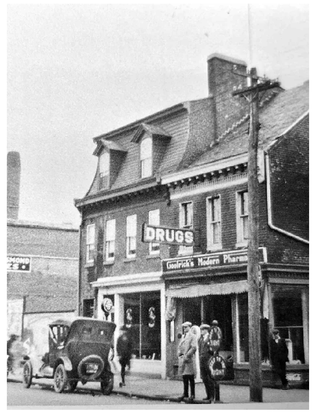


901 CAROLINE STREET
TENANT ALTERATIONS

CITY OF FREDERICKSBURG, VIRGINIA

NOTICE TO CONTRACTOR & ALL TRADES

ALL TRADES SHALL BE RESPONSIBLE FOR THE CONTENTS CONTAINED HEREIN, AND FOR THE INFORMATION REPRESENTED ON ALL SHEETS. THESE CONSTRUCTION DOCUMENTS HAVE BEEN PRODUCED WITH THE INTENTION OF BEING USED AS A SINGULAR TOOL FOR THE CONSTRUCTION OF THIS PROJECT. NO SINGLE DRAWING WILL STAND ALONE, AND AT NO TIME WILL THE ARCHITECT OR OWNER BE RESPONSIBLE FOR ACTIONS TAKEN BY A CONTRACTOR OR SUBCONTRACTOR WHO HAS NOT REVIEWED, AND IS NOT IN POSSESSION OF A FULL WORKING SET OF DRAWINGS. BE ADVISED, THERE MAY BE NOTES ON A DRAWING FOR ONE SPECIFIC TRADE THAT WILL PERTAIN TO THE WORK OF OTHER TRADES. GENERAL CONTRACTOR IS RESPONSIBLE FOR THE CLEAR COMMUNICATION BETWEEN ALL TRADES, AND THAT ALL WORKERS HAVE ADEQUATELY REVIEWED ALL DRAWINGS AND LOCATED ALL WORK THAT WOULD FALL UNDER THEIR RESPONSIBILITY.

BUILDING PERMIT BY GENERAL CONTRACTOR (VERIFY WITH OWNER)

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SHORING, BRACING & WEATHER PROTECTION.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROTECTION AND BARRICADING OF PUBLIC AREAS AND NEIGHBORING PROPERTIES

CONTRACTOR SHALL COMPLY WITH ALL PERTINENT RULES, REGULATIONS, ORDINANCES, AND LAWS MANDATED BY LOCAL, STATE, AND FEDERAL AGENCIES.

PRIOR TO CONSTRUCTION, EXAMINE ALL PROJECT SPECIFICATIONS, DRAWINGS, AND VISIT THE SITE TO DEVELOP A COMPLETE UNDERSTANDING OF THE PROJECT SCOPE. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM ALL WORK REQUIRED FOR A COMPLETE INSTALLATION. UPON REVIEW OF THESE DOCUMENTS, ADVISE THE ARCHITECT IN A TIMELY MANNER OF ANY DISCREPANCIES WHICH WILL EFFECT THE WORK REQUIRED SO THAT THE ARCHITECT MAY PROVIDE DIRECTION PRIOR TO BEGINNING EFFECTED WORK.

CODE INFORMATION
2018 VEBC

ALL CODE REFERENCES REFER TO THE VEBC U.N.O.
[2018 VCC SECTION REFERENCES INDICATED IN BRACKETS]

SUMMARY OF WORK
THIS WORK INCLUDES EXTERIOR REPAIRS & RESTORATION & INTERIOR ALTERATIONS WITHIN THE EXISTING APPROX. 2,270 SF BUILDING FOOTPRINT AT 901 CAROLINE STREET, AN HISTORIC STRUCTURE ESTABLISHED IN 1897.

EXISTING OCCUPANCY TO REMAIN: 1ST FLOOR SMALL ASSEMBLY B-USE CAFE / RETAIL SPACE & INTERIOR ALTERATIONS TO THE EXISTING 2ND FLOOR - TWO DWELLING UNIT R-3 APARTMENT USE.

A PARTIAL CHANGE OF USE IS PROPOSED FOR A PORTION OF THE BASEMENT LEVEL FROM S-1 STORAGE / MECHANICAL TO B USE SMALL ASSEMBLY RESTAURANT.

WORK WILL BE PERFORMED UNDER ONE PERMIT AS APPROVED BY THE AHJ.

HEIGHT & AREA LIMITATION (ALLOWABLE/ACTUAL):
NO CHANGE IS PROPOSED TO BUILDING HEIGHT OR AREA

[CHAPTER 3] USE & OCCUPANCY
[303.1.1] B SMALL BUSINESS ASSEMBLY BASEMENT
B SMALL BUSINESS ASSEMBLY FIRST FLOOR
R-3 (2) APARTMENT UNITS 2ND FLOOR

[CHAPTER 5] HEIGHT AND AREA
BUILDING HEIGHT & AREA: 27'-6" / (2) STORY / 2,270 SF

LEASE AREA
BASEMENT 1,985 SF LEASE AREA
1ST FLOOR 2,182 SF LEASE AREA
2ND FLOOR 2,165 SF LEASE AREA

[CHAPTER 6] TYPES OF CONSTRUCTION
[602.3] TYPE IIIB

VEBC
CHAPTER 1
103.9 CONSTRUCTION DOCUMENTS SHALL SHOW WORK CLASSIFICATION AND LEVELS OF ALTERATIONS IDENTIFIED.

CHAPTER 3
301.3.2 WORK AREA COMPLIANCE METHOD SELECTED

CODE INFORMATION (CONTINUED)

CHAPTER 4
404.2 ACCESSIBILITY: COMPLY WITH VCC CHAPTER 11 EXCEPT AS MODIFIED
404.2 EX2 ACCESSIBLE MEANS OF EGRESS NOT REQUIRED TO EX. BASEMENT
404.3 ACCESSIBLE ROUTE PROVIDED TO BASEMENT & 1ST FLOOR PRIMARY FUNCTION AREAS WHERE TECHNICALLY FEASIBLE. NEW ACCESSIBLE TOILETS PROVIDED IN BASEMENT & 1ST FLOOR LEVELS.
404.4.1 EXISTING NON-ACCESSIBLE ENTRANCE
404.4.4 STAIR FROM 1ST TO BASEMENT EXISTED PREVIOUSLY
T404.4.5 RAMPS COMPLY WITH T404.4.5
404.4.8 TYPE B & A DWELLING UNITS NOT REQUIRED

CHAPTER 5 REPAIRS COMPLY W/ CHAPTER 5

CHAPTER 6
601.1 ALTERATIONS SHALL COMPLY WITH VCC. PORTIONS OF THE BUILDING OR STRUCTURE NOT BEING ALTERED SHALL NOT BE REQUIRED TO TO COMPLY WITH VCC.
601.1.1 REPLACEMENT STAIRWAY NOT REQUIRED TO COMPLY WITH VCC 1011 SLOPE & PITCH. HANDRAIL EXTENSION NOT REQUIRED IN HAZARDOUS LOCATIONS.
601.2 THIS WORK INCLUDES LEVEL 1 & 2 ALTERATIONS
601.3 FLOOD HAZARD ELEVATION = 34.0. COMPLIANCE WITH VCC 1612 NOT REQUIRED FOR HISTORIC STRUCTURE
601.4 ALTERED PORTIONS OF EXTERIOR FENESTRATION TO COMPLY WITH VECC EXCEPT AS MODIFIED
601.4.4 NEW FENESTRATION COMPLY W/ C402.4 & R402.1.2
602.1 LEVEL 1 ALTERATIONS COMPLY WITH SECTION 602
602.3.1 NEW INTERIOR FINISHES SHALL COMPLY WITH CHAPTER 8 OF THE VCC
603.1 LEVEL 2 ALTERATIONS COMPLY WITH SECTION 603
603.3 EX 4 MIN. CEILING HEIGHT OF NEWLY CREATED OCCUPIED SPACES = 7'-0"
603.5 PROVIDE MINIMUM O.A. IN ALTERED HVAC SYSTEMS
603.7.1 NEW STRUCTURAL LOADS COMPLY WITH VCC

CHAPTER 7
701.1 PARTIAL CHANGE OF OCCUPANCY ON BASEMENT LEVEL FROM S-1 TO B USE SMALL TENANT SPACE RESTAURANT
703.1 INTERIOR FINISHES COMPLY WITH THE VCC
703.2 NO CHANGE IN OCCUPANCY HAZARD CATEGORY
703.2.2 PROTECTION OF EXISTING STAIR OPENINGS NOT REQUIRED PROTECT INTERIOR VERTICAL OPENINGS OTHER THAN STAIRWAYS PER VCC
704.2 FIRE SPRINKLER NOT REQUIRED
704.3 BUILDING FIRE ALARM AND DETECTION NOT REQUIRED

T705.2 MEANS OF EGRESS HAZARD CATEGORY - NO CHANGE

705.3.5.4.1 UNENCLOSED STAIR PERMITTED
T706.2 HEIGHT AND AREA CHANGE TO LESSER CATEGORY
T707.1 EXTERIOR WALL HAZARD CATEGORY EQUAL / LESSER - EXISTING OPENINGS ACCEPTABLE

CODE INFORMATION (CONTINUED)

710.1 TOILET ADDED IN BASEMENT TO MEET PLUMBING DEMAND FOR RESTAURANT USE.

[CHAPTER 29] MINIMUM PLUMBING FIXTURES [T403.1] 2018 VCC BASED ON MAX. COMBINED SMALL B-USE ASSEMBLY RESTAURANT OCCUPANCY OF (**98**) ON BASEMENT AND FIRST FLOOR LEVELS

	REQUIRED	PROVIDED
WC	2	2
LAV	2	2
DF	0	0 (RESTAURANT)
SS	1	1

REQUIRED PLUMBING FIXTURES PROVIDED FOR 2ND FLOOR APARTMENTS.

CHAPTER 8
NO BUILDING ADDITIONS ARE PROPOSED

CHAPTER 9
902.1 BUILDING IS A CONTRIBUTING HISTORIC STRUCTURE. PROPOSED WORK IN THE FLOOD HAZARD AREA IS NOT CONSIDERED SUBSTANTIAL IMPROVEMENT.
906.6 EXISTING BASEMENT DOOR OPENING MAY REMAIN

A STRUCTURAL ANALYSIS OF THE EXISTING BUILDING HAS BEEN PERFORMED & COMPLIANCE REPAIRS ARE INDICATED UNDER THIS PERMIT.

DESIGN LOADS
WORK AREA: NO CHANGE TO WORK AREA DESIGN LOADS U.N.O. SEE STRUCTURAL SHEET FOR DESIGN LOADS & DATA.

MEP COORDINATION NOTE
PLUMBING, ELECTRICAL & HVAC SYSTEMS ARE TO BE CONSTRUCTED AS COMPLETE. COORDINATED SYSTEMS BY OTHERS. AS A MINIMUM THEY SHALL MEET APPLICABLE BUILDING AND LIFE SAFETY CODES UNDER VA USBC 2018 & ANSI A117.1-2009. EACH SYSTEM INSTALLER MUST COORDINATE WITH THE GENERAL CONTRACTOR, COORDINATE KITCHEN EQUIPMENT WITH OWNER AND TENANT.

ARCHITECTURAL REVIEW BOARD NOTE:
MODIFICATIONS ALTERING THE APPEARANCE OF EXISTING FEATURES OR STRUCTURES FROM THE PUBLIC WAY HAVE BEEN SUBMITTED FOR ARB REVIEW - COA FY23-0062 INCLUDES ALTERATIONS TO EXTERIOR STAIRS, ADDITION OF WINDOW AND OPENING & MEP EQUIPMENT ON ROOF.

FEMA FLOOD HAZARD
EXISTING STRUCTURE IS LOCATED IN A FLOOD HAZARD AREA. 901 CAROLINE STREET MEETS FEMA'S DEFINITION OF AN EXEMPT HISTORIC STRUCTURE, AS A CONTRIBUTING STRUCTURE IN THE CITY OF FREDERICKSBURG'S DESIGNATED HISTORIC DISTRICT.

LAND DISTURBANCE
PER SDI PUBLIC UTILITIES CONNECTION EXHIBIT, LESS THAN 2,500 SF OF AREA WILL BE DISTURBED.

