL ADVISE THE OPERATIONS TEAM PRIOR TO ANY SLAB MODIFICATION OR REMOVAL. IF ANY ELEVATED SLAB IS TO BE MODIFIED IN ANYWAY (DRILLED, CORED, OR PENETRATED), TENANT SHALL PROVIDE STAMPED AND CERTIFIED DRAWINGS BY A LICENSED STRUCTURAL ENGINEERED CERTIFIED IN THE LOCAL JURISDICTION. ALL PENETRATIONS SHALL BE CORE BORED ONLY. SAW CUTTING, JACK HAMMERING, AND TRENCHING IS STRICTLY PROHIBITED. ALL PENETRATIONS SHALL BE SLEEVED, SEALED, FIRE STOPPED, AND WATERPROOFED. THE PENETRATION SLEEVE SHALL EXTEND A MINIMUM OF 4" ON EITHER SIDE OF THE SLAB AND BE LABELED WITH THE REQUIRED NFPA RATING. TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITION. (NONDESTRUCTIVE VERIFICATION MAYBE REQUIRED.) ANY DAMAGE OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.
11. *LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.*

DESCRIPTION	FURNISHED: GENERAL CONTRACTOR	FURNISHED: OWNER	FURNISHED: LANDLORD	INSTALLED: GENERAL CONTRACTOR	INSTALLED: OWNER	INSTALLED: LANDLORD	REMARKS
DIVISION 26: ELECTRICAL							
26.1 ELECTRICAL IDENTIFICATION	X			X			
26.2 POWER DISTRIBUTION SYSTEM							
26.2.1 MAIN SERVICE GEAR AND TRANSFORMERS			X			X	
26.2.2 MAIN SERVICE CONDUIT			X			X	
26.2.3 MAIN SERVICE WIRING			X			X	
26.2.4 MAIN SERVICE FUSES			X			X	
26.2.5 TRANSFORMER			X			X	
26.2.6 TENANT DISTRIBUTION PANELS AND BREAKERS	X			X			
26.2.7 CONDUIT, WIRE, OUTLETS, AND SWITCHES	X			X			
26.2.8 KITCHEN EQUIPMENT FINAL CONNECTION	X			X			
26.2.9 SIGNAGE CONDUIT AND WIRING	X			X			
26.3 LIGHTING DEVICES							
26.3.1 PARKING LOT LIGHTING			X			X	PARKING LOT LIGHTING IS EXISTING TO REMAIN, UNDER LANDLORD BASE BUILDING.
26.3.2 EXTERIOR LIGHTING		X		X			OWNER SUPPLIED FROM VENDOR NO. 122
26.3.3 EMERGENCY LIGHTING		X		X			OWNER SUPPLIED FROM VENDOR NO. 122 SCOPE OF WORK TO INCLUDE INTERIOR AND EXTERIOR
26.3.4 INCANDESCENT, DECORATIVE, AND FLUOR LIGHTING		X		X			OWNER SUPPLIED FROM VENDOR NO. 122
26.3.5 CUSTOM FIXTURES		X		X			OWNER SUPPLIED FROM VENDOR NO. 122
26.3.6 DIMMING SYSTEM		X		X			OWNER SUPPLIED FROM VENDOR NO. 122
26.4 LOW VOLTAGE							
26.4.1 CONDUIT AND WIRING	X			X			GENERAL CONTRACTOR TO COORDINATION WITH VENDOR NO. 107
26.4.2 DEVICES AND COVERPLATES		X			X		SUPPLIED AND INSTALLED BY VENDOR NO. 107
DIVISION 27: COMMUNICATIONS							
27.1 TELECOMMUNICATIONS IDENTIFICATION		X			X		
27.2 TELECOMMUNICATIONS							
27.2.1 IT EQUIPMENT RACK AND CABLE BOX RACK		X			X		SUPPLIED AND INSTALLED BY VENDOR NO. 107
27.2.4 (2) 2" CONDUIT FOR DATA SERVICE			X			X	VOICE OVER IP
27.3 TELEVISIONS							
27.3.1 CONDUIT AND WIRING	X			X			
27.3.2 MOUNTS		X			X		SUPPLIED AND INSTALLED BY VENDOR NO. 107 GENERAL CONTRACTOR SCOPE OF WORK TO INCLUDE PROVIDING BLOCKING
27.3.3 DEVICES		X			X		SUPPLIED AND INSTALLED BY VENDOR NO. 107
27.4.1 POWER	X			X			
27.4.2 EQUIPMENT		X			X		
DIVISION 28: ELECTRONIC SAFETY AND SECURITY							
28.1 SECURITY ALARM SYSTEM							
28.1.1 CONDUIT	X			X			
28.1.2 WIRING AND DEVICES		X			X		GENERAL CONTRACTOR TO COORDINATE WITH VENDOR NO. 33 ON ADDITIONAL SCOPE OF WORK WHICH INCLUDES THE INSTALLATION OF CONDUIT FROM KEYPAD TO MANAGER'S OFFICE, BACK BOX, CONDUIT AND WIRING TO EMERGENCY CIRCUIT
28.2 SECURITY CAMERAS							
28.2.1 CONDUIT AND WIRING	X			X			
28.2.2 DEVICES		X			X		SUPPLIED AND INSTALLED BY VENDOR NO. 116 CONSTRUCTION CAMERAS ARE PURCHASED BY THE G.C. FROM VENDOR NO.21 AND INSTALLED BY THE G.C.
28.3 SPEAKERS							
28.3.1 CONDUIT AND WIRING	X			X			
28.3.2 DEVICES		X			X		SUPPLIED AND INSTALLED BY VENDOR NO. 116
28.4 FIRE ALARM SYSTEM							
28.4.1 SYSTEM ENGINEER	X			X			
28.4.2 CONNECTION TO BASE BUILDING SYSTEM	X			X			
28.4.3 DEVICES	X			X			

SUBMITTAL MATRIX

GENERAL CONTRACTORS TO ALSO REVIEW ARCHITECTRUAL SPECIFICATIONS AS NOTED IN PLAN SECTION 700 OF THE ARCHITECTURAL PACKAGE FOR REQUIRED SUBMITTALS THAT MIGHT NOT BE LISTED BELOW.

SUBMITTAL DECRIPTION	REQUIRED REVIEW TIME (BUSINESS DAYS)	ARCHITECT OF RECORD	SHAKE SHACK	PHYSICAL SAMPLE REQUIRED	SUBMITTAL FOR RECORD	SUBMITTAL FOR RECORD ONLY
ELECTRICAL DISTRIBUTION EQUIPMENT	5	X				
LIGHT FIXTURES (SUBMITTED BY VENDOR DIRECTLY TO AOR/EOR PRIOR TO CONSTRUCTION)	5	X			X	
LIGHTING CONTROLS (SUBMITTED BY VENDOR DIRECTLY TO AOR/EOR PRIOR TO CONSTRUCTION)	5	X			X	
MEP TESTS, START-UP, AND PROGRAMMING REPORTS	5	X			X	

ELECTRICAL SYMBOL LEGEND (SOME MAY NOT BE USED)

	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
RECEPTACLES AND PLUGS		WALL MOUNTED SINGLE RECEPTACLE, NEMA 5-20R		FLUSH FLOOR MOUNTED SINGLE RECEPTACLE, NEMA 5-20R
		WALL MOUNTED DUPLEX RECEPTACLE		FLUSH FLOOR MOUNTED DUPLEX RECEPTACLE
		WALL MOUNTED DEDICATED DUPLEX RECEPTACLE		FLUSH FLOOR MOUNTED DEDICATED DUPLEX RECEPTACLE
		WALL MOUNTED DUPLEX RECEPTACLE ONE RECEPTACLE SWITCHED OR SPLIT-WIRED		FLUSH FLOOR MOUNTED DUPLEX RECEPTACLE, SPLIT-WIRED
		WALL MOUNTED QUADRUPLEX RECEPTACLE		FLUSH FLOOR MOUNTED QUADRUPLEX RECEPTACLE
		WALL MOUNTED DEDICATED QUADRUPLEX RECEPTACLE		FLUSH FLOOR MOUNTED DEDICATED QUADRUPLEX RECEPTACLE
		WALL MOUNTED QUADRUPLEX RECEPTACLE, SPLIT-WIRED		FLUSH FLOOR MOUNTED QUADRUPLEX RECEPTACLE, SPLIT-WIRED
		WALL MOUNTED SPECIAL RECEPTACLE, NEMA CONFIGURATION AS NOTED		FLUSH FLOOR MOUNTED SPECIAL RECEPTACLE, NEMA CONFIGURATION AS NOTED
		WALL MOUNTED RANGE RECEPTACLE, NEMA 14-50R UNLESS INDICATED OTHERWISE		ABOVE FLOOR SERVICE FITTING, HUBBELL #SC3098A OR EQUAL NEMA CONFIGURATION AS NOTED
	C	CEILING MOUNTED SINGLE RECEPTACLE, NEMA 5-20R (C=FLUSH CEILING, DC=DROPCORD)	C	CEILING MOUNTED QUADRUPLEX RECEPTACLE (C=FLUSH CEILING, DC=DROPCORD)
	C	CEILING MOUNTED DUPLEX RECEPTACLE (C=FLUSH CEILING, DC=DROPCORD)	C	CEILING MOUNTED DEDICATED QUADRUPLEX RECEPTACLE (C=FLUSH CEILING, DC=DROPCORD)
	C	CEILING MOUNTED DEDICATED DUPLEX RECEPTACLE (C=FLUSH CEILING, DC=DROPCORD)	C	CEILING MOUNTED QUADRUPLEX RECEPTACLE, SPLIT-WIRED (C=FLUSH CEILING, DC=DROPCORD)
	C	CEILING MOUNTED DUPLEX RECEPTACLE, SPLIT-WIRED (C=FLUSH CEILING, DC=DROPCORD)	C	CEILING MOUNTED SPECIAL RECEPTACLE, NEMA CONFIGURATION AS NOTED (C=FLUSH CEILING, DC=DROPCORD)
		MULTI-OUTLET ASSEMBLY		CORD AND PLUG
BOXES		WALL MOUNTED JUNCTION/OUTLET BOX	C	CEILING MOUNTED JUNCTION/OUTLET BOX
		FLUSH FLOOR MOUNTED JUNCTION/OUTLET BOX		JUNCTION BOX MOUNTED ABOVE CEILING
SWITCHES AND CONTROLS	$	SWITCH, SPST UNLESS INDICATED OTHERWISE, HORSEPOWER RATED WHEN USED IN CONJUNCTION WITH MOTORS		PUSHBUTTON STATION, ONE BUTTON
	OC	CEILING MOUNTED OCCUPANCY SENSOR		PUSHBUTTON STATION, TWO BUTTON
	OS	WALL MOUNTED OCCUPANCY SENSOR		PUSHBUTTON STATION, THREE BUTTON
	PC	CEILING MOUNTED PHOTOSENSOR		SAFETY SWITCH, CHARACTERISTICS AS INDICATED
	MS	CEILING MOUNTED MOTION SENSOR		DISCONNECT SWITCH PROVIDED BY EQUIPMENT MANUFACTURER INTEGRAL WITH EQUIPMENT
	TC	AUTOMATIC TIMECLOCK		ENCLOSED CIRCUIT BREAKER, CHARACTERISTICS AS INDICATED
	PCI	PHOTOCELL		MAGNETIC MOTOR STARTER
	R	RELAY		COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT SWITCH, CHARACTERISTICS AS INDICATED
	C	CONTACTOR	VFD	VARIABLE FREQUENCY DRIVE
	ALCR	UL 924 AUTOMATIC LOAD CONTROL RELAY; HUBBELL CONTROL SYSTEMS #ALCR1277 OR EQUAL	IVFD	VARIABLE FREQUENCY DRIVE, PROVIDED BY EQUIPMENT MANUFACTURER INTEGRAL WITH EQUIPMENT
	GTD	UL 1008 BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH; BODINE #GTD20A OR EQUAL		
SIGNAL	B	BELL		CHIME
	B	BUZZER		ROTATING BEACON
TELECOMMUNICATIONS		WALL MOUNTED TELEPHONE OUTLET; *P DENOTES NUMBER OF TELEPHONE PORTS		WALL MOUNTED DATA OUTLET; *D DENOTES NUMBER OF DATA PORTS
		FLUSH FLOOR MOUNTED TELEPHONE OUTLET; *P DENOTES NUMBER OF TELEPHONE PORTS		FLUSH FLOOR MOUNTED DATA OUTLET; *D DENOTES NUMBER OF DATA PORTS
	C	CEILING MOUNTED TELEPHONE OUTLET; *P DENOTES NUMBER OF TELEPHONE PORTS	C	CEILING MOUNTED DATA OUTLET; *D DENOTES NUMBER OF DATA PORTS
		WALL MOUNTED COMBINATION TELEPHONE AND DATA OUTLET; *P/*D DENOTES NUMBER OF TELEPHONE/DATA PORTS		FLUSH FLOOR MOUNTED COMBINATION TELEPHONE AND DATA OUTLET; *P/*D DENOTES NUMBER OF TELEPHONE/DATA PORTS
	WAP	WIRELESS ACCESS POINT	C	CEILING MOUNTED COMBINATION TELEPHONE AND DATA OUTLET; *P/*D DENOTES NUMBER OF TELEPHONE/DATA PORTS
RACEWAYS AND CIRCUITRY		CIRCUITRY, CONCEALED IN WALL OR CEILING	P	POWER POLE
		CIRCUITRY, CONCEALED IN OR UNDER FLOOR	T	TELECOMMUNICATIONS POLE
		CIRCUITRY, EXPOSED	TP	TWO-CHANNEL TELECOMMUNICATIONS AND POWER POLE
		CIRCUIT HOMERUN. THE NUMBER OF ARROWS INDICATES THE NUMBER OF CIRCUITS. TWO WIRES UNLESS NOTED OTHERWISE; SLASHES INDICATE NUMBER OF WIRES. EQUIPMENT GROUND WIRE IS REQUIRED BUT NOT INDICATED. A 7 INDICATES ISOLATED GROUND CONDUCTOR.	---UCP---	UNDERCARPET FLAT CONDUCTOR CABLE WIRING SYSTEM, POWER
			---UCT---	UNDERCARPET FLAT CONDUCTOR CABLE WIRING SYSTEM, TELEPHONE
			---UCD---	UNDERCARPET FLAT CONDUCTOR CABLE WIRING SYSTEM, DATA
		CONDUIT STUB		WIRE LOOP FOR FUTURE CONNECTION, 10'-0" MINIMUM SLACK
		CONDUIT/CIRCUIT BREAK AND CONTINUED ELSEWHERE		VERTICAL CONDUIT/CIRCUIT
MISCELLANEOUS		METER AND SOCKET	M	MOTOR
		LIGHTING AND APPLIANCE PANELBOARD, SURFACE MOUNTED	XX RPS	REMOTE LIGHTING POWER SUPPLY/TRANSFORMER; (XX = WATT RATING)
		LIGHTING AND APPLIANCE PANELBOARD, FLUSH MOUNTED	XX	TRACK LIGHTING END FEED; (XX = CURRENT LIMITER RATING, IF APPLICABLE)
		OTHER EQUIPMENT AS NOTED	GFCI	CLASS A (4-6 mA TRIP) GFCI DEVICE; VOLTAGE, PHASE, AND CURRENT RATING AS REQUIRED FOR THE LOAD
	TR	LOW VOLTAGE CONTROL TRANSFORMER	SPGFCI	SPECIAL PURPOSE GFCI DEVICE; VOLTAGE, PHASE, AND CURRENT RATING AS REQUIRED FOR THE LOAD

SYMBOL MODIFIERS (INCLUDING COMBINATIONS), ACRONYMS, AND ABBREVIATONS

GENERAL SYMBOL MODIFIERS (APPLY TO ALL)

+XX	MOUNTING HEIGHT TO CENTER OF BOX (OVERRIDES DEFAULT MOUNTING HEIGHT)
ACH	ABOVE COUNTERTOP/BACKSPLASH, SEE ARCHITECTURAL ELEVATIONS
EM	EMERGENCY
EX	EXISTING TO REMAIN
GFCI	GROUND-FAULT CIRCUIT INTERRUPTER (4 TO 6 MILLIAMP TRIP)
H	HORIZONTAL MOUNT
PT	POKE-THROUGH
RERN	REMOVE EXISTING AND REPLACE WITH NEW
RR	REMOVE AND RELOCATE/ REMOVED AND RELOCATED
WP	WEATHERPROOF
#.XX	CIRCUIT NUMBER:CONTROL ZONE

RECEPTACLE MODIFIERS

CH	CLOCK HANGER
CR	CONTROLLED
HG	HOSPITAL GRADE
IG	ISOLATED GROUND
MFR	PROVIDED BY EQUIPMENT MANUFACTURER INTEGRAL WITH THE EQUIPMENT
SP	SURGE PROTECTION
SR	SHOW WINDOW MOUNTED WITHIN 18 INCHES OF TOP OF SHOW WINDOW
TR	TAMPER-RESISTANT
USB	DEVICE WITH USB PORT(S)

SWITCHES AND CONTROLS MODIFIERS

2	DPST
3	THREE-WAY
4	FOUR-WAY
a,b,c..	CONTROL AND LOAD ASSOCIATION
D	DIMMER
DTC	SPDT, CENTER OFF, MAINTAINED CONTACT
DTM	SPDT, CENTER OFF, MOMENTARY CONTACT
F	BOX COVER UNIT, BUSSMANN SSU SERIES
G	GLOW HANDLE (HANDLE GLOWS WHEN SWITCH IS OFF)
K	KEY OPERATED
LV	LOW VOLTAGE
LVD	LOW VOLTAGE DIMMER
M	MANUAL MOTOR CONTROLLER WITH OVERLOAD HEATER
OR	OVERRIDE WITH TIMER
OS1	SINGLE-RELAY OCCUPANCY SENSOR
OS2	DUAL-RELAY OCCUPANCY SENSOR
OSD	DIMMING OCCUPANCY SENSOR
P	PILOT LIGHT (PILOT ON WHEN SWITCH IS ON)
SB	SWITCH BANK (GANGED SWITCHES)
T	TIMER

GENERAL ACRONYMS AND ABBREVIATIONS

AHJ	AUTHORITY HAVING JURISDICTION
ATS	AUTOMATIC TRANSFER SWITCH
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
DPNL	DISTRIBUTION (POWER) PANELBOARD
EGC	EQUIPMENT GROUNDING CONDUCTOR
ERMS	ARC ENERGY REDUCING MAINTENANCE SWITCH
FTL	FEED-THROUGH LUGS (SUBFEED LUGS ARE ALSO ACCEPTABLE)
GEC	GROUNDING ELECTRODE CONDUCTOR
GFPE	GROUND-FAULT PROTECTION OF EQUIPMENT
GND	GROUND
MCC	MOTOR CONTROL CENTER
MTS	MANUAL TRANSFER SWITCH
N.F.	NON-FUSED
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NIC	NOT IN CONTRACT
NL	NIGHTLIGHT
PNL	PANELBOARD
SSBJ	SUPPLY-SIDE BONDING JUMPER
ST	SHUNT TRIP
SWBD	SWITCHBOARD
UNO	UNLESS NOTED OTHERWISE
XFMR	TRANSFORMER
SPST	SINGLE POLE, SINGLE THROW
DPST	DOUBLE POLE, SINGLE THROW
3PST	THREE POLE, SINGLE THROW
4PST	FOUR POLE, SINGLE THROW
5PDT	SINGLE POLE, DOUBLE THROW
DPDT	DOUBLE POLE, DOUBLE THROW
3PDT	THREE POLE, DOUBLE THROW
4PDT	FOUR POLE, DOUBLE THROW
NO	NORMALLY OPEN
NC	NORMALLY CLOSED

DEVICE AND COVERPLATE FINISH SCHEDULE

AREA	WIRING DEVICE	COVERPLATE
FRONT OF HOUSE ON TILE OR WOOD WALL FINISH • DINING AREA • CUSTOMER RESTROOMS • QUEUING AREA/VESTIBULE	BLACK	BLACK MATTE (NYLON)
FRONT OF HOUSE ON PAINTED WALL FINISH • DINING AREA • CUSTOMER RESTROOMS • QUEUING AREA/VESTIBULE	WHITE	WHITE MATTE (NYLON)
KITCHEN/BACK OF HOUSE WITH STAINLESS WALL FINISH • COOKLINE • DISPLAY KITCHEN	GREY	STAINLESS (METAL)
KITCHEN/BACK OF HOUSE WITH FRP WALL FINISH • DISH WASHING/PREP AREAS • EMPLOYEE RESTROOMS • MANAGER'S OFFICE	WHITE	WHITE (NYLON)

GENERAL NOTES:

1. COLORS AND FINISHES SPECIFIED ABOVE SHALL BE APPLICABLE TO ALL DEVICES INCLUDING LOW VOLTAGE DEVICES UNLESS NOTED OTHERWISE.
2. PROVIDE FLAT EXPANDABLE IN-USE STYLE WEATHERPROOF COVERS WHERE INDICATED ON EQUIPMENT CONNECTION SCHEDULE OR NOTES.
3. ISOLATED GROUND RECEPTACLES SHALL BE ORANGE IN COLOR.

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REVISIONS

△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0048442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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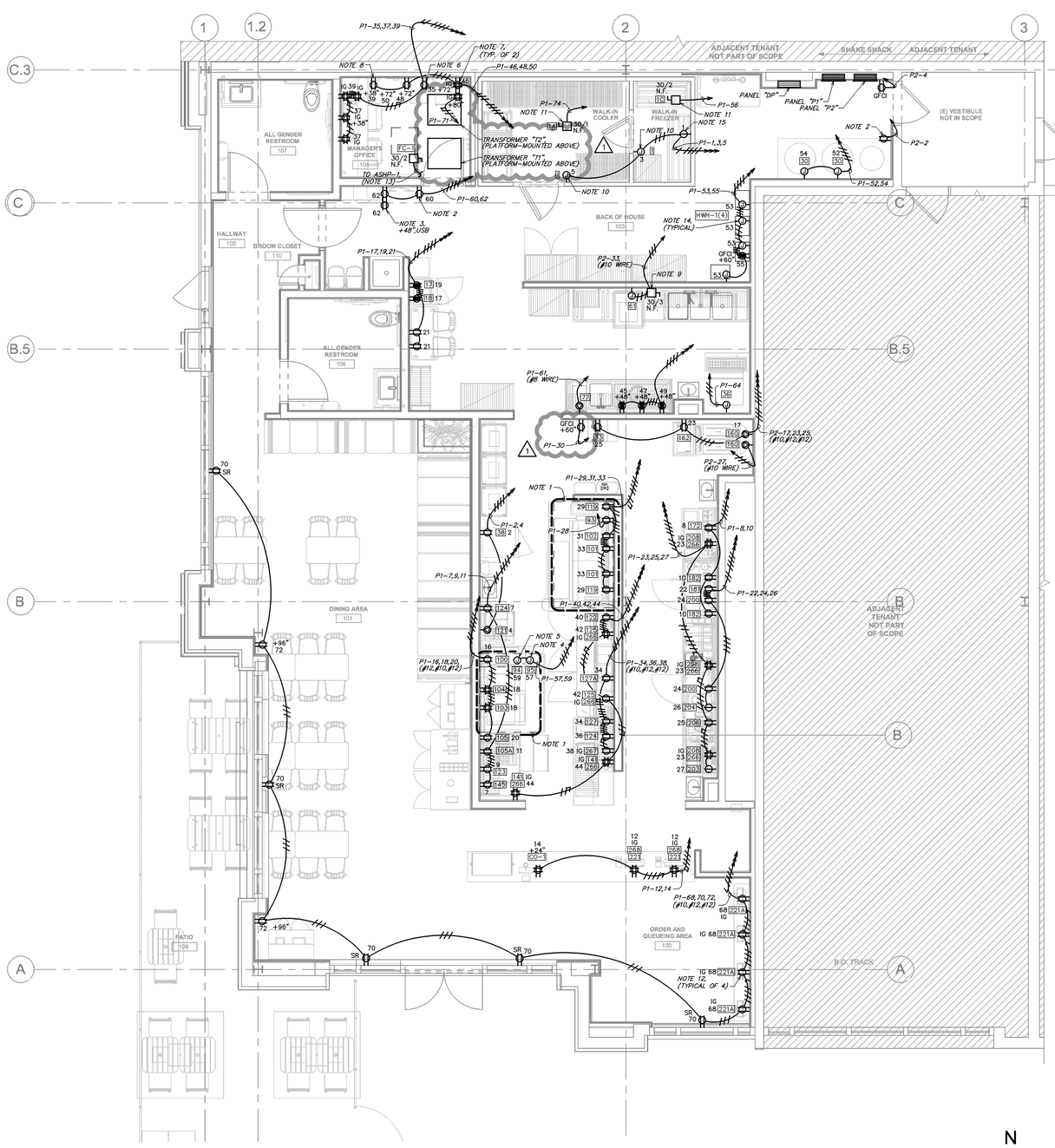
SHEET NAME: **ELECTRICAL ABBREVIATIONS AND SYMBOL LEGEND**

DATE: 06/01/2026 | PROJECT NO.: 41354

DRAWN: MJC | SCALE: AS NOTED

SHEET NO.: **E001**

SE JOB# 290519



1 ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"

N

GENERAL ELECTRICAL EXISTING CONDITIONS NOTES:

A. ANY EXISTING CONDITIONS INDICATED IN THIS SET OF DRAWINGS ARE BASED ON INFORMATION PROVIDED BY OTHERS AND POSSIBLE LIMITED FIELD VERIFICATION. ADJUST FOR ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE OWNER.
B. VISIT THE PROJECT SITE, REVIEW EXISTING CONDITIONS AGAINST THE CONTRACT DOCUMENTS, AND BECOME FAMILIAR WITH THE WORK PRIOR TO BIDDING AND START OF THE WORK. SIGNING THE CONTRACT IS AN ACKNOWLEDGEMENT THAT THE SITE VISIT HAS BEEN COMPLETED AND THE EXISTING CONDITIONS ARE ACCEPTED.
C. DEMOLISH ANY EXISTING EQUIPMENT, DEVICES, AND LUMINAIRES AS INDICATED AND/OR AS REQUIRED TO ALLOW FOR INSTALLATION AND CONSTRUCTION OF THE NEW WORK. REMOVE ALL EQUIPMENT, DEVICES, LUMINAIRES, CONDUITS, SUPPORTS, HANGERS, ETC. THAT ARE NOT SHOWN AND ARE REQUIRED TO BE REMOVED IN ORDER TO COMPLETE THE NEW WORK.
D. ELECTRICAL CIRCUITS THAT ARE TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY. CONDUCTORS SHALL BE REMOVED FROM THE ITEM TO BE DEMOLISHED TO THE SOURCE OVERCURRENT DEVICE. RACEWAYS WHICH ARE INSTALLED IN OR BELOW FLOORS OR WITHIN WALLS MAY BE ABANDONED, BUT ALL OVERHEAD OR EXPOSED RACEWAYS SHALL BE REMOVED. EXPOSED RACEWAYS TO BE ABANDONED SHALL BE REMOVED AND SHALL BE CUT OR CHISELED AT LEAST 2" INTO THE WALL OR FLOOR AND THE OPENING GROUTED SMOOTH.
E. THE OWNER SHALL HAVE SALVAGE RIGHTS TO ANY ITEMS THAT ARE TO BE DEMOLISHED. THOSE ITEMS THAT THE OWNER WISHES TO SALVAGE SHALL BE CAREFULLY REMOVED AND STORED IN A LOCATION AS DIRECTED BY THE OWNER. ALL OTHER ITEMS OF DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
F. PROVIDE TEMPORARY CIRCUITS AND CONNECTIONS TO EQUIPMENT, LUMINAIRES, OR DEVICES IN AREAS OF THE FACILITY THAT ARE TO REMAIN IN OPERATION AS REQUIRED TO MAINTAIN THOSE AREAS IN COMPLETE OPERATION.
G. MAINTAIN CONTINUITY OF EXISTING CIRCUITS AS REQUIRED TO PROVIDE POWER TO REMAINING EQUIPMENT, DEVICES, AND LUMINAIRES THAT ARE NOT BEING REMOVED.
H. PROVIDE BLANK COVERPLATES FOR EXISTING EMPTY DEVICE BOXES OR JUNCTION BOXES THAT MUST REMAIN, SUCH AS FOR CIRCUITS THAT MUST BE MAINTAINED TO OTHER AREAS.
I. WHERE ELECTRICAL DISTRIBUTION EQUIPMENT (PANELBOARDS, SWITCHBOARDS, ETC.,) IS TO BE REMOVED OR RELOCATED, ALL EXISTING CIRCUITS THAT ARE TO REMAIN SHALL BE RECONNECTED TO NEW OR RELOCATED ELECTRICAL DISTRIBUTION EQUIPMENT TO MAINTAIN THE CONTINUITY OF THOSE EXISTING CIRCUITS. INTERCEPT AND EXTEND ALL EXISTING CIRCUITS AS REQUIRED.

