accent SIGNS graphics
COMPLETE SIGN SERVICE & FABRICATION

June 19, 2025

To whom it may concern,

Regarding the building sign at:

Sherwin Williams
530 RITCHIE HWY
Severna Park, MD 21146

We are applying for a variance from the code below to be allowed to replace a sign that has been on the building for years and because of building construction, there is no alternative way to mount a sign.

Per the code ordinance listed below we are not allowed to have a sign that is sign is supported by poles, uprights, or braces extending from and attached to the roof of a structure:

In accordance with Article 18-3-303(b)(4), the following type of sign is prohibited: a sign that projects above the roof of a structure, a sign painted on the roof of a structure, and a sign supported by poles, uprights, or braces extending from or attached to the roof of a structure.

The proposed sign is supported by poles, uprights, or braces extending from and attached to the roof of a structure as that is the only way to attach the sign to the building because of the building construction

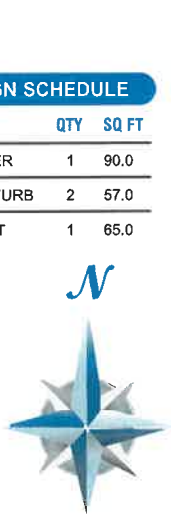
Sincerely,

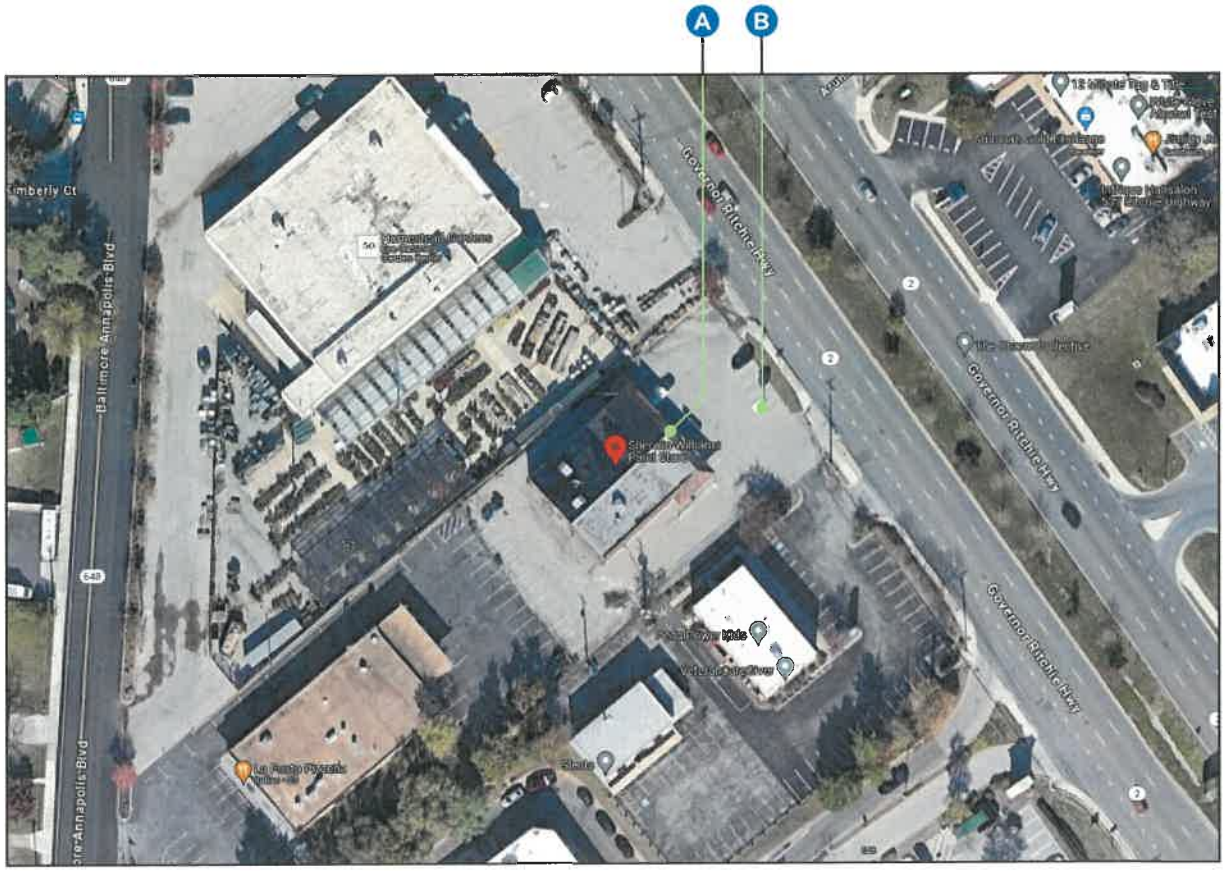
Danielle Manion
Accent Graphics, Inc.

523 East Rock Island Road Grand Prairie, TX 75050
(972) 399-0333 Fax (972)-986-4456
www.accentgraphicsinc.com

WALL & GROUND SIGN SCHEDULE

ID	DESCRIPTION	QTY	SQ FT
A	CH. LTRS. ON BACKER	1	90.0
B	POLE SIGN FACES/ REFURB	2	57.0
B	POLE SIGN CABINET	1	65.0





DATE	REVISIONS	NAME
-2022	X X	KD

AUTHORIZATION

CLIENT DATE

ACCOUNT EXECUTIVE DATE

LANDLORD DATE

ALL CHANGES MUST BE INITIALED BY CLIENT AND ACCOUNT EXECUTIVE ON FINAL APPROVED PRINT.

CLIENT SHERWIN WILLIAMS STORE #

INSTALLATION ADDRESS 530 RITCHIE HWY | Severna Park , MD 21146

DESIGNER KD ACCOUNT EXECUTIVE DM

DATE 01-03-2024 SHEET 7 OF 7 DESIGN # 231522-01

Gerber FILE =

Corel FILE =

accent SIGNS graphics
COMPLETE SIGN SERVICE & FABRICATION
523 E. ROCK ISLAND
GRAND PRAIRIE, TX 75050
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ABBREVIATION LIST

ABOVE FINISHED FLOOR	AFF	LAMINATED PLASTIC	LAM
ADJUSTABLE	ADJ	LANDLORD	LL
ALUMINUM	ALUM	LEFT-HAND	LH
ANCHOR BOLT	AB	LONG LEG HORIZONTAL	LLH
APPROXIMATELY	APPROX	LONG LEG VERTICAL	LLV
ARCHITECTURAL	ARCH	LONG	LG
AT	@	MANHOLE	MH
BEAM	BM	MANUFACTURER	MFR
BEARING	BRG	MASONRY OPENING	MO
BLOCKING	BLKG	MATERIAL	MATL
BOARD	BD	MAXIMUM	MAX
BOTTOM	BTM or Br	MECHANICAL	MECH
BUILDING	BLDG	METAL	MTL
CATCH BASIN	CB	MINIMUM	MIN
CEILING	CLNG	MISCELLANEOUS	MISC
CENTER TO CENTER	C/C	MOUNTED	MTD
CENTERLINE	CL	NOT APPLICABLE	NA
CLEAN OUT	CO	NOT IN CONTRACT	NIC
COLUMN	COL	NOT TO SCALE	NTS
CONCRETE MASONRY UNIT	CMU	ON CENTER	OC or o.c.
CONCRETE	CONC	OPENING	OPNG
CONSTRUCTION	CONST	OPPOSITE	OPP
CONTINUOUS	CONT	OUTSIDE DIAMETER	OD
CONTROL JOINT	CJ	OVERFLOW ROOF DRAIN	ORD
COURSE	CRS	PAINT	PT
DIAMETER	DIA	PAIR	PR
DIMENSION	DIM	PLASTIC LAMINATE	PLAM
DOWN	DN	PLATE	PL
DOWNSPOUT	DS	PLUS OR MINUS	+/-
DRAWING	DWG	PLYWOOD	PLWD
EACH FACE	EF	POINT OF SALE	POS
EACH WAY	EW	PRESERVATIVE TREATED	PRT
EACH	EA	PROPERTY LINE	P/L
ELECTRIC	ELEC	QUARRY TILE	QT
ELECTRIC WATER COOLER	EWC	RADIUS	RAD or R
ELEVATION	ELEV	RAIN WATER CONDUCTOR	RWC
EQUAL	EQ	REINFORCED	REINF
EXISTING	EXIST	REQUIRED	REQD
EXPANSION JOINT	EJ	REVISION	REV
EXTERIOR	EXT	RIGHT HAND	RH
EXTERIOR INSULATION & FINISH SYSTEM	EIFS	RIGHT OF WAY	ROW
FIBER REINFORCED PLASTIC	FRP	ROOF DRAIN	RD
FINISH	FIN	SECTION	SECT
FINISHED FLOOR	FF	SHEET	SHT
FIRE EXTINGUISHER CABINET	FEC	SIMILAR	SIM
FIRE RETARDANT TREATED	FRT	SPECIFICATION	SPEC
FIXTURE	FIXT	SQUARE FEET	SF
FLOOR	FLR	STAINLESS STEEL	SS
FLOOR DRAIN	FD	STANDARD	STD
GALVANIZED	GALV	STEEL	STL
GAUGE	GA	STRUCTURAL	STRUCT
GENERAL CONTRACTOR	GC	SUSPENDED	SUSP
GLASS	GL	TELEPHONE	TEL
GLASS FIBER REINFORCED CONCRETE	GFRC	TONGUE AND GROOVE	T&G
GLASS FIBER REINFORCED GYPSUM	GFRG	TOP OF	T/
GYPSUM BOARD	GYP BD	TOP OF JOIST	TOJ
HANDICAPPED	HCPD	TOP OF MASONRY	TOM
HARDWOOD	HDWD	TOP OF STEEL	TOS
HEATING/VENTILATING/AIR CONDITIONING	HVAC	TYPICAL	TYP
HEAVY DUTY	HD	UNLESS NOTED OTHERWISE	UNO
HOLLOW CORE	HC	VERTICAL	VERT
HOLLOW METAL	HM	VINYL COMPOSITION TILE	VCT
HORIZONTAL	HORIZ	VINYL TILE	VT
HOSE BIBB	HB	VINYL WALL COVERING	VWC
HOT WATER HEATER	WH	WALL COVERING	WC
HOUR	HR	WELDED WIRE FABRIC	WWF
INSIDE DIAMETER	ID	WITH	W/
INSULATION	INSUL	WITHOUT	W/O
INTERIOR	INT	WOOD	WD
JOIST BEARING	JB	WORK POINT	WP

SHERWIN WILLIAMS #5178

530 GOVERNOR RITCHIE HIGHWAY

SEVERNA PARK, MD 21146

CONTACTS

PROJECT MANAGER
ONYX CREATIVE
811 CROMWELL PARK DRIVE, SUITE 113
GLEN BURNIE, MD 21061
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ELECTRICAL
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PLUMBING
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PROJECT ENGINEER
THE SHERWIN WILLIAMS COMPANY PSG
EASTERN DIVISION REAL ESTATE
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MALVERN PA, 19355
CONTACT: JOSEPH ANDERSON
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OWNER/PROPERTY INFO
KENNETH WISHOKAL
563 BROADWATER ROAD
ARNOLD, MD 21012
MAP: 0032
GRID: 0001
PARCEL: 0027
BUILDING AREA: 5,600 SF
PROPERTY LAND AREA: 25,547 SF

JURISDICTION
ANNE ARUNDEL COUNTY
THE DEPARTMENT OF INSPECTIONS AND PERMITS
2664 RIVA ROAD, HERITAGE OFFICE COMPLEX
ANNAPOLIS, MD 21401
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PROJECT SUMMARY

IS 'Big' needed? could trigger a though of building review or unwanted scrutiny.

EXISTING FREE-STANDING BUILDING CONSISTING OF TWO TENANTS, SHERWIN WILLIAMS AND BANK OF GLEN BURNIE. TWO TENANTS WILL BE COMBINED INTO ONE IMPORTANT SPACE. EXISTING SPACES WILL BE ALTERED FOR SHERWIN WILLIAM'S FULL OCCUPANCY.

SHERWIN WILLIAMS ALTERATION PROGRAM INCLUDES NEW WALL PARTITIONS, NEW TOILETS, NEW LIGHT FIXTURES (AS SCHEDULED) ON OPEN CEILING, NEW PLUMBING FIXTURES AND NEW FINISHES.

SEPARATE PERMITS :
EXTERIOR SIGNAGE : WILL BE COORDINATED BETWEEN TENANT AND GC AND WILL BE APPLIED UNDER SEPARATE PERMIT.
SPRINKLER - THERE WILL BE NO WORK INVOLVE ON SPRINKLER UNDER THIS PERMIT. IF OWNER OPTED TO INSTALL ONE IN FUTURE, IT WILL BE APPLIED UNDER SEPARATE PERMIT.

APPLICABLE CODES

2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
2021 INTERNATIONAL BUILDING CODE (IBC)
2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
2021 INTERNATIONAL MECHANICAL CODE (IMC)
2021 INTERNATIONAL PLUMBING CODE (IPC)
2021 INTERNATIONAL FUEL GAS CODE (IFGC)
2018 LIFE SAFETY CODE (NFPA 101)
2018 FIRE PREVENTION CODE (NFPA 1)
2020 NATIONAL ELECTRICAL CODE (NEC)

We need confirmation this work / increased will not trigger any major work (over $25,000)

VICINITY MAP

KEY PLAN

DRAWING INDEX

		REVISIONS			
		DATE			
G001	COVER SHEET				
G002	CODE ANALYSIS & LIFE SAFETY PLAN				
G003	SITE PLAN				
ARCHITECTURAL					
D101	DEMOLITION PLAN				
D102	DEMOLITION REFLECTED CEILING PLAN				
A101	FLOOR PLAN				
A102	FIXTURE PLAN				
A103	REFLECTED CEILING PLAN				
A104	FINISH PLAN				
A105	ROOF PLAN				
A201	EXTERIOR ELEVATIONS				
A202	EXTERIOR ELEVATIONS				
A401	INTERIOR ELEVATIONS				
A501	DETAILS				
A601	DOOR & WINDOW SCHEDULES				
A901	SPECIFICATIONS				
A902	SPECIFICATIONS				
A903	SPECIFICATIONS				
A904	SPECIFICATIONS				
A905	SPECIFICATIONS				
A906	SPECIFICATIONS				
A907	SPECIFICATIONS				
A908	SPECIFICATIONS				
A909	SPECIFICATIONS				
A910	SPECIFICATIONS				
MECHANICAL					
M001	MECHANICAL DATA SHEET				
M002	MECHANICAL SCHEDULES & DETAILS				
M0101	MECHANICAL DEMOLITION PLAN				
M101	MECHANICAL FLOOR PLAN				
M201	MECHANICAL SPECIFICATIONS				
PLUMBING					
P001	PLUMBING DATA SHEET				
P002	PLUMBING DETAILS & SCHEDULES				
P0101	PLUMBING SPECIFICATIONS				
P101	PLUMBING FLOOR PLAN				
P201	PLUMBING DEMOLITION PLAN				
ELECTRICAL					
E0101	ELECTRICAL DEMOLITION PLAN				
E101	ELECTRICAL LIGHTING PLAN				
E102	ELECTRICAL POWER PLAN				
E103	ELECTRICAL ROOF PLAN				
E104	ELECTRICAL RISER DIAGRAM & SCHEDULES				

GENERAL NOTES (WHERE APPLICABLE)

1. THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, AIA A 201, 2017 IS APPLICABLE TO THE PROJECT AND INCLUDED HERE IN BY REFERENCE
2. DO NOT SCALE DRAWINGS. REQUEST CLARIFICATION FROM THE ARCHITECT TO RESOLVE DISCREPANCIES OR TO SUPPLY ADDITIONAL INFORMATION
3. INTERIOR DIMENSIONS ARE TO FACE OF GYPSUM BOARD - U.N.O.
4. FINISH FLOOR ELEVATIONS SHALL BE FROM TOP OF CONCRETE FLOOR SLAB OR TOP OF FLOOR SHEATHING WHERE APPLICABLE - U.N.O.
5. WORK IS TO BE PERFORMED IN ACCORDANCE WITH APPLICABLE CODES. CONDITIONS STATED ON THE PERMIT DOCUMENTS, LOCAL ORDINANCES, THE U.S. DEPARTMENT OF JUSTICE 2010 ADA STANDARDS, AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION (AHJ).
6. WOOD NOT CLASSIFIED AS INTERIOR FINISH MATERIAL SHALL BE FIRE RETARDANT TREATED. USE AN EXTERIOR GRADE FRT PRODUCT IN EXTERIOR WALL CONSTRUCTION, ROOF RELATED CONSTRUCTION AND FLASHING CONDITIONS.
7. WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE PRESERVATIVE TREATED.
8. WHERE EXISTING STRUCTURAL STEEL IS PROTECTED WITH A FIREPROOFING MATERIAL, PROTECT DURING DEMOLITION, ALTERATION AND CONSTRUCTION. PATCH AND REPAIR ANY MISSING OR DAMAGED FIREPROOFING TO MAINTAIN PROTECTION OF THE STRUCTURE.
9. AT PENETRATIONS THROUGH FIRE RATED ASSEMBLIES, PROVIDE PROTECTION MEETING THE REQUIREMENTS OF ASTM E-814 AND BEARING THE APPROPRIATE U.L. LABEL FOR THE CONDITION.
10. DESIGN & SELECTION OF SUPPORTS, BRACES, ANCHORS, ATTACHMENTS AND RELATED FASTENERS, UNLESS SHOWN ON THE DRAWINGS OR IN THE SPECIFICATIONS, IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR, UTILIZING INDUSTRY STANDARD MATERIALS AND METHODS SUITABLE TO THE CONDITION
11. WALL AND CEILING MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO REGISTERS, DIFFUSERS, GRILLES, SPEAKERS, CLEAN OUTS AND COVER PLATES, WHETHER FACTORY PRE-FINISHED OR NOT WHICH DO NOT MATCH THE ADJACENT WALL OR CEILING COLOR SHALL BE FIELD PAINTED, UNLESS OTHERWISE NOTED. COLOR AND FINISH TO BE APPROVED BY THE ARCHITECT.
12. COMPLY WITH SPECIAL WORKING CONDITIONS RELATING TO THE PROJECT, INCLUDING BUT NOT LIMITED TO REQUIREMENTS FOR TEMPORARY PROTECTION, TRASH MANAGEMENT, NOISE, LIGHT, DUST AND POLLUTION CONTROL, AND LIMITATIONS ON WORKING HOURS.

Professional Certification (Architect)
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17348 expiration date 8/14/2026

SCOT LOISELLE ARCHITECT
811 Cromwell Park Drive, Suite 113
Glen Burnie, Maryland 21061
410.863.5302 onyxcreative.com

SHERWIN WILLIAMS #5178
530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JH
Date	Issue
01-31-25	Permit Set

G001

COVER SHEET

FIRE NOTES:

ILLUMINATED EXIT SIGNS SHALL BE PROVIDED THROUGHOUT THE BUILDING. ALL EXIT SIGNS SHALL HAVE BATTERY BACKUP.

THIS BUILDING SHALL BE PROVIDED WITH APPROVED BATTERY POWERED EMERGENCY LIGHTING TO ILLUMINATE ALL REQUIRED MEANS OF EGRESS.

DOORS SHALL BE ARRANGED TO BE OPENED READILY FROM THE EGRESS SIDE WHENEVER THE BUILDING IS OCCUPIED. LOCKS, IF PROVIDED, SHALL NOT REQUIRE THE USE OF A KEY, A TOOL OR SPECIAL KNOWLEDGE OR EFFORT FOR OPERATION FROM THE EGRESS SIDE.

EMERGENCY LIGHTING UNITS ARE TO BE WIRED INTO THE NORMAL LIGHTING CIRCUIT AND ARRANGED AS TO PROVIDE THE REQUIRED ILLUMINATION AUTOMATICALLY IN THE EVENT OF ANY INTERRUPTION OF NORMAL LIGHTING SUCH AS ANY FAILURE OF PUBLIC UTILITY OR OUTSIDE ELECTRICAL POWER SUPPLY, OPENING OF A CIRCUIT BREAKER OR FUSE, OR ANY MANUAL ACTS INCLUDING ACCIDENTAL OPENING OF SWITCH CONTROLLING NORMAL LIGHTING FACILITIES.

EVERY CLOSET DOOR LATCH SHALL BE SUCH THAT CHILDREN CAN OPEN THE DOOR FROM THE INSIDE OF THE CLOSETS.

EVERY BATHROOM DOOR LOCK SHALL BE DESIGNED TO PERMIT OPENING OF THE LOCKED DOOR FROM THE OUTSIDE IN A EMERGENCY. THE OPENING DEVICE SHALL BE READILY ACCESSIBLE TO ANYONE OUTSIDE THE DOOR

THE ELEVATION OF THE FLOOR SURFACES ON BOTH SIDES OF A DOOR SHALL NOT VARY BY MORE THAN 1/2". THE ELEVATION SHALL BE MAINTAINED ON BOTH SIDES OF THE DOORWAY FOR A DISTANCE NOT LESS THAN THE WIDTH OF THE WIDEST LEAF. THRESHOLDS AT DOORWAYS SHALL NOT EXCEED 1/2" IN HEIGHT. RAISED THRESHOLDS AND FLOOR LEVEL CHANGES IN EXCESS OF 1/4" SHALL BE BEVELED WITH A SLOPE OF NOT STEEPER THAN 1 W 2.

A LATCH OR OTHER FASTENING DEVICE ON A DOOR SHALL BE PROVIDED WITH A RELEASING DEVICE HAVING AN OBVIOUS MEETHOD OF OPERATION AND THAT IS READILY OPERATED UNDER ALL LIGHTING CONDITIONS. THE RELEASING MECHANISM FOR ANY LATCH SHALL BE NOT LESS THAN 34", AND NOT MORE THAN 48" ABOVE FINISH FLOOR. DOORS SHALL BE OPERABLE WITH NOT MORE THAN ONE RELEASING OPERATION.

EVERY EXTERIOR AND INTERIOR WALL AND PARTITION SHALL BE FIRE STOPPED AT EACH FLOOR LEVEL, AT THE TOP STORY CEILING LEVEL, AND AT THE LEVEL OF SUPPORT FOR ROOFS.

PORTABLE FIRE EXTINGUISHERS SHALL BE INSTALLED, INSPECTED, AND MAINTAINED IN ACCORDANCE WITH NFPA 10 STANDARD FOR PORTABLE FIRE EXTINGUISHERS

GENERAL NOTES

A. REFER TO CODE SUMMARY ON SHEET G002 FOR ADDITIONAL INFORMATION

B. REFER TO DOOR SCHEDULE ON SHEET A701 FOR DOOR HARDWARE & OPERATION.

C. REFER TO ELECTRICAL DRAWINGS FOR EXIT SIGNS & EMERGENCY LIGHT INFORMATION.

FIRE EXTINGUISHERS

CLASS A HAZARD (ORDINARY)
- MAXIMUM FLOOR AREA PER UNIT OF A = 1,500 SQ. FT. (EXAMPLE. 3A SHALL PROTECT 3,000 SQ. FT.)
- MAXIMUM TRAVEL DISTANCE TO EXTINGUISHER = 75'

CLASS B HAZARD (FLAMMABLE)
- MAXIMUM TRAVEL DISTANCE TO 10B RATED EXTINGUISHER = 30'
- MAXIMUM TRAVEL DISTANCE TO 20B RATED EXTINGUISHER = 50'

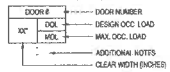
CLASS C HAZARD
- REQUIRED WHERE ENERGIZED ELECTRICAL EQUIPMENT CAN BE ENCOUNTERED
- SHALL BE SIZED AND LOCATED ON THE BASIS OF CLASS A OR CLASS B HAZARD

CLASS K HAZARD
- REQUIRED WHERE THERE IS A POTENTIAL FOR FIRES INVOLVING COMBUSTIBLE COOKING MEDIA.
- MAXIMUM TRAVEL DISTANCE TO EXTINGUISHER = 30'

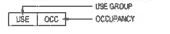
GENERAL NOTES
- A. DESIGN CRITERIA PER APPLICABLE BUILDING/FIRE CODES AND NFPA 10
- B. PROVIDE MINIMUM 2A-10B:C EXTINGUISHERS AS INDICATED ON PLAN OR AS DIRECTED BY AHJ.
- C. COORDINATE FINAL QUANTITIES, LOCATIONS AND INSTALLATION w/ AHJ.
- D. EXTINGUISHERS SHALL HAVE A GROSS WEIGHT NOT TO EXCEED 40 LBS.
- E. EXTINGUISHERS SHALL BE INSTALLED w/ BOTTOM @ 4"AFF MIN.
- F. EXTINGUISHERS SHALL BE INSTALLED w/ TOP @ 5'-0"AFF MAX - U.N.O.
- G. EXTINGUISHER CABINETS (WHERE OCCUR) SHALL BE INSTALLED w/ TOP OF CABINET @ 4'-0"AFF MAX U.N.O.

LEGEND

EXIT TAG



USE/OCCUPANCY TAG



FE FIRE EXTINGUISHER

FEC FIRE EXTINGUISHER w/ CABINET

Professional Certification (Architect)
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17046 expiration date 9/14/2026

CODE SUMMARY

CRITERIA	REQUIREMENTS	IBC 2021
TYPE OF CONSTRUCTION	II-B	IBC SECTION 602
NUMBER OF FLOORS	1	IBC SECTION 504
USE AND OCCUPANCY CLASSIFICATION: M (MERCANTILE) EXISTING - B (BUSINESS) EXISTING	M (MERCANTILE)	IBC SECTION 302
SPRINKLER SYSTEM (EXISTING IS NON SPRINKLED) - NO CHANGE	NO	IBC SECTION 903
FIRE ALARM SYSTEM (EXISTING FIRE ALARM AT THE BANK WILL BE REMOVED)	NO	IBC SECTION 907
BUILDING AREA	5,600 SQ FT	
OCCUPANT LOAD CALCULATIONS (PER AREA)		
M: 2,077 SQ FT / 60 SQ FT PER OCCUPANT=	35 OCCUPANTS	IBC TABLE 1004.5
B: 109 SQ FT / 150 SQ FT PER OCCUPANT=	1 OCCUPANTS	IBC TABLE 1004.5
S-1: 2,783 SQ FT / 300 SQ FT PER OCCUPANT=	10 OCCUPANTS	IBC TABLE 1004.5
TOTAL OCCUPANTS	46 OCCUPANTS	
EGRESS REQUIREMENTS (PER AREA)		
EGRESS WIDTH REQUIRED 46 OCCUPANTS x 0.20" PER OCCUPANT =	9.2" REQUIRED	
EGRESS WIDTH PROVIDED: 1 DOOR x 36" = 33" CLEAR 1 DOOR x 36" = 33" CLEAR 2 DOOR X 36" = 68" CLEAR 2 DOOR X 36" = 68" CLEAR		
TOTAL EGRESS WIDTH PROVIDED:	202" PROVIDED (COMPLY)	IBC SECTION 1005.3.2
EXITS REQUIRED / PROVIDED	2 /4	IBC TABLE 1006.3.1
MAXIMUM EXIT ACCESS TRAVEL DISTANCE 75'-10"	REFER TO LIFE SAFETY PLAN (COMPLY)	IBC TABLE 1017.2
PLUMBING CALCULATIONS		
MALE: 23 OCCUPANTS / FEMALE: 23 OCCUPANTS		IBC TABLE 2902.1
TOILETS - 1 PER 500 / LAVS - 1 PER 750		IBC TABLE 2902.1
SINGLE OCCUPANT RESTROOM FACILITY	2 TOILET / 2 LAV - REQ'D (2/2 PROVIDED)	IBC 2902.2 EXC. 4
DRINKING FOUNTAINS REQUIRED = 1 PER 1000 OCCUPANTS	2 REQ'D / 2 PROVIDED	IPC SECTION 410.3.1
SERVICE SINK REQUIRED = 1	1 PROVIDED	IBC TABLE 2902.1

APPLICABLE CODES

2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
2021 INTERNATIONAL BUILDING CODE (IBC)
2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
2021 INTERNATIONAL MECHANICAL CODE (IMC)
2021 INTERNATIONAL PLUMBING CODE (IPC)
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2018 LIFE SAFETY CODE (NFPA 101)
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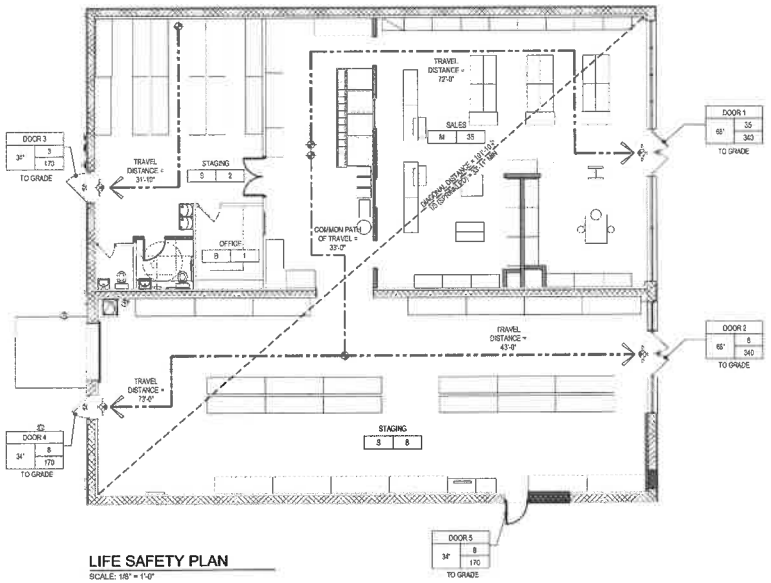

LIFE SAFETY PLAN

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

SCOT LOISELLE ARCHITECT
811 Cromwell Park Drive, Suite 113
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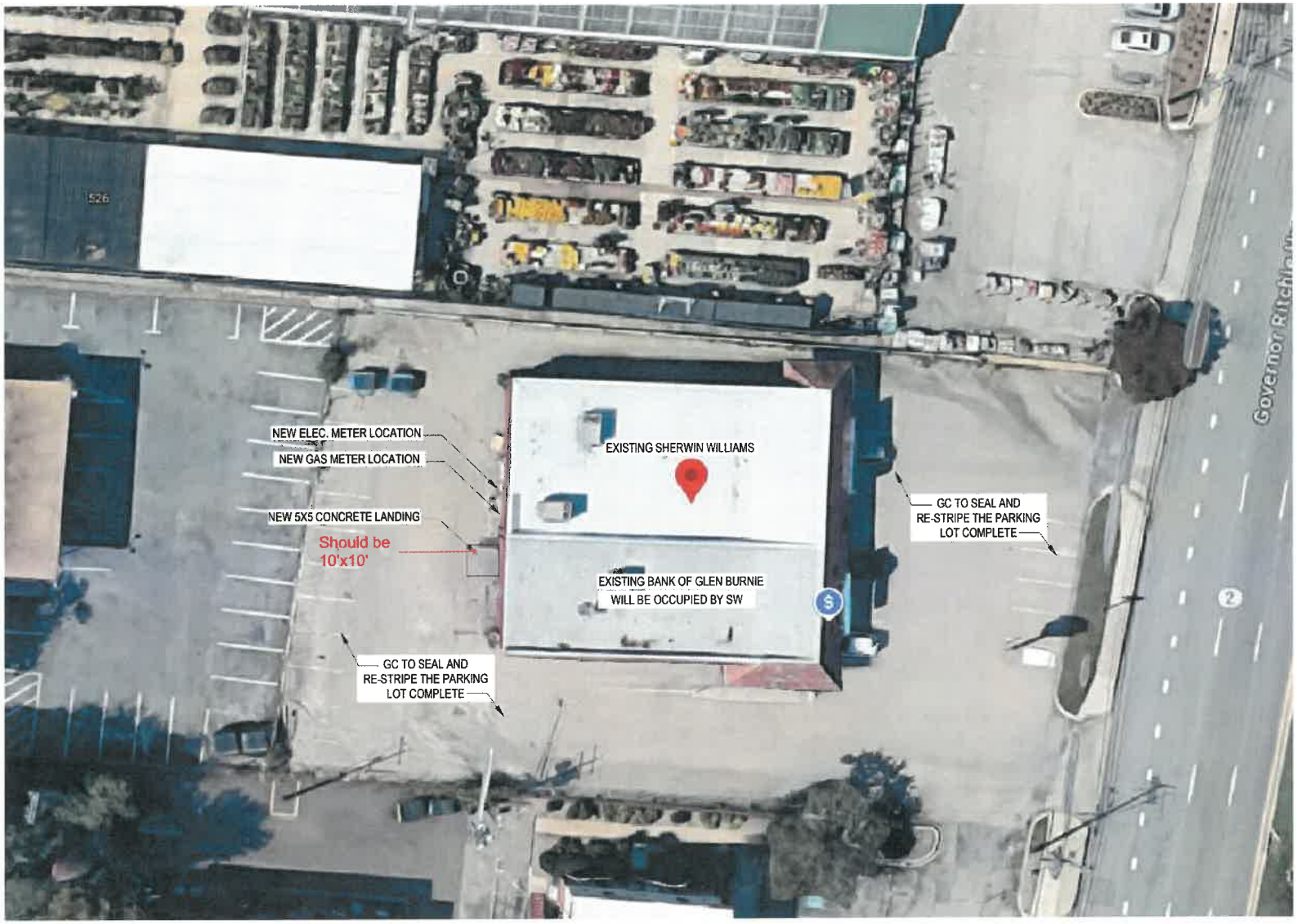
410.863.1300 scotloiselle.com

SHERWIN WILLIAMS #5178
530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.: 24.0774
Drawn By: JH
Date: 01-31-25
Issue: Permit Set

G002

CODE ANALYSIS & LIFE SAFETY PLAN



SITE PLAN
N.T.S.

SCOT LOISELLE ARCHITECT
811 Cromwell Park Drive, Suite 110
Glen Burnie, Maryland 21061
410.863.1500 scotloiselle.com

SHERWIN WILLIAMS #5178

530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JGC
Date	Issue
01-31-25	Permit Set

G003

SITE PLAN

CONCRETE SLAB CONSTRUCTION NOTES:

1. VERIFY & COORDINATE CONCRETE PAD AS SHOWN
2. PROVIDE AND INSTALL SMOOTH AND LEVEL CONCRETE LANDING FLOOR SLAB AS SHOWN.
3. MINIMUM LOAD SHALL BE 100 POUNDS PER SQUARE FOOT.
4. CONCRETE SLAB SHALL BE 3500 PSI NORMAL WEIGHT CONCRETE, 4" THICK MINIMUM, WITH 6x6 W1.4x1.4 WWF PLACED AT MID DEPTH OF SLAB OVER 15 MIL VAPOR BARRIER ON 4" MINIMUM THICK WASHED CRUSHED STONE, TYP.
5. PROVIDE/INSTALL 1 1/2" TOPPING SLAB MINIMUM INSIDE THE ENTIRE SPACE.

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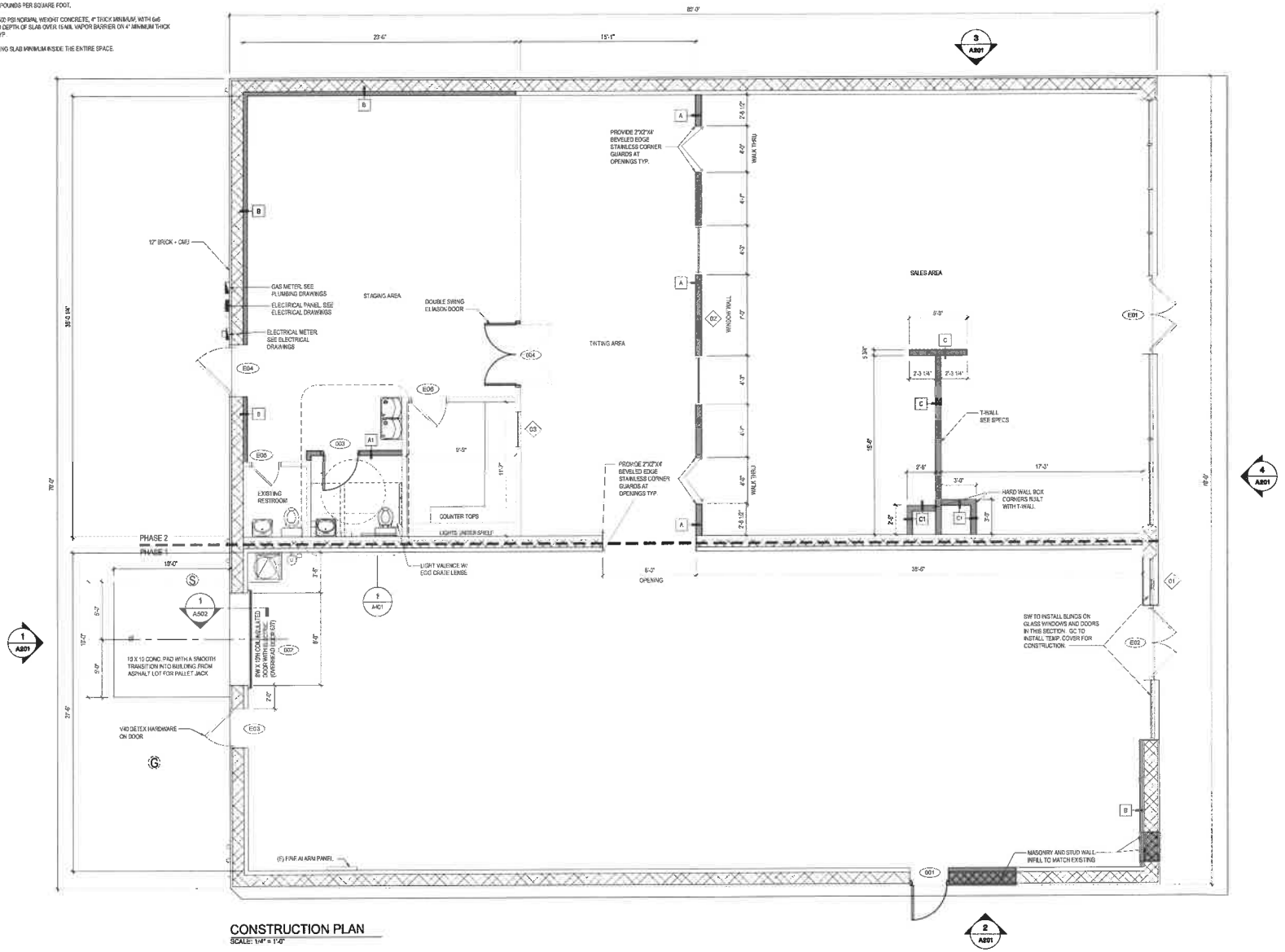


CONSTRUCTION PLAN
SCALE: 1/4" = 1'-0"

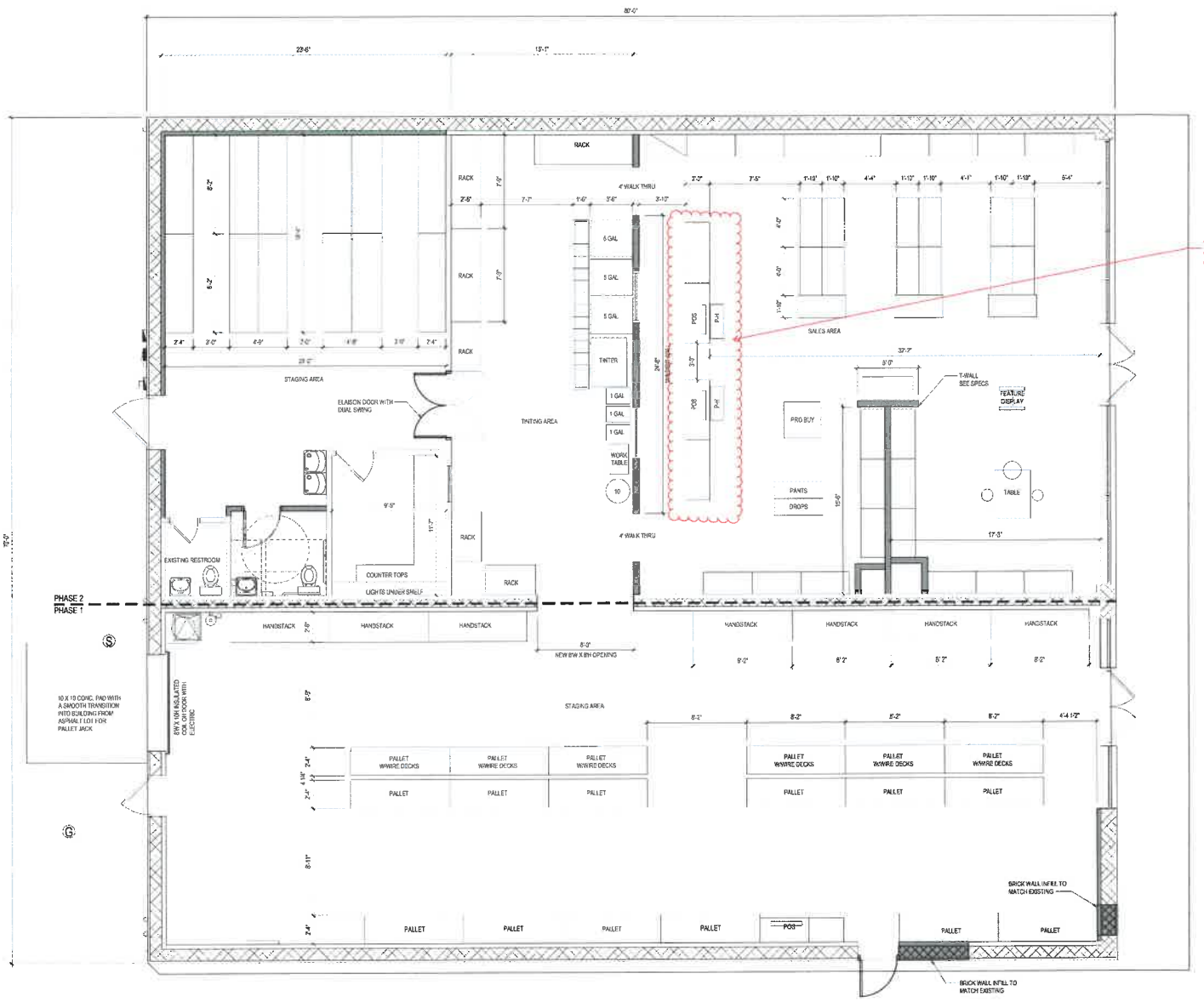
SCOT LOISELLE ARCHITECT
611 Cornell Park Drive, Suite 113
Glen Burnie, Maryland 21061
410.863.1300 scotloiselle.com

SHERWIN WILLIAMS #5178
530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JH
Date	Issue
01-31-25	Permit Set

A101

FLOOR PLAN



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

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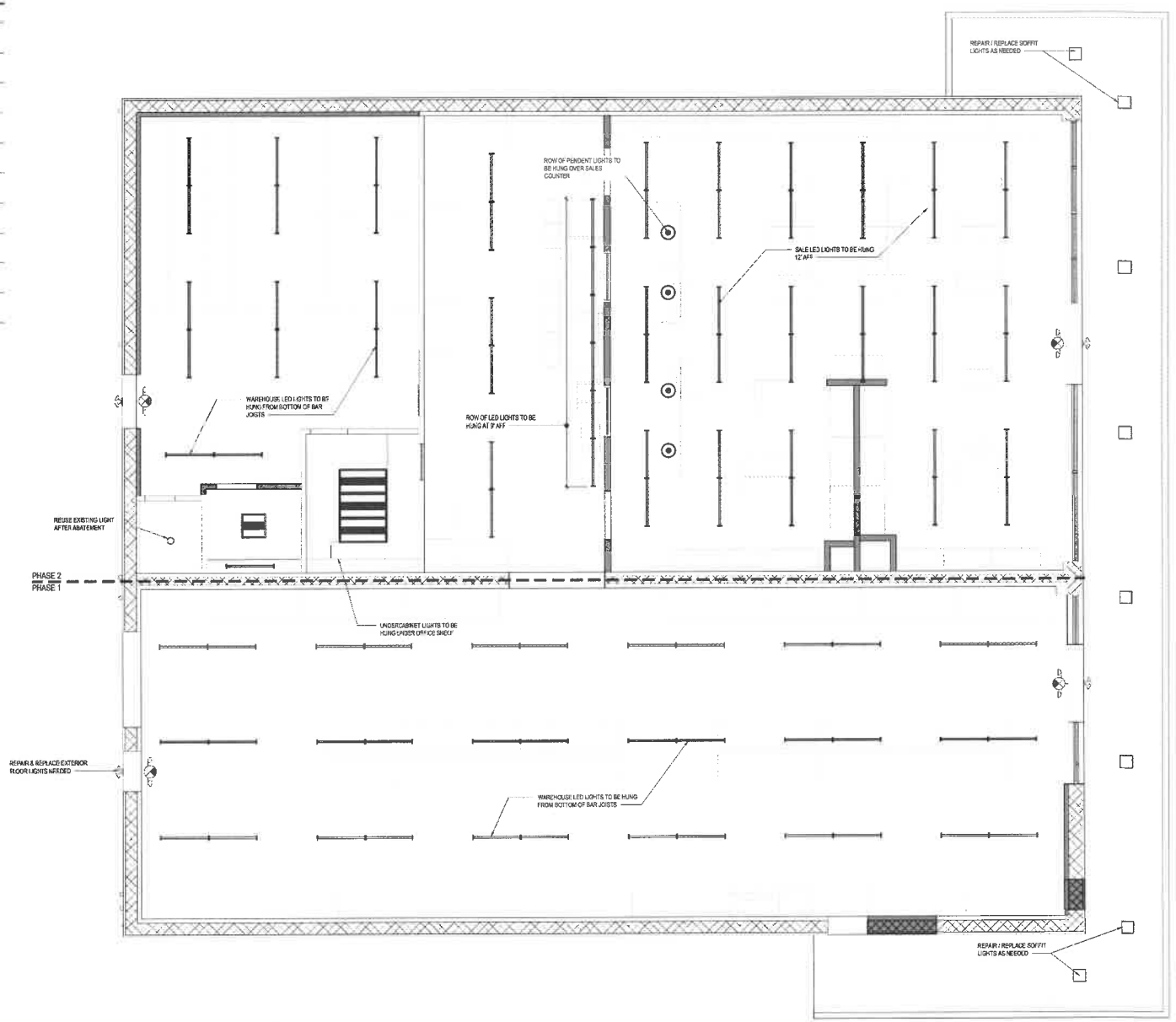
A102

FIXTURE PLAN

CEILING PLAN LEGENDS

SYMBOL	DESCRIPTION
	2'X2' LED FIXTURE
	2'X4' LED FIXTURE
	4'-8' LED STRIP
	EMERGENCY EXIT
	2'X2' DIFFUSER
	2'X2' GRILLE
	EXHAUST FAN
	EXTERIOR FLOOD LIGHTS
	PENDANT LIGHTS
	EXISTING LIGHT FIXTURE TO REMAIN

NOTE: ALL LIGHTS TO BE SOURCED FROM WESCO



REFLECTED CEILING PLAN

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

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Project No.:	24.0774
Drawn By:	JH

Date	Issue
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A103

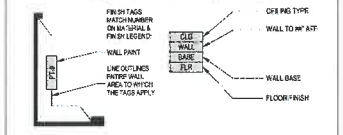
REFLECTED CEILING PLAN

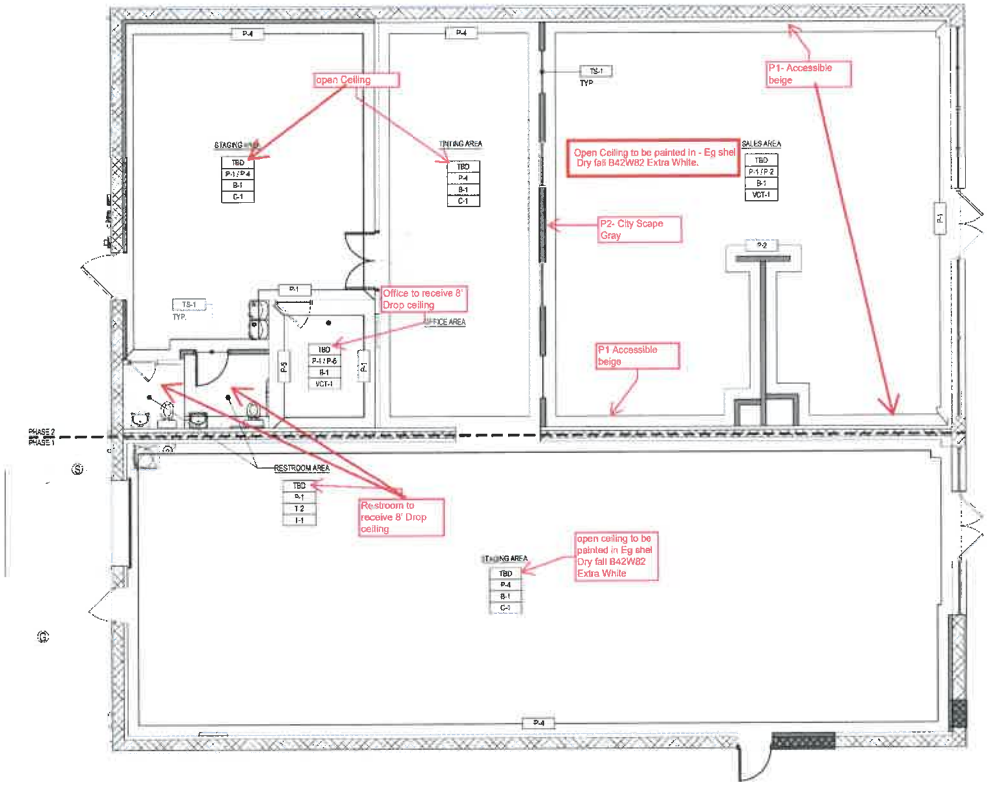
MATERIAL SCHEDULE

MATERIAL	SYMBOL	DESCRIPTION	NUMBER	COLOR	MFGR.	COMMENTS
TILE	T-1	12" x 12" MATTE FINISH TILE - FLOOR	AR05	CASPER	DAL-TILE	ASHLAR PATTERN, RESTROOM AREAS
	T-2	12" x 12" MATTE FINISH TILE - WALL	AR05	CASPER	DAL-TILE	ASHLAR PATTERN, RESTROOM AREAS
GROUT	G-1	GROUT FOR TILE T-1	103	COBBLESTONE	NAPEI	
VINYL COMPOSITION TILE	VCT-1	TECTON - RESISTANT VINYL TILE - FLOOR	30755	DOLOMITE	PHILADELPHIA CM	ASHLAR PATTERN; SALES & OFFICE AREAS
TRANSITION STRIP	TS-1	VINYL TRANSITION STRIP				MATCH COVE BASE COLOR
BASE	B-1	RUBBER COVE BASE				PARTITION WALLS ONLY. DO NOT INSTALL ON CONCRETE / 4 WALLS
CONCRETE	C-1	POLISHED CONCRETE				STAGING AREAS
PAINT	P-1	INTERIOR PAINT	SW7036	ACCESSIBLE BEIGE	SHERWIN WILLIAMS	
	P-2	INTERIOR PAINT	SW7067	CITYSCRAPES GRAY	SHERWIN WILLIAMS	
	P-3	INTERIOR PAINT	SW7033	AESTHETIC WHITE	SHERWIN WILLIAMS	
	P-4	INTERIOR PAINT		EXTRA WHITE	SHERWIN WILLIAMS	
	P-5	INTERIOR PAINT		DRY ERASE CLEAR	SHERWIN WILLIAMS	

FINISH SYMBOL LEGEND

NOTE: FINISH TAGS MATCH NUMBER ON FINISH MATERIAL SCHEDULE





FINISH PLAN
SCALE: 3/16" = 1'-0"

SCOT LOISELLE ARCHITECT
811 Cromwell Park Drive, Suite 113
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410.863.1302 orders@loiselle.com

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530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.: 24.0774
Drawn By: JH
Date: 01-31-25
Issue: Permit Set

A104

FINISH PLAN

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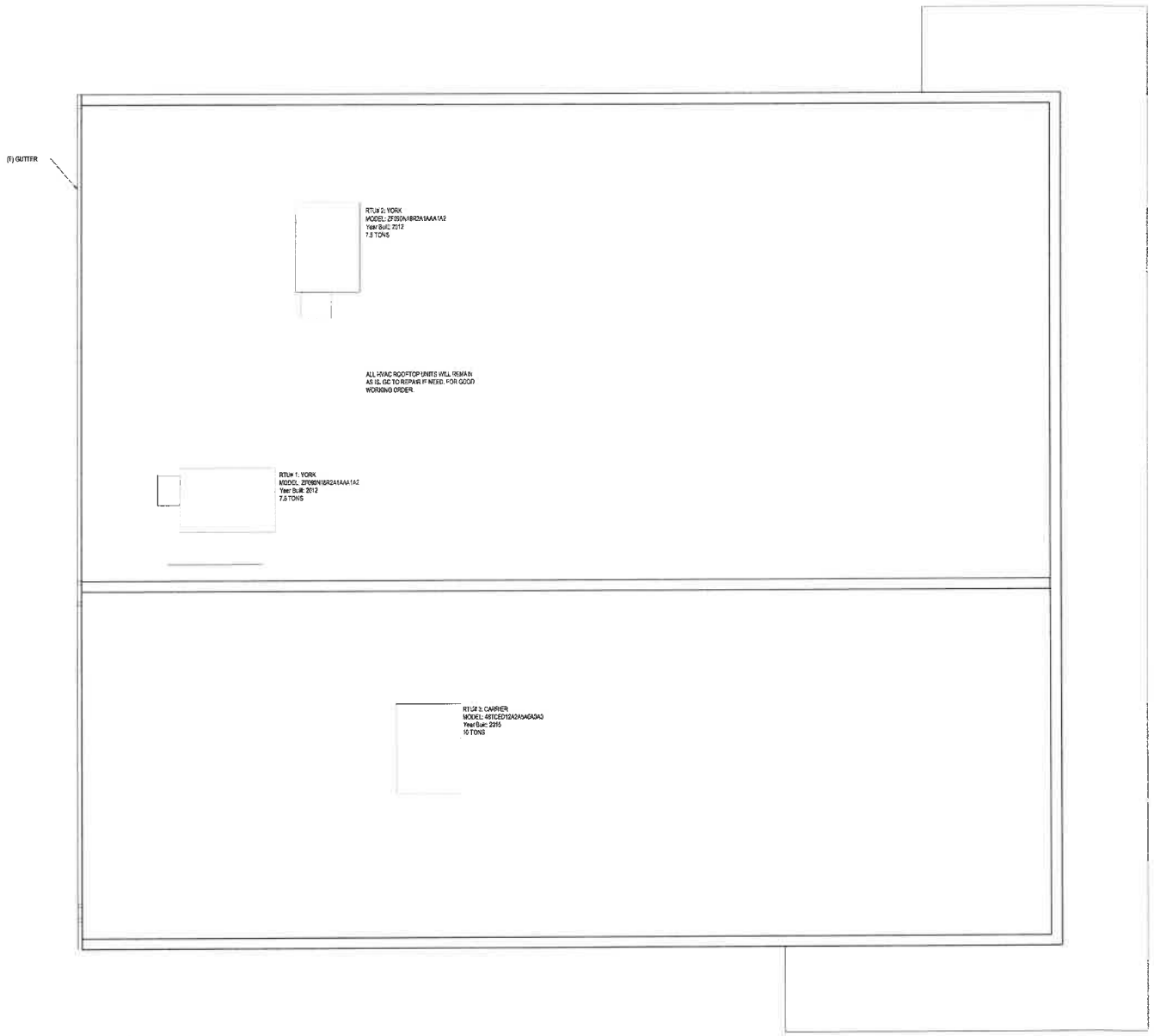

ROOF PLAN
SCALE: 1/4" = 1'-0"

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811 Cromwell Park Drive, Suite 110
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410.865.1362 orgvcreative.com

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530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JH

Date	Issue
01-31-25	Permit Set

A105

ROOF PLAN

Professional Certification (Architect)
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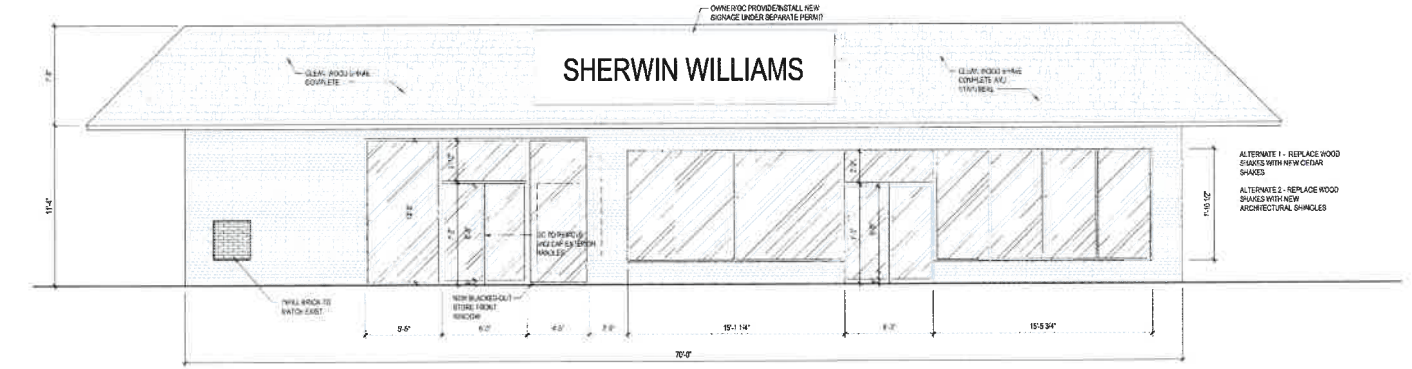
FRONT ELEVATION PHOTO



1 | FRONT ELEVATION
SCALE: 1/4" = 1'-0"

SCOT LOSELLE ARCHITECT
811 Cromwell Park Drive, Suite 110
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A201

EXTERIOR ELEVATIONS

Professional Certification (Architect)
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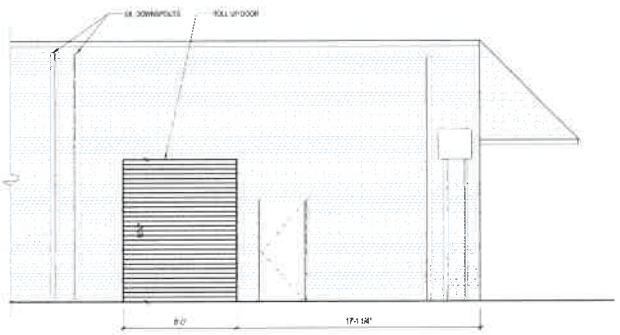
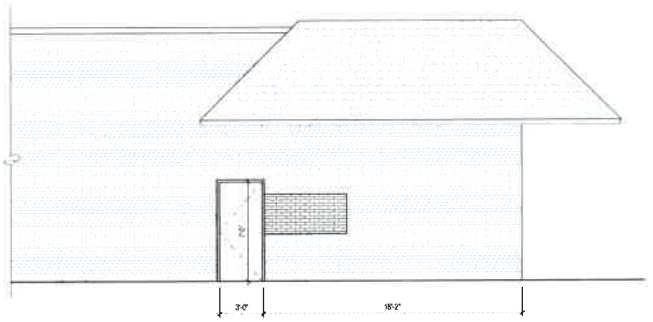
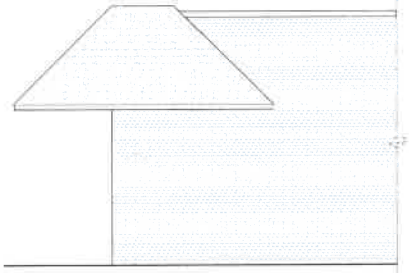


1 PARTIAL ELEVATION
SCALE: 1/4" = 1'-0"



2 PARTIAL ELEVATION
SCALE: 1/4" = 1'-0"



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

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SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JH

Date	Issue
01-31-25	Permit Set

A202

EXTERIOR ELEVATIONS

Professional Certification (Architect)
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ACCESSORY SCHEDULE

Construction Set: Only installed if required for inspection. SW to have Cintas install at some point after completion.