PROJECT CONTACTS

OWNER
JFH-FREDERICKSBURG III, LLC
1300 PRINCESS ANNE STREET
FREDERICKSBURG, VA 22401

ARCHITECT
SANDERS ARCHITECTURE, PC
DEX SANDERS
dsanders@sanders-pc.com
540.829.2590

STRUCTURAL ENGINEER & SPECIAL INSPECTOR
ECS MID-ATLANTIC, LLC
ALEXIS HERR, PE & WILLIAM GASPAR, PE
703.471.8400

MEP ENGINEER
INVERSITY CONSULTING ENGINEERS
CHAD NIXON, PE
804.933.1495

PUBLIC UTILITIES ENGINEER
SULLIVAN, DONAHOE & INGALLS, PC
540.898.5878

GENERAL CONTRACTOR
TBD

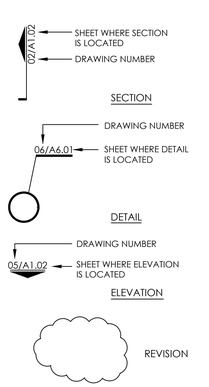
1

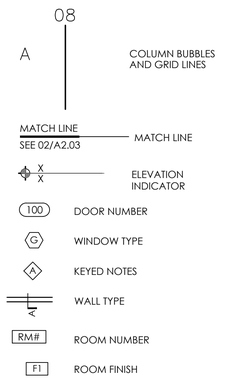
1

SHEET	DRAWING TITLE
CS.1	COVER SHEET
CS.2	NOTES AND SPECIFICATIONS
S0.1	GENERAL STRUCTURAL NOTES & REQUIREMENTS
S0.2	TYPICAL CONCRETE REPAIR DETAILS
S1.0	FOUNDATION / FLOOR FRAMING PLANS
S1.1	FLOOR & ROOF FRAMING PLANS
S2.1	STRUCTURAL DETAILS
D1.1	DEMOLITION PLANS
D1.2	DEMOLITION PLANS
A0.1	RATED PARTITION DETAILS
A1.1	FLOOR PLANS
A1.2	FLOOR PLANS
A4.1	EXTERIOR ELEVATIONS & WINDOW SCHEDULE
A5.1	BUILDING SECTIONS & DETAILS
A10.1	CEILING PLANS - BSMT & 1ST FLOOR
1 OF 1	PUBLIC UTILITY CONNECTIONS EXHIBIT
M0.1	MECHANICAL LEGEND, NOTES & SCHEDULES
M0.2	MECHANICAL SPECIFICATIONS
M0.3	MECHANICAL DETAILS
M1.1	MECHANICAL FLOOR PLANS - BSMT & 1ST
M1.2	MECHANICAL FLOOR PLAN - 2ND AND ROOF
E0.1	ELECTRICAL LEGEND & DETAILS
E1.1	ELECTRICAL BSMT & 1ST FLOOR LIGHTING PLAN
E1.2	ELECTRICAL 2ND FLOOR & ROOF LIGHTING PLAN
E2.1	ELECTRICAL BSMT & 1ST FLOOR POWER PLAN
E2.2	ELECTRICAL 2ND FLOOR & ROOF POWER PLAN
E3.1	ELECTRICAL PANELBOARD SCHEDULES & RISER
P0.1	PLUMBING LEGEND SCHEDULE & NOTES
P0.2	PLUMBING SCHEDULES AND DETAILS
P0.3	PLUMBING DETAILS
P0.4	PLUMBING SPECIFICATIONS
P1.1	PLUMBING PLAN - BSMT & 1ST -SWV
P1.2	PLUMBING PLAN - 2ND & ROOF - SWV
P2.1	PLUMBING PLAN - BSMT & 1ST - DOM
P2.2	PLUMBING PLAN - 2ND & ROOF - DOM
P3.1	PLUMBING RISER DIAGRAM

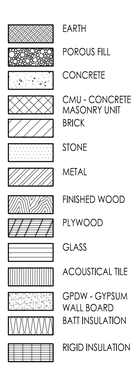
REFER TO SEPARATE INTERIOR DESIGN (I.D.) DOCUMENTS BY OTHERS FOR FINISHES & FINISH DETAILS.

GENERAL SYMBOLS





MATERIAL SYMBOLS

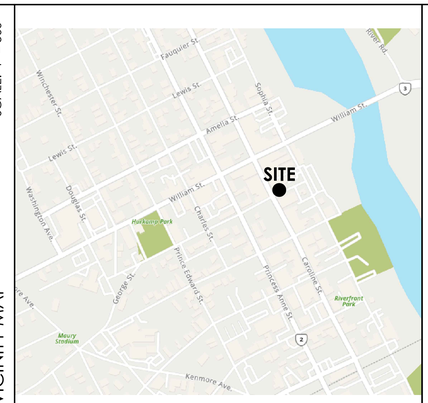


ABBREVIATIONS

@	AT	F.F.	FINISHED FLOOR	P.C.	PLUMBING CONTRACTOR
ABV.	ABOVE	EXPAN.	FINISH	PSF	PER SQUARE FOOT
A.C.T.	ACOUSTICAL CEILING TILE	FLR.	FLOOR	PSI	PER SQUARE INCH
A.F.F.	ABOVE FINISHED FLOOR	FND.	FOUNDATION	P.T.	PRESSURE TREATED
ADJ.	ADJUSTABLE	FRMG.	FRAMING	PERIM.	PERIMETER
ALT.	ALTERNATE	FT.	FOOT/FEET	PLUMB.	PLUMBING
ALUM.	ALUMINUM	FTG.	FOOTING	R.O.	ROUGH OPENING
ARCH.	ARCHITECTURAL	G.C.	GENERAL CONTRACTOR	RWC	RAIN WATER CONDUCTOR
B.F.F.	BELOW FINISHED FLOOR	GWB	GYPSUM WALLBOARD	REINF.	REINFORCED
BSMNT	BASEMENT	GA.	GAUGE	REQ.	REQUIRED
BLK'G	BLOCKING	GALV.	GALVANIZED	RESP.	RESPONSIBLE
B.O.	BOTTOM OF	HVAC	HEATING, VENTILATION & AIR CONDITIONING	RET.	RETURN
BOT.	BOTTOM			RM	ROOM
BRD.	BOARD	HW	HARDWARE	S.F.	SQUARE FEET
BLDG.	BUILDING	HDR.	HEADER	S.S.R	STANDING SEAM ROOF
C.T.	CERAMIC TILE	HGT.	HEIGHT	SCHED.	SCHEDULE
CLG.	CEILING	HORIZ.	HORIZANTAL	STD.	STANDARD
CLOS.	CLOSET	INSUL.	INSULATION	STL.	STEEL
CMU	CONCRETE MASONRY UNIT	INT.	INTERIOR	STOR.	STORAGE
CONC.	CONCRETE	JAN.	JANITOR	T&G	TONGUE & GROOVE
CONST.	CONSTRUCTION	JT.	JOINT	TEMP.	TEMPORARY
DBL	DOUBLE	L.F.	LINEAR FOOT	T.O.	TOP OF
DWG	DRAWING	M.C.	MECHANICAL CONTRACTOR	TYP.	TYPICAL
DETL.	DETAIL	MRB	MOISTURE RESISTANT BOARD	U.G.	UNDERGROUND
EX.	EXISTING	MANUF.	MANUFACTURED	U.N.O.	UNLESS NOTED OTHERWISE
E.C.	ELECTRICAL CONTRACTOR	MAX.	MAXIMUM	VWC	VINYL WALLCOVERING
ELEC.	ELECTRICAL	MECH.	MECHANICAL	VERT.	VERTICAL
ELEV.	ELEVATION	MIN.	MINIMUM	V.C.T.	VINYL COMPOSITE TILE
EQ.	EQUIVALENT	MTL.	METAL	W/	WITH
EXP.	EXPANSION	O.C.	ON CENTER	W/O	WITHOUT
EXT.	EXTERIOR	PT'D	PAINTED	W.W.F.	WELDED WIRE FABRIC
F.G.	FIBERGLASS	PL	PLATE	WD.	WOOD

VICINITY MAP

SCALE: 1" = 500'



DRAWING INDEX

JARRELL PROPERTIES, INC.

FOR CONSTRUCTION

SANDERS ARCHITECTURE PC
16125 RACCOON FORD RD
CULPEPER, VIRGINIA 22701
(v)540-829-2590

JARRELL PROPERTIES, INC.
TENANT ALTERATIONS
901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

COMMONWEALTH OF VIRGINIA
DEX A. SANDERS
Lic. No. 8814
07-30-24
ARCHITECT

REVISIONS:
1-PLAN REVIEW 10-25-24

DRAWN:	DAS
CHECKED:	
SCALE:	NOTED
DATE:	07-30-24
PROJECT #:	2212

COVER SHEET

CS.1

PROJECT SPECIFICATIONS

GENERAL NOTES:
1. ALL ITEMS & SYSTEMS TO BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER AND IN CONFORMANCE WITH APPLICABLE BUILDING CODES, LAWS AND REGULATIONS.

2. UNLESS "NO SUBSTITUTIONS" IS SPECIFICALLY INDICATED, IT IS NOT THE INTENT OF THESE SPECIFICATIONS TO EXCLUDE MANUFACTURERS THAT PRODUCE EQUAL PRODUCTS OR SYSTEMS. CONTRACTOR IS ENCOURAGED TO SUBMIT ALTERNATE PRODUCT OR SYSTEM MANUFACTURERS FOR CONSIDERATION BY ARCHITECT PRIOR TO BID .

3. CONTRACTOR SHALL DAILY REMOVE ALL DEBRIS FROM SITE AND KEEP WORK AREA CLEAN. REMOVE EXCESS MATERIALS FROM SITE.

4. FOLLOWING CONTRACT AWARD, SUBMIT PROPOSED COLOR CHARTS & SAMPLES FOR ALL REQUIRED COLOR SELECTIONS TO ARCHITECT / OWNER FOR SELECTION & SCHEDULE.

5. SUBMITTAL INFORMATION REQUIRED FOR ALL SECTIONS NOTED THUS **

6. CONTRACTOR SHALL SUBMIT AND OBTAIN ALL PERMITS REQUIRED FOR THE EXECUTION OF THIS WORK. U.N.O. ALL PERMIT FEES WILL BE PAID BY THE OWNER. THE OWNER WILL PAY FOR ALL OTHER QUALITY CONTROL INSPECTIONS. UTILITY CONNECTION FEES WILL BE PAID BY THE OWNER.

02000 - SITE WORK
1. CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM THE SITE. CONTRACTOR SHALL PROVIDE ADDITIONAL SOIL AND FILL MATERIAL AS NECESSARY TO COMPLETE THE WORK.
2. DO NOT OBSTRUCT EXISTING STREETS, PARKING OR TRAVEL WAYS WITHOUT OBTAINING PRIOR PERMISSION FROM THE OWNER & GOVERNMENT AGENCIES HAVING JURISDICTION.
3. PROTECT ALL EXISTING SITE IMPROVEMENTS TO REMAIN DURING CONSTRUCTION. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION AS ACCEPTABLE TO THE OWNER. THIS SHALL INCLUDE EXISTING PAVING & WALKS.
4. REPLACE ALL EXISTING ITEMS SCHEDULED TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION.
5. DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR NEIGHBORING PROPERTY OWNERS WITHOUT PRIOR WRITTEN PERMISSION. CONTRACTOR MUST FURNISH TEMPORARY UTILITY SERVICES IF SERVICE IS INTERRUPTED.
6. STRUCTURAL FILL (MACHINE TAMPED) AND DRAINAGE FILL TO BE #57 STONE OR ENGINEERED COMPACTED SOIL FILL AS APPROVED BY THE GEOTECHNICAL ENGINEER.
7. EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF THE CHARACTER OF SURFACE OR SUBSURFACE CONDITIONS ENCOUNTERED INCLUDING ROCK, SOIL MATERIALS OR OTHER OBSTRUCTIONS.
17. CONTRACTOR IS RESPONSIBLE FOR ALL SURVEY, BENCHMARKS AND STAKEOUT REQUIRED FOR THIS PROJECT.

02500 - BUILDLING UTILITIES
1. CONTRACTOR SHALL EXTEND, RELOCATE AND COMPLETE BUILDING UTILITY SERVICES IN COORDINATION WITH WORK PERFORMED BY OTHERS.
2. PROTECT ALL EXIST. SERVICES IN PLACE.
3. CONTRACTOR SHALL CAREFULY EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS AND FULL EXTENT OF WORK REQUIRED TO EXTEND ALL UTILITIES TO BUILDING. UTILITY CONNECTION & PERMIT FEES NOT SPECIFICALLY EXCLUDED ARE A PART OF THIS WORK.
4. AT PRE-CONSTRUCTION MEETING, CONTRACTOR SHALL PRESENT THE OWNER WITH A SCHEDULE FOR HAVING THE OWNER PROVIDED UTILITIES COMPLETE.
5. CONTRACTOR SHALL PROVIDE AND PAY FOR ANY TEMPORARY UTILITY SERVICES REQUIRED FOR CONSTRUCTION PRIOR TO FINAL UTILITY INSTALLATION (I.E. TEMP. ELEC.).