GENERAL ELECTRICAL NOTES:

A. WHERE THE MECHANICAL DESIGN UTILIZES A PLENUM RETURN AIR CEILING DESIGN, ALL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE PLENUM RETURN CEILING MUST MEET THE FLAME SPREAD AND SMOKE DEVELOPED RATINGS OF 25/50 AND BE APPROVED FOR USE IN PLENUM RETURN CEILINGS. COORDINATE PLENUM CEILING LOCATIONS WITH THE MECHANICAL CONTRACTOR.
B. COORDINATE ALL DEVICE LOCATIONS AND CIRCUIT ROUTING WITHIN ANY MILLWORK WITH MILLWORK VENDOR PRIOR TO ROUGH-IN.
C. COORDINATE THE CONNECTIONS OF ALL EQUIPMENT PROVIDED BY OTHERS WITH THE CONTRACTOR PROVIDING THE EQUIPMENT PRIOR TO ROUGH-IN. THIS INCLUDES, BUT IS NOT LIMITED TO, MECHANICAL EQUIPMENT, KITCHEN EQUIPMENT, AUDIO/VISUAL EQUIPMENT, FIRE SUPPRESSION SYSTEM EQUIPMENT, FIRE ALARM EQUIPMENT, ETC. PROVIDE THE APPROPRIATE DISCONNECTING MEANS FOR, AND TO MAKE THE FINAL CONNECTION TO, ANY HARDWIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPRIATE CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS NOT EQUIPPED WITH AN INTEGRAL CORD AND PLUG.
D. SEE PANEL SCHEDULES FOR INFORMATION ON CIRCUITS THAT ARE TO BE ROUTED THROUGH CONTACTORS OR RELAYS FOR CONTROL.
E. ALL EQUIPMENT, DEVICES, AND LUMINAIRES SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED. EQUIPMENT MOUNTED OUTDOORS SHALL BE NEMA 3R. DEVICES MOUNTED IN DAMP OR WET LOCATIONS SHALL BE WEATHERPROOF. RECEPTACLES RATED 15- OR 20-AMPS AND 120 VOLTS WHICH ARE LOCATED IN DAMP OR WET LOCATIONS SHALL BE GFCI PROTECTED AND EQUIPPED WITH A SUITABLE WEATHERPROOF COVERPLATE (WHILE-IN-USE IN WET LOCATIONS).
F. ALL LUGS, TERMINALS, ETC. IN ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE LISTED FOR A MINIMUM OF 75 DEGREE C CONDUCTORS. TERMINATIONS LISTED FOR ONLY 60 DEGREE C CONDUCTORS ARE NOT PERMITTED.
G. COORDINATE WITH ALL OTHER TRADES TO PROVIDE ALL CODE-REQUIRED CLEARANCES AROUND ELECTRICAL CONNECTION AND CONTROLS COMPARTMENTS IN ALL EQUIPMENT WHICH IS PROVIDED BY OTHERS AND CONNECTED BY THE ELECTRICAL CONTRACTOR SUCH AS, BUT NOT LIMITED TO, HVAC EQUIPMENT.
H. REFER TO KITCHEN EQUIPMENT CONSULTANT DRAWINGS FOR EXACT ROUGH-IN LOCATIONS, MOUNTING HEIGHTS, AND ADDITIONAL REQUIREMENTS FOR ALL EQUIPMENT TAGS SHOWN ON THIS SHEET, INCLUDING KITCHEN EQUIPMENT CONNECTIONS, ADS EQUIPMENT, AND POS OUTLET LOCATIONS.
I. REFER TO ELECTRICAL KITCHEN EQUIPMENT SCHEDULE, SHEET E601, FOR EQUIPMENT CONNECTION INFORMATION FOR ALL EQUIPMENT WITH TAGS SHOWN IN RECTANGLES ON THIS SHEET.
J. ALL EXPOSED POWER CONDUIT SHALL BE RIGID TYPE CONDUIT AND ROUTED PARALLEL TO BUILDING LINES. INSTALL ALL CONDUITS PLUMB AND LEVEL WHERE EXPOSED TO VIEW.
K. INSTALL CONDUITS FOR WALK-IN COOLER/FREEZER LIGHTS AND EVAPORATOR COILS ABOVE THE WALK-IN BOXES AND CONNECT TO EACH DEVICE FROM ABOVE. SEAL CONDUIT PENETRATIONS WITH SILICON SEALANT AND SEAL-OFF INTERIOR OF CONDUITS WITH EXPANDING FOAM SEALANT.
L. OWNER'S REQUIRED VENDOR FOR NEW PANELBOARDS AND ANY NEW ELECTRICAL EQUIPMENT IS GRAYBAR. OWNER'S REQUIRED PANELBOARD MANUFACTURER IS SQUARE D. GRAYBAR CONTACT INFORMATION:
KYRA COOPER – EMAIL: KYRA.COOPER@GRAYBAR.COM
LOUIS MIER – EMAIL: LOUIS.MIER@GRAYBAR.COM
JALEN KONOPKA – EMAIL: JALEN.KONOPKA@GRAYBAR.COM

KEYED NOTES:

1. PROVIDE RECEPTACLES WITH WEATHERPROOF WHILE IN-USE COVERS, IN AREA NOTED.
2. PROVIDE RECEPTACLE FOR DOORBELL CHIME RECEIVER. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN. SEE SHEET E102 FOR ADDITIONAL INFORMATION.
3. PROVIDE (2) LEVITON #TS635-W USB CHARGING RECEPTACLES, OR EQUAL, UNDER SAME FACEPLATE EMPLOYEE TIME CLOCK SYSTEM. RECEPTACLES TO BE MOUNTED DIRECTLY ABOVE TIME CLOCK MOUNTING BRACKET IN PORTRAIT ORIENTATION.
4. PROVIDE ALL WIRING AND COMPONENTS INDICATED AS FIELD WIRING IN THE HOOD CONTROL PANEL WIRING DIAGRAM. REFERENCE MANUFACTURER'S WIRING DIAGRAMS FOR CONNECTIONS TO HOOD LIGHTS AND CONTROLS, EXHAUST AND SUPPLY FANS, GAS SOLENOID SHUTOFF, SHUNT TRIP CIRCUIT BREAKERS, AND HOOD FIRE SUPPRESSION SYSTEM. VERIFY AND COORDINATE ALL REQUIREMENTS WITH THE HOOD CONTROL PANEL MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
5. INTERLOCK GREASE HOOD FIRE SUPPRESSION SYSTEM WITH FIRE ALARM SYSTEM SUCH THAT FIRE SUPPRESSION SYSTEM ACTIVATION ACTIVATES THE FIRE ALARM SYSTEM. COORDINATE EXACT LOCATION OF THE GREASE HOOD FIRE SUPPRESSION SYSTEM CONTROL PANEL WITH THE OWNER AND FIRE MARSHAL PRIOR TO ROUGH-IN.
6. PROVIDE RECEPTACLE ALIGNED WITH ADJACENT DATA OUTLET FOR SMART SAFE. REFER TO OFFICE ELEVATIONS ON ARCHITECTURAL SHEETS FOR EXACT LOCATION.
7. PROVIDE QUADRUPLEX ISOLATED GROUND RECEPTACLES STACKED VERTICALLY BEHIND THE IT RACK. REFER TO OFFICE ELEVATIONS ON ARCHITECTURAL SHEETS FOR EXACT LOCATIONS.
8. PROVIDE RECEPTACLE ALIGNED WITH ADJACENT DATA OUTLET FOR SECURITY ALARM PANEL. REFER TO OFFICE ELEVATIONS ON ARCHITECTURAL SHEETS FOR EXACT LOCATION.
9. COORDINATE FINAL LOCATION OF DISCONNECT WITH OWNER PRIOR TO ROUGH-IN. LOCATE WITHIN SIGHT OF APPLIANCE PER N.E.C. 422.31(C).
10. PROVIDE CONNECTION TO JUNCTION BOX ON WALK-IN COOLER/FREEZER FOR LIGHTS, DOOR HEATER, AND VENT HEATER AS REQUIRED. INSTALL LIGHT FIXTURES SHIPPED LOOSE WITH COOLER/FREEZER AND COMPLETE CONNECTION.
11. COORDINATE INTERCONNECTION AND CONTROL CABLING REQUIREMENTS BETWEEN CONDENSER AND EVAPORATOR WITH EQUIPMENT SUPPLIER.
12. INSTALL RECEPTACLE AS HIGH AS POSSIBLE BELOW KIOSK TABLE.
13. INDOOR UNIT OF SPLIT-SYSTEM IS POWERED FROM OUTDOOR UNIT. PROVIDE ELECTRICAL CONNECTION BETWEEN UNITS PER MANUFACTURER REQUIREMENTS. COORDINATE ALL ELECTRICAL REQUIREMENTS, FINAL UNIT LOCATIONS, AND CIRCUIT ROUTING WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
14. PROVIDE FINAL CONNECTIONS TO WATER HEATER AND RELATED EQUIPMENT INCLUDING RECIRCULATION PUMP, AQUASTATS, AND TIME SWITCH FURNISHED BY PLUMBING CONTRACTOR. THE REQUIRED DISCONNECTING MEANS SHALL CONSIST OF PADLOCK ACCESSORY ON CIRCUIT BREAKER SERVING WATER HEATER BRANCH CIRCUIT TO LOCK CIRCUIT BREAKER IN OPEN (OFF) POSITION. COORDINATE ALL REQUIREMENTS WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
15. PROVIDE SIMPLEX RECEPTACLE IN WEATHERPROOF CAST ALUMINUM BOX FOR WALK-IN FREEZER CONDENSATE PIPING HEAT TAPE. COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

NOTE:
REFER TO KITCHEN EQUIPMENT SCHEDULE ON SHEET E620 FOR ADDITIONAL ELECTRICAL REQUIREMENTS FOR ALL DEVICE TAGS SHOWN ON THIS SHEET.

REFER TO KITCHEN EQUIPMENT ELECTRICAL ROUGH-IN PLAN, SHEET KE101, FOR DIMENSIONED ROUGH-IN LOCATIONS AND MOUNTING HEIGHTS FOR ALL DEVICE TAGS SHOWN ON THIS SHEET, INCLUDING EQUIPMENT POWER AND LOW VOLTAGE OUTLET LOCATIONS.

REFER TO KITCHEN FOOD SERVICE SPECIAL CONDITIONS PLAN FOR BEVERAGE CONDUIT REQUIREMENTS.

1 LANDLORD COMMENT:
PRIOR TO ANY WORK ON THE CONCRETE SLAB TENANT GC SHALL VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER INSIDE/UNDER-SLAB CONDITION. A GROUND PENETRATING RADAR (GPR) SURVEY IS REQUIRED PRIOR TO WORK COMMENCEMENT (NONDESTRUCTIVE VERIFICATION REQUIRED.) ANY DAMAGED OR DOWNTIME CAUSED BY TENANT'S WORK SHALL BE REPAIRED AND REIMBURSED AT TENANT'S EXPENSE.

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REVISIONS

△	DATE	DESCRIPTION
1	08/26/2026	REVISION 1

STATUS: IFC SET

OREGON ROY SCHNACKEL LICENSE No PE 0048442 STATE OF OREGON PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

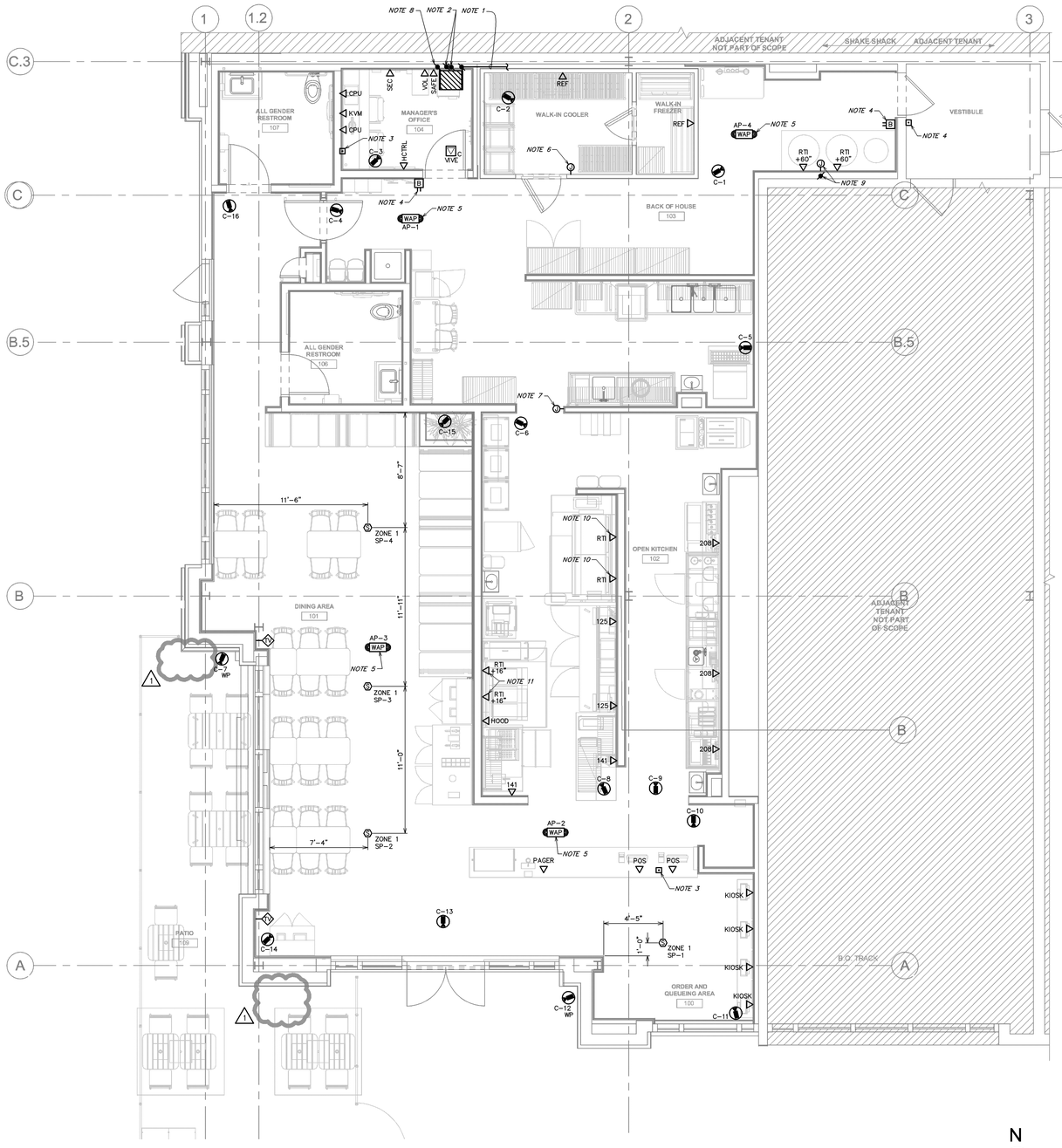
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SHEET NAME: **ELECTRICAL POWER PLAN**

DATE: 06/01/2026 | PROJECT NO.: 41354
DRAWN: MJC | SCALE: AS NOTED

SHEET NO.: **E101**

SE JOB#: 26519



1 LOW VOLTAGE SYSTEMS PLAN
SCALE: 1/4" = 1'-0"

N

SE JOB# 29019

GENERAL ELECTRICAL EXISTING CONDITIONS NOTES:

A. ANY EXISTING CONDITIONS INDICATED IN THIS SET OF DRAWINGS ARE BASED ON INFORMATION PROVIDED BY OTHERS AND POSSIBLE LIMITED FIELD VERIFICATION. ADJUST FOR ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE OWNER.
B. VISIT THE PROJECT SITE, REVIEW EXISTING CONDITIONS AGAINST THE CONTRACT DOCUMENTS, AND BECOME FAMILIAR WITH THE WORK PRIOR TO BIDDING AND START OF THE WORK. SIGNING THE CONTRACT IS AN ACKNOWLEDGEMENT THAT THE SITE VISIT HAS BEEN COMPLETED AND THE EXISTING CONDITIONS ARE ACCEPTED.
C. DEMOLISH ANY EXISTING EQUIPMENT, DEVICES, AND LUMINAIRES AS INDICATED AND/OR AS REQUIRED TO ALLOW FOR INSTALLATION AND CONSTRUCTION OF THE NEW WORK. REMOVE ALL EQUIPMENT, DEVICES, LUMINAIRES, CONDUITS, SUPPORTS, HANGERS, ETC. THAT ARE NOT SHOWN AND ARE REQUIRED TO BE REMOVED IN ORDER TO COMPLETE THE NEW WORK.
D. THE OWNER SHALL HAVE SALVAGE RIGHTS TO ANY ITEMS THAT ARE TO BE DEMOLISHED. THOSE ITEMS THAT THE OWNER WISHES TO SALVAGE SHALL BE CAREFULLY REMOVED AND STORED IN A LOCATION AS DIRECTED BY THE OWNER. ALL OTHER ITEMS OF DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
E. PROVIDE BLANK COVERPLATES FOR EXISTING EMPTY DEVICE BOXES OR JUNCTION BOXES THAT MUST REMAIN, SUCH AS FOR CIRCUITS THAT MUST BE MAINTAINED TO OTHER AREAS.
F. REMOVE ALL ABANDONED TELECOMMUNICATIONS CABLING.

GENERAL ELECTRICAL NOTES:

A. WHERE THE MECHANICAL DESIGN UTILIZES A PLENUM RETURN AIR CEILING DESIGN, ALL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE PLENUM RETURN CEILING MUST MEET THE FLAME SPREAD AND SMOKE DEVELOPED RATINGS OF 25/50 AND BE APPROVED FOR USE IN PLENUM RETURN CEILINGS. COORDINATE PLENUM CEILING LOCATIONS WITH THE MECHANICAL CONTRACTOR.
B. COORDINATE ALL DEVICE LOCATIONS AND CIRCUIT ROUTING WITHIN ANY MILLWORK WITH MILLWORK VENDOR PRIOR TO ROUGH-IN.
C. COORDINATE THE CONNECTIONS OF ALL EQUIPMENT PROVIDED BY OTHERS WITH THE CONTRACTOR PROVIDING THE EQUIPMENT PRIOR TO ROUGH-IN. THIS INCLUDES, BUT IS NOT LIMITED TO, MECHANICAL EQUIPMENT, KITCHEN EQUIPMENT, AUDIO/VISUAL EQUIPMENT, FIRE SUPPRESSION SYSTEM EQUIPMENT, FIRE ALARM EQUIPMENT, ETC. PROVIDE THE APPROPRIATE DISCONNECTING MEANS FOR, AND TO MAKE THE FINAL CONNECTION TO, ANY HARDWIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPRIATE CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS NOT EQUIPPED WITH AN INTEGRAL CORD AND PLUG.
D. ALL EQUIPMENT, DEVICES, AND LUMINAIRES SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED. EQUIPMENT MOUNTED OUTDOORS SHALL BE NEMA 3R. DEVICES MOUNTED IN DAMP OR WET LOCATIONS SHALL BE WEATHERPROOF. RECEPTACLES RATED 15- OR 20-AMPS AND 120 VOLTS WHICH ARE LOCATED IN DAMP OR WET LOCATIONS SHALL BE GFCI PROTECTED AND EQUIPPED WITH A SUITABLE WEATHERPROOF COVERPLATE (WHILE-IN-USE IN WET LOCATIONS).
E. REFER TO RESPONSIBILITY MATRIX ON SHEET E001 FOR ADDITIONAL REQUIREMENTS.
F. COORDINATE WITH SHAKE SHACK I.T. DEPARTMENT FOR INSTALLATION AND TERMINATION OF LOW VOLTAGE CABLING.
G. ALL LOW VOLTAGE CABLES TO BE CATSE PLENUM-RATED. PROVIDE CONDUIT PATHWAYS FOR LOW VOLTAGE CABLING ABOVE HARD CEILINGS.
H. ALL SPEAKER WIRE TO BE 16-GAUGE AWG. CABLE SHALL NOT BE IN CONDUIT UNLESS REQUIRED BY CODE.
I. PROVIDE DATA OUTLET BOXES WITH A DEDICATED 1" CONDUIT STUB-UP WITH PULL STRING CONCEALED TO ACCESSIBLE CEILING SPACE AT LOCATIONS AS INDICATED ON THE DRAWINGS.
J. GENERAL CONTRACTOR RESPONSIBLE FOR COORDINATING CONDUIT/INFRASTRUCTURE WORK FOR PATHWAYS FROM BASE BUILDING MAIN POINT OF CONNECTION TO SHAKE SHACK MANAGER'S OFFICE.
K. WHEN RIGID CONDUIT IS REQUIRED, ALL EXPOSED CONDUIT SHALL BE RIGID TYPE CONDUIT AND ROUTED PARALLEL TO BUILDING LINES. INSTALL ALL CONDUITS PLUMB AND LEVEL WHERE EXPOSED TO VIEW.
L. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF ALL THERMOSTATS, TEMPERATURE, AND HUMIDITY SENSORS. PROVIDE CONDUIT AND BACK BOX SIZE AS REQUIRED FOR ALL HVAC CONTROLS. CONDUIT FOR LOW VOLTAGE CONTROLS SHALL TERMINATE AT STRUCTURE ABOVE WITH BUSHING. CONDUIT SYSTEM FOR LINE VOLTAGE CONTROLS SHALL ROUTE CONTINUOUS TO EQUIPMENT SERVED.
M. PROVIDE (1) 3/4" SLEEVE FOR EACH EXTERIOR DEVICE TO INSIDE OF SPACE.
N. PROVIDE (1) 1" EMT CONDUIT FROM ABOVE THE I.T RACK TO ROOF FOR SATELLITE DISH. VERIFY WITH SHAKE SHACK IF REQUIRED.
O. PROVIDE CONDUIT, BUSHINGS, SLEEVES, AND PROTECTIVE GROMMETS FOR ALL DATA CABLING AS REQUIRED.
P. PROVIDE ALL-THREAD AT EACH CAMERA AND SPEAKER LOCATION SHOWN ON PLAN FROM CEILING DECK TO 6" BELOW LIGHT TRACK HEIGHT. (REFER TO ARCHITECTURAL PLANS FOR LIGHT TRACK HEIGHT). AT CAMERA LOCATIONS, PROVIDE (1) 4" ROUND/OCTAGON JUNCTION BOX ATTACHED TO BOTTOM OF ALL-THREAD.
Q. ALL DATA CABLES TO BE HOME RUNS FROM THE DEVICE TO THE MANAGER'S OFFICE WITH THE EXCEPTION OF SPEAKERS THAT SHOULD BE DAISY-CHAINED TOGETHER AS SHOWN ON THE PLAN.
R. PROVIDE SERVICE LOOPS SPOOLED AND HUNG NEATLY AT BOTH ENDS OF EACH CABLE 3'-0" AT THE FINAL DEVICE HEIGHT AND 3'-0" AT THE I.T RACK, UNLESS NOTED OTHERWISE.
S. ALL LOW VOLTAGE CABLES TO BE TAGGED AND CLEARLY LABELED ON BOTH ENDS WITH A P-TOUCH OR OTHER PRINTED LABEL.
T. PROVIDE ALL EMPTY CONDUITS WITH PULL STRINGS.

KEYED NOTES:

1. PROVIDE (2) 2" CONDUITS FOR INTERNET AND CABLE TV FROM UTILITY POINT OF CONNECTION AT BUILDING DISTRIBUTION TO ABOVE CEILING IN MANAGER'S OFFICE, UNLESS PROVIDED BY LANDLORD.
2. PROVIDE (2) 3" CONDUITS ABOVE THE I.T RACK TO ABOVE THE CEILING FOR CABLE MANAGEMENT. ROUTE ALL DATA CABLES THROUGH ONE OF THE 3" CONDUITS AND ALL OTHER CABLES THROUGH THE OTHER 3" CONDUITS. PROVIDE SLEEVES THROUGH WALL ABOVE CEILINGS AT FULL HEIGHT WALLS.
3. ADT TO PROVIDE WIRELESS PANIC BUTTON. COORDINATE ALL REQUIREMENTS WITH MANUFACTURER AND SHAKE SHACK I.T. MANAGER PRIOR TO ROUGH-IN.
4. PROVIDE WIRELESS DOORBELL CHIME (STI-3353) WITH RECEIVER (STI-3353). RECEIVER PLUGS INTO 120V RECEPTACLE, SEE SHEET E101 FOR RECEPTACLE LOCATION. MOUNT PUSH BUTTON AT BACK OF HOUSE DOOR AS INDICATED, AND COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN. PROGRAM PUSHBUTTON TO TRIGGER ALL INDOOR CHIME RECEIVERS.
5. PROVIDE DATA OUTLET FLUSH IN CEILING FOR WIRELESS ACCESS POINT. REFER TO PLANS FOR LOCATION.
6. PROVIDE JUNCTION BOX SURFACE MOUNTED INSIDE THE WALK-IN COOLER AT 6" A.F.F. FOR ALARM PANIC BUTTON. ROUTE 3/4" EMT WITH PULL-WIRE TO ABOVE CEILING IN THE MANAGER'S OFFICE FOR ALARM CABLING BY OTHERS.
7. PROVIDE FLUSH MOUNT OCTAGON BOX AT 48" A.F.F. WITH 1" CONDUIT ABOVE ACCESSIBLE CEILING FOR HOOD FIRE SUPPRESSION SYSTEM CONTRACTOR.
8. PROVIDE (1) 1" EMT CONDUIT FROM ABOVE THE I.T. RACK TO ROOF FOR DIRECTV SATELLITE DISH, IF REQUIRED. VERIFY WITH SHAKE SHACK IF REQUIRED.
9. PROVIDE CONDUIT, AS NECESSARY, AT ANY CONCEALED LOCATIONS FOR RTI SIGNAL CABLE FROM RTI FILL BOX LOCATION TO RTI SYSTEM LOCATION. SEE DETAIL 6/E501 FOR ADDITIONAL INFORMATION. VERIFY EXACT REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH IN.
10. PROVIDE LOW VOLTAGE WIRING IN MC CABLE TO SINGLE GANG BOX AT THIS POINT FOR RTI CONNECTION TO GRIDDLE, SEE DETAILS 6 AND 8/E501 FOR ADDITIONAL INFORMATION.
11. PROVIDE LOW VOLTAGE WIRING IN MC CABLE TO SINGLE GANG BOX AT THIS POINT FOR RTI CONNECTION TO FRYER, SEE DETAILS 6 AND 8/E501 FOR ADDITIONAL INFORMATION.

LOW VOLTAGE OUTLET LEGEND

NOTE THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS ARE USED

SYMBOL	CABLE REQUIREMENTS QTY	TYPE	ORIGIN	ADDITIONAL INFORMATION	NOTES
125	2	CAT 5E	IT RACK	+56" A.F.F. FOR ITEM #125 KDS	1
174	2	CAT 5E	IT RACK	+56" A.F.F. FOR ITEM #174 KDS	1
208	2	CAT 5E	IT RACK	+56" A.F.F. FOR ITEM #208 KDS	1
269	2	CAT 5E	IT RACK	+56" A.F.F. FOR ITEM #269 CARD READER	1
305	2	CAT 5E	IT RACK	+56" A.F.F. FOR ITEM #305 FUTURE KDS	1
307	2	CAT 5E	IT RACK	+56" A.F.F. FOR ITEM #307 FUTURE PRINTER	1
ANT	1	COAX (INCLUDED)	HME BASE STATION	+12'-15' A.F.G. FOR DRIVE-THRU EXTERIOR ANTENNA	8
CPU	4	CAT 5E	IT RACK	+16" A.F.F. FOR WORKSTATION	3
DM	6	CAT 5E	IT RACK	FOR DIGITAL MENU BOARDS SEE ELEVATIONS	3
DVM	1	CAT 5E	IT RACK	AS NOTED FOR DRIVE THRU CAMERA MONITOR	7
FIRE	1	CAT 5E	IT RACK	+72" A.F.F. FOR FIRE MONITORING	
HCTRL	1	CAT 5E	IT RACK	+48" AFF FOR REMOTE HOOD CONTROL	3
HDBS	1	CAT 5E	IT RACK	+70" FOR HEADSET BASE STATION	7
HOOD	1	CAT 5E	KITCHEN HOOD PANEL	IN HOOD CONTROL CABINET	
KDS	2	CAT 5E	IT RACK	IN OVERSHELF FOR KDS SYSTEM	2
KIOSK	2	CAT 5E	IT RACK	+26" A.F.F. FOR KIOSK	3
KVM	2	CAT 5E	IT RACK	+42" A.F.F. FOR KVM SWITCH	3
ONS	2	CAT 5E	IT RACK	AS NOTED FOR NOTIFICATION SCREEN	3
PAGER	2	CAT 5E	IT RACK	+26" A.F.F. FOR PAGER SYTEM	2
POS	4	CAT 5E	IT RACK	+20" A.F.F. FOR POS TERMINAL	2
REF	1	CAT 5E	IT RACK	AT EVAPORATOR FOR MONITORING	
RTI	-	-	-	AS NOTED FOR RTI SYSTEM	6
SAFE	2	CAT 5E	IT RACK	+18" A.F.F. FOR SMART SAFE	3
SEC	1	CAT 5E	IT RACK	+72" A.F.F. FOR SECURITY ALARM PANEL	3
TIME	1	CAT 5E	IT RACK	AS NOTED FOR DRIVE THRU TIMER MONITOR	7
TV	2	CAT 5E	IT RACK	+96" A.F.F. FOR WALL MOUNT TV	3
	1	COAX			
TVC	2	CAT 5E	IT RACK	AT CEILING FOR SUSPENDED T.V.	4
	1	COAX			
VIVE C	2	CAT 5E	IT RACK	AT CEILING FOR LUTRON VIVE HUB	
VOL	1	CAT 5E	IT RACK	+44" A.F.F. FOR VOLUME CONTROL	3
WAP	2	CAT 5E	IT RACK	AT CEILING FOR INTERIOR WIRELESS ACCESS POINT	5
WAP WP	2	CAT 6	IT RACK	+11'-0" A.F.G. FOR EXTERIOR WIRELESS ACCESS POINT	5,10
	1	CAT 5E	IT RACK	AT CEILING (OR SUSPENDED 6" BELOW NEARBY LIGHT FIXTURES IN DINING AREA) FOR INTERIOR SECURITY CAMERA	9
WP	1	CAT 6	IT RACK	11'-0" A.F.G. FOR EXTERIOR SECURITY CAMERA	10
	1	#16 WIRE	IT RACK	COORDINATE INTERIOR/EXTERIOR SPEAKER HEIGHTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN	

GENERAL NOTES:
A. PROVIDE 4" SQUARE BOX WITH SINGLE GANG PLASTER RING AND 3/4" EMT TO ACCESSIBLE CEILING AREA FOR ALL LOW VOLTAGE WALL OUTLETS, UNLESS NOTED OTHERWISE.
B. PROVIDE 4" OCTAGON BOX FOR ALL LOW VOTLAGE CEILING OUTLETS, UNLESS NOTED OTHERWISE.
C. MOUNTING HEIGHTS ARE TO BOTTOM OF OUTLET BOX, UNLESS NOTED OTHERWISE.

SCHEDULED NOTES:
1. REFER TO KITCHEN EQUIPMENT ROUGH-IN PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF LOW VOLTAGE OUTLETS FOR KITCHEN DATA SYSTEM.
2. LOW VOLTAGE OUTLET TO BE INSTALLED IN KITCHEN OVERSHELF ABOVE CHEF'S COUNTER. REFER TO KEC SHOP DRAWINGS FOR OUTLET LOCATIONS. PROVIDE 15' OF EXCESS CABLE FOR ALL DATA OUTLETS IN OVERSHELF.
3. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF LOW VOLTAGE OUTLETS FOR OFFICE EQUIPMENT AND TELEVISIONS. PROVIDE (1) 3/4" CONDUIT FROM THE IDF TO A SINGLE-GANG BOX AT TV LOCATION.
4. PROVIDE DATA OUTLET AT STRUCTURE ABOVE FOR CEILING MOUNTED TELEVISION. ROUTE CABLES CONCEALED DOWN INSIDE OF TELEVISION SUPPORT TUBE TO TELEVISION. PROVIDE (1) 3/4" CONDUIT FROM THE IDF TO A SINGLE-GANG BOX AT TV LOCATION.
5. PROVIDE DATA OUTLET FOR WIRELESS ACCESS POINT AT SAME ELEVATION AS LIGHTING FIXTURES.
6. CABLING PROVIDED BY OWNER'S VENDOR. PROVIDE OUTLET BOX WITH BLANK COVER PLATE, CONDUIT, AND PULL STRING TO ACCESSIBLE CEILING AREA PER GENERAL NOTE "A".
7. REFER TO ELEVATION DETAILS ON KITCHEN DRAWINGS FOR MORE INFORMATION.
8. INSTALL EXTERIOR ANTENNA FOR DRIVE THRU COMMUNICATIONS AND CONNECT TO DRIVE THRU COMMS BASE STATION WITH SUPPLIED CABLE.
9. VERIFY FINAL LOCATIONS AND AIMING OF ALL CAMERAS WITH CAMERA AIMING PLAN.
10. PROVIDE WEATHERPROOF JUNCTION BOX WITH 3/4" CONDUIT STUBBED INTO TENANT SPACE.

LOW VOLTAGE DEVICE COLOR SCHEDULE

AREA	CAMERAS	SPEAKERS
BACK OF HOUSE/KITCHEN (WHITE CEILING)	WHITE	WHITE
FRONT OF HOUSE/DINING (LIGHT CEILING)	WHITE	WHITE
EXTERIOR/PATIO	BLACK	BLACK

GENERAL NOTE:
A. EXPOSED LOW VOLTAGE CABLING SHALL MATCH THE DEVICE COLORS SPECIFIED ABOVE.

NOTE:
REFER TO KITCHEN EQUIPMENT ELECTRICAL ROUGH-IN PLAN, SHEET KE101, FOR DIMENSIONED ROUGH-IN LOCATIONS, MOUNTING HEIGHTS, AND ADDITIONAL REQUIREMENTS FOR LOW VOLTAGE OUTLETS LOCATED IN THE KITCHEN AND FOOD SERVICE AREAS.