TAG	DESCRIPTION	MANUFACTURER	NUMBER	MOUNTING HT	NOTE
1	PAPER TOWEL DISPENSER	BOBRICK	B-26C	37" TO BOTTOM	SURFACE MOUNTED
2	TOILET PAPER HOLDER (DBL)	BOBRICK	B-274	REFER TO INT. ELEVATIONS	SURFACE MOUNTED
3	MIRROR	BOBRICK	B-165	[illegible]	[illegible]
4	SOAP DISPENSER	BOBRICK	B-2111	44" TO VALVE	SURFACE MOUNTED
5	HORIZONTAL GRAB BARS	BOBRICK	B-6806x24 B-6806x36 B-6806x42 B-6806x18	34" TO TOP	SATIN STAINLESS STEEL FINISH AND CONCEALED FASTENERS
6	VERTICAL GRAB BAR	BOBRICK	B-6806x18	40" TO BOTTOM	SATIN STAINLESS STEEL FINISH AND CONCEALED FASTENERS
7	COAT HANGAR	BOBRICK	B2-16	48" TO TOP OF HOOK	

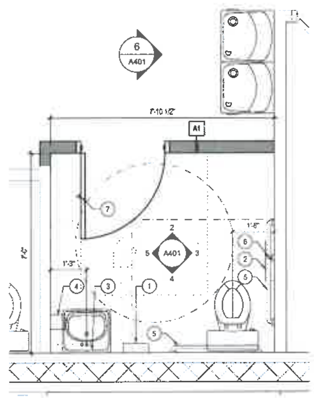
RESTROOM ACCESSORIES GENERAL NOTES:
- ALTERNATE: SW TO INSTALL CINTAS, GC TO INSTALL ONLY WHAT IS NEEDED FOR INSPECTIONS AND INSTALL TEMPORARY

RESTROOM FIXTURE GENERAL NOTES:
1. REFER TO PLANS AND ELEVATIONS FOR LOCATION OF FIXTURES
2. REFER TO PLUMBING PLANS AND SPECIFICATIONS FOR COMPLETE FIXTURE INFORMATION
3. PROVIDE BLOCKING IN WALLS FOR SUPPORT OF LISTED ACCESSORIES
4. MOUNT ACCESSORY W/ HIGHEST OPERABLE COMPONENT NO HIGHER THAN THE HEIGHT INDICATED
5. LAVATORY APPURTENANCES ARE TO BE INSTALLED PER ICC/ANSI A117.1 2009 GUIDELINES AND IN ACCORDANCE W/ MANUFACTURER'S RECOMMENDATIONS. COORDINATE WORK W/ ALL RELATED TRADES
6. EXPOSED PIPING & CONTROLS UNDER LAVATORY TO BE PROTECTED W/ LAV GUARD 2 UNDERSINK PIPE COVERS BY TRUEBRO (OR APPROVED EQUAL) PER ICC/ANSI A117.1 2009, SECTION 606.5

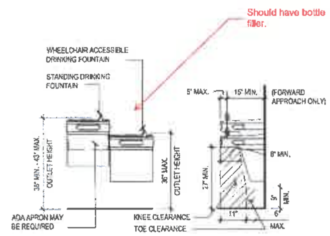
CODE COMPLIANCE PER FIXTURE - ADA / ICC/ANSI A117.1
WATER CLOSET PER ICC/ANSI 117.1 2009, SECTION 604

LAVATORY PER ICC/ANSI 117.1 2009, SECTION 606

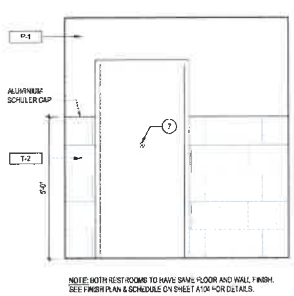
GRAB BARS PER ICC/ANSI A117.1 2009, SECTION 609



1 | ENLARGED FLOOR PLAN
SCALE: 1/2" = 1'-0"

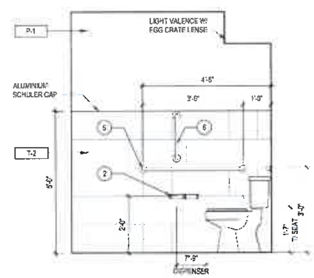


6 | TYPICAL DRINKING FOUNTAIN ELEVATION
SCALE: 1/2" = 1'-0"
ICC/ANSI A117.1-2017

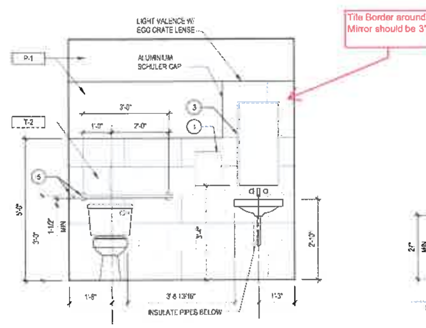


NOTE: BOTH RESTROOMS TO HAVE SAME FLOOR AND WALL FINISH. SEE FINISH PLAN & SCHEDULE ON SHEET A104 FOR DETAILS.

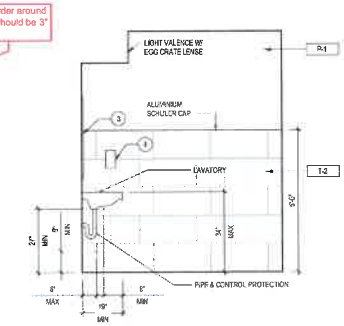
2 | RESTROOM ELEVATION
SCALE: 1/2" = 1'-0"



3 | RESTROOM ELEVATION
SCALE: 1/2" = 1'-0"



4 | RESTROOM ELEVATION
SCALE: 1/2" = 1'-0"



5 | RESTROOM ELEVATION
SCALE: 1/2" = 1'-0"

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Drawn By:	JH
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A401

INTERIOR ELEVATIONS

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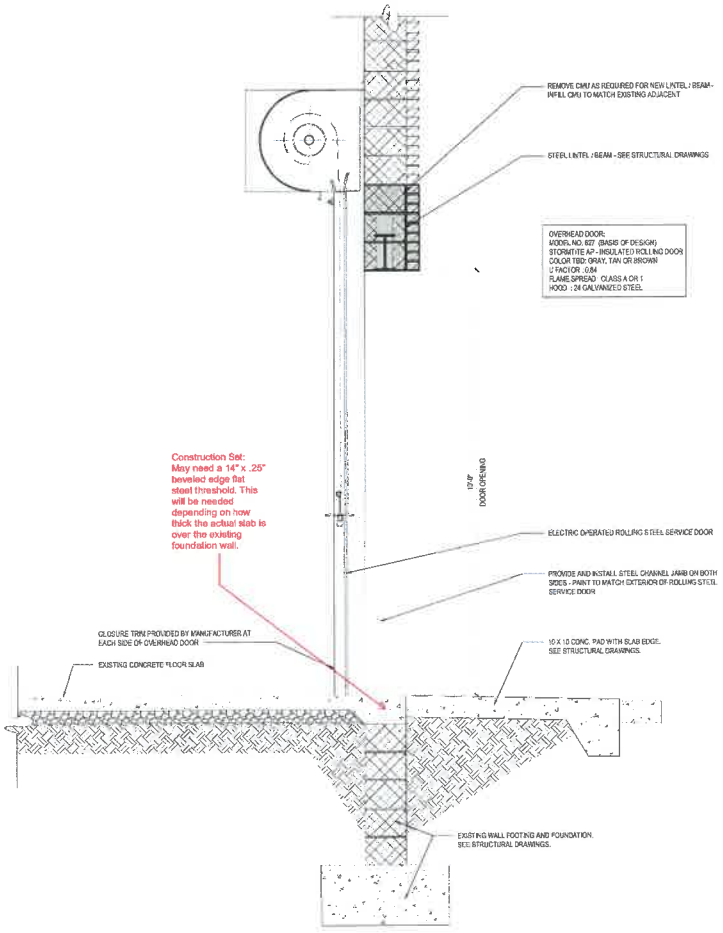
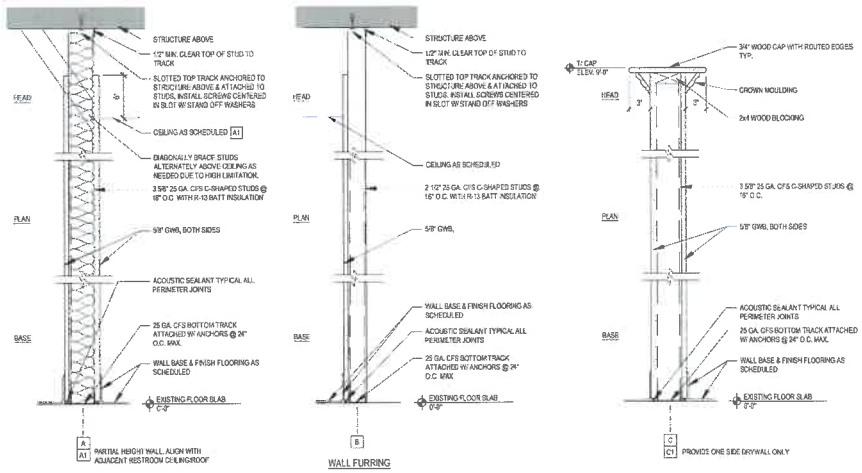


1 | SECTION @ OVERHEAD DOOR
SCALE: 3/4" = 1'-0"



2 | PARTITION TYPES
SCALE: 3/4" = 1'-0"

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Date	Issue
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A501

DETAILS

HARDWARE

SET #1 (EXIT)

- 1 1/2 PAIR BUTT HINGES, ANSI 156.1, A8111, HAGER BB1168 (ANSI A5111 / BB1199 @ EXTERIOR)
- CLOSER, ANSI A156.4, GRADE 1, LCN 4000 SERIES (PARALLEL ARM)
- CONCEALED VERTICAL ROD PUSH BAR DEVICE, W/ "EXIT ONLY" TRIM FUNCTION, VON DUPRIN SERIES 98, ANSI A156.3, GRADE 1, 5 PIN
- WALL STOP, ANSI A156.16/BHMA L12101, GLYNN-JOHNSON 50C
- THRESHOLD (MAX. 1/2"H.), WEATHERSTRIP PACKAGE (ASTRAGAL, JAMBS AND HEAD) AND BOTTOM SWEEP.
- 180 DEGREE DOOR VIEWER - MOUNT @ 60"AFF
- 6" KICK PLATE ON PUSH SIDE

SET #2 (COILING DOOR) - ELECTRIC MOTOR SUPPLIED BY MANUFACTURER

SET #3 (PRIVACY/RESTROOM)

- 1 1/2 PAIR BUTT HINGES, ANSI 156.1, A8111, HAGER BB1168 (ANSI A5111 / BB1199 @ EXTERIOR)
- CLOSER, ANSI A156.4, GRADE 1, LCN 4000 SERIES (PARALLEL ARM)
- PRIVACY LOCKSET, ANSI A156.2, SCHLAGE ND SERIES, GRADE 1, F76 FUNCTION
- WALL STOP, ROCKWOOD RM861-US26D
- 6" KICK PLATE ON PUSH SIDE

SET #4 (STOREROOM - PAIR)

- ELIASON DOOR HARDWARE - BY DOOR MANUFACTURER
- DOUBLE SWING HINGES
- 12"H. x (DOOR WIDTH - 2")W. STAINLESS STEEL KICK PLATE (PUSH SIDE), ANSI A156.6, HAGER 198S
- FLOOR STOP, ANSI A156.16/BHMA L02161, ROCKWOOD 441H-US26D

GLAZING:

1. INSULATED GLASS UNITS, LOW E, TYPE SG-B - ASTM E774 AND E773 DOUBLE PANE WITH GLASS ELASTOMER EDGE SEAL: OUTER PANE OF CLEAR GLASS, INNER PANE OF LOW E CLEAR GLASS ON CLEAR COLOR GLASS.
2. INSULATED GLAZING SHALL HAVE THE FOLLOWING CHARACTERISTICS/PROPERTIES:
   - A. "U"-FACTOR FOR DOOR IS ≤ 0.61
   - B. "U-FACTOR FIXED FENESTATION IS ≤ 0.38
   - C. "U-FACTOR FOR OPERABLE DOOR IS ≤ 0.45
   - D. SHADE COEFFICIENT/SOLAR HEAT GAIN COEFFICIENT (SHGC) ≤ 0.38
   - E. AIR INFILTRATION RATE FOR WINDOWS SHALL NOT EXCEED 0.06 CFM/FT² AT A STATIC PRESSURE DIFFERENCE OF 6.24 PSF
   - F. AIR INFILTRATION RATE FOR DOORS SHALL NOT EXCEED 0.05 CFM/FT² AT A STATIC PRESSURE DIFFERENCE OF 6.24 PSF
3. THE U-FACTOR AND SHGC FOR EACH GLAZED FENESTRATION PRODUCT (DOOR, WINDOW, SIDELIGHT) SHALL BE DETERMINED IN ACCORDANCE WITH THE NATIONAL FENESTRATION RATING COUNCIL, NFRC 100-1 "PROCEDURE FOR DETERMINING FENESTRATION PRODUCT U-FACTORS", AND NFRC 200-01 "PROCEDURE FOR DETERMINING FENESTRATION PRODUCT SOLAR HEAT GAIN COEFFICIENTS AND VISIBLE TRANSMITTANCE AT NORMAL INCIDENCE"
4. THICKNESS TO BE 1" (INNER PANE 1/4", OUTER PANE 1/4") UNLESS NOTED OTHERWISE ON PLANS.
5. PROVIDE TEMPERED (SAFETY) GLASS UNITS WHERE INDICATED WITH A "T" ON ELEVATION OR AS REQUIRED BY JURISDICTIONAL CODES. PROVIDE INSULATED GLASS UNITS WHERE INDICTED WITH A "I" ON ELEVATIONS.
6. GLAZING SHOULD MEET THE MINIMUM REQUIREMENTS FOR DEFLECTION UNDER ASTM E1300 "STANDARD PRACTICE FOR DETERMINING LOAD RESISTANCE OF GLASS IN BUILDINGS"

HARDWARE NOTES:

ALL 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, PINCHING OR TWISTING TO OPERATE.

MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED FIVE (5) POUNDS, PUSH & PULL.

HARDWARE FOR PAIRS OF DOORS IS FOR EACH LEAF, UNLESS NOTED.

Existing 3 & 4 Rear egress doors please add Doorscope DS2000 fisheye viewer to each.

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DOOR SCHEDULE

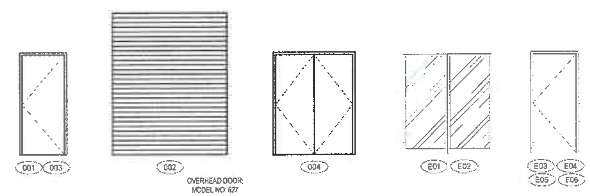
NO.	DOORS				FRAMES				
	TYPE	DESCRIPTION	SIZE	FINISH	MATERIAL	FINISH	FIRE RATING	HARDWARE	COMMENTS
001	EXTERIOR	FLUSH DOOR	3'-0" x 7'-0"	HM	HM			SET #1	
002	OVERHEAD	ELECTRIC COIL INSULATED DOOR	8'-0" x 10'-0"	-				SET #2	
003	INTERIOR	FLUSH DOOR	3'-0" x 7'-0"	SOLID CORE WOOD	HM			SET #3	
004	INTERIOR	ELIASON DOUBLE SWING DOOR, FLUSH	5'-4" x 7'-0"	HCP-10		-		SET #4	ANTIQUE WHITE COLOR
E01	EXISTING	STOREFRONT DOOR	6'-3" x 7'-0"						EXISTING TO REMAIN
E02	EXISTING	CURTAIN WALL DOOR	6'-0" x 7'-2"						EXISTING TO REMAIN
E03	EXISTING	METAL FLUSH DOOR	3'-0 1/2" x 7'-0"						EXISTING TO REMAIN
E04	EXISTING	METAL FLUSH DOOR	4'-0" x 7'-0"	-					EXISTING TO REMAIN
E05	EXISTING	METAL FLUSH DOOR	2'-4" x 7'-0"	-					EXISTING TO REMAIN
E06	EXISTING	METAL FLUSH DOOR	3'-0 1/2" x 7'-0"						EXISTING TO REMAIN

- ALL WOOD OR METAL DOORS TO GET 6" KICKPLATE ON PUSH SIDE. STOREFRONT DOORS TO RECEIVE CRASH BARS TO PROTECT GLASS UP 18"
- ALL DOORS EXCEPT STOREFRONT TO BE REPAINTED AND EXISTING IN GOOD WORKING ORDER

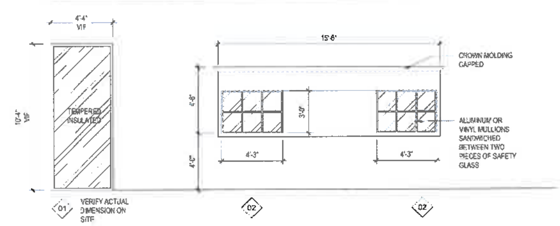
WINDOW SCHEDULE

TAG	WINDOW					DETAIL			
	QTY	DESCRIPTION	SILL HT.	WIDTH	HEIGHT	SILL	WIDTH	HEIGHT	COMMENTS
01	1	INSULATED-TEMPERED	-	4'-4"	10'-4"				
02	2	INTERIOR USE	4'-0"	4'-3"	3'-0"				INSULATED WITH VINYL OR ALUMINUM MULLION

DOOR & FRAME TYPES



WINDOW & FRAME TYPES



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SHERWIN WILLIAMS #5178

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SEVERNA PARK, MD 21146

Project No.: 24.0774
Drawn By: JH

Date	Issue
01-31-25	Permit Set

A601

DOOR & WINDOW SCHEDULES

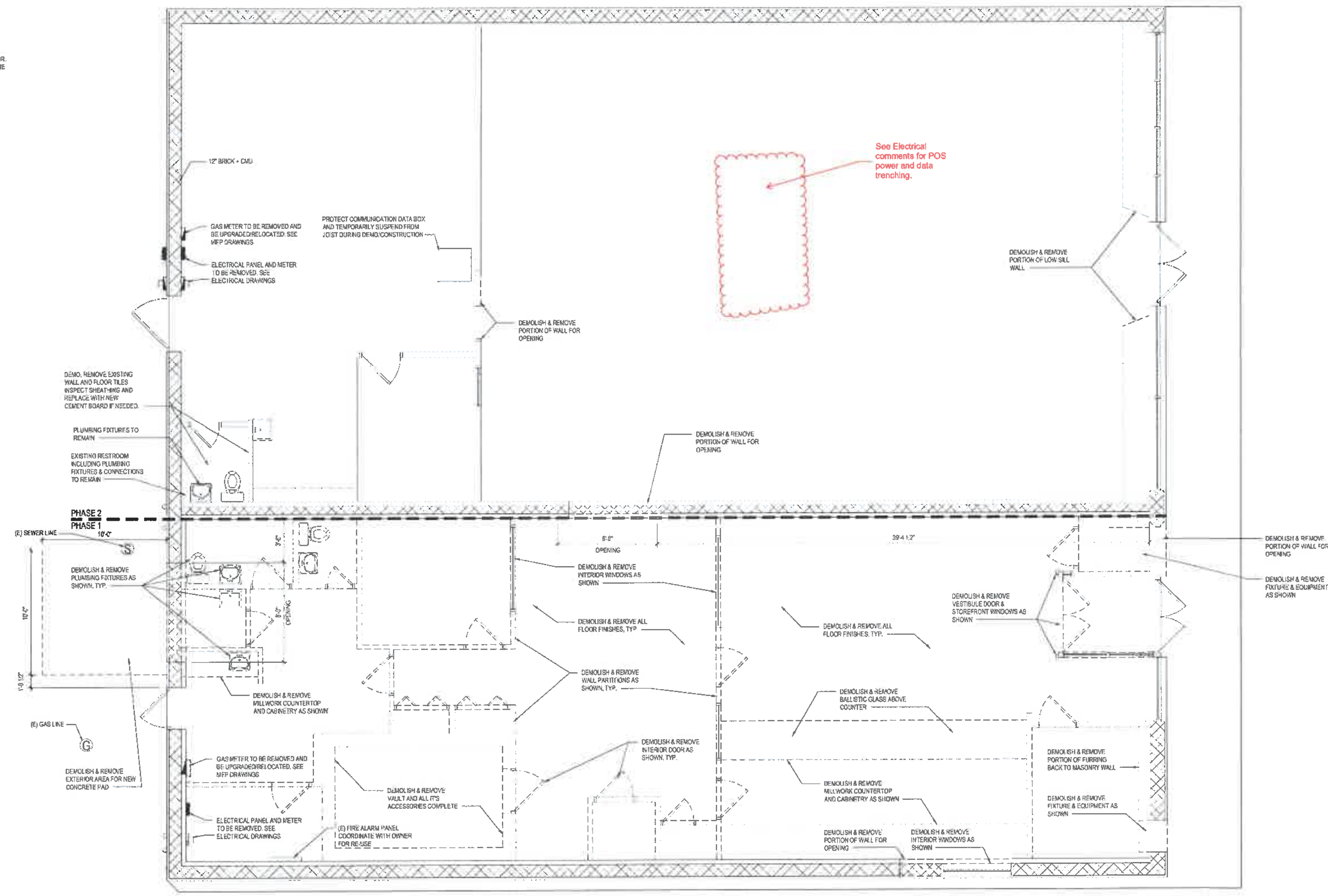
DEMOLITION NOTES:

1. DEMOLISH AND REMOVE DOOR AND ASSOCIATED DOOR HARDWARE.
2. DEMOLISH AND REMOVE WALL AND ASSOCIATED STUDS UP TO 8'-0" TO ACCOMMODATE NEW WINDOW.
3. DEMOLISH AND REMOVE LIGHTING FIXTURES.
4. PLUMBING FIXTURES TO REMAIN & BE RE-USED AFTER ABATEMENT.

GENERAL NOTES:

1. GC MUST HIRE ARCADIS FOR 3RD PARTY OVERSIGHT, AIR SAMPLES AND DOCUMENTATION.
   CONTACT: MICHAEL ORIOLA
   ASSOCIATE VICE PRESIDENT
   ARCADIS U.S., INC.
   O: +1 781 267 7436 | M: +1 517 906 0620
   E: michael.oriola@arcadis.com
2. COORDINATE PLUMBING FIXTURES WITH ABATEMENT CONTRACTOR. REMOVE AND REPLACE EXISTING PLUMBING FIXTURES IN THE SAME PLACE IF NECESSARY.

Professional Certification (Architect)
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17046 expiration date 6/14/2026



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

SCOT LOISELLE | ARCHITECT
611 Cromwell Park Drive, Suite 113
Glen Burnie, Maryland 21061
410.863.1302 crtycreative.com

SHERWIN WILLIAMS #5178

530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JH
Date	Issue
01-31-25	Permit Set

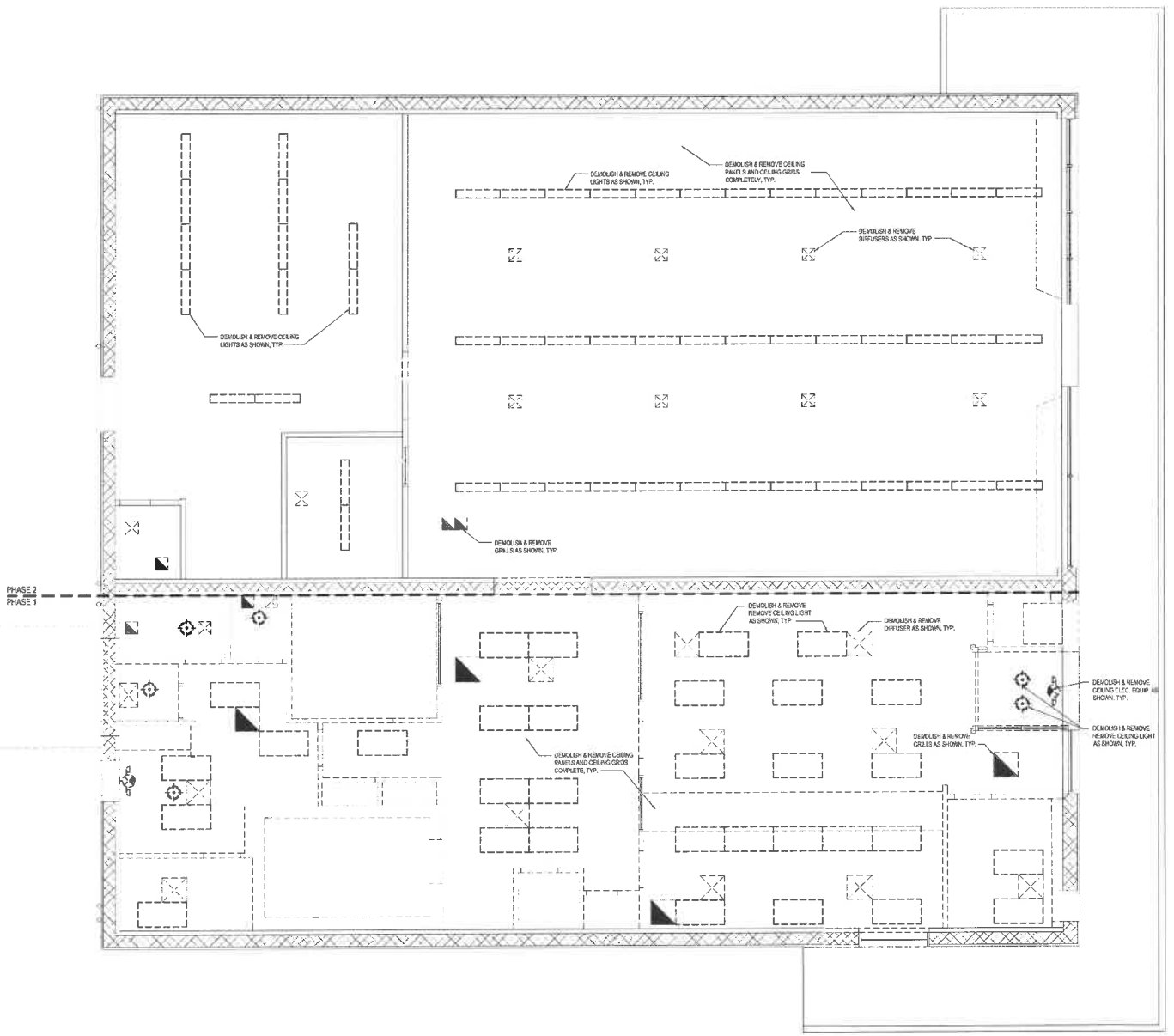
D101

DEMOLITION PLAN

DEMOLITION NOTES:

1. DEMOLISH AND REMOVE DOOR AND ASSOCIATED DOOR HARDWARE.
2. DEMOLISH AND REMOVE WALL AND ASSOCIATED STUDS UP TO 8'-0" TO ACCOMMODATE NEW WINDOW.
3. DEMOLISH AND REMOVE LIGHTING FIXTURES. TYP. OF 3.

Professional Certification. (Architect)
I certify that these documents were prepared or approved by me and that I am a duly licensed architect under the laws of the State of Maryland, license number 17048 expiration date 9/14/2026



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

SCOT LOISELLE ARCHITECT
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Glen Burnie, Maryland 21061
410.863.1292 scotloiselle.com

SHERWIN WILLIAMS #5178
530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JH
Date	Issue
01-31-25	Permit Set

D102

DEMOLITION RCP

SECTION 00 7200 – GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

AIA Document A201, General Conditions of the Contract for Construction, 2017 Edition.

SECTION 01 2000 – PRICE AND PAYMENT PROCEDURES

1.01 SCHEDULE OF VALUES

A. Submit a printed schedule on AIA Form G703 – Application and Certificate for Payment Continuation Sheet. Contractor's standard form or electronic media printout will be considered.

1.02 APPLICATIONS FOR PROGRESS PAYMENTS

A. Form: AIA G702 Application and Certificate for Payment and AIA G703 – Continuation Sheet. Include additional sheets when required.

B. When Architect requires substantiating information, submit data justifying dollar amounts in question.

1.03 MODIFICATION PROCEDURES

A. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 6000.

1.04 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:

1. Closeout procedures specified in Section 01 7000
2. Closeout submittals in accordance with Sections 01 3300 and 01 7800.

SECTION 01 2500 – SUBSTITUTION PROCEDURES

1.01 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.

1. Substitutions for Costs: Proposed due to changed Project circumstances beyond Contractor's control.
2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
   a. Substitution requests offering advantages solely to the Contractor will not be considered.

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
2. Agrees to provide the same warranty for the substitution as for the specified product.
3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
4. Waives claims for additional costs or time extension that may subsequently become apparent.
5. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.

1. No specific form is required. Contractor's Substitution Request documentation must include the following:
   a. Substitution Request Information:
      1) Indication of whether the substitution is for cause or convenience.
      2) Issue date.
      3) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
      4) Description of Substitution.
      5) Reason why the specified item cannot be provided.
      6) Differences between proposed substitution and specified item.
      7) Description of how proposed substitution affects other parts of work.
   b. Comparative Data: Provide point-by-point, item-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
      1) Physical characteristics.
      2) In-service performance.
      3) Expected durability.
      4) Visual effect.
      5) Warranties.
      6) Other salient features and requirements.
      7) Include, as appropriate or requested, the following types of documentation:
         (a)Product Data:
         (b)Samples.
         (c)Certificates, test, reports or similar qualification data.
         (d)Drawings, when required to show impact on adjacent construction elements.
   c. Impact of Substitution:
      1) Savings to Owner for accepting substitution.
      2) Change to Contract Time due to accepting substitution.
   d. Limit each request to a single proposed substitution item.

3.02 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Architect will consider requests for substitutions only within 15 days after date of Agreement.

B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

C. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
3. Bear the costs engendered by proposed substitution of:
   a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.

D. Substitutions will not be considered under one or more of the following circumstances:

1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
2. Without a separate written request.

3.03 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.

3.04 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

SECTION 01 3000 – ADMINISTRATIVE REQUIREMENTS

1.01 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 01 7000 – Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Architect through the General Contractor:

1. Requests for information (RFI).
2. Requests for substitution.
3. Shop drawings, product data, and samples.
4. Test and inspection reports.
5. Design data.
6. Manufacturer's instructions and field reports.
7. Applications for payment and change order requests.
8. Progress schedules.
9. Correction Punch List and Final Correction Punch List for Substantial Completion.
10. Closeout submittals.

3.01 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at regular intervals, appropriate to the stage of Work.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.02 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date established in Notice to Proceed, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

3.03 PROGRESS PHOTOGRAPHS

A. Submit photographs with each application for payment, taken not more than 3 days prior to submission of application for payment.

3.04 REQUESTS FOR INFORMATION (RFI)

A. Definition: A request seeking one of the following:

1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.

1. Prepare a separate RFI for each specific item.
   a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
   b. Do not forward requests which solely require internal coordination between subcontractors.
2. The Architect and the architect's consultants will not accept Requests For Information directly from subcontractors and suppliers.

D. Reasons for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.

1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
   a. Approval of submittals.
   b. Approval of substitutions.
   c. Changes that entail change in Contract Time and Contract Sum.
   d. Different methods of performing work than those indicated in the Contract Drawings and Specifications.
3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
   a. The Owner reserves the right to assess the Contractor for the costs (or time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.

E. Content: Include identifying information necessary for tracking the status of each RFI and information necessary to provide an actionable response.

1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Discrete and consecutive RFI number, and descriptive subject/title.
3. Issue date, and requested reply date.
4. Reference to particular Contract Document(s) requiring additional information/clarification. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
5. Annotations: Field dimensions and/or description of conditions which have engendered this request.
6. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example: routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.

H. Review Time: Architect will respond and return RFIs to Contractor within 7 calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.

1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.

1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.05 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:

1. Product data, shop drawings, samples for selection and samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 – Closeout Submittals.

3.06 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:

1. Design data, certificates, test reports, inspection reports, manufacturer's instructions, manufacturer's field reports and other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.07 NUMBER OF COPIES OF SUBMITTALS

A. Documents for information: Submit one copy electronically in .pdf format.

B. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.

C. Samples: Submit the number specified in individual specification sections, but not less than 3, one of which will be retained by Architect.

3.08 SUBMITTAL PROCEDURES

A. General Requirements:

1. Use a separate transmittal for each item.
2. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
   a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
   b. Submittals not bearing the contractor's approval will be returned with no action taken.
3. Send submittals in electronic format via email to Architect.
4. Schedule submittals to expedite the Project, and coordinate submission of related items.
   a. For each submittal for review, allow 10 days excluding delivery time to and from the Contractor.
   b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
5. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
6. Provide space for Contractor and Architect review stamps.
7. When revised for resubmission, identify all changes made since previous submission.
8. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
9. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
10. Submittals not requested will not be recognized or processed.
11. The Architect and the architect's consultants will not accept submittals from subcontractors and suppliers.
12. Architect will return copies of submittals for review to the Contractor by e-mail.
13. Architect will place copies of submittals for information into the project's electronic record.
14. Make submittals that require field verification or field measurements only when progress of the work is complete to the point where verification and measurements can be performed and such information is included on the submittal.

B. Product Data Procedures:

1. Submit only information required by individual specification sections.
2. Collect required information into a single submittal.
3. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:

1. Prepare accurate, drawn to scale, original shop drawing documentation by engineering Contract Documents and coordinating related work.
2. Do not reproduce Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Samples Procedures:

1. Transmit related items together as single package.
2. Identify each item to allow review for applicability in relation to shop drawings and installation locations.

E. Transmitting Procedures:

1. Transmit electronic submittals via e-mail. Include in the e-mail identification of the attachments as a submittal for review or for information. Do not include questions, comments, information or attachments pertaining to other than the submitted being sent in any submittal e-mail.
   a. Scans are to be of suitable resolution so as to be legible in all respects, but not less than 200 x 200 DPI
   b. Information originally in color is to be scanned and submitted in color.
   c. E-mail to the Architect's designated Project Architect.
2. Transmit samples and other submittals that cannot be converted to electronic format with the Contractor's standard transmittal form.
   a. Deliver to the Architect at architect's business address.

3.09 SUBMITTAL REVIEW

A. Architect will place copies of submittals for information into the project's electronic record.

B. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.

C. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.

D. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.

1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.

E. Architect's and consultants' actions on items submitted for review:

1. Authorizing purchasing, fabrication, delivery, and installation:
   a. "NO EXCEPTIONS TAKEN", or language with same legal meaning: Submittal is in compliance with project requirements.
   b. "EXCEPTIONS NOTED", or language with same legal meaning: Relatively minor changes and corrections are needed.
      1) At Contractor's option, submit corrected item, with revise notations acknowledged and incorporated.
   c. "REVISE & RESUBMIT", or language with same legal meaning: Comments and corrections are so extensive as to require significant changes, and further review, in order to show the submittal is in compliance with project requirements.
2. Not Authorizing fabrication, delivery, and installation:
   a. "REJECTED": Submittal is not in compliance with project requirements. In the Architect's opinion, the only reasonable course of action is a new submittal.
      1) Submit item complying with requirements of Contract Documents.

F. Architect's and consultants' actions on items submitted for information:

1. Items for which no action was taken:
   a. "Received" – to notify the Contractor that the submittal has been received for record only.
2. Items for which action was taken:
   a. "Reviewed" – no further action is required from Contractor.

SECTION 01 4000 – QUALITY REQUIREMENTS

1.01 SECTION INCLUDES

A. Submittals.
B. Quality assurance.
C. References and standards.
D. Testing and inspection agencies and services.
E. Control of installation.
F. Tolerances.
G. Manufacturers' field services.

1.02 SUBMITTALS

A. Design Data: Submit for project record, for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

B. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.

1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be issued at previous test results on material or product, but must be acceptable to Architect.

1.03 QUALITY ASSURANCE

A. Testing Agency Qualifications:

1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.

1.04 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.05 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Owner will employ services of an independent testing agency to perform certain code required special testing and inspection.

B. Contractor shall employ and pay for services of an independent testing agency to perform other testing and inspection.

C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

D. Contractor Employed Agency:

1. Testing Agency: Comply with requirements of ASTM E329, ASTM E543, ASTM E699, ASTM C1021, ASTM C1077, ASTM C1093, and ASTM C3740.
2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
3. Laboratory: Authorized to operate in the State in which the Project is located.
4. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances except where industry standards tolerances are more restrictive. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

A. See individual specification sections for testing and inspection required.

B. Testing Agency Duties:

1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
2. Perform specified sampling and testing of products in accordance with specified standards.
3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
5. Perform additional tests and inspections required by Architect.
6. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:

1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work.
3. Agency may not assume any duties of Contractor.
4. Agency has no authority to stop the Work.

D. Contractor Responsibilities:

1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
2. Cooperate with laboratory personnel and provide access to the Work and to manufacturers' facilities.
3. Provide incidental labor and facilities:
   a. To provide access to Work to be tested/inspected.
   b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
   c. To facilitate tests/inspections.
   d. To provide storage and curing of test samples.
4. Provide testing and inspection agency sufficient notice prior to expected time for operations requiring testing/inspection services.
5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency.

F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 CORRECTION

A. Replace Work or portions of the Work not complying with specified requirements.

SECTION 01 5000 – TEMPORARY FACILITIES AND CONTROLS

1.01 TEMPORARY UTILITIES

A. Provide and pay for electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.02 TELECOMMUNICATIONS SERVICES

A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

B. Telecommunications services shall include:

1. Telephone service with a number dedicated for project use and with voice messaging capability.
2. Internet Connections: Minimum of one; DSL modem or faster.
   a. Provide printer/copier/scanner or equivalent to allow for transfer of drawings and information to and from the field.

1.03 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.04 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide lockable gates and covered walkways for public rights-of-way and to maintain safe public access to and egress from existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 FENCING

A. Construction: Commercial grade chain link fence.

B. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.06 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

B. When the project site or portions thereof is to be occupied during construction, provide temporary insulated weather tight closure consistent with the requirements of paragraph A above.

1.07 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces, unless otherwise indicated on the drawings:

1. Minimum flame spread rating of 25 in accordance with ASTM E84.

1.08 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.09 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Provide means of removing mud from vehicle wheels before entering streets.

E. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.10 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers. Locate containers facing flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.12 FIELD OFFICES

A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.

B. Provide space for project meetings, with table and chairs to accommodate 10 persons.

1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing facilities used during construction to original condition.

D. Restore new permanent facilities used during construction to specified condition.

Professional Certification (Architect)
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17048 expiration date 8/14/2026.

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SHERWIN WILLIAMS #5178

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SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JJH
Date	Issue
01-31-25	Permit Set

A901

SPECIFICATIONS

SECTION 01 6000 – PRODUCT REQUIREMENTS

1.01 SUBMITTALS
A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

2.01 EXISTING PRODUCTS
A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS
A. Provide new products unless specifically required or permitted by Contract Documents.
B. Where other criteria are met, Contractor shall give preference to products that:
1. If used on interior, have lower emissions, as defined in Section 01 6116.
2. If wet-applied, have lower VOC content, as defined in Section 01 6116.
3. Are extracted, harvested, and/or manufactured closer to the location of the project.
4. Have longer documented life span under normal use.
5. Result in less construction waste. See Section 01 7419
6. Are made of vegetable materials that are rapidly renewable.
C. Provide interchangeable components of the same manufacture for components being replaced.

2.03 PRODUCT OPTIONS
A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
D. Specifications are, in general, written to be non-proprietary, however; where specific products are required, for example a certain size, color, texture, configuration or other characteristic, manufacturer and product information are provided on the drawings in the form of notes or schedules as appropriate.
1. Substitutions for products so indicated will be considered in accordance with "Substitution Procedures" of this specification Section.

2.04 MAINTENANCE MATERIALS
A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
B. Deliver and place in location as directed; obtain receipt prior to final payment.

3.01 SUBSTITUTION LIMITATIONS
A. See Section 01 2500 – Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS
A. Owner's Responsibilities:
1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
2. Arrange and pay for product delivery to site.
3. Submit claims for transportation damage and replace damaged, defective, or deficient items.
4. Arrange for manufacturers' warranties, inspections, and service.
B. Contractor's Responsibilities:
1. Review Owner reviewed shop drawings, product data, and samples.
2. Receive and unload products at site; inspect for completeness or damage and report damaged, defective, or deficient items to Owner.
3. Handle, store, install and finish products.
4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING
A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
D. Transport and handle products in accordance with manufacturer's instructions.
E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION
A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area.
B. Store and protect products in accordance with manufacturers' instructions.
C. Store with seals and labels intact and legible.
D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
E. For exterior storage of fabricated products, place on sloped supports above ground.
F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
G. Comply with manufacturer's warranty conditions, if any.
H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
I. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
J. Prevent contact with material that may cause corrosion, discoloration, or staining.
K. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
L. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

SECTION 01 7000 – EXECUTION REQUIREMENTS

1.01 SECTION INCLUDES
A. Examination, preparation, and general installation procedures.
B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
C. Pre-installation meetings.
D. Cutting and patching.
E. Surveying for laying out the work.
F. Cleaning and protection.
G. Starting of systems and equipment.
H. Demonstration and instruction of Owner personnel.
I. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
J. General requirements for maintenance service.

1.02 QUALIFICATIONS
A. For demolition work, employ a firm specializing in the type of work required.
1. Minimum of 5 years of experience.
B. For survey work, employ a land surveyor registered in the State in which the Project is located.
C. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.
D. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.03 PROJECT CONDITIONS
A. Comply with Safeguards During Construction requirements as outlined in the International Building Code, Chapter 33, edition as adopted at the project location.
B. For demolition work comply with ANSI A10.6.
C. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
D. Protect site from puddling or running water.
E. Protect areas not undergoing alteration as specified for protection of installed work.
F. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
G. Dust Control: Execute work by methods to minimize raising dust from demolition or construction operations. Provide positive means to prevent air-borne dust from dispersing into the atmosphere.
1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
H. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
1. Minimize the amount of bare soil exposed at one time.
2. Provide temporary measures such as berms, dikes, and drains, to manage water flow.
3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
I. Noise Control: Provide methods, means, and facilities to minimize noise produced by demolition or construction operations. Comply with local requirements for noise control.
J. Pest and Insect Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
K. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
L. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by demolition or construction operations.

1.04 COORDINATION
A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
B. Notify affected utility companies and comply with their requirements.
C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
F. Coordinate completion and clean-up of work of separate sections.
G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

2.01 PATCHING MATERIALS
A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 – Product Requirements.

3.01 EXAMINATION
A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
C. Examine and verify specific conditions described in individual specification sections.
D. Take field measurements before confirming product orders or beginning fabrication.
E. Verify that utility services are available, of the correct characteristics, and in the correct locations
F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION
A. Clean substrate surfaces prior to applying the next material or substance.
B. Seal cracks or openings of substrate prior to applying the next material or substance.
C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS
A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
B. Require attendance of parties directly affecting, or affected by, work of the specific section.
C. Notify Architect four days in advance of meeting date.
D. Prepare agenda and preside at meeting:
1. Review conditions of examination, preparation, and installation procedures.
2. Review coordination with related work.
E. Record minutes and distribute copies within two days after meeting to participants, with one copy to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK
A. Verify locations of survey control points prior to starting work.
B. Do not scale drawings. Request clarifications from the Architect.
C. Promptly notify Architect of any discrepancies discovered.
D. Contractor shall locate and protect survey control and reference points.
E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to the Architect.
G. Utilize recognized engineering survey practices.
H. Establish elevations, lines, and levels. Locate and lay out by instrumentation and similar appropriate means:
1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
2. Grid or axis for structures.
3. Building foundation, column locations, ground floor elevations.
I. Periodically verify layouts by same means.
J. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS
A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to the necessity for replacement.
C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
F. Make neat transitions between different surfaces, maintaining texture and appearance.
G. Do not install products that are defective, including warped, bowed, dented, chipped, cracked or broken members, and members with damaged finishes.

3.06 ALTERATIONS AND SELECTIVE DEMOLITION
A. Perform an engineering survey of building to determine whether demolition operations might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures.
B. Drawings showing existing construction and utilities are based on existing record documents only.
1. Verify that construction and utility arrangements are as indicated.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of alterations work constitutes acceptance of existing conditions.
C. Keep areas in which alterations are being conducted separate from other areas that are still occupied.
1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000.
D. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
E. Remove existing work as indicated and as required to accomplish new work.
1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
2. Remove items indicated on drawings.
3. Relocate items indicated on drawings.
4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces to receive new finish; remove existing finish if necessary for successful application of new finish.
5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces.
F. Services (Including but not limited to Alarm systems, Alarm systems, Alarm systems, Alarm systems, Alarm systems, and Alarm systems): Remove, relocate, and extend existing systems to accommodate new construction.
1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
b. Coordinate timing of service interruptions and shut downs with the owner and affected occupants.
c. Provide temporary connections to maintain existing systems in service.
4. Verify that abandoned services serve only abandoned facilities.
5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
G. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.
H. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
I. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
J. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
K. Clean existing systems and equipment.
L. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
M. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING
A. Whenever possible, execute the work by methods that avoid cutting or patching.
B. See Alterations article above for additional requirements.
C. Perform whatever cutting and patching is necessary to:
1. Complete the work.
2. Fit products together to integrate with other work.
3. Provide openings for penetration of mechanical, electrical, and other services.
4. Match work that has been cut to adjacent work.
5. Repair areas adjacent to cuts to required condition.
6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-complying work.
D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements; employ skilled and experienced installer to perform cutting for other sight exposed surfaces.
F. Examine areas to be cut or core drilled for presence of concealed utilities and structural elements including piping, electrical distribution, reinforcing steel and post-tensioning cables. Utilize x-ray equipment where necessary.
G. Cut rigid materials using masonry saw or core drill.
H. Restore work with new products in accordance with requirements of Contract Documents.
I. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
J. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to maintain fire rating.
K. Patching:
1. Finish patched surfaces to match the finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
2. Match color, texture, and appearance.
3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
4. When the finish cannot be matched, refinish entire surface to nearest intersections.

3.08 PROGRESS CLEANING
A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
C. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.
D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK
A. Protect installed work from damage by construction operations.
B. Provide special protection where specified in individual specification sections.
C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 SYSTEM STARTUP
A. Coordinate schedule for start-up of various equipment and systems.
B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
D. Verify that wiring and support components for equipment are complete and tested.
E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

3.11 DEMONSTRATION AND INSTRUCTION
A. Demonstrate operation and maintenance of products to Owner's personnel prior to date of Substantial Completion.
B. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
C. For equipment or systems requiring seasonal operation, perform demonstrations for other season within six months.
D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.
E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

3.12 ADJUSTING
A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.13 FINAL CLEANING
A. Execute final cleaning.
1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.
B. Use cleaning materials that are nonhazardous.
C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
F. Replace filters of operating equipment.
G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
H. Clean site: sweep paved areas, rake clean landscaped surfaces.
I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of it in legal manner; do not burn or bury.

3.14 CLOSEOUT PROCEDURES
A. In addition to the requirements of AIA A201, General Conditions of the Contract for Construction, comply with the following:
1. Make submittals that are required by governing or other authorities.
a. Provide copies to Owner.
2. Comply with requirements of Section 01780, Closeout Submittals.
3. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
4. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for review.
5. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
6. Complete items of work determined by final inspection.