02361 - TERMITE CONTROL
1. COORDINATE SOIL TREATMENT WITH EXCAVATION, FILLING, GRADING AND CONCRETE WORK.
2. SPECIAL WARRANTY: WRITTEN WARRANTY, SIGNED BY APPLICATOR AND CONTRACTOR CERTIFYING THAT TERMITE CONTROL WORK WILL PREVENT INFESTATION OF SUBTERRANEAN TERMITES FOR (5) YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
3. PROVIDE AN EPA - REGISTERED TERMITICIDE THAT IS NOT HARMFUL TO PLANTS. APPLY AS RECOMMENDED BY THE PRODUCTS EPA-REGISTERED LABEL.
4. POST WARNING SIGNS IN THE APPLICATION AREA.
5. RE-APPLY SOIL TREATMENT TO AREAS SUBSEQUENTLY DISTURBED BY CONSTRUCTION ACTIVITIES.
6. APPLY TO AREAS UNDER SLABS ON GRADE AND FOUNDATIONS AND MASONRY VOIDS.

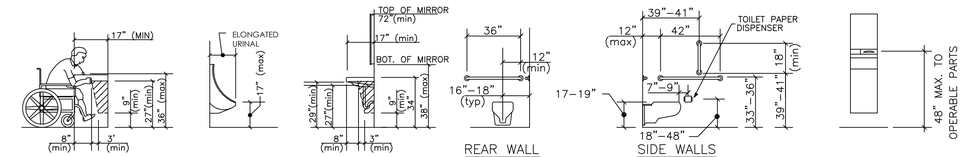
02800 - LANDSCAPING (NOT USED)

03300 CAST-IN-PLACE CONCRETE **
1. FLOOR SLABS & FOOTINGS - 3,500 PSI WITH 1LB/CY MICRO-FIBER MESH FOR FINISHED INTERIOR SLABS. ALL CONCRETE EXPOSED TO EXTERIOR TO BE AIR ENTRAINED 6% AT ± 1.5% AT POINT OF PLACEMENT.
2. CONCRETE WORK SHALL CONFORM TO THE CURRENT VERSION OF:
ACI 318-11 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
ACI 301-10 - SPECIFICATIONS FOR STRUCTURAL CONCRETE
3. PROVIDE STANDARD BAR CHAIRS & AND SPACERS AS REQUIRED FOR 3" COVER AT FOUNDATIONS AND 2" COVER AT FORMED WALLS AND ELEVATED SLABS. SUPPORT WIRE MESH W/ CONT. SLAB BOLSTERS @ 4'-0" OC MAX.
4. CONTRACTOR SHALL CAREFULLY MONITOR CONCRETE PLACEMENT ACTIVITIES TO MINIMIZE SPILLAGE & CLEAN BOTH INTERIOR AND EXTERIOR AREAS WHERE CONCRETE SPLATTERS OR DRIPS .
5. NO DUMPING OF EXCESS CONCRETE OR TRUCK CLEAN UP TO OCCUR ON SITE UNLESS APPROVED IN ADVANCE BY OWNER.
6. REINFORCING BARS: ASTM A615, GRADE 60. FLAT SHEET WELDED WIRE FABRIC: ASTM A1064. MINIMUM LAP SLICE TO BE 48 BAR DIAMETERS.
7. WATERSTOPS: RUBBER OR PVC
8. VAPOR BARRIER: 10 MIL MINIMUM POLYETHYLENE SHEETS - SEAL ALL EDGES. PROVIDE UNDER ALL INTERIOR SLABS.
9. JOINT FILLER STRIPS: ASPHALT-SATURATED CELLULOSIC FIBER.
10. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.

04200 UNIT MASONRY
1. THIS SECTION APPLIES TO HISTORIC MASONRY REPAIRS AND RE-CONSTRUCTION.
2. EXTERIOR BRICK REPLACEMENT & POINT UP SHALL FOLLOW NPS RECOMMENDATIONS FOR RESTORATION OF EXISTING SOFT CLAY BRICK FOUND IN PRESERVATION BRIEF 2: REPOINTING MORTAR JOINTS IN HISTORIC MASONRY BUILDINGS
3. PARTICULAR CARE SHALL BE TAKEN TO MATCH EXISTING MORTAR STRENGTH AND PROPERTIES.
4. RESTORATION MASON SHALL HAVE A MINIMUM OF 5 YEARS OF DEMONSTRATED EXPERIENCE RESTORING HISTORIC MASONRY STRUCTURES.
5. PROTECT MASONRY CONSTRUCTION DURING COLD, HOT AND WET WEATHER. COVER FINISHED MASONRY TO PROTECT FROM FOUNDATION DIRT.
CLEAN MASONRY OF ALL MORTAR DRIPS, STAINS AND EFFLORESCENCE USING EITHER A JOB MIX DETERGENT SOLUTION OR PROPRIETARY ACIDIC CLEANER TESTED TO INSURE THAT SURROUNDING CONSTRUCTION AND MASONRY FINISH IS NOT DAMAGED. COVER AND PROTECT MASONRY UNTIL SOIL IS STABILIZED. FOLLOW NPS RECOMMENDATIONS FOR CLEANING OF EXISTING SOFT CLAY BRICK FOUND IN PRESERVATION BRIEF 1: ASSESSING CLEANING AND WATER-REPELLENT TREATMENTS FOR HISTORIC MASONRY BUILDINGS.
6. RESTORE EACH TYPE OF BRICK IN A SAMPLE AREA FOR OWNER REVIEW AND APPROVAL BEFORE PROCEEDING WITH ALL WORK.
7. EXPOSED EMBEDDED FLASHINGS TO BE .0156 STAINLESS STEEL. CONCEALED FLASHING TO BE .040 THICKNESS EPDM.
8. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.

05000 METALS

SEE SHEET S0.1 FOR STRUCTURAL NOTES & REQUIREMENTS.



MOUNTING HEIGHTS
SCALE: NONE

EQUIPMENT PERMITTED IN HATCHED AREAS TO BE CONFIGURED TO PROTECT AGAINST CONTACT.
STANDARDS SHOW TYPICAL ACCESSIBLE MOUNTING HEIGHTS & CLEARANCES. SPECIFIED PRODUCTS MAY VARY FROM DETAIL IMAGE.
SPECIAL MOUNTING HEIGHTS MAY BE INDICATED ON OTHER SHEETS.
ORDER TOILETS WITH FLUSH VALVES ON THE OPEN SIDE OF THE TOILET.
REACH HEIGHTS SHOWN ARE TO OPERABLE PARTS (TYPICAL)

REACH HEIGHTS SHOWN ARE TYPICAL TO OPERABLE PARTS FOR ALL DEVICES INCLUDING RECEPTCALES / PULL STATIONS

SPECIFICATIONS (CONT.)

06000 WOOD AND PLASTICS **
1. CONFORM TO NDS-2018 "NATIONAL DESIGN SPECIFICATIONS" FOR WOOD CONSTRUCTION.
2. PROVIDE BLOCKING FOR ALL ITEMS MOUNTED TO FRAMING.
3. WHEN FRAMING IS COMPLETED, BUT BEFORE INSULATION, CONTRACTOR SHALL MEET WITH ARCHITECT TO REVIEW FRAMING AND BLOCKING.
4. SUBMIT ENGINEERED & FIRE TREATED WOOD PRODUCTS FOR REVIEW.
5. ALL WOOD FRAMING WALLS AND MEMBERS SHALL BE ERECTED STRAIGHT, PLUMB AND LEVEL. WALLS THAT ARE BOWED OR CROOKED SHALL BE STRAIGHTENED.
7. ALL MISC. BLOCKING MEMBERS FOR ROOFING SYSTEMS OR IN CONTACT WITH EXTERIOR WALLS, SLABS OR MASONRY TO BE PRESERVATIVE TREATED.
8. EXPOSED EXTERIOR TRIM & PANELS TO BE FACTORY PRIMED OR PRE-FINISHED BORAL OR FIBER-CEMENT EQ. TO JAMES HARDIE SMOOTH FINISH.
9. SEE SHEET S0.1 FOR WOOD STRUCTURAL NOTES.

1. ALL ROUGH CARPENTRY SHALL CONFORM TO THE REQUIREMENTS OF THE NDS-2015 "NATIONAL DESIGN SPECIFICATIONS (NDS) FOR WOOD CONSTRUCTION WITH 2018 SUPPLEMENT".

ALL EXTERIOR LOAD BEARING STUD WALLS ARE DESIGNED AS PERFORATED SHEAR WALLS BY THE ASD METHOD IN ACCORDANCE WITH NDS - SPECIAL DESIGN PROVISIONS FOR WIND & SEISMIC. HOLDOWN HARDWARE IS NOT REQUIRED AT THE MAIN BUILDING WALLS AS OVERTURNING EFFECTS UNDER DESIGN WIND RESULT IN NO NET UPLIFT.

PROVIDE NO. 2 SOUTHERN PINE OR EQ. WITH 19% MAXIMUM MOISTURE CONTENT FOR ALL FRAMING LUMBER INCLUDING, LINTELS, JOISTS, RAFTERS, AND BEAMS UNLESS NOTED OTHERWISE. WALL STUDS AND PLATES MAY BE S-P-F No. 1 / 2 U.N.O. ON PROJECT SPECIFIC DETAILS AND NOTES.

PROVIDE MICROLLAM VENEER LUMBER (LVL) MIN. 2.0E, PARALLAM PARALLEL STRAND LUMBER (PSL), AND TIMBERSTRAND LUMBER (LSL) MIN. 1.8E, MANUFACTURED BY TRUS JOIST (OR APPROVED EQUAL).

ALL FRAMING CONNECTIONS NOT SPECIFICALLY INDICATED ON THESE CONSTRUCTION DOCUMENTS SHALL COMPLY WITH THE MINIMUMS ESTABLISHED BY TABLE 2304.9.1 OF THE VUSBC.

ALL NAILED CONNECTIONS (OF TWO 2x MEMBERS) SPECIFICALLY INDICATED ON THESE CONSTRUCTION DOCUMENTS ARE ASSUMED TO BE DONE USING A MINIMUM NAIL SIZE OF 0.131" DIAMETER x 3" LONG UNLESS NOTED OTHERWISE.

ALL LIGHT GAGE STEEL PRE-FORMED CONNECTORS SHALL BE INSTALLED USING THE NUMBER OF NAILS AND NAIL TYPE LISTED FOR THAT CONNECTOR BY THE MANUFACTURER IN THEIR PUBLISHED LITERATURE. ALL NAILS LISTED AS 1 1/2" LONG SHALL BE MADE BY THE MANUFACTURER OF THAT CONNECTOR. HANGERS OR CONNECTORS USED WITH PRESSURE TREATED LUMBER SHALL HAVE G185 MINIMUM ZINC COATING (I.E. SIMPSON ZMAX G185).

PROVIDE A MINIMUM OF THREE INCHES OF BEARING FOR ENGINEERED LUMBER BEAMS, UNLESS OTHERWISE NOTED.

ALL BEAMS SHALL BE LATERALLY SUPPORTED BY BLOCKING OR OTHER MEANS AT ALL POINTS OF BEARING.

NAILS INSTALLED PARALLEL TO THE GLUE LINES ON THE NARROW FACE OF ENGINEERED LUMBER BEAMS SHALL NOT BE SPACED CLOSER THAN FOUR INCHES FOR 10d COMMON NAILS AND THREE INCHES FOR 8d COMMON NAILS.

DO NOT DRILL, NOTCH, CUT (EXCEPT TO LENGTH), OR ALTER ENGINEERED LUMBER BEAMS OR JOISTS WITHOUT WRITTEN APPROVAL OF FABRICATOR AND REVIEW BY STRUCTURAL ENGINEER.