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REVISIONS

△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0048442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

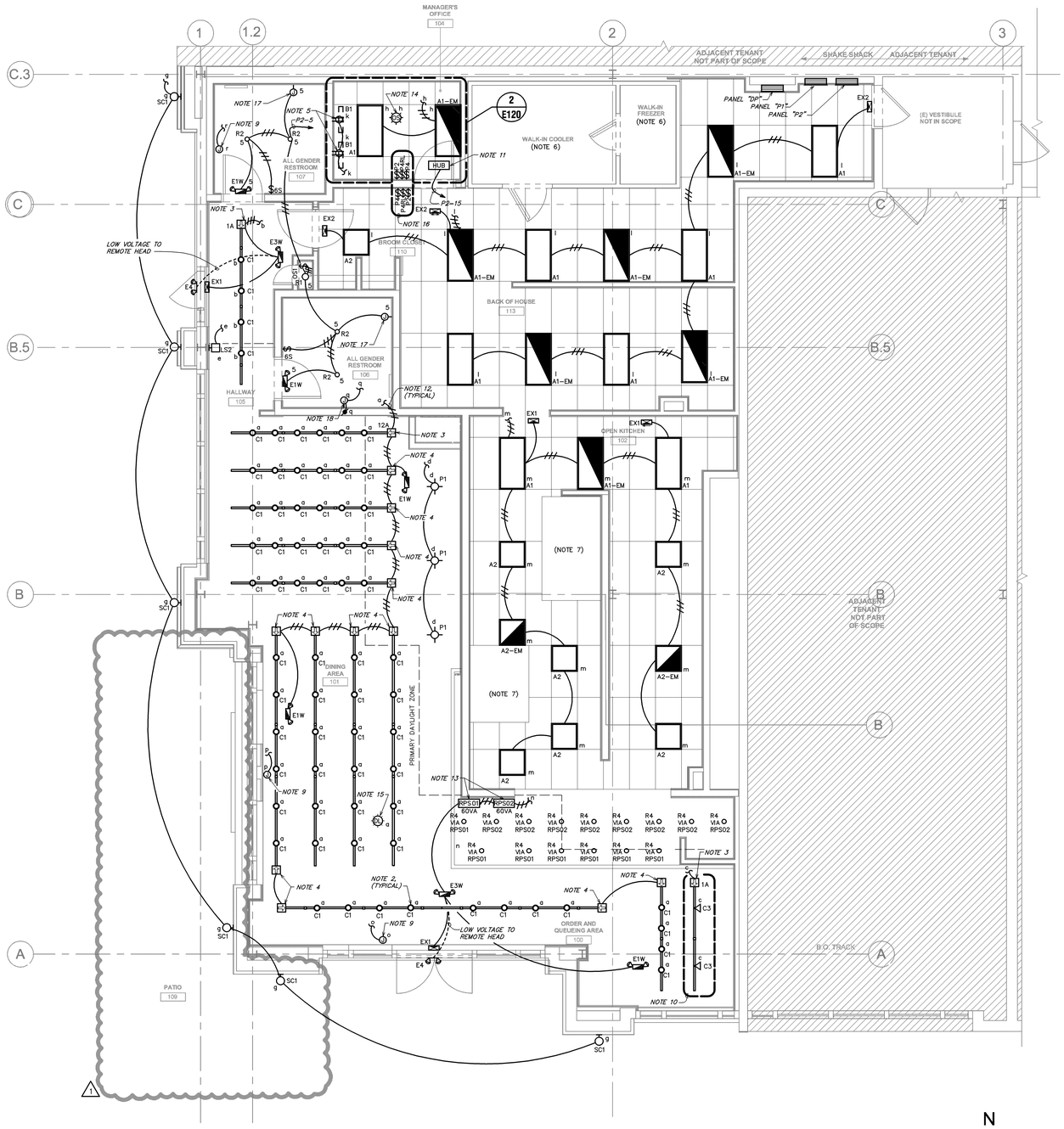
FIELD VERIFICATION:
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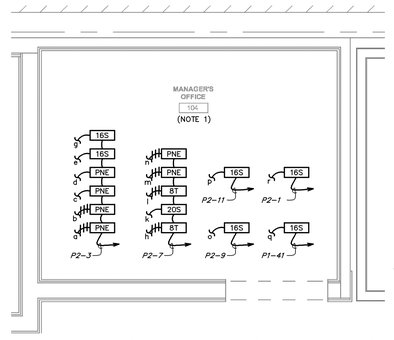
SHEET NAME: **LOW VOLTAGE SYSTEMS PLAN**

DATE: 06/01/2026 | PROJECT NO.: 41354
DRAWN: MJC | SCALE: AS NOTED

SHEET NO.: **E102**



1 ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



2 ENLARGED ELECTRICAL LIGHTING PLAN - LOAD CONTROLLERS
SCALE: 1/2" = 1'-0"

GENERAL ELECTRICAL EXISTING CONDITIONS NOTES:

A. ANY EXISTING CONDITIONS INDICATED IN THIS SET OF DRAWINGS ARE BASED ON INFORMATION PROVIDED BY OTHERS AND POSSIBLE LIMITED FIELD VERIFICATION. ADJUST FOR ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE OWNER.
B. VISIT THE PROJECT SITE, REVIEW EXISTING CONDITIONS AGAINST THE CONTRACT DOCUMENTS, AND BECOME FAMILIAR WITH THE WORK PRIOR TO BIDDING AND START OF THE WORK. SIGNING THE CONTRACT IS AN ACKNOWLEDGEMENT THAT THE SITE VISIT HAS BEEN COMPLETED AND THE EXISTING CONDITIONS ARE ACCEPTED.
C. DEMOLISH ANY EXISTING EQUIPMENT, DEVICES, AND LUMINAIRES AS INDICATED AND/OR AS REQUIRED TO ALLOW FOR INSTALLATION AND CONSTRUCTION OF THE NEW WORK. REMOVE ALL EQUIPMENT, DEVICES, LUMINAIRES, CONDUITS, SUPPORTS, HANGERS, ETC. THAT ARE NOT SHOWN AND ARE REQUIRED TO BE REMOVED IN ORDER TO COMPLETE THE NEW WORK.
D. ELECTRICAL CIRCUITS THAT ARE TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY. CONDUCTORS SHALL BE REMOVED FROM THE ITEM TO BE DEMOLISHED TO THE SOURCE OVERCURRENT DEVICE. RACEWAYS WHICH ARE INSTALLED IN OR BELOW FLOORS OR WITHIN WALLS MAY BE ABANDONED, BUT ALL OVERHEAD OR EXPOSED RACEWAYS SHALL BE REMOVED. EXPOSED RACEWAYS TO BE ABANDONED SHALL BE REMOVED AND SHALL BE CUT OR CHISELED AT LEAST 2" INTO THE WALL OR FLOOR AND THE OPENING GROUTED SMOOTH.
E. THE OWNER SHALL HAVE SALVAGE RIGHTS TO ANY ITEMS THAT ARE TO BE DEMOLISHED. THOSE ITEMS THAT THE OWNER WISHES TO SALVAGE SHALL BE CAREFULLY REMOVED AND STORED IN A LOCATION AS DIRECTED BY THE OWNER. ALL OTHER ITEMS OF DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
F. PROVIDE TEMPORARY CIRCUITS AND CONNECTIONS TO EQUIPMENT, LUMINAIRES, OR DEVICES IN AREAS OF THE FACILITY THAT ARE TO REMAIN IN OPERATION AS REQUIRED TO MAINTAIN THOSE AREAS IN COMPLETE OPERATION.
G. MAINTAIN CONTINUITY OF EXISTING CIRCUITS AS REQUIRED TO PROVIDE POWER TO REMAINING EQUIPMENT, DEVICES, AND LUMINAIRES THAT ARE NOT BEING REMOVED.
H. PROVIDE BLANK COVERPLATES FOR EXISTING EMPTY DEVICE BOXES OR JUNCTION BOXES THAT MUST REMAIN, SUCH AS FOR CIRCUITS THAT MUST BE MAINTAINED TO OTHER AREAS.
I. WHERE ELECTRICAL DISTRIBUTION EQUIPMENT (PANELBOARDS, SWITCHBOARDS, ETC.,) IS TO BE REMOVED OR RELOCATED, ALL EXISTING CIRCUITS THAT ARE TO REMAIN SHALL BE RECONNECTED TO NEW OR RELOCATED ELECTRICAL DISTRIBUTION EQUIPMENT TO MAINTAIN THE CONTINUITY OF THOSE EXISTING CIRCUITS. INTERCEPT AND EXTEND ALL EXISTING CIRCUITS AS REQUIRED.

GENERAL ELECTRICAL NOTES:

A. WHERE THE MECHANICAL DESIGN UTILIZES A PLENUM RETURN AIR CEILING DESIGN, ALL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE PLENUM RETURN CEILING MUST MEET THE FLAME SPREAD AND SMOKE DEVELOPED RATINGS OF 25/50 AND BE APPROVED FOR USE IN PLENUM RETURN CEILINGS. COORDINATE PLENUM CEILING LOCATIONS WITH THE MECHANICAL CONTRACTOR. LUMINAIRES THAT ARE MANUFACTURED WITH A METAL HOUSING MEET THIS REQUIREMENT AND ARE NOT REQUIRED TO BE PLENUM RATED UNLESS INDICATED OTHERWISE.
B. COORDINATE ALL DEVICE LOCATIONS AND CIRCUIT ROUTING WITHIN ANY MILLWORK WITH MILLWORK VENDOR PRIOR TO ROUGH-IN.
C. COORDINATE THE CONNECTIONS OF ALL EQUIPMENT PROVIDED BY OTHERS WITH THE CONTRACTOR PROVIDING THE EQUIPMENT PRIOR TO ROUGH-IN. THIS INCLUDES, BUT IS NOT LIMITED TO, MECHANICAL EQUIPMENT, KITCHEN EQUIPMENT, AUDIO/VISUAL EQUIPMENT, FIRE SUPPRESSION SYSTEM EQUIPMENT, FIRE ALARM EQUIPMENT, ETC. PROVIDE THE APPROPRIATE DISCONNECTING MEANS FOR, AND TO MAKE THE FINAL CONNECTION TO, ANY HARDWIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPRIATE CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS NOT EQUIPPED WITH AN INTEGRAL CORD AND PLUG.
D. SEE PANEL SCHEDULES FOR INFORMATION ON CIRCUITS THAT ARE TO BE ROUTED THROUGH CONTACTORS OR RELAYS FOR CONTROL.
E. ALL EQUIPMENT, DEVICES, AND LUMINAIRES SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED. EQUIPMENT MOUNTED OUTDOORS SHALL BE NEMA 3R. DEVICES MOUNTED IN DAMP OR WET LOCATIONS SHALL BE WEATHERPROOF. RECEPTACLES RATED 15- OR 20-AMPS AND 120 VOLTS WHICH ARE LOCATED IN DAMP OR WET LOCATIONS SHALL BE GFCI PROTECTED AND EQUIPPED WITH A SUITABLE WEATHERPROOF COVERPLATE (WHILE-IN-USE IN WET LOCATIONS).
F. ALL LUGS, TERMINALS, ETC. IN ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE LISTED FOR A MINIMUM OF 75 DEGREE C CONDUCTORS. TERMINATIONS LISTED FOR ONLY 60 DEGREE C CONDUCTORS ARE NOT PERMITTED.
G. CIRCUITS SERVING EMERGENCY LIGHTING EQUIPMENT SUCH AS EMERGENCY BATTERIES SHALL NOT SHARE A NEUTRAL (SHALL NOT BE PART OF A MULTIWIRE BRANCH CIRCUIT) WITH ANY OTHER CIRCUIT. PROVIDE A SEPARATE NEUTRAL FOR EVERY CIRCUIT THAT SERVES EMERGENCY LIGHTING EQUIPMENT.
H. ALTHOUGH NOT SPECIFICALLY SHOWN, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED LOW VOLTAGE WIRING AND DATA CABLING, PER THE MANUFACTURER'S RECOMMENDATIONS, FOR A COMPLETE, FUNCTIONAL LIGHTING CONTROL SYSTEM.
I. ALTHOUGH NOT SPECIFICALLY SHOWN, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED WIRING AND DATA CABLING, INCLUDING ALL 0-10V CONTROL WIRING WHERE APPLICABLE, PER THE MANUFACTURER'S RECOMMENDATIONS FOR A COMPLETE, FUNCTIONAL DIMMING SYSTEM.
J. REFER TO LIGHTING CONTROL DEVICE SCHEDULE ON SHEET E620 FOR OCCUPANCY SENSOR TYPES AND CONTROL INFORMATION.
K. REFER TO LUMINAIRE SCHEDULE ON SHEET E620 FOR LIGHT FIXTURE TYPES AND REQUIREMENTS.
L. REFER TO ARCHITECTURAL DRAWINGS AND ELEVATIONS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHT FIXTURES. COORDINATE DIMMER/SWITCH BANK LOCATION SWITH ARCHITECT PRIOR TO ROUGH-IN.
M. PROVIDE AIMING OF ALL ADJUSTABLE LIGHT FIXTURES AFTER SETUP IS COMPLETE TO EVENLY ILLUMINATE TABLE SURFACES, SIGNAGE, DECOR, AND EMERGENCY EGRESS PATHS. COORDINATE AIMING OF NORMAL FIXTURES WITH ARCHITECT. REFER TO ARCHITECTURAL EGRESS PATH PLAN FOR AIMING OF EMERGENCY LIGHT FIXTURES.

KEYED NOTES:

1. LIGHTING LOAD CONTROLLERS ARE SHOWN IN THIS AREA FOR CLARITY. LOAD CONTROLLERS CONNECTED TO WIRELESS ROOM CONTROL SENSORS (DAYLIGHT SENSORS, OCCUPANCY SENSORS, ETC.) SHALL BE INSTALLED WITHIN 30' OF THE RESPECTIVE SENSOR, AT AN ACCESSIBLE INDOOR CEILING LOCATION. ALL OTHER LOAD CONTROLLERS TO BE INSTALLED IN THIS AREA, ABOVE CEILING HEIGHT, UNLESS OTHERWISE NOTED.
2. AIM ALL TRACK HEADS STRAIGHT DOWNWARD (90 DEGREES TO THE FLOOR) UNLESS INDICATED OTHERWISE. ALL TRACK HEADS SHOULD BE CENTERED OVER TABLES WHERE POSSIBLE.
3. PROVIDE LIGHTING TRACK POWER END FEED CURRENT LIMITER DEVICE WITH RATING AS SHOWN. REFER TO LUMINAIRE SCHEDULE, SHEET E620 FOR COMPLETE MODEL NUMBER.
4. PROVIDE LIGHTING TRACK POWER END FEEDS WITH APPROPRIATE POLARITY TO CONNECT NON-ADJOINING TRACK LIGHTING SECTIONS AS SHOWN.
5. PROVIDE RECEPTACLES FOR UNDER-CABINET LIGHTS INSTALLED IMMEDIATELY BELOW LOWEST SHELF. PROVIDE FINAL CONNECTION TO FIXTURES WITH CORD AND PLUG CONNECTIONS. REFER TO OFFICE ELEVATIONS ON ARCHITECTURAL SHEETS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS.
6. INSTALL LIGHT FIXTURES SHIPPED LOOSE WITH WALK-IN COOLER. REFER TO POWER PLANS FOR CIRCUIT CONTINUATION.
7. LIGHT FIXTURES FURNISHED WITH EXHAUST HOOD. EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR PROVIDING SUFFICIENT ILLUMINATION TO COMPLY WITH LOCAL REQUIREMENTS. REFER TO CAPTIVE AIRE WIRING DIAGRAMS FOR CONNECTION INFORMATION AND OPTIONS. FINAL CONNECTION.
8. NOT USED.
9. PROVIDE WEATHERPROOF IGNITION BOX, DISCONNECT SWITCH AND RELATED CIRCUITRY AT ROOF PARAPET OR OTHER ACCESSIBLE LOCATION AS DIRECTED BY OWNER, FOR CONNECTION OF STOREFRONT SIGNAGE. COORDINATE REQUIREMENTS WITH OWNER AND SIGN INSTALLER PRIOR TO ROUGH-IN AND ADJUST ELECTRICAL PROVISIONS AS NECESSARY. PROVIDE CONCEALED CONDUIT THROUGH WALL FOR CONNECTION TO SIGN AND CONCEAL CONDUIT FROM CUSTOMER VIEW.
10. AIM ALL TRACK HEADS IN THIS AREA TOWARD THE BOTTOM HALF OF THE MENU BOARD(S). FIXTURES SHOULD BE AIMED TO MINIMIZE HOT SPOTS AND ENSURE EVEN ILLUMINATION.
11. LUTRON VIVE STARTER HUB. PROVIDE WITH FLUSH MOUNT ADAPTER, AND PROVIDE CONNECTION TO LOW VOLTAGE POWER SUPPLY. VERIFY EXACT ELECTRICAL REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN. VERIFY EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. SEE LIGHTING CONTROL DEVICE SCHEDULE ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE LUTRON ONE-LINE DIAGRAMS SHEETS E621, E622, E623, AND E624 FOR CONTROL CONFIGURATION.
12. CONNECT CIRCUIT VIA LOAD CONTROLLER(S) LOCATED IN MANAGER'S OFFICE. LOWERCASE LETTERS ADJACENT TO FIXTURES INDICATE CORRESPONDING LOAD CONTROLLER. SEE 2/E120 FOR ADDITIONAL INFORMATION. SEE LUTRON ONE-LINE DIAGRAMS SHEETS E621, E622, E623, AND E624 FOR CONTROL CONFIGURATION.
13. INSTALL THIS LUMINAIRE'S REMOTE LOW VOLTAGE LIGHTING TRANSFORMER IN AN INCONSPICUOUS, ACCESSIBLE LOCATION AND PROVIDE FINAL CONNECTION TO LUMINAIRE. COORDINATE MOUNTING LOCATION OF REMOTE LOW VOLTAGE LIGHTING TRANSFORMER WITH OWNER PRIOR TO ROUGH-IN. THE LENGTH OF CONDUCTORS BETWEEN REMOTE LOW VOLTAGE LIGHTING TRANSFORMER AND ASSOCIATED LUMINAIRE SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS FOR MAXIMUM CONDUCTOR LENGTH.
14. WIRELESS CEILING OCCUPANCY SENSOR. SEE LIGHTING CONTROL DEVICE SCHEDULE ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE LUTRON ONE-LINE DIAGRAMS SHEETS E621, E622, E623, AND E624 FOR CONTROL CONFIGURATION.
15. WIRELESS CEILING MOUNT DAYLIGHT SENSOR. SEE LIGHTING CONTROL DEVICE SCHEDULE ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE LUTRON ONELINE DIAGRAM SHEETS E621, E622, E623, AND E624 FOR CONTROL CONFIGURATION.
16. LUTRON PICO WIRELESS CONTROL WALL STATION. PROVIDE LOW-VOLTAGE RING FOR WALL STATION LOCATIONS. ALL LOCAL WALL STATIONS ARE EXPECTED TO BE BATTERY POWERED WITH NO COPPER AND CONDUIT ROUGH IN. VERIFY EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. SEE LUTRON CONTROL STATION DETAILS ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE LIGHTING CONTROL DEVICE SCHEDULE ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE LUTRON ONE-LINE DIAGRAMS SHEETS E621, E622, E623, AND E624 FOR CONTROL CONFIGURATION.
17. PROVIDE FINAL CONNECTION TO LIT MIRROR CENTERED ABOVE SINK. REFER TO RESTROOM ELEVATIONS ON SHEET A402 FOR ADDITIONAL INFORMATION AND CONNECT TO RESTROOM LIGHTING CIRCUIT FOR CONTROL. VERIFY EXACT ELECTRICAL REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN.
18. PROVIDE FINAL CONNECTION TO LED DRIVER(S) ABOVE CEILING FOR INTERIOR ILLUMINATED DECOR SIGNAGE. PROVIDE CONDUIT(S) WITH PULL STRING CONCEALED IN WALL FROM LED DRIVERS TO GROMMET AT SIGNAGE CONNECTION POINT(S). REFER TO INTERIOR ELEVATIONS ON SHEET A210/A211 FOR EXACT LOCATION AND MOUNTING HEIGHT.

NOTE
REFER TO ARCHITECTURAL RCP FOR EXACT DIMENSIONED LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES.

LANDLORD COMMENT:
STOREFRONT SIGNAGE, STOREFRONT ENTRY LIGHTS, PATIO LIGHTS, SHOW WINDOW LIGHTS AND SHOW WINDOW RECEPTACLES TO BE ON 24-HOUR/ 7-DAY TIME CLOCK.

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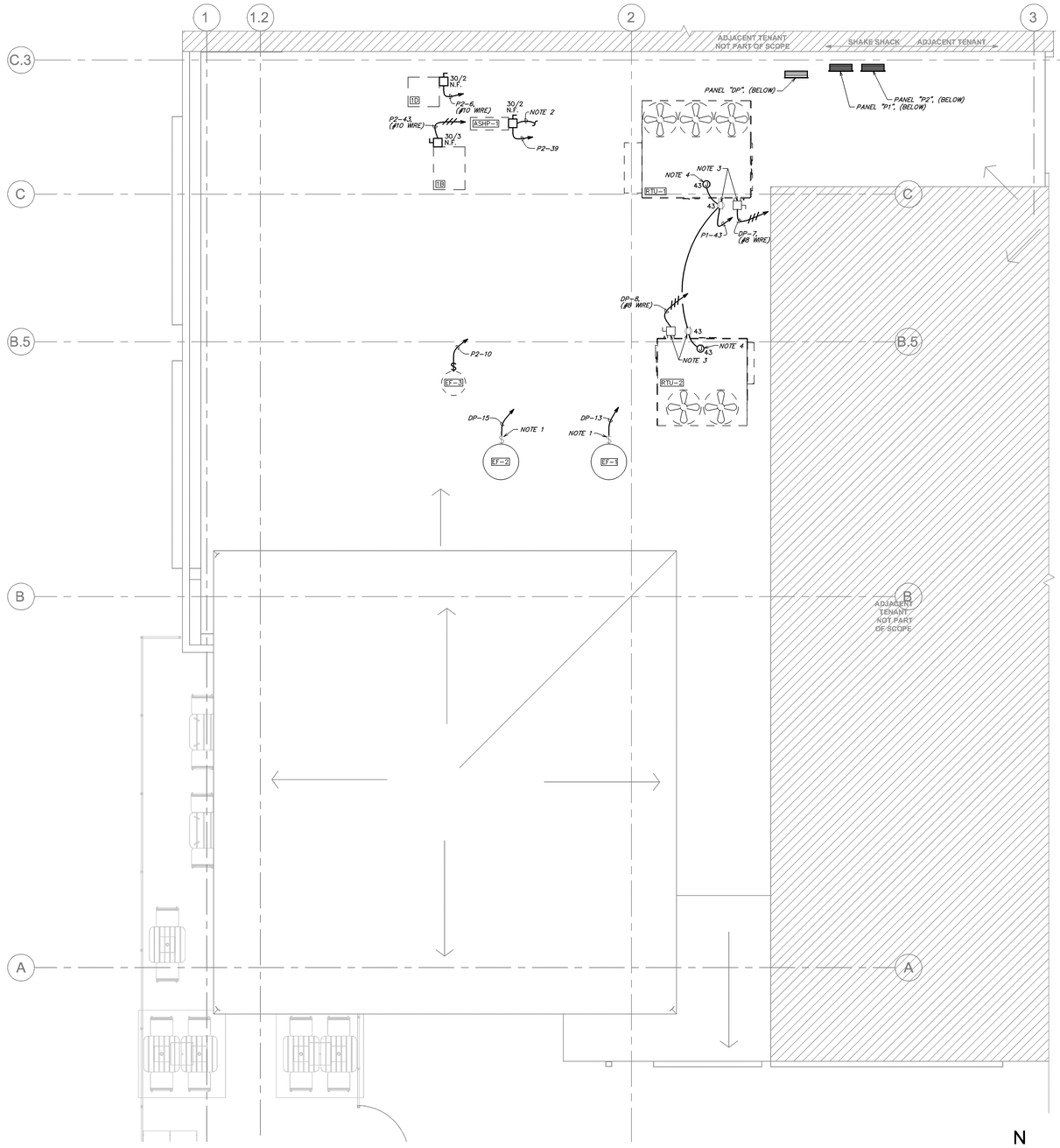
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SHEET NAME:
ELECTRICAL LIGHTING PLAN

DATE: 08/01/2026
PROJECT NO.: 41354
DRAWN: MJC
SCALE: AS NOTED

SHEET NO.:
E120

SE_JOB# 26519



1 ELECTRICAL ROOF PLAN
SCALE: 1/4" = 1'-0"

IE JOB#: 250519

GENERAL ELECTRICAL EXISTING CONDITIONS NOTES:

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E. THE OWNER SHALL HAVE SALVAGE RIGHTS TO ANY ITEMS THAT ARE TO BE DEMOLISHED. THOSE ITEMS THAT THE OWNER WISHES TO SALVAGE SHALL BE CAREFULLY REMOVED AND STORED IN A LOCATION AS DIRECTED BY THE OWNER. ALL OTHER ITEMS OF DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
F. PROVIDE TEMPORARY CIRCUITS AND CONNECTIONS TO EQUIPMENT, LUMINAIRES, OR DEVICES IN AREAS OF THE FACILITY THAT ARE TO REMAIN IN OPERATION AS REQUIRED TO MAINTAIN THOSE AREAS IN COMPLETE OPERATION.
G. MAINTAIN CONTINUITY OF EXISTING CIRCUITS AS REQUIRED TO PROVIDE POWER TO REMAINING EQUIPMENT, DEVICES, AND LUMINAIRES THAT ARE NOT BEING REMOVED.
H. PROVIDE BLANK COVERPLATES FOR EXISTING EMPTY DEVICE BOXES OR JUNCTION BOXES THAT MUST REMAIN, SUCH AS FOR CIRCUITS THAT MUST BE MAINTAINED TO OTHER AREAS.
I. WHERE ELECTRICAL DISTRIBUTION EQUIPMENT (PANELBOARDS, SWITCHBOARDS, ETC.,) IS TO BE REMOVED OR RELOCATED, ALL EXISTING CIRCUITS THAT ARE TO REMAIN SHALL BE RECONNECTED TO NEW OR RELOCATED ELECTRICAL DISTRIBUTION EQUIPMENT TO MAINTAIN THE CONTINUITY OF THOSE EXISTING CIRCUITS. INTERCEPT AND EXTEND ALL EXISTING CIRCUITS AS REQUIRED.

GENERAL ELECTRICAL NOTES:

A. COORDINATE THE CONNECTIONS OF ALL EQUIPMENT PROVIDED BY OTHERS WITH THE CONTRACTOR PROVIDING THE EQUIPMENT PRIOR TO ROUGH-IN. THIS INCLUDES, BUT IS NOT LIMITED TO, MECHANICAL EQUIPMENT, KITCHEN EQUIPMENT, AUDIO/VISUAL EQUIPMENT, FIRE SUPPRESSION SYSTEM EQUIPMENT, FIRE ALARM EQUIPMENT, ETC. PROVIDE THE APPROPRIATE DISCONNECTING MEANS FOR, AND TO MAKE THE FINAL CONNECTION TO, ANY HARDWIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPRIATE CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS NOT EQUIPPED WITH AN INTEGRAL CORD AND PLUG.
B. SEE PANEL SCHEDULES FOR INFORMATION ON CIRCUITS THAT ARE TO BE ROUTED THROUGH CONTACTORS OR RELAYS FOR CONTROL.
C. ALL EQUIPMENT, DEVICES, AND LUMINAIRES SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED. EQUIPMENT MOUNTED OUTDOORS SHALL BE NEMA 3R. DEVICES MOUNTED IN DAMP OR WET LOCATIONS SHALL BE WEATHERPROOF. RECEPTACLES RATED 15- OR 20-AMPS AND 120 VOLTS WHICH ARE LOCATED IN DAMP OR WET LOCATIONS SHALL BE GFCI PROTECTED AND EQUIPPED WITH A SUITABLE WEATHERPROOF COVERPLATE (WHILE-IN-USE IN WET LOCATIONS).
D. ALL LUGS, TERMINALS, ETC., IN ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE LISTED FOR A MINIMUM OF 75 DEGREE C CONDUCTORS. TERMINATIONS LISTED FOR ONLY 60 DEGREE C CONDUCTORS ARE NOT PERMITTED.
E. REFER TO MECHANICAL ROOF PLAN SHEET AND ARCHITECTURAL ROOF PLAN FOR EXACT MECHANICAL EQUIPMENT LOCATIONS.
F. COORDINATE ALL ROOF PENETRATIONS WITH REFRIGERATION PIPING. REFER TO ARCHITECTURAL ROOF PLAN FOR ADDITIONAL REQUIREMENTS.

KEYED NOTES:

1. EXHAUST FAN DISCONNECT SWITCH IS PROVIDED BY EQUIPMENT MANUFACTURER, INTEGRAL WITH EQUIPMENT. PROVIDE CIRCUIT AND FINAL CONNECTION TO DISCONNECT SWITCH AS INDICATED. PROVIDE CONNECTION BETWEEN EXHAUST FAN AND HOOD CONTROL PANEL FOR CONTROL WIRING. REFER TO MECHANICAL SHEETS FOR ADDITIONAL INFORMATION.
2. INDOOR UNIT OF SPLIT-SYSTEM IS POWERED FROM OUTDOOR UNIT. PROVIDE ELECTRICAL CONNECTION BETWEEN UNITS PER MANUFACTURER REQUIREMENTS. COORDINATE ALL ELECTRICAL REQUIREMENTS, FINAL UNIT LOCATIONS, AND CIRCUIT ROUTING WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. DISCONNECT SWITCH AND WEATHERPROOF GFCI SERVICE RECEPTACLE ARE PROVIDED BY EQUIPMENT MANUFACTURER, INTEGRAL WITH EQUIPMENT. PROVIDE CIRCUITS AND FINAL CONNECTIONS AS INDICATED.
4. PROVIDE FINAL CONNECTION TO UV STERILIZATION SYSTEM. VERIFY EXACT ELECTRICAL REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN. REFER TO SHEET M601 FOR ADDITIONAL INFORMATION.

LANDLORD COMMENT:

ALL ROOF WORK SHALL BE COORDINATED IN ADVANCE WITH MALL OPS TEAM AND PERFORMED BY LANDLORD'S DESIGNATED ROOF, CONTACT PROPERTY MANAGEMENT TEAM FOR PREFERRED VENDOR CONTACT INFORMATION.

1

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REVISIONS

△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0048442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
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SHEET NAME: **ELECTRICAL ROOF PLAN**

DATE: 06/01/2026 | PROJECT NO.: 41354
DRAWN: MJC | SCALE: AS NOTED

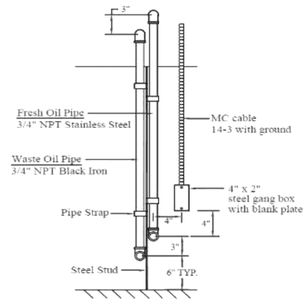
SHEET NO.: **E150**

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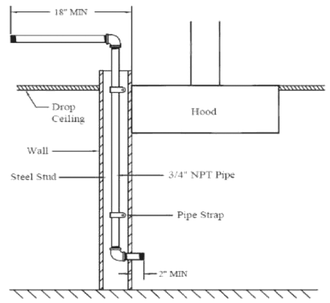
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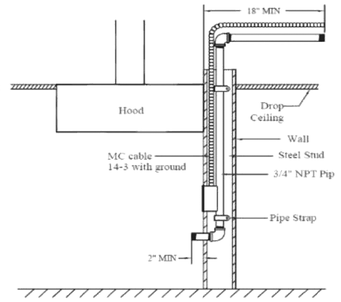
Front View
Inside Wall
(Not to Scale)

GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR EACH FRYER.



Cut-away View
Left side
(Not to Scale)

GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR EACH FRYER.



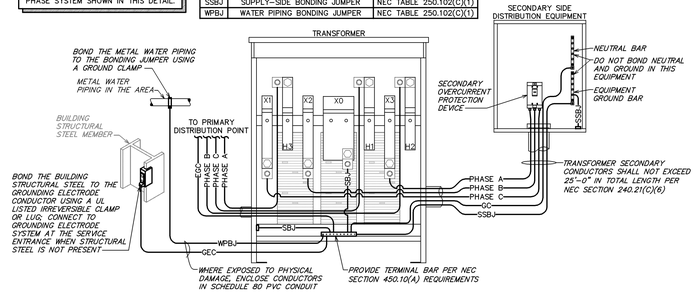
Cut-away View
Right side
(Not to Scale)

GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR EACH FRYER.