3.15 MAINTENANCE
A. Provide service and maintenance of components indicated in specification sections.
B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
C. Furnish service and maintenance of components indicated in specification sections.
D. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
E. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
F. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

SECTION 01 7800 – CLOSEOUT SUBMITTALS

1.01 SUBMITTALS
A. Project Record Documents: Submit documents to Owner when submitting final application for payment.
B. Operation and Maintenance Data: Submit two sets of final documents in final form.
C. Warranties and Bonds: Submit prior to final Application for Payment.
D. Certificate of Occupancy: Submit to owner when requesting Substantial Completion inspection

3.01 PROJECT RECORD DOCUMENTS
A. Maintain on site one set of the following record documents; record actual revisions to the Work; including but not limited to, Drawings, Specifications, Addenda, Change Orders, and reviewed submittals.
B. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction.

3.02 OPERATION AND MAINTENANCE DATA
A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers.
B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
D. For Each Product, Applied Material, and Finish:
1. Product data, with catalog number, size, composition, and color and texture designations.
2. Information for re-ordering custom mixed or manufactured products.
3. Manufacturer's instructions for Care and Maintenance.
E. Moisture protection and weather-exposed products; Provide manufacturer recommendations for inspections, maintenance, and repair.
F. For Each Item of Equipment and Each System, provide the manufacturer's installation, operation and maintenance manuals. Include test and balancing reports.

3.03 WARRANTIES AND BONDS
A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

Professional Certification (Architect):
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17048 expiration date 8/14/2026.

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Project No.:	24.0774
Drawn By:	JZH
Date	Issue
01-31-25	Permit Set

A902

SPECIFICATIONS

SECTION 03 3000 – CAST-IN-PLACE CONCRETE

1.01 SUBMITTALS

A. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
1. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives.

B. Mix Design: Submit proposed concrete mix design.
1. Indicate proposed mix design complies with requirements of ACI SPEC 301, Section 4 – Concrete Mixtures.
2. Indicate proposed mix design complies with requirements of ACI CODE-318, Chapter 5 – Concrete Quality, Mixing and Placing.
3. Indicate proposed mix design complies with fiber reinforcing manufacturer's written recommendations.
4. Indicate proposed mix design complies with admixture manufacturer's written recommendations.

C. Test Reports: Submit report for each test or series of tests specified.

1.02 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI SPEC -301 and ACI CODE-318.

B. Follow recommendations of ACI PRC-305 when concreting during hot weather.

C. Follow recommendations of ACI PRC-306 when concreting during cold weather.

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI PRC-347 to provide formwork that will produce concrete complying with tolerances of ACI SPEC-117.

B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
2. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
3. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
1. Type: Deformed billet-steel bars.
2. Finish: Unfinished, unless otherwise indicated.

B. Steel Welded Wire Reinforcement (WWR): Galvanized, plain type, ASTM A1064/A1064M.
1. Form: Flat Sheets.
2. WWR Style: 6X6 – W2.1XW2.1.

C. Reinforcement Accessories:
1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I – Normal Portland type.
1. Acquire cement for entire project from same source.

B. Cement: ASTM C150/C150M, Type II – Moderate Portland type.
1. Acquire cement for entire project from same source.

C. Cement: ASTM C150/C150M, Type III – High Early Strength Portland type.
1. Acquire cement for entire project from same source.

D. Fine and Coarse Aggregates: ASTM C33/C33M.
1. Acquire aggregates for entire project from same source.

E. Fly Ash: ASTM C618, Class C or F.

F. Ground Granulated Blast Furnace Slag: ASTM C989/C989M.

G. Water: ASTM C1602/C1602M: clean, potable, and not detrimental to concrete.

H. Structural Fiber Reinforcement: ASTM C1116/C1116M.
1. Fiber Length: 2.0 inch , nominal.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Air Entrainment Admixture: ASTM C260/C260M.

C. High Range Water Reducing Admixture: ASTM C494/C494M Type F.

D. Accelerating Admixture: ASTM C494/C494M Type C.

E. Retarding Admixture: ASTM C494/C494M Type B.

2.05 ACCESSORY MATERIALS

A. Underslab Vapor Retarder:
1. Sheet Material: ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. Single-ply polyethylene is prohibited.
2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.

B. Non-Shrink Cementitious Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents.
1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.

2.06 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.

B. Slab Isolation Joint Filler: 1/2-inch thick, height equal to slab thickness, with removable top section forming 1/2-inch deep sealant pocket after removal.
1. Material: ASTM D8139, semi-rigid, closed-cell polypropylene foam.

2.07 CURING MATERIALS

A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

2.08 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.

B. Concrete Strength: Establish required average strength for each type at concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301.
1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.

D. Fiber Reinforcement: Add to mix at rate of 3 pounds per cubic yard, or as recommended by manufacturer for specific project conditions.

E. Normal Weight Concrete:
1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: As scheduled.
2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
3. Cement Content: Minimum 520 lbs/cubic yd.
4. Water-Cement Ratio: Maximum 48 percent by weight.
5. Total Air Content: 3 percent, determined in accordance with ASTM C173/C173M.
a. 5% minimum to 7% maximum for exterior concrete.
6. Maximum Slump: 3-5 inches before water reducing admixture.
7. Maximum Aggregate Size: 1 inch.

2.09 MIXING

A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
1. Fiber Reinforcement: Batch and mix as recommended by manufacturer for specific project conditions.

B. Transit Mixers: Comply with ASTM C94/C94M.

C. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent.

C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
1. Use latex bonding agent only for non-load-bearing applications.

E. Dowel new concrete to existing concrete. Drill 8 inch deep holes into existing concrete, insert 12 inch long #4 steel dowels, and install with adhesive anchor system per manufacturers recommendations. Space dowels 24" o.c., 12" o.c. for slabs greater than 4 inches thick.

F. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.
1. Locate reinforcement in top third of slab with 3/4 inch minimum cover.
2. Lap reinforcement one wire space plus 2 inches minimum.

C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI PRC-304.

B. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

C. Ensure reinforcement, inserts, waterstops, and embedded parts will not be disturbed during concrete placement.

D. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface matrix, by sandblasting or high-pressure water jetting.

3.05 SLAB JOINTING

A. Locate joints as indicated on drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and curbs.

D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 1 to 4 hours after placing with an early-entry dry-cut saw; use 3/16 inch thick blade and cut 1 inch deep but not less than one quarter (1/4) the depth of the slab.

3.06 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Maximum Variation of Surface Flatness for Interior Floor slabs: 1/8 inch in 10 ft., unless indicated otherwise on drawings.

B. Correct the slab surface if tolerances are less than specified.

C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.07 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
1. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.

D. Concrete Slabs: Finish to requirements of ACI PRC-302.1 and as follows:
1. Surfaces to Receive Thin Floor Coverings: "Steel troweled" as described in ACI PRC-302.1; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
2. Other Surfaces to Be Left Exposed: Trowel as described in ACI PRC-302.1, minimizing burnish marks and other appearance defects.

E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.08 CURING AND PROTECTION

A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.09 FIELD QUALITY CONTROL

A. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

B. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

C. Compressive Strength Tests: ASTM C39/C39M, for each test, mold one cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less at each class of concrete placed.

D. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

E. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.10 DEFECTIVE CONCRETE

A. Defective Concrete: Repair or replace concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

3.11 SCHEDULE – CONCRETE TYPES AND STRengths

A. Foundations: 3,000 pounds per square inch 28 day concrete.

B. Slab on Grade: 4,000 psi 28 day concrete, fiber reinforced, steel trowel finish.

C. Light Pole Supports: 4,000 psi 28 day concrete, grout cleaned finish.

SECTION 03 5400 – SELF-LEVELING UNDERLAYMENT

1.01 SUBMITTALS

A. Product Data: Provide manufacturer's data sheets documenting physical characteristics and product limitations of underlayment materials. Include information on surface preparation and environmental limitations.

1.02 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the work of this section, and approved by manufacturer.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Keep from freezing. Protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.

1.04 FIELD CONDITIONS

A. Do not install underlayment until floor penetrations and peripheral work are complete.

B. During the curing process, ventilate spaces to remove excess moisture.

2.01 MATERIALS

A. Cement/Fibers Underlayment: Blended cement mix, that when mixed with water in accordance with manufacturer's directions will produce self-leveling underlayment with the following properties:
1. Compressive Strength: Minimum 4000 pounds per square inch after 28 days, tested per ASTM C109/C109M.

B. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to underlayment mix materials.

C. Primer: Manufacturer's recommended type.

D. Joint and Crack Filler: As recommended by manufacturer.

2.02 MIXING

A. Site mix materials in accordance with manufacturer's instructions.

B. Mix to self-leveling consistency without over-watering.

3.01 EXAMINATION

A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.

3.02 PREPARATION

A. Concrete: Mechanically prepare steel troweled concrete to create a textured surface necessary to achieve the best bond; acceptable methods include bead blasting and scarifying. Do not use acid etching.

3.03 APPLICATION

A. Install underlayment in accordance with manufacturer's instructions.

B. Place to indicated thickness, with top surface level to 1/8 inch in 10 ft.

C. Place before partition installation.

3.04 CURING

A. Once underlayment starts to set, prohibit foot traffic until final set has been reached.

B. Air cure in accordance with manufacturer's instructions.

3.05 PROTECTION

A. Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.

Do not permit traffic over unprotected floor underlayment surfaces.

SECTION 04 2000 – UNIT MASONRY

1.01 SECTION INCLUDES

A. Concrete block.

B. Clay facing brick.

C. Mortar and grout.

D. Reinforcement and anchorage.

E. Flashings.

F. Accessories.

1.02 SUBMITTALS

A. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.

B. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

C. Manufacturer's Certificate: Certify that water repellent admixture manufacturer has certified masonry unit manufacturer as an approved user of water repellent admixture in the manufacture of concrete block.

1.03 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:
1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
2. Special Shapes: Provide manufactured blocks configured for corners.
3. Load-Bearing Units: ASTM C90, normal weight.
a. Both hollow and solid block, as indicated.
4. Nonload-bearing Units: ASTM C129.
a. Both hollow and solid block, as indicated.
5. Integral Water Repellent: Provide concrete block units as specified in this section with polymeric liquid or powder admixture added to concrete masonry units at the time of manufacture.
a. Performance of Units with Integral Water Repellent:
1) Water Permeance: When tested per ASTM E514/E514M and for a minimum of 72 hours.
(a) No water visible on back of wall above flashing at the end of 24 hours.
(b) No flow of water from flashing equal to or greater than 0.032 gallons per hour at the end of 24 hours.
(c) No more than 25 percent of wall area above flashing visibly damp at end of test.
2) Flexural Bond Strength: ASTM C1072; minimum 10 percent increase.
3) Compressive Strength: ASTM C1314; maximum 5 percent decrease.
b. Use only in combination with mortar that also has integral water repellent admixture.
c. Use water repellent admixtures for masonry units and mortar by a single manufacturer.

2.02 BRICK UNITS

A. Facing Brick: ASTM C216, Type FBS Smooth, Grade SW.
1. Color and texture: As indicated on drawings.
2. Nominal size: As indicated on drawings.
3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.

2.03 MORTAR AND GROUT MATERIALS

A. Masonry Cement: ASTM C91/C91M, Types as scheduled in this section.

B. Pigments for Colored Mortar: Pure, mineral-based mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.
1. Color(s): As indicated on drawings.

C. Water: Clean and potable.

D. Integral Water Repellent Admixture for Mortar and Grout: Polymeric liquid or powder admixture added to mortar and grout at the time of manufacture.
1. Use only in combination with masonry units manufactured with integral water repellent admixture.
2. Use only water repellent admixture for mortar from the same manufacturer as water repellent admixture in masonry units.
3. Meet or exceed performance specified for water repellent admixture used in masonry units.

E. Packaged Dry Material for Mortar for Unit Masonry: Premixed masonry cement and mason's sand, complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
1. Type: Types as scheduled in this section.
2. Color: Standard gray and as indicated in drawings.
3. Water-repellent mortar for use with water-repellent masonry units.

F. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.
1. Type: Fine.

2.04 REINFORCEMENT AND ANCHORAGE

A. Single Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss or ladder.
2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M Class B.
3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

B. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss, with adjustable ties or ties spaced at 16 in on center.
2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M Class B.
3. Size: 0.1875 inch side rods with 0.1483 inch cross rods and adjustable components of 0.1875 inchwire, width of components as required to provide not less than 5/8 inch of mortar coverage from each masonry face.
4. Vertical adjustment: Not more than 1 1/4 inches.

C. Two-Piece Wall Ties: Formed steel wire, 0.1875 inch thick, adjustable, eye and pintle type, hot dip galvanized to ASTM A 153/A 153M, Class B, sized to provide not less than 5/8 inch of mortar coverage from masonry face and to allow vertical adjustment of up to 1-1/4 in.

D. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
2. Wire Ties: Manufacturer's standard shape, 0.187/5 inch thick.
3. Vertical adjustment: Not less than 3-1/2 inches.

E. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.

2.05 FLASHINGS

A. Metal Flashing Materials:
1. Stainless Steel Flashing: ASTM A666, Type 304, soft temper; 26 gauge, 0.0187 inch thick; finish 2B to 2D.

B. Stainless Steel/Polymer Fabric Flashing – Self-adhering: ASTM A240/A240M; 2 mil type 304 stainless steel sheet bonded on inward facing side to a sheet of polymer fabric that has a clear adhesive with a removable release liner.

C. Membrane Asphaltic Flashing Materials:
1. Rubberized Asphalt Flashing: Self-adhering polymer modified asphalt sheet; 40 mils (0.040 inch) minimum total thickness; 8 mil cross-laminated polyethylene bonded to adhesive rubberized asphalt, with a removable release liner.

D. Through-wall pan flashing: One piece molded polypropylene with integral weep and integral or separate bridge units to connect the individual units and divert moisture to the flashing pan.
1. Drainage mats or 2" to 3" of washed pea gravel fill to prevent mortar clogging the weep holes.

E. Factory-Fabricated Flashing Corners and End Dams: Stainless steel.

F. Flashing Sealant/Adhesives: Silicone, polyurethane, or silyl-terminated polyether/polyurethane or other type required or recommended by flashing manufacturer; type capable of adhering to type of flashing used.

G. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.

H. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.06 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.

B. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.

C. Weeps: Molded PVC grites, insect resistant.
1. Color(s): To match mortar color.

D. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.07 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification:
1. Masonry below grade and in contact with earth: Type S.
2. Exterior, loadbearing masonry: Type S.
3. Exterior, non-loadbearing masonry: Type S.
4. Interior, loadbearing masonry: Type S.
5. Interior, non-loadbearing masonry: Type O.

B. Colored Mortar: Proportion selected pigments and other ingredients without exceeding manufacturer's recommended pigment-to-cement ratio.

C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

D. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

A. Direct and coordinate placement of metal anchors supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
1. Bond: Running unless noted otherwise in the drawings.
2. Mortar Joints: Concave unless noted otherwise in the drawings.

D. Brick Units:
1. Bond: Running unless noted otherwise in the drawings.
2. Mortar Joints: Concave unless noted otherwise in the drawings.

3.05 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering cavities of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar and mortar smears as work progresses.

E. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.

F. Interlock intersections and external corners, except for units laid in stack bond.

G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

H. Perform job site cutting of masonry units with proper tools to provide straight, clean, uncripped edges. Prevent broken masonry unit corners or edges.

I. Cut mortar joints flush where wall tile is scheduled, cement parging is required, resilient base is scheduled, cavity insulation vapor barrier adhesive is applied, or bitumen dampproofing is applied.

J. Isolate masonry partitions from vertical structural framing members with a control joint.

K. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

L. Support flashings with solid grouted core.

3.06 WEEPS

A. Install weeps in concrete masonry walls at 32 inches on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.

B. Install weeps in [brick masonry] walls at 24 inches on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.

3.07 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build liner wythe ahead of outer wythe to accommodate accessories.

C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE – GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.

E. Lap joint reinforcement ends minimum 6 inches.

F. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 24 inches horizontally and 16 inches vertically.

G. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches with at least 5/8 inch mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE – MASONRY VENEER

A. Masonry Back-Up: Unless noted otherwise in the drawings, embed anchors in masonry back-up to bond veneer at maximum 2-2/3 sq ft of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

B. Stud Back-Up: Unless noted otherwise in the drawings, secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 2-2/3 sq ft of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.10 MASONRY FLASHINGS

A. Install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
1. Extend flashings full width at such interruptions and at least 6 inches into adjacent masonry and terminate with an end dam or turn up at least 8 inches to form watertight pan at non-masonry construction.
2. Remove or cover protrusions or sharp edges that could puncture flashings.
3. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 8 inches minimum on vertical surface of backing:
1. Install vertical leg of flashing behind water-resistive barrier sheet over backing.
2. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer's directions.
3. Apply cap bead of sealant on top edge of self-adhered flashing.

C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.

D. Extend metal drip edge through exterior face of masonry and turn down to form drip. Set in bed of mastic or elastic sealant to prevent moisture migration under flashing.

E. Support flexible flashings across gaps and openings.

F. Extend specified flexible flashings to within 1/4 inch of exterior face of masonry, and bond to top of metal drip edge with minimum 2 inch overlap.

G. Lap end joints of flexible flashings at least 4 inches and seal watertight with mastic or elastic sealant.

H. Butt, do not lap, and joints of metal drip edges with minimal gaps between adjacent pieces.

I. Install through-wall pan flashing in accordance with manufacturer's instructions.

3.11 GROUTED COMPONENTS

A. Lap splices minimum 48 bar diameters.

B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

C. Place and consolidate grout fill without displacing reinforcing.

D. At bearing horizontal fill masonry cores with grout for a minimum 12 inches either side of opening.

3.12 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

C. Locate and form expansion joint as detailed.

3.13 BUILT-IN WORK

A. As work progresses, install built-in metal door frames, glazed frames, fabricated metal frames, window frames, anchor bolts, and plates and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Set anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

3.14 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation from Alignment of Columns and Pilasters: 1/4 inch.

C. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.

D. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

E. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

F. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

G. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

H. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.15 CUTTING AND FITTING

A. Cut and fit for piles, conduit, and sleeves. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.16 PARGING

A. Dampen masonry walls prior to parging.

B. Scarify each parging coat to ensure full bond to subsequent coat.

C. Parge masonry walls in two uniform coats of mortar to a total thickness of 3/4 inch.

D. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.

E. Strike top edge of parging at 45 degrees.

3.17 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.18 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

Professional Certification (Architect)
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17026 expiration date 9/19/2020.

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SHERWIN WILLIAMS #5178
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SEVERNA PARK, MD 21146

Project No.: 24.0774
Drawn By: JJH

Date	Issue
01-31-25	Permit Set

A903

SPECIFICATIONS

SECTION 05 5000 – METAL FABRICATIONS

1.01 SECTION INCLUDES
A. Shop fabricated steel items.

1.02 SUBMITTALS
A. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

2.01 MATERIALS – STEEL
A. Steel Sections: ASTM A 36/A 36M.
B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.
C. Plates: ASTM A283/A283M.
D. Pipe: ASTM A 53/A 53M Grade B Schedule 40, black finish.
E. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.
F. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.
G. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
H. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
I. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I – Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION
A. Fit and shop assemble items in largest practical sections, for delivery to site.
B. Fabricate items with joints tightly fitted and secured.
C. Continuously seal joined members by continuous welds.
D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
F. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS
A. Bollards: Steel pipe, concrete filled, crowned cap, as detailed; prime paint finish.
B. Door Frames for Overhead Door Openings and Wall Openings: Channel sections; galvanized finish.
C. Loading Dock Edge Angles: As detailed; galvanized finish.
D. Downspout Guards: As detailed; galvanized finish.
E. Elevator Pit Ladders: Steel; in compliance with ASME A17.1; with mounting brackets and attachments; prime paint finish.

2.04 FINISHES – STEEL
A. Prepare surfaces to be primed in accordance with SSPC-SP2.
B. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
C. Prime Painting: One coat.
D. Galvanizing of Steel Members: Galvanize after fabrication to ASTM A 123/A 123M requirements. Provide minimum 1.7 oz/sq ft galvanized coating.

2.05 FABRICATION TOLERANCES
A. Squareness: 1/8-inch maximum difference in diagonal measurements.
B. Maximum Offset Between Faces: 1/16 inch.
C. Maximum Misalignment of Adjacent Members: 1/16 inch.
D. Maximum Bow: 1/8 inch in 48 inches.
E. Maximum Deviation from Plane: 1/16 inch in 48 inches.

3.01 EXAMINATION
A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION
A. Clean and strip primed steel items to bare metal where site welding is required.
B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION
A. Install items plumb and level, accurately fitted, free from distortion or defects.
B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
C. Perform field welding in accordance with AWS D1.1/D1.1M.
D. Obtain approval prior to site cutting or making adjustments not scheduled.
E. After erection, prime welds, abrasions and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.

3.04 TOLERANCES
A. Maximum Variation from Plumb: 1/4 inch per story, non-cumulative.
B. Maximum Offset from True Alignment: 1/4 inch.
C. Maximum Out-of-Position: 1/4 inch.

SECTION 06 1000 – ROUGH CARPENTRY

1.01 SECTION INCLUDES
A. Sheathing.
B. Roofing nailers.
C. Preservative treated wood materials.
D. Fire retardant treated wood materials.
E. Communications and electrical room mounting boards.
F. Concealed wood blocking, nailers, and supports.

1.02 SUBMITTALS
A. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.03 DELIVERY, STORAGE, AND HANDLING
A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

2.01 GENERAL REQUIREMENTS
A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER
A. Sizes: Nominal sizes as indicated on drawings, S4S.
B. Moisture Content: S–dry or MC19.
C. Miscellaneous Blocking, Nailers, and Furring:
1. Lumber: S4S, No. 2 or Standard Grade.
2. Boards: Standard or No. 3.

2.03 CONSTRUCTION PANELS
A. Roof Sheathing: Any PS 2 type, rated Structural I Sheathing.
1. Bond Classification: Exterior.
2. Span Rating: 60.
3. Performance Category: 3/4 PERF CAT.
B. Wall Sheathing: Any PS 2 type.
1. Bond Classification: Exterior.
2. Grade: Structural I Sheathing.
3. Span Rating: 24.
4. Performance Category: 5/8 PERF CAT.
C. Wall Sheathing: Glass mat faced gypsum, ASTM C1177/C1177M, 5/8 inch Type X fire resistant.
1. At assemblies indicated with Fire-Rating: Use type required by indicated tested assembly.
D. Wall Sheathing: Extruded Polystyrene (XPS) board insulation, ASTM C578.
1. Board Edges: Tongue-and-groove.
2. Type and Thermal Resistance, R-value (RSI-value): Type IV, 5.0 (0.88) per 1 inch at 75 degrees F mean temperature using ASTM C177 test method.
E. Communications and Electrical Room Mounting Boards: PS 1 A–D plywood; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.04 ACCESSORIES
A. Fasteners and Anchors:
1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for exterior, roof related and preservative-treated wood locations, unfinished steel elsewhere.

2.05 FACTORY WOOD TREATMENT
A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 – Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
B. Fire Retardant Treatment:
1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
b. Do not use treated wood in direct contact with the ground.
2. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
b. Treat rough carpentry items as indicated .
c. Do not use treated wood in applications exposed to weather or where the wood may become wet.

3.01 INSTALLATION – GENERAL
A. Select material sizes to minimize waste.
B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 BLOCKING, NAILERS, AND SUPPORTS
A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
E. Provide the following specific non-structural framing and blocking:
1. Handrails.
2. Grab bars.
3. Toilet room accessories.

3.03 ROOF-RELATED CARPENTRY
A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

3.04 INSTALLATION OF CONSTRUCTION PANELS
A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
1. At long edges use sheathing clips where joints occur between roof framing members.
2. Screw panels to framing; staples are not permitted.
B. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.
C. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
3. Install adjacent boards without gaps.

3.05 SITE APPLIED WOOD TREATMENT
A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
B. Allow preservative to dry prior to erecting members.

3.06 TOLERANCES
A. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.07 CLEANING
A. Waste Disposal: Comply with the requirements of Section 01 7419 – Construction Waste Management and Disposal.
1. Comply with applicable regulations.
2. Do not burn scrap on project site.
3. Do not burn scraps that have been pressure treated.
4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
C. Prevent sawdust and wood shavings from entering the storm drainage system.

SECTION 06 2000 – FINISHED CARPENTRY

1.01 SECTION INCLUDES
A. Finish carpentry items.
B. Wood door frames, glazed frames.
C. Wood standing and running trim.
D. Plastic laminate panels.

1.02 ADMINISTRATIVE REQUIREMENTS
A. Coordinate the work with plumbing rough-in, electrical rough-in, and installation of associated and adjacent components.
B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.03 SUBMITTALS
A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
1. Provide the information required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
B. Samples: Submit two samples of wood trim 6 inch long.

1.04 QUALITY ASSURANCE
A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

2.01 FINISH CARPENTRY ITEMS
A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.

2.02 SHEET MATERIALS
A. Particleboard: ANSI A208.1; Composed of wood chips, sawdust, or flakes of medium density, made with waterproof resin binders; of grade to suit application; sanded faces.
B. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.

2.03 PLASTIC LAMINATE MATERIALS
A. Plastic Laminate: NEMA LD 3; color as indicated; finish as selected.
B. Laminate Adhesive: Type recommended by laminate manufacturer to suit application; not containing formaldehyde or other volatile organic compounds.

2.04 FASTENINGS
A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.
B. Fasteners: Of size and type to suit application; use corrosion resistant fasteners for exterior locations.

2.05 ACCESSORIES
A. Lumber for Shimming and Blocking: Softwood lumber of any appropriate species.
B. Primer: Alkyd primer sealer.
C. Wood Filler: Solvent base, tinted to match surface finish color.

2.06 FABRICATION
A. Shop assemble work for delivery to site, permitting passage through building openings.
B. Cap exposed plastic laminate finish edges with material of same finish and pattern.
C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
D. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel edges. Locate counter butt joints minimum 2 feet from sink cut-outs.
E. Apply laminate backing sheet to reverse face of plastic laminate finished surfaces.

2.07 SHOP FINISHING
A. Sand work smooth and set exposed nails and screws.
B. Apply wood filler in exposed nail and screw indentations.
C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 – Finishing for grade specified and as follows:
1. Transparent:
a. System – 12, Polyurethane, Water-based.
b. Stain: As indicated on drawings.
c. Sheen: As indicated on drawings.
2. Opaque:
a. System – 4, Latex Acrylic, Water-based.
b. Color: As indicated on drawings.
c. Sheen: As indicated on drawings.
E. Back prime woodwork items to be field finished, prior to installation.

3.01 EXAMINATION
A. Verify adequacy of backing and support framing.
B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION
A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
B. Set and secure materials and components in place, plumb and level.
C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
D. Install trim with countersunk mechanical fasteners.
E. Install panels with concealed fasteners.

3.03 PREPARATION FOR SITE FINISHING
A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
B. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

3.04 TOLERANCES
A. Maximum Variation from True Position: 1/16 inch.
B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

SECTION 06 4100 – ARCHITECTURAL CASEWORK

1.01 SECTION INCLUDES
A. Specialty fabricated cabinet units.
B. Countertops.
C. Hardware.
D. Preparation for installing utilities.

1.02 SUBMITTALS
A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
1. Provide the information required by AWI/AWMAC/W: (AWS) or AWMAC/WI (NAAWS).
B. Product Data: Provide data for hardware accessories.

1.03 QUALITY ASSURANCE
A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum three years of experience.

1.04 DELIVERY, STORAGE, AND HANDLING
A. Protect units from moisture damage.

1.05 FIELD CONDITIONS
A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

2.01 CABINETS
A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
B. Plastic Laminate Faced Cabinets: Custom grade.
C. Cabinets:
1. Finish – Exposed Exterior Surfaces: Decorative laminate.
2. Door and Drawer Front Edge Profiles: Self-Edge banding with material of same finish and pattern.
3. Casework Construction Type: Type A – Frameless.
4. Interface Style for Cabinet and Door: Style 1 – Overlay; flush overlay.
5. Adjustable Shelf Loading: 50 lbs. per sq. ft.

2.02 LAMINATE MATERIALS
A. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.
B. Provide specific types as follows:
1. Horizontal Surfaces: HGL, 0.039 inch nominal thickness, colors as indicated, finish as indicated.
2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, colors as indicated, finish as indicated.
3. Cabinet Liner: CLS, 0.020 inch nominal thickness, colors as indicated, finish as indicated.
4. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.03 COUNTERTOPS
A. Plastic Laminate Countertops: Medium density fiberboard substrate covered with HPDL. Self-Edge banding with material of same finish and pattern.
B. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

2.04 ACCESSORIES
A. Adhesive: Type recommended by fabricator to suit application.
B. Fasteners: Size and type to suit application.
C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
D. Concealed Joint Fasteners: Threaded steel.
E. Grommets: Standard plastic, painted metal, or rubber grommets for cut-outs, in color to match adjacent surface.

2.05 HARDWARE
A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
B. Drawer and Door Pulls: If not specified in drawings then provide "U" shaped wire pull, aluminum with satin finish, 4 inch centers.
C. Drawer Slides:
1. Type: Full extension.
2. Static Load Capacity: Commercial grade.
3. Mounting: Side mounted.
D. Hinges: European style concealed self-closing type, steel with polished finish.

2.06 FABRICATION
A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
E. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Seal cut edges.

3.01 EXAMINATION
A. Verify adequacy of backing and support framing.
B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION
A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
C. Use fixture attachments in concealed locations for wall mounted components.
D. Use concealed joint fasteners to align and secure adjoining cabinet units.
E. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
F. Secure cabinets to floor using appropriate angles and anchorages.
G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.
H. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
I. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
J. Seal joint between back/end splashes and vertical surfaces.

3.03 ADJUSTING
A. Adjust installed work.
B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING
A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

SECTION 07 0150 – PREPARATION FOR RE-ROOFING

1.01 SECTION INCLUDES
A. Replacement of existing roofing system in preparation for new roofing system in designated areas as indicated on drawings.
B. Removal of existing flashing and counterflashings.
C. Temporary roofing protection.

1.02 ADMINISTRATIVE REQUIREMENTS
A. Coordinate with affected mechanical and electrical work associated with roof penetrations.
B. Schedule work to coincide with commencement of installation of new roofing system.

1.03 QUALITY ASSURANCE
A. Materials Removal Company Qualifications: Company specializing in performing work of type specified with at least five years of experience.

1.04 FIELD CONDITIONS
A. Do not remove existing roofing membrane when weather conditions threaten the integrity of building contents or intended continued occupancy.
B. Maintain continuous temporary protection prior to and during installation of new roofing system.

2.01 MATERIALS
A. Temporary Roofing Protection Materials:
1. Contractor's responsibility to select appropriate materials for temporary protection of roofing areas as determined necessary for this work.

3.01 EXAMINATION
A. Verify that existing roof surface has been cleared of materials being removed from existing roofing system and ready for next phase of work as required.

3.02 PREPARATION
A. Sweep roof surface clean of loose matter.
B. Remove loose stone and dispose of property off site.

3.03 MATERIAL REMOVAL
A. Remove only existing roofing materials that can be replaced with new materials the same day.
B. Remove metal counter flashings.
C. Scrape roofing gravel from membrane surface without causing serious damage to membrane felts.
D. Remove damaged portions of roofing membrane, perimeter base flashings, flashings around roof protrusions, pitch pans and pockets.
E. Remove damaged insulation and fasteners, cant strips, blocking.

3.04 PROTECTION
A. Provide protection of existing roofing system that is not having work performed on it.
B. Provide temporary protective sheeting over uncovered deck surfaces.
C. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights.
D. Provide for surface drainage from sheeting to existing drainage facilities.
E. Do not permit traffic over unprotected or repaired deck surface.

Professional Certification (Architect):
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17042 expiration date 8/14/2026.

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Project No.:	24.0774
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A904

SPECIFICATIONS

SECTION 07 2100 – THERMAL INSULATION

1.01 SECTION INCLUDES

A. Board insulation and integral vapor retarder cavity wall construction, perimeter foundation wall, underside of floor slabs, and as indicated on drawings.

B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.

C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.03 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

2.01 APPLICATIONS

A. Insulation Under Concrete Slabs: Extruded polystyrene (XPS) board.

B. Insulation at Perimeter of Foundation: Extruded polystyrene board.

C. Insulation Inside Masonry Cavity Walls: Extruded polystyrene (XPS) board.

D. Insulation in Metal Framed Walls: Batt insulation with specified vapor retarder.

2.02 FOAM BOARD INSULATION MATERIALS

A. Extruded Polystyrene (XPS) Board Insulation: Comply with ASTM C578 with either natural skin or cut cell surfaces.

1. Flame Spread Index (FSI): Class A – 0 to 25, when tested in accordance with ASTM E84.
2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
3. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.

2.03 MINERAL FIBER BLANKET INSULATION MATERIALS

A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.

1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
4. Formaldehyde Content: Zero.
5. Facing: Unfaced.
   a. In Climate Zones 4c and above; where a separate vapor retarder is being used.
   b. In Climate Zones 1, 2, 3, 4a & 4b; where no vapor retarder is required.
6. Facing: Asphalt treated Kraft paper, one side.
   a. In Climate Zones 4c and above; where a vapor retarder is required.
   b. Facing can not be exposed.

2.04 ACCESSORIES

A. Sheet Vapor Retarder: Polyamide film with variable vapor permeability based on ambient humidity. Permeance of 1 perm or less by the dry cup method, increasing to 10 perms by the wet cup method. Flame spread rating of 25 or less, when tested in accordance with ASTM E84.

B. Tape joints of rigid insulation in accordance with roofing and insulation manufacturers' instructions.

C. Insulation Fasteners: Lengths of unfinished, 13 gauge, 0.072 inch high carbon spring steel with chisel or mitered tips, held in place by tension, length to suit insulation thickness and substrate, capable of securely supporting insulation in place.

D. Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

E. Adhesive: Type recommended by insulation manufacturer for application.

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

A. Install boards vertically on foundation perimeter.

1. Install in running bond pattern.
2. Butt edges and ends tightly to adjacent boards and to protrusions.

B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BOARD INSTALLATION CONTINUOUS ON INTERIOR AT EXTERIOR WALLS

A. Install rigid insulation directly to concrete or masonry with manufacturer recommended adhesive. Tape all joints with manufacturer's minimum 4 inch wide sealant tape; comply with ASTM E2357.

1. Three continuous beads per board length.

B. Install rigid insulation directly to steel studs with manufacturer recommended mechanical fasteners. Tape all joints with manufacturer's minimum 4 inch wide sealant tape; comply with ASTM E2357.

C. Install boards vertically on walls.

1. Place boards to maximize adhesive contact.
2. Install in running bond pattern.
3. Butt edges and ends tightly to adjacent boards and to protrusions.

D. Extend boards over expansion joints, unbonded to wall on one side of joint.

3.04 BOARD INSTALLATION AT CAVITY WALLS

A. Install boards to fit snugly between wall ties.

B. Install boards horizontally on walls.

1. Install in running bond pattern.
2. Butt edges and ends tightly to adjacent boards and protrusions.

C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.05 BOARD INSTALLATION UNDER CONCRETE SLABS

A. Place perimeter insulation under slabs on grade after base for slab has been compacted.

B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab.

3.06 BATT INSTALLATION

A. Install insulation and vapor retarder in accordance with manufacturer's instructions.

B. Install in exterior wall, roof, and ceiling spaces without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

E. Install with factory applied vapor retarder membrane facing warm side of wall assembly. Lap ends and side flanges of membrane over framing members.

F. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

G. Place Sheet Vapor Retarder on warm side of insulation; lap and seal sheet retarder joints over member face.

H. Tape seal tears or cuts in vapor retarder.

I. Extend vapor retarder membrane tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

3.07 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

SECTION 07 3113 – ASPHALT SHINGLES

1.01 SECTION INCLUDES

A. Asphalt shingle roofing.

B. Flexible sheet membranes for eave protection, underlayment, and valley protection.

C. Flashing.

1.02 SUBMITTALS

A. Product Data: Provide data indicating material characteristics, performance criteria, and limitations.

B. Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in the manufacture of roofing systems similar to those required for this project, with not less than 5 years of experience.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store materials with labels intact in manufacturer's unopened packaging until ready for installation.

B. Protect materials from harmful environmental elements, construction dust, direct sunlight, and other potentially detrimental conditions.

C. When storing roofing materials on roofing system ensure that no damage occurs to supporting members and other materials.

1.05 WARRANTY

A. Provide manufacturer's standard limited warranty against defects in materials and workmanship as follows:

1. Repair or replace defective shingles.
2. Warranty period: 40 years.
   a. Full coverage, including cost of materials and labor, for the first 5 years.
   b. Material only coverage for remainder of term, pro-rated in accordance with manufacturer's standard warranty conditions.
3. Algae resistance: 10 years, free from algae growth affecting appearance.
   a. Repair, replace or clean singles at no cost to the owner.

2.01 ASPHALT SHINGLES

A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462/D3462M.

1. Fire Resistance: Class A, complying with ASTM E108.
2. Wind Resistance: Class A, when tested in accordance with ASTM D3161/D3161M.
3. Algae resistant.
4. Self-sealing type.
5. Style: Square.
6. Color: As selected by Architect.

2.02 SHEET MATERIALS

A. Underlayment: Asphalt-saturated organic roofing felt, unperforated, complying with ASTM D226/D226M, Type I, No. 15.

2.03 FLASHING

A. Metal Flashings: Provide sheet metal eave edge, gable edge, ridge, ridge vents, open valley flashing, chimney flashing, dormer flashing, and other flashing as indicated.

1. Form flashings to protect roofing materials from physical damage and shed water.
2. Form sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental to appearance or performance.
3. Hem exposed edges of flashings minimum 1/4 inch on underside.
4. Coat concealed surfaces of flashings with bituminous paint.

B. Aluminum Flashing: Prefinished aluminum, 26 gauge, 0.017 inch minimum thickness; PVC coating, color as selected.

2.04 ACCESSORIES

A. Roofing Nails: Standard round wire shingle type, galvanized steel, minimum 3/8 inch head diameter, 12 gage, 0.109 inch nail shank diameter, 1-1/2 inch long and complying with ASTM F1667.

B. Asphalt Roof Cement: ASTM D4586/D4586M, asbestos-free.

C. Bituminous Paint: Acid and alkali resistant type; black color.

D. Lap Cement: Fibrated cutback asphalt type, recommended for use in application of underlayment, free of toxic solvents.

E. Plastic Ridge Vents: Extruded plastic with vent openings that do not permit direct water or weather entry; flanged to receive shingles.

3.01 EXAMINATION

A. Verify existing conditions prior to starting this work.

B. Verify that roof deck is of sufficient thickness to accept fasteners.

C. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.

D. Verify roof openings are correctly framed.

E. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.02 PREPARATION

A. Broom clean deck surfaces before installing underlayment or eave protection.

3.03 INSTALLATION

A. Eave Protection Membrane:

1. Install eave protection membrane from eave edge to minimum 48 inches up-slope beyond interior face of exterior wall.
2. Install eave protection membrane in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

B. Underlayment:

1. Roof Slopes Up to 4:12: Install two layers of underlayment over area not protected by eave protection, with ends and edges weather lapped minimum 4 inches; stagger end laps of each consecutive layer and nail in place.
2. Roof Slopes Greater Than 4:12: Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 4 inches; stagger end laps of each consecutive layer, nail in place, and weather lap minimum 4 inches over eave protection.
3. Weather lap and seal watertight with plastic cement any items projecting through or mounted on roof.

C. Valley Protection:

1. Install valley protection in accordance with SMACNA (ASMM), Detail Figure 4-10.

D. Metal Flashing:

1. Install flashings in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
2. Weather lap joints minimum 2 inches and seal weather tight with plastic cement.
3. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

E. Shingles:

1. Install shingles in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
   a. Fasten individual shingles using two nails per shingle, or as required by manufacturer and local building code, whichever is greater.
   b. Fasten strip shingles using four nails per strip, or as required by manufacturer and local building code, whichever is greater.
2. Place shingles in straight coursing pattern with 5-inch weather exposure to produce double thickness over full roof area, and provide double course of shingles at eaves.
3. Project first course of shingles 3/4 inch beyond fascia boards.
4. Extend shingles 1/2 inch beyond face of gable edge fascia boards.
5. Cap hips with individual shingles, maintaining 5-inch weather exposure, and place to avoid exposed nails.
6. Coordinate installation of roof mounted components or work projecting through roof with weathertight placement of counterflashings.
7. Complete installation to provide weathertight service.

3.04 CLEANING

A. Clean exposed work upon completion of installation; remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to finish.

3.05 PROTECTION

A. Do not permit traffic over finished roof surface; protect roofing until completion of project.

SECTION 07 8400 – FIRESTOPPING

1.01 SUBMITTALS

A. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.

B. Product Data: Provide data on product characteristics, performance ratings, and limitations.

1.02 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.

1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:

1. Verification of minimum three years experience installing work of this type.

1.03 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

B. Provide ventilation in areas where solvent-cured materials are being installed.

2.01 MATERIALS

A. Firestopping Materials: Any materials meeting requirements.

B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

C. Fire Ratings: See Drawings for required ratings.

2.02 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.

B. Head-of-Wall Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of floor or wall, whichever is greater.

C. Floor-to-Floor, Wall-to-Wall, and Wall-to-Floor Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.

D. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.

2.03 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.

1. Fire Ratings: Use any system listed by UL, FM, or ITS (Warnock Hersey) 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, unless otherwise required by code, and that meets all other specified requirements. Refer to drawings for required ratings.

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 materials that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to prevent liquid material from 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 firestopping until inspected by authorities having jurisdiction.

C. Install labeling required by code.

3.04 CLEANING

Clean adjacent surfaces of firestopping materials.

Professional Certification (Architect)
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17042 expiration date 8/14/2026.

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Project No.:	24.0774
Drawn By:	JZH
Date	Issue
01-31-25	Permit Set

A905

SPECIFICATIONS

SECTION 07 2500 -- WEATHER BARRIERS

1.01 SECTION INCLUDES
- A. Water-resistive barriers.

1.02 DEFINITIONS
- A. Water-Resistive Barriers: Materials or assemblies installed behind exterior wall coverings; designed to prevent liquid water from further penetration into exterior wall assembly.

1.03 SUBMITTALS
- A. Product Data: Provide data on material characteristics, performance criteria, and limitations.

1.04 FIELD CONDITIONS
- A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

2.01 WEATHER BARRIER ASSEMBLIES
- A. Weather Barrier: Provide on exterior walls under exterior cladding and where indicated in other sections , and as indicated on drawings.
  1. Under cladding at framed walls with sheathing, use weather barrier sheet .
  2. Under cladding at masonry, use weather barrier coating .
  3. On outside surface of inside wythe of exterior masonry cavity walls, use weather barrier coating.

2.02 WATER-RESISTIVE BARRIERS
- A. Water-Resistive and Air Barrier, Multilayers: Outer layers of nonwoven, spunbonded polypropylene with vapor permeable, watertight polymeric middle layer.
  1. Air Permeance: 0.0011 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
  2. Water Vapor Permeance: 10 perms , minimum, when tested in accordance with ASTM E96/E96M using Procedure A - Desiccant Method, at 73.4 degrees F .
  3. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 3 months of weather exposure.
  4. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
  5. Seam and Perimeter Tape: As recommended by sheet manufacturer.
- B. Water-Resistive Barrier Coating: Fluid-applied air and water-resistive coating for various exterior substrates.
  1. Air Permeance, Building Material Air Leakage Rate: 0.004 cfm/sq ft maximum leakage when tested at 1.57 psf pressure difference in accordance with ASTM E2178.
  2. Water-Resistive Barrier over Sheathing Compliance: Complying with ICC-ES AC212.
  3. Water Vapor Permeance: Tested in accordance with ASTM E96/E96M.
     - a. Procedure A: Greater than 5 perms.
     - b. Procedure B: Greater than 14 perms.
  4. Dry Film Thickness (DFT): 10 mils, 0.010 inch , minimum.
  5. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 120 days of weather exposure.
  6. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 120 days of weather exposure.
  7. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
  8. Resistance to Fungal Growth: No growth when tested in accordance with ASTM D5590.
  9. System Accessory Products: As recommended by coating manufacturer.

2.03 ACCESSORIES
- A. Seal and Perimeter Tapes: As recommended by water-resistive barrier manufacturer.
- B. Flashings and Sealants: As recommended by water-resistive barrier manufacturer for application.
- C. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrates and weather barrier materials.
  1. Application: Apply at 30 to 40 mil, 0.030 to 0.040 inch nominal thickness.
  2. Elongation: 1,300 percent, measured in accordance with ASTM D412.
  3. Peel Adhesion: 28 lb/inch, minimum, when tested in accordance with ASTM D903.
  4. Hydrostatic Head Pressure: Resist head pressure of 57 feet, maximum, when tested in accordance with ASTM D751.
- D. Primer: Liquid applied polymer.
  1. Elongation: 1,300 percent, measured in accordance with ASTM D412.
- E. Flexible Flashing: Self-adhering sheet flashing complying with ASTM D1970/D1970M; waive slip resistance requirement if not installed on roof.
  1. Width: 4 inches.
  2. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 30 days of weather exposure.
- F. Sill Plate Sealer: Closed-cell foam tape with rubberized adhesive membrane; bridges gap between foundation structure and sill plate or skirt board.
  1. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 30 days of weather exposure.
- G. Fasteners: Type as recommended by the manufacturer for substrate and construction.
- H. Tape: Product manufactured by the membrane manufacturer.

3.01 EXAMINATION
- A. Verify that surfaces and conditions comply with requirements of this section.

3.02 PREPARATION
- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's instructions.

3.03 INSTALLATION
- A. Install materials in accordance with manufacturer's installation instructions.
- B. Install continuous water-resistive barriers where indicated on drawings, with sheets lapped to shed water.
- C. Apply sealants within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Mechanically Fastened Membranes :
  1. Install membranes in shingle fashion to shed water; align horizontally.
  2. Overlap seams as recommended by manufacturer, 6 inches, minimum.
  3. Overlap at outside and inside corners as recommended by manufacturer, 12 inches, minimum.
  4. Attach to framed construction with fasteners extending through sheathing into framing. Space fasteners at 12 to 18 inches on center along each framing member supporting sheathing, unless otherwise indicated in manufacturer's installation instructions.
  5. Where stud framing rests on concrete or masonry, extend lower edge of sheet at least 4 inches below bottom of framing and seal to wall with sealant.
  6. Install wall flashings under weather barrier.
  7. Coordinate transitions between dissimilar weather barrier materials to shed water and maintain continuity of weather barrier system.
- E. Self-Adhered Membranes:
  1. Prepare substrate in accordance with sheet manufacturer's installation instructions; fill and tape joints in substrate and between dissimilar materials.
  2. Lap sheets shingle-fashion to shed water and seal laps airtight.
  3. Upon placement of sheets, firmly press onto substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
  4. Use same material, or other material approved by sheet manufacturer, to seal sheets to adjacent substrates, and as flashing.
  5. At expansion joints, provide transition to joint assemblies approved by sheet manufacturer.
- F. Fluid-Applied Membranes :
  1. Prepare substrate in accordance with coating manufacturer's installation instructions; treat joints in substrate and between dissimilar materials as indicated.
  2. Where exterior masonry veneer is being applied, install masonry anchors prior to placement of water-resistive barrier over masonry substrate; seal airtight around anchors.
  3. Apply flashing to seal with adjacent construction and to bridge joints in coating substrate.
  4. Coordinate transitions between dissimilar weather barrier materials to shed water and maintain continuity of weather barrier system.
- G. Openings and Penetrations in Exterior Water-Resistive Barriers:
  1. Install flashing over sills, covering entire sill framing member, and extend at least 5 inches onto water-resistive barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
  2. At openings filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
  3. At openings filled with nonflanged frames, seal water-resistive barrier to each side of framing of opening using flashing at least 9 inches wide, and covering entire depth of framing.
  4. At head of openings, install flashing under water-resistive barrier extending at least 2 inches beyond face of jambs; seal water-resistive barrier to flashing.
  5. At interior face of openings, seal gaps between window and door frames and rough framing using appropriate joint sealant over backer rod.
  6. Service and Other Penetrations: Form flashing around penetrating items and seal to surface of water-resistive barrier.

3.04 FIELD QUALITY CONTROL
- A. Owner's Inspection and Testing: Cooperate with Owner's testing agency.
  1. Allow access to work areas and staging.
  2. Notify Owner's testing agency in writing of schedule for work of this section to allow sufficient time for testing and inspection.
  3. Do not cover work of this section until testing and inspection is accepted.
- B. Obtain approval of installation procedures from water-resistive barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.
- C. Take digital photographs of each portion of installation prior to covering up weather barriers.

3.05 PROTECTION
- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

SECTION 07 5400 - THERMOPLASTIC MEMBRANE ROOFING (TPO)

1.01 ADMINISTRATIVE REQUIREMENTS
- A. Preinstallation Meeting: Convene one week before starting work of this section.
  1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.02 SUBMITTALS
- A. Product Data: Provide data indicating membrane materials, flashing materials, insulation, surfacing, and fasteners.
- B. Shop Drawings: Submit drawings that indicate joint or termination detail conditions, conditions of interface with other materials, and setting plan for tapered insulation.

1.03 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with at least three years of experience and approved by manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING
- A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.
- B. Store materials in weather protected environment, clear of ground and moisture.
- C. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.
- D. Protect foam insulation from direct exposure to sunlight.

1.05 FIELD CONDITIONS
- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- D. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.06 WARRANTY
- A. System Warranty: Manufacturer's standard form, no dollar limit (NDL), in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
  1. Warranty Term: 15 years.
  2. For repair and replacement include costs of both material and labor in warranty.
  3. Warranty includes roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, cover boards, walkway products, and other components of the roofing system.

2.01 ROOFING
- A. Thermoplastic Membrane Roofing: One ply membrane, mechanically fastened, spot adhered or fully adhered as indicated on the drawings, over insulation.
- B. Roofing Assembly Requirements:
  1. Roof Covering External Fire Resistance Classification: UL (FRD) Class A.
- C. Acceptable Insulation Types - Constant Thickness Application: Any type that meets requirements and is approved by membrane manufacturer for application.
  1. Two layers of approximately equal thickness of polyisocyanurate board plus a cover board.
- D. Acceptable Insulation Types - Tapered Application: Any type that meets requirements and is approved by membrane manufacturer for application.

2.02 MEMBRANE ROOFING AND ASSOCIATED MATERIALS
- A. Membrane Roofing Materials:
  1. TPO: Thermoplastic polyolefin (TPO) complying with ASTM D6878/D6878M, sheet contains reinforcing fabrics or scrims.
     - c. Thickness: 60 mil, 0.060 inch, minimum.
  2. Sheet Width: Factory fabricated into largest sheets possible.
  3. Color: White.
- B. Seaming Materials: As recommended by membrane manufacturer.
- C. Membrane Fasteners: As recommended and approved by membrane manufacturer.
- D. Flexible Flashing Material: Same material as membrane.

2.03 COVER BOARDS
- A. Cover Boards: Faced high compressive strength polyisocyanurate (ISO) insulation complying with ASTM C1289, and the following characteristics:
  1. Classification:
     - a. Type II - Faced with either cellulosic facers or glass fiber mat facers on both major surfaces of the core foam.
       - 1) Class 4 - faced with coated or uncoated glass-fiber-mat facers on both major surfaces of core foam.
         - (a) Compressive Strength: Grade 1, 80 psi.
         - (b) Thickness: 1/2 inch, maximum.
  2. Board Size: 48 by 48 inches.
  3. Insulation Thermal Resistance, R-value: R-value (RSI-value) of 2.9, nominal.

2.04 INSULATION
- A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
  1. Classifications:
     - a. Type II:
       - 1) Class 2 - Faced with coated polymer-bonded glass fiber mat facers on both major surfaces of core foam.
       - 2) Compressive Strength: Classes 1-2-3, Grade 2 - 20 psi (138 kPa), minimum.
  2. Board Size: 48 by 96 inch.
  3. Maximum Board Thickness: 2.0 inch.
  4. Thermal Resistance: R-value [as indicated on the drawings].
  5. Tapered Board: Slope as indicated; minimum thickness 1/2 inch; fabricate of fewest layers possible.

2.05 ACCESSORIES
- A. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches wide; self-adhering.
- B. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.
- C. Membrane Adhesive: As recommended by membrane manufacturer.
- D. Cover tape: Tape adhesive laminated to cover strip, as recommended by manufacturer, used to strip in metal flashings.
- E. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.
- F. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.
- G. Strip Reglet Devices: Stainless steel, maximum possible lengths per location, with attachment flanges.
- H. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
  1. Composition: Roofing membrane manufacturer's standard.
- I. Coated Metal: Laminate of TPO membrane and galvanized steel.
- J. Flexible foam rod: Closed cell polyethylene, 1 1/2 inch diameter unless noted.

3.01 EXAMINATION
- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and nailing strips and reglets are in place.

3.02 INSTALLATION - GENERAL
- A. Perform work in accordance with manufacturer's instructions, NRCA (RM), and NRCA (WM) applicable requirements.
- B. Do not apply roofing membrane during unsuitable weather.
- C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
- D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- F. Coordinate this work with installation of associated counterflashings installed by other sections as the work of this section proceeds.
- G. Fasten roofing assembly to resist the design uplift pressures as indicated on structural drawings.
- H. In the absence of structural drawings, fasten roofing assembly to resist the design uplift pressures calculated in accordance with:
  1. IBC Chapter 15.
  2. IBC Chapter 16.
  3. ASCE 7.

3.03 INSULATION
- A. Attachment of insulation: Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions and Factory Mutual requirements.
- B. Cover Boards: Mechanically fasten cover boards in accordance with roofing manufacturer's instructions and FM (AG) Factory Mutual requirements.
- C. Lay subsequent layers of insulation with joints staggered minimum 6 inch from joints of preceding layer.
- D. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
- E. On metal deck, place boards parallel to flutes with insulation board edges bearing on deck flutes.
- F. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- G. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 18 inches.
- H. Do not apply more insulation than can be covered with membrane in same day.