2. ALL POST-INSTALLED ANCHORS (IN CONCRETE OR CMU) ARE TO BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS (INCLUDING BUT NOT LIMITED TO DRILL BIT SIZE, PROPER CLEANING OF HOLES, INSTALLATION TORQUE, AND TEMPERATURE CONSTRAINTS).
WHEN A SPECIFIC PRODUCT AND MANUFACTURER IS REFERENCED IN THE CONTRACT DOCUMENTS, THAT SPECIFIC PRODUCT SHALL BE USED UNLESS AN ALTERNATE PRODUCT IS APPROVED IN WRITING BY THE ARCHITECT OR STRUCTURAL ENGINEER OF RECORD PRIOR TO USE.
FASTENERS GENERICALLY REFERRED TO AS "SCREW ANCHOR" ON THE DRAWINGS SHALL BE ONE OF:
1. TITEN HD BY SIMPSON STRONG-TIE ANCHOR SYSTEMS
2. KWIK HUS-EZ BY HILTI
FOR THESE SCREW ANCHORS LISTED, USE STANDARD ANSI DRILL BIT (NO SPECIAL BIT REQUIRED). PROVIDE HOLES IN STEEL MEMBERS 1/8" LARGER THAN NOMINAL DIAMETER OF ANCHOR.
CHEMICAL ADHESIVE ANCHORING SYSTEMS USED IN CONCRETE GENERICALLY REFERRED TO AS "ADHESIVE ANCHORS" SHALL BE ONE OF :
1. SET-XP BY SIMPSON STRONG TIE
2. AT-XP BY SIMPSON STRONG TIE
3. HIT-RE 500-V3 BY HILTI
5. HIT-HY 200 BY HILTI
THREADED ROD ANCHORS USED WITH THESE SYSTEMS SHALL BE PROVIDED BY THE ADHESIVE MANUFACTURER AND HAVE A MINIMUM STEEL STRENGTH OF Fy = 36 KSI UNLESS NOTED OTHERWISE. REINFORCING STEEL USED WITH THESE SYSTEMS SHALL COMPLY WITH ASTM A615 GRADE 60..
ANY PRODUCTS SUBMITTED AS A REQUEST FOR SUBSTITUTION SHALL BE COMPLIANT WITH ACI 318-11 APPENDIX D AND APPROVED FOR USE IN CRACKED CONCRETE.
FASTENERS GENERICALLY REFERRED TO AS "EXPANSION ANCHORS" OR "WEDGE ANCHORS" SHALL BE ONE OF:
1. KWIK BOLT TZ BY HILTI
2. STRONG-BOLT 2 BY SIMPSON STRONG TIE ANCHOR SYSTEMS
3. POWER- STUD + SD2 BY POWERS FASTENERS
FASTENERS GENERICALLY REFERRED TO AS "CONCRETE/MASONRY SCREWS" SHALL BE ONE OF:
1. KWIK-CON II + BY HILTI
2. TITEN BY SIMPSON STRONG TIE ANCHOR SYSTEMS (DO NOT USE TITEN HD MINI)
3. TAPPER + BY POWERS FASTENERS

SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.

SPECIFICATIONS (CONT.)

07210 BUILDING INSULATION
1. PERIMETER FOUNDATION INSULATION TO BE DOW STYROFOAM POLYSTYRENE. PROVIDE 2" x 24" VERTICAL OR HORIZONTAL RIGID FOUNDATION INSULATION BELOW NEW EXTERIOR PERIMETER FOUNDATION SLABS.
2. CONCEALED EXTERIOR FRAME WALL INSULATION TO BE HIGH PERFORMANCE CELLULOSE OR ROCKWOOL BATT INSULATION OR EQ. IN MINIMUM R-VALUE INDICATED. EXPOSED INSULATION TO BE FOIL FACED & MEET COMMERCIAL SMOKE DEVELOPED / FLAME SPREAD REQUIREMENTS.
3. SOUND BATTS INSULATION TO BE CELLULOSE OR UN-FACED SOUND ATTENUATION FIBERGLASS BATT INSULATION BY OWNENS CORNING OR ROCKWOOL SOUND INSULATION OR EQ. IN 3-½" THICKNESS U.N.O. ALL SOUND PARTITIONS TO HAVE ACOUSTICAL SILICONE SEALANT AT ALL GAPS BETWEEN FRAMING AND SURROUNDING BUILDING ELEMENTS AND AROUND OTHER PENETRATIONS.
4. PROVIDE NECESSARY CLIPS & FASTENERS TO SUPPORT & FASTEN INSULATION TO SURROUNDING CONSTRUCTION.

NEW CONSTRUCTION INSULATION SCHEDULE:

PERIMETER	R-10	TYPICAL EXISTING CONDITION TO REMAIN
WALLS	R-15	(ONLY WHERE FURRED INSIDE MASONRY WALLS U.N.O.)
ROOF		EXISTING ROOF CONTINUOUS INSULATION TO REMAIN U.N.O.

07400 SIDING PANELS (NOT USED)

07450 ROOFING PANELS (NOT USED)

07841 - THROUGH PENETRATION FIRESTOP SYSTEMS (NOT USED)

07900 CAULKING & SEALANTS
1. PRODUCTS SHALL BE DOW CORNING - 790 OR GE SILICONE SILPRUF 2000 WEATHERING SEALANT.
2. TYPICALLY, SEALANT COLOR TO MATCH ADJACENT MATERIAL. CONSULT ARCHITECT FOR SPECIFIC COLOR SELECTIONS FROM FULL RANGE OF MANUFACTURER'S STANDARD COLOR.
3. PROVIDE MILDEW RESISTANT SILICONE SEALANT IN AREAS SUBJECT TO HIGH HUMIDITY.

08000 WINDOWS & EXTERIOR OPENINGS
1. SEE PLANS FOR WINDOWS & HARDWARE REPLACEMENT / RESTORATION SCHEDULE.
2. EXTERIOR DOORS TO BE AS INDICATED OR SELECTED BY OWNER COMPLETE WITH WEATHERSTRIPPING & THRESHOLD.

08110 STEEL DOORS & FRAMES (NOT USED)

08200 WOOD DOORS
1. U.N.O., TYPICAL INTERIOR WOOD DOORS TO BE PANEL DOORS AS SELECTED BY THE OWNER.
2. SET DOORS AND FRAMES PLUMB AND LEVEL SO DOOR HAS AN EVEN REVEAL AND OPENS AND CLOSES WITHOUT BINDING OR SCRAPING THE FLOOR. DOORS SHALL LATCH WITHOUT SLAMMING OR WITH CLOSER FORCE IF EQUIPPED WITH A CLOSER.
3. SEE DOOR SCHEDULE FOR ANY GLAZING, FIRE RATINGS AND OPENING PROTECTIVES

09200 GYPSUM BOARD ASSEMBLIES
1. PROVIDE COMPLETE GYPSUM BOARD ASSEMBLIES AS INDICATED FOR NEW WORK. INSTALL GYPSUM BOARD PANELS VERTICALLY ALONG STUD IN CONTINUOUS PANELS TO DECREASE BUTT JOINTS WHERE POSSIBLE. PROVIDE MR BOARD IN NON-FIRE RATED WET WALL LOCATIONS.
2. U.L. TESTED SYSTEMS INDICATED ARE TO BE INSTALLED AS INDICATED IN THE U.L. TESTED DETAIL W/ ALL EDGE CONDITIONS AND PENETRATIONS SEALED TO MAINTAIN THE NOTED FIRE RATING.
3. FINISH GYPSUM BOARD SO THAT SEAMS, DENTS, OVERSPRAY & SCREW LOCATIONS ARE NOT VISIBLE AFTER PAINT FINISH IS APPLIED.
4. WHERE GYPSUM BOARD MEETS CMU WALLS, JAMBS, FRAMES, TRIM OR OTHER STRUCTURE, PROVIDE A CONT. J-BEAD EDGE WITH A FLEXIBLE SEALANT FILLER.
5. CROOKED CORNERS OR WALLS WILL BE REQUIRED TO BE STRAIGHTENED.
6. FRAME SOFFITS WITH METAL STUDS TO COORDINATE WITH DUCTWORK & LIGHT FIXTURES. PROVIDE BRACING BACK TO ROOF FRAMING AND WALLS FOR SOFFITS SO THEY ARE STABLE.

09300 CERAMIC TILE (SUBMIT SAMPLES - AS SELECTED BY OWNER)
1. FLOOR TILE TO HAVE STATIC OF COEFFICIENT OF FRICTION OF MIN. 0.6.
2. SUBMIT SAMPLES OF PROPOSED TILE & COLORS.
3. ALL TILE TO BE THIN SET. MORTAR: LATICRETE #4237; GROUT: LATAPOXY 210 GROUT IN COLOR AS SELECTED BY OWNER.; SEALANT: PECORA BC-158 BUTYL RUBBER. INSTALL MEMBRANE WATERPROOFING IN TOILET ROOMS LATECRETE WATERPROOF MEMBRANE.
4. INSTALL TILE WITH EVEN JOINTS AND MISC. EDGE STRIPS, BULLNOSE AND TRIMS. LAYOUT TILE TO MINIMIZE THIN CUT TILES. LEAVE FLOOR CLEAN, WITH ALL GROUT REMOVED FROM TILE SURFACE.
5. TILE INSTALLER TO PROVIDE SUB-FLOOR LEVELER COMPATIBLE WITH SUB-FLOOR AND TILE.

09510 ACOUSTICAL TILE CEILING
1. TYPICAL CEILING TILES TO BE ARMSTRONG KITCHEN ZONE 2'x2'x 5/8" , SQUARE LAY-IN INSTALLED IN STANDARD METAL SUSPENSION SYSTEM EQ. TO PRELUDE XL . MAIN BEAMS: .025" THICKNESS, 1-1/2" HIGH AND 15/16" FLANGE (WHITE ENAMEL FINISH). SUSPEND WITH 12 GA. HANGERS AT 4'-0" OC MAX. AND 8" FROM ENDS. CROSS BEAMS: .017" THICKNESS, LOCKED INTO MAIN BEAMS. SUSPEND FROM STRUCTURE ABOVE ONLY - NOT FROM PIPES OR DUCTWORK. INSTALL GRID LEVEL TO HEIGHT INDICATED OR, WITH PRIOR APPROVAL FROM THE ARCHITECT, AS HIGH AS STRUCTURE & EQUIPMENT ALLOW. U.N.O. CENTER GRID IN ROOM AS INDICATED ON THE REFLECTED CEILING PLAN. LEAVE (2) FULL BOXES OF TILE FOR OWNER REPLACEMENT AFTER OCCUPANCY.
2. CONTRACTOR TO COORDINATE ITEMS INSTALLED IN CEILING SO THAT LIGHTS ARE EVENLY SPACED & DIFFUSERS & DETECTORS ARE CENTERED IN THE TILE.
3. MAINTAIN U.L. RATED CEILING SYSTEM ABOVE.
4. NEATLY TRIM & TOUCH UP PAINT ALL VISIBLE CUT EDGES. REPLACE ALL NICKED AND DAMAGED TILES BEFORE FINAL INSPECTION.

09650 RESILIENT BASE & FLOORING (NOT USED)

09660 CARPET
1. AS SELECTED BY OWNER

09900 PAINTING
1. PREPARE ALL SURFACES FOR COATINGS & APPLY COATINGS AS RECOMMENDED BY THE MFG. SPECIFICATIONS BELOW BASED ON SHERWIN-WILLIAMS (BENJAMIN-MOORE APPROVED EQUAL). NOTE THAT EXPOSED ALUM., BRASS, CHROME, STAINLESS STEEL, ETC. TO BE LEFT UNFINISHED. DO NOT PAINT OVER TAGS & LABELS.
2. NO SPRAY APPLICATION OF PAINT WITHOUT PRIOR APPROVAL FROM OWNER. IF SPRAY APPLICATION IS USED, TURN OFF HVAC SYSTEM & PROTECT EQUIPMENT & ADJACENT SURFACES FROM OVERSPRAY.
3. EXTENT OF COATING IN CONTRACT INCLUDES: ALL EXTERIOR FERROUS METALS THAT ARE NOT PRE-FINISHED & SEALING EXTERIOR CMU. PAINT INTERIOR FERROUS METALS - INCLUDING METAL DOORS, FRAMES & RAILS, ALL GYPSUM DRYWALL SURFACES, CMU, AS WELL AS EXPOSED DUCTWORK, PIPING & CONDUIT.
4. PRIOR TO APPLICATION OF ANY COATING, PAINTING CONTRACTOR WILL EXAMINE THE SUBSTRATE TO BE COATED. APPLICATION OF PAINT DEMONSTRATES PAINTING CONTRACTOR'S ACCEPTANCE OF SUBSTRATE.

PAINTING SCHEDULE: NOTE THAT NOT ALL MATERIALS MAY BE APPLICABLE TO THIS PROJECT

EXTERIOR FERROURS METAL: shall be painted in accordance with the Steel Structural Painting Council Specification (SSPC) "Alkyd Paint System No. 2.04 with Zinc Chromate Iron Oxide Primer" as follows:
a. The surface shall be cleaned as specified in SSPCSP 663 "Commercial Blast Cleaning".
b. Pre-treament of the steel shall not be required.
c. All paint, shall be applied in accordance with SSPCPA 164, "Field and Maintenance Painting".
d. A minimum of three coats of paint shall be applied.
e. After cleaning, the steel shall be primed with one coat of paint conforming with Federal Specification TTP57b, "Zinc Yellow Iron Oxide Base, Ready Mixed".
f. Touch up field painting shall be performed in accordance with specification SSPCPA 164.
g. The second paint coat shall be SW A100 Exterior Latex Gloss.
h. The finish coat of paint shall be SW AI00 Exterior Latex Gloss.
i. The dry film thickness of the paint at any point shall not be less than the following: for the primer 1.5 mils; for the three coat paint system 3.5 mils. In the event the required paint film thickness is not achieved as specified, additional coats shall be applied until the required thickness is obtained.