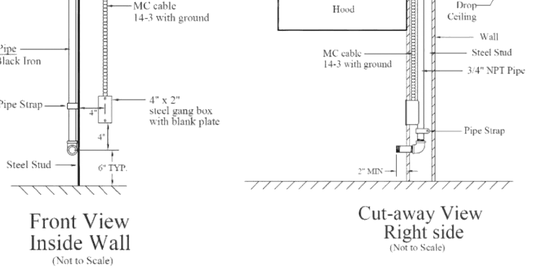
8 FRYER RTI DETAILS
NOT TO SCALE

CONDUCTOR SCHEDULE		
MARK	DESCRIPTION	SIZED PER
EGC	EQUIPMENT GROUNDING CONDUCTOR	NEC TABLE 250.122
GC	GROUNDED CONDUCTOR (NEUTRAL)	SEE ONE-LINE DIAGRAM
GEC	GROUNDING ELECTRODE CONDUCTOR	NEC TABLE 250.66
SBJ	SYSTEM BONDING JUMPER	NEC TABLE 250.102(C)(1)
SSBJ	SUPPLY-SIDE BONDING JUMPER	NEC TABLE 250.102(C)(1)
WPBJ	WATER PIPING BONDING JUMPER	NEC TABLE 250.102(C)(1)

GROUNDING REQUIREMENTS FOR SINGLE PHASE SYSTEMS ARE IDENTICAL TO THE REQUIREMENTS FOR THE THREE PHASE SYSTEM SHOWN IN THIS DETAIL.



9 TRANSFORMER GROUNDING AND BONDING DETAIL
NOT TO SCALE



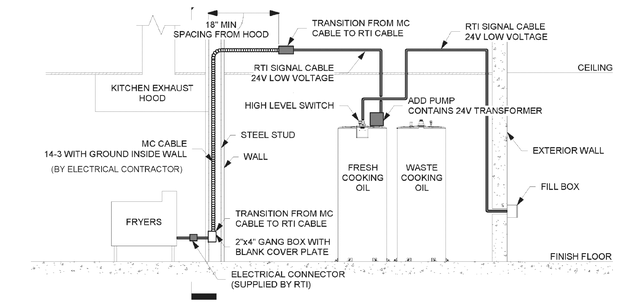
Front View
Inside Wall
(Not to Scale)

GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR THE GRIDDLE GREASE UNIT.

Cut-away View
Right side
(Not to Scale)

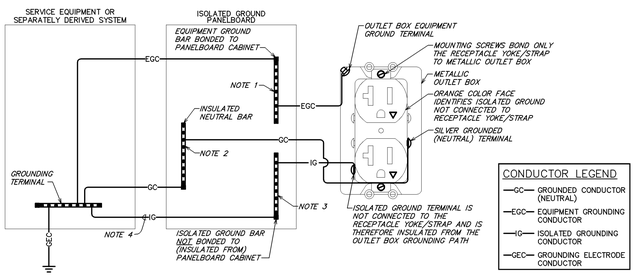
GENERAL NOTES:
1. THE PIPING AND ELECTRICAL ARRANGEMENT IS REQUIRED FOR THE GRIDDLE GREASE UNIT.

7 GRIDDLE RTI DETAILS
NOT TO SCALE



GENERAL NOTES:
1. ELECTRICAL WIRING WILL BE INSTALLED BY RTI, UNLESS OTHERWISE NOTED.

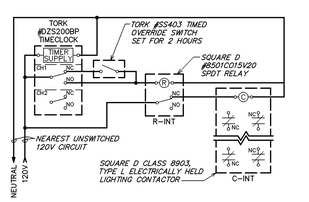
6 RTI SYSTEM DETAIL
NOT TO SCALE



GENERAL NOTES APPLICABLE TO THIS DETAIL:
A. THIS DETAIL IS DIAGRAMMATIC AND IS NOT INTENDED TO INDICATE PROPOSED CIRCUIT ROUTING. UNGROUNDED CONDUCTORS AND RACEWAYS ARE NOT SHOWN FOR CLARITY. ALL RACEWAYS SHALL BE SECURELY BONDED TO THE BOXES AND ENCLOSURES TO WHICH THEY CONNECT.
B. A GREEN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED FOR EVERY BRANCH CIRCUIT. NO EXCEPTIONS.
C. GROUNDED (NEUTRAL) CONDUCTORS ARE ONLY REQUIRED FOR 120V LOADS OR POLYPHASE LOADS THAT REQUIRE 120V POWER. WHEN INSTALLED PER THE CURRENT NATIONAL ELECTRICAL CODE REQUIREMENTS, AT LEAST TWO EQUIPMENT GROUNDING CONDUCTOR PATHS ARE REQUIRED. THE EQUIPMENT GROUNDING CONDUCTOR FOR THE OUTLET BOX AND RECEPTACLE STRAP/YOKE AND THE ISOLATED GROUNDING CONDUCTOR FOR THE RECEPTACLE.

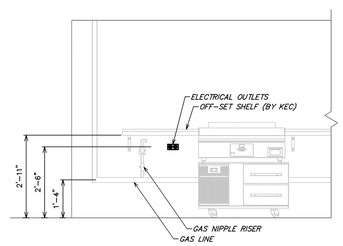
NOTES APPLICABLE TO THIS DETAIL:
1. ONLY EQUIPMENT GROUNDING CONDUCTORS SHALL TERMINATE ON THE EQUIPMENT GROUND BAR. UNDER NO CIRCUMSTANCES SHALL ANY ISOLATED GROUNDING OR GROUNDED CONDUCTOR (NEUTRAL) CONDUCTORS TERMINATE ON THIS BAR.
2. ONLY GROUNDED (NEUTRAL) CONDUCTORS SHALL TERMINATE ON THE NEUTRAL BAR. UNDER NO CIRCUMSTANCES SHALL ANY ISOLATED GROUNDING OR EQUIPMENT GROUNDING CONDUCTORS TERMINATE ON THIS BAR.
3. ONLY ISOLATED GROUNDING CONDUCTORS SHALL TERMINATE ON THE ISOLATED GROUND BAR. UNDER NO CIRCUMSTANCES SHALL ANY EQUIPMENT GROUNDING OR GROUNDED CONDUCTOR (NEUTRAL) CONDUCTORS TERMINATE ON THIS BAR.
4. ISOLATED GROUNDING CONDUCTOR IS PERMITTED TO PASS THROUGH PANELBOARDS BUT MUST TERMINATE AT THE SERVICE EQUIPMENT GROUNDING TERMINAL OR AT THE GROUNDING TERMINAL OF THE SEPARATELY DERIVED SYSTEM, IF APPLICABLE, UNLESS INDICATED OTHERWISE.

5 ISOLATED GROUND SYSTEM DETAIL
NOT TO SCALE

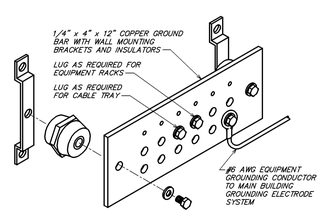


GENERAL NOTES APPLICABLE TO THIS DETAIL:
A. SEE PANEL SCHEDULES FOR CIRCUITS THAT ARE TO BE CONTROLLED BY EACH CONTACTOR.
B. EACH CONTACTOR CONSTITUTES A CONTROL ZONE. ALTHOUGH NOT SPECIFICALLY SHOWN ON THIS DETAIL, PROVIDE MULTIPLE CONTACTORS WIRED IN PARALLEL WHEN THE NUMBER OF CIRCUITS IN A CONTROL ZONE EXCEEDS THE MAXIMUM NUMBER OF POLES AVAILABLE ON A SINGLE CONTACTOR. PROVIDE A MINIMUM OF 2 SPARE CONTACTOR POLES PER CONTROL ZONE.
C. ALL CONTACTORS SHALL BE ELECTRICALLY HELD AND PROVIDED WITH NORMALLY OPEN CONTACTS. SQUARE D CLASS 8903 OR EQUAL. TYPE L FOR LOADS UP TO 30 AMPS OR TYPE S FOR LOADS GREATER THAN 30 AMPS.
D. CONTACTS SHALL CARRY A CURRENT RATING EQUAL TO OR GREATER THAN THE RATING OF THE OVERCURRENT PROTECTIVE DEVICES OF THE CIRCUITS CONTROLLED BY THE CONTACTOR.
E. MOUNT CONTACTORS ADJACENT TO THE ASSOCIATED PANELBOARD(S). ALL CONTACTORS SHALL BE PROVIDED WITH INDIVIDUAL ENCLOSURES. AT THE CONTRACTOR'S OPTION, OPEN CONTACTORS ARE PERMITTED WHEN MOUNTED WITHIN A COMMON ENCLOSURE.
F. COORDINATE MOUNTING LOCATION OF EMERGENCY OFF PUSHBUTTON WITH THE OWNER AND AUTHORITY HAVING JURISDICTION.

4 EQUIPMENT CONTROL DETAIL
NOT TO SCALE

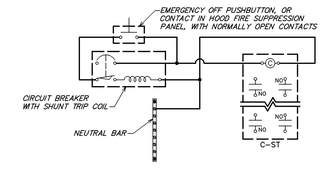


3 HOT LINE ELEVATION
NOT TO SCALE



GENERAL NOTES APPLICABLE TO THIS DETAIL:
A. NOT ALL PARTS AND PART NUMBERS ARE SHOWN IN THE DETAIL. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR A COMPLETE WORKING INSTALLATION, INCLUDING MISCELLANEOUS APPURTENANCES REQUIRED BUT NOT SHOWN.

2 GROUND BAR DETAIL
NOT TO SCALE



GENERAL NOTES APPLICABLE TO THIS DETAIL:
A. SEE PANEL SCHEDULES FOR CIRCUITS THAT ARE TO BE CONTROLLED BY EACH CONTACTOR.
B. EACH CONTACTOR CONSTITUTES A CONTROL ZONE. ALTHOUGH NOT SPECIFICALLY SHOWN ON THIS DETAIL, PROVIDE MULTIPLE CONTACTORS WIRED IN PARALLEL WHEN THE NUMBER OF CIRCUITS IN A CONTROL ZONE EXCEEDS THE MAXIMUM NUMBER OF POLES AVAILABLE ON A SINGLE CONTACTOR. PROVIDE A MINIMUM OF 2 SPARE CONTACTOR POLES PER CONTROL ZONE.
C. ALL CONTACTORS SHALL BE ELECTRICALLY HELD AND PROVIDED WITH NORMALLY OPEN CONTACTS. SQUARE D CLASS 8903 OR EQUAL. TYPE L FOR LOADS UP TO 30 AMPS OR TYPE S FOR LOADS GREATER THAN 30 AMPS.
D. CONTACTS SHALL CARRY A CURRENT RATING EQUAL TO OR GREATER THAN THE RATING OF THE OVERCURRENT PROTECTIVE DEVICES OF THE CIRCUITS CONTROLLED BY THE CONTACTOR.
E. MOUNT CONTACTORS ADJACENT TO THE ASSOCIATED PANELBOARD(S). ALL CONTACTORS SHALL BE PROVIDED WITH INDIVIDUAL ENCLOSURES. AT THE CONTRACTOR'S OPTION, OPEN CONTACTORS ARE PERMITTED WHEN MOUNTED WITHIN A COMMON ENCLOSURE.
F. COORDINATE MOUNTING LOCATION OF EMERGENCY OFF PUSHBUTTON WITH THE OWNER AND AUTHORITY HAVING JURISDICTION.

1 SHUNT TRIP CONTACTOR WIRING DIAGRAM
NOT TO SCALE

REVISIONS		
Δ	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS:
IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0046442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
ELECTRICAL DETAILS

DATE:	PROJECT NO.:
06/01/2026	41354
DRAWN: MJC	SCALE: AS NOTED

SHEET NO.:
E501

SE_JOB# 255519

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SECTION 260000 - ELECTRICAL GENERAL CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

A. This Section supplements all Sections of the Specifications for Division 26, Division 27, and Division 28 and shall apply to all phases of work hereinafter specified, shown on the Drawings, or required to provide a complete installation of approved electrical systems.

B. The Drawings, General Conditions and General Provisions of the Contract apply to this Section and the other Sections of Division 26, Division 27, and Division 28 of the Specifications. Where conflicts arise between these documents, the more stringent provision will be applicable, subject to the interpretation of the Engineer.

C. Furnish all labor, material, services, and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all electrical and electrical equipment systems as shown and noted on the Drawings, and its delivery to the Owner, complete in all respects and ready for use.

D. Where plans indicate fixtures or equipment will be furnished by this Contractor for installation by other Contractors, this Contractor shall furnish all such equipment, complete in all respects and ready for installation. Drawings, instructions, and manuals supplied with equipment shall be carefully preserved and turned over to the installing Contractor.

E. Where plans indicate fixtures or equipment will be furnished by others, this Contractor shall provide all wiring and supplies and shall connect such equipment to the electrical system. Drawings, instructions, and manuals supplied with equipment shall be carefully preserved and turned over to the Architect.

1.02 DEFINITIONS

A. Work: The construction and services required by the Contract Documents whether completed or partially completed and includes all labor, materials (or equipment), and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project.

B. Furnish: To supply and deliver, unload, and inspect for damage.

C. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, connect, and place into operation into the work.

D. Provide: To furnish and install.

E. Connect: To bring service to the equipment and make final attachment including necessary switches, outlets, boxes, terminations, etc.

F. Concealed: Hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction, in crawl spaces, or buried.

G. Exposed: Not installed underground nor concealed as defined.

H. Drawings: All plans, details, equipment schedules, diagrams, sketches, etc. issued for the construction of the work.

I. Conduit: Conduit, and all required fittings, pull boxes, hangers, and other supports and accessories related to such conduit.

1.03 CODES AND STANDARDS

A. Perform work in accordance with the applicable Building Code, Electrical Code, Fire Code, Mechanical Code, Plumbing Code, Energy Code, and all other applicable codes, amendments, and ordinances. Also perform all work in accordance with:
1. Occupational Safety and Health Administration (OSHA) Regulations.
2. Americans with Disabilities Act (ADA).
3. The Authority Having Jurisdiction.
4. Limited requirements including Tenant Criteria Manuals and Lease Exhibits.
5. Utility company requirements.

B. Recognized Standards: Design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these Specifications shall conform to the latest publications or standard rules of Institute of Electrical and Electronic Engineers (IEEE), National Electrical Manufacturers Association (NEMA), Underwriters Laboratories, Inc. (U.L.), National Fire Protection Association (NFPA), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), National Electrical Code (NEC), National Electrical Safety Code (NESC), National Electrical Contractors Association (NECA), and American Institute of Steel Construction (AISC).

C. Code, standard, and utility company requirements are minimum requirements of the Drawings and/or Specifications. The Contract Documents take precedence where the Contract Documents exceed code, Landlord, utility, or recognized standards requirements.

1.04 PERMITS AND FEES: Permits, licenses, fees, inspections and arrangements required for the work under this Contract shall be obtained by the Contractor at his expense.

1.05 TEMPORARY SERVICES FOR CONSTRUCTION

A. Provide a temporary electrical service, including all required equipment such as transformers, generators and fuel, panelboards, etc. as required by all trades. Coordinate power requirements for the temporary service with the General Contractor and the utility company prior to the start of construction. The Contractor is responsible to develop all temporary service plans and specifications as required by the Authority Having Jurisdiction, such as those for fire alarm stations as required by the Authority Having Jurisdiction, and to pay for all temporary service energy consumption.

B. Provide all temporary lighting necessary to provide lighting levels in compliance with OSHA Regulations and as required by all trades.

1.06 CONTRACT DRAWINGS

A. Obtain, fully understand, and coordinate the work with the complete set of Contract Documents. Any required corrections, including all associated costs, arising from lack of coordination with the complete set of Contract Documents is the Contractor's sole responsibility.

B. Work under these Sections is diagrammatic and is intended to convey the scope of work and indicate the general arrangement of equipment, conduit, and outlets. Obtain instructions from the Architect/Engineer prior to rough-in wherever a question exists as to the exact intended location of outlets or equipment.

C. Promptly report and discrepancies discovered within the Contract Documents. Failure of the Contractor to report discrepancies shall result in the resolution becoming the Contractor's responsibility and subject to the Architect/Engineer's review and possible rejection. Should the Architect/Engineer reject a discrepancy resolution of which they were not notified, the Contractor is fully responsible to correct the installation, including all associated costs, until approval of the installation is given by the Architect/Engineer.

1.07 SUBMITTALS FOR ENGINEER REVIEW

A. Furnish the following submittals to the Architect for review by the Engineer:
1. Product data for floor boxes and all associated cover plates and flanges.
2. Product data and shop drawings for remote control switching devices.
3. Product data for contactors and relays.
4. Product data and shop drawings for lighting control devices.
5. Product data and shop drawings for central dimming systems.
6. Shop drawings for low-voltage transformers.
7. Shop drawings for switchboards.
8. Shop drawings for panelboards.
9. Shop drawings for motor control centers.
10. Product data for shop drawings for electrical service entrance equipment.
11. Product data for multi-outlet assemblies.
12. Product data for enclosed switches.
13. Product data for enclosed controllers.
14. Product data and shop drawings for variable frequency drives.
15. Product data and shop drawings for lighting inverters.
16. Product data and shop drawings for surge protective devices.
17. Product data for interior lighting.
18. Product data for exterior lighting.
19. Product data and shop drawings for telephone and data systems.
20. Product data and shop drawings for television systems.

B. Use manufacturer's specification sheets identified by number indicated on drawings or schedules.

C. Indicate catalog number on the cut sheets.

D. Submittals other than those listed above will not be reviewed and will be returned stating same.

E. Submittals are reviewed only for general compliance with the Contract Documents. Dimensions, quantities and details are not checked during submittal review. Review of the submittals does not relieve the Contractor of the responsibility for providing all materials, equipment and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the Contract Documents. The responsibility for coordination of substituted materials and equipment lies solely with the substituting Contractor.

1.08 QUALITY ASSURANCE

A. All components shall be listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose and free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced without any change in the Contract amount.

B. Unless otherwise specified, all equipment, devices, luminaires, and materials of the same type or classification and used for the same purpose shall be products of the same manufacturer. Use only new, un-weathered, and unused material, except as specifically noted.

C. Equipment performance and accessories shall be as indicated on the Drawings and/or specified in Sections. Inclusion in both locations is not a requisite to inclusion in the Contract; equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system, including all required components reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents.

1.09 DELIVERY, STORAGE, AND HANDLING: Accept all materials on site and inspect for damage and report to Owner prior to installation. Store and handle all materials in accordance with manufacturer's instructions to avoid damage to internal components, enclosures, and finishes.

1.10 WARRANTY AND GUARANTEE: Provide a complete parts and labor warranty and guarantee on all systems for a period of one year from Owner acceptance of the completed facility. This warranty and guarantee shall cover all failures except failure is directly attributable to vandalism or causes other than defects in material or workmanship.

PART 2 PRODUCTS

2.01 CONDUCTOR TERMINATIONS: Provide conductor terminations rated at a minimum of 75 degrees C in all equipment.

2.02 SUBSTITUTIONS: The products specified in the Contract Documents constitute the Basis of Design for the Construction Documents and set minimum standards for quality, size, and functionality. Other products are permitted to be submitted, at the Contractor's option, during shop drawing review unless indicated otherwise. Any substitute products shall meet or exceed all requirements specified. Any costs and coordination issues arising out of any substitution, including coordination with all other contractors and subcontractors and any associated costs, is the substituting contractor's sole responsibility.

PART 3 EXECUTION

3.01 COORDINATION OF WORK

A. Review lines and established heights shall be in strict accordance with architectural drawings and specifications. Verify all dimensions shown and establish all elevations and additional dimensions not shown prior to rough-in.

B. Promptly report any difficulties encountered in the installation of the work which might prevent prompt and proper installation. Failure to report shall constitute an acceptance of the work of other trades and no basis for the execution of this work.

C. Coordinate the work with all trades so that it proceeds without delay and minimizes interference to work that is in progress or has not been completed. Conflicts arising from lack of coordination shall be this Contractor's responsibility. The Electrical Contractor shall pay for all extra cutting and patching necessary by any lack of coordination.

D. Arrange all conduit runs in such a manner that it does not interfere with grilles, diffusers, outlet boxes, luminaires, or other items while providing for maximum headroom. Maintain access to equipment requiring service when selecting mounting elevations.

E. Afford other trades reasonable opportunity for the execution of their work and connect the work of other trades as to not delay or interfere with their work.

F. Explicitly follow all manufacturer's installation instructions and promptly report any conflicts between the manufacturer's installation instructions and the Contract Documents.

G. Provide all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure and complete installation.

H. Verify and coordinate all requirements and installation details of all materials and equipment prior to rough-in. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other Sections. Determine connection locations and requirements, sequence rough-in of electrical connections to coordinate with installation of equipment, sequence electrical connections to coordinate with start-up of equipment, and verify that proper power supply is available prior to subcontractor's ordering equipment. Verify proper voltage, phase, and current rating of power supply and report any discrepancies prior to order, connection of equipment, or start-up. Responsibility for verification of proper power supply voltage and any damage resulting from incorrect connections shall rest with this Contractor and any conflicts arising from lack of coordination shall be this Contractor's responsibility.

3.02 ACCESS TO EQUIPMENT: Install all equipment, starters, switches, receptacles, and boxes so that all parts are easily accessible for inspection, operation, maintenance, and repair. Provide access doors, fire rated where required, for concealed equipment.

3.03 CUTTING, PATCHING, AND PIERCING

A. Cut all openings in a neat workmanlike manner, only as large as required for the installation, and leave surfaces around openings smooth and finished to match surfaces surrounded.

B. Patch existing finished surfaces and building components using new materials matching existing materials.

C. Fire and/or Smoke Rated Assemblies: Become familiar with all fire and/or smoke rated construction and install work to maintain the integrity of all rated assemblies.

D. Roof Penetrations: Coordinate with the Roofing Contractor to provide any required roof penetrations.

3.04 FIELD QUALITY CONTROL

A. Install all equipment, devices, luminaires, and materials plumb, level, securely, and in a neat workmanlike manner in accordance with NFPA 70 and all applicable NECA and NEMA standards.

B. Adjust all flush mounted equipment, boxes, cabinets, and enclosures such that they are flush with finished wall or flooring material.

C. Replace or refinish damaged equipment, devices, luminaires, materials, and surfaces where marring or disfigurement has occurred.

D. Clean electrical parts to remove harmful materials. Clean exposed surfaces of all equipment, devices, luminaires, and enclosures prior to installation of all boxes, enclosures, and cabinets of all foreign materials.

E. Paint all electrical equipment and materials located on exterior walls, on the roof where exposed to view, where visible from 6'-0" above grade from any property line, and all exposed conduit to match the surrounding surfaces. Coordinate paint color with the Architect.

3.05 TESTING AND INSPECTION

A. Testing: Test the entire system under operating conditions over a sufficient period of time to establish the adequacy, quality, safety, completed status, and suitable operation of all equipment, devices, luminaires, etc.

B. Inspection: Obtain all required certificates of inspection and approval.

3.06 PROJECT CLOSEOUT

A. Project Record Documents: Provide one printed copy and one electronic copy of project record drawings to the Owner. Project record drawings shall reflect the actual "as-built" installation conditions and shall include all changes in circuitry, and luminaires, circuiting arrangements, routing of all underfloor conduits, routing of conduits 2 inches and larger than 2 inches, locations and routing of all outlet, pull, and junction boxes, locations of all items requiring maintenance and inspection, and locations of components and circuiting and switching arrangements of lighting controls.

B. Operation and Maintenance Data: Provide one printed copy and one electronic copy of operation and maintenance data for all systems, equipment, devices and luminaires to the Owner. Operation and maintenance data shall include manufacturer's cut sheets, maintenance procedures, recommended maintenance intervals, wiring diagrams, parts lists, manufacturers' warranties, certificates, and test reports of each item installed.

C. Maintenance Materials: Provide to the Owner two keys for each different enclosure and cabinet, including panelboards, two spare fuses of each type and size, and one fuse puller.

D. Test Reports: Provide one printed copy and one electronic copy of all completed test reports to the Owner.

END OF SECTION

SECTION 260501 - ELECTRICAL DEMOLITION

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT: Materials and equipment for patching and extending work as specified in individual Sections.

PART 3 EXECUTION

3.01 EXAMINATION

A. Visit the project site, review existing conditions against the Contract Documents, and familiarize himself with the work prior to the beginning of the work.

B. Verify existing conditions, field measurements, and circuiting arrangements are as indicated and that abandoned wiring and equipment serve only abandoned facilities. By signing the Contract, the Contractor acknowledges the site visit has been completed and the existing conditions are accepted.

C. Promptly report any field discrepancies. The Contractor assumes full responsibility for adjusting for discrepancies of which the design team is not informed.

D. Any demolition work indicated on the Drawings is intended to convey the scope of the demolition work involved. If demolition plans are not included with the Drawings, the Contractor is responsible to demolish existing as required to allow for installation and construction of the work.

E. Commencement of work means Contractor accepts existing conditions.

3.02 PREPARATION

A. Disconnect electrical systems in walls, floors, and ceilings that are removed.

B. Protect and safeguard any existing service lines and utility structures.

C. Coordinate utility service outages with all affected parties.

D. Provide temporary wiring and connections to maintain existing systems in service as required for the sequencing of the work or the Owner's need for continued operations.

E. Maintain all existing power, telephone, and fire alarm systems in service until new system is fully operational, tested, and ready for service. Verify with all stakeholders (Owner, Authority Having Jurisdiction, utility company, Landlord, etc.) at least 48 hours before partially or completely disabling systems. Disable systems only to make switchovers and connections, and minimize all outage durations.

3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Maintain continuity of circuits as needed to provide power to remaining devices, fixtures, or equipment not being removed.

B. Remove, relocate, and extend existing installations as required to accommodate new construction. Remove and salvage existing items as indicated. Items not indicated to salvage with existing electrical installations or as specified and required by Code.

C. Remove all abandoned wiring, including all abandoned telecommunications and other low voltage cabling, to source of supply.

D. Remove exposed abandoned conduit and abandoned conduit above accessible ceilings.

E. Disconnect and remove all devices, boxes, distribution equipment, luminaires, and all associated mounting hardware and appurtenances that are not required to remain.

F. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

G. Dispose of all equipment not reused as part of the work. The Owner shall have salvage rights on all materials and equipment removed.

3.04 CLEANING AND REPAIR

A. Repair construction and finishes damaged during demolition and extension work.

B. Patch all openings resulting from the installation or removal of electrical equipment or materials.

C. Clean and repair existing materials and equipment that remain or that are to be reused.

D. Existing and Relocated Panelboards: Clean exposed surfaces, remove all foreign material from interiors, check tightness of electrical connections, replace damaged circuit breakers, and vacuum clean bus and gutter spaces.

E. Existing and Relocated Luminaires: Clean luminaire reflectors and lenses per manufacturer's recommendations, replace all lamps with new, replace any expired ballasts, and repair any broken electrical components. Replace any existing luminaires with identical luminaire for any existing luminaires that are damaged beyond repair.

END OF SECTION

SECTION 260519 - CONDUCTORS AND CABLES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 BUILDING WIRE AND CABLES

A. Provide conductor building wire installed in raceway unless indicated otherwise, otherwise permitted, or otherwise required.

B. All conductors shall be copper conductors with 600V insulation; type THHN for dry and damp locations and type THWN-2 for wet locations.

C. Metal Clad Cable (Type MC): Permitted only for branch circuits in concealed locations and only when approved by applicable codes and amendments and the Authority Having Jurisdiction. Exposed MC Cable is not permitted; no exceptions.
1. All MC cables shall be listed and identified for grounding.
2. All MC Cable shall be equipped with copper equipment grounding conductor. No exceptions.

D. Nonmetallic-Sheathed Cable (Type NM): Type NM-B permitted only within individual dwelling units and common areas of multifamily dwelling occupancies which are Type III, IV, or V construction when permitted by all local and national codes and amendments and the Authority Having Jurisdiction. Exposed NM Cable is not permitted; no exceptions.

E. Use solid or stranded conductors for all conductors 10 AWG and smaller. Use stranded conductors for all conductors 8 AWG and larger.

F. Wire Sizes:
1. Use 12 AWG conductors, minimum, for all circuits unless indicated otherwise or as required by all codes as follows:
a. 20A, 120V circuits longer than 75 feet: 10 AWG to offset voltage drop.
b. 20A, 120V circuits longer than 150 feet: 8 AWG to offset voltage drop.
c. 20A, 277V circuits longer than 150 feet: 10 AWG to offset voltage drop.
2. Wire sizes indicated on the Drawings or indicated above shall be carried through the entire circuit to the furthest outlet box on the associated circuit unless indicated otherwise.
a. Where a circuit splits into multiple branches, the wire size shall be carried through the entirety of each branch to the furthest outlet box on each branch unless indicated otherwise.

2.02 CONTROL CABLES

A. Control cable conductor sizes, quantities, stranding, and shielding as recommended by the manufacturer and required for the installation but no smaller than 18 AWG.

B. Horizontal Applications in Conduit: Type CL2 unless otherwise noted.

C. Horizontal Applications not in Conduit: Type CL2P unless otherwise required.

D. Riser Applications: Type CL2R unless otherwise required.

2.03 COMMUNICATIONS CABLES: See Section 271005.

2.04 WIRING CONNECTORS

A. Use twist-on insulated spring connectors, mechanical connectors, or compression connectors for conductor sizes 8 AWG and smaller. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.

B. Use mechanical connectors or compression connectors for conductor sizes 6 AWG and larger.

C. Use crimped terminals for all control circuit conductor connections.

PART 3 EXECUTION

3.01 PREPARATION: Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.02 COLOR CODING

A. Color code conductors as follows and maintain consistent color coding throughout project including branch circuit conductors.
1. 208Y/120 V, 3-phase, 4 Wire System
a. Phase A: Black
b. Phase B: Red
c. Phase C: Blue
d. Neutral/Grounded: White
2. 480Y/277 V, 3 phase, 4 Wire System
a. Phase A: Brown
b. Phase B: Orange
c. Phase C: Yellow
d. Neutral/Grounded: Gray
3. Equipment Ground: Green
4. Isolated Ground: Green with yellow stripe

3.03 INSTALLATION

A. Circuit routing indicated is diagrammatic. Arrange circuiting to minimize splices and include circuit lengths required to install connected devices within 10 feet of location shown.

B. Combining branch circuits in a single raceway is permitted under the following conditions:
1. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
2. Increase size of conductors as required to account for ampacity derating.
3. Size raceways, boxes, etc. to accommodate conductors.

C. Neutral Conductors:
1. Provide separate neutral conductors for:
a. Branch circuits protected by ground fault circuit interrupter (GFCI) circuit breakers.
b. Branch circuits protected by arc fault circuit interrupter (AFCI) circuit breakers.
c. Branch circuits protected by shunt trip circuit breakers.
d. Branch circuits fed from feed-through protection of GFCI receptacles.
e. Branch circuits with dimming controls.
f. Branch circuits that serve emergency lighting equipment such as emergency batteries or emergency lighting unit equipment.
g. Where required by the wire counts shown on the Drawings.
2. Multiwire branch circuits (shared neutrals) are permitted where not otherwise indicated.
a. Locate all multiwire branch circuits in vertically adjacent panelboard pole spaces and provide circuit breaker handle ties to simultaneously disconnect all ungrounded conductors.

D. Pull all conductors together into raceway at same time; do not damage conductors or exceed manufacturer's recommended maximum pulling tension or sidewall pressure, and use suitable wire pulling lubricant where recommended by the manufacturer.

E. Secure and support conductors and cables in accordance with NFPA 70 using supports and surfaces approved by the Authority Having Jurisdiction. Provide independent support from building structure; do not support from raceways, piping, ductwork, suspended ceiling support systems, or other systems and do not allow conductors or cables to lay on ceiling tiles.

F. Cut all conductors to the manufacturer's recommendations and terminate using suitable fittings including anti-short, insulated bushings where applicable.

G. Provide a minimum of 12 inches of slack at each outlet. Provide a minimum of 5 feet of slack where conductors are installed in enclosures for future termination by others.

H. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.

I. Make wiring connections using specified wiring connectors and make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies.

J. Do not remove conductor strands to facilitate insertion into connector. Provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the connected conductor. Where conductors are larger than the equipment terminations can accommodate.

K. Insulate splices and taps that are made with uninsulated connectors using insulating covers specifically designed for the connectors, or electrical tape for dry or damp locations. Use heat shrink tubing for wet locations.

L. Provide all connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

M. Provide all control wiring and communication cabling, whether or not shown on the Drawings, per manufacturer's recommendations and as required for a complete and operational system.