3.04 MEMBRANE APPLICATION
- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
- B. Shingle joints on sloped substrate in direction of drainage.
- C. Fully Adhered Application: Fully embed membrane in adhesive except in areas directly over or within 3 inches of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.
- D. Spot Adhered Application: Mechanically fasten adhesion discs to substrate. Apply adhesive to discs and bond membrane. Fully adhere one roll before proceeding to adjacent rolls.
- E. Overlap edges and ends and seal seams by heat welding. Seal permanently waterproof.
- F. Apply seam sealant at membrane edges and patches where recommended by roof membrane manufacturer.
- G. Mechanical Attachment: Apply membrane and mechanical attachment devices in accordance with manufacturer's instructions.
- H. At intersections with vertical surfaces:
  1. Extend membrane up a minimum of 8 inches onto vertical surfaces.
     - a. Place flexible foam rod at roof to wall intersection where roof is not suported by walls and as detailed.
  2. Fully adhere flexible flashing over membrane and up to top of wall.
     - a. Continue across nailer to front edge and turn down face of wall.
  3. Insert flashing into reglets and secure where detailed.
- I. At gravel stops and perimeter metal flashings, extend membrane under metal and turn down the outside face of the wall.
  1. Fully adhere flexible flashing over flange of metal and extend onto roof membrane.
- J. Around roof penetrations, seal flanges and flashings with flexible flashing.
- K. Coordinate installation of roof drains and sumps and related flashings.

3.05 FINISHING
- A. Install walkway pads. Space pad joints to permit drainage.

3.06 FIELD QUALITY CONTROL
- A. See Section 01 4000 - Quality Requirements, for general requirements for field quality control and inspection.
- B. Require site attendance of roofing material manufacturers daily during installation of the Work.
- C. Test membrane seam welds in accordance with roofing manufacturer's requirements.
  1. Test welds with probe to verify seam weld continuity. Test 100% of seams.
  2. Verify field strength of seams; not less than 3 tests per work day.
  3. Repair tears, voids and lapped seams in roofing membrane that do not meet requirements.

3.07 CLEANING
- A. Remove excess materials, and debris from roof surfaces.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

3.08 PROTECTION
- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

SECTION 07 6200 - SHEET METAL FLASHING AND TRIM

1.01 SECTION INCLUDES
- A. Fabricated sheet metal items, including gravel stops, copings, fascias, flashings, counterflashings, gutters, downspouts, and as indicated on drawings.
- B. Sealants for joints within sheet metal fabrications.
- C. Precast concrete splash pads.

1.02 SUBMITTALS
- A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

1.03 QUALITY ASSURANCE
- A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual or The NRCA Roofing and Waterproofing Manual recommendations and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of experience.

1.04 DELIVERY, STORAGE, AND HANDLING
- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

1.05 WARRANTY
- A. Provide manufacturer's standard material finish warranty, agreeing to repair or replace panels that show evidence of finish degradation, including fading, chalking, cracking, or peeling.
  4. Warranty period 10 years, non-prorated.

2.01 EDGE SYSTEMS USED WITH LOW SLOPE ROOFING SYSTEMS
- A. Edge System Requirements
  1. Metal edge to resist the design uplift pressures calculated according to:
     - a. IBC Chapter 15 section on Performance Requirements.
     - b. SPRI ES-1.

2.02 SHEET MATERIALS
- A. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gauge, (0.0239) inch thick base metal, shop pre-coated with PVDF coating.
  1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
  2. Color: As indicated on drawings.
- B. Aluminum: ASTM B209 (ASTM B209M); 20 gauge, (0.032 inch) thick; anodized finish of color as selected.
  1. Clear Anodized Finish: AAMA 611 AA-M12C22A41 Class I clear anodic coating not less than 0.7 mils thick.
  2. Color Anodized Finish: AAMA 611, AA-M12C22A42/44, Class I, integrally or electrolytically colored anodic coating not less than 0.7 mil, 0.0007 inch thick.
     - a. Color: As indicated on drawings.
- C. Pre-Finished Aluminum: ASTM B209 (ASTM B209M); 20 gauge, (0.032 inch) thick; plain finish shop pre-coated with modified silicone coating.
  1. Modified Silicone Polyester Coating: Pigmented Organic Coating System, AAMA 2603; baked enamel finish system.
  2. Color: As indicated on drawings.
- D. Stainless Steel: ASTM A666, Type 304 alloy, soft temper, 28 gauge, (0.0156 inch) thick; smooth No. 4 - Brushed finish.

2.03 FABRICATION
- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of same material as sheet, continuous, interlocking with sheet.
- C. Form pieces in longest possible lengths.
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- E. Form material with flat lock seams, except where otherwise indicated. At moving joints, use butt joints with concealed backup plate.
  1. Fabricate concealed backup plate, minimum 12 inch long.
- F. Fabricate corners from one piece with minimum 24 inch long legs; solder for rigidity, seal with sealant.
- G. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

2.04 GUTTER, SCUPPER AND DOWNSPOUT FABRICATION
- A. Gutters and Scuppers: SMACNA (ASMM), Rectangular profile.
- B. Downspouts: Rectangular profile.
- C. Gutters, Scuppers and Downspouts: Size for rainfall intensity determined by a storm occurrence of 1 in 10 years in accordance with SMACNA (ASMM).
- D. Accessories: Profiled to suit gutters, scuppers and downspouts.
  1. Anchorage Devices: In accordance with SMACNA (ASMM) requirements.
  2. Gutter Supports: Brackets & Straps.
  3. Downspout Supports: Brackets & Straps.
- E. Splash Pads: Precast concrete type, of size and profile appropriate to the application; minimum 3000 psi at 28 days, with minimum 5 percent air entrainment.
- F. Downspout Boots: Plastic.
- G. Seal metal joints.

2.05 ACCESSORIES
- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Underlayment: ASTM D226/D226M, organic roofing felt, Type I (No. 15).
- C. Primer: Zinc chromate type.
- D. Concealed Sealants: Non-curing butyl sealant.
- E. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- F. Plastic Cement: ASTM D4586/D4586M, Type I.
- G. Reglets: Surface mounted or recessed as detailed type, Stainless Steel.
- H. Solder: ASTM B32; Sn50 (50/50) type.

3.01 EXAMINATION
- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION
- A. Install starter and edge strips, and cleats before starting installation.
- B. Install surface mounted reglets true to lines and levels, and seal top of reglets with sealant.
- C. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

Professional Certification (Architect):
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17049 expiration date 8/14/2026.

3.03 INSTALLATION
- A. Fasten metal edge systems to resist the design uplift pressures calculated according to:
  1. IBC Chapter 15 section on Performance Requirements.
  2. SPRI ES-1.
- B. Insert flashings into reglets to form tight fit; secure in place with lead wedges; pack remaining spaces with lead wool; seal flashings into reglets with sealant.
- C. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..
- D. Apply plastic cement compound between metal flashings and felt flashings.
- E. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- F. Roof Edge Flashing (Gravel Stop), Fascia Cap and Coping Joint Style: Butt, with 12 inch wide concealed backup plates.
- G. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection.
  1. Provide two rows of butyl sealant on backup plate each side of movement joint.
- H. Seal metal joints watertight.
- I. Secure gutters and downspouts in place with concealed fasteners.
- J. Slope gutters 1/4 inch per 10 feet, minimum.
- K. Connect downspouts to downspout boots, and grout connection watertight.
- L. Set splash pads under downspouts.

3.04 FIELD QUALITY CONTROL
- A. Inspect the work during installation to ascertain compliance with specified requirements.

3.05 SCHEDULE
- A. Gravel stop, Fascia and Coping Cap: Prefinished galvanized steel.
- B. Gutters and Downspouts: Prefinished galvanized steel.
- C. Scuppers: Prefinished galvanized steel.
- D. Sill and head flashings, including transition flashing between materials: Prefinished aluminum.
- E. Exposed trim & accessories related to aluminum framed storefronts: Anodized aluminum, color to match storefront.
- F. Counterflashings at Roofing Terminations (over roofing base flashings): Stainless steel
- G. Counterflashings at Curb-Mounted Roof Items, including skylights and roof hatches: Match material of item being flashed.

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SHERWIN WILLIAMS #5178
530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JZH
Date	Issue
01-31-25	Permit Set

A906

SPECIFICATIONS

SECTION 07 9200 – JOINT SEALANTS

1.01 SECTION INCLUDES
- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 SUBMITTALS
- A. Product Data: Submit manufacturer's technical data sheets for each product to be used; include the following:
  1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
  2. List of backing materials approved for use with the specific product.
  3. Backing material recommended by sealant manufacturer.
  4. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
  5. Substrates the product should not be used on.
  6. Substrates for which use of primer is required.
- B. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
  1. Where standard colors do not match color of adjacent materials, submit custom color.

1.03 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years experience.
- B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of experience.
- C. Field Adhesion Tests of Joints: Test for adhesion using most appropriate method in accordance with ASTM C1521, or another applicable method as recommended by manufacturer.

1.04 WARRANTY
- A. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

2.01 JOINT SEALANT APPLICATIONS
- A. Scope:
  1. Exterior Joints:
     - a. Seal open joints except open joints indicated on drawings as not sealed.
     - b. Seal the following joints:
       - 1) Wall expansion and control joints.
       - 2) Joints between doors, windows, and other frames or adjacent construction.
       - 3) Joints between different exposed materials.
  2. Interior Joints:
     - a. Do not seal interior joints indicated on drawings as not sealed.
     - b. Do not seal gaps and openings in gypsum board, plaster, and suspended ceilings
     - c. Do not seal through-penetrations in sound-rated assemblies that are also fire-rated assemblies.
     - d. Seal the following joints:
       - 1) Joints between door frames and window frames and adjacent construction.
       - 2) In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, and piping penetrations.
       - 3) In sound-rated wall and ceiling assemblies, seal joints between wall assemblies and ceiling assemblies; between wall assemblies and other construction; between ceiling assemblies and other construction.
  3. Do Not Seal:
     - a. Intentional weep holes in masonry.
     - b. Joints indicated to be covered with expansion joint cover assemblies.
     - c. Joints where sealant is specified to be furnished and installed by manufacturer of product to be sealed.
     - d. Joints where sealant installation is specified in other sections.
     - e. Joints between suspended ceilings and walls.
- B. Exterior Joints: Use nonsag non-staining silicone sealant, unless otherwise indicated.
  1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing.
  2. Lap Joints between Manufactured Metal Panels: Butyl rubber, non-curing.
  3. Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane "traffic-grade" sealant.
- C. Interior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
  1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.
  2. Wall and Ceiling Joints in Wet Areas: Nonsag polyurethane sealant for continuous liquid immersion.
  3. Floor Joints in Wet Areas: Nonsag polyurethane "nontraffic-grade" sealant suitable for continuous liquid immersion.
  4. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
  5. In Sound Rated Assemblies: Acrylic emulsion latex sealant.
  6. Narrow Control Joints in Interior Concrete Slabs: Self-leveling epoxy sealant.
  7. Other Floor Joints: Self-leveling polyurethane "traffic-grade" sealant.
- D. Interior Wet Areas: Bathrooms, restrooms, kitchens, food service areas, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.
- E. Sound-Rated Assemblies: Walls and ceilings identified as STC-rated, sound-rated, or acoustical.

2.02 NONSAG JOINT SEALANTS
- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
  1. Movement Capability: Plus and minus 50 percent, minimum.
  2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
  3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
  4. Color: Match adjacent finished surfaces.
- B. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
  1. Color: Clear.
- C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multicomponent; not expected to withstand continuous water immersion or traffic.
  1. Color: Match adjacent finished surfaces.
- D. Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface .
  1. Movement Capability: Plus and minus 35 percent, minimum.
  2. Color: Match adjacent finished surfaces.
- E. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
  1. Color: Standard colors matching finished surfaces, Type OP (opaque).
- F. Non-Curing Butyl Sealant: Solvent-based; ASTM C1311; single component, nonsag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.

2.03 SELF-LEVELING JOINT SEALANTS
- A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion .
  1. Movement Capability: Plus and minus 25 percent, minimum.
  2. Color: Gray or match adjacent finish.
- B. Self-Leveling Polyurethane Sealant for Continuous Water Immersion: Polyurethane; ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
  1. Movement Capability: Plus and minus 25 percent, minimum.
  2. Color: Gray.
- C. Semi-Rigid Self-Leveling Epoxy Joint Filler: Epoxy or epoxy/polyurethane copolymer; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
  1. Composition: Multicomponent, 100 percent solids by weight.
  2. Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
  3. Color: Match adjacent finished surfaces.
  4. Joint Width, Minimum: 1/8 inch.
  5. Joint Width, Maximum: 1/4 inch.

2.04 ACCESSORIES
- A. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- B. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- C. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- D. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

3.01 EXAMINATION
- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION
- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION
- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Install acoustical sealant application work in accordance with ASTM C919.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL
- A. See Section 01 4000 – Quality Requirements for additional requirements.
- B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

SECTION 08 1113 – HOLLOW METAL DOORS AND FRAMES

1.01 SUBMITTALS
- A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
- B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.02 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Provide hollow metal doors and frames from SDI Certified manufacturer: www.steeldoor.org/sdicertified.php/#sle.

1.03 DELIVERY, STORAGE, AND HANDLING
- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

2.01 PERFORMANCE REQUIREMENTS
- A. Requirements for Hollow Metal Doors and Frames:
  1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
  2. Accessibility: Comply with applicable accessibility standards.
  3. Door Edge Profile: Manufacturers standard for application indicated.
  4. Typical Door Face Sheets: Flush.
  5. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturers standard.
  6. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.02 HOLLOW METAL DOORS
- A. Door Finish: Factory primed and field finished.
- B. Exterior Doors: Thermally insulated.
  1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
     - a. Level 3 – Extra Heavy-duty.
     - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
     - c. Model 2 – Seamless.
     - d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
  2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
  3. Door Thermal Resistance: R-Value of 2.5.
  4. Door Thickness: 1-3/4 inches, nominal.
  5. Top Closures for Outswinging Doors: Flush with top of faces and edges.
  6. Weatherstripping: Refer to Section 08 7100.
- C. Interior Doors, Non-Fire Rated:
  1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
     - a. Level 2 – Heavy-duty.
     - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
     - c. Model 1 – Full Flush.
     - d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
  2. Door Thickness: 1-3/4 inches, nominal.
- D. Fire-Rated Doors:
  1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
     - a. Level 2 – Heavy-duty.
     - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
     - c. Model 1 – Full Flush.
     - d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
  2. Fire Rating: As indicated on drawings, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
     - a. Provide units listed and labeled by UL (DIR) or ITS (DIR).
     - b. Attach fire rating label to each fire rated unit.
     - c. Smoke and Draft Control Doors (as indicated on drawings): Self-closing or automatic closing doors in accordance with NFPA 80 and NFPA 105, with fire-resistance-rated wall construction rated the same or greater than the fire-rated doors, and the following;
       - 1) Maximum Air Leakage: 3.0 cfm/sq ft of door opening at 0.10 inch w.g. pressure, when tested in accordance with UL 1784 at both ambient and elevated temperatures.
       - 2) Gasketing: Provide gasketing or edge sealing as necessary to achieve leakage limit.
       - 3) Label: Include the "S" label on fire-rating label of door.
  3. Door Core Material: Manufacturers standard core material/construction in compliance with requirements.
  4. Door Thickness: 1-3/4 inches, nominal.

2.03 HOLLOW METAL FRAMES
- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Frame Finish: Factory primed and field finished.
- C. Exterior Door Frames: Face welded type.
  1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
  2. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
  3. Weatherstripping: Separate, see Section 08 7100.
- D. Interior Door Frames, Non-Fire Rated: Knock down type.
  1. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
- E. Door Frames, Fire-Rated: Knock-down type.
  1. Fire Rating: Same as door, labeled.
  2. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
- F. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- G. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.
- H. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

2.04 FINISHES
- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15 mil, 0.015 inch dry film thickness (DFT) per coat; provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
  1. Fire-Rated Frames: Comply with fire rating requirements indicated.

2.05 ACCESSORIES
- A. Louvers: Roll formed steel with overlapping frame; finish same as door components; factory-installed.
  1. In Fire-Rated Doors: UL (DIR) or ITS (DIR) listed fusible link louver, same rating as door.
  2. Style: Standard straight slat blade.
  3. Louver Free Area: 50 percent.
  4. Fasteners: Concealed fasteners.
- B. Glazing: As specified in Section 08 8000.
- C. Removable Stops: Formed sheet steel, mitered corners; prepared for countersink style tamper proof screws.
- D. Astragals for Double Doors: Specified in Section 08 7100.
  1. Exterior Doors: 14GA Galvanized Steel, Flat.
- E. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.
- F. Silencers: Resilient rubber or vinyl, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- G. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

3.01 EXAMINATION
- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION
- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION
- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Install door hardware as specified in Section 08 7100.
- E. Coordinate installation of electrical connections to electrical hardware items.

3.04 TOLERANCES
- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.05 ADJUSTING
- A. Adjust for smooth and balanced door movement.
- B. Adjust closers for full closure and applicable accessibility operating forces.

SECTION 08 1416 – FLUSH WOOD DOORS

1.01 SECTION INCLUDES
- A. Flush wood doors; flush and flush glazed configuration; fire-rated and non-rated.

1.02 SUBMITTALS
- A. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- B. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
- C. Samples: Submit two samples of door veneer, 4 by 4 inches in size illustrating wood grain, stain color, and sheen.

1.03 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.

1.04 DELIVERY, STORAGE, AND HANDLING
- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.05 WARRANTY
- A. Manufacturer Warranty: Provide manufacturer's warranty on interior doors for the life of the installation. Complete forms in Owner's name and register with manufacturer.
  1. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.
- B. Interior Doors: Provide manufacturer's warranty for the following period:
  1. Interior Hollow Core Doors: One (1) year.
  2. Interior Solid Core Doors: Life of installation.

2.01 DOORS AND PANELS
- A. Doors: See drawings for locations and additional requirements.
  1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS), AWMAC/WI (NAAWS) or WDMA I.S. 1A.
  2. Wood Veneer Faced Doors: 5-ply or 7-ply unless otherwise indicated.
  3. Where plastic laminate (P'Lam) is indicated on door schedule, use either high pressure decorative laminate (HPDL) faced doors in compliance with AWI/AWMAC/WI (AWS), AWMAC/WI (NAAWS) or WDMA I.S. 1A, or low pressure decorative laminate (LPDL) faced doors in compliance with WDMA I.S. 1A.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
  1. Provide solid core doors at all locations, except as indicated on the door schedule.
  2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C – Positive Pressure; Underwriters Laboratories Inc (UL) or Intertek/Warnock Hersey (WHI) labeled without any visible seals when door is open.

2.02 DOOR AND PANEL CORES
- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.
- B. Core for Low Pressure Decorative Laminate (LPDL), Non-Rated and 20 Minute Rated Doors: ANSI A208.1 Grade M-2 particleboard, minimum, with no seams on faces; edges reinforced as required to pass performance grade specified.
- C. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

2.03 DOOR FACINGS
- A. Veneer Facing for Transparent Finish: Red oak, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.
  1. Vertical Edges: Any option allowed by quality standard for grade.
  2. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.
- B. Veneer Facing for Opaque Finish: Medium density overlay (MDO), in compliance with indicated quality standard.
- C. High Pressure Decorative Laminate (HPDL) Facing for Non-Fire-Rated Doors: NEMA LD 3, HGS; color(s) as indicated; refer to door schedule.
- D. Low Pressure Decorative Laminate (LPDL) Facing: Provide matching PVC edges applied with polyurethane hot melt adhesive.
  1. Color: As indicated on drawings.

2.04 DOOR CONSTRUCTION
- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
  1. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
     - a. Provide solid blocking for other throughbolted hardware.
- C. Where supplementary protective edge trim is required, install trim after veneer facing has been applied full-width.
- D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
  1. Exception: Doors to be field finished.
- F. Provide edge clearances in accordance with the quality standard specified.

2.05 FINISHES – WOOD VENEER DOORS
- A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 – Finishing for grade specified and as follows:
  1. Transparent:
     - a. System – 12 Polyurethane Water-based.
     - b. Stain: As indicated on drawings.
     - c. Sheen: As indicated in drawings.
  2. Opaque:
     - a. System – 4, Latex Acrylic, Water-based.
     - b. Color: As indicated on drawings.
     - c. Sheen: As indicated on drawings.
- B. Factory finish doors in accordance with approved sample.
- C. Seal door top edge with color sealer to match door facing.

2.06 ACCESSORIES
- A. Wood Louvers:
  1. Material and Finish: Species to match door facing.
  2. Louver Blade: Flush louver.
  3. Louver Free Area: As indicated on Mechanical Documents.
- B. Metal Louvers:
  1. Material and Finish: Roll formed steel; pre-painted finish to color as selected.
  2. Louver Blade: Inverted V blade, sight proof.
  3. Louver Free Area: As indicated on Mechanical Documents.
- C. Glazing: See Section 08 8000.
- D. Glazing Stops: Wood, of same species as door facing, mitered corners; prepared for countersink style tamper proof screws.
- E. Astragals and Edges for Double Doors: Pairs of doors astragals, and door edge sealing and protection devices.
  1. UL listed products in compliance with requirements of authorities having jurisdiction.
  2. Provide surface mounted astragal to cover or fill space for full door height between pair of doors or door and adjacent jamb.

3.01 EXAMINATION
- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION
- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
  1. Install fire-rated doors in accordance with NFPA 80 requirements.
- B. Factory-Finished and Fire Rated Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Field-Finished Doors: Trimming to fit is acceptable.
  1. Adjust width of non-rated doors by cutting equally on both jamb edges.
  2. Trim maximum of 3/4 inch off bottom edges.
  3. Trim fire-rated doors in strict compliance with fire rating limitations.
- D. Use machine tools to cut or drill for hardware.
- E. Coordinate installation of doors with installation of frames and hardware.
- F. Coordinate installation of glazing.
- G. Install door louvers plumb and level.

3.03 TOLERANCES
- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING
- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure and applicable accessibility operating forces.

Professional Certification (Architect)
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17042 expiration date 8/14/2026.

SECTION 08 3323 – OVERHEAD COILING DOORS

1.01 SECTION INCLUDES
- A. Exterior coiling doors.
- B. Interior non-fire-rated coiling doors.
- C. Fire-rated coiling doors.

1.02 SUBMITTALS
- A. Product Data: Provide general construction and component connections and details.
- B. Shop Drawings: Indicate pertinent dimensioning, anchorage methods, hardware locations, and installation details.

1.03 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years experience and approved by manufacturer.

2.01 COILING DOORS
- A. Exterior Coiling Doors: Steel slat curtain.
  1. Performance: Withstand positive and negative wind loads equal to 1.5 times design wind loads specified by local code without damage or permanent set, using 10 second duration of maximum load.
  2. Sandwich slat construction with insulated core of manufacturer's standard type; insulation value: R of 6 minimum.
  3. Nominal Slat Size: 2 inches wide by required length.
  4. Finish: Factory Primed.
     - a. Field Paint as indicated in the drawings.
  5. Guide, Angles: Galvanized steel.
  6. Hood Enclosure. Manufacturer's standard; primed steel.
  7. Manual hand chain lift operation.
  8. Mounting: As indicated on drawings.
  9. Locking Devices: Slide bolt on inside.
  10. Complete weatherstripping package including bottom bar weatherstrip, surface guide weatherstrip and internal hood baffle weatherstrip.
- B. Interior Non-Fire-Rated Coiling Doors: Steel slat curtain.
  1. Single Thickness Slats: Manufacturer's standard.
  2. Nominal Slat Size: 3 inches wide by required length.
  3. Finish: Primed.
     - a. Field Paint as indicated in the drawings.
  4. Guides, Angles: Galvanized steel.
  5. Hood Enclosure: Manufacturer's standard; primed steel.
  6. Manual hand chain lift operation.
  7. Mounting: As indicated on drawings.
  8. Locking Devices: Slide bolt on inside.
- C. Fire-Rated Coiling Doors: Steel slat curtain; comply with NFPA 80.
  1. Provide products listed and labeled by ITS (DIR) or UL (DIR) as suitable for purpose specified and indicated on drawings.
  2. Oversized Openings: Provide certificate of compliance from authorities having jurisdiction indicating approval of fire rated units and operating hardware assembly.
  3. Single Thickness Slats: Manufacturer's standard.
  4. Nominal Slat Size: 2 inches wide by required length.
  5. Finish: Primed.
     - a. Field Paint as indicated in the drawings.
  6. Guides, Angles: Galvanized steel.
  7. Hood Enclosure: Manufacturer's standard; primed steel.
  8. Coiling Door Release Mechanism: Fire alarm system activated with automatically governed closing speed.
  9. Manual hand chain lift operation.
  10. Mounting: As indicated.

2.02 MATERIALS AND COMPONENTS
- A. Metal Curtain Construction: Interlocking slats.
  1. Slat Ends: Alternate slats fitted with end locks to act as wearing surface in guides and to prevent lateral movement.
  2. Curtain Bottom for Slat Curtains: Fitted with angles to provide reinforcement and positive contact in closed position.
  3. Weatherstripping for Exterior Doors: Moisture and rot proof, resilient type, located at jamb edges, bottom of curtain, and where curtain enters hood enclosure of exterior doors.
  4. Steel Slats: Minimum thickness, 24 gage, 0.020 inch; ASTM A653/A653M galvanized steel sheet.
     - a. Galvanizing: Minimum G90 coating.
- B. Guide Construction: Continuous, of profile to retain door in place with snap-on trim, mounting brackets of same metal.
- C. Guides – Angle: ASTM A36/A36M metal angles, size as indicated.
  1. Hot-dip galvanized in compliance with ASTM A123/A123M.
- D. Hood Enclosure and Trim: Internally reinforced to maintain rigidity and shape.
  1. Prime painted.
- E. Lock Hardware:
  1. Latching Mechanism: Inside mounted, adjustable keeper, spring activated latch bar feature to keep in locked or retracted position.
  2. Latch Handle. Manufacturer's standard.
  3. Slide Bolt: Provide on single-jamb side, extending into slot in guides, with padlock on one side.
  4. Manual Chain Lift: Provide padlockable chain keeper on guide.
- F. Roller Shaft Counterbalance: Steel pipe and helical steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.

3.01 EXAMINATION
- A. Verify that adjacent construction is suitable for door installation.
- B. Verify that electrical services have been installed and are accessible.
- C. Verify that door opening is plumb, header is level, and dimensions are correct.
- D. Commencement of installation indicates acceptance of substrate and door opening conditions.

3.02 INSTALLATION
- A. Install units in accordance with manufacturer's instructions.
- B. Install fire-rated doors in accordance with NFPA 80.
- C. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- D. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- E. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- F. Complete wiring from fire alarm system.
- G. Install enclosure and perimeter trim.

3.03 TOLERANCES
- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation From Plumb: 1/16 inch.
- C. Maximum Variation From Level: 1/16 inch.
- D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch per 10 feet straight edge.

3.04 ADJUSTING
- A. Adjust operating assemblies for smooth and noiseless operation.

3.05 CLEANING
- A. Clean installed components.
- B. Remove labels and visible markings.

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Project No.:	24.0774
Drawn By:	JZH
Date	Issue
01-31-25	Permit Set

A907

SPECIFICATIONS

SECTION 08 4313 – ALUMINUM-FRAMED STOREFRONTS

1.01 ADMINISTRATIVE REQUIREMENTS
A. Coordinate with installation of other components that comprise the exterior enclosure.

1.02 SUBMITTALS
A. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.
B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.

1.03 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of experience.
B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of experience.

1.04 DELIVERY, STORAGE, AND HANDLING
A. Handle products at this section in accordance with AAMA CW-10.
B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.05 FIELD CONDITIONS
A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.06 WARRANTY
A. Provide two year manufacturer warranty against defects in material and workmanship.
B. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

2.01 ALUMINUM-FRAMED STOREFRONT
A. Aluminum-Framed Storefronts: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
1. Glazing Rabbet: For 1 inch insulating glazing.
2. Glazing Rabbet: For 1/4 inch monolithic glazing.
3. Glazing Position: Centered (front to back).
4. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep, unless otherwise noted on drawings.
5. Finish: Class 1 natural anodized.
a. Factory finish all surfaces that will be exposed in completed assemblies.
b. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
6. Finish: Class 1 color anodized.
a. Factory finish all surfaces that will be exposed in completed assemblies.
b. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
7. Finish: Superior performing organic coatings.
a. Factory finish all surfaces that will be exposed in completed assemblies.
b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
c. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
B. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
B. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
10. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
11. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
12. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
13. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
B. Performance Requirements:
1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
a. Design Wind Loads: Comply with requirements of ASCE 7.
b. Member Deflection: Limit member deflection to flexure limit at glass in any direction, with full recovery of glazing materials.
2. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 8 psf.
3. Air Leakage Laboratory Test: Maximum of 0.06 cu ft/min sq ft of wall area, when tested in accordance with ASTM E283 at 6.24 psf pressure differential across assembly.

2.02 COMPONENTS
A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
1. Framing members for interior applications need not be thermally broken.
2. Provide a compressible head receptor to allow vertical deflection at the head without deforming other framing components.
3. Glazing Stops: Flush.
4. Structurally Reinforced Members: Extruded aluminum with internal reinforcement of structural steel member.
B. Glazing: As specified in Section 08 8000.
C. Swing Doors: Glazed aluminum.
1. Thickness: 1-3/4 inches.
2. Top Rail: 4 inches wide.
3. Vertical Stiles: 4-1/2 inches wide.
4. Bottom Rail: 10 inches wide.
5. Glazing Stops: Square.
6. Finish: Same as storefront.

2.03 MATERIALS
A. Extruded Aluminum: ASTM B221 (ASTM B221M).
B. Sheet Aluminum: ASTM B209 (ASTM B209M).
C. Fasteners: Stainless steel.
D. Exposed Flashings: Aluminum sheet, 20 gauge, 0.032 inch minimum thickness; finish to match framing members.
E. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

2.04 FINISHES
A. Class 1 Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.
B. Class 1 Color Anodized Finish: AAMA 611 AA-M12C22A42 Integrally colored anodic coating not less than 0.7 mils thick.
C. Superior Performing Organic Coatings System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of aluminum extrusion and panels surfaces having minimum total dry film thickness (DFT) of 1.2 mils, 0.0012 inch.
D. Color: As indicated on drawings.
E. Touch-up Materials: As recommended by framing manufacturer for field application.

2.05 HARDWARE
A. Door Hardware: As indicated on drawings.

3.01 EXAMINATION
A. Verify dimensions, tolerances, and method of attachment with other work.
B. Verify that wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

3.02 INSTALLATION
A. Install wall system in accordance with manufacturer's instructions.
B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
C. Provide alignment attachments and shims to permanently fasten system to building structure.
D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
E. Provide thermal isolation where components penetrate or disrupt building insulation.
F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
G. Where fasteners penetrate sill flashings, make watertight by sealing and sealing fastener heads to sill flashing.
H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
I. Set thresholds in bed of sealant and secure.
J. Install hardware using templates provided.
K. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES
A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.
B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.04 ADJUSTING
A. Adjust operating hardware and sash for smooth operation.

SECTION 08 7100 – DOOR HARDWARE

1.01 ADMINISTRATIVE REQUIREMENTS
A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
C. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

1.02 SUBMITTALS
A. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.
B. Shop Drawings – Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
1. Comply with BHI (1165) using door numbers and hardware set numbers as indicated in construction documents.
2. List groups and suffixes in proper sequence.
3. Provide complete description for each door listed.
4. Provide manufacturer's and product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.
5. Include account of abbreviations and symbols used in schedule.

1.03 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of experience.
B. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least three years of experience and approved by manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING
A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.05 WARRANTY
A. Warranty against defects in material and workmanship for period indicated, from Date of Substantial Completion.
1. Closers: Ten years, minimum.
2. Exit Devices: Three years, minimum.
3. Locksets and Cylinders: Three years, minimum.
4. Other Hardware: Two years, minimum.

2.01 DESIGN AND PERFORMANCE CRITERIA
A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
B. Provide individual items of single type, of same model, and by same manufacturer.
C. Provide door hardware products that comply with the following requirements:
1. Applicable provisions of federal, state, and local codes.
2. Accessibility: ADA Standards and ICC A117.1.
3. Applicable provisions of NFPA 101.
4. Fire-Rated Doors: NFPA 80, listed and labeled by qualified testing agency for fire protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
5. Hardware on Fire-Rated Doors: Listed and classified by UL (DIR), ITS (DIR), or testing firm acceptable to authorities having jurisdiction as suitable for application indicated.
6. Hardware for Smoke and Draft Control Doors: Provide door hardware that complies with local codes, and requirements of assemblies tested in accordance with UL 1784.
7. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified.
D. Electrically Operated and/or Controlled Hardware: Provide necessary power supplies, power transfer hinges, relays, and interfaces as required for proper operation; provide wiring between hardware and control components and to building power connection in compliance with NFPA 70.
E. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. Refer to Door Hardware Schedule.
F. Fasteners:
1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
a. Aluminum fasteners are not permitted.
b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
2. Fire-Rated Applications: Comply with NFPA 80.
a. Provide wood or machine screws for hinges mortised to doors or frames. Strike plates to frames, and closers to doors and frames.
b. Provide steel through bolts for attachment of surface mounted closers, hinges, or exit devices to door panels unless proper door blocking is provided.

2.02 HINGES
A. Hinges: Complying with BHMA A156.1.
1. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
a. Provide hinge width required to clear surrounding trim.
2. Provide hinges on every swinging door.
3. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
4. Provide ball-bearing hinges at each door unless otherwise indicated.
5. Provide non-removable pins on exterior outswinging doors.
6. Provide following quantity of butt hinges for each door:
a. Doors From 60 inches High up to 90 inches High: Three hinges.
b. Doors 90 inches High up to 120 inches High: Four hinges.

2.03 EXIT DEVICES
A. Exit Devices: Comply with BHMA A156.3, Grade 1.
1. Lever design to match lockset trim.
2. Provide cylinder with cylinder dogging or locking trim.
3. Provide exit devices properly sized for door width and height.
4. Provide strike as recommended by manufacturer for application indicated.
5. Provide less bottom rod (LBR) at scheduled locations to eliminate use of floor mounted strikes.
6. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.
7. For electrical options, provide quick connect plug-in pre-wired connectors.

2.04 DELAYED-EGRESS ELECTROMAGNETIC LOCKS
A. Delayed-Egress Electromagnetic Locks: Comply with BHMA A156.24, Grade 1.
1. Delayed-Egress Timer: Upon depressing push bar provide 15 seconds delay before door egress permitted, in compliance with NFPA 101.
2. Holding Force: 600 lbs, minimum.
3. Voltage: 12 VDC, and provide power supplies by same manufacturer as locks.
4. Provide electromagnetic locks for fire-rated doors in compliance with UL 10C.
5. Mounting: Surface mounted to door and frame on secure side, with fasteners, brackets, and spacer bars as required for application.

2.05 LOCK CYLINDERS
A. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
1. Provide cylinders from same manufacturer as locking device.
2. Provide cams and/or tailpieces as required for locking devices.

2.06 CYLINDRICAL LOCKS
A. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 2, 4000 Series.
1. Bored Hole: 2-1/8 inch diameter.
2. Latchbolt Throw: 1/2 inch, minimum.
3. Backset: 2-3/4 inch unless otherwise indicated.
4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
a. Finish: To match lock or latch.
5. Provide a lock for each door, unless otherwise indicated that lock is not required.
6. Trim: Provide lever handle or pull trim on outside of each lock, unless otherwise indicated.

2.07 DOOR PULLS AND PUSH PLATES
A. Door Pulls and Push Plates: Comply with BHMA A156.6.
1. Pull Type: Straight, unless otherwise indicated.
2. Push Plate Type: Flat, with rounded corners, unless otherwise indicated.
a. Edges: Beveled, unless otherwise indicated.
3. Material: Stainless steel, unless otherwise indicated.
4. On solid doors, provide matching door pull and push plate on opposite faces.

2.08 CLOSERS
A. Closers: Comply with BHMA A156.4, Grade 1.
1. Type: Surface mounted to door unless otherwise indicated.
2. Provide door closer on each exterior door.
3. Provide door closer on each fire-rated and smoke-rated door.
a. Spring hinges are not an acceptable self-closing device, unless otherwise indicated.
4. Where an overlapping astragal is included on pairs of swinging doors, provide coordinator to ensure door leaves close in proper order.
5. At corridor entry doors, mount closer on room side of door.
6. At outswinging exterior doors, mount closer on interior side of door.

2.09 PROTECTION PLATES
A. Protection Plates: Comply with BHMA A156.6.
B. Metal Properties: Stainless steel.
1. Metal, Heavy Duty: Thickness 0.062 inch, minimum.
C. Edges: Beveled, on four sides unless otherwise indicated.
D. Fasteners: Countersunk screw fasteners.
E. Drip Guard: Provide at head of exterior doors unless covered by roof or canopy.

2.10 FLOOR STOPS
A. Floor Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
1. Provide floor stops when wall surface is not available; be cautious not to create a tripping hazard.
2. Material: Aluminum housing with rubber insert.

2.11 WALL STOPS
A. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
1. Provide wall stops to prevent damage to wall surface upon opening door.
2. Type: Bumper, concave, wall stop.
3. Material: Aluminum housing with rubber insert.

2.12 THRESHOLDS
A. Thresholds: Comply with BHMA A156.21.
1. Provide threshold at each exterior door, unless otherwise indicated.
2. Type: Flat surface.
3. Material: Aluminum.
4. Threshold Surface: Thermally broken.
5. Field cut threshold to profile of frame and width of door sill for sight fit.
6. Provide non-corroding fasteners at exterior locations.

2.13 WEATHERSTRIPPING AND GASKETING
A. Weatherstripping and Gasketing: Comply with BHMA A156.22.
1. Provide gasketing for smoke and draft control doors that complies with local codes, requirements of assemblies tested in accordance with UL 1784.
2. Provide weatherstripping on each exterior door at head, jambs, and meeting sites of door pairs, unless otherwise indicated.
3. Provide door bottom sweep on each exterior door, unless otherwise indicated.

2.14 VIEWER
A. Viewer: Provide at inside of door at eye level to see who is on outside of door.
1. Material: Brass.

2.15 FIRE DEPARTMENT LOCK BOX
A. Fire Department Lock Box:
1. Heavy-duty, surface mounted, solid stainless-steel box with hinged door and interior gasket seal; single drill resistant lock with dust covers and tamper alarm.
2. Capacity: Holds 2 keys.
3. Finish: Manufacturer's standard black.

2.16 FINISHES
A. Finishes: Identified in Door Hardware Schedule.

3.01 EXAMINATION
A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.
B. Verify that electric power is available to power operated devices and of correct characteristics.

3.02 INSTALLATION
A. Install hardware in accordance with manufacturer's instructions and applicable codes.
B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.
C. Install hardware for smoke and draft control doors in accordance with NFPA 105.
D. Use templates provided by hardware item manufacturer.
E. Do not install surface mounted items until application of finishes to substrate are fully completed.
F. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. Mounting heights in compliance with applicable accessibility standards.
G. Set exterior door thresholds with full width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.03 ADJUSTING
A. Adjust hardware for smooth operation.
B. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.04 CLEANING
A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
B. Clean adjacent surfaces soiled by hardware installation.
C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

SECTION 08 8000 – GLAZING

1.01 SUBMITTALS
A. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
B. Certificates: Certify that products of this section meet or exceed specified requirements.
C. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.02 QUALITY ASSURANCE
A. Perform Work in accordance with GANA (GM), GANA (SM), GANA (GRM), and IGMA TM-3000 for fabrication and installation.
B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of experience.
C. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years experience.

1.03 WARRANTY
A. See Section 01 7800 – Closeout Submittals, for additional warranty requirements.
B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.
C. Laminated Glass: Provide a five (5) year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.

2.01 PERFORMANCE REQUIREMENTS – EXTERIOR GLAZING ASSEMBLIES
A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
1. Design Pressure: Calculated in accordance with ASCE 7.
2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
4. Glass thicknesses listed are minimum.
B. Vapor Retarder and Air Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier.
1. In conjunction with vapor retarder and joint sealer materials described in other sections.
C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.02 GLASS MATERIALS
A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, type I – Transparent Flat, Class 1 – Clear, Quality – Q3.
2. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
3. Impact Resistant Safety Glass: Complies with ANSI Z97.1 and 16 CFR 1201 criteria: Class A/Category II.
B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Complies with ANSI Z97.1 – Class B or 16 CFR 1201 – Category I impact test requirements.

2.03 INSULATING GLASS UNITS
A. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
3. Spacer Color: Black.
4. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
b. Color: Black.
5. Purge interpane space with dry air, hermetically sealed.
B. Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
3. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
a. Tint: Clear.
b. Coating: Low-E, on #2 surface.
4. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
a. Tint: Clear.
5. Total Thickness: 1 inch.
6. Thermal Transmittance (U-Value), Summer – Center of Glass: 0.24, maximum.
7. Solar Heat Gain Coefficient (SHGC): 0.38 percent, maximum.
C. Insulating Glass Units: Spandrel glazing.
1. Applications: Exterior spandrel glazing unless otherwise indicated.
2. Space between lites filled with air.
3. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
a. Tint: Clear.
b. Coating: Same as on vision units, on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch thick.
a. Tint: Clear.
b. Opacifier: Ceramic frit, on #4 surface.
c. Opacifier Color: As indicated drawings.
5. Total Thickness: 1 inch.
D. Insulating Glass Units: Safety glazing.
1. Applications:
a. Glazed lites in exterior doors.
b. Glazed sidelights and panels next to doors.
c. Other locations required by applicable federal, state, and local codes and regulations.
d. Other locations indicated on drawings.
2. Space between lites filled with argon.
3. Glass Type: Same as other vision glazing except use fully tempered or laminated float glass for both outboard and inboard lites.
4. Total Thickness: 1 inch.
5. Thermal Transmittance (U-Value), Summer – Center of Glass: 0.24, maximum.
6. Solar Heat Gain Coefficient (SHGC): 0.38, maximum.

2.04 GLAZING UNITS
A. Monolithic Interior Vision Glazing:
1. Applications: Interior glazing unless otherwise indicated.
2. Glass Type: Annealed float glass.
3. Tint: Clear.
4. Thickness: 1/4 inch, nominal.
B. Monolithic Interior Safety Glazing:
1. Applications:
a. Glazed lites in doors.
b. Glazed sidelights to doors.
c. Other locations required by applicable federal, state, and local codes and regulations.
d. Other locations indicated on drawings.
2. Glass Type: Fully tempered or laminated safety glass as specified.
3. Tint: Clear.
4. Thickness: 1/4 inch, nominal, unless noted otherwise.

3.01 VERIFICATION OF CONDITIONS
A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

Professional Certification (Architect)
I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland, license number 17045 expiration date 9/14/2026.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.
C. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION
A. Clean contact surfaces with appropriate solvent and wipe dry immediately before glazing. Remove coatings that are not tightly bonded to substrates.
B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL
A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.
C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.
D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.
E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.
F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 FIELD QUALITY CONTROL
A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.
B. Monitor and report installation procedures and unacceptable conditions.

3.05 CLEANING
A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
B. Remove non-permanent labels immediately after glazing installation is complete.
C. Clean glass and adjacent surfaces after sealants are fully cured.
D. Clean glass on both exposed surfaces just prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.06 PROTECTION
A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

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Project No.: 24.0774
Drawn By: JZH
Date: 01-31-25
Issue: Permit Set

A908

SPECIFICATIONS

SECTION 09 0561
COMMON WORK RESULTS FOR FLOORING PREPARATION

1.01 SECTION INCLUDES
- A. This section applies to floors identified in Contract Documents that are to receive floor covering.
- B. Testing of concrete floor slabs for moisture and alkalinity (pH).
- C. Testing of existing concrete floor slabs for moisture and alkalinity (pH) has already been conducted; test report is attached.
- D. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
  1. Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.
- G. Patching compound.
- H. Remedial floor coatings.

1.02 SUBMITTALS
- A. Visual Observation Report: For existing floor coverings to be removed.
- B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
  1. Moisture and alkalinity (pH) limits and test methods.
  2. Manufacturer's required bond/compatibility test procedure.
- C. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
- D. Testing Agency's Report:
  1. Description of areas tested; include floor plans and photographs if helpful.
  2. Summary of conditions encountered.
  3. Moisture and alkalinity (pH) test reports.
  4. Copies of specified test methods.
  5. Recommendations for remediation of unsatisfactory surfaces.
  6. Product data for recommended remedial coating.
  7. Submit report to Architect.
  8. Submit report not more than two business days after conclusion of testing.
- E. Adhesive Bond and Compatibility Test Report.
- F. Floor Moisture Testing Technician Certificate: International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician– Grade I certificate.

1.03 QUALITY ASSURANCE
- A. Moisture and alkalinity (pH) testing shall be performed by an Independent testing agency employed and paid by Contractor.
- B. Contractor may perform adhesive and bond test with Contractor's own personnel or hire a testing agency.
- C. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
  1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.
- D. Contractor's Responsibility Relating to Independent Agency Testing:
  1. Provide access for and cooperate with testing agency.
  2. Confirm date of start of testing at least 10 days prior to actual start.
  3. Allow at least 4 business days on site for testing agency activities.
  4. Achieve and maintain specified ambient conditions.
- E. Floor Moisture Testing Technician Qualifications: International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician Certification– Grade I.
- F. Remedial Coating Installer Qualifications: Company specializing in performing work of the type specified in this section, trained by or employed by coating manufacturer, and able to provide at least 3 project references showing at least 3 years' experience installing moisture emission coatings.

2.01 MATERIALS
- A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
  1. Cementitious moisture–, mildew–, and alkali–resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
  2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
- B. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low–VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.
- C. Remedial Floor Coating: Single– or multi–layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
  1. Thickness: As required for application and in accordance with manufacturer's installation instructions.

3.01 CONCRETE SLAB PREPARATION
- A. Perform following operations in the order indicated:
  1. Existing concrete slabs (on–grade and elevated) with existing floor coverings:
     - a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
     - b. Removal of existing floor covering.
  2. Existing concrete slabs with coatings or penetrating sealers/hardeners/dustproofers:
     - a. Do not attempt to remove coating or penetrating material.
     - b. Do not abrade surface.
  3. Preliminary cleaning.
  4. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
  5. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
  6. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
  7. Specified remediation, if required.
  8. Patching, smoothing, and leveling, as required.
  9. Other preparation specified.
  10. Adhesive bond and compatibility test.
  11. Protection.
- B. Remediations:
  1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re–test after correction.
  2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
  3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

3.02 PRELIMINARY CLEANING
- A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film–forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
- B. Do not use solvents or other chemicals for cleaning.

3.03 MOISTURE VAPOR EMISSION TESTING
- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

3.04 INTERNAL RELATIVE HUMIDITY TESTING
- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F2170 Procedure A and as follows.
- D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.
- F. Report: Report the information required by the test method.

3.05 ALKALINITY TESTING
- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
  1. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
  2. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.
  3. Use of a digital pH meter with probe is acceptable; follow meter manufacturer's instructions.
- C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.06 PREPARATION
- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non–moving joints, and other irregularities with patching compound.
- D. Do not fill expansion joints, isolation joints, or other moving joints.

SECTION 09 2116 – GYPSUM BOARD ASSEMBLIES

1.01 SECTION INCLUDES
- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Resilient sound isolation clips.
- E. Acoustic insulation.
- F. Gypsum sheathing.
- G. Backing board.
- H. Gypsum wallboard.
- I. Joint treatment and accessories.

1.02 SUBMITTALS
- A. Product Data:
  1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.
  2. Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- B. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.

1.03 QUALITY ASSURANCE
- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of experience.

2.01 GYPSUM BOARD ASSEMBLIES
- A. Provide completed assemblies complying with ASTM C840 and GA–216.
- B. Shaft Walls at HVAC Shafts: Provide completed assemblies with the following characteristics:
  1. Air Pressure Within Shaft: Sustained loads of 5 lbf/sq ft with maximum mid–span deflection of L/240.
  2. Acoustic Attenuation: STC of 35–39 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- C. Shaft Walls at Elevator Shafts: Provide completed assemblies with the following characteristics:
  1. Air Pressure Within Shaft: Intermittent loads of 5 lbf/sq ft with maximum mid–span deflection of L/240.
  2. Acoustic Attenuation: STC of 35–39 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- D. Fire–Resistance–Rated Assemblies: Provide completed assemblies with the following characteristics:
  1. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).

2.02 METAL FRAMING MATERIALS
- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
- B. Non–Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
  1. Studs: C–shaped.
  2. Runners: U shaped, sized to match studs.
  3. Ceiling Channels: C–shaped.
  4. Resilient Furring Channels: 1/2 inch depth, for attachment to substrate through one leg only.
- C. Shaft Wall Studs and Accessories: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.
- D. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection and prevent rotation of studs while maintaining structural performance of partition.
  1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100.
  2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot–dipped galvanized coating.
- E. Preformed Top Track Firestop Seal:
  1. Provide components UL–listed for use in UL–listed fire–resistance–rated head of partition joint systems indicated on drawings.
- F. Non–structural Framing Accessories:
  1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
  2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
     - a. Materials: ASTM A36/A36M formed sheet steel support member with factory–welded ASTM A1003/A1003M steel plate base.
  3. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.
  4. Flexible Wood Backing: Fire–retardant–treated wood with sheet steel connectors.
  5. Sheet Metal Backing: 18 gauge, 0.042 inch thick, galvanized, 6" wide.
- G. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.

2.03 BOARD MATERIALS
- A. Gypsum Wallboard: Paper–faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  1. Application: Use for vertical surfaces, unless otherwise indicated.
  2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
     - a. Mold–resistant board is required whenever board is being installed before the building is enclosed and conditioned.
     - b. Mold resistant board is required in toilet room and janitor closet walls and where indicated in drawings.
  3. At Assemblies Indicated with Fire–Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
  4. Thickness:
     - a. Vertical Surfaces: 5/8 inch unless otherwise indicated or required by tested assembly.
- B. Backing Board For Wet Areas:
  1. Application: Surfaces behind tile in wet areas including tub and shower surrounds and shower ceilings.
  2. Glass Mat Faced Board: Coated glass mat water–resistant gypsum backing panel as defined in ASTM C1178/C1178M.
     - a. Fire–Resistance–Rated Type: Type X core, thickness 5/8 inch.
- C. Backing Board For Non–Wet Areas: Water–resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
  1. Application: Vertical surfaces behind thinset tile, except in wet areas.
  2. Type X Thickness: 5/8 inch.
  3. Edges: Tapered.
- D. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  1. Application: Ceilings, unless otherwise indicated.
  2. Thickness: 1/2 inch, unless otherwise indicated.
  3. Edges: Tapered.
- E. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
  1. Application: Exterior sheathing, unless otherwise indicated.
  2. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
  3. Regular Board Thickness: 5/8 inch unless otherwise indicated.
  4. Edges: Square.
- F. Exterior Soffit Board: Exterior gypsum soffit board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  1. Application: Ceilings and soffits in protected exterior areas, unless otherwise indicated.
  2. At Assemblies Indicated with Fire–Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X.
  3. Regular Type Thickness: 1/2 inch, unless otherwise indicated.
  4. Edges: Tapered.
- G. Shaftwall and Coreboard: Type X; 1 inch thick by 24 inches wide, beveled long edges, ends square cut.
  1. Paper–Faced Type: Gypsum shaftliner board or gypsum coreboard as defined ASTM C1396/C1396M; water–resistant faces.

2.04 GYPSUM BOARD ACCESSORIES
- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 inch or as indicated on drawings.
- B. Water–Resistive Barrier: See Section 07 2500.
- C. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, unless noted otherwise.
  1. Types: As detailed or required for finished appearance.
  2. Special Shapes: In addition to conventional corner bead and control joints, provide U–bead at exposed panel edges.
- D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
  1. Joint Compound: Drying type, vinyl–based, ready–mixed.
- E. Finishing Compound: Surface coat and primer, takes the place of skim coating.
- F. High Build Drywall Surfacer: Vinyl acrylic latex–based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
- G. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
- H. Exterior Soffit Vents: One piece, perforated, ASTM B221 6063 T5 alloy aluminum, with edge suitable for direct application to gypsum board and manufactured especially for soffit application. Provide continuous vent.

3.01 EXAMINATION
- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 SHAFT WALL INSTALLATION
- A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.
  1. Install studs at spacing required to meet performance requirements.
- B. Shaft Wall Liner: Cut panels to accurate dimensions and install sequentially between special friction studs.

3.03 FRAMING INSTALLATION
- A. Metal Framing: Install in accordance with ASTM C1007AISI S220 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
  1. Laterally brace entire suspension system.
  2. Install bracing as required at exterior locations to resist wind uplift.
- C. Studs: Space studs as indicated.
  1. Extend partition framing to height indicated on drawings.
  2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
  3. Partitions Penetrating Ceiling, not Terminating at Structure: Brace top track securely to structure at 48 inches on center, unless otherwise indicated.
  4. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- E. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
  1. Orientation: Vertical.
  2. Spacing: As indicated.
- F. Blocking: Use sheet metal backing secured to studs. Provide blocking for support of wall cabinets, toilet accessories, hardware, opening frames, and other wall mounted items requiring secure attachment.
  1. Use wood blocking secured to studs for plumbing fixtures, toilet partitions, grab bars, handrails and other items indicated on the drawings to be supported with wood blocking.