EXTERIOR GALVANIZED METALS: (All exterior galvanized metal to be painted).
Prepare per workmanship above.
1st Coat: SW DTM Acrylic Primer/Finish 2.5 mils.
2nd Coat: SW A-100 Exterior Latex Gloss
3rd Coat: SW A-100 Exterior Latex Gloss

SPECIFICATIONS (CONT.)

EXTERIOR WOOD (FACTORY PRIMED)
Field Prime: PrimePlus
1st Coat: SW Duration Exterior Latex Satin
2nd Coat: SW Duration Exterior Latex Satin

INTERIOR GYPSUM DRYWALL:
Eg-Shel Enamel:
1st Coat: SW PrepRite Classic Latex Primer
2nd Coat: SW Pro-Mar 200 LATEX Eg-Shel
3rd Coat: SW Pro-Mar 200 LATEX Eg-Shel

NOTE:APPLY SEMI-GLOSS FINISH TO TOILETS, KITCHEN & JANITOR'S CLOSET

INTERIOR FERROUS METALS:
GROUP A: (ALL EXPOSED INTERIOR CEILING METAL, EXCEPT ALUMINUM, BRASS, BRONZE, CHROME, STAINLESS STEEL). TO INCLUDE THE FOLLOWING ITEMS SPECIALLY: STEEL JOISTS, STEEL BEAMS, PURLINS, STEEL GIRDERS, STEEL DECK.

1ST COAT: PRIMER COAT GENERALLY BY OTHERS, TOUCH UP AND PREPARE PER WORKMANSHIP ABOVE OR APPLY ONE COAT OF SW DMT ACRYLIC PRIMER.
2ND COAT: SW PRO-MAR 200 ALKYD FLAT WALL PAINT.
3RD COAT: SW PRO-MAR 200 ALKYD FLAT WALL PAINT.

NOTE:ALL PIPE, PIPE COVERING, AND CONDUITS, SHALL BE FINISHED THE SAME AS THE MATERIALS TO WHICH THEY ARE ATTACHED.

GROUP B: ALL OTHER INTERIOR METAL NOT PREFINISHED AND IN PARTICULAR: STEEL COLUMNS, RAILINGS, DOOR JAMBS, STEEL DOORS AND FRAMES, ETC.

PRIMER: FACTORY PRIMER OR SW KEM BOND HS UNIVERSAL PRIMER
2ND COAT: SW PRO-MAR 200 ALKYD SEMI-GLOSS
3RD COAT: SW PRO-MAR 200 ALKYD SEMI-GLOSS.

GALVANIZED METAL: SAME AS FOR FERROUS METALS ABOVE.

INTERIOR MASONRY SEALER :
NONE

PAINTED WOOD WORK:
1ST COAT: PREPRITE WALL AND WOOD PRIMER
2ND COAT: SW PRO-MAR 200 INTERIOR LATEX SEMI-GLOSS.
3RD COAT: SW PRO-MAR 200 INTERIOR LATEX SEMI-GLOSS.

NATURAL FINISH WOOD
1ST Coat: Stained - Minwax penetrate color - lightly sanded
2nd Coat: Minwax clear gloss polyurethane
3rd Coat: Minwax clear gloss polyurethane

ALL CLEAR FINISH INTERIOR CONCRETE FLOORS
Clear Concrete Sealer - Waterproof, low VOC

15000 MECHANICAL (SEE MECHANICAL SHEET SPECS.)

15400 PLUMBING SYSTEM (SEE PLUMBING SHEET SPECS.)

16000 ELECTRICAL (SEE ELECTRICAL SHEET SPECS.)

JJ
JARRELL PROPERTIES, INC.

FOR CONSTRUCTION

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COMMONWEALTH OF VIRGINIA
DEX A. SANDERS
Lic. No. 8814
07-30-24
ARCHITECT

REVISIONS:
1-PLAN REVIEW 10-25-24

DRAWN:	DAS
CHECKED:	
SCALE:	NOTED
DATE:	07-30-24
PROJECT #:	2212

NOTES & SPECIFICATIONS

CS.2

Structural Notes

GENERAL REQUIREMENTS:

1. THE STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE 2018 VIRGINIA CONSTRUCTION CODE (USBC).

IBC 2018 2018 INTERNATIONAL BUILDING CODE (AS MODIFIED BY USBC)
ASCE 7-16 MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES
ACI 301-10 SPECIFICATIONS FOR STRUCTURAL CONCRETE
ACI 315-99 DETAILS AND DETAILING OF CONCRETE REINFORCEMENT
ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AISC 303-16 CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES
AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (15TH EDITION MANUAL, LRFD)
AISI S100-12 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS
AWS D1.1 AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE - STEEL
SJI 100-2015 STEEL JOIST INSTITUTE STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS, 44TH EDITION SDI MANUAL STEEL DECK INSTITUTE, DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS

2. SCALES INDICATED ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DIMENSIONS ARE NOT TO BE OBTAINED BY SCALING FROM THE DRAWINGS.

3. THE DESIGN GRAVITY LOADS ARE AS FOLLOWS:

FLOOR/ROOF DEAD LOAD = As needed
ROOF DEAD LOAD = 40 psf
FLOOR LIVE LOAD = 100 psf
ROOF LIVE LOAD = 20 psf
1 INTERIOR STAIR LIVE LOAD = 100 psf

4. SNOW LOADS : ASCE 7-10: GROUND SNOW LOAD (Pg) = 25 PSF (FIG. 7-1)
EXPOSURE FACTOR (Ce) = 1.0 (TABLE 7-2, TERRAIN B)
THERMAL FACTOR (Ct) = 1.0 (TABLE 7-3)
SNOW IMPORTANCE FACTOR (Is) = 1.0 (TABLE 1.5-2)
FLAT ROOF SNOW LOAD (Pf=0.7 Ce Ct I Pg) = 21 PSF
MIN. SNOW LOAD FOR LOW-SLOPE ROOFS (Pm=(20) Pf) =20 PSF

5. WIND - ASCE 7-10:
WIND SPEED, Vult = 115 mph
EXPOSURE CATEGORY B
RISK CATEGORY II
GUST FACTOR, G = 0.85
INTERNAL PRESSURE COEFFICENT, Ci = +/- 0.18

6. SEISMIC - ASCE 7-10:
EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7, 12.8
RESPONSE MODIFICATION FACTOR R=1.3 ORDINARY PLAIN MASONRY SHEAR WALLS
SEISMIC IMPORTANCE FACTOR, I = 1.0 RISK
CATEGORY: II
MAPPED SPECTRAL RESPONSE ACCELERATIONS: Ss = 0.244g, S1 = 0.093g
SPECTRAL RESPONSE ACCELERATIONS: Sds = 0.26g, Sd1 = 0.15g
SITE CLASS: D
SEISMIC DESIGN CATEGORY: C

7. THE STRUCTURAL INTEGRITY OF THE BUILDING IS DEPENDENT UPON COMPLETION ACCORDING TO THE PLANS AND SPECIFICATIONS. THE STRUCTURAL ENGINEER OF RECORD ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION. THE METHOD OF CONSTRUCTION AND SEQUENCE OF OPERATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL SUPPLY ANY NECESSARY BRACING, GUYS, ETC. TO PROPERLY BRACE THE STRUCTURE AGAINST WIND, DEAD AND LIVE LOADS UNTIL THE BUILDING IS COMPLETED ACCORDING TO THE PLANS AND SPECIFICATIONS. ANY QUESTIONS REGARDING TEMPORARY BRACING REQUIREMENTS SHOULD BE FORWARDED TO THE STRUCTURAL ENGINEER FOR REVIEW.

8. MECHANICAL UNITS AND ANY OTHER EQUIPMENT SUPPORTED BY THE STRUCTURE WITH WEIGHTS IN EXCESS OF 200 LBS. SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

9. CONTRACTOR SHALL REVIEW AND VERIFY ALL FIELD CONDITIONS, DIMENSIONS AND CONTRACT DOCUMENTS PRIOR TO COMMENCING WORK AND SHALL NOTIFY THE S.E.R. OR ARCHITECT OF ANY DISCREPANCIES OR OMISSIONS BEFORE PROCEEDING.

10. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY THE GENERAL CONTRACTOR AND REVIEWED BY THE S.E.R. SHOULD THE OWNER OR CONTRACTOR FAIL TO OBTAIN THE S.E.R.'S REVIEW OF THE SHOP DRAWINGS, THE S.E.R. WILL NOT ACCEPT RESPONSIBILITY FOR THE DESIGN AND CERTIFICATION OF THIS PROJECT. PRIOR TO SUBMISSION, THE CONTRACTOR SHALL REVIEW SHOP DRAWINGS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL NOT BE PRODUCED PRIOR TO FINAL CONSTRUCTION SET.

11. DO NOT FABRICATE PRIOR TO SHOP DRAWING REVIEW. REVIEW IS LIMITED TO CONFORMANCE WITH THE DESIGN CONCEPT. ALL DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR FOR COMPATIBILITY OF ARCHITECTURAL AND STRUCTURAL REQUIREMENTS. NOTIFY ARCHITECT OR ENGINEER OF ANY CONFLICTS PRIOR TO FABRICATION.

FOUNDATIONS AND SLABS-ON-GROUND

1. FOUNDATIONS: CONVENTIONAL SHALLOW SPREAD FOUNDATIONS. DESIGN IS SIMILAR TO EXISTING FOUNDATIONS.

2. NET ALLOWABLE BEARING CAPACITY = 1500 PSF.

3. SLABS ON GROUND TO BE PLACED OVER A 10 MIL MINIMUM THICKNESS PUNCTURE RESISTANT VAPOR BARRIER (SEE SPECIFICATIONS), ON A 4 INCH MINIMUM THICK CAPILLARY WATER BARRIER ON STRUCTURAL FILL (SEE CIVIL FOR REQUIREMENTS). TURN THE VAPOR BARRIER UP AT INTERSECTING VERTICAL SURFACES AND UTILITY PENETRATIONS AND SEAL WITH VAPOR BARRIER MANUFACTURER'S STANDARD, COMPATIBLE TAPE. SEAL ALL JOINTS WITH TAPE TO PROVIDE A CONTINUOUS UNBROKEN VAPOR BARRIER BETWEEN THE SUBGRADE AND THE SLAB ABOVE.

4. SAWN JOINTS IN CONCRETE SLABS MUST BE MADE THE SAME DAY AS PLACEMENT, AS SOON AS POSSIBLE WITHOUT DAMAGING THE CONCRETE, AND IN NO CASE LATER THAN 12 HOURS AFTER CONCRETE PLACEMENT.

5. COORDINATE EXACT LOCATIONS OF SLAB CONTROL AND CONSTRUCTION JOINTS WITH ARCHITECTURAL FLOOR FINISHES TO ENSURE SLAB JOINTS DO NOT READ THROUGH FINISHES.

CONCRETE:

1. NORMAL-WEIGHT, 3,500 PSI COMPRESSIVE STRENGTH AT 28 DAYS .

2. CONCRETE SHALL HAVE A SAND FINE AGGREGATE AND NORMAL WEIGHT COARSE AGGREGATE CONFORMING TO ASTM-C150.

3. FIELD-CURED CONCRETE SHALL ATTAIN A MINIMUM STRENGTH OF 75% OF THE SPECIFIED 28 DAY COMPRESSIVE STRENGTH PRIOR TO ANY BACKFILL PLACEMENT.

4. UNLESS SUBMITTED AND APPROVED OTHERWISE, ASTM C 150, TYPE I CEMENT SHALL BE USED.

5. THE MAXIMUM BATCH-TO-PLACEMENT TIME FOR THE RETAINING WALL CONCRETE IS 90 MINUTES. CONCRETE SHALL BE PLACED WITH AN AMBIENT TEMPERATURE RANGE OF 55 TO 90 DEGREES FAHRENHEIT.

6. MIXING, TRANSPORTING, AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301. VIBRATE CONCRETE IN ACCORDANCE WITH ACI-309.

7. MATERIALS USED FOR FORMING SHALL BE STRAIGHT, SMOOTH, AND - WHERE POSSIBLE FROM A CONSTRUCTABILITY STANDPOINT - BE CONTINUOUS WITH THE NUMBER OF PROVIDED JOINTS AND SEAMS MINIMIZED.