END OF SECTION

SECTION 260526 - GROUNDING AND BONDING

PART 1 GENERAL

1.01 MAXIMUM GROUNDING SYSTEM RESISTANCE: 5 ohms.

PART 2 PRODUCTS

2.01 ROD ELECTRODES: Copper, 3/4 inch diameter, 10 foot long solid rods. Sectional rods are not permitted.

2.02 CONCRETE ENCASED ELECTRODES: 4 AWG, 20 foot long bare copper wire.

2.03 WIRE: Copper, sized to meet NFPA 70 requirements.

2.04 CONNECTORS AND ACCESSORIES: Copper, copper alloy, or bronze mechanical connectors.

PART 3 EXECUTION

3.01 INSTALLATION OF GROUNDING ELECTRODE SYSTEM

A. As applicable to the project, provide all components required for a complete grounding electrode system including bonding of metal underground water pipe, metal frame of the building, concrete-encased electrode, metal aboveground water piping system, metal aboveground gas piping system, and rod electrode(s) per NFPA 70 requirements.

3.02 INSTALLATION OF EQUIPMENT GROUNDING SYSTEM

A. Install an isolated equipment grounding conductor sized per NFPA 70 requirements within each feeder and branch circuit raceway and terminate each end on suitable lug, bus, or bushing.

3.03 INSTALLATION OF ISOLATED GROUNDING SYSTEM

A. Provide an additional isolated grounding conductor for circuits serving isolated ground receptacles. Isolated grounding conductor shall be isolated from the isolated grounding receptacle to the isolated ground bus in the upstream panelboard.

3.04 TESTING

A. Measure grounding resistance using Fall of Potential Method or Signal Injection Method. Provide additional rod electrodes as required to reduce grounding resistance to less than the specified maximum permitted value.

END OF SECTION

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 HANGERS AND SUPPORTS

A. Corrosion-resistant materials of size and type adequate to carry the supported weight, including the weight of wire in conduit; do not use perforated pipe straps as a means of support.

2.02 ANCHORS AND FASTENERS

A. Use precast inserts, preset inserts, expansion anchors, or self-drilling anchors as approved by the Structural Engineer for concrete elements.

B. Use beam clamps, steel spring clips, steel straps, or welded fasteners for steel elements.

C. Use toggle bolts or hollow wall fasteners for hollow masonry, plaster, and gypsum board partitions.

D. Use powder-actuated anchors or preset inserts for solid masonry walls.

E. Use sheet metal screws for sheet metal elements and wood screws for wood elements.

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide all required blocking and supplemental framing required to securely support all materials.

B. Fasten supports to building structure and surfaces only. Do not fasten supports to pipes, ducts, mechanical equipment, conduit, or ceiling suspension wires.

C. Obtain permission from Structural Engineer before drilling or cutting structural member or before using powder-actuated anchors.

D. Rigidly weld support members or use hex-bolts to present neat appearance with adequate strength and rigidity. Provide lock washers under all nuts. E. Install surface-mounted cabinets and panelboards with minimum of four anchors. F. Provide steel channel supports behind all cabinets and panelboards located in damp or wet locations to stand enclosures 1 inch off wall.

E. Provide supports for all low voltage wiring not routed in conduit.

END OF SECTION

SECTION 260534 - CONDUIT AND WIREWAYS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 CONDUIT

A. Size: As required by NFPA 70 for the conductors installed but no smaller than specified.
1. Sizes Indicated on the Drawings:
a. Any conduit sizes indicated to a utility transformer are based on Schedule 40 PVC conduit.
b. Any conduit sizes indicated to the primary or secondary of a dry-type transformer are based on Flexible Metal Conduit (FMC).
c. All other conduit sizes are based on Electrical Metallic Tubing (EMT).
d. The Contractor is responsible to adjust conduit sizes as required when a different conduit type is used.

B. Underground: 3/4 inch minimum rigid metal conduit, intermediate metal conduit, Schedule 40 PVC. Metal conduits shall be galvanized or PVC coated.

C. Outdoor Locations above Grade: 1/2 inch minimum rigid metal conduit or intermediate metal conduit. Nonmetallic conduit is not permitted above grade. Conduits shall be galvanized or PVC coated.

D. Within Slabs above Grade: 3/4 inch minimum rigid metal conduit, intermediate metal conduit, or Schedule 80 PVC. Metal conduits shall be galvanized or PVC coated. Coordinate with the Structural Engineer for restrictions and for locations on conduits installed in slabs above grade.

E. Exposed Wet and Damp Locations: 1/2 inch minimum rigid metal conduit or intermediate metal conduit. Conduits shall be galvanized or PVC coated.

F. Connections to Vibrating Equipment and Luminaires in Dry Locations: 1/2 inch minimum flexible metal conduit.

G. Connections to Vibrating Equipment and Luminaires in Damp and Wet Locations: 1/2 inch minimum liquidtight flexible metal conduit.

H. All Other Dry Locations: 1/2 inch minimum rigid metal conduit, intermediate metal conduit, or electrical metallic tubing.

2.02 FITTINGS: Provide listed fittings identified for use with the conduit.

2.03 WIREWAYS: Sheet steel, listed by UL 5100 for use in locations or Sage Cs Class 5100 Type LDR for damp and wet locations unless indicated otherwise; size as required by NFPA 70 based on conductor fill and bending radius requirements.

PART 3 EXECUTION

3.01 INSTALLATION

A. Conceal all conduit in all interior and exterior areas, including exposed structure areas, unless the Architect approval specifically indicates the use of exposed conduit.

B. Route any exposed conduit parallel and perpendicular to walls.

C. Subject to the Architect's approval, conduit located above ceilings is permitted to be routed point-to-point provided it is secured and supported per NFPA 70 requirements and complies with all applicable Codes and other requirements of the specifications.

D. Do not embed conduit in slabs-on-grade. Locate conduit a minimum of 2 inches below the bottom surface of the slab to avoid future damage from cutting of the floor slab.

E. Route conduit in slabs-above-grade from point-to-point. Do not cross conduits embedded in slabs.

F. Route underground conduit from point-to-point and at a burial depth in compliance with NFPA 70, local code, and utility company requirements.

G. Arrange conduit to maintain headroom and prevent moisture and arrange supports to prevent misalignment during wiring installation.

H. Secure and support conduit in compliance with NFPA 70 requirements and group adjacent conduits on steel channel racks and trapezes.

I. Provide 12 inches of clearance between conduit and piping or surfaces with temperatures exceeding 104 degrees F.

J. Install no more than equivalent of three 90 degree bends between boxes.

K. Provide sleeves when penetrating footings, masonry walls and floors and seal all penetrations through footings and floors water tight.

L. Provide listed fittings to accommodate expansion and deflection where conduit crosses seismic, control, and expansion joints.

M. Provide suitable pull string in each empty conduit except sleeves and nipples.

N. Provide suitable fittings to prevent entrance of moisture and dirt and maintain.

O. Secure wireway to building surfaces and close ends of wireway and unused conduit openings.

P. Ground and bond conduit and wireways as required by NFPA 70.

END OF SECTION

SECTION 260537 - BOXES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 ALL BOXES

A. Nonmetallic boxes are not permitted unless indicated otherwise or without specific written approval from the Architect.

B. Provide all required box hangers and supports, extension rings, mud rings, etc. for a complete and secure installation.

C. Use equipment boxes where more than one device is mounted together; do not use sectional boxes.

2.02 OUTLET AND SMALL JUNCTION BOXES

A. Dry and Damp Locations: Galvanized NEMA OS 1 stamped steel box rated for the weight of the equipment supported and sized per NFPA 70 requirements for the device(s) and conductors installed within.

B. Wet Locations: Galvanized cast metal NEMA FB 1 Type FD box with gasketed cover and threaded hubs and sized per NFPA 70 requirements for the device(s) and conductors installed within.

2.03 PULL AND LARGE JUNCTION BOXES

A. Dry and Damp Locations: Galvanized NEMA OS 1 stamped steel box sized per NFPA 70 requirements for the conductors installed within.

B. Wet Locations: Galvanized NEMA 250 Type 4 cast iron or cast aluminum box with ground flange, neoprene gasket, and stainless steel cover screws and sized per NFPA 70 requirements for the conductors installed within.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in locations indicated and as required for splices, taps, wire pulling, equipment connections, and as required by NFPA 70.

B. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

C. Install outlet boxes for all wall-mounted wiring devices at heights indicated in Section 262726 unless indicated otherwise. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes prior to rough-in.

D. Use flush boxes in finished areas. Do not install flush boxes back-to-back in walls; provide minimum 6 inches and one stud separation.

E. Locate flush boxes in masonry walls to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.

F. Install all wall-mounted boxes plumb and level.

G. Install all ceiling-mounted boxes level and oriented parallel with building lines and centered in ceiling grid tees where applicable.

H. Install all floor boxes level and oriented parallel with building lines and tile grout lines where applicable.

I. Vertically align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

J. Install concealed boxes within 6 inches from ceiling access panels, air distribution diffusers, or removable recessed luminaires.

K. Support boxes independently of conduit; do not support boxes from ceiling support wires.

L. Install knockout closures in unused box openings.

M. Install cover plates on boxes; see Section 262726 for cover plate specifications.

N. Ground and bond boxes as required by NFPA 70.

END OF SECTION

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 NAMEPLATES: Engraved laminated plastic with 1/8 inch letters on contrasting background.

2.02 LABELS: As required by regulatory agencies.

2.03 WIRE MARKERS: Cloth, tape, split sleeve, or tubing type.

PART 3 EXECUTION

3.01 NAMEPLATES: Provide nameplates with the unique equipment designation at each electrical distribution and control equipment enclosure, communication cabinet, and control device station.

3.02 WARNING LABELS: Provide all regulatory required and industry standard warning labels and all electrical equipment, including high-voltage, tested series rated combination control and arc flash hazard labeling.

3.03 WIRE MARKERS: Provide wire and cable markers at panelboard gutters, pull boxes, outlet boxes, and junction boxes for each load connection. Indicate branch circuit or feeder number indicated on Drawings. Indicate voltage and circuit number for multiwire branch circuits.

3.04 COLOR CODE LEGEND: Provide identification label identifying conductor color codes at each piece of feeder or branch-circuit distribution equipment.

3.05 INSTALLATION

A. Install nameplates and labels parallel to equipment lines.

B. Secure nameplates to inconspicuous but accessible surface. Do not attach to the public to the inside surface of door.

C. Secure nameplates for distribution equipment not visible to the public to the front of the enclosure using screws, rivets, or adhesive.

END OF SECTION

SECTION 260565 - FIRE STOPPING

PART 1 GENERAL

1.01 PREPARATION: Examine the complete set of Drawings and identify all fire rated partitions, floors and assemblies and identify appropriate firestopping method for the assembly.

PART 2 PRODUCTS

2.01 FIRESTOPPING ASSEMBLIES: Use only systems listed by UL or FM or tested in accordance with ASTM E 814 or ASTM E 119 that have an F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating.

2.02 MATERIALS: Provide firestopping, foam firestopping, fibered compound firestopping, fiber packing material, mechanical firestop devices, intumescent putty, and firestop pillows are permitted.

PART 3 EXECUTION

3.01 INSTALLATION

A. Comply with firestopping manufacturer's recommendations for temperature and other environmental conditions before, during, and after installation. Provide ventilation in areas where solvent-cured materials are being installed.

B. Protect adjacent surfaces from damage by material installation.

C. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material. Remove incompatible materials which may affect bond. Install backing materials to prevent liquid material leakage.

D. Apply the appropriate fire stopping materials and systems to maintain the fire rating of the partition, floor, or ceiling assembly being penetrated.

E. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

F. Do not cover installed firestopping until inspected by Authority Having Jurisdiction.

G. Install any labeling required by Code.

H. Clean adjacent surfaces of firestopping materials.

END OF SECTION

SECTION 260919 - CONTACTORS AND RELAYS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 CONTACTORS

A. Description: Square D Class 8903, Type L or Type S unless indicated otherwise or otherwise required.

B. Contacts:
1. Provide with quantity of normally open and normally closed contacts as required and a minimum of two spare poles.
a. Provide multiple contactors connected in parallel with one another when the number of contacts required exceeds the maximum capability of a single contactor.
2. Coordinate contact rating to match branch circuit overcurrent protection, considering derating for continuous loads, but no less than 30 amps.

C. Coil: Coordinate with the voltage of the control circuit.

D. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the contactor is installed.

2.02 RELAYS

A. Description: Square D Class 8501 Type C unless indicated otherwise or otherwise required.

B. Contacts: Form C contacts rated at 30 amperes unless indicated otherwise.

C. Coil: Coordinate with the voltage of the control circuit.

D. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the relay is installed.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install individual controls and relays in enclosures adjacent to panelboard serving controlled circuits and make electrical wiring interconnections.

B. Provide all relays, contactors, interposing relays, and controls that are required but may not be shown to switch the loads in the manner indicated on the Drawings.

C. Provide nameplate for contactors indicating contactor number.

END OF SECTION

SECTION 260923 - LIGH

3. Sequence rough-in of electrical connections to coordinate with installation of equipment.
4. Sequence electrical connections to coordinate with start-up of equipment.

B. Verify and coordinate all requirements and installation details of all materials and equipment prior to rough-in.

C. Verify proper voltage, phase, and current rating of power supply and immediately report any discrepancies.

D. Responsibility for verification of proper power supply voltage and any damage resulting from incorrect connections shall rest with this Contractor.

E. Any conflicts arising from lack of coordination shall be this Contractor's responsibility.

PART 2 PRODUCTS

2.01 CORDS

A. Description: Multi-conductor flexible cord Type SO for dry and damp locations or Type SOW in wet locations.

B. Conductor Quantity: As required for the load served; include identified equipment grounding conductor.

C. Conductor Insulation Rating: As required for the voltage of the load served.

D. Conductor Ampacity: No less than the rating of the overcurrent protection device protecting the circuit.

2.02 CORD CAPS: Match cord cap to receptacle configuration at outlet provided for equipment.

2.03 OTHER MATERIALS: Provide all disconnect switches, wiring devices, conduit, wire and cable, and boxes required.

PART 3 EXECUTION

3.01 ELECTRICAL CONNECTIONS

A. Make electrical connections in accordance with equipment manufacturer's instructions.

B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.

D. Provide receptacle outlet to accommodate connection with attachment plug.

E. Provide cord and cap where field-supplied attachment plug is required.

F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.

H. Install terminal block jumpers to complete equipment wiring requirements.

I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

J. Cut and seal conduit openings in freezer and cooler walls, floors, and ceilings where applicable.

END OF SECTION

SECTION 262726 - WIRING DEVICES

PART 1 GENERAL

1.01 PREPARATION: Contact the Architect to determine colors of all wiring devices, cover plates, and carpet and tile flanges, locations where stainless steel cover plates are required, and locations where carpet and tile flanges are required.

PART 2 PRODUCTS

2.01 RECEPTACLES

A. All Receptacles:
1. Color as selected by Architect.
2. Provide tamper-resistant receptacles where denoted "TR" on the Drawings and otherwise required.
3. Provide ground-fault circuit interrupter receptacles where denoted "GFCI" on the Drawings and otherwise required.
4. Provide receptacles with factory-applied permanent controlled receptacle marking where denoted "CR" on the Drawings and where controlled by automatic shutoff controls.
   a. Field-applied controlled receptacle markings, such as those made by a label maker, are not acceptable.
5. Provide NEMA receptacle indicated with two integral Type A, 5 ampere, 5 volt USB ports where denoted "USB" on the Drawings.
6. Provide identified weather-resistant receptacles for receptacles installed outdoors.
7. NEMA 5-15R unless indicated otherwise.

B. Standard NEMA 5-15R Duplex: Hubbell #BR15 unless indicated otherwise.

C. Standard NEMA 5-20R Duplex: Hubbell #BR20 unless indicated otherwise.

D. Interior GFCI Duplex: Hubbell #GF20 unless indicated otherwise.
1. Provide GFCI receptacles with audible alarm when the receptacle serves a sump pump.

E. Exterior GFCI Duplex: Hubbell #GFTR20 unless indicated otherwise.

F. Isolated Ground Duplex: Hubbell #IG220CR unless indicated otherwise.

G. Surge Protection Receptacles: Hubbell #HBL5362SA unless indicated otherwise.

H. Clock Hanger Receptacles: Hubbell #HBL5235 unless indicated otherwise.

I. Other NEMA Configurations: As required by the load served.

2.02 FACELESS GFCI: Hubbell #GFBFST20; color as selected by Architect.

2.03 MULTI-OUTLET ASSEMBLY: Wiremold Plugmold 2000 Series with receptacles at 6 inches on center unless indicated otherwise. Provide all fittings required for a complete installation. Coordinate device and channel finish color with the Architect.

2.04 WALL SWITCHES

A. All Switches:
1. Color as selected by Architect.
2. Horsepower rated when used as motor disconnecting means.

B. Single Pole Toggle: Hubbell #1221 unless indicated otherwise.

C. Three-Way Toggle: Hubbell #1223 unless indicated otherwise.

D. Four-Way Toggle: Hubbell #1224 unless indicated otherwise.

E. Single Pole Toggle with Pilot Light: Hubbell #HBL1221PLC unless indicated otherwise.

F. Single Pole Keyed: Hubbell #HBL1221L unless indicated otherwise.

G. Three-Way Keyed: Hubbell #HBL1223L unless indicated otherwise.

H. Four-Way Keyed: Hubbell #HBL1224L unless indicated otherwise.

2.05 WALLBOX DIMMERS

A. All Wallbox Dimmers: Color as selected by Architect.

B. Incandescent Dimmers:
1. Up to 600 Watts: Lutron Maestro #MA-600 unless indicated otherwise.
2. Between 600 and 1000 Watts: Lutron Maestro #MA-1000 unless indicated otherwise.
3. Between 1000 and 1920 Watts: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-120-WH power interface unless indicated otherwise.

C. Fluorescent 2-Wire Dimmers:
1. 120 Volts, Up to 5 Amps: Lutron Diva #DVFTU-5A3P unless indicated otherwise.

D. Fluorescent 3-Wire Dimmers:
1. 120 Volts, Up to 6 Amps: Lutron Maestro #MAF-6AM unless indicated otherwise.
2. 120 Volts, Between 6 and 16 Amps: Lutron Maestro #MAF-6AM with Lutron #PHPM-3F-120-WH power interface unless indicated otherwise.
3. 277 Volts, Up to 6 Amps: Lutron Maestro #MAF-6AM-277 unless indicated otherwise.
4. 277 Volts, Between 6 and 16 Amps: Lutron Maestro #MAF-6AM with Lutron #PHPM-3F-DV-WH power interface unless indicated otherwise.

E. Fluorescent 0-10 Volt Dimmers:
1. Up to 16 Amps: Lutron Maestro #MAF-6AM with Lutron #GRX-TVI power interface unless indicated otherwise.

F. Magnetic Low Voltage Dimmers:
1. Up to 450 Watts: Lutron Maestro #MALV-600 unless indicated otherwise.
2. Between 450 and 600 Watts: Lutron Maestro #MALV-1000 unless indicated otherwise.
3. Between 800 and 1920 Watts: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-DV-WH power interface unless indicated otherwise.

G. Electronic Low Voltage Dimmers:
1. Up to 600 Watts: Lutron Maestro #MAELV-600 unless indicated otherwise.
2. Between 600 and 1920 Watts: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-DV-WH power interface unless indicated otherwise.

H. LED Dimmers:
1. All LED Dimmers: Dimmer utilized shall be tested and listed by the LED manufacturer as a compatible dimmer.
2. 0-10 Volt Dimmers:
   a. Up to 16 Amps: Lutron Maestro #MAF-6AM with Lutron #GRX-TVI power interface unless indicated otherwise.
3. Electronic Low Voltage Dimmers:
   a. Up to 16 Amps: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-DV-WH power interface unless indicated otherwise.
4. Magnetic Low Voltage Dimmers
   a. Up to 16 Amps: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-DV-WH power interface unless indicated otherwise.

2.06 ABOVE-FLOOR SERVICE FITTINGS: Hubbell #SC3098A housing with plates as required for the wiring devices installed within unless indicated otherwise.

2.07 POKE-THROUGH FITTINGS: Wiremold Evolution 6AT series unless indicated otherwise with wiring devices indicated; color as selected by Architect.

2.08 POWERPOLE: Wiremold AMDTP series unless indicated otherwise with wiring devices indicated. Provide lengths, device covers, ceiling trim plates, and mounting foot as required for a complete installation.

2.09 COVER PLATES

A. All Cover Plates:
1. Color and material as selected by Architect.
2. Provide cover plates appropriate for the wiring devices installed within the box.
   a. Use combination plates when wiring devices are ganged together.

B. Wall Plates:
1. Provide standard-size nylon wall plates unless indicated otherwise; mid-size or jumbo wall plates are not permitted.
2. Provide stainless steel coverplates where requested by the Architect.
3. Provide galvanized steel cover plates on outlet boxes and junction boxes located in unfinished areas, above accessible ceilings, and on surface mounted outlets.
4. Provide gasketed, cast metal, hinged cover plates for all exterior locations, where denoted "WP" on the Drawings, and where otherwise required.
5. Provide weatherproof while-in-use covers which are listed and identified as "extra-duty" for all receptacles installed in wet locations.

PART 3 EXECUTION

3.01 EXAMINATION: Verify that outlet boxes are installed at proper heights and that openings are neatly cut and will be completely covered by the cover plates or flanges.

3.02 PREPARATION

A. Provide extension rings to bring wall-mounted outlet boxes flush with finished surface.

B. Adjust floor boxes to bring floor boxes flush with finished floor.

3.03 MOUNTING HEIGHTS

A. General: All mounting heights are to the centerline of the outlet box.

B. Receptacles:
1. Install receptacles at 18 inches above finished floor unless indicated otherwise.
2. Install receptacles at countertops at the lesser of 44 inches above finished floor or 3 inches above any sidesplashes or backsplashes unless indicated otherwise.

C. Wall Switches: Install wall switches including wallbox dimmers, wall switch occupancy sensors, and low voltage switches associated with programmable relay panels and room controllers at 46 inches above finished floor unless indicated otherwise.

D. Telecommunications Outlets:
1. Install telecommunications outlets including telephone, data, and television outlets 18 inches above finished floor unless indicated otherwise.
   Install telephone outlets for side-reach and forward-reach wall telephone 46 inches above finished floor unless indicated otherwise.

E. Modify mounting heights in masonry walls as required to locate the outlet box at the joint in the masonry unit to avoid multiple or split-cut masonry units.

3.04 INSTALLATION

A. Install wall switches with OFF position down.

B. Install receptacles vertically with ground pin on bottom unless indicated otherwise.

C. Ground-Fault Circuit Interrupter (GFCI) Receptacles:
1. Provide a separate GFCI receptacle for every instance where denoted "GFCI" on the Drawings and otherwise required by Code; do not GFCI-protect receptacles from the load side of an upstream GFCI receptacle.
2. Install all GFCI receptacles in a readily accessible location.
   a. Provide faceless GFCI device in a readily accessible location when the receptacle will not be readily accessible and connect receptacle to load side of faceless GFCI.

D. Wallbox Dimmers:
1. Install wallbox dimmers to achieve full rating; do not break heatsink fins off.
2. Install power interfaces in concealed accessible location.
3. Provide a separate neutral conductor for each branch circuit serving wallbox dimmers; do not connect wallbox dimmers to multiwire branch circuits.
4. Provide all control wiring and communications cabling including all 0-10V control wiring, whether or not shown on the Drawings, per manufacturer's recommendations and as required for a complete and operational system.

E. Install wiring devices in outlet boxes and connect wiring device grounding terminal to branch circuit equipment grounding conductor.

F. Connect wiring devices by wrapping conductor around screw terminal; do not use back-wired push-in terminals.

G. Install cover plates on all outlet boxes including blank outlets.

H. Use flat-head screws, clips, and straps to fasten multi-outlet assembly channel to surfaces and use suitable insulating bushings and inserts at connections to outlets and corner fittings.

END OF SECTION

SECTION 262813 - FUSES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 FUSES

A. Up to 600 Amps: Dual-element time-delay Class RK1 unless indicated otherwise or otherwise required for the switch in which the fuse is installed.

B. Greater than 600 Amps: Dual-element time-delay Class L unless indicated otherwise indicated otherwise or otherwise required for the switch in which the fuse is installed.

C. Site Lighting: Class CC with in-line fuseholder.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install fuses with label oriented such that manufacturer, type, and size are easily read.

END OF SECTION

SECTION 262818 - ENCLOSED SWITCHES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 SAFETY SWITCHES

A. 240 Volt Class: Square D Class 3130 general duty unless indicated otherwise.

B. 600 Volt Class: Square D Class 3110 heavy duty unless indicated otherwise.

C. Voltage, Phase, and Current Ratings: As indicated or otherwise required.

D. Fuse Clips: Class R cartridge fuse clips where fuses are installed.

E. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the switch is installed.

F. Accessories: Provide grounding kit for all enclosed switches.

2.02 BOX COVER UNITS: Bussmann #SSU unless indicated otherwise.

PART 3 EXECUTION

3.01 INSTALLATION

A. All Enclosed Switches:
1. Install in locations that provide all working space required by NFPA 70.
2. Install 5 feet to the operating handle.
3. Install fuses in fusible disconnect switches.
4. Provide nameplate indicating equipment designation, NEMA fuse class, and fuse size installed.

END OF SECTION

SECTION 264313 - SURGE PROTECTIVE DEVICES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 SURGE PROTECTION DEVICES

A. Description: Square D Surgelogic EMA series Type 2 surge protective device with the following ratings unless indicated otherwise:
1. Minimum Peak Surge Current Rating:
   a. Service Entrance Equipment: 240 kA per phase
   b. Power Distribution Panelboards: 160 kA per phase
   c. Branch Panelboards: 120 kA per phase
2. Maximum Voltage Protection Ratings:
   a. 277/480 Volt, 3 Phase, 4 Wire Systems:
      1. L-N: 1200 volts.
      2. L-G: 1200 volts.
      3. N-G: 1200 volts.
      4. L-L: 2000 volts.
3. Enclosure: Manufacturer's standard enclosure with integral disconnect switch and suitable for the environment in which the surge protective device is installed.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install surge protective devices directly adjacent to and within 6 inches of the associated switchboard or panelboard to keep conductor length absolutely minimized.

B. Comply with manufacturer's written recommendations for conductor and overcurrent protection device size for connecting surge protective devices to the electrical distribution system.

C. Install wiring between surge protective device and associated overcurrent protection device as short and straight as possible. Do not exceed manufacturer's recommended lead length.

D. Coordinate location to allow adequate clearances for maintenance.

E. Do not bond neutral and ground.

F. Do not integrate surge protective device within switchboards or panelboards unless indicated otherwise; see IEEE-1100 Section 8.4.2.5.

G. Do not energize or connect electrical system distribution equipment to their sources until surge protective devices are installed and connected.

H. Disconnect all surge protective devices before performing any Megger or high-potential testing of electrical distribution equipment.

END OF SECTION

SECTION 265100 - INTERIOR LIGHTING

PART 1 GENERAL

1.01 QUALITY ASSURANCE

A. Verify all ceiling systems for proper coordination of luminaires and accessories including any drywall frames, bar hangers, flanges, trim rings, etc. required for a complete, finished installation.

B. Provide only luminaires that are listed for the environment in which they are installed.
1. Luminaires shall carry damp location and/or wet location ratings as required.
2. Luminaires shall be insulated ceiling (IC) rated when recessed into insulated ceilings; coordinate locations of all insulated ceilings with the Architectural plans.

C. Coordinate exact locations of all luminaires with the Architectural Reflected Ceiling Plan(s); luminaire locations on the Architectural Reflected Ceiling Plan(s) take precedence over locations indicated on the electrical lighting plans.

D. Coordinate mounting heights of all wall-mounted luminaires with the Architect prior to rough-in.

E. Confirm all luminaire and accessory finishes with the Architect prior to ordering.

F. Coordinate luminaire dimensions with the wall and/or ceiling thickness prior to ordering.

G. Coordinate mounting location, number of faces, and directional arrows of exit signs as required to mark paths of egress to the satisfaction of the Authority Having Jurisdiction.

PART 2 PRODUCTS

2.01 LUMINAIRES

A. Provide as indicated on the Drawings.

B. The acceptability of any substitute fixtures lies solely with the Architect and Engineer.

C. The specified luminaire shall be provided at no additional cost where a substitute fixture is not accepted by the Architect or Engineer.

2.02 NON-DIMMING BALLASTS, TRANSFORMERS, AND DRIVERS

A. All Ballasts, Transformers, and Drivers
1. Provide low-temperature ballasts when installed in locations where ambient temperature can fall below 10 degrees C (50 degrees F).

B. LED Drivers: As required for and compatible with the associated LED module.

2.03 DIMMING BALLASTS AND DRIVERS

A. All Dimming Ballasts and Drivers:
1. Provide appropriate dimming ballasts/drivers in all fluorescent and LED luminaires controlled by wallbox dimmer switches or dimming systems whether or not specifically indicated within the specified luminaire's catalog number.
2. All dimming ballasts/drivers shall be compatible with associated wallbox dimmer switches or centralized dimming system control units.
3. Dimming Range: 100 percent to 5 percent.
4. Voltage: Universal (120 through 277 volts).
5. Power Factor: Greater than 0.95.
6. Total Harmonic Distortion: Less than 10 percent.
7. Sound Level Rating: Class A.

B. LED Dimming Drivers: Advance Xitanium series or equal.

2.04 EMERGENCY POWER SUPPLIES

A. Provide appropriate emergency battery in all fluorescent and LED luminaires indicated as emergency fixtures whether or not specifically indicated within the specified luminaire's catalog number.
1. Battery Type: Sealed nickel calcium (NiCad) with 7-year, minimum, life expectancy.
2. Illumination Time: 90 minutes minimum.
3. Voltage: Universal (120 through 277 volts).
4. Test Switch: Two-wire with LED indicator.
5. Lamp Operation: Two-lamp operation for luminaries equipped with more than one lamp.
6. Minimum Initial Illumination Rating:
   a. Linear Fluorescent: 1400 lumens per luminaire.
   b. Compact Fluorescent: 1100 lumens per luminaire.
   c. Integrated LED 1000 Lumens and Less: 10 watt output.
   d. Integrated LED Greater than 1000 Lumens: 20 watt output.

2.05 LAMPS

A. All Lamps:
1. Provide all incandescent lamps from the same manufacturer.

B. Incandescent: As indicated on the Drawings.

C. LED: As indicated on the Drawings.

2.06 ACCESSORIES

A. Provide all supplementary items, appurtenances, and devices incidental to or necessary for a sound, secure, and complete installation including, but not limited to:
1. Dimming ballasts for fluorescent and LED luminaires that are served by wallbox dimmer switches or dimming systems.
2. Emergency power supplies for fluorescent and LED luminaires indicated as emergency fixtures.
3. Multiple ballasts for fluorescent luminaires where indicated to have multi-level switching.
4. All trim rings, extensions, stems, canopies, cords, pendant feeds, connectors, bar hangers, fittings, hold-down clips, alignment clips/joiners, etc. necessary to mount the luminaires in a proper and approved method.
5. All necessary low-voltage transformers, connectors, mounting hardware, etc. for a complete low-voltage lighting system.
6. All necessary connectors, feeds, end caps, pendants, mounting hardware, fittings, etc. for a complete track lighting system.
7. Chain hangers for all suspended luminaires in unfinished areas.
8. Drywall frames for all linear fluorescent luminaires that are recessed into drywall ceilings.
9. Wireguards for any wall-mounted luminaires, including emergency lighting unit equipment and exit signs, located in gymnasiums or where otherwise exposed to physical damage.
10. Fire-rated luminaire covers (tents) for luminaires installed in fire-rated ceiling assemblies; coordinate locations of fire-rated ceiling assemblies with the Architectural plans.
11. Any seismic bracing and/or restraints required by the Authority Having Jurisdiction.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install luminaires in locations shown on the Architectural Reflected Ceiling Plan(s); luminaire locations on the Architectural Reflected Ceiling Plan(s) take precedence over locations indicated on the electrical lighting plans.

B. Install luminaires plumb and level and align with building lines and adjacent luminaires.

C. Support all luminaires completely independent of any suspended ceiling systems.

D. Connect luminaires to branch circuit.
1. Circuit all exit signs, emergency lights, and nightlights ahead of any switching.
2. Do not use multiwire branch circuits for circuits serving emergency lighting equipment such as emergency batteries or emergency lighting unit equipment.