3.04 ACOUSTIC ACCESSORIES INSTALLATION
- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

3.05 BOARD INSTALLATION
- A. Comply with ASTM C840, GA–216, and manufacturer's instructions. Install to minimize butt and joints, especially in highly visible locations.
- B. Single–Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
  1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- C. Double–Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.
- D. Fire–Resistance–Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- F. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
  1. Paper–Faced Sheathing: Immediately after installation, protect from weather by application of water–resistive barrier.
- F. Exterior Soffits: Install exterior soffit board perpendicular to framing, with staggered end joints over framing members or other solid backing.
- G. Cementitious Backing Board: Install over steel framing members and wood framing members where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
- H. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of nonrated double–layer assemblies, which may be installed by means of adhesive lamination.
- I. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For nonrated assemblies, install as follows:
  1. Single–Layer Applications: Screw attachment.
  2. Double–Layer Application: Install base layer using screws or nails. Install face layer using screws.
- J. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA–226.
- K. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum soffit board with sealant.

3.06 INSTALLATION OF TRIM AND ACCESSORIES
- A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
  1. Space in accordance with ASTM C840 and as indicated.
  2. Not more than 30 feet apart on walls and ceilings over 50 feet long.
  3. At exterior soffits, not more than 30 feet apart in both directions.
  4. Where partition, wall or ceiling traverses a construction joint (expansion, seismic, or building control element) in the base building structure.
  5. Where floor supported partition adjoins ceiling supported structures.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.
- D. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations indicated on drawings. Provide vent area specified.

3.07 JOINT TREATMENT
- A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, embed and finish with setting type joint compound.
- B. Paper Faced Gypsum Board: Use paper joint tape, embed with setting type joint compound and finish with drying type joint compound.
- C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  1. Level 5: Walls and ceilings to receive semi–gloss or gloss paint finish and other areas specifically indicated.
  2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
  3. Level 3: Walls to receive textured wall finish.
  4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
  5. Level 1: Fire–resistance–rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  1. Feather coats of joint compound so that camber is maximum 1/32 inch.
- F. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark–free finish.
- F. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.08 TOLERANCES
- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

SECTION 09 6500 – RESILIENT FLOORING

1.01 SECTION INCLUDES
- A. Resilient tile flooring.
- B. Resilient base.
- C. Resilient stair accessories.
- D. Installation accessories.

1.02 SUBMITTALS
- A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- B. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- C. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of subfloor is acceptable.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  1. Extra Flooring Material: 12 square feet of each type and color.
  2. Extra Wall Base: 8 linear feet of each type and color.

1.03 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years experience.
- B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years experience and approved by flooring manufacturer.
- C. Testing Agency Qualifications: Independent firm specializing in performing concrete slab moisture testing and inspections of the type specified in this section.

1.04 DELIVERY, STORAGE, AND HANDLING
- A. Upon receipt, immediately remove any shrink–wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather–tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

1.05 FIELD CONDITIONS
- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

2.01 TILE FLOORING
- A. Vinyl Composition Tile: Homogeneous, with color extending throughout thickness.
  1. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
  2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648, NFPA 253, ASTM E 648, or NFPA 253.
  3. Size: 12 by 12 inch.
  4. Thickness: 0.125 inch.
  5. Pattern & Color: as indicated on the drawings.
  6. Color: As indicated on drawings.
- B. Vinyl Tile: Printed film type, with transparent or translucent wear layer.
  1. Minimum Requirements: Comply with ASTM F1700, Class III.
  2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648.
  3. Tile Size: As indicated on drawings.
  4. Wear Layer Thickness: 0.020 inch minimum.
  5. Total Thickness: 0.20 inch.
  6. Total Thickness: As indicated on drawings.
  7. Color: As indicated on drawings.
- C. Rubber Tile: Homogeneous, color and pattern throughout thickness.
  1. Minimum Requirements: Comply with ASTM F1344, of Class corresponding to type specified.
  2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648, NFPA 253, ASTM E 648, or NFPA 253.
  3. Size: As indicated on drawings nominal.
  4. Total Thickness: 0.125 inch.
  5. Total Thickness: As indicated on drawings.
  6. Texture: As indicated on drawings.
  7. Color: As indicated on drawings.
- D. Feature Strips: Of same material as tile, as indicated on drawings.

2.02 STAIR COVERING
- A. Stair Treads: Rubber; full width and depth of stair tread in one piece; tapered thickness.
  1. Minimum Requirements: Comply with ASTM F2169.
  2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648, NFPA 253, ASTM E 648, or NFPA 253.
  3. Nominal Thickness: 0.1875 inch.
  4. Nosing, Striping and Texture: As indicated on drawings.
  5. Color: As indicated on drawings.
- B. Stair Treads with Integral Risers: Rubber; full height of riser, full width and depth of tread in one piece; tapered thickness.
  1. Minimum Requirements: Comply with ASTM F2169.
  2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
  3. Nominal Thickness: 0.1875 inch.
  4. Nosing, Striping and Tread Texture: As indicated on drawings.
  5. Color: As indicated on drawings.
- C. Stair Stringers: Full height in one piece and in maximum available lengths, matching treads in material and color.
  1. Nominal Thickness: 0.080 inch.
- D. Stair Nosings: 1–1/2 inch horizontal return minimum, 1–1/8 inch vertical return minimum, full width of stair tread in one piece.
  1. Material: Rubber.
  2. Nominal Thickness: 0.125 inch.
  3. Color: As indicated on drawings.

2.03 RESILIENT BASE
- A. Resilient Base: ASTM F1861, as indicated on drawings; top set.
  1. Height, Color, and Finish : As indicated on the drawings.
  2. Thickness: 0.125 inch.
  3. Length: Roll.
  4. Accessories: Premolded external corners and internal corners.

2.04 ACCESSORIES
- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
  1. Provide only products having lower VOC content than allowed by local regulation.
- C. Moldings, Transition and Edge Strips: As indicated on the drawings.
- D. Sealer and Polish: Types recommended by flooring manufacturer.

3.01 EXAMINATION
- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust–free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
  1. Test in accordance with Section 09 0561.
  2. Obtain Instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
  3. Follow moisture and alkalinity remediation procedures in Section 09 0561.
- D. Verify that required floor–mounted utilities are in correct location.

3.02 PREPARATION
- A. Prepare floor substrates for installation of flooring in accordance with Section 09 0561.
- B. Prohibit traffic until filler is fully cured.
- C. Clean substrate.
- D. Apply primer as required to prevent "bleed–through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION – GENERAL
- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Adhesive–Applied Installation:
  1. Spread only enough adhesive to permit installation of materials before initial set.
  2. Fit joints and butt seams tightly.
  3. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
  1. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
  2. Resilient Strips: Attach to substrate using adhesive.
- F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- G. Install flooring in recessed floor access covers, maintaining floor pattern.
- H. Install feature strips where indicated.

3.04 INSTALLATION – TILE FLOORING
- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Pattern: As indicated on drawings.
- C. Install feature strips and floor markings where indicated. Fit joints tightly.

3.05 INSTALLATION – RESILIENT BASE
- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.06 INSTALLATION – STAIR COVERINGS
- A. Install stair coverings in one piece for full width and depth of tread.
- B. Install stringers configured tightly to stair profile
- C. Adhere over entire surface. Fit accurately and securely.

3.07 CLEANING
- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.08 PROTECTION
- A. Prohibit traffic on resilient flooring for 48 hours after installation.

SCOT LOISELLE | ARCHITECT

SHERWIN WILLIAMS #5178
530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JZH
Date	Issue
01-31-25	Permit Set

A909

SPECIFICATIONS

SECTION 09 9113 – EXTERIOR PAINTING

1.01 SECTION INCLUDES
A. Surface preparation.
B. Field application of paints.
C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
1. Exposed surfaces of steel lintels and hedge angles.
D. Do Not Paint or Finish the Following Items:
1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
2. Items indicated to receive other finishes.
3. Items indicated to remain unfinished.
4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
5. Non-metallic roofing and flashing.
6. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, zinc, and lead.
7. Marble, granite, slate, and other natural stones.
8. Floors, unless specifically indicated.
9. Ceramic and other types of tiles.
10. Glass.
11. Concealed pipes, ducts, and conduits.

1.02 SUBMITTALS
A. Product Data: Provide complete list of products to be used, with the following information for each:
1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
2. MPI product number (e.g. MPI #47).
3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
1. Where sheen is specified, submit samples in only that sheen.
2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens definitely not required.
C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 6000 – Product Requirements, for additional provisions.
2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
3. Label each container with color in addition to the manufacturer's label.

1.03 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years experience.
B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience.

1.04 DELIVERY, STORAGE, AND HANDLING
A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.05 FIELD CONDITIONS
A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

2.01 MANUFACTURERS
A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
1. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.
2. Substitution of a different paint system using MPI-approved products by the same manufacturer will be considered.

2.02 PAINTS AND FINISHES – GENERAL
A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
4. Supply each paint material in quantity required to complete entire project's work from a single production run.
5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
B. Volatile Organic Compound (VOC) Content:
1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
a. 40 CFR 59, Subpart D—National Volatile Organic Compound Emission Standards for Architectural Coatings.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to jurisdiction having jurisdiction.
C. Flammability: Comply with applicable code for surface burning characteristics.
D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
E. Colors: As indicated on drawings.

2.03 PAINT SYSTEMS – EXTERIOR
A. Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including concrete, concrete masonry units, brick, fiber cement siding, primed wood, and primed metal.
1. Two top coats and one coat primer.
2. Top Coat(s): Exterior Latex; MPI #10, 11, 15, 119, or 214.
3. Primer: As recommended by top coat manufacturer for specific substrate.
B. Wood, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
2. Semi-gloss: Two coats of latex enamel; MPI #11.
C. Exterior Gypsum Board and Exterior Plaster, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
2. Flat: Two coats of latex; MPI #10.
D. Ferrous Metals, Unprimed, Latex, 3 Coat:
1. One coat of latex primer.
2. Semi-gloss: Two coats of latex enamel; MPI #163.
E. Ferrous Metals, Primed, Latex, 2 Coat:
1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
2. Semi-gloss: Two coats of latex enamel; MPI #163.
F. Galvanized Metals, Latex, 3 Coat:
1. One coat galvanize primer.
2. Semi-gloss: Two coats of latex enamel; MPI #163.

2.04 PRIMERS
A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Interior/Exterior Latex Block Filler; MPI #4.
2. Water Based Primer for Galvanized Metal; MPI #134.
3. Rust-Inhibitive Water Based Primer; MPI #107.
4. Latex Primer for Exterior Wood; MPI #6.

2.05 ACCESSORY MATERIALS
A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
B. Patching Material: Latex filler.
C. Fastener Head Cover Material: Latex filler.

3.01 EXAMINATION
A. Do not begin application of paints and finishes until substrates have been properly prepared.
B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
D. Test shop-applied primer for compatibility with subsequent cover materials.
E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Exterior Plaster and Stucco: 12 percent.
2. Fiber Cement Siding: 12 percent.
3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
4. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.
5. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION
A. Clean surfaces thoroughly and correct defects prior to application.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Remove or repair existing paints or finishes that exhibit surface defects.
D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
E. Seal surfaces that might cause bleed through or staining of topcoat.
F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
G. Concrete:
1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
2. Clean concrete according to ASTM D4258. Allow to dry.
3. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.
H. Masonry:
1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
2. Prepare surface as recommended by top coat manufacturer.
I. Fiber Cement Siding: Remove dirt, dust and other foreign matter with a stiff fiber brush. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
J. Exterior Gypsum Board: Fill minor defects with exterior filler compound. Spot prime defects after repair.
K. Exterior Plaster: Fill hairline cracks, small holes, and imperfections with exterior patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
L. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
M. Concrete Floors and Traffic Surfaces: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
N. Galvanized Surfaces:
1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
2. Prepare surface according to SSPC-SP 2.
O. Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.
P. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied. Back prime concealed surfaces before installation.
Q. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION
A. Remove prefinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
B. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.
C. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
D. Where applied sealant is to be painted, do not apply finish coats until sealant is applied.
E. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
F. Apply each coat to uniform appearance.
G. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.
H. Sand wood and metal surfaces lightly between coats to achieve required finish.
I. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
J. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING
A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION
A. Protect finishes until completion of project.
B. Touch-up damaged finishes after Substantial Completion.

SECTION 09 9123 – INTERIOR PAINTING

1.01 SECTION INCLUDES
A. Surface preparation.
B. Field application of paints.
C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
1. Prime surfaces to receive wall coverings.
2. Mechanical and Electrical:
a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
b. In finished areas, paint shop-primed items.
D. Do Not Paint or Finish the Following Items:
1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
2. Items indicated to receive other finishes.
3. Items indicated to remain unfinished.
4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
5. Floors, unless specifically indicated.
6. Glass.
7. Concealed pipes, ducts, and conduits.

1.02 SUBMITTALS
A. Product Data: Provide complete list of products to be used, with the following information for each:
1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
2. MPI product number (e.g. MPI #47).
3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
1. Where sheen is specified, submit samples in only that sheen.
2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens definitely not required.
C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 6000 – Product Requirements, for additional provisions.
2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
3. Label each container with color in addition to the manufacturer's label.

1.03 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years experience.
B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience.

1.04 DELIVERY, STORAGE, AND HANDLING
A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.05 FIELD CONDITIONS
A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

2.01 MANUFACTURERS
A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
1. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.
2. Substitution of a different paint system using MPI-approved products by the same manufacturer will be considered.

2.02 PAINTS AND FINISHES – GENERAL
A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
4. Supply each paint material in quantity required to complete entire project's work from a single production run.
5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
B. Volatile Organic Compound (VOC) Content:
1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
a. 40 CFR 59, Subpart D—National Volatile Organic Compound Emission Standards for Architectural Coatings.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to jurisdiction having jurisdiction.
C. Flammability: Comply with applicable code for surface burning characteristics.
D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
E. Colors: As indicated on drawings.
1. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.

2.03 PAINT SYSTEMS – INTERIOR
A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, and aluminum.
1. Two top coats and one coat primer.
2. Top Coat(s): Interior Latex; MPI #43, 44, 52, 53, 54, or 114.
3. Top Coat Sheen, unless noted otherwise on drawings:
a. Flat: MPI gloss level 1; use this sheen for ceilings and other overhead surfaces.
b. Eggshell: MPI gloss level 3; use this sheen at all locations.
4. Primer: As recommended by top coat manufacturer for specific substrate.
B. Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
1. Medium duty applications include doors, door frames, railings, handrails, guardrails, and bollards.
2. Two top coats and one coat primer.
3. Top Coat(s): High Performance Architectural Interior Latex; MPI #139, 140, or 141.
4. Top Coat Sheen:
a. Semi-Gloss: MPI gloss level 5; use this sheen unless noted otherwise.
5. Primer: As recommended by top coat manufacturer for specific substrate.
C. Dry Fall: Paints and coatings applied to exposed interior overhead services or as indicated on drawings, including shop primed steel deck, structural steel, metal fabrications, galvanized ducts, galvanized conduit, and galvanized piping.
1. Shop primer by others.
2. One top coat.
3. Top Coat: Latex Dry Fall; MPI #118, 155, or 226.
4. Top Coat Sheen:
a. Flat: MPI gloss level 1; use this sheen unless noted otherwise.
D. Transparent Finish on Concrete Floors, unless noted otherwise.
1. 2 coats sealer.
2. Sealer: Water Based Sealer for Concrete Floors; MPI #99.
3. Sealer Sheen:
a. Eggshell: MPI gloss level 3; use this sheen unless noted otherwise.
E. Wood, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
2. Semi-gloss: Two coats of latex enamel; MPI #54, unless noted otherwise.
F. Concrete/Masonry, Opaque, Latex, 3 Coat:
1. One coat of block filler.
2. Flat: Two coats of latex enamel; MPI #53, unless noted otherwise.
G. Ferrous Metals, Unprimed, Latex, 3 Coat:
1. One coat of latex primer.
2. Semi-gloss: Two coats of latex enamel; MPI #153, unless noted otherwise.
H. Ferrous Metals, Primed, Latex, 2 Coat:
1. Touch-up with latex primer.
2. Semi-gloss: Two coats of latex enamel; MPI #153, unless noted otherwise.
I. Galvanized Metals, Latex, 3 Coat:
1. One coat galvanize primer.
2. Semi-gloss: Two coats of latex enamel; MPI #153, unless noted otherwise.
J. Fabrics/Insulation Jackets, Alkyd, 3 Coat:
1. One coat of alkyd primer sealer.
2. Flat: Two coats of alkyd enamel; MPI #49, unless noted otherwise.

2.04 PRIMERS
A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Interior/Exterior Latex Block Filler; MPI #4.
2. Interior Latex Primer Sealer; MPI #50.
3. Interior Water Based Primer for Galvanized Metal; MPI #134.
4. Latex Primer for Interior Wood; MPI #39.

2.05 ACCESSORY MATERIALS
A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
B. Patching Material: Latex filler.
C. Fastener Head Cover Material: Latex filler.

3.01 EXAMINATION
A. Do not begin application of paints and finishes until substrates have been properly prepared.
B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
D. Test shop-applied primer for compatibility with subsequent cover materials.
E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Gypsum Wallboard: 12 percent.
2. Plaster and Stucco: 12 percent.
3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
5. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION
A. Clean surfaces thoroughly and correct defects prior to application.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Remove or repair existing paints or finishes that exhibit surface defects.
D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
E. Seal surfaces that might cause bleed through or staining of topcoat.
F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
G. Concrete:
1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
2. Clean concrete according to ASTM D4258. Allow to dry.
3. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.
H. Masonry:
1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
2. Prepare surface as recommended by top coat manufacturer.
I. Concrete Floors and Traffic Surfaces: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
J. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
K. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
L. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
M. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
N. Copper: Remove contamination by steam, high pressure water, or solvent washing.
O. Galvanized Surfaces:
1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
2. Prepare surface according to SSPC-SP 2.
P. Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.
Q. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to painting. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
R. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
S. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION
A. Remove prefinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
C. Where applied sealant is to be painted, do not apply finish coats until sealant is applied.
D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
E. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats as necessary for complete hide.
G. Sand wood and metal surfaces lightly between coats to achieve required finish.
H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 PROTECTION
A. Protect finishes until completion of project.
B. Touch-up damaged finishes after Substantial Completion.

SECTION 10 2800 – TOILET, BATH & LAUNDRY ACCESSORIES

1.01 SECTION INCLUDES
A. Commercial toilet accessories.
B. Under-lavatory pipe supply covers.
C. Diaper changing stations.
D. Utility room accessories.

1.02 ADMINISTRATIVE REQUIREMENTS
A. Coordinate the work with the placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

1.03 SUBMITTALS
A. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

2.01 MATERIALS
A. Accessories – General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adaptors, and anchor components for installation.
1. Grind welded joints smooth.
2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.
B. Keys: Provide two keys for each accessory to Owner; master key lockable accessories.
C. Stainless Steel Sheet: ASTM A666, Type 304.
D. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.
E. Mirror Glass: Annealed float glass, ASTM C1036 Type 1, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.
F. Adhesive: Contact type, waterproof.
G. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.
H. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.02 FINISHES
A. Stainless Steel: Satin finish, unless otherwise noted.
B. Galvanizing for Items Other than Sheet: Comply with ASTM A123/A123M; galvanize ferrous metal and fastening devices.

2.03 COMMERCIAL TOILET ACCESSORIES
A. As scheduled on the drawings.

2.04 UNDER-LAVATORY PIPE AND SUPPLY COVERS
A. Under-Lavatory Pipe and Supply Covers:
1. Insulate exposed drainage piping, including hot, cold, and tempered water supplies under lavatories or sinks to comply with ADA Standards.
2. Exterior Surfaces: Smooth non-absorbent, non-abrasive surfaces.
3. Construction: 1/8 inch flexible PVC.
a. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
4. Color: White.

2.05 DIAPER CHANGING STATIONS
A. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
1. Material: Polyethylene.
2. Mounting: Surface.
3. Color: As indicated on drawings.

2.06 UTILITY ROOM ACCESSORIES
A. Combination Utility Shelf/Mop and Broom Holder: 0.05 inch thick stainless steel, Type 304, with 1/2 inch returned edges, 0.06 inch steel wall brackets.
1. Drying rod: Stainless steel, 1/4 inch diameter.
2. Hooks: Two, 0.08 inch stainless steel rag hooks at shelf front.
3. Mop/broom holders: Three spring-loaded rubber cam holders at shelf front.
4. Length: Manufacturer's standard length for number of holders/hooks.

3.01 EXAMINATION
A. Verify existing conditions before starting work.
B. Verify exact location of accessories for installation.
C. For electrically-operated accessories, verify that electrical power connections are ready and in the correct locations.
D. See Section 06 1000 – Rough Carpentry for installation of blocking, reinforcing plates, and concealed anchors in walls.

3.02 PREPARATION
A. Deliver inserts and rough-in frames to site for timely installation.
B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION
A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
B. Install plumb and level, securely and rigidly anchored to substrate.
C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

3.04 PROTECTION
A. Protect installed accessories from damage due to subsequent construction operations.

SECTION 10 4400 – FIRE PROTECTION SPECIALTIES

1.01 SECTION INCLUDES
A. Fire extinguishers.
B. Fire extinguisher cabinets.
C. Accessories.

1.02 SUBMITTALS
A. Product Data: Provide extinguisher operational features and color and finish.
B. Shop Drawings: Indicate cabinet physical dimensions and accessories required for complete installation.

1.03 FIELD CONDITIONS
A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

2.01 FIRE EXTINGUISHERS
A. Fire Extinguishers – General: Comply with product requirements of NFPA 10 and applicable amendments whichever is more stringent.
1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.
B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
1. Class: ABC type.
2. Size: 5 pound minimum.
3. Finish: Baked polyester powder coat red color.
4. Temperature range: Minus 40 degrees F to 120 degrees F.
C. Dry Chemical Type Fire Extinguishers: Stainless steel tank, with pressure gauge.
1. Class: K type.
2. Size: 1.6 gallons.
3. Finish: Polished stainless steel.
4. Temperature range: Minus 20 degrees F to 120 degrees F.

2.02 FIRE EXTINGUISHER CABINETS
A. Cabinet Construction: Non-fire rated.
1. Formed primed steel sheet; 0.036 inch thick base metal.
B. Cabinet Configuration: Semi-recessed type.
1. Size to accommodate accessories.
2. Trim: Returned to wall surface, with 2-1/2 inch projection, 1-3/4 inch wide face.
C. Door: 0.036 inch metal thickness, reinforced for flatness and rigidity with nylon catch. Hinge doors for 180 degree opening with two butt hinges.
D. Door Glazing: Acrylic plastic, clear, 1/8 inch thick, flat shape and set in resilient channel glazing gasket.
E. Cabinet Mounting Hardware: Appropriate to cabinet, with pre-drilled holes for placement of anchors.
F. Finish of Cabinet Exterior Trim and Door: Baked enamel, color as selected.
G. Finish of Cabinet Interior: White colored enamel.

2.03 ACCESSORIES
A. Extinguisher Brackets: Formed steel, chrome plated.
B. Graphic Identification: Fire Extinguisher.
C. Lettering: "FIRE EXTINGUISHER" decal, or vinyl self-adhering, prespaced black lettering in accordance with authorities having jurisdiction (AHJ).

3.01 EXAMINATION
A. Verify existing conditions before starting work.
B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Install one (1) extinguisher per 3,000 s.f. floor area and not more than 75' travel distance from any point to an extinguisher.
C. Install cabinets plumb and level in wall openings. 24 inches from finished floor to inside bottom of cabinet, unless noted otherwise.
D. Secure rigidly in place.
E. Place extinguishers and accessories in cabinets and on wall brackets, unless noted otherwise.
F. Install Dry Chemical, K type extinguishers in kitchens and in other areas involving cooking fluids, such as oils and fats and as directed by authority having jurisdiction.
G. Install Multipurpose Dry Chemical type extinguisher in other areas and as directed by authority having jurisdiction.
H. Final size, location and quantity shall be confirmed by the authority having jurisdiction.

MUST Remove all plan references to paints or coatings reference to 'or equal' language and Sherwin-Williams Exclusive. SW will be supplying the liquid material.

SCOT LOBELLE ARCHITECT
811 Cromwell Park Drive, Suite 113
Glen Burnie, Maryland 21061
410.850.1306 or jrlobelle.com

SHERWIN WILLIAMS #5178
530 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	JCH
Date	Issue
01-31-25	Permit Set

A910

SPECIFICATIONS

STRUCTURAL GENERAL NOTES

Governing Code: International Building Code, 2021 Edition

Building Risk Category (IBC Table 1604.5) Category II

SNOW LOADS			WIND LOADS				SEISMIC LOADS		LIVE LOADS	
Drift per ASCE 7			Vult		115mph		Ie =	1.0	Roof	20 psf
Is	=	1.0	Vasd		90mph		Ss =	0.132g	Public Areas	100 psf
Ct	=	1.0	Exposure		B		S1 =	0.042g		
Ce	=	1.0	GCpi		±0.18		Site Class D (default)			
Pg	=	25 psf	Ult. Component Pressure(psf)				Sds =	0.14g		
Pf	=	20 psf	Roof 1	+16.0	-23.8		Sd1 =	0.068g		
Rain on Snow	5 psf		Roof 2	+16.0	-39.9		Design Category B			
			Roof 3	+16.0	-60.1		Basic Seismic-Force-Resisting System:			
GEOTECHNICAL			Wall 4	+23.8	-25.8		Ordinary Plain Masonry Shear Walls			
Soil Bearing 2000psf			Wall 5	+23.8	-31.9		Design Base Shear: 0.19W			
(per AA county)			Pressures shown are for				Cs = 0.096R = 1.5			
			10 sf effective wind area.				Analysis Procedure: N/A +W < 5%			

GENERAL:
1. The structure is designed to be self-supporting and stable after the building is completed and materials have attained their design strengths. It is the sole responsibility of the contractor to determine erection procedure and sequence to insure the safety of construction personnel, property, and component parts during all phases of construction. This responsibility includes the use of whatever shoring, temporary bracing, etc. that may be necessary.
   a. Contractor shall engage a Maryland licensed engineer to provide shoring design calculations and installation drawings according to ASCE 37-14. Submit calculations and installation drawings to structural engineer of record for review prior to shoring installation.
2. The contractor shall conduct a pre-construction meeting with the owner's special inspector or special inspection coordinator to establish the scheduling of special inspections. Non-conforming construction due to failure to obtain special inspections shall be corrected and inspected at no cost to the Owner.
3. The contractor shall perform all construction for the project in a manner and sequence that are based on accepted industry standards that recognize the interaction of the components that comprise the structure, without causing distress, unanticipated movements or irregular load paths as a result of the construction means and methods employed.
4. Details labeled "typical details" on drawings apply to situations occurring on the project that are the same or similar to those specifically detailed. Such details apply whether or not details are referenced at each location. Notify engineer of conflicts regarding applicability of "typical details".
5. Work these drawings with architectural, mechanical, plumbing and electrical drawings.
6. Do not scale drawings.
7. Contractors shall familiarize themselves with all proprietary products shown on the drawings. Such products shall be installed per the manufacturer's printed instructions unless shown otherwise in the details.
8. Prior to start of construction, contractor shall verify all existing construction, elevations and conditions. Any conditions discovered to be in variance with design documents shall be brought to the attention of the Architect immediately.
9. Contractor is responsible for protecting all existing construction to remain. Any damage caused by the Contractor shall be repaired or replaced to the satisfaction of the Owner and Architect at no cost to the Owner.
10. Existing Structural Members: Size and configuration of existing structural members shown on these drawings are based on field observation only. All dimensions and sizes are to be verified in field.
11. Construction loads shall not exceed the design live load referenced in these documents. Any loads exceeding the design live load will require additional shoring and is solely the responsibility of the contractor.
12. All structural building code requirements, standards, and specifications referenced are for the year referenced in the governing building code noted.
13. Any discrepancies occurring between the structural and architectural drawings shall be brought to the AOR and EORs attention immediately for coordination.
14. Shop drawings and other submittals:
   b. Submittals shall be checked and coordinated with other materials and trades by the general contractor and shall bear the contractor's review stamp with the checker's initials and date prior to being submitted to the architect for approval.
   c. General contractor's schedule shall allow for a minimum of 10 work days for review and return of all submittals unless noted otherwise.
   d. Where dimensions or elevations of existing construction could affect the new construction, it is the contractor's responsibility to make field measurements for incorporation in the shop drawings.

STRUCTURAL STEEL:
1. Detailing, fabrication and erection shall be in accordance with the latest specifications of the American Institute of Steel Construction.
2. All welding to be performed in accordance with latest AWS specifications. Electrodes to be E70XX coated type, low hydrogen classification.
3. All weld sizes not specifically shown within the details shall be the minimum required size based on thickness of the thinner part as per AISC specification, Tables J2.3 and J2.4.
4. All structural and miscellaneous steel including but not limited to angles, channels, bearing plates, base plates, cap plates, etc., per ASTM A36.
5. All wide flange structural steel sections shall be per ASTM A992, Grade 50.
6. Lintel beams built into exterior masonry walls shall be hot dip galvanized per ASTM A123.
7. Submittals. Shop and Erection drawings shall be submitted for approval prior to fabrication according to Section 4 of the AISC Code of Standard Practice.

CAST-IN-PLACE CONCRETE:
1. All concrete work is to be in accordance with ACI 301, Specifications for Concrete Construction.
2. Admixtures:
   a. Use an approved air entraining agent for all concrete exposed to weather or vehicular traffic. Use 6% entrained air, plus 1% minus 1.5%.
   b. The use of calcium chloride or admixtures containing chlorides is prohibited.
   c. Fly ash: A maximum of 15% by weight of the total cementitious material may consist of Type F flyash conforming to ASTM C618. This amount shall be used in calculating the water-cement ratio. Contractor's schedule shall account for longer curing times required.
3. Reinforcing Steel:
   a. Deformed bars per ASTM A615, Grade 60.
   b. Lap reinforcement 40 diameters unless otherwise noted.

Bar	Minimum Lap (inches)
#4	20
#5	26

   c. Provide all accessories necessary to support reinforcement per CRSI recommendations.
   d. Minimum clearance for placement for reinforcing steel.
      1. Cast against and permanently exposed to earth -------------- 3"
      2. Exposed to earth or weather:
         #5 and smaller ------------------------------ 1 1/2"
      3. Not exposed to weather or in contact with the ground:
         Slabs on grade ------------------------------ 1 1/2"
4. Concrete:

LOCATION	MAX STRENGTH	SLUMP	COMMENTS
All Slabs	4000 psi	3"-7"	with Air
Grout for Masonry Cores	2500 psi	9"	Coarse

5. Cure all slabs using a moisture retaining cover or wet cure procedures.
6. Concrete mixes shall be proportioned in accordance with ACI 301.

SPECIAL INSPECTIONS:
1. The owner shall obtain, in addition to the regular inspections conducted by the department of building safety, special inspection and testing services in accordance with the applicable building code and AHJ and provided by an approved independent testing laboratory per ASTM E329. Reports shall be sent directly to the Owner, Architect, Structural Engineer and Contractor. Concrete test reports shall also be sent to ready mix supplier. These services shall include the following:

   Concrete:
   During the taking of test specimens and placing of reinforced concrete (except slabs on grade).

   Reinforcing steel:
   For conformance with the approved plans prior to the closing of forms or the delivery of concrete to the job site

   Structural Welding:
   Verify the materials, qualifications of welding procedures and welders prior to the start of work and provide periodic inspections of work in progress and a visual inspection of all welds (including welding of metal roof deck, if any) prior to completion of work. Inspection is not required for welding performed in an approved fabricator's shop.

   Structural Masonry:
   During the preparation and taking of any required prisms or test specimens, at the start of laying units, after the placement of reinforcing steel, grout space prior to each grouting operation, and during all grouting operations.

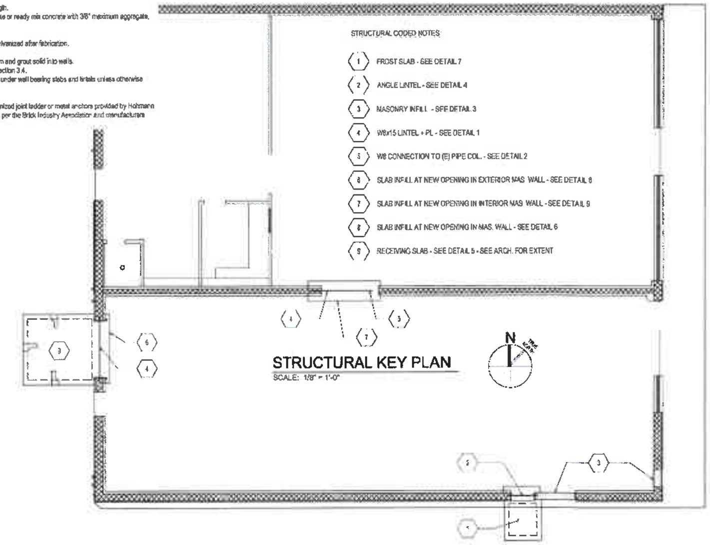
2. The special inspector shall be a qualified person who shall demonstrate his/her competence to the satisfaction of the building official for inspection of the particular type of construction or operation requiring special inspection.
3. Duties and responsibilities of the special inspector:

   Observe the work assigned for conformance to the approved contract documents. The inspector may not alter, modify, enlarge or waive any of the requirements of the contract documents.

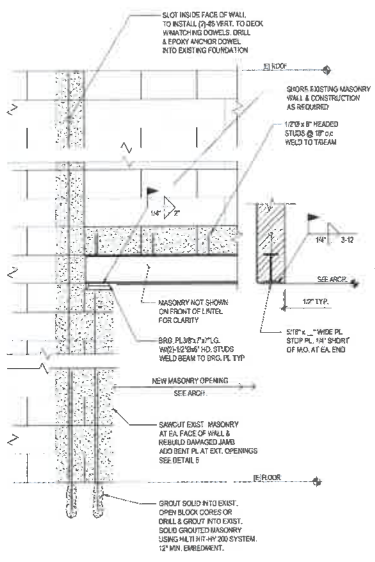
   Furnish inspection reports to the owner, the building official, and the design professional of record. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, submit a complete list of all outstanding discrepancies on a weekly basis to the owner, the building official, and the design professional of record until all corrections have been completed.

   Submit a final signed report stating whether the work requiring special inspections was, to the best of the special inspector's knowledge, in conformance with the approved contract documents and the applicable workmanship provisions of the building code.
4. Structural Observation (as defined in chapter 17 of the building code) is not required.
5. Where special inspection requirements duplicate the requirements of other specified testing, duplicate inspections shall not be required.

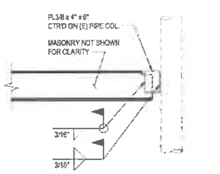
MASONRY:
1. The masonry elements of this building are designed in accordance with "Building Code Requirements for Masonry Structures" TMS 402. Materials and construction methods shall be as specified in "Specifications for Masonry Structures" TMS 602.
2. All testing and inspection shall be done by an independent testing laboratory.
3. Load bearing concrete masonry units shall conform to ASTM C90, f'm = 2000 psi determined by the unit strength method or prism test method.
4. Brick per ASTM C216, Grade SW, Type FBS, 8,000 psi minimum strength.
5. Mortar for unreinforced masonry per ASTM C270, Type S, 2,800 psi cube strength.
6. Grout per ASTM C476, 2500 psi minimum, coarse grout 3/8" maximum aggregate or ready mix concrete with 3/8" maximum aggregate, see Cast-In-Place Concrete specifications. Slump to be 9" ± 1"
7. Reinforcement:
   a. Wire for horizontal joint reinforcement per ASTM A82 ladder type, 9 gauge, galvanized after fabrication.
   b. Lap splices in horizontal joint reinforcement 7" minimum
   c. Reinforcing bars per ASTM A615, Grade 60, lap splices 48 diameters minimum and grout solid into walls.
   d. Use bar positioners for placement of vertical reinforcing bars per ACI 530.1, section 3.4.
8. Provide 16" of solid masonry under wall bearing beams and 8" of solid masonry under wall bearing slabs and lintels unless otherwise noted on the drawings.
9. The collar joint in multi-wythe walls below grade shall be fully grouted.
10. Brick veneer shall be tied to the building structure with appropriate hot-dip galvanized joint ladder or metal anchors provided by Hohmann & Barnard (or approved equal). Veneer anchor attachment and spacing shall be per the Brick Industry Association and manufacturers recommendations.



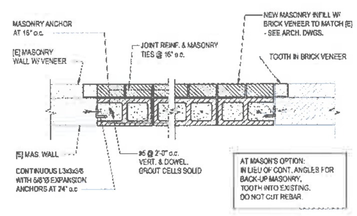
STRUCTURAL KEY PLAN
SCALE: 1/8" = 1'-0"



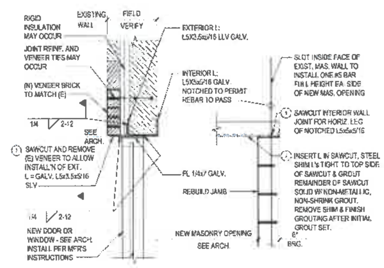
1 DETAIL
TYPICAL BEAM LINTEL IN (E) MAS. WALL



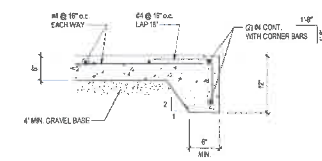
2 DETAIL
TYPICAL BEAM LINTEL CONNX TO (E) COLUMN



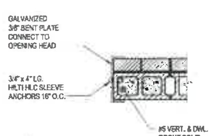
3 DETAIL
TYPICAL PLAN AT MASONRY OPENING INFILL



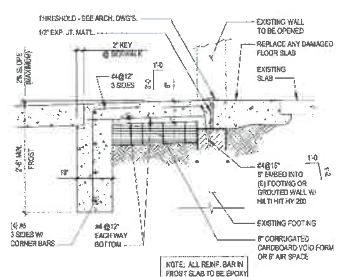
4 DETAIL
TYPICAL NEW OPENING IN (E) MASONRY WALL



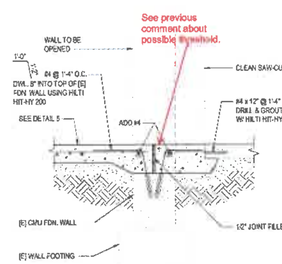
5 DETAIL
TYPICAL TURNED DOWN SLAB



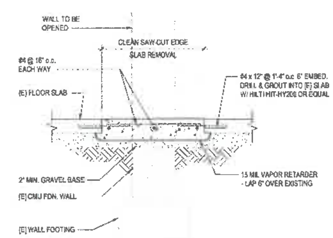
6 DETAIL
TYPICAL OVERHEAD DOOR JAMB



7 DETAIL
TYPICAL FROST SLAB AT EXISTING FOOTING



8 DETAIL
TYPICAL SLAB INFILL AT EXTERIOR MASONRY OPNG.



9 DETAIL
TYPICAL SLAB INFILL AT INTERIOR MASONRY OPNG.

Professional Certification (Structural)
I certify that these documents were prepared or approved by me, and that I am a duly licensed structural engineer under the laws of the State of Maryland. license number 64115 expiration date 1/8/2027.

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Project No.:	24.0774
Drawn By:	TF
Date	Issue
01-31-25	Permit Set

S101

STRUCTURAL PLAN DETAILS & NOTES

MECHANICAL SYMBOLS/ABBREVIATIONS LEGEND

SYMBOL/ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
(S)	TEMPERATURE SENSOR	EF	EXHAUST FAN
(T)	THERMOSTAT	EH	ELECTRIC HEATER
RTS	REMOTE TEST SWITCH	ETR	EXISTING TO REMAIN
SD	DUCT SMOKE DETECTOR	EXIST (E)	EXISTING
	CONNECT TO EXISTING	HP	HORSEPOWER
FD	FIRE DAMPER	HVAC	HEATING, VENTILATION, AIR CONDITIONING
MD	MOTORIZED DAMPER	KW	KILOWATT
	VOLUME DAMPER	MBH	1,000 BTUH
CD	CEILING DIFFUSER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
RG	RETURN GRILLE	N/C	NOT IN CONTRACT
EG	EXHAUST GRILLE	OA	OUTSIDE AIR
	AIRFLOW DIRECTION	PH	PHASE
	LOUVERED DOOR	PSI	POUNDS PER SQUARE INCH
	UNDERCUT DOOR	RA	RETURN AIR
UP DOWN	SUPPLY DUCT	RG	RETURN GRILLE
UP DOWN	RETURN/OUTSIDE AIR DUCT	RTU	ROOFTOP UNIT
UP DOWN	EXHAUST DUCT	SA	SUPPLY AIR
	DUCTWORK ACOUSTICAL LINING	SG	SUPPLY GRILLE
	MITERED ELBOW WITH TURNING VANES	TG	TRANSFER GRILLE
	SPIN-IN BRANCH W/MANUAL DAMPER	TYP	TYPICAL
A	AMPS	UH	UNIT HEATER
ACU	AIR CONDITIONING UNIT	V	VOLTS
AFF	ABOVE FINISHED FLOOR	VD	VOLUME DAMPER
AHU	AIR HANDLING UNIT	W	WATTS
CD	CEILING DIFFUSER		
CFM	CUBIC FEET PER MINUTE		
CU	CONDENSING UNIT		

NOTE: ALL SYMBOLS SHOWN MAY NOT APPEAR ON THE DRAWINGS.

DEMOLITION GENERAL NOTES

A. THE ARCHITECTURAL DRAWINGS ARE TO BE USED ONLY AS A GUIDELINE FOR DEMOLITION. THE CONTRACTOR MUST VISIT THE SITE PRIOR TO BIDDING TO VERIFY ALL WORK REQUIRED FOR A COMPLETE JOB AND INCLUDE THE COST OF SUCH WORK IN HIS BID.

B. EXAMINE AREAS AND CONDITIONS UNDER WHICH DEMOLITION WORK MUST BE PERFORMED. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES PERFORMING DEMOLITION WORK AND/OR DEMOLITION WORK PERFORMED BY THE OWNER. IN EVERY INSTANCE OF DEMOLITION AND/OR REMODELING, THE CONTRACTOR SHALL FIGURE A COMPLETE JOB AS NONE OTHER SHALL BE ACCEPTED.

C. THE EXTENT OF WORK SHOWN OR NOT SHOWN SHALL INCLUDE REMOVAL AND LEGALLY DISPOSE OFF SITE, ALL THE ITEMS AND SYSTEMS BEING REMOVED.

D. THIS CONTRACTOR SHALL RETAIN ON THE PREMISES IN NEATLY STACKED PILES WHERE INSTRUCTED FOR SELECTION BY THE OWNER, ALL MATERIAL, WIRE, FIXTURES AND/OR EQUIPMENT WHICH ARE SPECIFIED TO BE REMOVED OR REPLACED. ALL SUCH ITEMS, NOT SELECTED FOR SALVAGE BY THE OWNER, SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES AND LEGALLY DISPOSED.

E. CONFORM TO ALL APPLICABLE CODES FOR DEMOLITION OF ITEMS AND SYSTEMS, SAFETY OF ADJACENT SYSTEMS. DUST CONTROL, LEGAL RUN-OFF CONTROL, DISPOSAL AND ALL ITEMS NECESSARY TO COMPLETE THE WORK COMPLETELY.

F. DEMOLITION SHALL BE DONE IN A MANNER SO AS NOT TO DAMAGE ADJACENT WORK AND NOT AFFECT THE OPERATION OF SYSTEMS TO REMAIN IN USE. ANY ITEM TO REMAIN THAT IS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AND/OR REPAIRED AT THE CONTRACTOR'S EXPENSE.

G. DEMOLITION AND CUTTING SHALL BE DONE IN A MANNER WHICH DOES NOT DEFORM OR APPLY LOADS TO THE EXISTING FRAMING AND EQUIPMENT OF THE BUILDING TO REMAIN.

H. WALLS, CEILINGS, FLOORS, ETC., BEING DISTURBED BY THE WORK SHALL BE RETURNED TO FINISHED CONDITIONS TO MATCH EXISTING BY THE CONTRACTOR AND CONTRACTOR SHALL DO HIS OWN CUTTING AND PATCHING AS NECESSARY UNDER HIS CONTRACT.

I. CONTRACTOR SHALL MAINTAIN EXISTING SERVICES TO AND IN THE EXISTING AREA AS REQUIRED.

J. EXISTING SYSTEMS TO REMAIN ARE TO BE SUPPORTED AS REQUIRED UNTIL THE MODIFIED ELEMENTS ARE INSTALLED AND SUPPORTED.

K. IF NECESSARY, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES IN THE EXISTING AREAS.

L. EXISTING ABOVE GRADE FLOOR SLABS SHALL BE SAW-CUT IN A MANNER THAT DOES NOT CAUSE THE STEEL FRAMING OR THE REBAR SUPPORTING THE SLAB TO BE CUT. CONTRACTOR SHALL FIELD VERIFY SLAB THICKNESS AND REBAR SPACING.

M. EXISTING ABOVE GRADE FLOOR SLABS SHALL BE CORE DRILLED AT REENTRANT CORNERS OF NEW FLOOR OPENINGS TO PREVENT OVER CUTTING. IF EXISTING SLAB IS A STRUCTURAL SLAB, CONTRACTOR SHALL CONTACT ENGINEER ON HOW TO PROCEED.

N. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ELECTRIC SERVICE TO ALL MECHANICAL EQUIPMENT BEING REMOVED AS A RESULT OF THE RENOVATION.

O. EQUIPMENT AND DEVICES SHALL BE REMOVED COMPLETE INCLUDING HANGERS, SUPPORTS, CONTROLS, CONDUIT, WIRE, PIPES, DUCTWORK, ETC. WIRING SHALL BE DISCONNECTED AT CIRCUIT BREAKERS, REMOVED AND BREAKERS MARKED "SPARE."

P. ALL OPEN ENDED PIPING AND DUCTWORK THAT IS TO REMAIN SHALL BE CAPPED AND PROPERLY SECURED.

Q. ANY EXISTING PIPES, DUCTWORK, CONDUIT, LOW VOLTAGE CONTROL, WIRING AND/OR ELECTRICAL AND MECHANICAL DEVICES BEING DISTURBED BY THE WORK SHALL BE REWORKED BY THIS CONTRACTOR AS REQUIRED TO RETURN TO ITS FORMER EXISTING OPERATING CONDITION.

R. ANY PIPES OR DUCTWORK, OR CONTROL WIRING, OR TUBING FEEDING THROUGH DEVICES OR EQUIPMENT BEING RELOCATED, REWORKED, OR ABANDONED AND SERVING OTHER DEVICES, AND/OR EQUIPMENT SHALL BE MAINTAINED IN WORKING CONDITION.

S. ANY ASBESTOS REMOVAL IF REQUIRED WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK.

T. EXISTING ARCHITECTURAL, MECHANICAL AND ELECTRICAL EQUIPMENT AND SYSTEMS SHALL BE PROTECTED FROM DAMAGE RESULTING FROM DEMOLITION.

U. CONTRACTOR SHALL PROTECT ALL EXISTING RETURN DUCTWORK AND TRANSFER AIR OPENINGS WITH DISPOSABLE FILTERS DURING CONSTRUCTION. FILTERS SHALL BE OF THE DISPOSABLE TYPE AND SHALL BE MERV 8. REPLACE EXISTING BUILDING UNIT FILTERS AFTER CONSTRUCTION IS COMPLETE.

MECHANICAL GENERAL NOTES:

A. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT TO INSTALL A COMPLETE AND OPERATION HEATING AND COOLING SYSTEM.

B. CONTRACTOR SHALL PROVIDE ALL REQUIRED HVAC PERMITS.

C. THE CONTRACTOR SHALL COMPLY WITH NFPA-90A AND ALL APPLICABLE CODES.

D. HVAC WORK TO BE PERFORMED SHALL BE IN COMPLIANCE WITH ALL STATE AND LOCAL CODES.

E. FLEXIBLE DUCT SHALL COMPLY WITH SMACNA, ALL LOCAL CODES, U.L. RATING, AND NOT EXCEED FIVE FEET IN LENGTH.

F. SHEET METAL DUCT, WHERE REQUIRED BY LOCAL CODES, SHALL BE LINED WITH 1" MATT FACED DUCTLINER IN THE FIRST 10 (TEN) FEET OF THE RETURN AND SUPPLY DUCT STARTING FROM THE HVAC UNIT. AFTER THE FIRST 10 (TEN) FEET THE USE OF 1" DUCT WRAP SHALL BE ACCEPTABLE WORK MATERIAL TO BE VERIFIED WITH CEILING ACCESSIBILITY RATING.

G. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SWITCHES, DISCONNECTS, AND CONTROL WIRING.

H. DUCT SIZES ARE CLEAR INSIDE DIMENSIONS, ALLOW FOR DUCT INSULATION.

I. THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR ONE (1) YEAR FROM THE FINAL WORK ACCEPTANCE BY THE OWNER AND A FIVE YEAR WARRANTY ON THE COMPRESSOR

J. FILTERS SHALL BE OF THE DISPOSABLE TYPE AND SHALL BE MERV-8, PROVIDE TWO SETS, ONE DURING CONSTRUCTION AND ONE FOR USE AFTER OCCUPANCY.

K. CONTRACTORS SHALL INSTALL ALL NECESSARY OFFSETS, BENDS, AND TRANSITIONS REQUIRED TO PROVIDE A COMPLETE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.

L. COORDINATE LOCATION OF ALL CEILING DIFFUSERS, GRILLES AND REGISTERS IN THE FIELD WITH THE ELECTRICIAN TO PREVENT CONFLICT WITH LIGHTS AND ARCHITECTURAL ELEMENTS.

M. ALL WORK OF THIS TRADE SHALL BE COORDINATED WITH ALL OTHER TRADES TO AVOID ANY INTERFERENCES THAT MAY DELAY PROGRESS DURING CONSTRUCTION.

N. THE MECHANICAL CONTRACTOR SHALL TEST AND BALANCE TO THE AIR QUANTITIES ON THE PLAN AND PROVIDE A T&B REPORT

O. CONTRACTOR SHALL INSTALL MANUAL BALANCING DAMPERS AT ALL SUPPLY AIR BRANCH DUCTWORK RUN OUTS.

P. CONTRACTOR SHALL INSTALL TURNING VANES AT ALL DUCTWORK TEES AND 90 DEGREE ELBOWS.

Q. ALL SHEET METAL DUCTWORK SHALL COMPLY WITH SMACNA STANDARDS. ALL DUCTWORK JOINTS SHALL BE TAPED AND SEALED

R. CONTRACTOR SHALL PROVIDE EQUIPMENT OF THE SCHEDULED CAPACITIES DESIGNED.

Professional Certification (Mechanical)
I certify that these documents were prepared or approved by me, and that I am a duly licensed mechanical engineer under the laws of the State of Maryland, license number 54114 expiration date 3/20/2025.

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Project No.: 24.0774
Drawn By: MH

Date	Issue
01-31-25	Permit Set

M001

MECHANICAL DATA SHEET

Professional Certification (Mechanical)
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FAN SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	TYPE	CAPACITY (CFM)	RPM	ESP ("WC)	DRIVE	MOTOR POWER (WATTS)	ELECTRICAL		OPERATING WEIGHT(LBS)	REMARKS
										VOLT	PHASE		
EF-1	PANASONIC	FV-08105S1	TOILET EXHAUST	CEILING	80	1,114	0.2	DIRECT	13.2	120	1	7	1,2,3

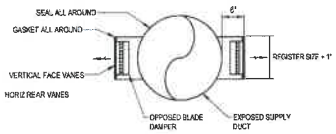
REMARKS:
1. APPROVED MANUFACTURERS: GREENHECK, LOREN COOK, PANASONIC, OR TWIN CITY.
2. PROVIDE WITH FAN SPEED CONTROLLER, DISCONNECT SWITCH, GRAVITY DAMPER, AND WHITE FRAME/GRILLE.
3. FAN CONTROL VIA FAN/LIGHT SWITCH.

GRILLE AND DIFFUSER SCHEDULE

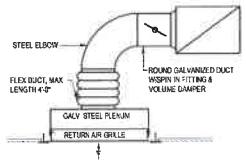
MARK	MANUFACTURER	MODEL	MODULE SIZE	MATERIAL	FINISH	REMARKS
CD-1	PRICE	PDS	24x24	STEEL	STD. WHITE	1,2,3
SG-1	PRICE	520	SEE PLANS	STEEL	STD. WHITE	1,4
RG-	PRICE	530	SEE PLANS	STEEL	STD. WHITE	1,3
EG-	PRICE	530	SEE PLANS	STEEL	STD. WHITE	1,3

REMARKS:
1. APPROVED MANUFACTURERS: TITUS, PRICE, TUTTLE AND BAILEY, NAILOR AND ANEMOSTAT.
2. ALL CEILING DIFFUSERS ARE 4-WAY THROW UNLESS INDICATED OTHERWISE ON PLANS.
3. PROVIDE 5/8"x24" FRAME FOR DRYWALL CEILING. REFER TO ARCHITECTURAL CEILING PLAN PRIOR TO ORDERING.
4. NARROW FRAME, DOUBLE DEFLECTION GRILLE, LONG DIMENSION FRONT BLADES, WITH OPPOSED BLADE DAMPER MOUNTED BEHIND.

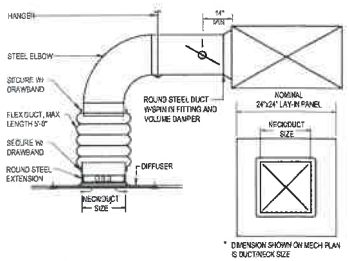
Exposed duct diffusers to be inline and same unfinished color as duct and angled down NOT elbowed and pointing down.



6 | SIDE WALL MOUNTING DIFFUSER DETAIL
N.T.S.



5 | DUCTED RETURN DETAIL
N.T.S.



4 | LAY-IN DIFFUSER DETAIL
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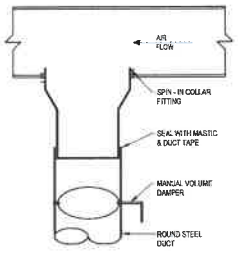
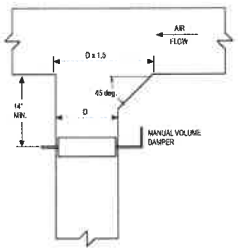
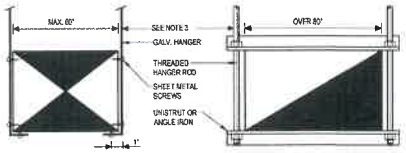


3 | ROUND DUCT BRANCH
N.T.S.