8. MINIMUM CONCRETE COVER PROTECTION FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS:

FOOTINGS 3 INCHES
SLABS ON GRADE SINGLE LAYER 2 INCHES (TOP)

9. PROVIDE STANDARD BAR CHAIRS AND SPACERS AS REQUIRED TO MAINTAIN CONCRETE PROTECTION SPECIFIED.

Structural Notes (CONT)

REINFORCING STEEL:

1. REINFORCING BARS SHALL CONFORM TO ASTM-A615, GRADE 60. REINFORCING BARS SHALL NOT BE TACK WELDED, WELDED, HEATED, OR THERMALLY CUT WITHOUT PRIOR APPROVAL BY ECS.

2. DETAILING OF CONCRETE REINFORCING BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI SP-66, "DETAILING MANUAL". PLACING OF REINFORCING BARS SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 315R, "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" AND CRSI, "MANUAL OF STANDARD PRACTICE".

HISTORIC MASONRY (EXISTING BRICK)

1. ALL BRICK CONSTRUCTION TO BE IN ACCORDANCE WITH ACI 530 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", THE BRICK INSTITUTE OF AMERICA AND 2018 VCC REQUIREMENTS.

2. MORTAR FOR REPOINTING AND MORTAR IN CONTACT WITH EXISTING MASONRY TO REMAIN TO MATCH EXISTING.

3. STEEL LINTELS SHALL BE ASTM A36 AND SHALL HAVE A CORROSION-RESISTANT GALVANIZED COATING, APPROVED COAT OF PAINT, ENAMEL OR OTHER APPROVED PROTECTION PRIOR TO INSTALLATION. STEEL LINTELS MAY ALSO BE FABRICATED OF APPROVED CORROSION-RESISTANT STEEL (STAINLESS STEEL OR ASTM A242) REFER TO THE MASONRY VENEER LINTEL SCHEDULE FOR ADDITIONAL REQUIREMENTS

BRICK MASONRY (NEW)

1. BRICK CONSTRUCTION TO BE IN ACCORDANCE WITH ACI 530 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", THE BRICK INSTITUTE OF AMERICA AND 2012 IBC REQUIREMENTS.

2. MORTAR ASTM C270, TYPE S EXTERIOR OR BELOW GRADE ASTM C270, TYPE N OR S EXTERIOR ABOVE GRADE.

3. STEEL LINTELS SHALL BE ASTM A36 AND SHALL HAVE A CORROSION-RESISTANT GALVANIZED COATING, APPROVED COAT OF PAINT, ENAMEL OR OTHER APPROVED PROTECTION PRIOR TO INSTALLATION. STEEL LINTELS MAY ALSO BE FABRICATED OF APPROVED CORROSION-RESISTANT STEEL (STAINLESS STEEL OR ASTM A242) REFER TO THE MASONRY VENEER LINTEL SCHEDULE FOR ADDITIONAL REQUIREMENTS

MASONRY (BOND BEAM AND INFILL)

1. BOND BEAMS MAYBE PRECAST CONCRETE OR MASONRY. IF MASONRY, THE FOLLOWING APPLIES:

2. MASONRY CONSTRUCTION TO BE IN ACCORDANCE WITH THE NATIONAL CONCRETE MASONRY ASSOCIATION'S STANDARD PRACTICES AND "SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF LOAD-BEARING CONCRETE MASONRY" OR ACI 530 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES". ALL MASONRY TO CONFORM TO THE FOLLOWING SPECIFICATION:

ASTM C90, LOAD-BEARING C.M.U.

ASTM C270, TYPE N INTERIOR LOAD-BEARING

3. CMU UNITS SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF FM = 1500 PSI. CONTRACTOR SHALL PROVIDE SPECIAL TEST AND INSPECTION FOR THE LOCATION OF THE REINFORCEMENT AND DURING CONSTRUCTION OF CMU WALL.

4. GROUT OR PEA GRAVEL CONCRETE USED FOR FILLING UNIT CELLS OF MASONRY SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI ON THE NET AREA AT 28 DAYS.

WOOD:

A. ALL JOISTS, HEADERS, EXTERIOR AND INTERIOR BEARING WALL STUDS, TOP PLATES AND BOTTOM PLATES TO BE MINIMUM SPF#2 UNLESS NOTED OTHERWISE.

B. ROOF RAFTER TO BE MIMIMUM SPF#1

C. NON-BEARING INTERIOR WALL STUDS MAY BE SPF-STUD GRADE 2x4 AT 24" O.C.

D. THE DESIGN VALUES SHOWN IN THE FOLLOWING TABLE ARE IN ACCORDANCE WITH THE 2005 NATIONAL DESIGN SPECIFICATIONS (NDS).

LUMBER GRADE DESIGN VALUES					
Lumber Grade	Fb	Fc pend	Fc para	Fv	E
SPF #2 (STUDS, PLATES, ETC)	875 psi	425 psi	1150 psi	135 psi	1400000 psi
SPF #1	1200 psi	565 psi	1400 psi	175 psi	160000psi

E. ALL LUMBER USED IN EXTERIOR APPLICATIONS, INCLUDING WOOD IN CONTACT WITH EXTERIOR MASONRY OR CONCRETE SLABS OR WALLS, AND SILL PLATES EXPOSED TO CONCRETE SHALL BE SOUTHERN PINE TREATED IN ACCORDANCE WITH AWPA U1. USE CATEGORY 2 FOR SILL PLATES, CATEGORY 3B FOR EXTERIOR MEMBERS, AND CATEGORY 4A FOR WOOD IN GROUND CONTACT. SEE AWPA U1 FOR ALL OTHER CASES.

F. ALL METAL CONNECTORS AND FASTENERS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED MINIMUM 1.85 OUNCE PER SQUARE FOOT (ASTM A653, A123, AND A153), STAINLESS STEEL (TYPE 303,304,305 OR 316) OR OTHER CORROSION RESISTANT MATERIALS THAT ARE COMPATIBLE WITH THE PRESERVATIVE USED AND EXPOSURE CONDITIONS. BEAM TO BEAM CONNECTIONS ON EXPOSED DECKS SHALL BE STAINLESS STEEL OR BETTER. CONTRACTOR TO VERIFY THE SUITABILITY OF CONNECTORS WITH THE MANUFACTURER AND THE GOVERNING JURISDICTION.

G. FASTENERS SHOULD MATCH THE TYPE OF CONNECTOR BEING USED. STAINLESS STEEL CONNECTORS REQUIRE STAINLESS STEEL FASTENERS AND HOT DIPPED GALVANIZED CONNECTORS REQUIRE HOT DIPPED GALVANIZED FASTENERS THAT MEET THE SPECIFICATIONS OF ASTM A153.

H. ALL STUDS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA (NATIONAL FOREST PRODUCTS ASSOCIATION) REQUIREMENTS. MEMBERS ARE NOT TO BE DRILLED IN EXCESS OF NDS OR LOCAL CODE REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ALL POSTS SHALL STACK CONTINUOUSLY TO SOLID BEARING ON FOUNDATION WALLS OR BEAMS; PROVIDE SOLID BLOCKING AND OR CRIPPLES AS REQUIRED BETWEEN FLOORS.

I. SHEATHING: EACH PANEL SHALL BE IDENTIFIED WITH THE APPROPRIATE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION, AND SHALL MEET THE REQUIREMENTS OF APA PRP-108 PERFORMANCE STANDARDS. ALL PANELS WHICH HAVE ANY EDGE OR SURFACE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE CLASSED EXTERIOR GRADE. PANEL THICKNESS, GRADE, AND GROUP NUMBER OR SPAN RATING SHALL BE AT LEAST EQUAL TO THAT SHOWN ON THE DRAWINGS. APPLICATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN PLYWOOD ASSOCIATION. ALL ADHESIVES SHALL CONFORM TO APA SPECIFICATION AFG-01 AND APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. LAP SHEATHING OVER WALL PLATES TO PREVENT UPLIFT.

K. WOOD FLOOR DECKING, INCLUDING THE EXISTING FLOOR BOARDS IN ROOMS 104, 105, 106, AND 107 SHALL BE SCREWED INTO THE EXISTING WOOD JOISTS. MIMIMUM 2 SELF DRILLING STRUCTURAL SCREWS PER BOARD INTO EACH JOIST.

K. MOISTURE CONTENT OF LUMBER DELIVERED TO THE SITE SHALL BE LESS THAN OR EQUAL TO 19%

STRUCTURAL STEEL

1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL MUST BE IN ACCORDANCE WITH AISC 360, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (LRFD DESIGN) AND THE AISC AND THE AISC "STEEL CONSTRUCTION MANUAL", 15TH EDITION.

2. STEEL GRADES:

A. ANGLES AND MISCELLANEOUS PLATES - ASTM A36 (Fy = 36 KSI)
B. STRUCTURAL TUBING (SQ., RECT., ROUND) - ASTM A500, GRADE C; OR ASTM A1085
C. CHANNELS - ASTM A36 (Fy = 36 KSI), OR ASTM A572, GRADE 50 (Fy = 50 KSI)
D. W SHAPES - ASTM A992, (Fy = 50 KSI)
E. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36

3. ALL BOLTS MUST BE 3/4 INCH DIAMETER, HIGH STRENGTH, ASTM F3125 (TYPE N). BOLTS SHALL BE BEARING TYPE AND INSTALLED IN 'SNUG TIGHT' CONDITION.

4. ALL WELDING MUST BE IN ACCORDANCE WITH ANSI/AWS D1.1 STRUCTURAL WELDING CODE. WELDING ELECTRODES MUST BE E70 SERIES.

5. CONNECTIONS SHALL BE ASIC STANDARD CAPABLE OF SUPPORTING THE LOAD INDICATED ON THE DRAWINGS AS (K). IF LOAD IS NOT PROVIDED, CONNECTION TO BE DESIGNED FOR ½ OF THE TOTAL UNIFORM LOAD CAPACITY OF THE BEAM.

6. MINIMUM WELD SIZE MUST BE 3/16" FILLET WELDS ALL AROUND, UNLESS INDICATED OTHERWISE.

7. SHOP CONNECTIONS MUST BE WELDED AND FIELD CONNECTIONS MUST BE WELDED OR BOLTED AS INDICATED OR APPROVED ON SHOP DRAWINGS.

8. NO SHOP SPLICE OR OTHER CONNECTION WILL BE PERMITTED UNLESS SHOWN ON APPROVED SHOP DRAWINGS.

Structural Notes (CONT)

STEEL JOISTS:

1. OPEN WEB STEEL JOISTS AND BRIDGING FOR JOISTS SHALL CONFORM TO THE STEEL JOIST INSTITUTE "STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS". ERECTION LAYOUT, CALCULATIONS, DETAILS, AND ANY OTHER INFORMATION DEEMED NECESSARY BY THE ENGINEER SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION. TOP CHORDS SHALL BE ANGLES OR TEES. JOISTS SHALL BE WELDED TO SUPPORTING STEEL MEMBERS. BRIDGING SHALL BE CONTINUOUS THROUGH OPEN WEB STEEL JOISTS. PROVIDE DIAGONAL BRIDGING WITH BOLTED CONNECTIONS AT CHORDS AND INTERSECTIONS WHERE REQUIRED BY SJI. CAMBER ALL JOISTS THE AMOUNT RECOMMENDED BY THE SJI. TYPICAL JOIST SEAT DEPTH = 2-1/2" U.N.O.

STEEL DECK:

1. COLD-ROLLED METAL DECK FOR ROOFS MUST BE GALVANIZED STEEL (G60 COATING), ASTM A653 OR A792, DESIGNED IN ACCORDANCE WITH THE STEEL DECK INSTITUTE (SDI) "MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS."

2. DECK SUPPORTED ON OPEN WEB STEEL JOISTS MUST BE THE NON-COMPOSITE TYPE, 9/16" DEEP, TYPE C, G60 MIN. GALVANIZED, WITH THE FOLLOWING MINIMUM PROPERTIES PER 12" OF WIDTH: A. 0.6" DEEP 26 GA., I= 0.0149 IN4 S= 0.035 IN3 Fy= 90 KSI

3. DO NOT WELD DECK TO OPEN WEB STEEL JOISTS. USE INDICATED SCREW CONNECTIONS.

4. CONTRACTOR SHALL SHORE AND SUPPORT DECK AND FLOOR SYSTEM DURING CONCRETE PLACEMENT & CONSTRUCTION UNTIL CONCRETE REACHES 28 DAY DESIGN STRENGTH.