E. Provide all additional emergency lighting and/or exit signs determined necessary by the Authority Having Jurisdiction during inspections.

F. Install all remote ballasts, low voltage transformers, and drivers in concealed accessible areas in close proximity to the associated luminaires and connect to the associated luminaires per the manufacturer's recommendations, including adjusting wire sizes for voltage drop if required.

G. Prevent insulation from being installed above or within 3 inches away from any luminaire that is recessed into an insulated ceiling but is not insulated ceiling (IC) rated.

H. Install fire-rated luminaire covers (tents) for luminaires installed in fire-rated ceiling assemblies; provide fire-rated boxes around luminaires when fire-rated luminaire covers (tents) are not available.

3.02 CLOSEOUT

A. Replace any lamps and ballasts that expire before the Owner's acceptance of the project.

B. Aim and adjust all luminaires to provide illumination levels, focusing, and distribution patterns to the Owner's satisfaction.

END OF SECTION

SECTION 271005 - TELEPHONE AND DATA SYSTEMS

PART 1 GENERAL

1.01 PREPARATION

A. Coordinate all demarcation locations with the serving utility and/or the Landlord.

B. Hold meeting with the Owner prior to commencing work.
1. Determine Scope of Work and Division of Responsibility.
2. Determine quantities of phone drops and data drops are required at each outlet box.
3. Confirm all cabling, termination, cross-connection equipment, enclosure, and jack requirements.

PART 2 PRODUCTS

2.01 ENCLOSURES

A. Backboards: Provide 3/4 inch thick UL-labeled, fire-retardant, interior grade plywood; size as indicated on the Drawings.

B. Equipment Racks: Only if required pursuant to meeting with the Owner:
1. Wall-Mounted Racks: Chatsworth Products Standard Swing Gate series; 19 inches wide, depth as required for installed components, and height as required for installed components plus 50 percent.
2. Floor-Mounted Racks: Chatsworth Products 50120 QuadraRack series with vertical and horizontal cable management, top and bottom cable troughs, and grounding lug; 19 inches wide, 29 inches deep, and height as required for installed components plus 50 percent.

2.02 OUTLET BOXES

A. Wall: 4-square by 2-1/8 inch deep outlet box with single gang mud ring and cover plate unless indicated otherwise or otherwise required.

B. Floor: As indicated on the Drawings or within Section 260537 unless indicated otherwise or otherwise required.

C. Wall Plates:
1. Provide standard-size nylon blank wall plates unless indicated otherwise; color as selected by the Architect. Mid-size or jumbo wall plates are not permitted.
2. When cabling is to be provided by this Contractor, provide standard-size nylon modular keystone jack cover plates compatible with the associated modular keystone jacks and with appropriate number of jacks unless indicated otherwise; color as selected by the Architect.

2.03 PATHWAYS

A. All Pathways:
1. See Section 260534 for permitted conduit types.
2. Provide pullstring in each conduit.

B. Service Entrance: Conduit with extended radius sweeps; size as indicated or otherwise required.

C. Branch Wiring: Provide 3/4 inch minimum conduit from all outlet boxes to accessible ceiling space unless indicated otherwise.

2.04 COPPER CABLES, PLUGS, AND JACKS: Only if required pursuant to meeting with the Owner:

A. Data:
1. All Data Cabling: Unshielded twisted pair (UTP) Category 6A unless indicated otherwise or otherwise required.
2. Backbone (Riser) Cabling: Type OMR when installed in conduit and Type OMP when not installed in conduit; gray jacket unless indicated otherwise or otherwise required.
3. Horizontal Cabling: Type OM when installed in conduit and Type OMP when not installed in conduit; blue jacket unless indicated otherwise or otherwise required.
4. Plugs: Category 6A UTP non-keyed 8-wire modular plugs unless indicated otherwise or otherwise required.
5. Jacks: Category 6A UTP non-keyed 8-wire RJ45 modular keystone jack unless indicated otherwise or otherwise required; color as selected by the Owner.

B. Telephone:
1. All Telephone Cabling: Unshielded twisted pair (UTP) Category 3 unless indicated otherwise or otherwise required.
2. Horizontal Cabling: Type OM when installed in conduit and Type OMP when not installed in conduit; blue jacket unless indicated otherwise or otherwise required.
3. Plugs: Category 3 UTP non-keyed 8-wire modular plugs unless indicated otherwise or otherwise required.
4. Jacks: Category 3 UTP non-keyed 8-wire RJ45 modular keystone jack unless indicated otherwise or otherwise required; color as selected by the Owner.

2.05 CROSS-CONNECTION EQUIPMENT: Only if required pursuant to meeting with the Owner:

A. Connector Blocks for Category 3 Cabling: Type 66 insulation displacement connectors unless indicated otherwise or otherwise required with capacity sufficient for cables to be terminated plus 25 percent spare.

B. Connector Blocks for Category 5e Cabling: Type 110 insulation displacement connectors unless indicated otherwise or otherwise required with capacity sufficient for cables to be terminated plus 25 percent spare.

C. Patch Panels for Copper Cabling: Panduit DP5e series UTP patch panel unless indicated otherwise or otherwise required with quantity of ports sufficient for cables to be terminated plus 25 percent spare.

D. Patch Cords: Provide one Category 5e patch cord for each pair of patch panel ports.

PART 3 EXECUTION

3.01 INSTALLATION OF ENCLOSURES

A. Backboards: Install at locations indicated on the Drawings.

B. If required pursuant to meeting with the Owner:
1. Wall-Mounted Racks: Install to plywood backboard at locations directed by the Owner.
2. Floor-Mounted Racks: Permanently anchor to floor in accordance with manufacturer's recommendations at locations directed by the Owner, connect adjacent racks together, and remove interior side panels.

3.02 INSTALLATION OF OUTLET BOXES

A. Install in compliance with Section 260537.

B. Mounting Heights: See Section 262726.

3.03 INSTALLATION OF PATHWAYS

A. All Pathways:
1. Install all pathways with the following minimum clearances:
   a. 48 inches from motors, generators, frequency converters, transformers, x-ray equipment, and uninterruptible power systems.
   b. 12 inches from power conduits and cables and panelboards.
   c. 5 inches from fluorescent and high frequency lighting fixtures.
   d. 6 inches from flues, hot water pipes, and steam pipes.

B. Conduit:
1. Install conduit in compliance with Section 260534 unless indicated otherwise.
   a. Do not install more than two 90 degree bends in a single horizontal cable run.
   b. Leave pull cords in place where cables are not initially installed.
   c. Under floor slabs, locate conduit at 12 inches minimum below vapor retarder and seal penetrations of vapor retarder around conduit.
2. Underground Service Entrance: Install conduit at least 18 inches below finish grade and encase in at least 3 inches thick concrete for at least 60 inches out from the building line.

C. Grounding and Bonding: Perform in accordance with ANSI/J-STD-607 and NFPA 70.

3.04 INSTALLATION OF CABLES, PLUGS, AND JACKS

A. Only if required pursuant to meeting with the Owner:
1. Install cables from outlet to cross-connection equipment as directed by the Owner.
2. Do not exceed 300 feet from outlet to switch.
3. Do not bend cable tighter than the greater of the manufacturer's recommended bend radius or 4 times the cable diameter.
4. Do not exceed the greater of the manufacturer's recommended cable pull tension or 25 pounds.
5. Use only lubricants approved by cable manufacturer when installing cables in conduit and do not chafe or damage outer jacket.
6. Install plugs and jacks as required.
7. Provide the following minimum extra length of cable, looped neatly:
   a. At Patch Panels: 10 feet.
   b. At Outlets: 12 inches.
8. Install labels complying with TIA/EIA-606 using coded identifiers:
   a. Cables: Color coded labels on each end.
   b. Outlets: Label each jack on its cover plate with a unique numerical identifier as to its type and function.
   c. Patch Panels: Label each jack with a unique numerical identifier as to its type and function.
   d. Patch Cords: Label with jack identifier corresponding to initial installation.

3.05 INSTALLATION OF CROSS-CONNECTION EQUIPMENT

A. Only if required pursuant to meeting with the Owner:
1. Install connector blocks at backboards as directed by the Owner.
2. Install patch panels in equipment racks as directed by the Owner.
3. Install labels complying with TIA/EIA-606 using coded identifiers:
   a. Patch Panels: Label each jack with a unique numerical identifier as to its type and function.
   b. Patch Cords: Label with jack identifier corresponding to initial installation.

3.06 TESTING

A. General: Comply with inspection and testing requirements of specified installation standards.

B. Visual Inspection:
1. Inspect cable jackets for certification markings.
2. Inspect cable terminations for color coded labels of proper type.
3. Inspect outlet plates and patch panels for complete labels.
4. Inspect patch cords for complete labels.

C. Testing of Copper Cabling and Associated Equipment:
1. Test backbone cables after termination but before cross-connection.
2. Test backbone cables for DC loop resistance, shorts, opens, intermittent faults, and polarity between connectors and between conductors and shield, if cable has overall shield.
3. Test operation of shorting bars in connection blocks.
4. Category 3 Backbone: Perform attenuation test.
5. Category 3 Links: Test each pair for short circuit continuity, short to ground, crosses, reversed polarity, operational and ring-back, and dial tone.
6. Category 5e/6 Backbone: Perform near end cross talk (NEXT) and attenuation tests.
7. Category 5e/6 Links: Perform tests for wire map, length, attenuation, NEXT, and propagation delay.

D. Final Testing: After all work is complete, including installation of telecommunications outlets, and telephone dial tone service is active, test each voice jack for dial tone.

END OF SECTION

SECTION 275132 - TELEVISION SYSTEMS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

2.01 ENCLOSURES

A. Backboards: Provide 3/4 inch thick UL-labeled, fire-retardant, interior grade plywood; size as indicated on the Drawings.

2.02 OUTLET BOXES

A. Wall: 4-square by 2-1/8 inch deep outlet box with single gang mud ring and cover plate unless indicated otherwise or otherwise required.

B. Floor: As indicated on the Drawings or within Section 260537 unless indicated otherwise or otherwise required.

C. Wall Plates:
1. Provide standard-size nylon blank wall plates unless indicated otherwise; color as selected by the Architect. Mid-size or jumbo wall plates are not permitted.

2.03 PATHWAYS

A. All Pathways:
1. See Section 260534 for permitted conduit types.
2. Provide pullstring in each conduit.

B. Service Entrance: Conduit with extended radius sweeps; size as indicated or otherwise required.

C. Branch Wiring: Provide 3/4 inch minimum conduit from all outlet boxes to accessible ceiling space unless indicated otherwise.

PART 3 EXECUTION

3.01 INSTALLATION OF ENCLOSURES

A. Backboards: Install at locations indicated on the Drawings.

3.02 INSTALLATION OF OUTLET BOXES

A. Install in compliance with Section 260537.

B. Mounting Heights: See Section 262726.

3.03 INSTALLATION OF PATHWAYS

A. All Pathways:
1. Install all pathways with the following minimum clearances:
   a. 48 inches from motors, generators, frequency converters, transformers, x-ray equipment, and uninterruptible power systems.
   b. 12 inches from power conduits and cables and panelboards.
   c. 5 inches from fluorescent and high frequency lighting fixtures.
   d. 6 inches from flues, hot water pipes, and steam pipes.

B. Conduit:
1. Install conduit in compliance with Section 260534 unless indicated otherwise.
   a. Do not install more than two 90 degree bends in a single horizontal cable run.
   b. Leave pull cords in place where cables are not initially installed.
   c. Under floor slabs, locate conduit at 12 inches minimum below vapor retarder and seal penetrations of vapor retarder around conduit.

END OF SECTION

SECTION 280800 - COMMISSIONING OF ELECTRICAL SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. Section includes Cx process requirements for the following electrical systems, assemblies, and equipment:
1. Transformers.
2. Distribution and branch-circuit panelboards.
3. Wiring devices.
4. Lighting control systems.
5. Normal Power System testing and verification.

B. Related requirements:
1. Section 019113 "General Commissioning Requirements" for general Cx process requirement and CxA responsibilities.

1.02 INFORMATIONAL SUBMITTALS

A. Construction Checklists: Draft construction checklists will be created by CxA for Contractor review.

B. Construction Checklists: Installation and Performance test checklists for systems, assemblies, subsystems, equipment, and components to be part of the Cx process and according to requirement in Section 019113 "General Commissioning Requirement."
1. Instrumentation and control for electrical systems.
2. Instrumentation and control for lighting control systems.
3. Electrical feeders and branch circuits.
4. Transformers.
5. Medium voltage power cables.
6. Medium voltage circuit breakers.
7. Medium voltage surge protective devices.
8. Metering devices.
9. Panelboards.
10. Lighting.
11. Lighting Controls.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONSTRUCTION CHECKLISTS

A. Complete detailed construction checklists (prefunctional checklists) prepared by the CxA for HVAC systems, assemblies, subsystems, equipment, and components.

3.02 CONSTRUCTION CHECKLIST REVIEW

A. Review and provide written comments on draft construction checklists. CxA will create required draft construction checklists and provide them to Contractor.

B. Return draft construction checklist review comments within 5 days of receipt.

C. When review comments have been resolved, the CxA will provide final construction checklists marked "Approved for Use, (date)."

D. Use only construction checklists marked "Approved for Use, (date)."

3.03 CX TESTING PREPARATION

A. Certify that electrical systems, subsystems, and equipment have been installed, calibrated, and started and that they are operating according to the Contract Documents and approved submittals.

B. Set systems, subsystems, and equipment into operating mode to be tested according to approved test procedures (for example: normal shutdown, normal auto position, normal manual position, unoccupied cycle, and alarm conditions).

3.04 CX TESTS COMMON TO ELECTRICAL SYSTEMS

A. Verification of Normal and essential Power System Operation:
1. Prerequisites:
   a. Acceptance of results for construction checklists for Division 26 electrical components associated with essential power system.
2. Equipment and Systems to Be Tested: Division 26 electrical equipment.
3. Test Purpose: verify operation of Normal power system.
4. Test Conditions:
   a. Energize components of Normal power system.
   b. Stimulate a failure of Normal power system.

B. Verification of Control and Instrumentation:
1. Prerequisites: Acceptance of results for construction checklists.
2. Test Purpose: Verify operation of control and monitoring systems for Normal and Essential power systems.
3. Test Conditions:
   1. Energize components of Normal power system.
   2. Test operation of equipment.
   3. Test operation of all lighting controls (occupancy sensors, daylight controls, schedules).

END OF SECTION

zebra

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REVISIONS

	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0048442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME: ELECTRICAL SPECIFICATIONS

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN: MJC
SCALE: AS NOTED

SHEET NO.: E591

SE JOB# 26019

ELECTRICAL KITCHEN EQUIPMENT SCHEDULE (SOME MAY NOT BE USED)

EQUIPMENT INFORMATION					CONNECTION INFORMATION	
TAG	DESCRIPTION	AMPS	VOLTS	PHASE	TERMINATION	NOTES
1	WALK-IN COOLER/FREEZER CONNECTION	1.0	120	1	JUNCTION BOX ON TOP OF WALK-IN BOX	3,5
1A	WALK-IN COOLER EVAPORATOR	1.0	120	1	WEATHERPROOF MOTOR RATED DISCONNECT SWITCH ADJACENT TO EVAPORATOR	3,4,6
1B	WALK-IN COOLER CONDENSER	6.0	208	3	NEMA 3R DISCONNECT SWITCH AT UNIT, SIZED AS INDICATED ON E150	3,4,6
1C	WALK-IN FREEZER EVAPORATOR	1.0	208	1	WEATHERPROOF MOTOR RATED DISCONNECT SWITCH ADJACENT TO EVAPORATOR	3,4,6
1D	WALK-IN FREEZER CONDENSER	9.0	208	1	NEMA 3R DISCONNECT SWITCH AT UNIT, SIZED AS INDICATED ON E150	3,4,6
17	EMPLOYEE MICROWAVE	10.0	120	1	NEMA 5-20R RECEPTACLE	1
18	EMPLOYEE REFRIGERATOR	6.0	120	1	NEMA 5-20R RECEPTACLE	1
30	RTI OIL RECYCLING TANKS	12.0	120	1	JUNCTION BOX FOR HARDWIRED CONNECTION	1
33	SODA BAG-IN-BOX SYSTEM	6.5	120	1	NEMA 5-20R RECEPTACLE	1
36	ICE MACHINE	14.2	208	1	JUNCTION BOX FOR HARDWIRED CONNECTION	3
36A	ICE MACHINE SANITATION SYSTEM	0.8	120	1	NEMA 5-15R RECEPTACLE	1
37	REACH-IN REFRIGERATOR	2.5	120	1	NEMA 5-15R RECEPTACLE	1
38	REACH-IN FREEZER	8.0	120	1	NEMA 5-15R RECEPTACLE	1
61	VENTLESS UPRIGHT DISHWASHER	18.7	208	3	JUNCTION BOX FOR HARDWIRED CONNECTION	3,4
75	IMMERSION BLENDER	2.3	120	1	NEMA 5-15R RECEPTACLE	1
77	RETHERMALIZER	28.8	208	1	HUBBELL #HBL2620SR2 NEMA L6-30R TWIST-LOCK RECEPTACLE	1
93	GREASE COLLECTOR	7.1	120	1	NEMA 5-15R RECEPTACLE	1
94	HOOD FIRE SUPPRESSION SYSTEM	5.0	120	1	JUNCTION BOX FOR HARDWIRED CONNECTION	5,7
95	HOOD CONTROL CABINET	5.0	120	1	JUNCTION BOX FOR HARDWIRED CONNECTION	5,7
100	GAS GRIDDLE	2.0	120	1	NEMA 5-15R RECEPTACLE	1
101	GAS GRIDDLE	2.0	120	1	NEMA 5-15R RECEPTACLE	1
102	REFRIGERATED BASE	8.7	120	1	NEMA 5-15R RECEPTACLE	1
102A	REFRIGERATED BASE	8.7	120	1	NEMA 5-15R RECEPTACLE	1
102B	REFRIGERATED BASE	8.7	120	1	NEMA 5-15R RECEPTACLE	1
102E	REFRIGERATED BASE	8.7	120	1	NEMA 5-15R RECEPTACLE	1
103	GAS FRYER WITH FILTER PUMP	8.7	120	1	NEMA 5-15R RECEPTACLE	1
104	GAS FRYER WITH FILTER PUMP	8.7	120	1	NEMA 5-15R RECEPTACLE	1
105	FRY DUMP WITH WARMER	8.0	120	1	NEMA 5-15R RECEPTACLE	1
105A	FRY DUMP WITH WARMER	15.9	120	1	NEMA 5-15R RECEPTACLE	1
107	REFRIGERATED BREADING UNIT	6.0	120	1	NEMA 5-15R RECEPTACLE	2
108	WORKTOP FREEZER	2.0	120	1	NEMA 5-15R RECEPTACLE	1
109	FROZEN FRY DISPENSER	11.0	120	1	NEMA 5-15R RECEPTACLE	1
118	UNDERCOUNTER REFRIGERATOR	2.4	120	1	NEMA 5-15R RECEPTACLE	1
119	ELECTRONIC TIMER	1.0	120	1	NEMA 5-15R RECEPTACLE	1
119A	ELECTRONIC TIMER	1.0	120	1	NEMA 5-15R RECEPTACLE	1
121	CONVEYOR TOASTER	13.4	208	1	NEMA 6-20R RECEPTACLE	1
122	REFRIGERATED PREP UNIT	9.0	120	1	NEMA 5-15R RECEPTACLE	1
123	WORKTOP FREEZER	4.8	120	1	NEMA 5-15R RECEPTACLE	1
124	TOPPING DISPENSER	8.3	120	1	NEMA 5-15R RECEPTACLE	1
125	KDS SYSTEM	1.5	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	1
127	FRENCH FRY WARMER	8.3	120	1	NEMA 5-15R RECEPTACLE	1
127A	FOOD WARMER	8.3	120	1	NEMA 5-15R RECEPTACLE	1
130	OVERSHELF	20.0	120/208	1	CONNECT TO EQUIPMENT SUPPLIED WIRE TERMINATION BLOCKS	3,8
131	HEATED SHELF	12.5	208	1	PROVIDE DIRECT CONNECTION TO PRE-WIRED OVERSHELF	
131A	HEATED SHELF	6.4	120	1	PROVIDE DIRECT CONNECTION TO PRE-WIRED OVERSHELF	
132	HEAT LAMP	0.7	120	1	PROVIDE DIRECT CONNECTION TO PRE-WIRED OVERSHELF	
133	60" HEAT LAMP	10.0	120	1	PROVIDE DIRECT CONNECTION TO PRE-WIRED OVERSHELF	
133A	48" HEAT LAMP	11.7	120/208	1	PROVIDE DIRECT CONNECTION TO PRE-WIRED OVERSHELF	
134	24" HEAT LAMP	8.2	120/208	1	PROVIDE DIRECT CONNECTION TO PRE-WIRED OVERSHELF	
135	HEATED SHELF	3.5	120	1	PROVIDE DIRECT CONNECTION TO PRE-WIRED OVERSHELF	
141	KDS SYSTEM	2.5	120	1	PROVIDE DIRECT CONNECTION TO PRE-WIRED OVERSHELF	
143	CURVED LID DISPLAY FREEZER	2.3	120	1	NEMA 5-15R RECEPTACLE	1
143A	CURVED LID DISPLAY FREEZER	3.6	120	1	NEMA 5-15R RECEPTACLE	1
145	TOPPING DISPENSER	4.3	120	1	NEMA 5-15R RECEPTACLE	1
160	FROZEN CUSTARD MACHINE	20.0	208	3	NEMA 15-20R RECEPTACLE, TOTAL OF TWO PER MACHINE	1
161	SANDWICH/SALAD PREP REFRIGERATOR	5.1	120	1	NEMA 5-15R RECEPTACLE	1
162	CUSTARD MOBILE FREEZER	6.0	120	1	NEMA 5-15R RECEPTACLE	1
172	CUSTARD DIPPING CABINET	6.5	120	1	NEMA 5-15R RECEPTACLE	1
174	KDS MONITOR	1.5	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	1
181	COLD BEVERAGE DISPENSER	3.8	120	1	NEMA 5-15R RECEPTACLE	1
182	THREE SPINDLE MIXER	7.5	120	1	NEMA 5-15R RECEPTACLE	1
183	DRINK MIXER	2.5	120	1	NEMA 5-15R RECEPTACLE	1
184	CONCRETE MIXER	6.4	120	1	NEMA 5-15R RECEPTACLE	1
200	UNDERCOUNTER REFRIGERATOR	2.4	120	1	NEMA 5-15R RECEPTACLE	1
201	WORKTOP REFRIGERATOR	6.5	120	1	NEMA 5-15R RECEPTACLE	1
203	SODA DISPENSER	15.0	120	1	NEMA 5-20R RECEPTACLE	1
203A	SODA DISPENSER	16.0	120	1	NEMA 5-20R RECEPTACLE	1
203B	ICE MAKER	14.2	208	1	JUNCTION BOX FOR HARDWIRED CONNECTION	1
204	TEA BREWER	14.4	120	1	NEMA 5-20R RECEPTACLE	1
206	LEMONADE DISPENSER	4.9	120	1	NEMA 5-15R RECEPTACLE	1
208	KDS SCREEN	2.5	120	1	NEMA 5-15R RECEPTACLE	1
221	P.O.S. TERMINAL	3.0	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	1
221A	KIOSK TERMINAL	1.5	120	1	COORDINATE PLUGMOLD PLACEMENT WITH MILLWORK	1
260	HME BASE STATION	3.0	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	8
261	HEADSET BATTERY CHARGER	1.5	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	8
262	SECURITY MONITOR	3.0	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	8
263	HME TIME MONITOR	1.5	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	8
263A	HME TIMER SIGNAL PROCESSOR	1.5	120	1	CONNECT TO ADJACENT HME TIME MONITOR RECEPTACLE	8
264	HME CONTROL UNIT	1.5	120	1	CONNECT TO ADJACENT HME TIME MONITOR RECEPTACLE	8
265	LINE BUSTER TABLETS	1.5	120	1	NEMA 5-20R RECEPTACLE	8
266	BUMP BAR	1.0	120	1	CONNECT TO ADJACENT KDS SYSTEM RECEPTACLE	1
267	PRINTER	2.5	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	1
268	PRINTER	2.5	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	1
269	RECEIPT PRINTER	2.5	120	1	NEMA 5-20R ISOLATED GROUND RECEPTACLE	1
302	FUTURE ESPRESSO CAPPUCINO	30.0	208	1	NEMA L6-30R RECEPTACLE	
304	FUTURE COFFEE TEA BREWER	28.0	120/240	1	JUNCTION BOX FOR HARDWIRED CONNECTION	9
305	FUTURE KDS SCREEN	1.5	120	1	NEMA 5-15R ISOLATED GROUND RECEPTACLE	
307	FUTURE BUMP BAR	1.0	120	1	NEMA 5-15R RECEPTACLE	
310	FROZEN DRINK MACHINE	13.0	208	3	NEMA 15-20R RECEPTACLE	2

GENERAL NOTES:
- A. THIS IS A MASTER EQUIPMENT CONNECTION SCHEDULE. SOME ITEMS LISTED MAY NOT BE USED.
- B. EQUIPMENT CONNECTION SCHEDULE BASED ON ORIGINAL EQUIPMENT SELECTIONS AVAILABLE AT THE TIME OF THIS DESIGN. VERIFY EQUIPMENT SELECTIONS AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING PURCHASED WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN AND ADJUST ELECTRICAL PROVISIONS AS NECESSARY PER EQUIPMENT MANUFACTURER'S INSTALLATION REQUIREMENTS.
- C. REFER TO FINAL KITCHEN DRAWINGS FOR EXACT LOCATIONS, MOUNTING HEIGHTS, AND ADDITIONAL REQUIREMENTS FOR ALL KITCHEN EQUIPMENT.
- D. ALL WEATHERPROOF COVERS SHALL BE EXPANDABLE WEATHERPROOF WHILE IN-USE TYPE.
- E. PROVIDE PRINTED LABELS FOR ALL DISCONNECT SWITCHES INDICATING THE LOAD SERVED.

SCHEDULED NOTES:
1. EQUIPMENT SUPPLIED WITH FACTORY INSTALLED CORD AND PLUG.
2. PROVIDE HEAVY DUTY CORD AND MATCHING PLUG AS SCHEDULED.
3. PROVIDE LIQUID-TIGHT FLEXIBLE CONDUIT CONNECTION TO ALLOW FOR LOCATION ADJUSTMENTS.
4. PROVIDE DISCONNECT SWITCH IN AN ACCESSIBLE LOCATION WITHIN SIGHT OF THE EQUIPMENT SERVED.
5. EQUIPMENT MAY BE SEPARATED FOR SHIPPING. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PROVIDE COMPLETE CONNECTION.
6. PROVIDE ALL INTERCONNECTIONS TO REMOTE CONDENSING UNIT. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PROVIDE COMPLETE CONNECTION.
7. ROUTE CIRCUIT THROUGH HOOD CONTROL PANEL FOR CONTROL.
8. REFER TO ELEVATION DETAILS ON KITCHEN DRAWINGS FOR MORE INFORMATION. COORDINATE REQUIREMENTS WITH ARCHITECT AND MANUFACTURER PRIOR TO ROUGH-IN.
9. PROVIDE 208V TO 240V SINGLE PHASE BUCK-BOOST TRANSFORMER.

PANEL "P1"

FED FROM: PANEL "DP"
VOLTAGE: 208Y/120V, 3 PHASE, 4 WIRE
BUS MATERIAL: ALUMINUM OR COPPER
BUS LOAD: 173 AMPS
BUS RATING: 225 AMPS
MAIN: 225/3 MAIN BREAKER

MOUNTING: FLUSH MOUNTED
ENCLOSURE: NEMA 1
FAULT CURRENT: 4015 AMPS
AIC/SCCR RATING: 10 KA
OPTIONS*: BONDED AND ISOLATED GROUND BARS

			LOAD (VA)					LOAD (VA)					
NOTES	CKT.	LOAD DESCRIPTION	A	B	C	BREAKER	BREAKER	A	B	C	LOAD DESCRIPTION	CKT.	NOTES
GFPE	1	FREEZER HEAT TAPE	1000			20/1	20/1	960			REACH-IN FREEZER	2	GFCI
	3	WALK-IN CONNECTION		240		20/1	20/2		1813		TOASTER CONVEYOR	4	GFCI
	5	WALK-IN CONNECTION			240	20/1				1813	------	6	
GFCI	7	FOOD TOPPING WARMER	1516			20/1	20/1	780			CUSTARD DIPPING CABINET	8	GFCI
NOTE 1	9	WORKTOP FREEZER		264		20/1	20/1		1800		MIXER	10	GFCI
NOTE 1	11	FRENCH FRY WARMER			1092	20/1	20/1			720	P.O.S. TERMINALS	12	GFCI
	13	SPARE				20/1	20/1	500			PAGER SYSTEM	14	GFCI
	15	SPARE				20/1	20/1		240		GAS GRIDDLE TOP	16	NOTE 1
GFCI	17	EMPLOYEE REFRIGERATOR			720	20/1	20/1			2088	FRYER	18	NOTE 1
GFCI	19	EMPLOYEE MICROWAVE	1200			20/1	20/1	1092			FRENCH FRY WARMER	20	NOTE 1
GFCI	21	EMPLOYEE TABLE RECEPT.		360		20/1	20/1		480		BEVERAGE DISPENSER	22	GFCI
GFCI	23	KDS MONITOR			900	20/1	20/1			576	UC REFRIGERATOR	24	GFCI
GFCI	25	LEMONADE DISP.	588			20/1	20/1	1728			TEA BREWER	26	GFCI
GFCI	27	ICE CHEST/SODA TOWER		600		20/1	20/1		840		GREASE COLLECTOR	28	NOTE 1
NOTE 1	29	TIMER			360	20/1	20/1			180	CO2 DETECTOR	30	
NOTE 1	31	REFRIGERATED BASE	360			20/1	20/1				SPARE	32	
NOTE 1	33	GAS GRIDDLE TOP		480		20/1	20/1		2000		FOOD WARMER	34	GFCI
HLO	35	SMART SAFE			180	20/1	20/1			1000	FOOD TOPPING WARMER	36	GFCI
	37	MANAGERS DESK IG	720			20/1	20/1	300			PRINTER	38	GFCI
	39	MANAGERS DESK IG		720		20/1	20/1		696		PIZZA PREP REF.	40	GFCI
	41	SFSG SIGNAGE			500	20/1	20/1			720	KDS SYSTEM	42	GFCI
	43	RTU SERVICE RECEPT.	360			20/1	20/1	720			KDS MONITOR	44	GFCI
	45	CONVENIENCE REC.		180		20/1	20/1		1000		DATA RACK 1	46	
	47	CONVENIENCE REC.			180	20/1	20/1			500	DVR MONITOR	48	
	49	CONVENIENCE REC.	180			20/1	20/1	300			SECURITY ALARM	50	HLO
	51	SPARE				20/1	20/1		1440		OIL TANK	52	HPL
HPL	53	TANKLESS HWH-1			1200	20/1	20/1			1440	OIL TANK	54	HPL
	55	WATER SOFTENER	500			20/1	20/2	1801			1C	56	
	57	HOOD CONTROLS		500		20/1	---		1801		------	58	
HLO	59	ANSUL			500	20/1	20/1			180	DOORBELL CHIME	60	GFCI
GFCI	61	RETHERMALIZER	3464			30/2	20/1	360			HARRI TIME CLOCK	62	GFCI
	63	------		3464		---	20/2		1705		3G	64	HPL
	65	SPARE				20/1	---			1705	------	66	
	67	SPARE				20/1	20/1	720			ORDER KIOSK RECEPTS	68	
	69	SPARE				20/1	20/1		900		SHOW WINDOW REC.	70	
	71	DATA RACK 2			1000	20/1				600	TELVISION	72	
	73	SPARE				20/1	20/1	1800			1A	74	
	75	SPARE				20/1					SPACE ONLY	76	
	77	SPARE				20/1					SPACE ONLY	78	
	79	SPACE ONLY									SPACE ONLY	80	
ST	81	SHUNT TRIP CONTACTOR				20/1					SPACE ONLY	82	
	83	SHUNT TRIP COIL									SPACE ONLY	84	

NOTES:
- * SEE SPECIFICATIONS FOR OTHER OPTIONS REQUIRED BUT NOT NECESSARILY NOTED HERE
- GFCI PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) 5 MILLIAMP TRIP TYPE CIRCUIT BREAKER. PROVIDE EXTERNAL GFCI DEVICE IF A GFCI CIRCUIT BREAKER IS NOT AVAILABLE.
- GFPE PROVIDE GROUND-FAULT PROTECTION OF EQUIPMENT (GFPE) 30 MILLIAMP TRIP TYPE CIRCUIT BREAKER.
- ST PROVIDE CIRCUIT BREAKER WITH SHUNT TRIP.
- HLO PROVIDE HANDLE CLAMP/NON-PADLOCKABLE LOCK-ON/HANDLE BLOCKING ACCESSORY TO PREVENT MANUAL OPERATION.
- HPL PROVIDE PERMANENTLY-INSTALLED HANDLE PADLOCK ACCESSORY TO LOCK CIRCUIT BREAKER IN THE OPEN POSITION.
- NOTE 1 PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) 5 MILLIAMP TRIP TYPE CIRCUIT BREAKER. PROVIDE EXTERNAL GFCI DEVICE IF A GFCI CIRCUIT BREAKER IS NOT AVAILABLE. ROUTE CIRCUIT THROUGH CONTACTOR C-ST. SEE DETAIL 1/E501 FOR ADDITIONAL INFORMATION.