2 | RECTANGULAR BRANCH
N.T.S.



NOTES:
1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 6 SQ. FT., DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
3. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

1 | DUCT HANGER SUPPORT
N.T.S.

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Project No.:	24.0774
Drawn By:	MH
Date	Issue
01-21-25	Permit Set

M002

MECHANICAL SCHEDULES AND DETAILS

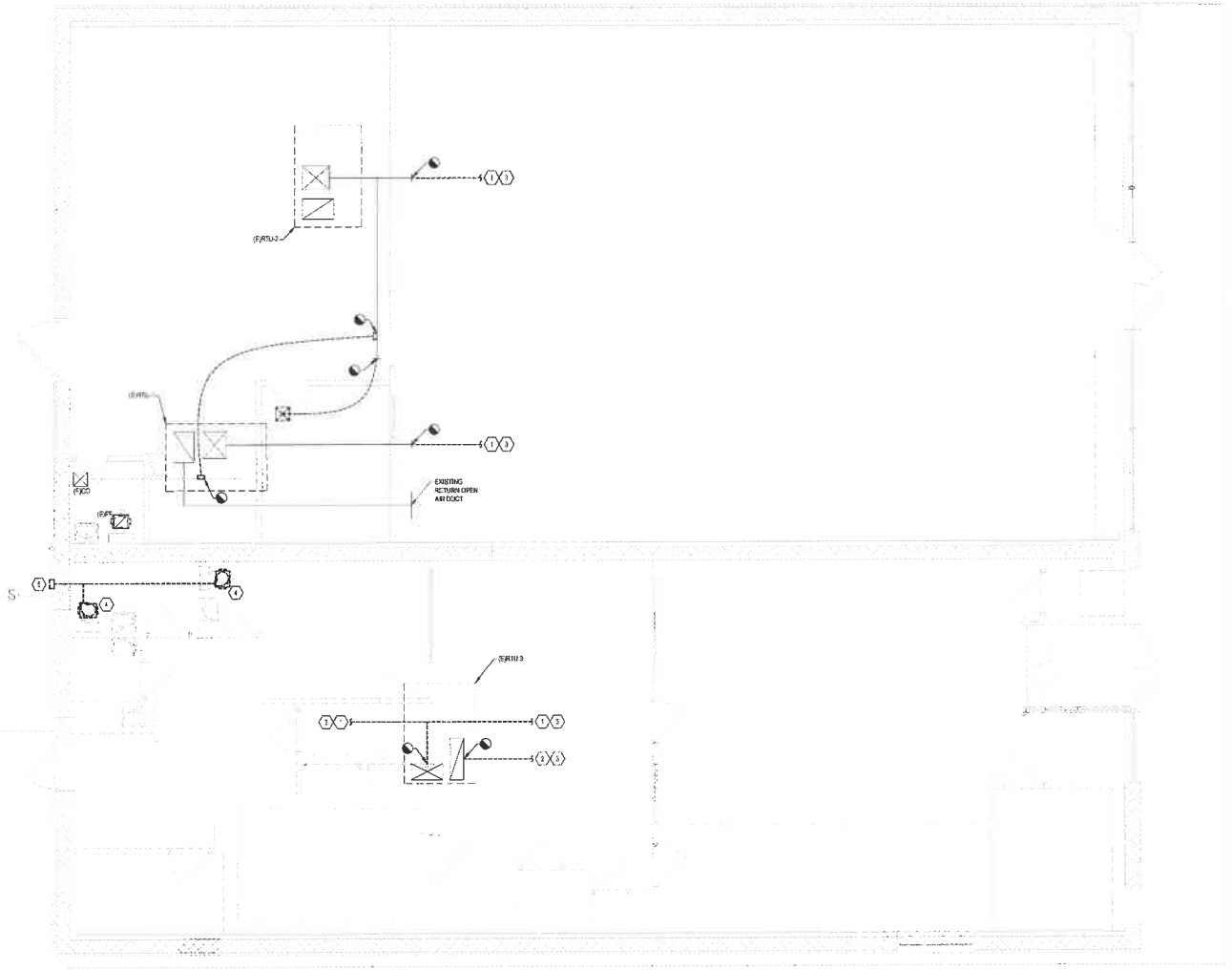
Professional Certification (Mechanical)
I certify that these documents were prepared or approved by me, and that I am a duly licensed mechanical engineer under the laws of the State of Maryland, license number 34114 expiration date 2/20/2025

GENERAL NOTES

A. REFER TO DRAWING M001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.

KEYED NOTE SCHEDULE

1. REMOVE EXISTING SUPPLY AIR DUCT MAINS, ACCESSORIES, AND HANGERS.
2. REMOVE EXISTING RETURN AIR DUCT MAINS, ACCESSORIES, AND HANGERS.
3. REMOVE EXISTING SUPPLY AND RETURN AIR DEVICES AND ASSOCIATED DUCT RUNOUTS THROUGHOUT THE EXISTING SPACE.
4. REMOVE EXISTING CEILING EXHAUST FAN, DUCTWORK, ACCESSORIES, AND HANGERS.
5. REMOVE EXISTING EXHAUST DISCHARGE HOOD.



MECHANICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

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511 Cromwell Park Drive, Suite 112
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Project No.:	24.0774
Drawn By:	MH
Date	Issue
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MD101

MECHANICAL DEMOLITION PLAN

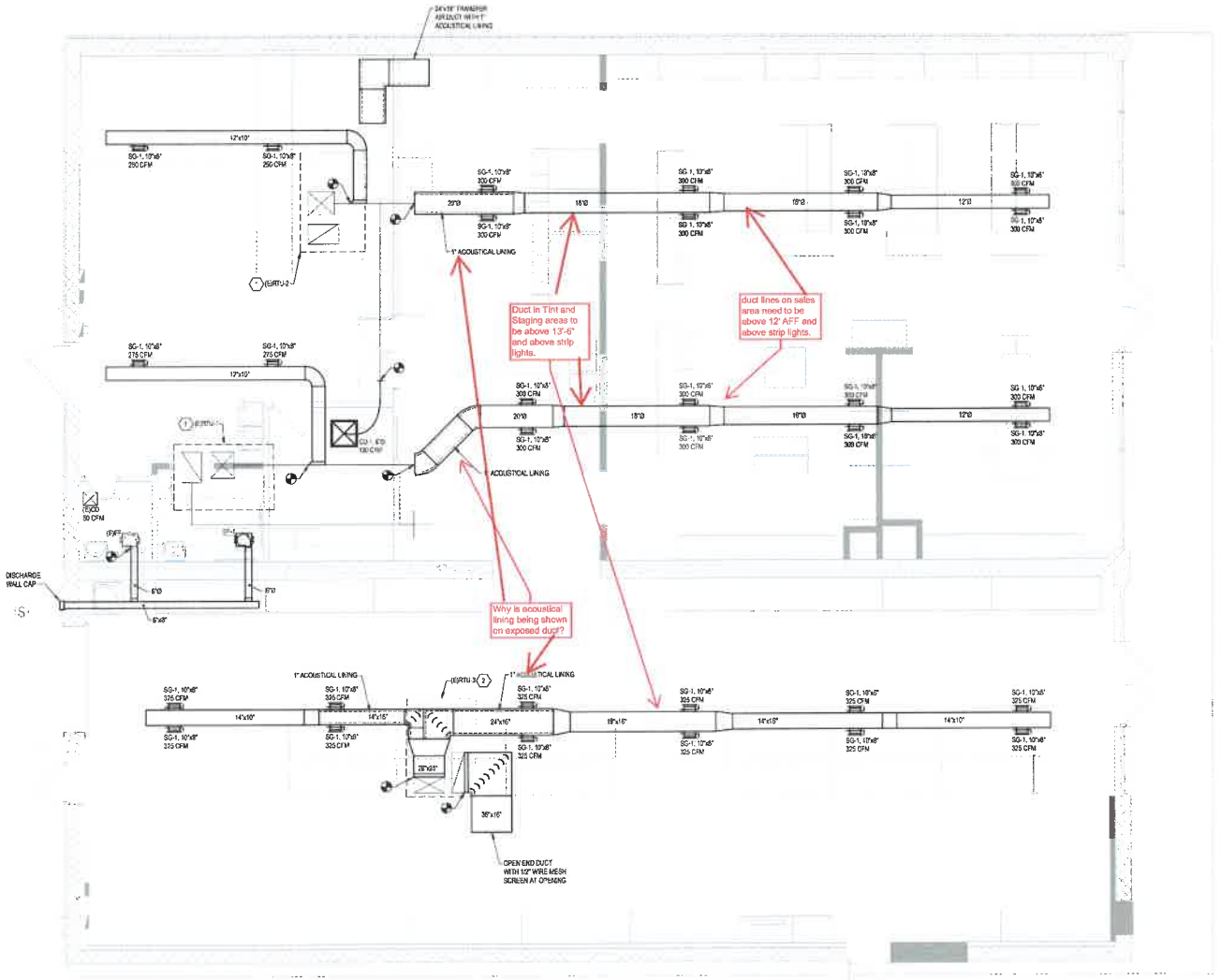
Professional Certification (Mechanical)
I certify that these documents were prepared or approved by me, and that I am a duly licensed mechanical engineer under the laws of the State of Maryland, license number 54114 expiration date 9/30/2025

GENERAL NOTES

A. REFER TO DRAWING M001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.

KEYED NOTE SCHEDULE

1. EXISTING ROOFTOP UNIT, NOMINAL COOLING CAPACITY 7-1/2 TONS, HEATING INPUT 150 MBH, SUPPLY AIRFLOW 2,000 CFM.
2. EXISTING ROOFTOP UNIT, NOMINAL COOLING CAPACITY 10 TONS, HEATING INPUT 224 MBH, SUPPLY AIRFLOW 4,000 CFM.



MECHANICAL FLOOR PLAN

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

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SHERWIN WILLIAMS #5178

580 GOVERNOR RITCHIE HIGHWAY
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Project No.:	24.0774
Drawn By:	MH
Date:	Issue:
01-31-25	Permit Set

M101

MECHANICAL FLOOR PLAN

Mechanical
General Information

A. General
1. Conform to all general and special conditions of contract as specified by architect, tenant and owner.
2. Specifications are applicable to all contractors and subcontractors for mechanical and electrical systems
3. Contractor shall comply with owner's standards, facility specifications, rules and regulations. All owner's criteria shall be complied with and included in this bid. Check other plans and specifications and fully coordinate with other trades and architect's requirements.
4. Visit site, check facilities and conditions, and verify all utility company requirements and connection points in field prior to starting work. Take all items into consideration in bid.
5. Systems are to be complete and workable in all respects, placed in operation and properly adjusted.
6. Each contractor shall provide for his own clean-up, removal and legal disposal of all rubbish daily.
7. The contractor shall be solely responsible for construction means, methods, and sequences of construction and the safety of workmen. comply with all OSHA regulations.
8. No piping, ductwork, controls, etc., shall be installed or routed above electrical panels and equipment or through elevator rooms or shafts.
9. The mechanical and electrical contractors shall coordinate the electrical characteristics of all mechanical equipment prior to ordering of equipment. No additional payment will be made for lack of contractor coordination of electrical characteristics.
10. All mechanical and electrical system components shall be routed tight to underside of structure and through joists or trusses where possible. Coordinate installation to preserve headroom, equipment access, and architectural clearances for finishes, including ceiling heights. Coordinate with all other trades and do not conflict with the architectural requirements for the finished construction. Provide offsets where required to coordinate with other trades.
11. Refer to architectural reflected ceiling plans for locations of all grilles and diffusers.
12. Operation and maintenance manuals: three (3) bound sets of the operation and maintenance manuals shall be provided to the construction representative at turnover, and are required for final acceptance.
13. As built drawings: the HVAC subcontractor shall progressively record all HVAC drawing changes which shall be available at all times for review by the construction representative. An AutoCAD copy of the final as-built drawings shall be provided to the construction representative at turnover. This AutoCAD as-built is required for final acceptance of the project.

B. Codes, standards and regulations
1. Conform to all applicable codes, government regulations, utility company requirements, and national electrical code.
2. Obtain permits and pay all fees. Arrange for all required inspections and approvals.

C. Related work specified elsewhere
1. Openings and chases, when shown on architectural drawings.

D. Drawings
1. The systems as shown on the contract drawings are diagrammatic.
2. The intent is for complete and workable systems. The drawings and these notes are to be used together as a basis of showing and/or describing the system requirements for the facility.
3. Verify all dimensions and clearances by field measurement and check for interferences prior to starting work.

E. Base equipment and materials and substitutions
1. All equipment and materials shall be new, free of defects and U.L. labeled.
2. Submit shop drawings for all equipment, fixtures, etc., including all accessories to be furnished. Base bid manufacturers and models are included in specifications or listed in schedule on drawing. Any other manufacturer or model is a substitution.
3. Substitutions are subject to the approval of the owner and shall be listed on the form of proposal for the owner's consideration prior to contract award. If substitution is submitted, it is the contractor's responsibility to evaluate it and certify that the substitution is equivalent in all respects to the base specifications.
4. If substitutions are approved, notify all other contractors, subcontractors or trades affected by substitution and fully coordinate. Any costs resulting from substitution, whether by contractor or others, shall be responsibility of and paid for by substituting contractor.
5. All equipment shall be installed in full accordance with the manufacturer's installation instructions. It is this contractor's responsibility to check and conform to these requirements prior to starting work.

F. Check, test, start, adjust, balance and instructions
1. After installation, check all equipment, and perform start up in accordance with the manufacturer's instructions.
2. All piping shall be tested and free of leaks.
3. Balance all systems, calibrate controls, check for proper operating sequence under all conditions, and make all necessary adjustments.
4. All wiring shall be fully tested and made free of grounds and short circuits.
5. Instruct owner in operation of systems and submit operating and maintenance manual on all equipment and systems
6. Provide engraved labels and identification tags for all piping systems, valves and equipment.
7. Provide typed panel directories and engraved labels for all panels and equipment.

G. Cutting, patching and drilling
1. All cutting and chasing of the building construction required for this work shall be by this contractor unless shown on architectural drawings and confirmed as to size and location prior to new construction. Cutting shall be in a neat and workmanlike manner.
2. Neatly saw cut all rectangular openings, set sleeve through opening, and finish patch or provide trim flange around opening.
3. Core drill and sleeve all round openings.
4. Cut and patch existing building walls as required for duct installation. Provide steel lintel above opening wider than 10". See structural drawings for sizes. Provide escutcheons or 2" wide sheet metal flanges around all exposed penetrations.
5. Do not cut any structural components without architect's approval.
6. Patch and finish to match adjacent areas that have been cut, damaged or modified to install equipment for this project.
7. Cutting of roof, installation of curbs, and patching of roof shall be by a certified roofing contractor, approved by building owner, and paid for by this contractor.
8. Fire stop all penetrations of fire rated construction in a code approved manner, using UL listed fire rated materials.
9. All contractors shall confirm with owner, prior to bid, times available for noise producing work such as cutting and core drilling of floors, walls, etc., as well as times for work which require access into adjoining areas. Include any premium time required in bid.
10. Exact location of roof top mechanical units shall be approved by owner's structural engineer. Mechanical contractor shall furnish and install all supplemental support steel for units and roof duct penetrations after approval of structural engineer.

H. Warranty
1. Fully warrant all materials, equipment and workmanship for one (1) year from date of acceptance.
2. Repair or replace without charge to the owner all items found defective during the warranty period.

SECTION 23 0593
TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Testing, adjustment, and balancing of air systems.
B. Measurement of final operating condition of HVAC systems.

1.02 SUBMITTALS
A. TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.
1. Include at least the following in the plan:
a. List of all air flow, water flow, sound level, system capacity and efficiency measurements to be performed and a description of specific test procedures, parameters, formulas to be used.
b. Copy of field checkout sheets and logs to be used, listing each piece of equipment to be tested, adjusted and balanced with the data cells to be gathered for each.
c. Final test report forms to be used.
d. Procedures for formal deficiency reports, including scope, frequency and distribution.
B. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
1. Revise TAB plan to reflect actual procedures and submit as part of final report.
2. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect and for inclusion in operating and maintenance manuals.
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 report format use that; otherwise, follow ASHRAE Std 111.
5. Units of Measure: Report data in I-P (inch-pound) units only.
6. Include the following on the title page of each report:
a. Name of Testing, Adjusting, and Balancing Agency.
b. Address of Testing, Adjusting, and Balancing Agency.
c. Telephone number of Testing, Adjusting, and Balancing Agency.
d. Project name.
e. Project location.
f. Project Architect.
g. Project Engineer.
h. Project Contractor.
i. Project altitude.
j. Report date.
C. Project Record Documents: Record actual locations of flow measuring stations and balancing valves and rough setting.

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 (NSTSB), 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. SMACNA (TAB).
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.
2. Having minimum of three years documented experience.
3. Certified by one of the following:
a. AABC, Associated Air Balance Council: www.aabc.com/#sle; upon completion submit AABC National Performance Guaranty.
b. NEBB, National Environmental Balancing Bureau: www.nebb.org/#sle.
c. TABB, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute: www.tabbcertified.org/#sle.
E. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.

3.02 EXAMINATION
A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
1. Systems are started and operating in a safe and normal condition.
2. Temperature control systems are installed complete and operable.
3. Proper thermal overload protection is in place for electrical equipment.
4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
5. Duct systems are clean of debris.
6. Fans are rotating correctly.
7. Fire and volume dampers are in place and open.
8. Access doors are closed and duct end caps are in place.
9. Air outlets are installed and connected.
10. Duct system leakage is minimized.
B. Submit field reports. Report defects and deficiencies that will or could prevent proper system balance.
C. Beginning of work means acceptance of existing conditions.

3.03 ADJUSTMENT TOLERANCES
A. Air Handling Systems: Adjust to within plus or minus 10 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.
B. Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 10 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.

3.04 RECORDING AND ADJUSTING
A. Field Logs: Maintain written logs including:
1. Running log of events and issues.
2. Discrepancies, deficient or uncompleted work by others.
3. Contract interpretation requests.
4. Lists of completed tests.
B. Ensure recorded data represents actual measured or observed conditions.
C. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
D. Mark on drawings the locations where traverse and other critical measurements were taken and cross reference the location in the final report.
E. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
F. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

3.05 AIR SYSTEM PROCEDURE
A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site altitude.
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.
F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. 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.
I. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage
J. Where modulating dampers are provided, take measurements and balance at extreme conditions. Balance variable volume systems at maximum air flow rate, full cooling, and at minimum air flow rate, full heating.

3.06 SCOPE
A. Test, adjust, and balance the following:
1. Packaged Roof Top Heating/Cooling Units.
2. Air Inlets and Outlets.

3.07 MINIMUM DATA TO BE REPORTED
A. Duct Leak Tests:
1. Description of ductwork under test.
2. Duct design operating pressure.
3. Duct design test static pressure.
4. Duct capacity, air flow.
5. Maximum allowable leakage duct capacity times leak factor.
6. Test apparatus:
a. Blower.
b. Orifice, tube size.
c. Orifice size.
d. Calibrated.
7. Test static pressure.
8. Test orifice differential pressure.
9. Leakage.
B. 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.

END OF SECTION

SECTION 23 0713
DUCT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Duct Insulation.
B. Duct liner.

1.02 SUBMITTALS
A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

1.03 DELIVERY, STORAGE, AND HANDLING
A. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS
A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 GLASS FIBER, FLEXIBLE
A. Insulation: ASTM C553; flexible, noncombustible blanket.
1. K (Ksi) value: 0.36 at 75 degrees F (0.052 at 24 degrees C), when tested in accordance with ASTM C518.
2. Maximum Service Temperature: 1200 degrees F (649 degrees C).
3. Maximum Water Vapor Absorption: 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: 0.02 perm inch (0.029 ng/Pa s m), when tested in accordance with ASTM E96/E96M.
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. Indoor Vapor Barrier Mastic:
1. Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.

2.03 GLASS FIBER, RIGID
A. Insulation: ASTM C612; rigid, noncombustible blanket.
1. K (Ksi) Value: 0.24 at 75 degrees F (0.036 at 24 degrees C), when tested in accordance with ASTM C518.
2. Maximum Service Temperature: 450 degrees F (232 degrees C).
3. Maximum Water Vapor Absorption: 5.0 percent.
4. Maximum Density: 8.0 lb/cu ft (128 kg/cu m).
B. Vapor Barrier Jacket:
1. Kraft paper with glass fiber yarn and bonded to aluminized film.
2. Moisture Vapor Permeability: 0.02 perm inch (0.029 ng/Pa s m), when tested in accordance with ASTM E96/E96M.
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. Indoor Vapor Barrier Finish:
1. Vinyl emulsion type acrylic, compatible with insulation, black color.

2.04 DUCT LINER
A. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation. Comply with ASTM C916.
B. Liner Fasteners: Galvanized steel, self-adhesive pad with integral head.

PART 3 EXECUTION

3.01 EXAMINATION
A. Test ductwork for design pressure prior to applying insulation materials.
B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Install in accordance with NAIMA National Insulation Standards.
C. 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.
D. 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.
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 (DCS) 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.

3.03 SCHEDULES
A. Plenums: 1 1/2 inch
B. Supply Ducts: 1-1/2 inch

END OF SECTION

SECTION 23 3100
HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Metal ductwork.
B. Nonmetal ductwork.
C. Casings and plenums.

1.02 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience, and approved by manufacturer.

1.03 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 DUCT ASSEMBLIES
A. Regulatory Requirements: Construct ductwork to comply with NFPA 90A standards.
B. Ducts: Galvanized steel, unless otherwise indicated.

2.02 MATERIALS
A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.
B. 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 index of zero and smoke developed index of zero, when tested in accordance with ASTM E84.
F. Gasket Tape: Provide butyl rubber gasket tape for a flexible seal between transfer duct connector (TDC), transverse duct flange (TDF), applied flange connections, and angle rings connections.
G. Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.
H. Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:
1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.
3. Concrete Screw Type Anchors: Complying with ICC-ES AC193.
4. Masonry Screw Type Anchors: Complying with ICC-ES AC106.
5. Concrete Adhesive Type Anchors: Complying with ICC-ES AC308.

2.03 DUCTWORK FABRICATION
A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.
B. No variation of duct configuration or size permitted except by written permission. Size round duct installed in place of rectangular ducts in accordance with ASHRAE (FUND) Handbook – Fundamentals.
C. Duct systems have been designed for metal duct. At the Contractor's option, fibrous glass duct may be substituted for metal duct.
D. Provide duct material, gauges, reinforcing, and sealing for operating pressures indicated.
E. 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 air foil turning vanes of perforated metal with glass fiber insulation.
F. Provide turning vanes of perforated metal with glass fiber insulation when acoustical lining is indicated.
G. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
H. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).

2.04 MANUFACTURED DUCTWORK AND FITTINGS
A. Round Ducts: Round lockseam duct with galvanized steel outer wall.
1. Manufacture in accordance with SMACNA (DCS).
B. Flexible Ducts: Black polymer film supported by helically wound spring steel wire.
1. UL labeled.
2. Insulation: Fiberglass insulation with polyethylene vapor barrier film.
3. Pressure Rating: 4 inches wg (1000 Pa) positive and 0.5 inches wg (175 Pa) negative.
4. Maximum Velocity: 4000 fpm (20.3 m/sec).
5. Temperature Range: Minus 20 degrees F to 175 degrees F (Minus 28 degrees C to 79 degrees C).

2.05 CASINGS AND PLENUMS
A. Fabricate casings in accordance with SMACNA (DCS) and construct for operating pressures indicated.
B. Reinforce door frames with steel angles tied to horizontal and vertical plenum supporting angles. Install hinged access doors where indicated or required for access to equipment for cleaning and inspection.
C. Fabricate acoustic casings with reinforcing turned inward. Provide 16 gauge, 0.0598 inch (1.52 mm) sheet steel back facing and 22 gauge, 0.0299 inch (0.76 mm) perforated sheet steel front facing with 3/32 inch (2.4 mm) diameter holes on 5/32 inch (4 mm) centers. Construct panels 3 inches (75 mm) thick packed with 4.5 lb/cu ft (72 kg/cu m) minimum glass fiber insulation media, on inverted channels of 16 gauge, 0.0598 inch (1.52 mm) sheet steel.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install, support, and seal ducts in accordance with SMACNA (DCS).
B. Install in accordance with manufacturer's instructions.
C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
D. Flexible Ducts: Connect to metal ducts with mechanical fastener.
E. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
F. 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.
G. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
H. Use crimp joints with or without bead for joining round duct sizes 8 inch (200 mm) and smaller with crimp in direction of air flow.
I. Use double nuts and lock washers on threaded rod supports

END OF SECTION

SECTION 23 3300
AIR DUCT ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Air turning devices/extractors.
B. Backdraft dampers – metal.
C. Duct access doors.
D. Duct test holes.
E. Flexible duct connectors.
F. Volume control dampers.

1.02 SUBMITTALS
A. Product Data: Provide for shop fabricated assemblies including volume control dampers. Include electrical characteristics and connection requirements.

1.03 DELIVERY, STORAGE, AND HANDLING
A. Protect dampers from damage to operating linkages and blades.

PART 2 PRODUCTS

2.01 AIR TURNING DEVICES/EXTRACTORS
A. Multi-blade device with radius blades attached to pivoting frame and bracket, steel construction, with push-pull operator strap.

2.02 BACKDRAFT DAMPERS – METAL
A. Gravity Backdraft Dampers, Size 12x12 inches (300x300 mm) or Smaller, Furnished with Air Moving Equipment: Air moving equipment manufacturer's standard construction.
B. Multi-Blade, Parallel Action Gravity Balanced Backdraft Dampers: Galvanized steel, with center pivoted blades of maximum 6 inch (150 mm) width, with felt or flexible vinyl sealed edges, linked together in rattle-free manner with 90 degree stop, steel ball bearings, and plated steel pivot pin; adjustment device to permit setting for varying differential static pressure.

2.04 DUCT ACCESS DOORS
A. Fabricate in accordance with SMACNA (DCS) and as indicated.
B. Access doors with sheet metal screw fasteners are not acceptable.

2.05 DUCT TEST HOLES
A. Temporary Test Holes: Cut or drill in ducts as required. Cap with neat patches, neoprene plugs, threaded plugs, or threaded or twist-on metal caps.
B. Permanent Test Holes: Factory fabricated, air tight flanged fittings with screw cap. Provide extended neck fittings to clear insulation.

2.06 FLEXIBLE DUCT CONNECTORS
A. Fabricate in accordance with SMACNA (DCS) 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 (1.0 kg/sq m).
2. Metal: 3 inches (75 mm) wide, 24 gauge, 0.0239 inch (0.61 mm) thick galvanized steel.

2.07 VOLUME CONTROL DAMPERS
A. Fabricate in accordance with SMACNA (DCS) and as indicated.
B. Splitter Dampers:
1. Material: Same gauge as duct to 24 inches (600 mm) size in either direction, and two gauges heavier for sizes over 24 inches (600 mm).
2. Blade: Fabricate of double thickness sheet metal to streamline shape, secured with continuous hinge or rod.
3. Operator: Minimum 1/4 inch (6 mm) diameter rod in self aligning, universal joint action, flanged bushing with set screw.
C. Single Blade Dampers:
1. Fabricate for duct sizes up to 6 by 30 inch (150 by 760 mm).
2. Blade: 24 gauge, 0.0239 inch (0.61 mm), minimum.
D. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 by 72 inch (200 by 1825 mm). Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
1. Blade: 18 gauge, 0.0478 inch (1.21 mm), minimum.
F. Quadrants:
1. Provide locking, indicating quadrant regulators on single and multi-blade dampers.
2. On insulated ducts mount quadrant regulators on stand-off mounting brackets, bases, or adapters.
3. Where rod lengths exceed 30 inches (750 mm) provide regulator at both ends.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA (DCS).
B. Provide backdraft dampers on exhaust fans or exhaust ducts nearest to outside and where indicated.
C. 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 for cleaning kitchen exhaust ducts in accordance with NFPA 96 Provide minimum 8 by 8 inch (200 by 200 mm) size for hand access, size for shoulder access, and as indicated. Provide 4 by 4 inch (100 by 100 mm) for balancing dampers only. Review locations prior to fabrication.
D. Provide duct test holes where indicated and required for testing and balancing purposes.
E. 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.
F. 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.

END OF SECTION

Professional Certification (Mechanical)
I certify that these documents were prepared or approved by me, and that I am a duly licensed mechanical engineer under the laws of the State of Maryland, license number 54114 expiration date 3/20/2025

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Project No.:	24.0774
Drawn By:	MH
Date	Issue
01-31-25	Permit Set

M201

MECHANICAL SPECIFICATIONS

PLUMBING SYMBOLS/ABBREVIATIONS LEGEND

SYMBOL/ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
CW	DOMESTIC COLD WATER	DS	DOWN SPOUT
HW	DOMESTIC HOT WATER	EC	ELECTRICAL CONTRACTOR
THW	DOMESTIC RECIRCULATING HOT WATER	EWC	ELECTRIC WATER COOLER
G	GAS	EWH	ELECTRIC WATER HEATER
G(PSI)	GAS (@ PSI)	EXIST (E)	EXISTING
SAN	SANITARY	FCO	FLOOR CLEANOUT
ST	STORM	FD	FLOOR DRAIN
V	VENT	FS	FLOOR SINK
	EXISTING PIPING TO BE REMOVED	FT	FEET
	EXISTING PIPING TO REMAIN	HB	HOSE BIB
	BALL VALVE	HP	HORSE POWER
	GATE VALVE	IWH	INSTANTANEOUS WATER HEATER
	CHECK VALVE	KW	KILOWATT
	GAS VALVE	LAV	LAVATORY
	UNION	MB	MOP BASIN
	WATER METER	MBH	1000 BTUH
	BACKFLOW PREVENTER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
	PIPE DOWN	NIC	NOT IN CONTRACT
	PIPE UP	PSI	POUNDS PER SQUARE INCH
	PIPE CONNECTION FROM BOTTOM	RPZ	REDUCED PRESSURE ZONE ASSEMBLY
	STRAINER	RTU	ROOFTOP UNIT
	TEMPERATURE GAUGE	SK	SINK
	PRESSURE GAUGE	TPV	TRAP PRIMER VALVE
	WATER HAMMER ARRESTOR	TYP	TYPICAL
	TRAP PRIMER	UR	URINAL
	PIPE CAP	V	VOLTS
	PIPE BREAK	VTR	VENT THRU ROOF
	CONNECT TO EXISTING	W	WATTS
	HOSE BIB	WC	WATER CLOSET
A	AMPS	WCO	WALL CLEANOUT
AFF	ABOVE FINISHED FLOOR	WH	WALL HYDRANT
AFG	ABOVE FINISHED GRADE		
CFH	CUBIC FEET PER HOUR		
CO	CLEANOUT		

NOTE: ALL SYMBOLS SHOWN MAY NOT APPEAR ON THE DRAWINGS.

DEMOLITION GENERAL NOTES

A. THE ARCHITECTURAL DRAWINGS ARE TO BE USED ONLY AS A GUIDELINE FOR DEMOLITION. THE CONTRACTOR MUST VISIT THE SITE PRIOR TO BIDDING TO VERIFY WORK REQUIRED FOR A COMPLETE JOB AND INCLUDE THE COST OF SUCH WORK IN THEIR BID.

B. EXAMINE AREAS AND CONDITIONS UNDER WHICH DEMOLITION WORK MUST BE PERFORMED. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES PERFORMING DEMOLITION WORK AND/OR DEMOLITION WORK PERFORMED BY THE OWNER. IN EVERY INSTANCE OF DEMOLITION AND/OR REMODELING, THE CONTRACTOR SHALL FIGURE A COMPLETE JOB AS NONE OTHER SHALL BE ACCEPTED.

C. THE EXTENT OF WORK SHOWN OR NOT SHOWN SHALL INCLUDE REMOVAL AND LEGALLY DISPOSE OFF SITE, ALL TRE ITEMS AND SYSTEMS BEING REMOVED

D. THIS CONTRACTOR SHALL RETAIN ON THE PREMISES IN NEATLY STACKED PILES WHERE INSTRUCTED FOR SELECTION BY THE OWNER, ALL MATERIAL WIRE, FIXTURES AND/OR EQUIPMENT WHICH ARE SPECIFIED TO BE REMOVED OR REPLACED. ALL SUCH ITEMS NOT SELECTED FOR SALVAGE BY THE OWNER, SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES AND LEGALLY DISPOSED.

E. COMPORM TO ALL APPLICABLE CODES FOR DEMOLITION OF ITEMS AND SYSTEMS. SAFETY OF ADJACENT SYSTEMS, DUST CONTROL, LEGAL RUN-OFF CONTROL, DISPOSAL AND ALL ITEMS NECESSARY TO COMPLETE THE WORK COMPLETELY.

F. DEMOLITION SHALL BE DONE IN A MANNER SO AS NOT TO DAMAGE ADJACENT WORK AND NOT AFFECT THE OPERATION OF SYSTEMS TO REMAIN IN USE. ANY ITEM TO REMAIN THAT IS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AND/OR REPAIRED AT THE CONTRACTOR'S EXPENSE.

G. DEMOLITION AND CUTTING SHALL BE DONE IN A MANNER WHICH DOES NOT DEFORM OR APPLY LOADS TO THE EXISTING FRAMING AND EQUIPMENT OF THE BUILDING TO REMAIN.

H. WALLS, CEILINGS, FLOORS, ETC., BEING DISTURBED BY THE WORK SHALL BE RETURNED TO FINISHED CONDITIONS TO MATCH EXISTING BY THE CONTRACTOR AND CONTRACTOR SHALL DO HIS OWN CUTTING AND PATCHING AS NECESSARY UNDER THEIR CONTRACT.

I. THE CONTRACTOR SHALL MAINTAIN EXISTING SERVICES TO AND IN THE EXISTING AREA AS REQUIRED.

J. THE EXISTING SYSTEMS TO REMAIN ARE TO BE SUPPORTED AS REQUIRED UNTIL THE MODIFIED ELEMENTS ARE INSTALLED AND SUPPORTED.

K. IF NECESSARY, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES IN THE EXISTING AREAS.

L. EXISTING ABOVE GRADE FLOOR SLABS SHALL BE SAW-CUT IN A MANNER THAT DOES NOT CAUSE THE STEEL FRAMING OR THE REBAR SUPPORTING THE SLAB TO BE CUT. CONTRACTOR SHALL FIELD VERIFY SLAB THICKNESS AND REBAR SPACING.

M. EXISTING ABOVE GRADE FLOOR SLABS SHALL BE CORE DRILLED AT REENTRANT CORNERS OF NEW FLOOR OPENINGS TO PREVENT OVER CUTTING. IF EXISTING SLAB IS A STRUCTURAL SLAB, CONTRACTOR SHALL CONTACT ENGINEER ON HOW TO PROCEED

N. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ELECTRIC SERVICE TO ALL MECHANICAL EQUIPMENT BEING REMOVED AS A RESULT OF THE RENOVATION.

O. EQUIPMENT AND DEVICES SHALL BE REMOVED COMPLETE INCLUDING HANGERS, SUPPORTS, CONTROLS, CONDUIT, WIRE, PIPES, DUCTWORK, ETC. WIRING SHALL BE DISCONNECTED AT CIRCUIT BREAKERS, REMOVED AND BREAKERS MARKED "SPARE."

P. ALL OPEN ENDED PIPING AND DUCTWORK THAT IS TO REMAIN SHALL BE CAPPED AND PROPERLY SECURED.

Q. ANY EXISTING PIPES, DUCTWORK, CONDUIT, LOW VOLTAGE CONTROL, WIRING AND/OR ELECTRICAL AND MECHANICAL DEVICES BEING DISTURBED BY THE WORK SHALL BE REWORKED BY THIS CONTRACTOR AS REQUIRED TO RETURN TO ITS FORMER/EXISTING OPERATING CONDITION.

R. ANY PIPES OR DUCTWORK, OR CONTROL WIRING, OR TUBING FEEDING THROUGH DEVICES OR EQUIPMENT BEING RELOCATED, REWORKED, OR ABANDONED AND SERVING OTHER DEVICES, AND/OR EQUIPMENT SHALL BE MAINTAINED IN WORKING CONDITION.

S. ANY ASBESTOS REMOVAL IF REQUIRED WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK.

T. EXISTING ARCHITECTURAL, MECHANICAL AND ELECTRICAL EQUIPMENT AND SYSTEMS SHALL BE PROTECTED FROM DAMAGE RESULTING FROM DEMOLITION.

U. CONTRACTOR SHALL SUBMIT A PROPOSED DECONSTRUCTION SEQUENCE TO THE OWNER AND ARCHITECT FOR REVIEW PRIOR TO COMMENCEMENT OF WORK.

V. CONTRACTOR SHALL PROTECT ALL EXISTING RETURN DUCTWORK AND TRANSFER AIR OPENINGS WITH DISPOSABLE FILTERS DURING CONSTRUCTION. FILTERS SHALL BE OF THE DISPOSABLE TYPE AND SHALL BE MERV 8. REPLACE EXISTING BUILDING UNIT FILTERS AFTER CONSTRUCTION IS COMPLETE.

PLUMBING GENERAL NOTES:

A. PLUMBING CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATIONS AND SIZES OF ALL UTILITIES, INCLUDING THE DEPTHS OF ALL BELOW GRADE SANITARY SEWERS, PRIOR TO START OF WORK. THIS DRAWING IS NOT INTENDED TO INDICATE ALL EXISTING UTILITIES.

B. CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID AND FIELD VERIFY EXISTING CONDITIONS TO ENSURE THAT THE WORK REPRESENTED ON THE DRAWINGS AND IN THESE SPECIFICATIONS CAN BE INSTALLED AS INDICATED. CONTRACTOR SHALL TAKE ALL INTERFERENCES INTO CONSIDERATION. IDENTIFY POTENTIAL INTERFERENCES WITH NEW WORK AND REPORT TO ARCHITECT IMMEDIATELY. PROVIDE ALL NECESSARY OFFSETS TO SUIT FIELD CONDITIONS AS REQUIRED.

C. CONTRACTOR SHALL VERIFY AND COORDINATE ALL UTILITY CONNECTION POINTS, INCLUDING SIZES AND INVERTS WITH EXISTING FIELD CONDITION PRIOR TO START OF WORK.

D. MAKE ALL UTILITY CONNECTIONS AND INSTALLATIONS IN FULL ACCORDANCE WITH ALL UTILITY REGULATIONS. PROVIDE ALL ADDITIONAL APPURTENANCES AS REQUIRED BY UTILITY COMPANY. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.

E. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS RELATED TO THE INSTALLATION OF THE WORK.

F. WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, LAWS, ACTS AND ALL AUTHORITIES HAVING JURISDICTION AND LANDLORD'S CRITERIA.

G. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR FIXTURES AND EQUIPMENT. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF PLUMBING FIXTURES.

H. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE CONTRACT DOCUMENTS BEFORE COMMENCING ANY WORK.

I. SLEEVE AND SEAL PIPE PENETRATIONS OF WALLS AND FLOORS. APPLY INTUMESCENT FIRE SAFING COMPOUND AT PENETRATIONS OF FIRE-RATED WALLS AND FLOORS, MAINTAINING INTEGRITY AND RATING OF FIRE SEPARATION. SLEEVES THROUGH FLOORS SHALL EXTEND 2" ABOVE FLOOR, BE GROUTED INTO PLACE AND WATERPROOFED. PIPING THROUGH EXTERIOR WALLS SHALL BE SLEEVED AND SEALED WEATHER TIGHT WITH SILICONE CAULK.

J. WHEN SUBMITTING SHOP DRAWINGS FOR PLUMBING FIXTURES, PLUMBING CONTRACTOR TO PROVIDE SEPARATE WATER CLOSET FIXTURE CUTS SHOWING FLUSH HANDLES ON APPROPRIATE SIDES OF TANK FOR ADA ACCESS.

Professional Certification (Mechanical)
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Project No.:	24.0774
Drawn By:	MH
Date	Issue
01-31-25	Permit Set

P001

PLUMBING DATA SHEET

EXPANSION TANK SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	TYPE	CAPACITY (GAL)	SIZE (DIA"xL")	OPERATING WEIGHT (LBS)	REMARKS
ET-	AMTROL	ST-5C-DD	EWH-1	DIAPHRAGM	2	8" x 14"	18	1

REMARKS
1. APPROVED MANUFACTURERS: AMTROL, SELL AND GOSSET, OR TACO.

DOMESTIC WATER HEATER (ELECTRIC) SCHEDULE

MARK	MANUFACTURER	MODEL	STORAGE TEMPERATURE (°F)	RECOVERY AT 100° (GPH)	STORAGE (GAL.)	NUMBER OF ELEMENTS	MAXIMUM OPERATION (KW)	ELECTRICAL VOLT	ELECTRICAL PHASE	REMARKS
EWH-1	AO SMITH	DEL-30	120	18	40	2	4.5	208	3	1,2

REMARKS
1. APPROVED MANUFACTURERS: AO SMITH, BRADFORD WHITE, LOCHINVAR, RHEEM, AND STATE.
2. RECOVERY RATE BASED ON 40°F ENTERING WATER TEMPERATURE.

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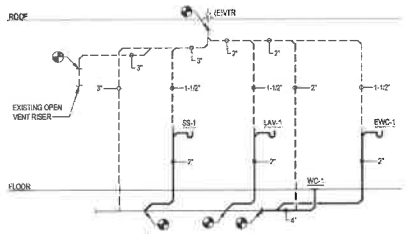
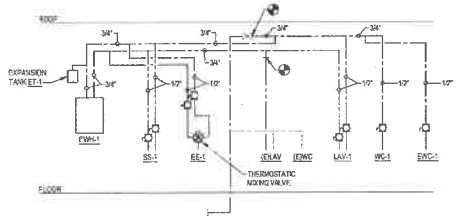
PLUMBING FIXTURE CONNECTION SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	CONNECTIONS CW	CONNECTIONS HW	CONNECTIONS SANITARY	CONNECTIONS VENT	DESCRIPTION
WC-1 ADA	WATER CLOSET	KOHLER	PRESSURE LITE K3519	1/2"		3"	2"	VITREOUS CHINA, ELONGATED BOWL, PRESSURE ASSIST SIPHON JET FLUSH ACTION, 1.0 GPF, FLOOR MOUNTED, CHURCH MODEL 2858SC1 HEAVY DUTY PLASTIC, OPEN FRONT SEAT WITH SELF-SUSTAINING CHECK HINGE. FIXTURE TO CONFORM TO ADA REQUIREMENTS. FLUSH LEVER TO BE MOUNTED ON TANK OPEN TO WIDE SIDE OF TOILET AREA.
LAV-1 ADA	LAVATORY	AMERICAN STANDARD	LUCERNE 0355.012	1/2"	1/2"	1 1/2"	1 1/2"	VITREOUS CHINA, 22"x 18" WALL HUNG LAVATORY BACK DRILLED FOR CONCEALED ARMCHAIR CARRIER, AMERICAN STANDARD MODEL 0355202.892 DECK MOUNTED SENSOR FAUCET, 0.5 GPM, OFFSET GRID DRAIN AND TAILPIECE. INSULATE ALL EXPOSED WASTE AND WATER SUPPLY PIPING UNDER LAVATORY WITH SAFETY COVERS PER ADA REQUIREMENTS AS MANUFACTURED BY PLUMBERREX, MOGUIRE, OR TRUBRO. PROVIDE ASSE 1070 TEMPERING VALVE SET AT 90°F MOUNT FIXTURE AT HANDICAP HEIGHT.
SS-1	SERVICE SINK	ELKAY	SS81342	1/2"	1/2"	3"	1 1/2"	21" x 27 1/2" x 14" STAINLESS STEEL, FLOOR MOUNT SINGLE COMPARTMENT SCULLERY SINK, 16 GUAGE 304 STAINLESS STEEL, CENTER DRAIN, SUPPORTED BY FOUR STAINLESS STEEL TUBULAR LEGS, 8" CENTER FAUCET HOLES, CHICAGO MODEL 897 FAUCET WITH VACUUM BREAKER SPOUT, ADJUSTABLE WALL BRACE, P#8, HOOK AND 3/4" HOSE THREAD OUTLET.
EWC-1	WATER COOLER	ELKAY	EMABFTL8WSLK	1/2"		1 1/2"	1 1/2"	BI-LEVEL WALL MOUNTED COOLER WITH BOTTLE FILLING STATION, 8.0GPH @ 80 DEGREE AMBIENT, FILTRATION SYSTEM, MECHANICAL FRONT ACTIVATION OF COOLER, SENSOR ACTIVATION OF FILLING STATION, LIGHT GRAY GRANITE FINISH.
EE-1	EMERGENCY EYEWASH	BRADLEY	S19 224PT	1/2"		2"	1-1/2"	WALL-MOUNT EYEWASH WITH PADDLE OPERATION, BARRIER-FREE, HINGED DUST COVERS, PLASTIC BOWL, TAILPIECE AND P-TRAP. PROVIDE WITH BRADLEY S19 2309 MIXING VALVE TO SUPPLY TEPID WATER.
CO-1	CLEANOUT	J.R. SMITH	4020	-	-	SEE PLANS	SEE PLANS	DUCO CAST IRON CLEANOUT WITH ROUND ADJUSTABLE SCORIATED SECURED NICKEL BRONZE TOP

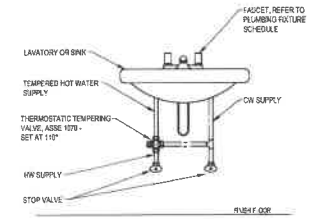
NOTES
1. REFER TO SPECIFICATIONS FOR APPROVED EQUAL MANUFACTURERS.
2. INSTALL SERVICE, SHUTOFF & CHECK VALVES, COCKS, STOPS, AIR CUSHIONS, VACUUM BREAKERS, AND SAFETY DEVICES WHERE REQUIRED BY CODE. SPECIFICATIONS, OR DRAWINGS.
3. EXPOSED P-TRAPS TO BE 17 GA. CHROME PLATE WITH CLEANOUT AND ESCUTCHEON PLATE.
4. STOPS TO BE CHROME PLATED 1/2" ANGLE VALVE WITH CHROME PLATED 12" LONG, 1/2" O.D. FLEXIBLE RISER AND ESCUTCHEON PLATE



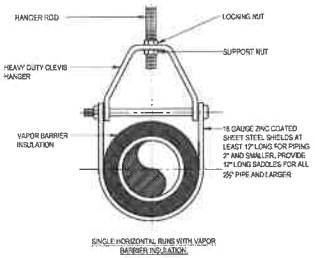
6 | SANITARY RISER DIAGRAM
N.T.S.



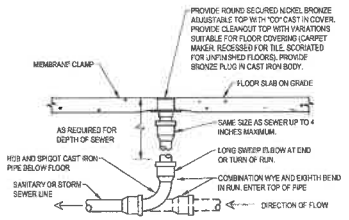
5 | DOMESTIC WATER RISER DIAGRAM
N.T.S.



LAVATORY/ SINK
4 | TEMPERING VALVE DETAIL
N.T.S

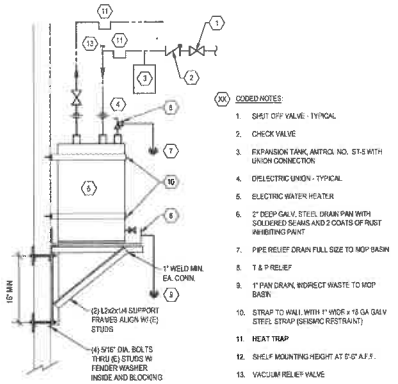


3 | CLEVIS HANGER DETAIL
N.T.S.



NOTES:
1. LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45 DEGREES, AT 50 FT INTERVALS OF STRAIGHT RUNS, AND WHERE SHOWN ON PLANS.
2. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS.
3. LOCATE CLEANOUTS WHERE THERE IS 18 INCHES CLEAR AROUND. CONSULT LOCAL CODES FOR OTHER REQUIREMENTS.

2 | FLOOR CLEANOUT DETAIL
N.T.S



WALL BRACKETED
1 | WATER HEATER DETAIL
N.T.S.

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Project No.:	24.0774
Drawn By:	MH
Date	Issue
01-31-25	Permit Set

P002

PLUMBING DETAILS AND SCHEDULES

Professional Certification (Mechanical)
I certify that these documents were prepared or approved by me, and that I am a duly licensed mechanical engineer under the laws of the State of Maryland, license number 54114 expiration date 3/30/2025.

GENERAL PLUMBING NOTES

A. REFER TO DRAWING P001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.

ⓧ KEYED NOTE SCHEDULE

1. EXISTING WATER CLOSET AND LAVATORY IN THIS TOILET ROOM TO REMAIN.
2. REMOVE EXISTING WATER CLOSET, LAVATORY, FLOOR DRAINS IN THE TOILET ROOMS. REMOVE ASSOCIATED DOMESTIC WATER, WASTE, AND VENT PIPING.
3. REMOVE EXISTING ELECTRIC WATER HEATER. REMOVE ASSOCIATED DOMESTIC WATER PIPING.
4. REMOVE EXISTING SERVICE SINK. REMOVE ASSOCIATED DOMESTIC WATER, WASTE, AND VENT PIPING.
5. REMOVE EXISTING SINK. REMOVE ASSOCIATED DOMESTIC WATER, WASTE, AND VENT PIPING.
6. REMOVE EXISTING VENT PIPING. VENT THRU ROOF TO REMAIN.
7. REMOVE EXISTING WATER SERVICE PIPING AND WATER PIPING IN THE BANK BUILDING. VALVE AND CAP WATER SERVICE AT EXISTING METER. CONFIRM EXACT LOCATION AND SIZE OF WATER SERVICE IN THIS FIELD.
8. REMOVE EXISTING GAS METER AND SERVICE MAIN TO THE BUILDING. CAP PIPING AT THE MAIN.
9. REMOVE EXISTING GAS PIPING. PIPING UP THRU ROOF TO EXISTING RTU TO REMAIN.
10. EXISTING WATER SERVICE TO THE EXISTING SHERWIN WILLIAMS STORE TO REMAIN. CONFIRM EXACT LOCATION AND SIZE OF WATER SERVICE IN THE FIELD.
11. REMOVE EXISTING VENT PIPING. EXISTING OPEN VENT RISER IN CEILING TO REMAIN.

PLUMBING DEMOLITION PLAN

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

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Project No.:	24.0774
Drawn By:	MH
Date	Issue
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PD101

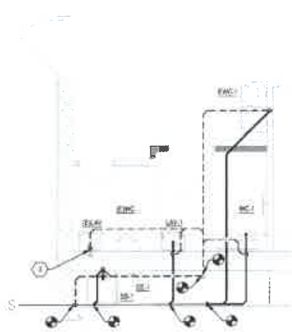
PLUMBING DEMOLITION PLAN

GENERAL PLUMBING NOTES

A. REFER TO DRAWING P001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS

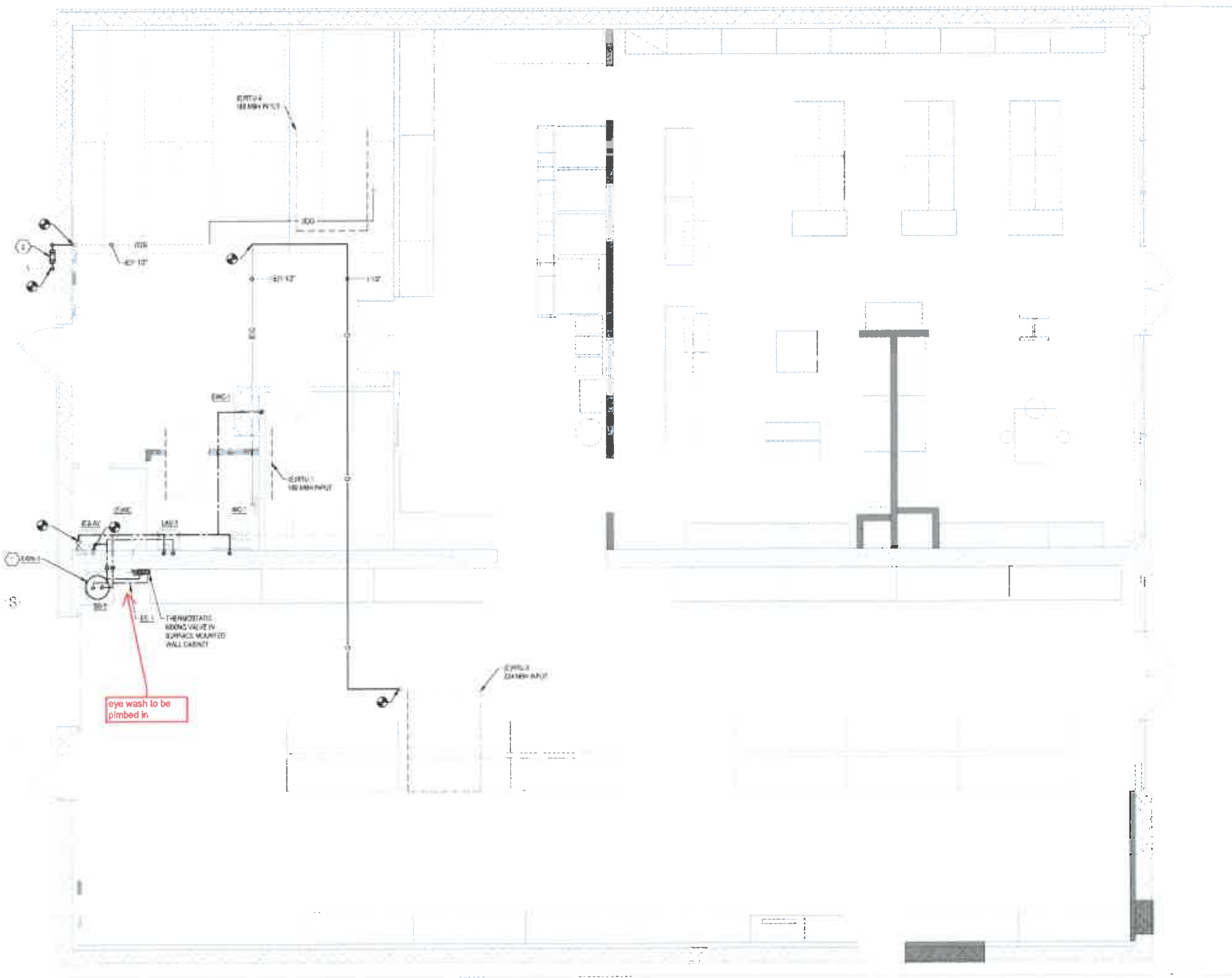
(X) KEYED NOTE SCHEDULE

1. ELECTRIC WATER HEATER ON WALL ABOVE MOP BASIN. REFER TO DETAIL 1/P001 FOR INSTALLATION DETAILS.
2. NEW GAS METER AND PRESSURE REGULATOR BY UTILITY COMPANY. CONNECT TO EXISTING SERVICE MAIN.
3. CONNECT NEW VENT PIPE TO TOP OF EXISTING VENT RISER.