INSPECTIONS

1. OWNER SHALL RETAIN THE SERVICES OF INDEPENDENT AGENCIES TO PERFORM THE INSPECTION OF THE FOLLOWING ITEMS: CONCRETE, STRUCTURAL STEEL, MASONRY

AS CONSTRUCTION PROGRESSES, FORWARD COPIES OF INSPECTION REPORTS TO STRUCTURAL ENGINEER FOR REVIEW. ECS CANNOT ISSUE A CERTIFICATE OF SATISFACTORY COMPLETION WITHOUT REVIEWING THE ABOVE REPORTS AND FINAL CERTIFICATES ISSUED BY EACH OF THE ABOVE AGENCIES.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT A DIGITAL COPY OF SHOP DRAWINGS OR PRODUCT DATA FOR THE FOLLOWING STRUCTURAL ITEMS:

1. CONCRETE
DESIGN MIX
REINFORCEMENT
2. STEEL
MISCELLANEOUS STEEL (LINTELS, BEARING PLATES, BASE PLATES, ANCHORS)
STEEL BEAMS AND POSTS
STEEL DECK
STEEL JOISTS
3. MASONRY
MASONRY + GROUT
PRECAST BOND BEAMS

EXISTING CONDITIONS

1. EXISTING CONSTRUCTION INDICATED ON DRAWINGS IS FOR REFERENCE ONLY. VERIFY EXISTING DIMENSIONS AND CONDITIONS PRIOR TO ORDERING MATERIAL AND START WORK. BRING DISCREPANCIES BETWEEN THE EXISTING CONDITIONS ON SITE AND EXISTING CONDITIONS INDICATED ON CONTRACT DOCUMENTS TO IMMEDIATE ATTENTION OF THE ECS.

2. EXISTING CONSTRUCTION HAS NOT BEEN VERIFIED FOR CONFORMANCE WITH REQUIREMENTS OF APPLICABLE BUILDING CODE EXCEPT FOR AREAS DIRECTLY AFFECTED BY MODIFICATIONS INDICATED HEREIN.

3. SHORE AND TEMPORARILY BRACE EXISTING CONDITION AS NECESSARY TO ACCOMMODATE REMOVAL OF EXISTING CONSTRUCTION.

NOTIFY ECS IF ANY EXISTING CONSTRUCTION NOT DESIGNATED FOR REMOVAL INTERFERES WITH INSTALLATION OF NEW WORK AND OBTAIN DIRECTION FROM ECS PRIOR TO REMOVAL OF INTERFERING CONSTRUCTION.

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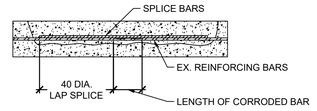
FND / FRAMING PLANS

S0.1

UNCORRODED BAR		CORRODED BAR
REINFORCING STEEL MINIMUM ALLOWABLE DIAMETER		
BAR SIZE	NOM. DIA. (IN)	MIN. ALLOW. DIA. (IN)
#3	0.375	0.338
#4	0.500	0.450
#5	0.625	0.563
#6	0.750	0.675
#7	0.875	0.787
#8	1.000	0.900
#9	1.128	1.015
#10	1.270	1.143
#11	1.410	1.269



REINFORCING BAR REPAIR NOTES

1. LAP SPLICE REPAIR: INSTALL ADDITIONAL REINFORCING AT LOCATIONS WHERE REBAR DIAMETER IS LESS THAN THAT INDICATED IN THE TABLE. EXTEND NEW BAR BEYOND THE DAMAGED SECTION OF THE BAR.

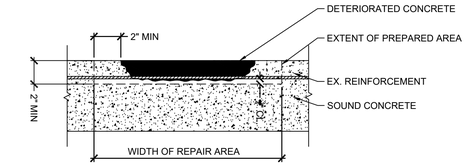
04 REINFORCING BAR REPAIR GUIDE
SCALE: NTS

CONCRETE

A. PATCH MATERIAL: SIKA REPAIR 223, OR APPROVED EQUAL, FOR HORIZONTAL AND VERTICAL REPAIRS. USE WITH SIKA ARMATEC 110 EPOCEM.
B. STRUCTURAL CONCRETE: NORMAL-WEIGHT, 4,500 PSI COMPRESSIVE STRENGTH AT 28 DAYS W/ 4% TO 6% ENTRAINED AIR CONTENT, A SLUMP BETWEEN 3"AND 5", AND A MAXIMUM WATER-CEMENT RATIO OF 0.45.
C. CORROSION INHIBITOR ADMIXTURE TO BE SUBMITTED WITH CONCRETE MIX DESIGN.
D. CONCRETE SHALL HAVE A SAND FINE AGGREGATE AND NORMAL WEIGHT COARSE AGGREGATE CONFORMING TO ASTM-C150.
E. UNLESS SUBMITTED AND APPROVED OTHERWISE, ASTM C150, TYPE I CEMENT SHALL BE USED.
F. MAXIMUM BATCH-TO-PLACEMENT TIME IS 90 MINUTES. CONCRETE SHALL BE PLACED WITH AN AMBIENT TEMPERATURE RANGE OF 55 TO 90 DEGREES FAHRENHEIT.
G. VIBRATE CONCRETE IN ACCORDANCE WITH ACI-309.
H. MATERIALS USED FOR FORMING SHALL BE STRAIGHT, SMOOTH, AND - WHERE POSSIBLE FROM A CONSTRUCTABILITY STANDPOINT – BE CONTINUOUS WITH THE NUMBER OF PROVIDED JOINTS AND SEAMS MINIMIZED.
I. CONCRETE IS TO BE SELF-BONDING OR A BONDING AGENT IS REQUIRED WITH USE.

REINFORCING STEEL

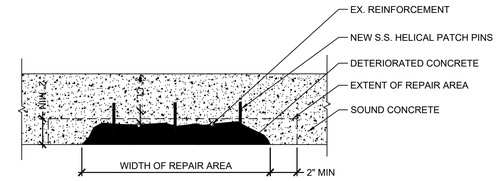
A. REINFORCING BARS SHALL CONFORM TO ASTM-A615, GRADE 60. REINFORCING BARS SHALL NOT BE TACK WELDED, WELDED, HEATED, OR THERMALLY CUT WITHOUT PRIOR APPROVAL BY ECS.
B. DETAILING OF CONCRETE REINFORCING BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI SP-66, "DETAILING MANUAL", PLACING OF REINFORCING BARS SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 315R, "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" AND CRSI, "MANUAL OF STANDARD PRACTICE".



NOTES:

1. PARTIAL DEPTH REPAIR SHOWN MAY BE APPLIED TO SLABS, CURBS, WALLS, COLUMNS, BEAMS, OR OTHER SPALLS THAT HAVE FEW EXPOSED REBAR THAT ARE NOT SIGNIFICANTLY CORRODED.
2. REPAIR MAY BE USED ON BOTH HORIZONTAL AND VERTICAL SURFACES.
3. SOME REPAIR LOCATIONS MAY NOT HAVE VISIBLE REBAR.
4. ROUT AND SEAL PERIMETER OF REPAIRED AREA AFTER CONCRETE HAS CURED A MINIMUM OF 7 DAYS.

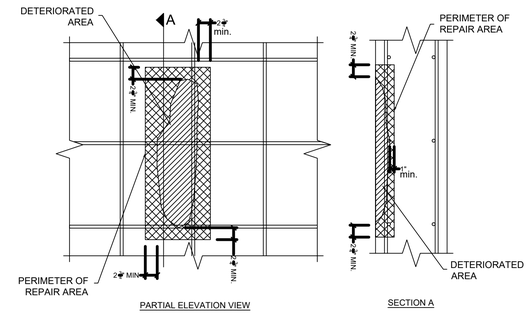
01 PARTIAL DEPTH CONCRETE REPAIR
SCALE: NTS



NOTES:

1. OVERHEAD REPAIR SHOWN MAY BE APPLIED TO SLABS, BEAMS, OR OTHER SPALLS THAT HAVE FEW EXPOSED REBAR THAT ARE NOT SIGNIFICANTLY CORRODED.
2. SOME REPAIR LOCATIONS MAY NOT HAVE VISIBLE REBAR.
3. INSTALL CONCRETE PATCH TIES (HELIFIX PATCHPIN OR APPROVED EQUAL) INTO SOUND CONCRETE WHEN PERFORMING A VERTICAL OR OVERHEAD PATCH IF REINFORCING STEEL IS NOT EXPOSED AFTER DEMOLITION.
4. ROUT AND SEAL PERIMETER OF REPAIRED AREA AFTER CONCRETE HAS CURED A MINIMUM OF 7 DAYS.

02 OVERHEAD CONCRETE REPAIR
SCALE: NTS



PARTIAL ELEVATION VIEW

SECTION A

NOTES:
1) THE CONTRACTOR SHALL SOUND THE AREA TO CONFIRM THE EXTENT OF DETERIORATION.
2) REMOVE LOOSE AND DETERIORATED CONCRETE DOWN TO SOUND CONCRETE. FOLLOW MINIMUM REQUIREMENTS AS STATED ABOVE.
3) CUT-IN AND CHIP-OUT A PORTION OF SOUND CONCRETE AS SHOWN ON EITHER SIDE OF THE DETERIORATED AREA.
4) GRIND CLEAN EXPOSED REINFORCEMENT. USE WIRE WHEEL BRUSH OR OTHER EQUIPMENT AS NECESSARY.
5) COORDINATE WITH ECS TO ENSURE DETERIORATED CONCRETE HAS BEEN FULLY REMOVED.
6) IF CONDITIONS EXIST WHERE MORE THAN 10% OF REBAR DIAMETER IS LOST DUE TO CORROSION, SPLICE NEW REBAR ACCORDING TO DETAIL 4/S-3 REBAR SPLICE DETAIL.
7) APPLY SIKA ARMATEC 110 EPOCEM (OR SUBMITTED AND APPROVED ALTERNATE) TO EXPOSED, AND CLEANED, CONCRETE SURFACES AND REBAR. ADHERE TO MANUFACTURER'S SPECIFICATIONS.
8) MOISTEN (SATURATE) PREPARED CONCRETE SURFACE AND ALLOW TO DRY TO SSD (SATURATED SURFACE-DRY) CONDITION JUST PRIOR TO PLACING PATCH FOR REPAIR.
9) PATCH WITH SIKAREPAIR 223 (OR SUBMITTED AND APPROVED ALTERNATE). ADHERE TO MANUFACTURER'S SPECIFICATIONS.
10) REPAIR DETAIL APPLICABLE TO WALLS, BEAMS, DOUBLE TEE BEARINGS, AND OTHER VERTICAL CONCRETE FACES THROUGHOUT THE GARAGE.

03 VERTICAL CONCRETE REPAIR
SCALE: NTS

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CONCRETE REPAIR DETAILS

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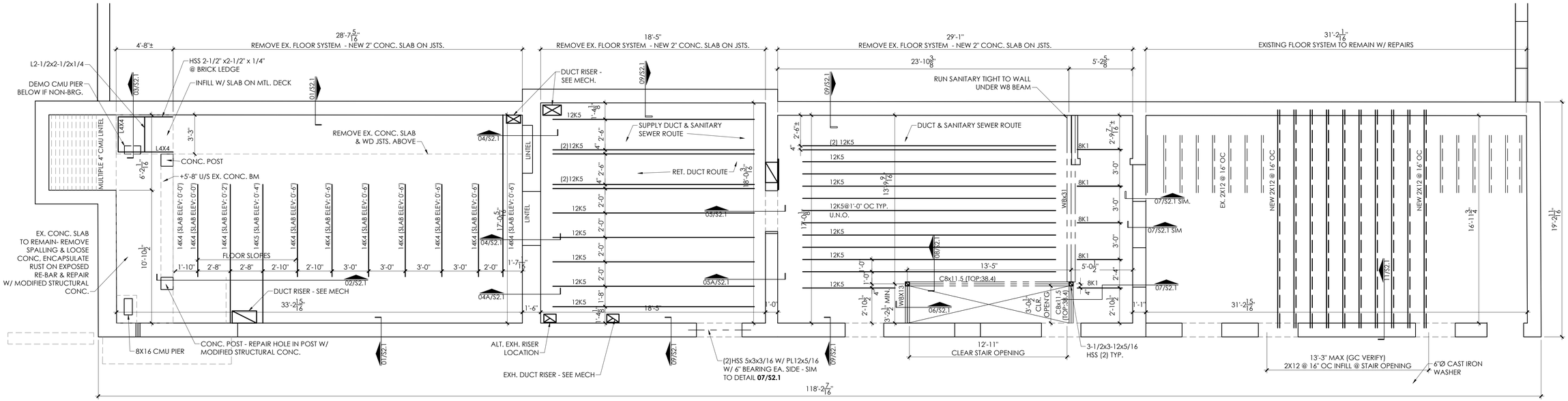
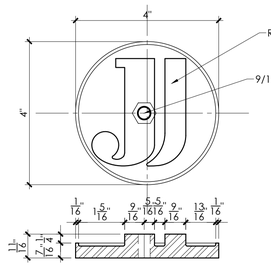