LOAD ANALYSIS FOR PANEL "P1" (INCLUDING SUBFEEDS)

LOAD DESCRIPTION	DEMAND FACTOR	PHASE A (VA) CONNECT.	PHASE A (VA) DEMAND	PHASE B (VA) CONNECT.	PHASE B (VA) DEMAND	PHASE C (VA) CONNECT.	PHASE C (VA) DEMAND	TOTAL (VA) CONNECT.	TOTAL (VA) DEMAND
RECEPTACLE:	100%	2400	2400	1440	1440	1040	1040	4880	4880
OTHER CONTINUOUS:	125%	0	0	1440	1800	1940	2425	3380	4225
OTHER NONCONTINUOUS:	100%	3440	3440	2460	2460	4320	4320	10220	10220
WATER HEATING:	100%	0	0	0	0	1200	1200	1200	1200
KITCHEN:	65%	11509	7481	14383	9349	9895	6432	35785	23261
MOTOR:	100%	3602	3602	1802	1802	0	0	5403	5403
ADD 25% OF LARGEST MOTOR:	100%	260	260	260	260	260	260	780	780
56'-0" SHOW WINDOW AT 200 VA/FT:	100%	3734	3734	3734	3734	3734	3734	11200	11200
TOTAL:		24943	20915	25518	20844	22388	19410	72848	61168
EQUIVALENT AMPS:		206	172	210	171	184	160	200	168
PHASE BALANCE:			2.58%		2.23%		-4.80%		

PANEL "DP"

FED FROM: FUSIBLE SWITCH
VOLTAGE: 480Y/277V, 3 PHASE, 4 WIRE
BUS MATERIAL: ALUMINUM OR COPPER
BUS LOAD: 199 AMPS
BUS RATING: 400 AMPS
MAIN: 400/3 MAIN BREAKER

MOUNTING: FLUSH MOUNTED
ENCLOSURE: NEMA 1
FAULT CURRENT: 60150 AMPS
AIC/SCCR RATING: 65 KA
OPTIONS*: BONDED EQUIPMENT GROUND BAR

			LOAD (VA)					LOAD (VA)					
NOTES	CKT.	LOAD DESCRIPTION	A	B	C	BREAKER	BREAKER	A	B	C	LOAD DESCRIPTION	CKT.	NOTES
HPL	1	PANEL "P1" VIA XFMR	20915			110/3	110/3	14204			PANEL "P2" VIA XFMR	2	HPL
	3	------		20843		---	---		13036		------	4	
	5	------			19410	---	---			14146	------	6	
	7	RTU-1	8979			45/3	50/3	10753			RTU-2	8	
	9	------		8979		---	---		10753		------	10	
	11	------			8979	---	---			10753	------	12	
	13	EF-1	1441			15/1					SPACE ONLY	14	
	15	EF-2		1441		15/1					SPACE ONLY	16	
	17	SPACE ONLY									SPACE ONLY	18	
	19	SPACE ONLY									SPACE ONLY	20	
	21	SPACE ONLY									SPACE ONLY	22	
	23	SPACE ONLY									SPACE ONLY	24	
	25	SPACE ONLY									SPACE ONLY	26	
	27	SPACE ONLY									SPACE ONLY	28	
	29	SPACE ONLY									SPACE ONLY	30	
	31	SPACE ONLY					60/3				SPD	32	
	33	SPACE ONLY					---				------	34	
	35	SPACE ONLY					---				------	36	
	37	SPACE ONLY					---				------	38	
	39	SPACE ONLY					---				------	40	
	41	SPACE ONLY					---				------	42	

NOTES:
- * SEE SPECIFICATIONS FOR OTHER OPTIONS REQUIRED BUT NOT NECESSARILY NOTED HERE
- HPL PROVIDE PERMANENTLY-INSTALLED HANDLE PADLOCK ACCESSORY TO LOCK CIRCUIT BREAKER IN THE OPEN POSITION.

LOAD ANALYSIS FOR PANEL "DP" (INCLUDING SUBFEEDS)

LOAD DESCRIPTION	DEMAND FACTOR	PHASE A (VA) CONNECT.	PHASE A (VA) DEMAND	PHASE B (VA) CONNECT.	PHASE B (VA) DEMAND	PHASE C (VA) CONNECT.	PHASE C (VA) DEMAND	TOTAL (VA) CONNECT.	TOTAL (VA) DEMAND
LIGHTING:	125%	1581	1977	1617	2022	1083	1354	4281	5352
RECEPTACLE:	100%	2580	2580	1620	1620	1040	1040	5240	5240
OTHER CONTINUOUS:	125%	1200	1500	2640	3300	3140	3925	6980	8725
OTHER NONCONTINUOUS:	100%	3440	3440	2960	2960	4320	4320	10720	10720
WATER HEATING:	100%	0	0	0	0	1200	1200	1200	1200
KITCHEN:	65%	18857	12257	20951	13618	17183	11169	56989	37043
MOTOR:	100%	29579	29579	26611	26611	25323	25323	81511	81511
ADD 25% OF LARGEST MOTOR:	100%	2689	2689	2689	2689	2689	2689	8065	8065
56'-0" SHOW WINDOW AT 200 VA/FT:	100%	3734	3734	3734	3734	3734	3734	11200	11200
TOTAL:		63657	57753	62820	56552	59710	54752	186186	169055
EQUIVALENT AMPS:		220	199	217	194	206	188	214	194
PHASE BALANCE:			2.49%		0.35%		-2.84%		

PANEL "P2"

FED FROM: PANEL "DP"
VOLTAGE: 208Y/120V, 3 PHASE, 4 WIRE
BUS MATERIAL: ALUMINUM OR COPPER
BUS LOAD: 114 AMPS
BUS RATING: 225 AMPS
MAIN: 225/3 MAIN BREAKER

MOUNTING: FLUSH MOUNTED
ENCLOSURE: NEMA 1
FAULT CURRENT: 4159 AMPS
AIC/SCCR RATING: 10 KA
OPTIONS*: BONDED EQUIPMENT GROUND BAR

			LOAD (VA)					LOAD (VA)					
NOTES	CKT.	LOAD DESCRIPTION	A	B	C	BREAKER	BREAKER	A	B	C	LOAD DESCRIPTION	CKT.	NOTES
	1	BLADE SIGN	1200			20/1	20/1	180			DOORBELL CHIME	2	GFCI
	3	FOH LIGHTING		1617		20/1	20/1		180		RECEPT.	4	
	5	RR LIGHTING			1083	20/1	25/2			2402	10	6	
	7	BOH LIGHTING	1581			20/1	---	2402			------	8	
	9	EXTERIOR SIGNAGE		1200		20/1	15/1		448		EF-3	10	C-INT
	11	EXTERIOR SIGNAGE			1200	20/1					SPACE ONLY	12	
	13	SPARE				20/1					SPACE ONLY	14	
	15	LUTRON HUB		500		20/1					SPACE ONLY	16	
GFCI	17	FROZEN CUSTARD			2161	20/3					SPACE ONLY	18	
	19	------	2161			---					SPACE ONLY	20	
	21	------		2161		---					SPACE ONLY	22	
GFCI	23	CUSTARD MOBILE FREEZER			720	20/1					SPACE ONLY	24	
GFCI	25	BAG-IN-BOX	780			20/1					SPACE ONLY	26	
GFCI	27	FROZEN CUSTARD		2161		20/3					SPACE ONLY	28	
	29	------			2161	---					SPACE ONLY	30	
	31	------	2161			---					SPACE ONLY	32	
	33	61		2246		25/3					SPACE ONLY	34	
	35	------			2246	---					SPACE ONLY	36	
	37	------	2246			---					SPACE ONLY	38	
	39	ASHP-1		786		15/2					SPACE ONLY	40	
	41	------			786	---					SPACE ONLY	42	
	43	1B	2402			25/3					SPACE ONLY	44	
	45	------		2402		---					SPACE ONLY	46	
	47	------			2402	---					SPACE ONLY	48	
	49	SPARE				20/1					SPACE ONLY	50	
	51	SPARE				20/1					SPACE ONLY	52	
	53	SPARE				20/1					SPACE ONLY	54	
	55	SPARE				20/1					SPACE ONLY	56	
	57	SPARE				20/1					SPACE ONLY	58	
	59	SPARE				20/1					SPACE ONLY	60	
	61	SPARE				20/1					SPACE ONLY	62	
	63	SPACE ONLY									SPACE ONLY	64	
	65	SPACE ONLY									SPACE ONLY	66	
	67	SPACE ONLY									SPACE ONLY	68	
	69	SPACE ONLY									SPACE ONLY	70	
	71	SPACE ONLY									SPACE ONLY	72	
	73	SPACE ONLY									SPACE ONLY	74	
	75	SPACE ONLY									SPACE ONLY	76	
	77	SPACE ONLY									SPACE ONLY	78	
	79	SPACE ONLY									SPACE ONLY	80	
	81	SPACE ONLY									SPACE ONLY	82	
	83	SPACE ONLY									SPACE ONLY	84	

NOTES:
- * SEE SPECIFICATIONS FOR OTHER OPTIONS REQUIRED BUT NOT NECESSARILY NOTED HERE
- GFCI PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) 5 MILLIAMP TRIP TYPE CIRCUIT BREAKER. PROVIDE EXTERNAL GFCI DEVICE IF A GFCI CIRCUIT BREAKER IS NOT AVAILABLE.
- C-# ROUTE CIRCUIT THROUGH CONTACTOR (# = CONTACTOR DESIGNATION).

LOAD ANALYSIS FOR PANEL "P2" (INCLUDING SUBFEEDS)

LOAD DESCRIPTION	DEMAND FACTOR	PHASE A (VA) CONNECT.	PHASE A (VA) DEMAND	PHASE B (VA) CONNECT.	PHASE B (VA) DEMAND	PHASE C (VA) CONNECT.	PHASE C (VA) DEMAND	TOTAL (VA) CONNECT.	TOTAL (VA) DEMAND
LIGHTING:	125%	1581	1977	1617	2022	1083	1354	4281	5352
RECEPTACLE:	100%	180	180	180	180	0	0	360	360
OTHER CONTINUOUS:	125%	1200

LIGHTING CONTROL DEVICE SCHEDULE

MARK	CATALOG NUMBER
HUB	HJS-0-FM
P2	PJ2-2B-GWH-L01
P4RL	PJ2-4B-GWH-L01
P4	PJ2-4B-GWH-EL2
6S	MS-A102-WH
PA	PHPM-PA-120-WH
DL	LRF2-DCRB-WH
OS	LRF2-OCR2B-P-WH

GENERAL NOTES:

A. SEE LUTRON ONE-LINE DIAGRAMS SHEETS E621, E622, AND 623 FOR ADDITIONAL INFORMATION.

LOAD CONTROLLER SCHEDULE

MARK	CATALOG NUMBER
16S	RMJS-16R-DV-B
20S	RMJS-20R-DV-B
8T	RMJS-8T-DV-B
PNE	RMJS-PNE-DV

GENERAL NOTES:

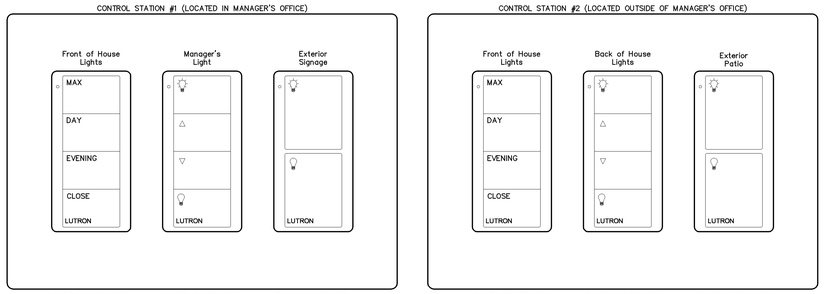
A. SEE LUTRON ONE-LINE DIAGRAMS SHEETS E621, E622, AND 623 FOR ADDITIONAL INFORMATION.

LUMINAIRE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	VOLTAGE	WATTS	MOUNTING	LIGHT SOURCE	DIMMING	SPECIFIER	REMARKS
A1	ATTAIN LED	AT-SPN-V2-24-20/25/30/40/50W-30/35/40/50/65K-W	120	50	CEILING, RECESSED	INTEGRATED LED	0-10V	OTHERS	SET TO 50 WATTS AND 3500 DEGREES K.
A1-EM	ATTAIN LED	AT-SPN-V2-24-20/25/30/40/50W-30/35/40/50/65K-W-EM	120	50	CEILING, RECESSED	INTEGRATED LED	0-10V	OTHERS	SET TO 50 WATTS AND 3500 DEGREES K. PROVIDE WITH EMERGENCY BATTERY BACKUP, TITLE 20 COMPLIANT.
A2	ATTAIN LED	AT-SPN-V2-22-20/25/30/40W-30/35/40/50/65K-W	120	40	CEILING, RECESSED	INTEGRATED LED	0-10V	OTHERS	SET TO 40 WATTS AND 3500 DEGREES K.
A2-EM	ATTAIN LED	AT-SPN-V2-22-20/25/30/40W-30/35/40/50/65K-W-EM	120	40	CEILING, RECESSED	INTEGRATED LED	0-10V	OTHERS	SET TO 40 WATTS AND 3500 DEGREES K. PROVIDE WITH EMERGENCY BATTERY BACKUP, TITLE 20 COMPLIANT.
B1	BEST LIGHTING PRODUCTS	LUMINAIRE: UCE-24-KFS CORD: ZZ-CORDPLUG-WHT-6C3P	120	10	UNDERCABINET	INTEGRATED LED	NON	OTHERS	SET TO 3000 DEGREES K.
C1	ATTAIN LED	HOUSING: AT-TR359-WH-J TRACK AND ACCESSORIES: CONTECH LT SERIES CURRENT LIMITERS: CONTECH LA-23-RN-P SERIES	120	12	TRACK	(1) TCP LED12P30D30KNFL	MLV	OTHERS	PROVIDE ALL END FEEDS AND CONNECTORS REQUIRED FOR A COMPLETE INSTALLATION. SEE PLANS FOR REQUIRED CURRENT LIMITER RATINGS.
C3	CONTECH	CTL191-V-3-D-P TRACK AND ACCESSORIES: LT SERIES CURRENT LIMITERS: LA-23-RN-P SERIES	120	19	TRACK	INTEGRATED LED	MLV	OTHERS	PROVIDE ALL END FEEDS AND CONNECTORS REQUIRED FOR A COMPLETE INSTALLATION. SEE PLANS FOR REQUIRED CURRENT LIMITER RATINGS.
E1W	BEST LIGHTING PRODUCTS	EM-W	120	3	SEE REMARKS	INTEGRATED LED	NON	OTHERS	FIXTURES IN THE DINING ROOM SHALL BE SUSPENDED FROM THE CEILING. OTHERWISE, FIXTURES SHALL BE WALL MOUNTED.
E3W	ASTRALITE	TP-100-PLUS-16-2X3W-W	120	4	SEE REMARKS	INTEGRATED LED	NON	OTHERS	FIXTURES IN THE DINING ROOM SHALL BE SUSPENDED FROM THE CEILING. OTHERWISE, FIXTURES SHALL BE WALL MOUNTED.
E4	BEST LIGHTING PRODUCTS	RHLED-2-WP-MV-B	120	2	WALL, SURFACE	INTEGRATED LED	NON	OTHERS	
EX1	BEST LIGHTING PRODUCTS	ELXTEU-1-G-C-A-EM	120	4	WALL OR CEILING, SURFACE	INTEGRATED LED	NON	OTHERS	
EX2	ASTRALITE	TP-CH-U-G-W-EM	120	4	WALL OR CEILING, SURFACE	INTEGRATED LED	NON	OTHERS	
LS2	AVENUE LIGHTING	AVL9899-BLK	120	12	WALL, SURFACE	INTEGRATED LED	NON	OTHERS	
P1	VISUAL COMFORT & CO.	6024-112	120	15	CEILING, SUSPENDED	(1) E26 MEDIUM BASE A19 LAMP, 15 WATT MAX	ELV	OTHERS	PROVIDE CHANNEL STRUT CENTERED OVER BOOTH TABLES, INSTALLED AT SAME HEIGHT AS NEARBY LIGHTING TRACK.
R1	ENVISION	CONSTRUCTION PLATE: CUNV-NC-ICAT-7H DOWNLIGHT: LED-RDL-EX-6-3P18-5CCT-WH-SM	120	18	CEILING, RECESSED	INTEGRATED LED	ELV	OTHERS	
R2	ENVISION	CONSTRUCTION PLATE: CUNV-NC-ICAT-7H DOWNLIGHT: LED-RDL-EX-4-3P12-5CCT-WH-SM TRIM: RDL-TRIM-4-BN-SM	120	12	CEILING, RECESSED	INTEGRATED LED	ELV	OTHERS	
R4	ENVISION	LUMINAIRE: LED-MDL-1-ADJ-6W-30K-RDBK TRANSFORMER: CV-12V-DC-60-DIM	120	6	CEILING, RECESSED	INTEGRATED LED	ELV	OTHERS	PROVIDE ONE TRANSFORMER FOR EVERY 8 LUMINAIRES.
SC1	QUORUM	721-2-69	120	90	WALL, SURFACE	(2) TCP LED10A19D0D30KW LAMPS	NON	OTHERS	

LUMINAIRE SCHEDULE GENERAL NOTES:

A. LUMINAIRE SYMBOLS THAT ARE SHOWN HALF-SHADED, OR LABELED "EM", ON THE PLAN(S) INDICATE LUMINAIRES THAT SERVE AS EMERGENCY LIGHTING. UNLESS SERVED BY A CIRCUIT ORIGINATING AT AN EMERGENCY PANELBOARD OR CENTRAL LIGHTING INVERTER, EMERGENCY LIGHTING LUMINAIRES SHALL BE PROVIDED WITH AN EMERGENCY BATTERY. SEE THE SPECIFICATIONS FOR MINIMUM EMERGENCY BATTERY PERFORMANCE REQUIREMENTS.
B. PROPOSED SUBSTITUTIONS FOR LUMINAIRES THAT ARE SELECTED BY OTHERS REQUIRE THE APPROVAL OF THE INDIVIDUAL THAT SELECTED THE LUMINAIRE.
C. COORDINATE ALL DIMMING CONTROL DIMMING METHODS WITH THE DIMMING METHODS INDICATED ON THIS SCHEDULE.
D. THE OWNER HAS A NATIONAL ACCOUNT WITH SPECIALTY LIGHTING GROUP FOR ALL LUMINAIRES. CONTACT JENNIFER MARQUIS AT (860) 767-0110 EXT. 231 OR JENNIFER.MARQUIS@SSLIGHTING.COM FOR QUOTE



1 LUTRON CONTROL STATION DETAILS
NOT TO SCALE

Store Name: Shake Shack - Coconut Point Estero
Shake Shack Store #: 1794
Lutron Project #: [Lutron will assign]

Control Intent & Schedules1

Customer Circuit #	Feed Circuit #	Lutron Circuit # (Lutron Use)	Zone Location	Fixture Type	Specified Zone Name	Zone Type	Dim/Non-Dim2	Load Type	Load Controller (Lutron Use)	Include on "Front of House" Keypad	Include on "Signage" Keypad	Include on "Back of House" Keypad	Local Manual Control Keypad	System Webpage Control	Occupancy / Vacancy	Daylight Harvesting2	Sunrise	6:00am	10:45 AM	Sunset	10:00 PM	12:00 AM	Spare Event	Spare Event	Spare Event
										Manual Controls					Auto		Schedule								
1	"a" (P2-3)	To be filled out by Lutron	Interior: Front-of-House	C1	DINING TRACK DAYLIGHTING	Dining Area	Dim	Forward Phase	[Select Load Controller]	✓				✓		✓	-	100%	80%	50%	100%				
2	"b" (P2-3)	To be filled out by Lutron	Interior: Front-of-House	C1	RESTROOM HALLWAY	Restroom Hallway	Dim	Reverse Phase	[Select Load Controller]	✓				✓			-	100%	80%	50%	100%	10%			
3	"c" (P2-3)	To be filled out by Lutron	Interior: Front-of-House	C3	MENU BOARD TRACK	Interior Signage and Menu Board	Non-Dim	Forward Phase	[Select Load Controller]	✓	✓			✓			-	-	100%	80%	100%				
4	"d" (P2-3)	To be filled out by Lutron	Interior: Front-of-House	P1	BOOTH PENDANTS	Decorative Lights	Dim	Reverse Phase	[Select Load Controller]	✓				✓			-	100%	80%	50%	100%				
5	"e" (P2-3)	To be filled out by Lutron	Interior: Front-of-House	LS2	DINING SCONCES	Decorative Lights	Dim	Non-Dim	[Select Load Controller]	✓				✓			-	100%	80%	50%	100%				
6	"f" SPARE	To be filled out by Lutron	[Select Zone Location]	SPARE	SPARE	?	[Select Load Type]		[Select Load Controller]																
7	"g" (P2-3)	To be filled out by Lutron	Exterior: All	LS2	PATIO SCONCES	Exterior Patio Lights	Non-Dim	Reverse Phase	[Select Load Controller]				✓	✓			-		ON			OFF			
8	"h" (P2-7)	To be filled out by Lutron	Interior: Back-of-House	A1-EM	MANAGER'S OFFICE	Manager's Office	Dim	0-10V	[Select Load Controller]			✓	✓	✓	✓		-	-	-	-	-	-			
9	"k" (P2-7)	To be filled out by Lutron	Interior: Back-of-House	B1	MANAGER'S DESK	Manager's Office	Dim	Non-Dim	[Select Load Controller]			✓	✓	✓	✓		-	-	-	-	-	-			
10	"i" (P2-7)	To be filled out by Lutron	Interior: Back-of-House	A1, A1-EM, A2	BACK KITCHEN	Work Room	Dim	0-10V	[Select Load Controller]			✓	✓	✓	✓		-	100%, DO	-	-	-	-, EO			
11	"m" (P2-7)	To be filled out by Lutron	Interior: Back-of-House	R1	OPEN KITCHEN	Kitchen - Open Area	Dim	Reverse Phase	[Select Load Controller]			✓	✓	✓			-	100%	-	-	-	10%			
12	"n" (P2-7)	To be filled out by Lutron	Interior: Back-of-House	R4	ORDER COUNTER	Kitchen - Work Area (R4)	Dim	Reverse Phase	[Select Load Controller]			✓	✓	✓			-	100%	-	-	-	10%			
13	"o" (P2-9)	To be filled out by Lutron	Exterior: All	SIGN	EXTERIOR SIGN	Exterior Signage including LED tape at band of letters	Non-Dim	Non-Dim	[Select Load Controller]		✓		✓	✓			-	-	ON	-	-	OFF			
14	"p" (P2-11)	To be filled out by Lutron	Exterior: All	SIGN	EXTERIOR SIGN	Exterior Signage including LED tape at band of letters	Non-Dim	Non-Dim	[Select Load Controller]		✓		✓	✓			-	-	ON	-	-	OFF			
15	"q" (P1-41)	To be filled out by Lutron	Interior: Front-of-House	SIGN	SFSG SIGN	Interior Signage and Menu Board	Non-Dim	Non-Dim	[Select Load Controller]	✓	✓			✓			-	-	1	0.8	1				
16	"r" (P2-1)	To be filled out by Lutron	Interior: Front-of-House	SIGN	BLADE SIGN	Exterior Signage including LED tape at band of letters	Non-Dim	Non-Dim	[Select Load Controller]		✓		✓	✓			-	-	ON	-	-	OFF			

Project Notes:
1) Where schedule deviates from Shake Shack standard, state why in notes.
2) Where required/allowed by local energy code.
3) Disable Occupancy ("DO") Sensor at 6:00am and turn ON lights. Enable Occupancy ("EO") Sensor at close + 60minutes.
4) " - " means Unaffected or Not Applicable.

Form Notes:
1) "Hidden" unused rows.
2) "?" implies Zone Type cell for given zone does not match a valid Zone Type from approved list or is waiting to be filled in.

Store Hours	CONTROLS		LOCKS
Open	11:00 AM		0:15
Close	10:00 PM		1:00

VERIFY EXACT OPENING AND CLOSING HOURS WITH SHAKE SHACK PROJECT MANAGER PRIOR TO PROGRAMMING LIGHTING CONTROLS. "CLOSE" SCHEDULE SHALL INITIATE A MAXIMUM OF 2.5 HOURS AFTER STORE CLOSING TIME.

zebra
ZEBRA ARCHITECTURE, PLLC
14614 N KIERLAND BLVD., SUITE N300
SCOTTSDALE, ARIZONA 85254
PHONE: 480.912.1169 zbr.global

Schnackel engineers
New York • Miami • Omaha • Los Angeles • Seattle • Honolulu
800-581-0963 www.schnackel.com

STORE NO.:

SHAKE SHACK
COCONUT POINT, FL
3181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISIONS		
△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0048442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

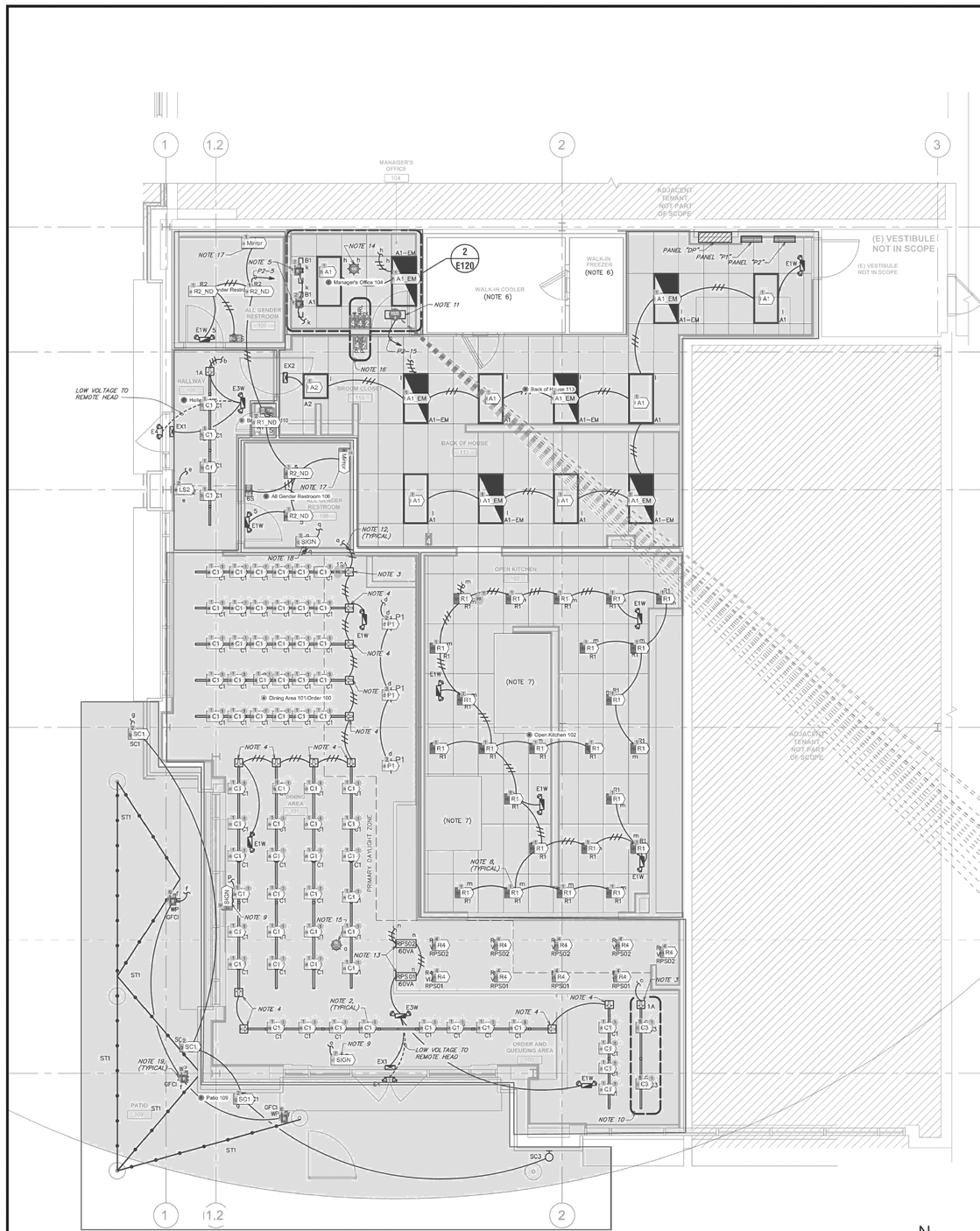
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SHEET NAME: LIGHTING SCHEDULES

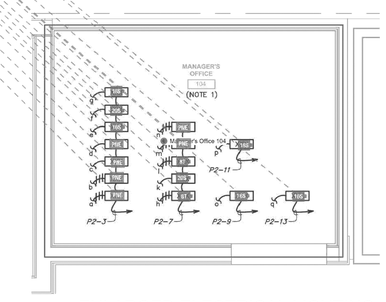
DATE: 08/01/2026
PROJECT NO.: 41354
DRAWN: MJC
SCALE: AS NOTED

SHEET NO.: E620

SE JOB# 290519



1 ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



2 ENLARGED ELECTRICAL LIGHTING PLAN - LOAD CONTROLLERS
SCALE: 1/2" = 1'-0"

NOTE:
REFER TO ARCHITECTURAL RCP FOR EXACT DIMENSIONED LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES.

N

E. OR FLOOR AND THE OPENING GROUTED SMOOTH.
E. THE OWNER SHALL HAVE SALVAGE RIGHTS TO ANY ITEMS THAT ARE TO BE DEMOLISHED. THOSE ITEMS THAT THE OWNER WISHES TO SALVAGE SHALL CAREFULLY REMOVED AND STORED IN A LOCATION AS DIRECTED BY THE O ALL OTHER ITEMS OF DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
F. PROVIDE TEMPORARY CIRCUITS AND CONNECTIONS TO EQUIPMENT, LUMINA DEVICES IN AREAS OF THE FACILITY THAT ARE TO REMAIN IN OPERATIO REQUIRED TO MAINTAIN THOSE AREAS IN COMPLETE OPERATION.
G. MAINTAIN CONTINUITY OF EXISTING CIRCUITS AS REQUIRED TO PROVIDE TO REMAINING EQUIPMENT, DEVICES, AND LUMINAIRES THAT ARE NOT BE REMOVED.
H. PROVIDE BLANK COVERPLATES FOR EXISTING EMPTY DEVICE BOXES OR J BOXES THAT MUST REMAIN, SUCH AS FOR CIRCUITS THAT MUST BE MAINT OTHER AREAS.
I. WHERE ELECTRICAL DISTRIBUTION EQUIPMENT (PANELBOARDS, SWITCHBOA ETC.) IS TO BE REMOVED OR RELOCATED, ALL EXISTING CIRCUITS THAT REMAIN SHALL BE RECONNECTED TO NEW OR RELOCATED ELECTRICAL DIST EQUIPMENT TO MAINTAIN THE CONTINUITY OF THOSE EXISTING CIRCUITS INTERCEPT AND EXTEND ALL EXISTING CIRCUITS AS REQUIRED.