2 | WASTE AND VENT PLUMBING PLAN

1/4"=1'-0"



1 | DOMESTIC WATER AND GAS PLUMBING PLAN

1/4"=1'-0"

Professional Certification (Mechanical)
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Project No.:	24.0774
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Date	Issue
01-31-25	Permit Set

P101

PLUMBING FLOOR PLAN

Plumbing General Information

A. General
1. Conform to all general and special conditions of contract as specified by architect, tenant and owner.
2. Specifications are applicable to all contractors and subcontractors for plumbing and electrical systems
3. Contractor shall comply with owner's standards, facility specifications, rules and regulations. All owner's criteria shall be complied with and included in this bid. Check other plans and specifications and fully coordinate with other trades and architect's requirements.
4. Visit site, check facilities and conditions, and verify all utility company requirements and connection points in field prior to starting work. Take all items into consideration in bid.
5. Systems are to be complete and workable in all respects, placed in operation and properly adjusted.
6. Each contractor shall provide for his own clean-up, removal and legal disposal of all rubbish daily.
7. The contractor shall be solely responsible for construction means, methods, and sequences of construction and the safety of workmen, comply with all OSHA regulations.
8. No piping, controls, etc., shall be installed or routed above electrical panels and equipment or through elevator rooms or shafts.
9. The plumbing and electrical contractors shall coordinate the electrical characteristics of all plumbing equipment prior to ordering of equipment. No additional payment will be made for lack of contractor coordination of electrical characteristics.
10. All plumbing and electrical system components shall be routed tight to underside of structure and through joists or trusses where possible. Coordinate installation to preserve headroom, equipment access, and architectural clearances for finishes, including ceiling heights. Coordinate with all other trades and do not conflict with the architectural requirements for the finished construction. Provide offsets where required to coordinate with other trades.
11. Operation and maintenance manuals: three (3) bound sets of this operation and maintenance manuals shall be provided to the construction representative at turnover, and are required for final acceptance.
12. As built drawings: the plumbing subcontractor shall progressively record all plumbing drawing changes which shall be available at all times for review by the construction representative. An AutoCAD copy of the final as-built drawings shall be provided to the construction representative at turnover. This AutoCAD as-built is required for final acceptance of the project.

B. Codes, standards and regulations
1. Conform to all applicable codes, government regulations, utility company requirements, and national electrical code.
2. Obtain permits and pay all fees. Arrange for all required inspections and approvals.

C. Related work specified elsewhere
1. Openings and chases, when shown on architectural drawings.

D. Drawings
1. The systems as shown on the contract drawings are diagrammatic.
2. The intent is for complete and workable systems. The drawings and these notes are to be used together as a basis of showing and/or describing the system requirements for the facility
3. Verify all dimensions and clearances by field measurement and check for interferences prior to starting work.

E. Base equipment and materials and substitutions
1. All equipment and materials shall be new, free of defects and U.L. labeled.
2. Submit shop drawings for all equipment, fixtures, etc., including all accessories to be furnished. Base bid manufacturers and models are included in specifications or listed in schedule on drawing. Any other manufacturer or model is a substitution.
3. Substitutions are subject to the approval of the owner and shall be listed on the form of proposal for the owner's consideration prior to contract award. If substitution is submitted, it is the contractor's responsibility to evaluate it and certify that the substitution is equivalent in all respects to the base specifications.
4. If substitutions are approved, notify all other contractors, subcontractors or trades affected by substitution to fully coordinate. Any costs resulting from substitution, whether by contractor or others, shall be responsibility of and paid for by substituting contractor.
5. All equipment shall be installed in full accordance with the manufacturer's installation instructions. It is this contractor's responsibility to check and conform to these requirements prior to starting work.

F. Check, test, start, adjust, balance and instructions
1. After installation, check all equipment, and perform start up in accordance with the manufacturer's instructions.
2. All piping shall be tested and free of leaks.
3. Balance all systems, calibrate controls, check for proper operating sequence under all conditions, and make all necessary adjustments.
4. All wiring shall be fully tested and made free of grounds and short circuits.
5. Instruct owner in operation of systems and submit operating and maintenance manual on all equipment and systems.
6. Provide engraved labels and identification tags for all piping systems, valves and equipment.
7. Provide typed panel directories and engraved labels for all panels and equipment.

G. Cutting, patching and drilling
1. All cutting and chasing of the building construction required for this work shall be by this contractor unless shown on architectural drawings and confirmed as to size and location prior to new construction. Cutting shall be in a neat and workmanlike manner.
2. Neatly saw cut all rectangular openings, set sleeve through opening, and finish patch or provide trim flange around opening.
3. Neatly saw cut floors for sewer installation and patch floor to match existing, including floor covering.
4. Core drill and sleeve all round openings.
5. Do not cut any structural components without architect's approval.
6. Patch and finish to match adjacent areas that have been cut, damaged or modified to install equipment for this project.
7. Cutting of roof, installation of curbs, and patching of roof shall be by a certified roofing contractor, approved by building owner, and paid for by this contractor.
8. Fire stop all penetrations of fire rated construction in a code approved manner, using UL listed fire rated materials.
9. All contractors shall confirm with owner, prior to bid, times available for noise producing work such as cutting and core drilling at floors, walls, etc., as well as times for work which require access into adjoining areas. Include any premium time required in bid.

H. Warranty
1. Fully warrant all materials, equipment and workmanship for one (1) year from date of acceptance.
2. Extend all manufacturer's warranties to owner.
3. Repair or replace without charge to the owner all items found defective during the warranty period.

SECTION 22 0553
IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Pipe markers.

PART 2 PRODUCTS

2.01 IDENTIFICATION APPLICATIONS
A. Piping: Pipe markers.

2.02 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.
C. Color code as follows:
1. Potable, Cooling, Boiler, Feed, Other Water: Green with white letters.
2. Fire Quenching Fluids: Red with white letters.
3. Flammable Fluids: Yellow with black letters.

PART 3 EXECUTION

3.01 PREPARATION
A. Degrease and clean surfaces to receive adhesive for identification materials.

3.02 INSTALLATION
A. Install plastic pipe markers in accordance with manufacturer's instructions.
B. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.

END OF SECTION

SECTION 22 0719
PLUMBING PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Piping insulation.
B. Jackets and accessories.

1.02 SUBMITTALS
A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

1.03 DELIVERY, STORAGE, AND HANDLING
A. Accept materials on site labeled with manufacturer's identification, product density, and thickness.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS
A. Surface Burning Characteristics: Flame spread index/Smoke developed Index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 GLASS FIBER
A. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
1. K (Ksi) 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; rigid molded, noncombustible, with wicking material to transport condensed water to the outside of the system for evaporation to the atmosphere.
1. K (Ksi) Value: ASTM C177, 0.25 at 75 degrees F (0.034 at 24 degrees C).
2. Maximum Service Temperature: 220 degrees F (104 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.

2.03 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
A. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
1. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
2. Maximum Service Temperature: 220 degrees F (104 degrees C).
3. Connection: Waterproof vapor barrier adhesive.

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 (68 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.

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.

3.02 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.
C. Exposed Piping: Locate insulation and cover seams in least visible locations.
D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
E. 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 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.
F. 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.
G. For hot piping conveying fluids over 140 degrees F (60 degrees C), insulate flanges and unions at equipment.
H. 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 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.
I. Inserts and Shields:
1. Application: Piping 1-1/2 inches (40 mm) 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 (150 mm) long, of same thickness and contour as adjoining insulation; may be factory fabricated.
J. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions.
K. Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces (less than 10 feet (3 meters) above finished floor): Finish with PVC jacket and fitting covers.

3.03 SCHEDULES
A. Plumbing Systems:
1. Domestic Hot Water Supply:
a. Glass Fiber Insulation:
1) Pipe Size Range: 1 1/2 inch and larger.
2) Thickness: 1 1/2 inch.
b. Glass Fiber Insulation:
1) Pipe Size Range: 1 1/4 inch and smaller .
2) Thickness: 1 inch.
c. Cellular Foam Insulation:
1) Pipe Size Range: 1 1/4 inch and smaller.
2) Thickness: 1 inch.
2. Domestic Hot Water Recirculation:
a. Glass Fiber Insulation:
1) Pipe Size Range: All sizes.
2) Thickness: 1 inch (25 mm).
3. Domestic Cold Water: Glass Fiber 1 inch

END OF SECTION

SECTION 22 1005
PLUMBING PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Pipe, pipe fittings, specialties, and connections for piping systems.
1. Sanitary sewer and Vent piping.
2. Domestic water.
3. Gas piping.
4. Flanges, unions, and couplings.
5. Pipe hangers and supports.
6. Valves

1.02 SUBMITTALS
A. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Include valve data and ratings.

1.03 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 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET (1500 MM) OF BUILDING
A. Cast Iron Pipe: CISPI 301, hubless.
1. Fittings: Cast iron.
2. Joints: CISPI 310, neoprene gasket and stainless steel clamp and shield assemblies.
B. PVC Pipe: ASTM D2665 or ASTM D3034.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.03 SANITARY SEWER PIPING AND VENT PIPING, ABOVE GRADE
A. Cast Iron Pipe: CISPI 301, hubless, service weight. Required in plenum ceiling space.
1. Fittings: Cast iron.
2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.

2.04 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.

2.05 DOMESTIC WATER PIPING, ABOVE GRADE
A. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), 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. Mechanical Press Sealed Fittings: Double-pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, nonlead, synthetic rubber sealing elements.

2.06 NATURAL GAS PIPING, BURIED WITHIN 5 FEET (1500 MM) OF BUILDING
A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
1. Fittings: ASTM A234/A234M, wrought steel welding type.
2. Joints: ASME B31.1, welded.
3. Jacket: AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil (0.25 mm) polyethylene tape.

2.07 NATURAL GAS PIPING, ABOVE GRADE
A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
2. Joints: Threaded or welded to ASME B31.1.
3. Manifolds, exterior piping and risers, and piping on roof are all required to be painted with enamel paint.

2.08 FLANGES, UNIONS, AND COUPLINGS
A. Unions for Pipe Sizes 3 inches (80 mm) and Under:
1. Ferrous Pipe: Class 150 malleable iron threaded unions.
2. Copper Tube and Pipe: Class 150 bronze unions with soldered joints.
B. Flanges for Pipe Size Over 1 inch (25 mm):
1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
C. Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.
1. Dimensions and Testing: In accordance with AWWA C606.
2. Housing Material: Provide ASTM A47/A47M malleable iron or ductile iron, galvanized.
3. Gasket Material: EPDM suitable for operating temperature range from minus 20 degrees F (minus 34 degrees C) to 230 degrees F (110 degrees C).
4. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
5. When pipe is field grooved, provide coupling manufacturer's grooving tools.
D. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.09 PIPE HANGERS AND SUPPORTS
A. Provide hangers and supports that comply with MSS SP-58.
1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers
a. Cold and Hot Pipe Sizes 6 inches (150 mm) and Over: Double hangers.
3. Trapeze Hangers: Welded steel channel frames attached to structure.
4. Vertical Pipe Support: Steel riser clamp.

2.10 BALL VALVES
A. Construction, 4 inches (100 mm) and Smaller: MSS SP-110, Class 150, 400 psi (2760 kPa) CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, Teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

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. Install in accordance with manufacturer's instructions.
B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
E. Group piping whenever practical at common elevations.
F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
H. Provide access where valves and fittings are not exposed.
I. Establish elevations of buried piping outside the building to ensure not less than local requirements for cover depth.
J. Install vent piping penetrating roofed areas to maintain integrity of roof assembly.
K. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer to welds.
L. Provide support for utility meters in accordance with requirements of utility companies.
M. Prepare exposed, unfinished pipe, fittings, supports, and accessories for finish painting.
N. Install bell and spigot pipe with bell end upstream.
O. Install valves with stems upright or horizontal, not inverted.
P. Install water piping to ASME B31.9.
Q. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
R. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.
S. Sleeve pipes passing through partitions, walls, and floors.
T. 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.
U. 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.
11. Support cast iron drainage piping at every joint.
V. 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, unions, 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 valves for shut-off and to isolate equipment, part of systems, or vertical risers.

3.05 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM
A. Disinfect water distribution system.
B. Prior to starting work, verify system is complete, flushed, and clean.
C. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
D. Maintain disinfectant in system for 24 hours.
E. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

3.06 SERVICE CONNECTIONS
A. Provide new water service complete with approved reduced pressure backflow preventer and water meter with by-pass valves, pressure reducing valve.
1. Provide sleeve in wall for service main and support at wall with reinforced concrete bridge. Calk enlarged sleeve and make watertight with pliable material. Anchor service main inside to concrete wall.
2. Provide 18 gage, 0.0478-inch (1.21 mm) galvanized sheet metal sleeve around service main to 6 inch (150 mm) above floor and 6 feet (1800 mm) minimum below grade. Size for minimum of 2 inches (50 mm) of loose batt insulation stuffing.

3.07 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: 6.5 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. All Sizes:
1) Maximum Hanger Spacing: 5 ft (1.8 m).
2) Hanger Rod Diameter: 3/8 inch (9 mm).

END OF SECTION

SECTION 22 4000
PLUMBING FIXTURES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PREPARATION
A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.02 INSTALLATION
A. Install each fixture with trap, easily removable for servicing and cleaning.
B. Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
C. Install components level and plumb.

3.03 INTERFACE WITH WORK OF OTHER SECTIONS
A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.04 ADJUSTING
A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

END OF SECTION

Professional Certification (Mechanical)
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Drawn By: MH
Date: 01-31-25
Issue: Permit Set

P201

PLUMBING SPECIFICATIONS

ABBREVIATION LEGEND

ABBREVIATION	DESCRIPTION
A	AMPERES
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CAT	CATALOG
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CL	CENTERLINE
CLF	CURRENT LIMITING FUSE
CU	COPPER
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EM	INDICATES EMERGENCY CIRCUIT
EMT	ELECTRICAL METALLIC TUBING
EWC	ELECTRIC WATER COOLER
FU	FUSE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FAEP	FIRE ALARM EXTENDER PANEL
FLA	FULL LOAD AMPERES
GND,G	GROUND OR GROUNDING
GRMC	GALVANIZED RIGID METALLIC CONDUIT
HOA	HAND, O-F, AUTOMATIC SWITCH
IMC	INTERMEDIATE METAL CONDUIT
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
LTG	LIGHTING
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
NTS	NOT TO SCALE
P	POLE
PNL	PANEL
POS	PROVIDED UNDER OTHER SECTIONS
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANITY
REQD	REQUIRED
RMC	RIGID METAL CONDUIT
RTU	ROOF TOP UNIT
SP	SPARE
SW	SWITCH
TEL	TELEPHONE
UL	UNDERWRITERS LABORATORIES
V	VOLT
W	WIRE
WP	WEATHERPROOF

ELECTRICAL SYMBOL/ABBREVIATION LEGEND

SYMBOL	DESCRIPTION	MTG. HGT. (U.N.O.)
$	LIGHT SWITCH	48"
$3	3-WAY SWITCH	48"
$D	DIMMER	48"
$K	KEY-SWITCH	48"
$OC	OCCUPANCY SENSOR	48"
$VC	VACANCY SENSOR	48"
⊕ : ⊕ : ⊕	SINGLE / DUPLEX / DOUBLE DUPLEX RECEPTACLE	18"
⊕GF ; ⊕GF : ⊕GF	RECEPTACLE WITH GROUND FAULT PROTECTION	18"
⊕WP ; ⊕WP : ⊕WP	WEATHER RESISTANT RECEPTACLE WITH WEATHERPROOF IN-USE COVER	18"
⊕WP ; ⊕WP : ⊕WP	WEATHER RESISTANT RECEPTACLE	18"
⊕F ; ⊕F	DUPLEX / DOUBLE DUPLEX IN-FLOOR RECEPTACLE	
J	JUNCTION BOX	
T	THERMOSTAT LOCATION, PROVIDE BOX WITH 1/2" CONDUIT TO CEILING SPACE	60"
S	SENSOR LOCATION, PROVIDE BOX WITH 1/2" CONDUIT TO CEILING SPACE	60"
▼	TELEPHONE JACK, PROVIDE BOX WITH 1/2" CONDUIT TO CEILING SPACE	18"
▽	DATA JACK, PROVIDE BOX WITH 3/4" CONDUIT TO CEILING SPACE	18"
▼	COMBO DATA/TELE JACK, PROVIDE BOX WITH 3/4" CONDUIT TO CEILING SPACE	18"
TF	COMBO DATA/TELE IN FLOOR JACK	
B	BUTTON	48"
B	BELL/BUZZER	
	PANELBOARD	
	MOTOR	
	NON-FUSED DISCONNECT	
	FUSED DISCONNECT	
	STARTER/FUSED DISCONNECT	
F	PULL STATION	48"
H/S	HORN/STROBE (CD = CANDELA RATING)	80"
	CEILING MOUNTED HORN/STROBE (CD = CANDELA RATING)	
V	STROBE (CD = CANDELA RATING)	80"
S	DUCT SMOKE DETECTOR	
S	SMOKE DETECTOR	
TS	TAMPER SWITCH	
FS	FLOW SWITCH	
RTS	REMOTE TEST SWITCH	
FACP	FIRE ALARM CONTROL PANEL	
FAAP	FIRE ALARM ANNUNCIATOR PANEL	

ABBREVIATION	DESCRIPTION
AHJ	AUTHORITY HAVING JURISDICTION
EX	EXISTING
GFI	GROUND FAULT INTERRUPTING
NL	NIGHT LIGHT
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
WP	WEATHER PROOF

Professional Certification (Electrical)
I certify that these documents were prepared or approved by me, and that I am a duly licensed electrical engineer under the laws of the State of Maryland, license number 61478 expiration date 8/1/2025.

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Project No.: 24.0774
Drawn By: LY

Date	Issue
01-31-25	Permit Set

E001

ELECTRICAL DATA SHEET

DEMOLITION NOTES:

A. PERFORM ALL DEMOLITION OF EXISTING ELECTRICAL SYSTEMS AS INDICATED ON ELECTRICAL AND ARCHITECTURAL PLANS OR NECESSARY FOR THE PROJECT. REMOVE FROM SITE AND PROPERLY DISPOSE OF ALL MATERIAL AND DEBRIS FROM THIS WORK.

B. DEMOLITION DRAWINGS ARE GENERAL IN NATURE SHOWING THE SCOPE OF DEMOLITION WORK. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE QUANTITY OF LIGHT FIXTURES, OUTLETS, ETC. REMOVE ALL EQUIPMENT AND DEVICES NO LONGER REQUIRED FOR FINISHED CONSTRUCTION. REMOVE CONDUITS BEYOND NEW SURFACES. REMOVE ALL EXISTING WIRE FROM CONDUIT BACK TO POINT OF COMMON USE OR TO PANELS.

C. REMOVE AND/OR RELOCATE EXISTING ELECTRICAL DEVICES ON WALLS OR CEILING BEING REMOVED. COORDINATE EXACT CONDITIONS WITH ARCHITECTURAL DRAWINGS.

D. FOR ALL DEVICES AND FIXTURES BEING REMOVED, REMOVE RELATED CONDUIT AND WIRING TO SOURCE. RE-LABEL EXISTING CIRCUIT BREAKERS AS "SPARE" WHEN LOAD IS COMPLETELY REMOVED OR REVISE LABEL ON PANEL DIRECTORY APPROPRIATELY.

E. PATCH ALL SURFACES TO MATCH SURROUNDING FOR DEVICES TO BE REMOVED FROM EXISTING WALL TO BE MAINTAINED. ALL CIRCUITS WHICH ARE REQUIRED TO REMAIN ACTIVE SHALL BE MAINTAINED OR REWORKED AS REQUIRED. ANY EXISTING CIRCUITS OR CABLING SYSTEMS SERVING AREAS NOT AFFECTED BY DEMOLITION SHALL BE MAINTAINED.

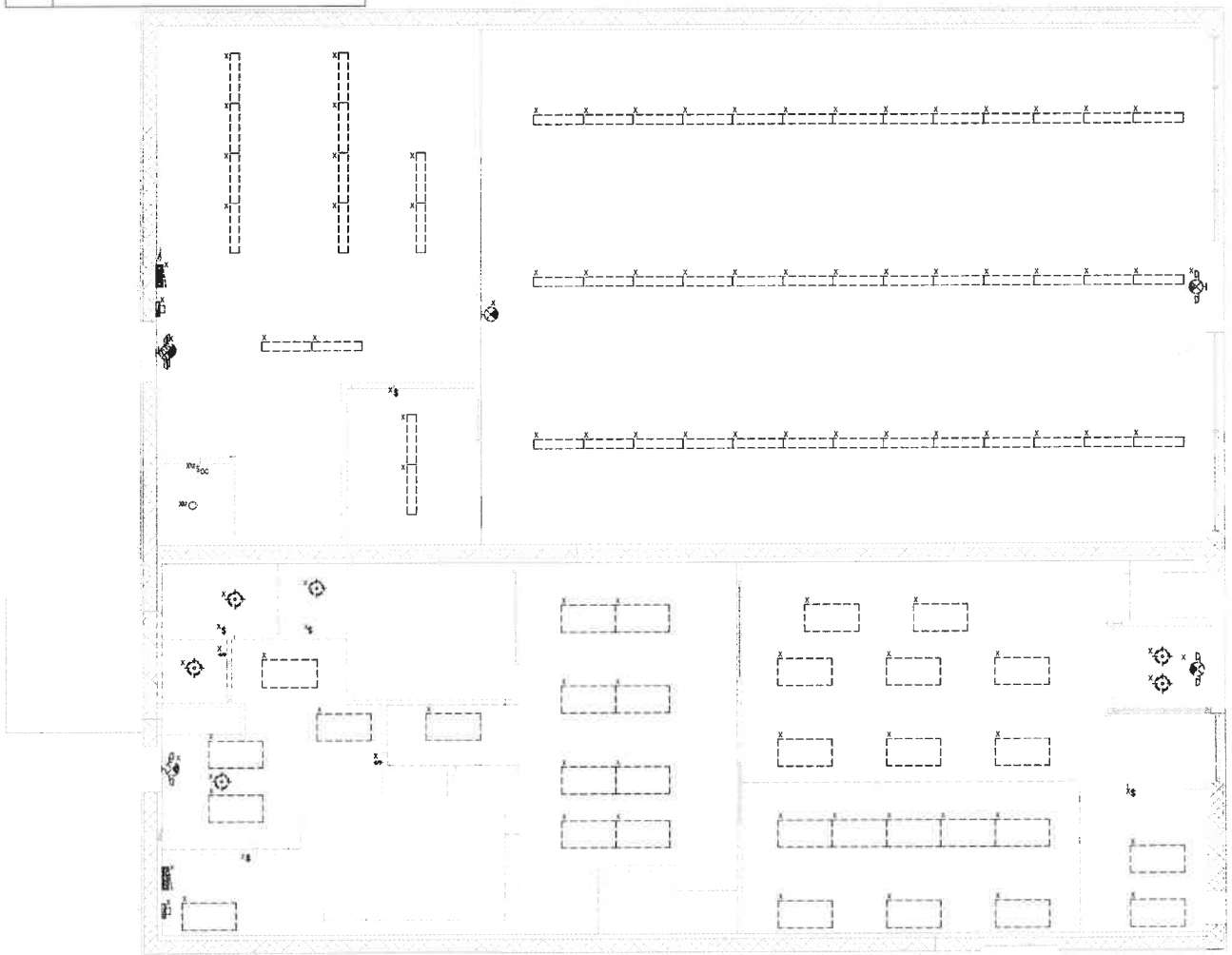
F. ALL CIRCUITS SHALL BE VERIFIED WITH EXISTING DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO BEGINNING DEMOLITION.

G. EXISTING LIGHT FIXTURES BEING RELOCATED SHALL BE CLEANED AND RE-LAMPED. VERIFY CORRECT OPERATION OF EXISTING FIXTURE AND REPORT ALL FAULTY CONDITIONS TO THE ARCHITECT OR OWNER.

H. THE OWNER RESERVES THE RIGHT OF SALVAGE FOR ALL EXISTING ELECTRICAL EQUIPMENT PRIOR TO DEMOLITION. THE CONTRACTOR SHALL REVIEW ALL MATERIALS AND DELIVER TO THE OWNER THOSE REQUIRED IN THEIR EXISTING CONDITION. ALL OTHER MATERIAL SHALL BE REMOVED BY THIS CONTRACTOR.

I. REMOVE DATA AND PHONE CABLING SYSTEM AS DIRECTED BY OWNER. NO CABLES SHALL BE REMOVED OR CUT WITHOUT APPROVAL FROM OWNER. ANY EXISTING CABLES TO REMAIN SHALL BE SUPPORTED FROM STRUCTURE BEFORE CEILING REMOVAL.

DEMOLITION ANNOTATION LEGEND	
"XR"	DENOTES EXISTING DEVICE/EQUIPMENT TO BE RELOCATED IN ITS ENTIRETY. MAINTAIN ALL BRANCH CIRCUIT WIRING, CONDUIT, ETC. FOR RELOCATION TO NEW LOCATION ("XN") INDICATED ON "NEW WORK" DRAWINGS
"XN"	DENOTES NEW LOCATION OF EXISTING RELOCATED ("XR") DEVICE/EQUIPMENT. REWORK ALL BRANCH CIRCUIT WIRING, CONDUIT, ETC. TO NEW LOCATION AS REQUIRED.
"XM"	DENOTES EXISTING DEVICE/EQUIPMENT TO BE MAINTAINED.
"X"	DENOTES EXISTING DEVICE/EQUIPMENT TO BE DISCONNECTED AND REMOVED COMPLETE BACK TO SOURCE OR NEXT ACTIVE DEVICE BEING MAINTAINED UNLESS NOTED OTHERWISE.



ELECTRICAL DEMOLITION PLAN

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

Professional Certification (Electrical)
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01-31-25	Permit Set

ED101

ELECTRICAL DEMOLITION PLAN

GENERAL NOTES:

A. ALL DEVICES, EQUIPMENT, FIXTURES, ETC. MUST BE GROUNDED BY USE OF A PROPERLY SIZED GROUNDING CONDUCTOR. MECHANICAL/ELECTRICAL BONDS OF THE METALLIC RACEWAY SYSTEM SHALL ALSO BE MAINTAINED.

B. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED A LIMIT OF 3%.

C. CIRCUITS MAY BE COMBINED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCES SHALL MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.

D. ALL CONDUITS SHALL CONTAIN A GROUND WIRE SIZED PER NEC TABLE 250-122. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY (ACCORDING TO CIRCULAR MIL AREA) FROM THE SIZE REQUIRED BY NEC TABLE 250-122.

E. EXPOSED CONDUITS, WHERE PERMITTED, SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO BUILDING STRUCTURAL MEMBERS.

F. ALL DEVICE COVER PLATES SHALL BE WHITE UNLESS NOTED OTHERWISE.

G. PROVIDE FUNCTIONAL TESTING FOR LIGHTING CONTROLS AND ALL REQUIRED REPORTING AND DOCUMENTATION PER ENERGY CODE REQUIREMENTS.

KEYED NOTE SCHEDULE

1. CONNECT TO THE EXISTING CIRCUIT SERVING THE AREA.
2. WIRE FIXTURE AHEAD OF ANY LIGHTING CONTROL DEVICES.

Professional Certification (Electrical)
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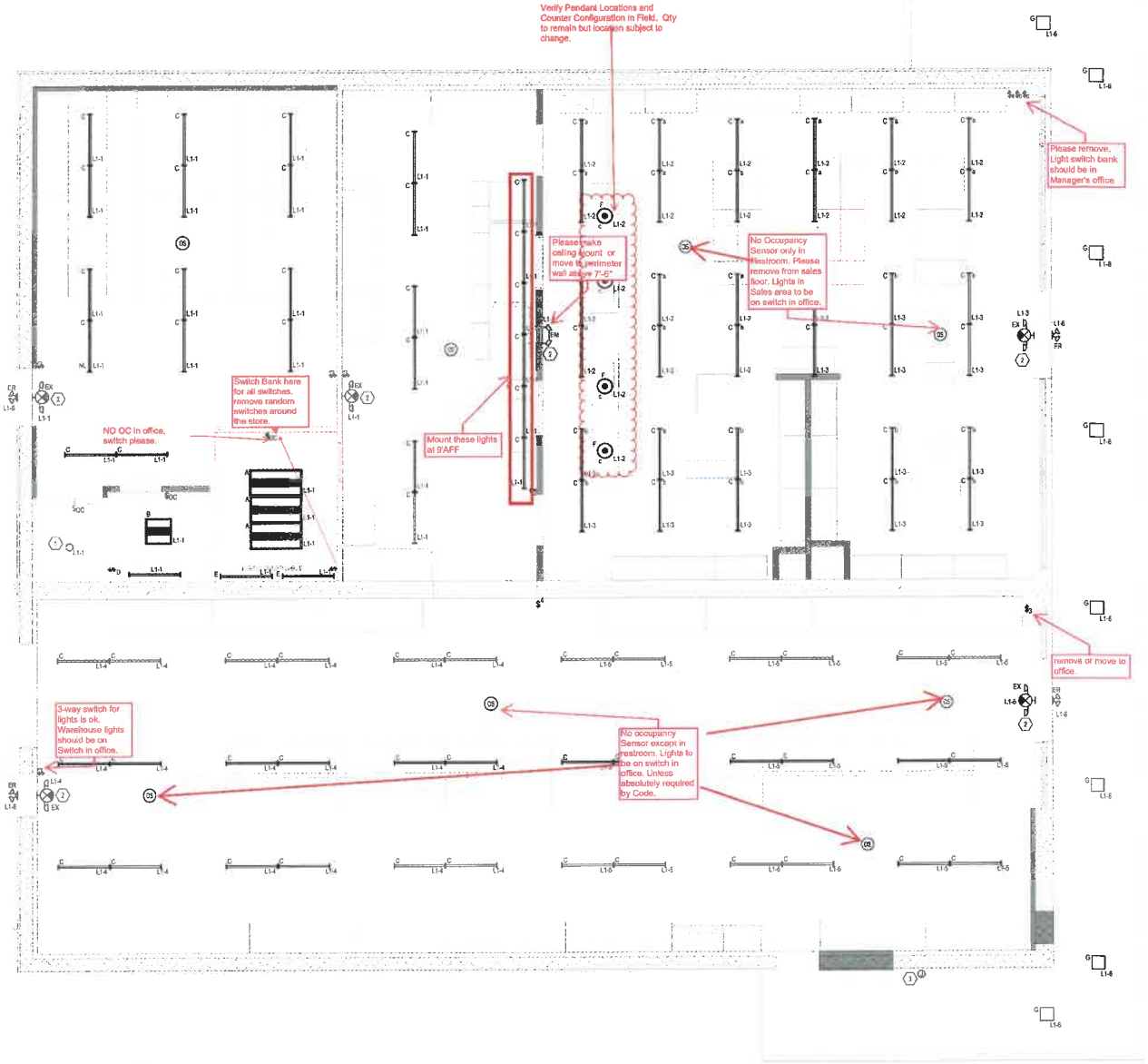

ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"

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Project No.:	24.0774
Drawn By:	LY
Date	Issue
01-31-25	Permit Set

E101

ELECTRICAL LIGHTING PLAN

Professional Certification (Electrical).
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GENERAL NOTES:

A. ALL DEVICES, EQUIPMENT, FIXTURES, ETC. MUST BE GROUNDED BY USE OF A PROPERLY SIZED GROUNDING CONDUCTOR. MECHANICAL/ELECTRICAL BONDS OF THE METALLIC RACEWAY SYSTEM SHALL ALSO BE MAINTAINED.

B. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE, SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED A LIMIT OF 3%.

C. CIRCUITS MAY BE COMBINED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCES SHALL MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.

D. ALL CONDUITS SHALL CONTAIN A GROUND WIRE SIZED PER NEC TABLE #250-122. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY (ACCORDING TO CIRCULAR MIL AREA) FROM THE SIZE REQUIRED BY NEC TABLE #250-122.

E. EXPOSED CONDUITS, WHERE PERMITTED, SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO BUILDING STRUCTURAL MEMBERS.

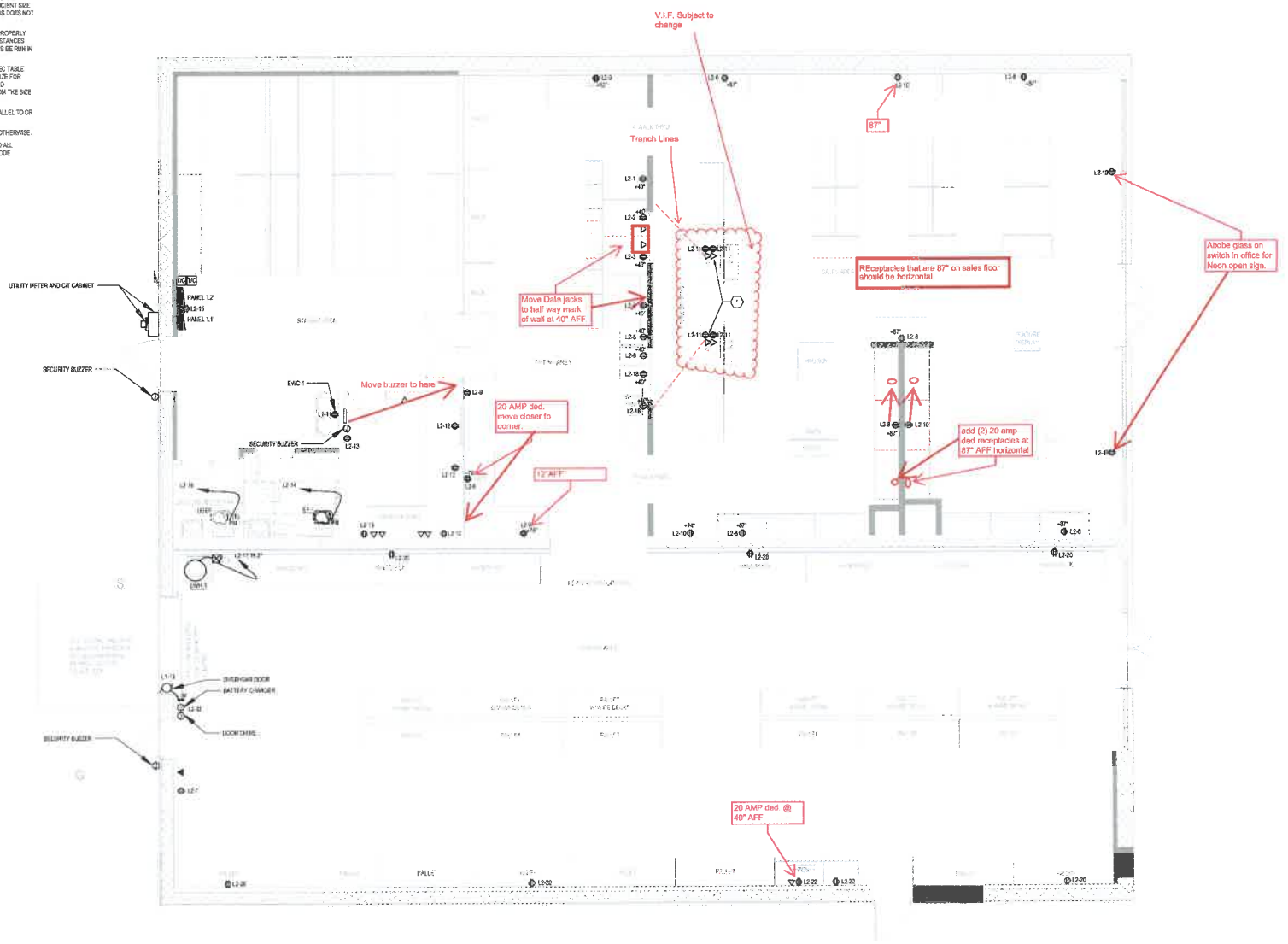
F. ALL DEVICE COVER PLATES SHALL BE WHITE UNLESS NOTED OTHERWISE.

G. PROVIDE FUNCTIONAL TESTING FOR LIGHTING CONTROLS AND ALL REQUIRED REPORTING AND DOCUMENTATION PER ENERGY CODE REQUIREMENTS.

KEYED NOTE SCHEDULE

Change to trench to Window Wall with stub up 8" - 2" empty data with pull string and another conduit for POS electric.

1. DUAL CHANNEL POWER POLE. FOR POWER AND DATA.
2. MOUNT STORE-FRONT RECEPTACLE ABOVE WINDOW.



ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"

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Project No.:	24.0774
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Date	Issue
01-31-25	Permit Set

E102

ELECTRICAL POWER PLAN

GENERAL NOTES:

A. ALL DEVICES, EQUIPMENT, FIXTURES, ETC. MUST BE GROUNDED BY USE OF A PROPERLY SIZED GROUNDING CONDUCTOR. MECHANICAL/ELECTRICAL BONDS OF THE METALLIC RACEWAY SYSTEM SHALL ALSO BE MAINTAINED.

B. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED A LIMIT OF 3%.

C. CIRCUITS MAY BE COMBINED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCES SHALL MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.

D. ALL CONDUITS SHALL CONTAIN A GROUND WIRE SIZED PER NEC TABLE #250-122. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY (ACCORDING TO CIRCULAR MIL AREA) FROM THE SIZE REQUIRED BY NEC TABLE #250-122.

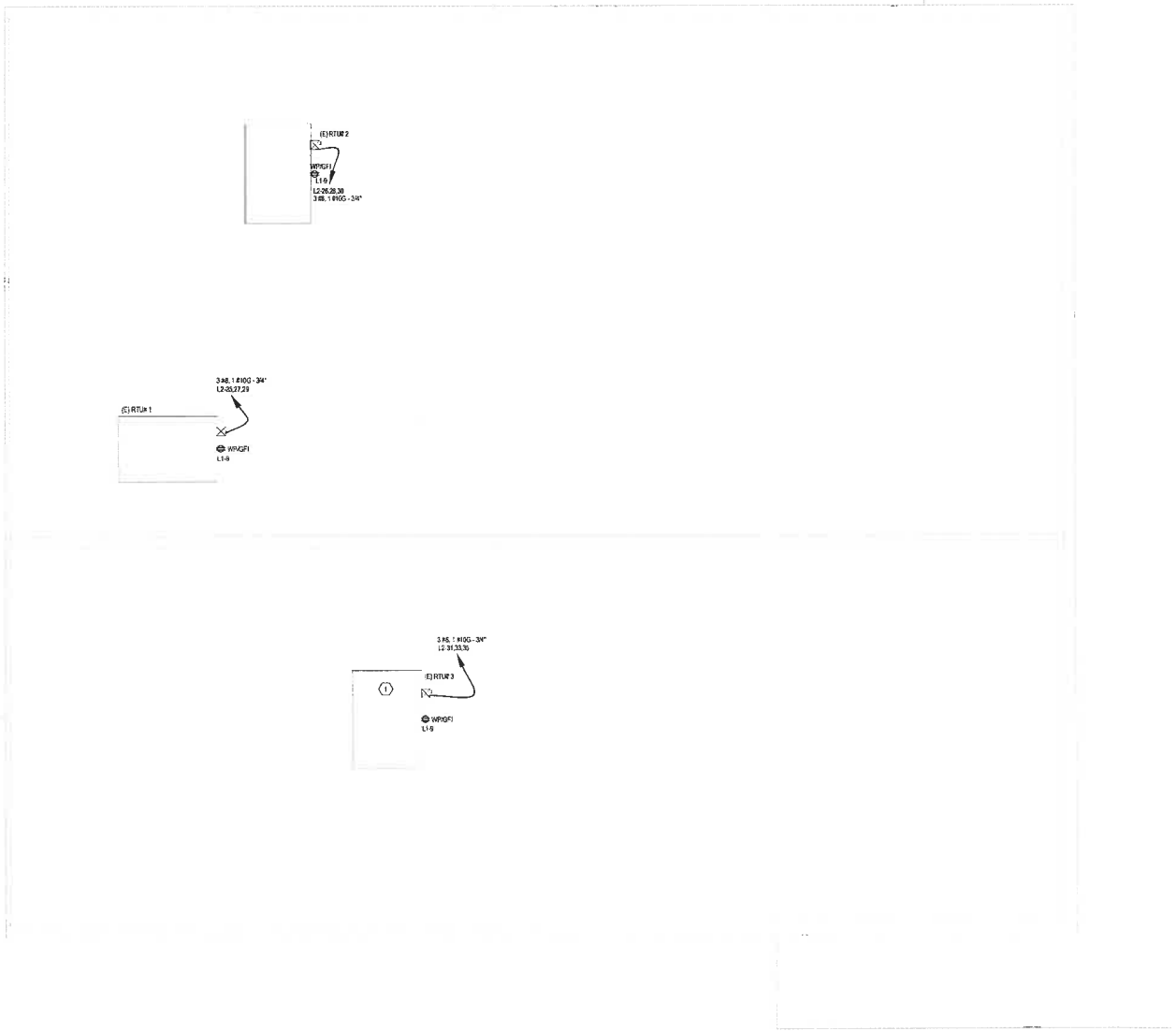
E. EXPOSED CONDUITS, WHERE PERMITTED, SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO BUILDING STRUCTURAL MEMBERS.

F. ALL DEVICE COVER PLATES SHALL BE WHITE UNLESS NOTED OTHERWISE.

G. PROVIDE FUNCTIONAL TESTING FOR LIGHTING CONTROLS AND ALL REQUIRED REPORTING AND DOCUMENTATION PER ENERGY CODE REQUIREMENTS

KEYED NOTE SCHEDULE

1. CONTRACTOR SHALL EXTEND EXISTING CONDUIT AND WIRING FROM LOCATION SHOWN ON PLAN TO NEW PANEL 'L2' AS REQUIRED.



ELECTRICAL ROOF PLAN
SCALE: 1/4" = 1'-0"

Professional Certification (Electrical)
I certify that these documents were prepared or approved by me, and that I am a duly licensed electrical engineer under the laws of the State of Maryland, license number 61478, expiration date 8/10/2025.

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SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	LY

Date	Issue
01-31-25	Permit Set

E103

ELECTRICAL ROOF PLAN

PANEL: L1						MAIN:	200A MAIN CIRCUIT BREAKER			VOLTAGE:	120/208		
						PHASE:	3	WIRE:	4	BUS AMPS:	200	AIC:	10K
MOUNTING:	SURFACE	LOCATION:	BACK OF HOUSE			FEED THRU LUGS:	NO			ISOLATED GROUND BUS:	NO		

CKT	NOTE	BKR	LOAD DESCRIPTION	KVA	AB	BB	CB	KVA	LOAD DESCRIPTION	BKR	NOTE	CKT
1		20/1	LIGHTING - STAGING/TINTING AREA	.9	1.4			.5	LIGHTING - SALES AREA	20/1		2
3		20/1	LIGHTING - SALES AREA	.5		1.0		.5	LIGHTING - STAGING AREA	20/1		4
5		20/1	LIGHTING - STAGING AREA	.5			0.7	.2	EXTERIOR LIGHTING	20/1		6
7		20/1	TIME CLOCK	.3	1.2			.9	EXTERIOR SIGNAGE	20/1		8
9		20/1	ROOFTOP RECEPTACLES	.5		0.5		6.9				10
11	GFI	20/1	EWC-1	.5			0.5	6.9	(E) RTU-3	60/3		12
13		20/1	OVERHEAD DOOR	.7	0.7			6.9				14
15		20/1	SPARE	0.0		0.0		0.0	SPARE	20/1		16
17		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		18
19		20/1	SPARE	0.0	0.0			0.0	SPARE	20/1		20
21		20/1	SPARE	0.0		0.0		0.0	SPARE	20/1		22
23		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		24
25		20/1	SPARE	0.0	0.0			0.0	SPARE	20/1		26
27		20/1	SPARE	0.0		0.0		0.0	SPARE	20/1		28
29		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		30
31		20/1	SPARE	0.0	0.0			0.0	SPARE	20/1		32
33		20/1	SPARE	0.0		0.0		0.0	SPARE	20/1		34
35		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		36
37		20/1	SPARE	0.0	0.0			0.0	SPARE	20/1		38
39		20/1	SPARE	0.0		0.0		0.0	SPARE	20/1		40
41		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		42

NOTES:
L HANDLE LOCK
GFI GROUND FAULT INTERRUPTING
AFI ARC FAULT INTERRUPTING
CD CONTINUOUS DUTY
H HACR RATED

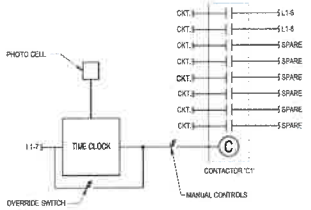
TOTAL KVA PER PHASE:	9.3	7.5	7.2
TOTAL KVA:	24.0		
TOTAL AMPS:	66.6		

PANEL: L2						MAIN:	200A MAIN CIRCUIT BREAKER			VOLTAGE:	120/208		
						PHASE:	3	WIRE:	4	BUS AMPS:	200	AIC:	10K
MOUNTING:	SURFACE	LOCATION:	BACK OF HOUSE			FEED THRU LUGS:	NO			ISOLATED GROUND BUS:	NO		

CKT	NOTE	BKR	LOAD DESCRIPTION	KVA	AB	BB	CB	KVA	LOAD DESCRIPTION	BKR	NOTE	CKT
1		20/1	DEDICATED RECEPTACLE	1.4	2.8			1.4	DEDICATED RECEPTACLE	20/1		2
3		20/1	DEDICATED RECEPTACLE	1.4		2.8		1.4	DEDICATED RECEPTACLE	20/1		4
5		20/1	DEDICATED RECEPTACLE	1.4			2.8	1.4	DEDICATED RECEPTACLE	20/1		6
7		20/1	DEDICATED RECEPTACLE	.2	1.3			1.1	RECEPTACLES - SALES AREA	20/1		8
9		20/1	RECEPT. - TINTING AREA	.9		1.8		.7	RECEPTACLES - SALES AREA	20/1		10
11		20/1	POS RECEPTACLE - SALES AREA	.7			1.2	.5	RECEPTACLES - OFFICE	20/1		12
13		20/1	RECEPTACLES - OFFICE	.8	0.5			.1	EF-1	20/1		14
15		20/1	PANEL RECEPTACLE	.8		0.8		.5	(E) EXHAUST FAN	20/1		16
17				1.5			1.2	.8	RECEPTACLES	20/1		18
19		20/3	EWH-1	1.5				1.3	RECEPTACLES - STAGING AREA	20/1		20
21				1.5	2.2			.2	POS RECEPTACLE - STAGING AREA	20/1		22
23		20/1	RECEPTACLE - TINTING AREA	.2		1.7		.2	RECEPTACLE - TINTING AREA	20/1		24
25				5.3	10.6		0.2	5.3				26
27		60/3	(E) RTU-1	5.3		10.6		5.3	(E) RTU-2	50/3		28
29				5.3			10.6	5.3				30
31		20/1	SPARE	0.0	0.5			.5	BATTERY CHARGER	20/1		32
33		20/1	SPARE	0.0		0.0		0.5	PANEL RECEPTACLE	20/1		34
35		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		36
37		20/1	SPARE	0.0	0.0			0.0	SPARE	20/1		38
39		20/1	SPARE	0.0		0.0		0.0	SPARE	20/1		40
41		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		42

NOTES:
L HANDLE LOCK
GFI GROUND FAULT INTERRUPTING
FI ARC FAULT INTERRUPTING
CD CONTINUOUS DUTY
H HACR RATED

TOTAL KVA PER PHASE:	18.5	17.6	16.9
TOTAL KVA:	53.0		
TOTAL AMPS:	147.1		



NOTES:
A. LIGHTING CONTACTORS TO BE MECHANICALLY HELD WITH 2-WIRE CONTROL MODULE AND 120V COIL, 20AMP FULLY RATED CONTACTS
B. TIMECLOCK TO BE DIGITAL, ASTRONOMIC, 2 CHANNEL WITH PHOTOCELL.

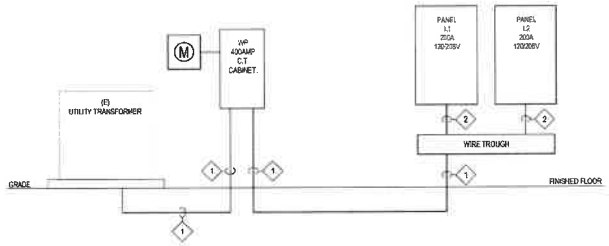
2 LIGHT CONTROL SCHEMATIC
N.T.S.

Lighting from Amrk Sabatino at WESCO

LIGHT FIXTURE SCHEDULE

MARK	SYMBOL	MANUFACTURER CATALOG NO.	MOUNTING	LAMPS	FIXTURE WATTS	VOLTAGE	DESCRIPTION	NOTES
A		GE LIGHTING SOLUTIONS WWW.CURRENTBYGE.COM LVT24SKWNWH-Xxxxxxxx-HP	RECESSED	LED	43	120	2' x 4' LED LIGHT FIXTURE	
B		GE LIGHTING SOLUTIONS WWW.CURRENTBYGE.COM LVT22SKGWNWH-Xxxxxxxxxx	RECESSED	LED	41	120	2' x 2' LED LIGHT FIXTURE	
C		ALBEO AI V21474BOMSAQVDSTK2W	PENDANT	LED	27	120	PENDANT MOUNTED LED LIGHT FIXTURE	
D		ALBEO ALV304TB3T48DWSAQVDSTK2W	SURFACE	LED	27	120	SURFACE MOUNTED LED LIGHT FIXTURE	
E		JUNO UPLD-22IN-SWWH-SDCR-WH	SURFACE	LED	17.1	120	SURFACE MOUNTED LED LIGHT FIXTURE	
F		CONTECH LIGHTING CYP3T130KCMVDPCWP-S	PENDANT	LED	13	120	PENDANT MOUNTED LED LIGHT FIXTURE	
G		CURRENTLIGHTING.COM/FXO SGC-F-8C1-SGS-75-120/277V-4000K70	SURFACE	LED		120	SURFACE MOUNTED LED LIGHT FIXTURE	
EX		CHLORIDE LIGHTING: CR4IL-1-W-R	SURFACE	LED	5.5	120	SURFACE MOUNTED LED DOWNLIGHT	
ER		LITHONIA LIGHTING: ELA7-DWP-L030-SD	SURFACE	LED	25	UNV	RECESSED MOUNTED LED DOWNLIGHT	1
EF		LITHONIA LIGHTING: EU2C - 120/277	SURFACE	LED	2	120	LED EMERGENCY BATTERY LIGHTING UNIT	1

NOTES:
1. PROVIDE UNSWITCHED 'HOT' LEG FOR CONNECTION TO BATTERY UNIT



1 ONE-LINE DIAGRAM
N.T.S.

ONE LINE DIAGRAM NOTES:

A. COORDINATE ALL WORK WITH POWER COMPANY REQUIREMENTS PRIOR TO BIDDING & INCLUDE THE COST OF ALL ASSOCIATED LABOR, MATERIALS, & CHARGES IN BID.
B. VERIFY THE AVAILABLE FAULT CURRENT WITH THE UTILITY COMPANY PRIOR TO BIDDING AND PROVIDE EQUIPMENT RATED ACCORDINGLY. SUBMIT FAULT CURRENT CALCULATIONS WITH SHOP DRAWING SUBMITTAL.
C. PROVIDE FULL LENGTH VERTICAL BUSSING IN ALL SWITCHBOARDS, DISTRIBUTION PANELS & PANELBOARDS
D. PROVIDE FULL SIZE HORIZONTAL BUSSING IN ALL SWITCHBOARDS
E. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE
F. ALL INTERIOR WALL-MOUNTED EQUIPMENT SHALL BE MOUNTED ON 3/4" FIRE RATED BACKBOARD
G. ALL FLOOR-MOUNTED EQUIPMENT SHALL BE MOUNTED ON 4" HIGH CONCRETE HOUSEKEEPING PAD
H. COORDINATE SPACE W/ ALL OTHER TRADES TO MAINTAIN ALL CODE-REQUIRED CLEARANCES.
I. REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

FEEDER SCHEDULE

1. (2) SETS 2"-4#3/0 +1#3 GND.
2. 2"-4#3/0+1#6 GND.

Professional Certification (Electrical)
I certify that these documents were prepared or approved by me, and that I am a duly licensed electrical engineer under the laws of the State of Maryland, license number 51478 expiration date 9/12/2025

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Project No.:	24.0774
Drawn By:	LY
Date	Issue
01-31-25	Permit Set

E104

ELECTRICAL RISER DIAGRAM AND SCHEDULES

SECTION 26 0505
SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 EXECUTION

1.01 EXAMINATION

A. Verify that wiring and equipment to be removed serve only areas of demolition, or make provisions to maintain portions of systems serving areas outside of scope of demolition.

B. Demolition drawings are based on casual field observation and existing record documents.

C. Beginning of demolition means installer accepts existing conditions.

1.02 PREPARATION

A. Disconnect electrical systems in walls, floors, and ceilings to be removed.

B. Coordinate utility service outages with utility company.

C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.

E. Existing Fire Alarm System: Maintain existing system in service until new system is accepted. Disable system only to make switchovers and connections. Minimize outage duration.
1. Notify Owner before partially or completely disabling system.
2. Notify local fire service.
3. Make notifications at least 24 hours in advance.
4. Make temporary connections to maintain service in areas adjacent to work area.

1.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing installations to accommodate new construction.

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.

E. Disconnect and remove abandoned panelboards and distribution equipment.

F. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.

G. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.

H. Repair adjacent construction and finishes damaged during demolition and extension work.

I. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

1.04 CLEANING AND REPAIR

A. Clean and repair existing materials and equipment that remain or that are to be reused.

B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

C. Luminaires: Remove existing luminaires for cleaning. Use mild detergent to clean all exterior and interior surfaces; rinse with clean water and wipe dry. Replace lamps, ballasts and broken electrical parts.

SECTION 26 0526
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 PRODUCTS

1.01 GROUNDING AND BONDING REQUIREMENTS

A. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.

B. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

C. Grounding Electrode System:
1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
2. Metal Underground Water Pipe(s):
3. Metal In-Ground Support Structure:
   a. Provide connection to metal in-ground support structure that is in direct contact with earth in accordance with NFPA 70.
4. Concrete-Encased Electrode:
5. Ground Ring:
6. Ground Rod Electrode(s):
   a. Space electrodes not less than 8 feet from each other and any other ground electrode.
7. Ground Bar: Provide ground bar, separate from service equipment enclosure, for common connection point of grounding electrode system bonding jumpers as permitted in NFPA 70. Connect grounding electrode conductor provided for service-supplied system grounding to this ground bar.

D. Separately Derived System Grounding:
1. Separately derived systems include, but are not limited to:
   a. Transformers (except autotransformers such as buck-boost transformers)
   b. Uninterruptible power supplies (UPS), when configured as separately derived systems.
   c. Generators, when neutral is switched in the transfer switch.
2. Provide grounding electrode conductor to connect derived system grounded conductor to nearest effectively grounded metal building frame. Unless otherwise indicated, make connection at neutral (grounded) bus in source enclosure.
3. Provide bonding jumper to connect derived system grounded conductor to nearest metal building frame and nearest metal water piping in the area served by the derived system, where not already used as a grounding electrode for the derived system. Make connection at same location as grounding electrode conductor connection.
4. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
5. Where the source and first disconnecting means are in separate enclosures, provide supply-side bonding jumper between source and first disconnecting means.

E. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
4. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
   a. Metal water piping where not already effectively bonded to metal underground water pipe used as grounding electrode.
   b. Metal gas piping.

F. Isolated Ground System:
1. Where isolated ground receptacles or other isolated ground connections are indicated, provide separate isolated/insulated equipment grounding conductors.

G. Communications Systems Grounding and Bonding:
1. Provide intersystem bonding termination at service equipment or metering equipment enclosure and at disconnecting means for any additional buildings or structures in accordance with NFPA 70.

1.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.

C. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

SECTION 26 0529
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 PRODUCTS

1.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
2. 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.

B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.

C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.

D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.

E. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.

F. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.

PART 2 EXECUTION

2.01 INSTALLATION

A. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

B. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.

C. Unless specifically indicated or approved by Architect, do not provide support from roof deck.

D. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

SECTION 26 0533.13
CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 PRODUCTS

1.01 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.

B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.

C. Underground:
1. Use galvanized steel rigid metal conduit, PVC-coated galvanized steel rigid metal conduit, or rigid PVC conduit.

D. Concealed: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or electrical metallic tubing (EMT).

E. Exposed, Thin: Not Subject to Physical Damage: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or electrical metallic tubing (EMT).

F. Exposed, Exterior: Use galvanized steel rigid metal conduit or intermediate metal conduit (IMC).

G. Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit.
1. Maximum Length: 6 feet.

H. Connections to Vibrating Equipment:
1. Dry Locations: Use flexible metal conduit.
2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit.
3. Maximum Length: 6 feet unless otherwise indicated.

1.02 CONDUIT REQUIREMENTS

A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.

B. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.

C. Provide products listed, classified, and labeled as suitable for the purpose intended.

D. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

PART 2 EXECUTION

2.01 INSTALLATION

A. Conduit Routing:
1. Conceal all conduits unless specifically indicated to be exposed.
2. Conduits in the following areas may be exposed, unless otherwise indicated:
   a. Mechanical rooms.
   b. Mechanical equipment rooms.
   c. Within joists in areas with no ceiling.
3. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.

B. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

C. Connections and Terminations:
1. Use suitable adapters where required to transition from one type of conduit to another.
2. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
3. Secure joints and connections to provide maximum mechanical strength and electrical continuity.

D. Penetrations:
1. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
2. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
3. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
4. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.

E. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation.

F. Provide grounding and bonding in accordance with Section 26 0526.

SECTION 26 0533.16
BOXES FOR ELECTRICAL SYSTEMS

PART 1 PRODUCTS

1.01 BOXES

A. General Requirements:
1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
3. Provide products listed, classified, and labeled as suitable for the purpose intended.
4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
1. Use raised covers suitable for the type of wall construction and device configuration where required.
2. Use shallow boxes where required by the type of wall construction.
3. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
4. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
5. Minimum Box Size, Unless Otherwise Indicated:
   a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 36 mm) trade size.

C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger than 100 cubic inches:
1. Comply with NFPA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
2. NEMA 250 Environment Type, Unless Otherwise Indicated:
3. Junction and Pull Boxes Larger Than 100 cubic inches:
   a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.

D. Floor Boxes:
1. Description: Floor boxes compatible with floor box service fittings provided in accordance with Section 26 2726; with partitions to separate multiple services; furnished with all components, adapters, and trims required for complete installation.

PART 2 EXECUTION

2.01 INSTALLATION

A. Box Locations:
1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 3100 as required where approved by the Architect.
2. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
3. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.

B. Install boxes plumb and level.

C. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.

D. Close unused box openings.

E. Install blank-off plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.

SECTION 26 0553
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 PRODUCTS

1.01 IDENTIFICATION REQUIREMENTS

A. Identification for Equipment:
1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
2. Service Equipment:
   a. Use identification nameplate to identify each service disconnecting means.
   b. For buildings or structures supplied by more than one service, or any combination of branch circuits, feeders, and services, use identification nameplate or means of identification acceptable to authority having jurisdiction at each service disconnecting means to identify all other services, feeders, and branch circuits supplying that building or structure. Verify format and descriptions with authority having jurisdiction.
3. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
   a. Service equipment.
   b. Industrial control panels.
   c. Motor control centers.
   d. Elevator control panels.
   e. Industrial machinery.

B. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.

1.02 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Labels:
1. Materials: Use self-adhesive laminated plastic labels: UV, chemical, water, heat, and abrasion resistant.
2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

1.03 UNDERGROUND WARNING TAPE

A. Materials: Use non-detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.

B. Exception: Use foil-backed detectable type tape where required by serving utility or where directed by Owner.

SECTION 26 0583
WIRING CONNECTIONS

PART 1 PRODUCTS

1.01 MATERIALS

A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
1. Colors: Comply with NEMA WD 1.
2. Cord Construction: NFPA 70, Type SJO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.

1.02 EQUIPMENT CONNECTIONS

A. As indicated in equipment schedules on drawings or as indicated on plans.

PART 2 EXECUTION

2.01 ELECTRICAL CONNECTIONS

A. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

B. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.

C. Provide receptacle outlet to accommodate connection with attachment plug.

D. Provide cord and cap where field-supplied attachment plug is required.

E. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

F. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.

G. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

H. Coolers and Freezers: Cut and seal conduit openings in freezer and cooler walls, floor, and ceilings.

SECTION 26 0923
LIGHTING CONTROL DEVICES

PART 1 PRODUCTS

1.01 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled as suitable for the purpose intended.

1.02 OCCUPANCY SENSORS

A. All Occupancy Sensors:
1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
2. Sensor Technology:
   a. Passive Infrared (PIR) Occupancy Sensors: Designed to detect occupancy by sensing movement of thermal energy between zones.
   b. Ultrasonic Occupancy Sensors: Designed to detect occupancy by sensing frequency shifts in emitted and reflected inaudible sound waves.
   c. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
   d. Passive Infrared/Acoustic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and audible sound sensing technologies
3. Provides LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.
5. Compatibility (Non-Dimming Sensors): Suitable for controlling incandescent lighting, low-voltage lighting with electronic and magnetic transformers, fluorescent lighting with electronic and magnetic ballasts, and fractional motor loads, with no minimum load requirements.

B. Wall Switch Occupancy Sensors:
1. All Wall Switch Occupancy Sensors:
   a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
   b. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.

C. Ceiling Mounted Occupancy Sensors:
1. All Ceiling Mounted Occupancy Sensors:
   a. Description: Low profile occupancy sensors designed for ceiling installation.

D. Directional Occupancy Sensors:
1. All Directional Occupancy Sensors: Designed for wall or ceiling mounting, with integral swivel for field adjustment of motion detection coverage.

E. Luminaire Mounted Occupancy Sensors: Designed for direct luminaire installation and control, suitable for use with specified luminaires.
1. High Bay Luminaire Mounted Occupancy Sensors: Passive Infrared (PIR) type with a field of view of 360 degrees unless otherwise indicated.

F. Power Packs for Low Voltage Occupancy Sensors:
1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.
2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on drawings.

1.03 TIME SWITCHES

A. Digital Electronic Time Switches:
1. Description: Factory-assembled solid state programmable controller with LCD display, listed and labeled as complying with UL 916 or UL 917.
2. Schedule Capacity: Not less than 16 programmable on/off operations.
3. Provide automatic daylight savings time and leap year compensation.
4. Provide power outage backup to retain programming and maintain clock.
5. Manual override: Capable of overriding current schedule both permanently and temporarily until next scheduled event.

1.04 OUTDOOR PHOTO CONTROLS

A. Stem-Mounted Outdoor Photo Controls:
1. Description: Direct-wired photo control unit with threaded conduit mounting stem and field-adjustable swivel base, listed and labeled as complying with UL 773A.

B. Button Type Outdoor Photo Controls:
1. Description: Direct-wired photo control unit complying with ANSI C136.10 with weatherproof gasketed wall plate where required or indicated, listed and labeled as complying with UL 773A.

1.05 DAYLIGHTING CONTROLS

A. System Description: Control system consisting of photo sensors and compatible control modules and power packs, contactors, or relays as required for automatic control of load indicated according to available natural light; capable of integrating with occupancy sensors and manual override controls.

PART 2 EXECUTION

2.01 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of lighting control devices provided under this section.

B. Install lighting control devices in accordance with manufacturer's instructions.

C. Outdoor Photo Control Locations:
1. Where possible, locate outdoor photo controls with photo sensor facing north. If north facing photo sensor is not possible, install with photo sensor facing east, west, or down.
2. Locate outdoor photo controls so that photo sensors do not face artificial light sources, including light sources controlled by the photo control itself.

2.02 FIELD QUALITY CONTROL

A. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.

B. Test time switches to verify proper operation.

C. Test outdoor photo controls to verify proper operation, including time delays where applicable.

D. Test daylighting controls to verify proper operation, including light level measurements and time delays where applicable. Record test results in written report to be included with submittals.

E. Correct wiring deficiencies and replace damaged or defective lighting control devices.

2.03 ADJUSTING

A. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.

B. Adjust position of directional occupancy sensors and outdoor motion sensors to achieve optimal coverage as required.

C. Where indicated or as directed by Architect, install factory masking material to adjust infrared detectors on passive infrared (PIR) and dual technology occupancy sensor lenses to block undesired motion detection.

D. Adjust time switch settings to achieve desired operation schedule as indicated or as directed by Architect. Record settings in written report to be included with submittals.

E. Adjust daylighting controls under optimum lighting conditions after all room finishes, furniture, and window treatments have been installed to achieve desired operation as indicated or as directed by Architect. Record settings in written report to be included with submittals. Readjust controls calibrated prior to installation of final room finishes, furniture, and window treatments that do not function properly as determined by Architect

SECTION 26 2100
LOW-VOLTAGE ELECTRICAL SERVICE ENTRANCE

PART 1 PRODUCTS

1.01 ELECTRICAL SERVICE REQUIREMENTS

A. Provide new electrical service consisting of all required conduits, conductors, equipment, metering provisions, supports, accessories, etc. as necessary for connection between Utility Company point of supply and service entrance equipment.
   a. Products furnished by Contractor: Comply with Utility Company requirements

SECTION 26 2416
PANELBOARDS

PART 1 PRODUCTS

1.01 MANUFACTURERS

A. ABB/GE: www.geindustrial.com/pqis.

B. Eaton Corporation: www.eaton.com/pqis.

C. Schneider Electric, Square D Products; www.schneider-electric.us/pqis.

D. Siemens Industry, Inc: www.usa.siemens.com/pqis.

1.02 PANELBOARDS - GENERAL REQUIREMENTS

A. Short Circuit Current Rating:
1. Provide panelboards with listed short circuit current rating as indicated on the drawings.
2. Listed series ratings are acceptable, except where not permitted by motor contribution according to NFPA 70.
3. Label equipment utilizing series ratings as required by NFPA 70.

B. Panelboards Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.

C. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.

D. Bussing: Sized in accordance with UL 67 temperature rise requirements.
1. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
2. Provide separate isolated/insulated ground bus where indicated or where isolated grounding conductors are provided.

E. Conductor Terminations: Suitable for use with the conductors to be installed.

F. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
2. Boxes: Galvanized steel unless otherwise indicated.
   a. Provide wiring gutters sized to accommodate the conductors to be installed.
3. Lockable Doors: All locks keyed alike unless otherwise indicated.

G. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.

H. Multi-Section Panelboards: Provide enclosures of the same height, with feed-through lugs or sub-feed lugs and feeders as indicated or as required to interconnect sections.

I. Load centers are not acceptable.

J. Provide the following features and accessories where indicated or where required to complete installation:
1. Feed-through lugs.
2. Sub-feed lugs.

1.03 OVERCURRENT PROTECTIVE DEVICES

A. Molded Case Circuit Breakers:
1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
2. Interrupting Capacity:
   a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated.
   b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
3. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
4. Provide the following circuit breaker types where indicated:
   a. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of personnel.
   b. Ground Fault Equipment Protection Circuit Breakers: Designed to trip at 30 mA for protection of equipment.
   c. Arc-Fault Circuit Interrupter (AFCI) Circuit Breakers: Combination type listed as complying with UL 1699.
   d. 100 Percent Rated Circuit Breakers: Listed for application within the panelboard where installed at 100 percent of the continuous current rating.
   e. Current Limiting Circuit Breakers: Without using fusible elements, designed to limit the let-through energy to a value less than the energy of a one-half cycle wave of the symmetrical prospective current when operating within its current limiting range.
5. Do not use tandem circuit breakers.
6. Do not use handle ties in lieu of multi-pole circuit breakers.
7. Provide multi-pole circuit breakers for multi-wire branch circuits as required by NFPA 70.
8. Provide the following features and accessories where indicated or where required to complete installation:
   a. Shunt Trip: Provide coil voltage as required for connection to indicated trip actuator.
   b. Handle Lock Provision: For locking circuit breaker handle in OFF position.

PART 2 EXECUTION

2.01 INSTALLATION

A. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

B. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 78 inches above the floor or working platform.

C. Provide minimum of six spare 1 inch trade size conduits out of each flush-mounted panelboard stubbed into accessible space above ceiling and below floor.

D. Install all field-installed branch devices, components, and accessories.

E. Provide filler plates to cover unused spaces in panelboards.

F. Provide circuit breaker lock-on devices to prevent unauthorized personnel from de-energizing essential loads where indicated. Also provide for the following:
1. Emergency and night lighting circuits.
2. Fire detection and alarm circuits.
3. Communications equipment circuits.
4. Intrusion detection and access control system circuits.
   a. Video surveillance system circuits.

SECTION 26 2713
ELECTRICITY METERING

PART 1 PRODUCTS

1.01 EQUIPMENT FOR OWNER ELECTRICITY METERING

A. Provide microprocessor-based digital electricity metering systems including all instrument transformers, wiring, and connections necessary for measurements specified.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Provide electricity metering systems and associated components compatible with the equipment and associated circuits to be metered.

D. Service Conditions: Provide electricity meters suitable for operation under the service conditions at the installed location.

E. Enclosures:
1. Where not furnished by manufacturer, provide required cabinets and enclosures in accordance with Section 26 0533.16.
2. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
3. Finish: Manufacturer's standard unless otherwise indicated.

F. Instrument Transformers:
1. Comply with IEEE C57.13, where applicable.
2. Select suitable ratio, burden, and accuracy as required for connected devices.

G. Current Transformers: Compatible with connected meters; replace meters damaged by connection of incompatible current transformers. Provide shorting terminal blocks for connection of secondaries where applicable.

H. Potential Transformers: Include primary and secondary fuses with disconnecting means.

SECTION 26 2726 WIRING DEVICES

PART 1 PRODUCTS

1.01 WIRING DEVICE APPLICATIONS

A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.

C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.

D. Provide tamper resistant receptacles for receptacles installed in dwelling units

E. Provide GFCI protection for receptacles installed within 6 feet of sinks.

F. Provide GFCI protection for receptacles installed in kitchens.

G. Provide GFCI protection for receptacles serving electric drinking fountains.

H. Provide isolated ground receptacles for receptacles serving computers and electronic cash registers.

1.02 WALL SWITCHES

A. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.
1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.

B. Standard Wall Switches: Commercial specification grade, 20 A,

Professional Certification (Electrical):
I certify that these documents were prepared or approved by me, and that I am a duly licensed electrical engineer under the laws of the State of Maryland, license number 61478 expiration date 8/1/2025.

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Project No.: 24.0774
Drawn By: LY
Date: 01-31-25
Issue: Permit Set

E201

ELECTRICAL SPECIFICATION

120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

C. Momentary Contact Wall Switches: Commercial specification grade, 20 A, 120/277 V with toggle type three position switch actuator and momentary contacts; single pole double throw, off with switch actuator in center position.

1.03 WALL DIMMERS

A. Wall Dimmers – General Requirements: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1472; types and ratings suitable for load controlled as indicated on the drawings.

B. Provide accessory wall switches to match dimmer appearance when installed adjacent to each other.

1.04 FAN SPEED CONTROLLERS

A. Description: 120 V AC, solid-state, full-range variable speed, slide control type with separate on/off switch, with integral radio frequency interference filtering, fan noise elimination circuitry, power failure preset memory, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1917.

1.05 RECEPTACLES

A. Receptacles – General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.

1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.

B. Convenience Receptacles:

1. Standard Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
2. Isolated Ground Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R, with ground contacts isolated from mounting strap; isolated ground triangle mark on device face; single or duplex as indicated on the drawings.
3. Weather Resistant Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; single or duplex as indicated on the drawings.
4. Tamper Resistant Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as tamper resistant type; single or duplex as indicated on the drawings.

C. GFCI Receptacles:

1. GFCI Receptacles – General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.

1.06 WALL PLATES

A. Wall Plates: Comply with UL 514D.

1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.

B. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

1.07 FLOOR BOX SERVICE FITTINGS

A. Description: Service fittings compatible with floor boxes provided under Section 26 0533.16 with components, adapters, and trims required for complete installation.

1.08 POKE-THROUGH ASSEMBLIES

A. Description: Assembly comprising floor service fitting, poke-through component, fire stops and smoke barriers, and junction box for conduit termination; fire rating listed to match fire rating of floor and suitable for floor thickness where installed.

PART 2 EXECUTION

2.01 EXAMINATION

A. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.

2.02 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

2.03 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.

1. Where multiple receptacles, wall switches, or wall dimmers are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
2. Locate wall switches on strike side at door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.

B. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.

C. For isolated ground receptacles, connect wiring device grounding terminal only to identified branch circuit isolated equipment grounding conductor. Do not connect grounding terminal to outlet box or normal branch circuit equipment grounding conductor.

D. Provide GFCI receptacles with integral GFCI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.

E. Do not share neutral conductor on branch circuits utilizing wall dimmers.

F. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.

G. G. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

SECTION 26 5100 INTERIOR LIGHTING

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.02 SUBMITTALS

A. Shop Drawings:

1. Provide photometric calculations and competitive pricing where luminaires are proposed for substitution upon request.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings.

B. Substitutions: Equivalent products, except where individual luminaire types are designated with substitutions not permitted. Submit competitive pricing with all fixture substitutions.

2.02 LUMINAIRES

A. Manufacturers:

1. Acuity Brands, Inc: www.acuitybrands.com/gsle.
2. Cooper Lighting, a division of Cooper Industries: www.cooperindustries.com/gsle.
3. Hubbell Lighting, Inc: www.hubbelllighting.com/gsle.
4. Philips Lighting North America Corporation: www.lightingproducts.philips.com/gsle.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.

D. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.

E. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

F. Hazardous (Classified) Location Luminaires: Listed and labeled as complying with UL 844 for the classification of the installed location.

G. LED Luminaires:

1. Tested in accordance with IES LM-79 and IES LM-80.

H. Track Lighting Systems: Provide track compatible with specified track heads, with all connectors, power feed fittings, dead ends, hangers and canopies as necessary to complete installation.

I. Luminaires Mounted in Continuous Rows: Provide quantity of units required for length indicated, with all accessories required for joining and aligning.

2.03 EMERGENCY LIGHTING UNITS

A. Manufacturers:

1. Acuity Brands, Inc: www.acuitybrands.com/gsle.
2. Cooper Lighting, a division of Cooper Industries: www.cooperindustries.com/gsle.
3. Hubbell Lighting, Inc: www.hubbelllighting.com/gsle.
4. Substitutions: See Section 01 6000 – Product Requirements.

B. Description: Emergency lighting units complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.

C. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes at rated emergency illumination, and automatically recharges battery upon restoration of normal power source.

D. Battery:

1. Sealed maintenance-free lead calcium unless otherwise indicated.
2. Size battery to supply all connected lamps, including emergency remote heads where indicated.

E. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.

F. Provide low-voltage disconnect to prevent battery damage from deep discharge.

G. Self-Diagnostics: Provide units that self-monitor functionality and automatically perform testing required by NFPA 101 where indicated; provide indicator light(s) to report test and diagnostic status.

2.04 EXIT SIGNS

A. Manufacturers – Powered and Self-Luminous Signs:

1. Acuity Brands, Inc: www.acuitybrands.com/elm.
2. Cooper Lighting, a division of Cooper Industries: www.cooperindustries.com/gsle.
3. Hubbell Lighting, Inc: www.hubbelllighting.com/gsle.

B. Description: Internally illuminated exit signs with LEDs unless otherwise indicated; complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.

1. Number of Faces: Single or double as indicated or as required for the installed location.
2. Directional Arrows: As indicated or as required for the installed location.

C. Self-Powered Exit Signs:

1. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes at rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
2. Battery: Sealed maintenance-free nickel cadmium unless otherwise indicated.
3. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
4. Provide low-voltage disconnect to prevent battery damage from deep discharge.
5. Self-Diagnostics: Provide units that self-monitor functionality and automatically perform testing required by NFPA 101 where indicated; provide indicator light(s) to report test and diagnostic status.

D. Accessories:

1. Provide compatible accessory high impact polycarbonate vandal shields where indicated.
2. Provide compatible accessory wire guards where indicated.

2.05 BALLASTS AND DRIVERS

A. Ballasts/Drivers – General Requirements:

1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.

B. Dimmable LED Drivers:

1. Dimming Range: Continuous dimming from 100 percent to five percent relative light output unless dimming capability to lower level is indicated, without flicker.
2. Control Compatibility: Fully compatible with the dimming controls to be installed.

2.06 LAMPS

A. Manufacturers:

1. Where a specific manufacturer or model is indicated elsewhere in the luminaire schedule or on the drawings, substitutions are not permitted unless explicitly indicated.

B. Lamps – General Requirements:

1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.

PART 3 EXECUTION

3.01 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.

B. Install products in accordance with manufacturer's instructions.

C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).

D. Provide required support and attachment in accordance with Section 26 0529.

E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

F. Suspended Ceiling Mounted Luminaires:

1. Do not use ceiling tiles to bear weight of luminaires.
2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.
3. Secure lay-in luminaires to ceiling support channels using listed safety clips at four corners.
4. In addition to ceiling support wires, provide two galvanized steel safety wire(s), minimum 12 gauge, connected from opposing corners of each recessed luminaire to building structure.
5. See appropriate Division 9 section where suspended grid ceiling is specified for additional requirements.

G. Recessed Luminaires:

1. Install trims tight to mounting surface with no visible light leakage.
2. Non-IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.
3. Luminaires Recessed in Fire-Rated Ceilings: Install using accessories and firestopping materials to meet regulatory requirements for fire rating.

H. Suspended Luminaires:

1. Unless otherwise indicated, specified mounting heights are to bottom of luminaire.
2. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
3. Provide minimum of two supports for each luminaire equal to or exceeding 4 feet nominal length, with no more than 4 feet between supports.
4. Install canopies tight to mounting surface.
5. Unless otherwise indicated, support pendants from swivel hangers.

I. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.

J. Install accessories furnished with each luminaire.

K. Bond products and metal accessories to branch circuit equipment grounding conductor.

L. Emergency Lighting Units:

1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.
2. Install lock-on device on branch circuit breaker serving units.

M. Exit Signs:

1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.
2. Install lock-on device on branch circuit breaker serving units.

N. Remote Ballasts: Install in accessible location as indicated or as required to complete installation, using conductors per manufacturer's recommendations not exceeding manufacturer's recommended maximum conductor length to luminaire.

O. Identify luminaires connected to emergency power system in accordance with Section 26 0553.

P. Install lamps in each luminaire.

3.02 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.

B. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Architect or authority having jurisdiction.

C. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

SECTION 26 5600 EXTERIOR LIGHTING

PART 1 PRODUCTS

1.01 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings.

B. Substitutions: See Section 01 6000 – Product Requirements. Equivalent products, except where individual luminaire types are designated with substitutions not permitted. Submit competitive pricing with all fixture substitutions.

1.02 LUMINAIRES

A. Provide products that are listed and labeled as complying with UL 1598, where applicable.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.

D. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.

E. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

F. Provide luminaires listed and labeled as suitable for wet locations unless otherwise indicated.

G. LED Luminaires:

1. Components: UL 8750 recognized or listed as applicable.
2. Tested in accordance with IES LM-79 and IES LM-80.
3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

H. Exposed Hardware: Stainless steel.

1.03 BALLASTS AND DRIVERS

A. Manufacturers:

1. General Electric Company/GE Lighting: www.gelighting.com/gsle.
2. OSRAM Sylvania, Inc: www.osram.us/ds/gsle.

B. Ballasts/Drivers – General Requirements:

1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.

1.04 LAMPS

A. Lamps – General Requirements:

1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.

1.05 POLES

A. All Poles:

1. Provide poles and associated support components suitable for the luminaire(s) and associated supports and accessories to be installed.
2. Structural Design Criteria:
   a. Comply with AASHTO LTS.
   b. Wind Loads: Include effective projected area (EPA) of luminaire(s) and associated supports and accessories to be installed.
   c. Dead Load: Include weight of proposed luminaire(s) and associated supports and accessories.
3. Material: Steel, unless otherwise indicated.
4. Shape: Square straight, unless otherwise indicated.
5. Finish: Match luminaire finish, unless otherwise indicated.
6. Mounting: Install on concrete foundation, height as indicated on the drawings, unless otherwise indicated.

B. Metal Poles: Provide ground lug, accessible from handhole or transformer base.

PART 2 EXECUTION

2.01 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.

B. Install products in accordance with manufacturer's instructions.

C. Install luminaires in accordance with NECA/ESNA 501.

D. Provide required support and attachment in accordance with Section 26 0529.

E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

F. Install accessories furnished with each luminaire.

G. Bond products and metal accessories to branch circuit equipment grounding conductor.

H. Install lamps in each luminaire.

Professional Certification (Checkprint)
I certify that these documents were prepared or approved by me, and that I am a duly licensed electrical engineer under the laws of the State of Maryland, license number 61478 expiration date 8/12/2025.

SCOT LOISELLE ARCHITECT
811 Corporate Park Drive, Suite 113
Glen Burnie, Maryland 21061
410.863.1295 anyroadve.com

SHERWIN WILLIAMS #5178

520 GOVERNOR RITCHIE HIGHWAY
SEVERNA PARK, MD 21146

Project No.:	24.0774
Drawn By:	LY
Date	Issue
01-31-25	Permit Set

E202

ELECTRICAL SPECIFICATION

EAST ELEVATION - STOREFRONT

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

EXISTING CONDITIONS

12% of storefront facade = 93.7 sq. ft. maximum

DATE	REVISIONS	NAME
-2022	X X	KD

AUTHORIZATION

CLIENT DATE

ACCOUNT EXECUTIVE DATE

LANDLORD DATE

ALL CHANGES MUST BE INITIALED BY CLIENT AND ACCOUNT EXECUTIVE ON FINAL APPROVED PRINT.

CLIENT SHERWIN WILLIAMS STORE #

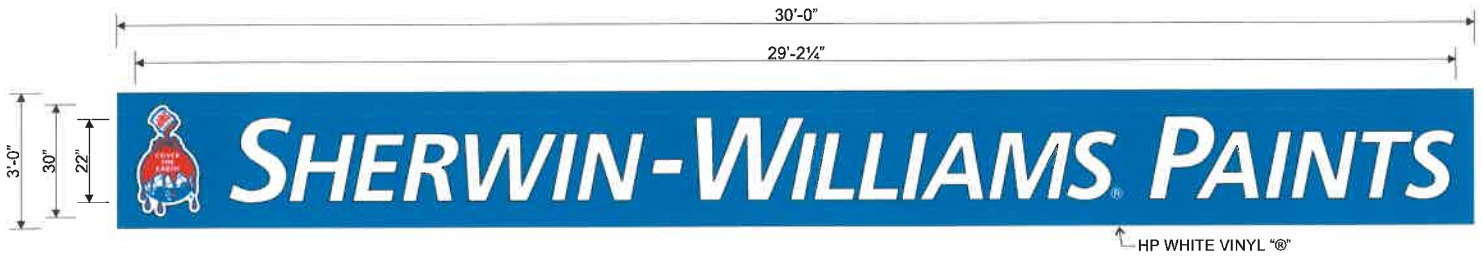
INSTALLATION ADDRESS 530 RITCHIE HWY | Severna Park , MD 21146

DESIGNER KD ACCOUNT EXECUTIVE DM

DATE 01-03-2024 SHEET 2 OF 7 DESIGN # 231522-01

Gerber FILE =
Corel FILE =

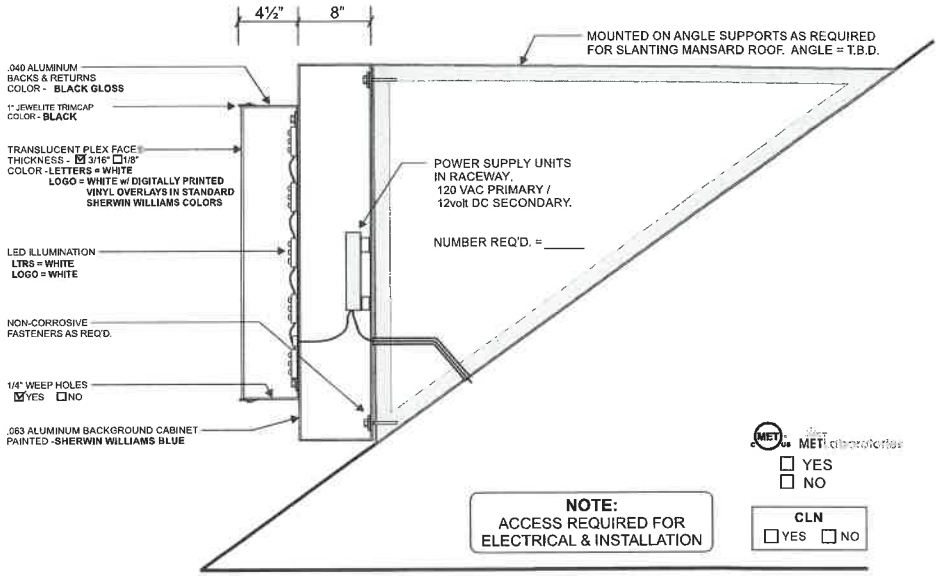
accent SIGNS graphics
COMPLETE SIGN SERVICE & FABRICATION
523 E. ROCK ISLAND
GRAND PRAIRIE, TX 75050
TOLL FREE (800) 810-3044
METRO (972) 399-0333
FAX (972) 986-4456
EMAIL
WEBSITE www.accentgraphicsinc.com FAX (800) 810-3045



A PLEX FACE CHANNEL LETTERS ON BACKGROUND RACEWAY — **90 Sq Ft**

(1) SET REQUIRED

Scale: 3/8" = 1'-0"



SECTION DETAIL - PLEX FACE CHAN LTRS on BACKGROUND RACEWAY

Scale: NTS

INSTALLATION REQUIREMENTS for all signs unless specified otherwise on individual sign specifications.
Variation from this criteria without written approval from Accent Graphics is strictly forbidden.
* All freestanding signs are to be engineered for local conditions by a licensed and registered engineer.

SIGN SIZE	MOUNTING SURFACE							
	SQUARE FOOTAGE	WOOD	SHEET METAL	BRICK	CONCRETE	CONCRETE BLOCK	DRYVIT / EIFIS	STUCCO over wire mesh
	UNDER 10 SQ. FT.	3/8" THRU BOLTS w/ 2" angle iron backer A minimum of (4) 3/8" bolts are required.	3/8" THRU BOLTS w/ 2" angle iron backer A minimum of (4) 3/8" bolts are required.	3/8" LEAD ANCHORS A minimum of (4) 3/8" bolts are required.	3/8" LEAD ANCHORS A minimum of (4) 3/8" bolts are required.	3/8" TOGGLE A minimum of (4) 3/8" bolts are required.	3/8" THRU BOLTS w/ 2" angle iron backer A minimum of (4) 3/8" bolts are required.	3/8" THRU BOLTS w/ 2" angle iron backer A minimum of (4) 3/8" bolts are required.
	10 SQ. FT. TO 50 SQ. FT.	3/8" THRU BOLTS w/ 2" angle iron backer A minimum of (4) 3/8" bolts are required.	3/8" THRU BOLTS w/ 2" angle iron backer A minimum of (4) 3/8" bolts are required.	3/8" LEAD ANCHORS A minimum of (4) 3/8" bolts are required.	3/8" LEAD ANCHORS A minimum of (4) 3/8" bolts are required.	3/8" TOGGLE A minimum of (4) 3/8" bolts are required.	3/8" THRU BOLTS w/ 2" angle iron backer A minimum of (4) 3/8" bolts are required.	3/8" THRU BOLTS w/ 2" angle iron backer A minimum of (4) 3/8" bolts are required.
	50 SQ. FT. TO 100 SQ. FT.	3/8" THRU BOLTS w/ 3" angle iron backer A minimum of (10) 3/8" bolts are required.	3/8" THRU BOLTS w/ 3" angle iron backer A minimum of (10) 3/8" bolts are required.	1/2" LEAD ANCHORS A minimum of (10) 1/2" bolts are required	1/2" LEAD ANCHORS A minimum of (10) 1/2" bolts are required	3/8" THRU BOLTS w/ 1" angle iron backer A minimum of (10) 3/8" bolts are required.	3/8" THRU BOLTS w/ 3" angle iron backer A minimum of (10) 3/8" bolts are required.	3/8" THRU BOLTS w/ 3" angle iron backer A minimum of (10) 3/8" bolts are required.
	100 SQ. FT. TO 200 SQ. FT.	1/2" THRU BOLTS w/ 3" angle iron backer A minimum of (1) 1/2" bolt per each 15 sq ft is required.	1/2" THRU BOLTS w/ 3" angle iron backer A minimum of (1) 1/2" bolt per each 15 sq ft is required.	1/2" WEDGE ANCHOR A minimum of (1) 1/2" bolt per each 15 sq ft is required.	1/2" WEDGE ANCHOR A minimum of (1) 1/2" bolt per each 15 sq ft is required.	1/2" THRU BOLTS w/ 3" angle iron backer A minimum of (1) 1/2" bolt per each 15 sq ft is required.	REQUIRES SPECIAL ENGINEERING	REQUIRES SPECIAL ENGINEERING
	OVER 200 SQ. FT.	REQUIRES SPECIAL ENGINEERING	REQUIRES SPECIAL ENGINEERING	1/2" THRU BOLTS w/ at least 3" angle iron backer A minimum of (1) 1/2" bolt per each 15 sq ft is required.	1/2" THRU BOLTS w/ at least 1" angle iron backer A minimum of (1) 1/2" bolt per each 15 sq ft is required.	REQUIRES SPECIAL ENGINEERING	REQUIRES SPECIAL ENGINEERING	REQUIRES SPECIAL ENGINEERING

Backers = 24" on 36" long steel angle iron (1½" x 1½" min.)

DATE	REVISIONS	NAME
-2022	X X	KD

AUTHORIZATION

CLIENT DATE

ACCOUNT EXECUTIVE DATE

LANDLORD DATE

ALL CHANGES MUST BE INITIALED BY CLIENT AND ACCOUNT EXECUTIVE ON FINAL APPROVED PRINT.

CLIENT SHERWIN WILLIAMS STORE # _____

INSTALLATION ADDRESS 530 RITCHIE HWY | Severna Park , MD 21146

DESIGNER KD ACCOUNT EXECUTIVE DM

DATE 01-03-2024 SHEET 1 OF 7 DESIGN # 231522-01

Gerber FILE =

Corel FILE =

accent SIGNS graphics
COMPLETE SIGN SERVICE & FABRICATION
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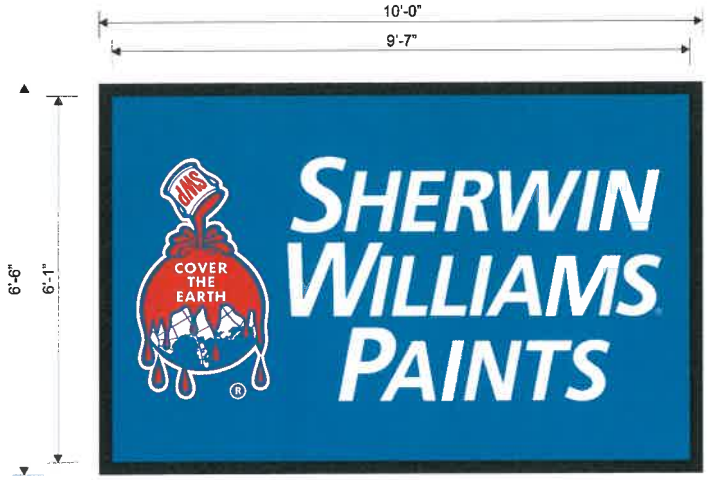
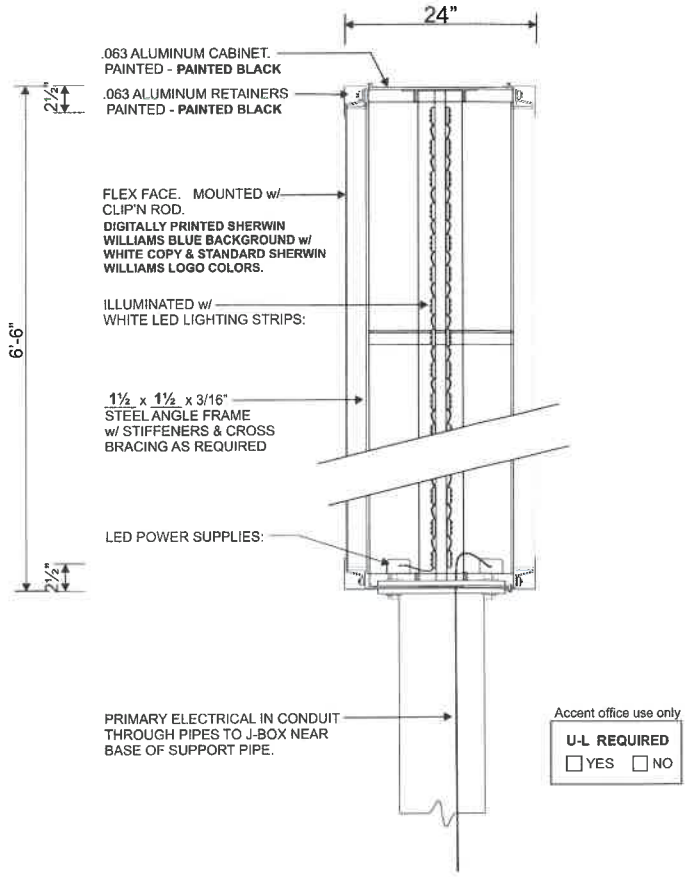
ME #: 70858





Accent office use only

U-L REQUIRED
☐ YES ☐ NO

B D/F POLE SIGN CABINET W/ FLEX FACES **65 SQ. FT.**

QTY: (1) REQUIRED Scale: 1/2" = 1'-0"

REMOVE AND REPLACE POLE SIGN CABINET

* FLEX FACES W/ DIGITALLY PRINTED SHERWIN WILLIAMS BLUE BACKGROUND w/ WHITE COPY & STANDARD SHERWIN WILLIAMS LOGO COLORS.
* CABINET & RETAINERS - BLACK.
* REMOVE DIGITAL EMC AND DECORATIVE ALUMINUM FEATURES
* PAINT EXISTING POLE BLACK

SECTION DETAIL - D/F POLE SIGN w/ FLEX FACES

Scale: NTS

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32828, EXPIRATION DATE: 4/28/2026

McFarland Engineering
183 Edgewater Ct
Mocksville, NC 27028
Structural Sign Design & Engineering Services

Ph: (281) 813-7439
Email: sean@signstructures.com
Web: www.signstructures.com

SHERWIN WILLIAMS

Address: 530 RITCHIE HWY
City/State: SEVERNA PARK, MD
Client: ACCENT GRAPHICS

ENGINEERING OF VERTICAL SUPPORT AND FOUNDATION ONLY. NO CABINET ENGINEERING PROVIDED OR IMPLIED.

Initial Drawing: (70858) DS

STATE OF MARYLAND · SEAN M. McFARLAND · 32828 · PROFESSIONAL ENGINEER

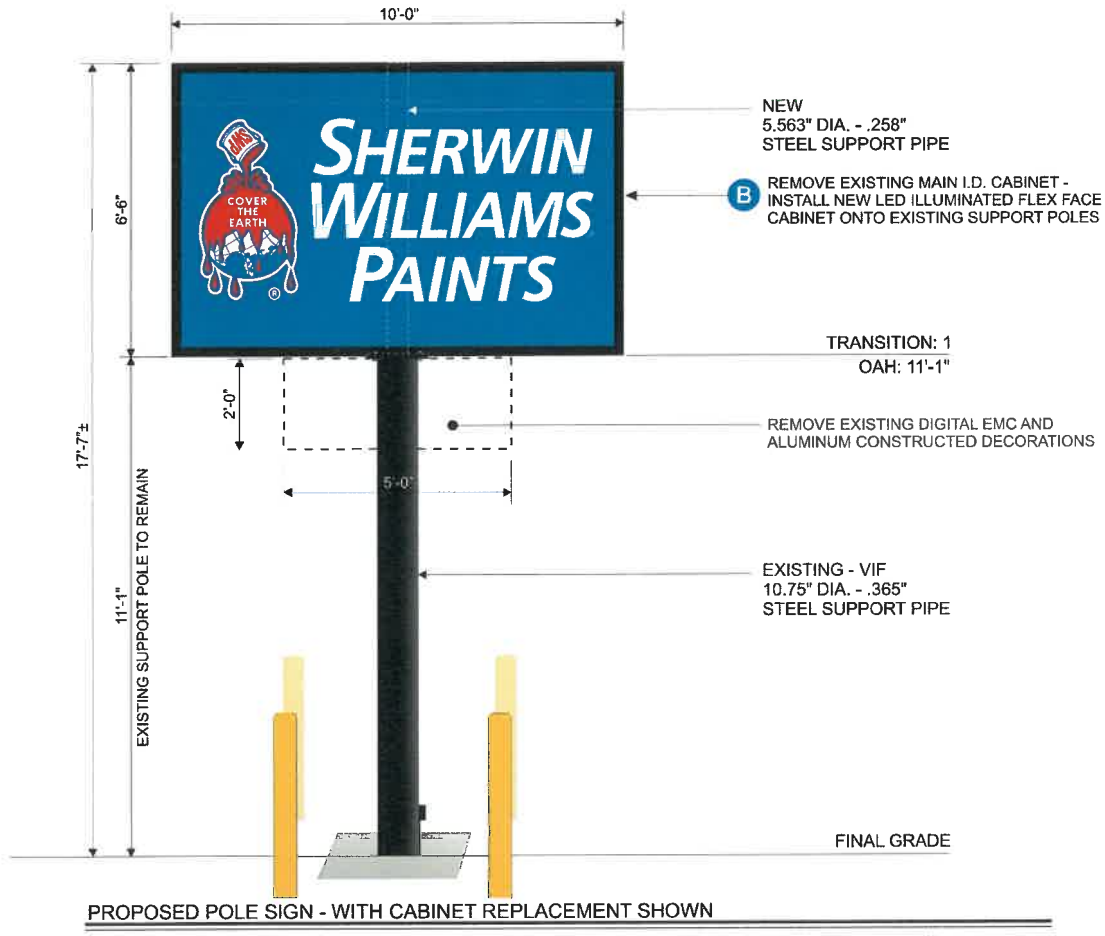
Documents signed by: Sean M. McFarland

The electronic seal appearing on this document was authorized by Sean M. McFarland, PE on May 8, 2025.

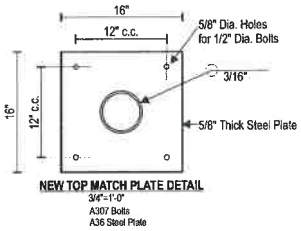
Date: 5-8-2025
Sheet #: 1 OF 2

NC Firm Registration: F-1136
Maryland License Number: 32828
Maryland Expiration Date: 4/28/2026

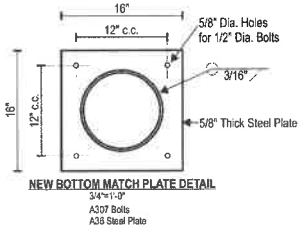
ME #: 70858



PROPOSED POLE SIGN - WITH CABINET REPLACEMENT SHOWN

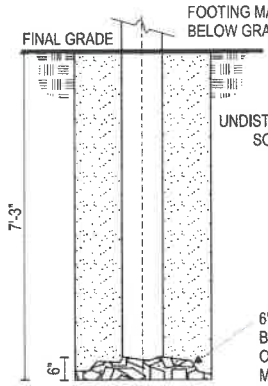


NEW TOP MATCH PLATE DETAIL
3/4"=1'-0"
A307 Bolts
A36 Steel Plate

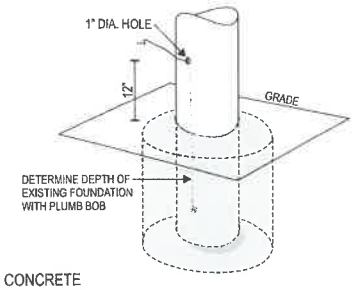


NEW BOTTOM MATCH PLATE DETAIL
3/4"=1'-0"
A307 Bolts
A36 Steel Plate

NIGHT VIEW



2500 PSI CONCRETE (MIN.)
TYPICAL OF ONE PIER
SCALE: 3/8" = 1'
EXISTING - VERIFY IN FIELD



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McFarland Engineering
183 Edgewater Ct
Mocksville, NC 27028
Structural Sign Design & Engineering Services

Ph: (281) 813-7439
Email: sean@signstructures.com
Web: www.signstructures.com

SHERWIN WILLIAMS
Address: 530 RITCHIE HWY
City/State: SEVERNA PARK, MD
Client: ACCENT GRAPHICS

ENGINEERING OF VERTICAL SUPPORT AND FOUNDATION ONLY. NO CABINET ENGINEERING PROVIDED OR IMPLIED.

Initial Drawing: (70858) DS

STATE OF MARYLAND · SEAN M. McFARLAND · 32828 · PROFESSIONAL ENGINEER

The electronic seal appearing on this document was authorized by Sean M. McFarland, PE on May 8, 2025.

Date: 5-8-2025
Sheet #: 2 OF 2

NC Firm Registration: F-1136
Maryland License Number: 32828
Maryland Expiration Date: 4/28/2026

Date:	5/8/25	City, State:	Severna Park, MD	SHEET: 1 OF 3
Client:	**Accent Graphics**	Overall Height:	17'-7"	Sean M. McFarland, P.E.
Sign:	Sherwin Williams	Wind Speed	115 mph	McFarland Engineering

Sign Description — 530 Ritchie Hwy

Columns: 1
ME Job: 70858 B
Height: 6'-6"
Width: 10'-0"

NEW CABINET & MATCH PLATES
EXISTING BASE PIPE & FOOTING
ULTIMATE LOADS

Table of Contents

Structural Variables and Code Loading Specifications

Cabinet Type: Miscellaneous
Structural Section: Steel Pipe - 35000psi
Number of Zones: 2

Code: 2021 IBC
Wind Speed: 115
Wind Exposure: C

Wind Loads Per ASCE 7-16

Sign Sections:

Zone	Cabinet Wt. Per Sq. Ft.	Weight	Transition (Y or N)
1	20	14.6 #/FT	y
2	0	40.5 #/FT	y
3	0		
4	0		
5	0		
6	0		
7	0		
8	0		

STATE OF MARYLAND · SEAN M. McFARLAND · 32828 · PROFESSIONAL ENGINEER
DocuSigned by: Sean McF
1BDD47092CE3405...

State License: Maryland - 32828

Geometry:

Zone	Top Elevation	Height	* Approx. Width	Pressure	Force	Approx. Weight
1	17.58 FT	6.50 FT	10.00 FT *	26.72 PSF	1.74 K	1,395 #
2	11.08 FT	11.08 FT	0.90 FT *	11.48 PSF	0.11 K	449 #
				Total Wind Force =	1.85 K	1,844 #

Date:	5/8/25	City, State:	Severna Park, MD	SHEET:	2 OF 3
Client:	**Accent Graphics**	Overall Height:	17'-7"	Sean M. McFarland, P.E.	
Sign:	Sherwin Williams	Wind Speed	115 mph	McFarland Engineering	

530 Ritchie Hwy

ME Job: 70858 B

Moments at Transitions:

Zone	Lateral Force	2 Mom. Arm	1 Mom. Arm
1	1.74 K	14.33 FT	3.25 FT
2	0.11 K	5.54 FT	
		25.52 K-FT	5.65 K-FT
Section Properties:		13.26 IN^3	2.44 IN^3

Structural Sections to be used:

Zone	Option	Pipe (VIF) Dim.	Wall t.	Weight	Sxx	d/t	Sxx Req'd
2	Pipe (VIF)	10.75 IN	0.365 IN	40.5 #/FT	28.11 IN^3	29.45	13.26 IN^3
1	Pipe (New)	5.56 IN	0.258 IN	14.6 #/FT	5.12 IN^3	21.50	2.44 IN^3

Structure Required

# Req'd	Size	Wall Thickness
1	10.75 IN	0.365 IN
1	5.56 IN	0.258 IN

Date: 5/8/25		City, State:	Severna Park, MD	SHEET: 3 OF 3
Client: **Accent Graphics**		Overall Height:	17'-7"	Sean M. McFarland, P.E.
Sign: Sherwin Williams		Wind Speed	115 mph	McFarland Engineering

530 Ritchie Hwy

ME Job: 70858 B

One Pier Footing (VIF)

Block Footing Design:

d = A / 2 * (1 + (1 + (4.36 * h) / A)^1/2))

where A = (2.34 * P) / (S1 * b)

Select the footing and soil type:

Footing: Round

Vert. Soil Bearing (psf): 1500

Lat. Soil Bearing (psf): 150

Mmax =	25,523 #-FT
Pmax (Lateral) =	1,851 #
LSBP =	150 PCF
S1 =	681 PCF X d
d =	3.000 FT
A =	2.12 FT^2
h =	13.789 FT
d =	6.804 FT

USE: 3.00 FT. RND. X 7.25 FT DEEP PIER (VIF - PLUMB BOB)

Soil Bearing Check:

DLmax =	1,844 LBS	
Area of Footing =	7.07 FT^2	
Actural SBP =	261 PSF	
Allowable SBP =	1,350 PSF	(Includes code allowed 20% increase for every foot of footing below 12" into natural grade.)

261 PSF < 1,350 PSF THEREFORE OK

Matchplate Design - New

A36 Steel Fy= 36ksi

E70 Electrodes Fw= 928 #/in/16th

A307 A.B.'s Ft=20 ksi

D =	10.75 IN	# of Bolts =	4	Dia. Bolt	0.5
e =	0.63 IN	Column Mom =	5,645 #-FT		
b eff =	3.95 IN				
e eff =	2.25 IN				
plate t =	0.63 IN				

P Bolt = M * 12 (in/ft) / 2 bolts (D + e + t) — 2,823 # < 3,926 #

t req'd = [(6*P*e eff* 1 bolt)/(.75*Fy(b eff + 2*t))]^1/2 — .521 IN < 0.63 IN

Weld = M * 12 (in/ft) / Fw (3.1415 * D^2/4) — 0.80 16th's < 3.00 16th's

USE: (4) 1/2" Dia. Bolts w/ 5/8" Matchplate. Weld to Support with (1) 3/16" Fillet Weld.