GENERAL ELECTRICAL NOTES:
A. WHERE THE MECHANICAL DESIGN UTILIZES A PLENUM RETURN AIR CEILIN DESIGN, ALL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE PLENUM CEILING MUST MEET THE FLAME SPREAD AND SMOKE DEVELOPED RATINGS AND BE APPROVED FOR USE IN PLENUM RETURN CEILINGS. COORDINATE CEILING LOCATIONS WITH THE MECHANICAL CONTRACTOR. LUMINAIRES T MANUFACTURED WITH A METAL HOUSING MEET THIS REQUIREMENT AND ARE REQUIRED TO BE PLENUM RATED UNLESS INDICATED OTHERWISE.
B. COORDINATE ALL DEVICE LOCATIONS AND CIRCUIT ROUTING WITHIN ANY WITH MILLWORK VENDOR PRIOR TO ROUGH-IN.
C. COORDINATE THE CONNECTIONS OF ALL EQUIPMENT PROVIDED BY OTHERS CONTRACTOR PROVIDING THE EQUIPMENT PRIOR TO ROUGH-IN. THIS INCL BUT IS NOT LIMITED TO, MECHANICAL EQUIPMENT, KITCHEN EQUIPMENT, AUDIO/VISUAL EQUIPMENT, FIRE SUPPRESSION SYSTEM EQUIPMENT, FIRE EQUIPMENT, ETC. PROVIDE THE APPROPRIATE DISCONNECTING MEANS FO TO MAKE THE FINAL CONNECTION TO ANY HARDWIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPR CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS EQUIPPED WITH AN INTEGRAL CORD AND PLUG.
D. SEE PANEL SCHEDULES FOR INFORMATION ON CIRCUITS THAT ARE TO BE THROUGH CONTACTORS OR RELAYS FOR CONTROL.
E. ALL EQUIPMENT, DEVICES, AND LUMINAIRES SHALL BE SUITABLE FOR TH ENVIRONMENT IN WHICH THEY ARE INSTALLED. EQUIPMENT MOUNTED OUT SHALL BE NEMA 3R. DEVICES MOUNTED IN DAMP OR WET LOCATIONS SHA WEATHERPROOF. RECEPTACLES RATED 15- OR 20-AMPS AND 120 VOLTS W LOCATED IN DAMP OR WET LOCATIONS SHALL BE GFCI PROTECTED AND EQ WITH A SUITABLE WEATHERPROOF COVERPLATE (WHILE-IN-USE IN WET LOCATIONS).
F. ALL LUGS, TERMINALS, ETC. IN ELECTRICAL DISTRIBUTION EQUIPMENT LISTED FOR A MINIMUM OF 75 DEGREE C CONDUCTORS. TERMINATIONS L FOR ONLY 60 DEGREE C CONDUCTORS ARE NOT PERMITTED.
G. CIRCUITS SERVING EMERGENCY LIGHTING EQUIPMENT SUCH AS EMERGENCY BATTERIES SHALL NOT SHARE A NEUTRAL (SHALL NOT BE PART OF A MU BRANCH CIRCUIT) WITH ANY OTHER CIRCUIT. PROVIDE A SEPARATE NEU EVERY CIRCUIT THAT SERVES EMERGENCY LIGHTING EQUIPMENT.
H. ALTHOUGH NOT SPECIFICALLY SHOWN, THE ELECTRICAL CONTRACTOR SHAL PROVIDE ALL REQUIRED LOW VOLTAGE WIRING AND DATA CABLING, PER T MANUFACTURER'S RECOMMENDATIONS, FOR A COMPLETE, FUNCTIONAL LIGH CONTROL SYSTEM.
I. ALTHOUGH NOT SPECIFICALLY SHOWN, THE ELECTRICAL CONTRACTOR SHAL PROVIDE ALL REQUIRED WIRING AND DATA CABLING, INCLUDING ALL 0-1 CONTROL WIRING WHERE APPLICABLE, PER THE MANUFACTURER'S RECOMME FOR A COMPLETE, FUNCTIONAL DIMMING SYSTEM.
J. REFER TO LIGHTING CONTROL DEVICE SCHEDULE ON SHEET E620 FOR OCC SENSOR TYPES AND CONTROL INFORMATION.
K. REFER TO LUMINAIRE SCHEDULE ON SHEET E620 FOR LIGHT FIXTURE TYP REQUIREMENTS.
L. REFER TO ARCHITECTURAL DRAWINGS AND ELEVATIONS FOR EXACT LOCATI MOUNTING HEIGHTS OF ALL LIGHT FIXTURES. COORDINATE DIMMER/SWITC LOCATION SMITH ARCHITECT PRIOR TO ROUGH-IN.
M. PROVIDE AIMING OF ALL ADJUSTABLE LIGHT FIXTURES AFTER SETUP IS TO EVENLY ILLUMINATE TABLE SURFACES, SIGNAGE, DECOR, AND EMERGE EGRESS PATHS. COORDINATE AIMING OF NORMAL FIXTURES WITH ARCHIT REFER TO ARCHITECTURAL EGRESS PATH PLAN FOR AIMING OF EMERGENCY FIXTURES.

KEYED NOTES:
1. ALL LOAD CONTROLLERS TO BE INSTALLED IN THIS AREA, ABOVE CEILIN HEIGHT, UNLESS OTHERWISE NOTED.
2. AIM ALL TRACK HEADS STRAIGHT DOWNWARD (90 DEGREES TO THE FLOOR) INDICATED OTHERWISE. ALL TRACK HEADS SHALL BE CENTERED OVER T WHERE POSSIBLE.
3. PROVIDE LIGHTING TRACK POWER END FEED CURRENT LIMITER DEVICE WI RATING AS SHOWN. REFER TO LUMINAIRE SCHEDULE, SHEET E620 FOR C MODEL NUMBER.
4. PROVIDE LIGHTING TRACK POWER END FEEDS WITH APPROPRIATE POLARIT CONNECT NON-ASSURING TRACK LIGHTING SECTIONS AS SHOWN.
5. PROVIDE RECEPTACLES FOR UNDER-CABINET LIGHTS INSTALLED IMMEDIAT BELOW LOWEST SHELF. PROVIDE FINAL CONNECTION TO FIXTURES WITH PLUG CONNECTIONS. REFER TO OFFICE ELEVATIONS ON ARCHITECTURAL FOR EXACT LOCATIONS AND MOUNTING HEIGHTS.
6. INSTALL LIGHT FIXTURES SHIPPED LOOSE WITH WALK-IN COOLER. REFE POWER PLANS FOR CIRCUIT CONTINUATION.
7. LIGHT FIXTURES FURNISHED WITH EXHAUST HOOD. EQUIPMENT MANUFACT SHALL BE RESPONSIBLE FOR PROVIDING SUFFICIENT ILLUMINATION TO C WITH LOCAL REQUIREMENTS. REFER TO CAPTURE AIRE WIRING DIAGRAMS CONNECTION INFORMATION AND PROVIDE FINAL CONNECTION.
8. CENTER ALL LIGHTS IN THE CENTER OF THE ARCHITECTURAL CEILING GR
9. PROVIDE WEATHERPROOF JUNCTION BOX, DISCONNECT SWITCH AND RELATE CIRCUITRY AT ROOF PARAPET OR OTHER ACCESSIBLE LOCATION AS DIRECT OWNER. FOR CONNECTION OF STOREFRONT SIGNAGE. COORDINATE REQUIR WITH OWNER AND SIGN INSTALLER PRIOR TO ROUGH-IN AND ADJUST ELEC PROVISIONS AS NECESSARY. PROVIDE CONCEALED CONDUIT THROUGH WAL CONNECTION TO SIGN AND CONCEAL CONDUIT FROM CUSTOMER VIEW.
10. AIM ALL TRACK HEADS IN THIS AREA TOWARD THE BOTTOM HALF OF THE BOARD(S). FIXTURES SHOULD BE AIMED TO MINIMIZE HOT SPOTS AND E EVEN ILLUMINATION.
11. LUTRON VIVE STARTER HUB. PROVIDE WITH FLUSH MOUNT ADAPTER, AND CONNECTION TO LOW VOLTAGE POWER SUPPLY. VERIFY EXACT ELECTRICAL REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN. VER EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. SEE LIGHTING DEVICE SCHEDULE ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE ONE-LINE DIAGRAMS SHEETS E621, E622, E623, E624, AND E625 FOR C CONFIGURATION.
12. CONNECT CIRCUIT VIA LOAD CONTROLLER(S) LOCATED IN MANAGER'S OFF LOWERCASE LETTERS ADJACENT TO FIXTURES INDICATE CORRESPONDING LO CONTROLLER. SEE 2/E120 FOR ADDITIONAL INFORMATION. SEE LUTRON ONE-LINE DIAGRAMS SHEETS E621, E622, E623, E624, AND E625 FOR C CONFIGURATION.
13. INSTALL THIS LUMINAIRE'S REMOTE LOW VOLTAGE LIGHTING TRANSFORME INCONSPICUOUS, ACCESSIBLE LOCATION AND PROVIDE FINAL CONNECTION LUMINAIRE. COORDINATE MOUNTING LOCATION OF REMOTE LOW VOLTAGE TRANSFORMER WITH OWNER PRIOR TO ROUGH-IN. THE LENGTH OF CONDUC BETWEEN REMOTE LOW VOLTAGE LIGHTING TRANSFORMER AND ASSOCIATED LUMINAIRE SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS FOR M CONDUCTOR LENGTH.
14. WIRELESS CEILING OCCUPANCY SENSOR. SEE LIGHTING CONTROL DEVICE SCHEDULE ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE LUTRON DIAGRAMS SHEETS E621, E622, E623, E624, AND E625 FOR CONTROL CONFIGURATION.
15. WIRELESS CEILING MOUNT DAYLIGHT SENSOR. SEE LIGHTING CONTROL DE SCHEDULE ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE LUTRON DIAGRAM SHEETS E621, E622, E623, E624, AND E625 FOR CONTROL CONFIGURATION.
16. LUTRON PICO WIRELESS CONTROL WALL STATION. PROVIDE LOW-VOLTAGE FOR WALL STATION LOCATIONS. ALL LOCAL WALL STATIONS ARE EXPECTE BATTERY POWERED WITH NO COPPER AND CONDUIT ROUGH IN. VERIFY EX LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. SEE LUTRON CONTROL DETAILS ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE LIGHTING DEVICE SCHEDULE ON SHEET E620 FOR ADDITIONAL INFORMATION. SEE ONE-LINE DIAGRAMS SHEETS E621, E622, E623, E624, AND E625 FOR C CONFIGURATION.
17. PROVIDE FINAL CONNECTION TO LIT MIRROR CENTERED ABOVE SINK. RE RESTROOM ELEVATIONS ON SHEET A402 FOR ADDITIONAL INFORMATION AN CONNECT TO RESTROOM LIGHTING CIRCUIT FOR CONTROL.
18. PROVIDE FINAL CONNECTION TO INTERIOR ILLUMINATED DECOR SIGNAGE. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH SIGNAGE VENDA TO ROUGH-IN.
19. PROVIDE DUPLEX RECEPTACLE FOR CONNECTION TO STRING LIGHTS. RECE SHALL BE MOUNTED IN AN INCONSPICUOUS, OVERHEAD LOCATION NEAR END STRING LIGHT RUN. COORDINATE QUANTITY AND EXACT LOCATIONS OF RECEPTACLES WITH SHAKE SHACK CONSTRUCTION PROJECT MANAGER PRIOR ROUGH-IN. COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECT PRIO ROUGH-IN.

System Layout

General Notes

- This layout is for system schematic purposes only. Contractor shall locate, install, and wire equipment according to Lutron installation and specification documents.
  - Load Interfaces (XP, BM), BMF, PHPM, etc.) are shown near their respective loads, however actual installation location can vary.
  - If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
- Verify shade design with Lutron.
- See Cover Sheet and One-Lines for additional information.

Legend

MS	MS-A102-WH (3)
2	PJ2-2B-GWH-L01 (CW-1-WH) (2)
4	PJ2-4B-GWH-EL2 (CW-1-WH) (2)
4	PJ2-4B-GWH-L01 (CW-1-WH) (2)
LRF2	LRF2-DCRB-WH (1)
LRF2	LRF2-OCR2B-P-WH (1)
PHPM	PHPM-RA-120-WH (2)
HJS	HJS-0-FM (1)
RMJS	RMJS-16R-DV-B (5)
RMJS	RMJS-20R-DV-B (2)
RMJS	RMJS-8T-DV-B (2)
RMJS	RMJS-PNE-DV (6)
	Third Party Receptacle (5)

Project Name:
Shake Shack #1794 Coconut Point

Location:
Estero, Florida

Project Number:
2254353.1.0

Created by:
Richelle Ruggiero

File Name:
2254353_ShakeShack_1794CoconutPoint.lutd

Document Revision:
0

Date: May 12, 2026

Sheet: 11

Lutron System Layout is Based On:
Electrical Lighting Plan E120

Dated: May 11, 2026

Floor 1/E120

NOT FOR CONSTRUCTION

LUTRON.
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STORE NO.:

SHAKE SHACK
COCONUT POINT, FL
3181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISIONS

	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS:
IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0048442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
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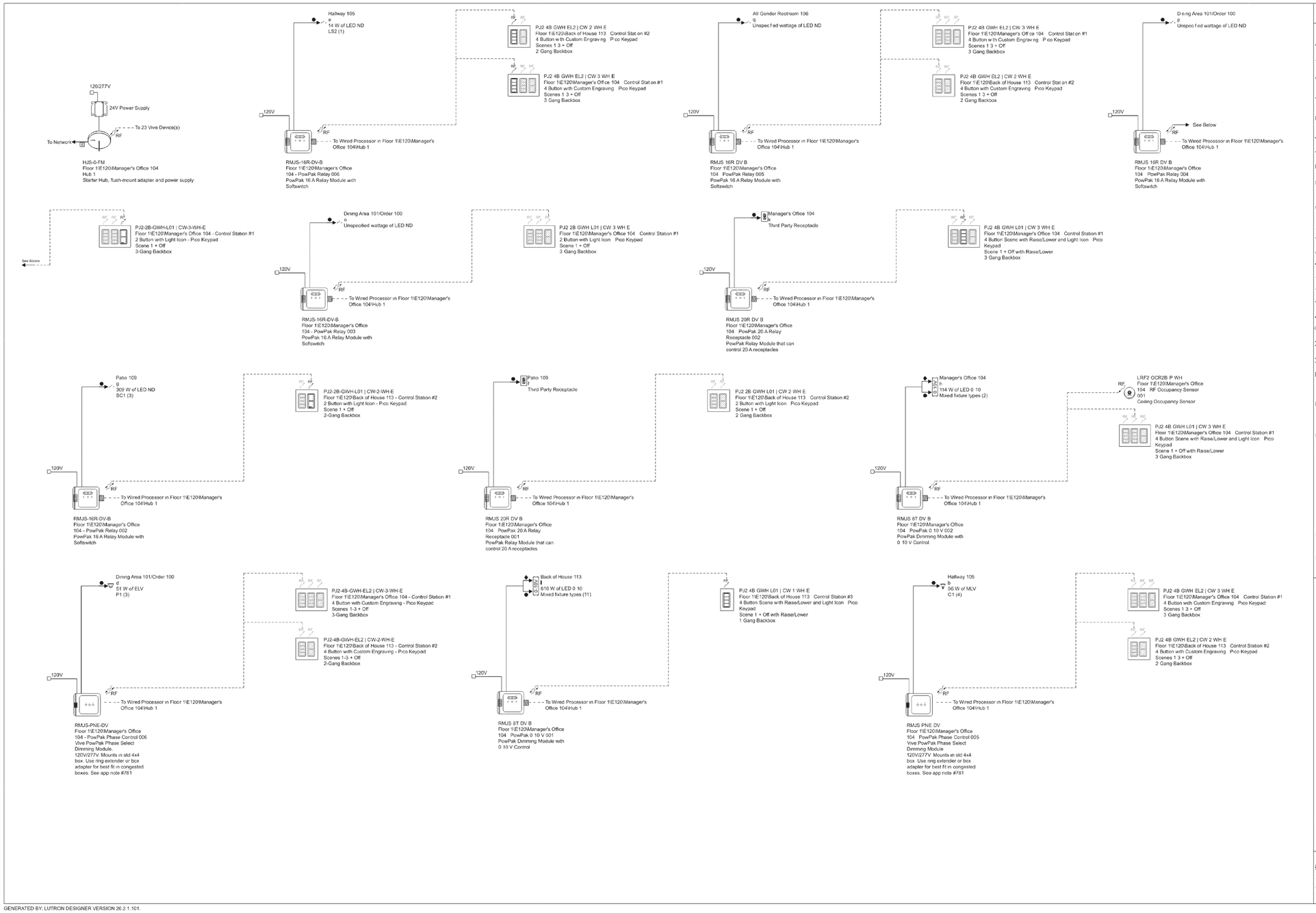
SHEET NAME:
LUTRON VIVE ONE-LINE

DATE: 08/01/2026
PROJECT NO.: 41354
DRAWN: MJC
SCALE: AS NOTED

SHEET NO.:
E621

SE JOB# 295519

Lutron Designer 26.2.1.191



GENERATED BY: LUTRON DESIGNER VERSION 26.2.1.101.

ONE LINE

WIRE LEGEND

- △2 QS CONTROL LINK (CONNECT WIRES 1, 2, 3 AND 4)*
- ▲2 QS CONTROL LINK (CONNECT WIRES 1, 3 AND 4 DO NOT CONNECT WIRE 2)*
- ▽5 PANEL CONTROL LINK (CONNECT WIRES 1, 2, 3, 4 AND 5)*
- ▼5 PANEL CONTROL LINK (CONNECT WIRES 1, 2, 3 AND 4 DO NOT CONNECT WIRE #5)*
- ▷5 PANEL CONTROL LINK (CONNECT WIRES 1, 3, 4 AND 5 DO NOT CONNECT WIRE #2)*
- ◁5 QS SIVOIA SHADE CONTROL LINK*
- ▲T BELDEN CABLE 1387LA(OR EQUIVALENT)
- □ NORMAL INPUT POWER 2 #12 AWG (4 SQ MM) + GROUND
- ◧ NORMAL EMERGENCY INPUT POWER 2 #12 AWG (4 SQ MM) + GROUND
- ③ 3 PHASE 4 WIRE INPUT POWER, 4 #12 AWG (4 SQ MM) + GROUND
- ● 2 #12 AWG (4 SQ MM) + GROUND
- ●●● 2 #18 AWG (1 0 SQ MM) ***
- ○ 3 #12 AWG (4 SQ MM) + GROUND
- ◆ 0 10 V SIGNAL 2#18AWG (1 0 SQ MM)
- ●● 2#18 AWG (1 0 SQ MM)
- ○○ 3#18 AWG (1 0 SQ MM)
- ◇ ECOSYSTEM BUS/LOOP*
- ◈ DALI LOOP
- ◈ T SERIES TUNABLE WHITE LOOP
- ⧗ LUTRON SENSOR CABLE C CBL 522S OR USE 4#22 AWG (1 0 SQ MM)
- ⧖ LUTRON SENSOR CABLE C CBL 522S OR USE 3#22 AWG (1 0 SQ MM)
- Ⓓ DMX CABLE USE LUTRON GRX CBL DMX 250/GRX CBL DMX 500 OR BELDEN #9729 (NON PLENUM) OR BELDEN #89729 (PLENUM) OR DURA FLEX 22/4 WA CABLE
- Ⓔ ETHERNET CABLE CAT5E OR BETTER CABLE FOR LUTRON NETWORK TERMINATED WITH RJ45 CONNECTORS (NOT PROVIDED BY LUTRON) 328 FT (100 M) MAXIMUM RUN
- Ⓕ FIBER OPTIC CABLE FOR LUTRON NETWORK TERMINATED WITH APPROPRIATE FIBER OPTIC CONNECTORS (NOT PROVIDED BY LUTRON) REQUIRES DEDICATED FIBER OPTIC LINK (SINGLE MODE OR MULTI MODE)
- ●E 2 #12 AWG (4 SQ MM) + GROUND IF FIXTURE IS ANSI C137 1 THEN LINE VOLTAGE THROUGH RELAY IS OPTIONAL ***
- – – – RF CONNECTION
- ——— WIRED CONNECTION

*PLEASE REFER TO NOTES ON WIRING FOR MORE WIRING GUIDELINES
**REFER TO LOAD SCHEDULE FOR FEED AND LOAD INFORMATION
***REFER TO NOTES IN WIRING SECTION FOR MORE LOAD WIRING GUIDELINES

PROJECT NAME
SHAKE SHACK #1794
COCONUT POINT

LOCATION
ESTERO, FLORIDA

Project Number
2254353 1 0

CREATED BY.
RICHELLE RUGGIERO

FILE NAME:
2254353_SHAKESHACK_1794C OCONUTPOINT LUTD

Document Revision:
0

MAY 12, 2026 | Sheet 13

FOR DETAILED DEFINITION OF PRODUCT CAPABILITIES REFER TO PRODUCT SPECIFICATION SUBMITTAL SHEETS.

⚠ **NOT FOR CONSTRUCTION**

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STORE NO.:

SHAKE SHACK
COCONUT POINT, FL
3181 VILLAGE SHOP WAY, SUITE 105, ESTERO, FL 33928

REVISIONS

△	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS:
IFC SET

GREGORY ROY SCHNACKEL — LICENSE — No PE 0048442 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the jobsite and shall promptly notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

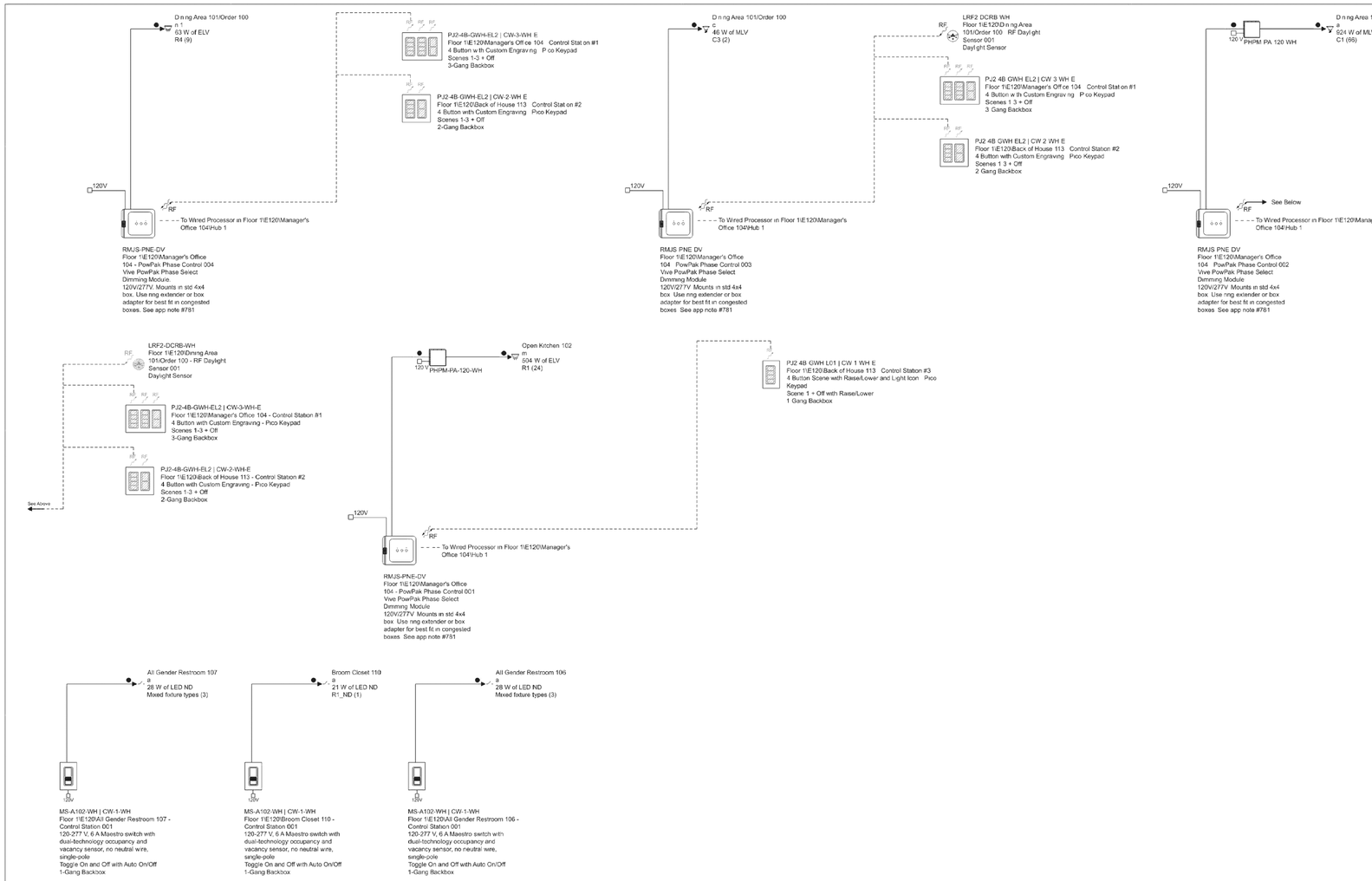
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SHEET NAME:
LUTRON VIVE ONE-LINE

DATE: 06/01/2026
PROJECT NO.: 41354
DRAWN: MJC
SCALE: AS NOTED

SHEET NO.:
E622

SE JOB#: 226519



GENERATED BY: LUTRON DESIGNER VERSION 26.2.1.101.

ONE LINE

WIRE LEGEND

- QS CONTROL LINK (CONNECT WIRES 1, 2, 3 AND 4)*
- QS CONTROL LINK (CONNECT WIRES 1, 3 AND 4 DO NOT CONNECT WIRE 2)*
- PANEL CONTROL LINK (CONNECT WIRES 1, 2, 3, 4 AND 5)*
- PANEL CONTROL LINK (CONNECT WIRES 1, 2, 3 AND 4 DO NOT CONNECT WIRE #5)*
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- 2#18 AWG (1 0 SQ MM)
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RF CONNECTION
WIRED CONNECTION

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**REFER TO LOAD SCHEDULE FOR FEED AND LOAD INFORMATION
***REFER TO NOTES IN WIRING SECTION FOR MORE LOAD WIRING GUIDELINES

PROJECT NAME
SHAKE SHACK #1794
COCONUT POINT

LOCATION
ESTERO, FLORIDA

Project Number
2254353 1 0

CREATED BY.
RICHELLE RUGGIERO

FILE NAME:
2254353 SHAKESHACK 1794C OCONUTPOINT LUTD

Document Revision:
0

MAY 12, 2026 | Sheet 14

FOR DETAILED DEFINITION OF PRODUCT CAPABILITIES REFER TO PRODUCT SPECIFICATION SUBMITTAL SHEETS.

⚠ **NOT FOR CONSTRUCTION**

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STORE NO.:

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COCONUT POINT, FL
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REVISIONS

	DATE	DESCRIPTION
1	08/28/2026	REVISION 1

STATUS: IFC SET

GREGORY ROY SCHNACKEL LICENSE No PE 0046442 STATE OF FLORIDA PROFESSIONAL ENGINEER
Date: 08/27/26 COA#: 28403

FIELD VERIFICATION:
The Contractor shall verify all figured dimensions and conditions at the project site and notify Zebra Architecture, PLLC of any dimensional errors, omissions or discrepancies before beginning or fabricating any work. Do not scale these drawings.

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SHEET NAME:
LUTRON VIVE ONE-LINE

DATE:	PROJECT NO.:
08/01/2026	41354
DRAWN: MJC	SCALE: AS NOTED

SHEET NO.:
E623

SE_JOB_26519

Wiring Legend:

Wiring Notes:

Manager's Office 104

QTY: 1

PJ2 4B GWH EL2 /
PJ2 4B GWH L01

QTY: 1

LRF2 OCR2B P WH

QTY: 2

Third Party

THIRD PARTY RECEPTACLE

All Gender Restroom 107

QTY: 1

MS A102 WH

Open Kitchen 102

QTY: 1

PHPM PA 120 WH

Dining Area 101/Order 100

QTY: 1

LRF2 DCR5 WH

QTY: 1

PHPM PA 120 WH

Manager's Office 104

QTY: 6

RMJS PNE DV

QTY: 2

8A MAX (SWITCHED)

0.10V DIM (60 mAMAX)

RMJS 8T DV B

QTY: 2

RMJS 2ER DV B

QTY: 5

RMJS 16R DV B

Broom Closet 110

QTY: 1

MS A102 WH

Back of House 113

QTY: 1

PJ2 4B GWH EL2 /
PJ2 2B GWH L01

QTY: 1

PJ2 4B GWH L01

All Gender Restroom 106

QTY: 1

MS A102 WH

Patio 109

QTY: 3

Third Party

THIRD PARTY RECEPTACLE

QTY: 1

HJS-0-FM

FLOOR 1

Lutron Designer 26.2.1.101

DYNAMIC RISER DIAGRAM

GENERAL NOTES

1 REFER TO SUBMITTAL SYSTEM LAYOUT REPORT AND ONE LINE (IF AVAILABLE) FOR DEVICE WIRING INFORMATION AND DETAILS

2 REFER TO SUBMITTAL PANEL AND FIXTURE SCHEDULES FOR ADDITIONAL LOAD INFORMATION

3 REFER TO SUBMITTAL SYSTEM LAYOUT OR LOOP SCHEDULE REPORTS FOR MORE INFORMATION ABOUT FIXTURES ON THE DIGITAL LOOP

LUTRON SERVICES

QTY.	SERVICE TITLE (MODEL NUMBER)	SERVICE DESCRIPTION
		THE QUANTITY OF SERVICES INCLUDED WITHIN TO BE INCLUDED AS PART OF THIS PROJECTS SCOPE OF WORK AND SPECIFIED WITHIN THE SPECIFICATIONS
		PRE-STARTUP ELECTIVE SERVICES
	REMOTE WEB ACCESS (RWA-WB-ANY)	CREATE REMOTE WEB ACCESS (RWA-WB-ANY) ENABLES SECURE ONLINE ACCESS TO ENCRYPTED REMOTE WEB SESSIONS FOR ONE (1) LUTRON SYSTEM. REMOTE WEB ACCESS REQUIRES A CUSTOMER-PROVIDED BROADBAND INTERNET CONNECTION. CUSTOMER-PROVIDED EQUIPMENT AND THIRD-PARTY SOFTWARE MAY BE REQUIRED. SEE LUTRON.COM/RWA FOR MORE INFORMATION.
	ONE YR WEB ACCESS (1YR-RWA-WB-ANY)	CREATE REMOTE WEB ACCESS (1YR-RWA-WB-ANY) ENABLES SECURE ONLINE ACCESS TO ENCRYPTED REMOTE WEB SESSIONS FOR ONE (1) LUTRON SYSTEM. REMOTE WEB ACCESS REQUIRES A CUSTOMER-PROVIDED BROADBAND INTERNET CONNECTION. CUSTOMER-PROVIDED EQUIPMENT AND THIRD-PARTY SOFTWARE MAY BE REQUIRED. SEE LUTRON.COM/RWA FOR MORE INFORMATION.
	PLAN REVIEW ONLY (PLAN REVIEW ONLY)	START PRE-BIDDING MEETING & SET-UP WEB SESSION THROUGH WHICH CUSTOMER'S DESIGNER OR ENGINEER OF RECORD (EOR) CAN SUBMIT SYSTEM DESIGN FOR REVIEW AND THE PROGRAMMER AND LUTRON TECHNICIAN ATTEND MEETING TO REVIEW SYSTEM DESIGN AND ENGINEERING LABEL AND SYSTEM SCHEMATIC CAD ALL SYMBOLS AND LOAD TYPES WITHIN THE PROJECT.