1ST FLOOR FRAMING PLAN

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



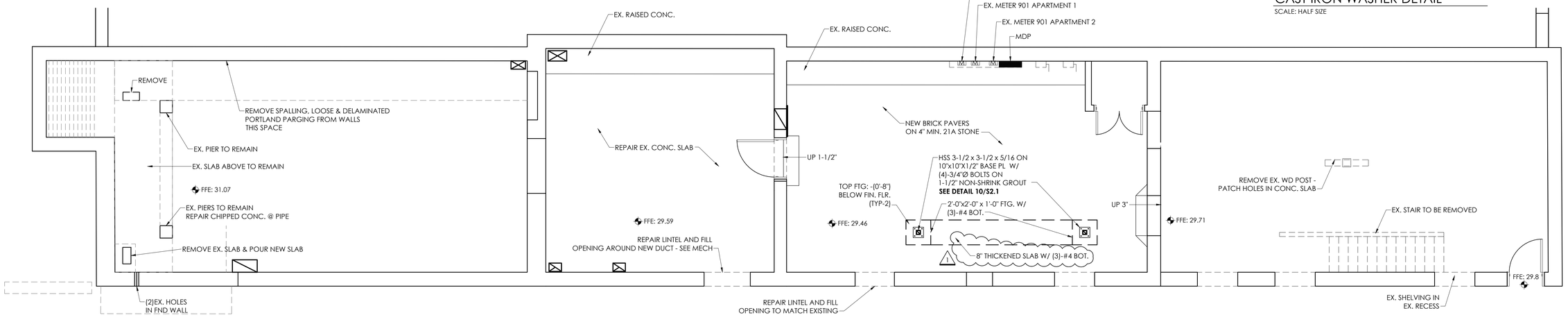
SECTION

CUSTOM CAST IRON WASHER NOTES

1. CAST FROM ASTM A48/A48M GREY IRON. REMOVE BURRS & SHARP EDGES.
2. SHOP PAINT ALL SURFACES BACK.
3. FABRICATOR TO PREPARE CAST OR 3D PRINT SAMPLE FOR OWNER APPROVAL PRIOR TO FABRICATION.
4. 3D CAD FILE TO BE FURNISHED TO FABRICATOR FOR USE AS REQUIRED AND REQUESTED.

CAST IRON WASHER DETAIL

SCALE: HALF SIZE



BASEMENT FOUNDATION PLAN

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

EXISTING BRICK REPAIR NOTE:

1. TYPICAL BASEMENT LEVEL: REPAIR & RE-POINT WALLS & STEP CRACKS W/ NEW MORTAR TO MATCH EXISTING. REPLACE BRICK WHERE MISSING OR SURFACE IS DAMAGED. RE-BUILD BRICK FOR NEW JOIST BEARING AND TO REPAIR BEARING SURFACES. PREPARE SAMPLE REPAIR AREA FOR OWNER APPROVAL OF MATERIAL AND COLORS BEFORE PROCEEDING WITH REMAINDER OF POINT UP. FIELD VERIFY EXTENT OF RE-POINTING REQUIRED & DOCUMENT QUANTITY INCLUDED IN BID. SEE SHEET CS.2 SECTION 04200 FOR HISTORIC BRICK REPAIR SPECIFICATIONS.

NOTES

1. TYPICAL SLAB ON GRADE: 4", 3,500 PSI NORMAL WEIGHT CONC. W/ 6X6-W1.4xW1.4 WWF AT MID-DEPTH OVER 10 MIL VAPOR RETARDER

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL DIMENSIONS & CONDITIONS BEFORE CONSTRUCTION.

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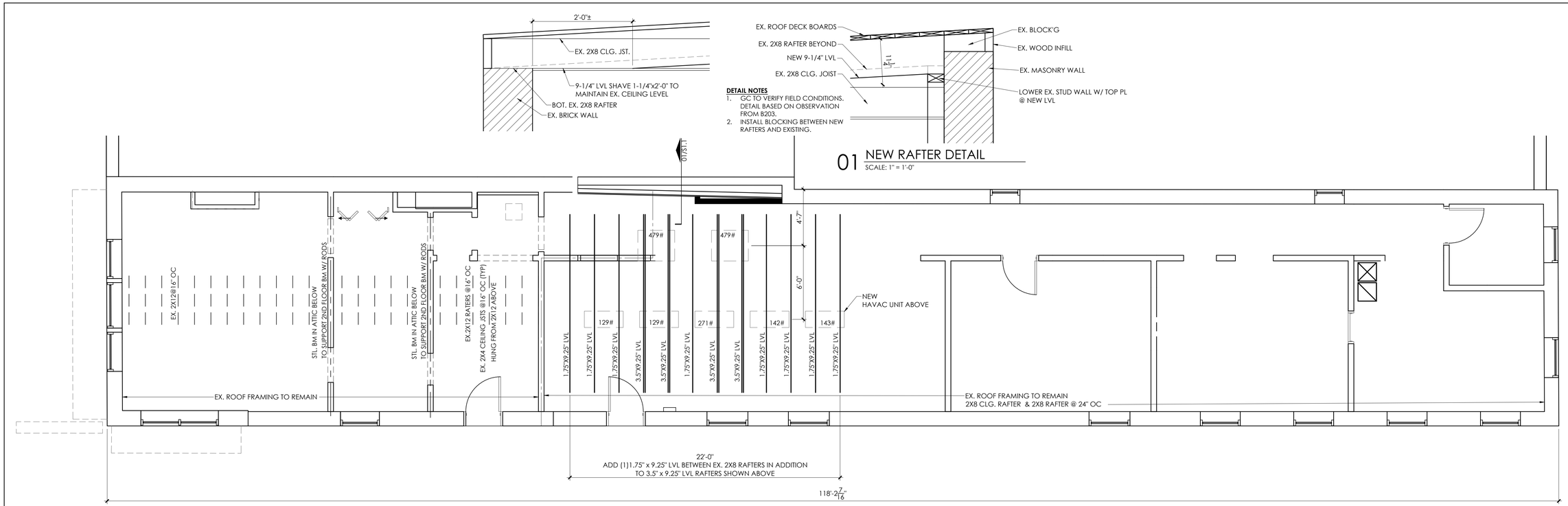
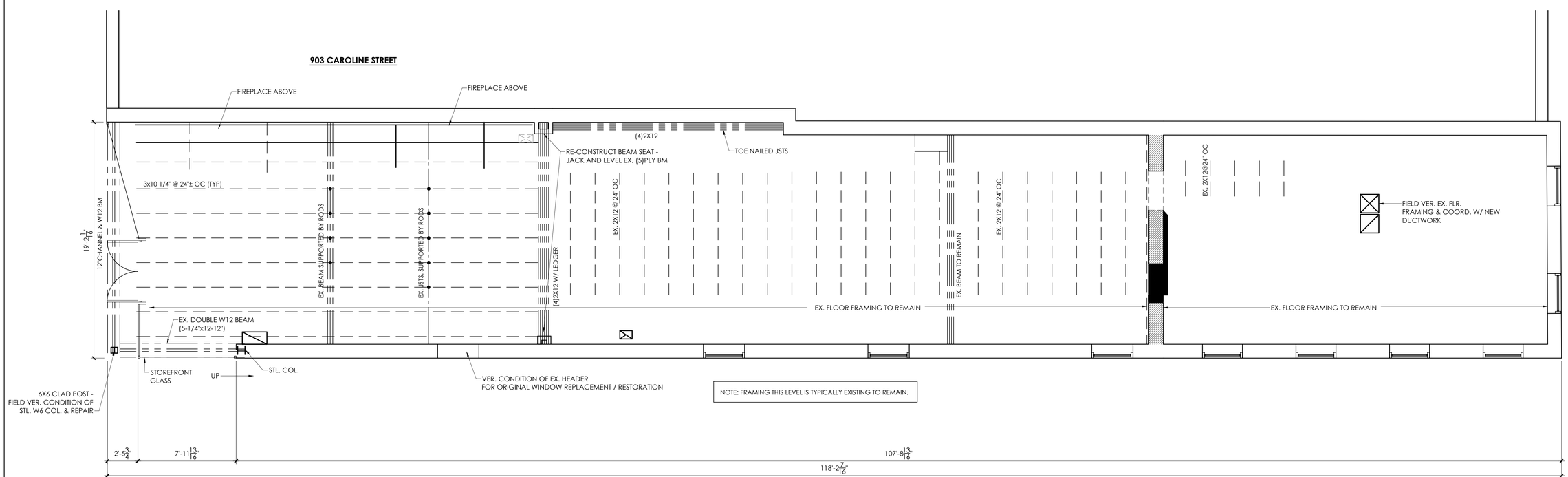
FND / FRAMING PLANS

S1.0



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



2ND FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"

N

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL DIMENSIONS & CONDITIONS BEFORE CONSTRUCTION.

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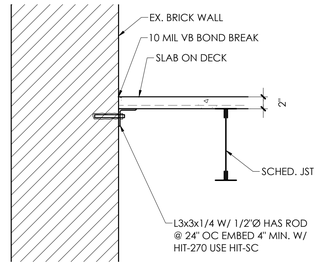
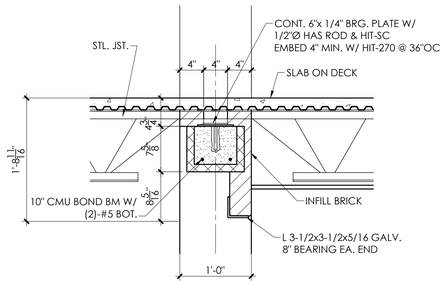
FRAMING PLANS

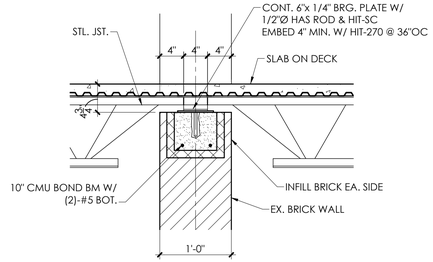
S1.1



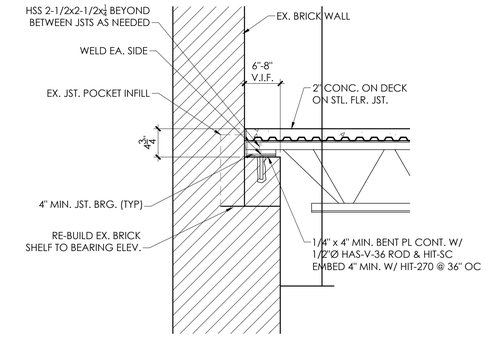
09 DECK FRAMING DETAIL
SCALE: 1" = 1'-0"



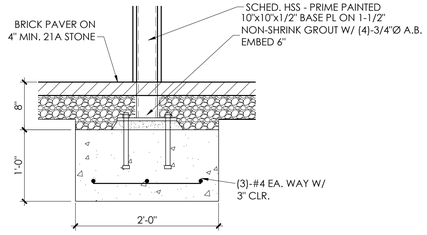
05 DECK FRAMING @ OPENING
SCALE: 1" = 1'-0"



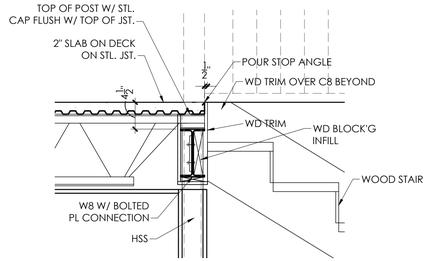
05A DECK FRAMING @ WALL
SCALE: 1" = 1'-0"



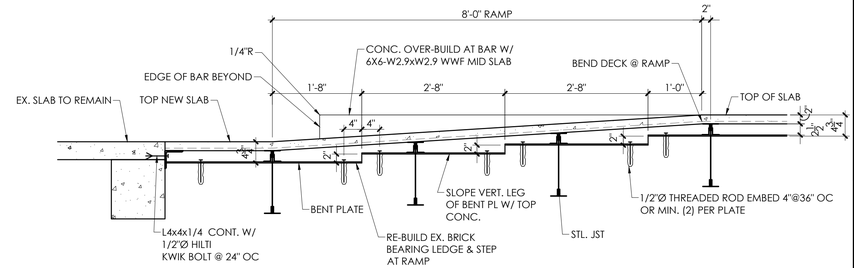
01 FRAMING DETAIL
SCALE: 1" = 1'-0"



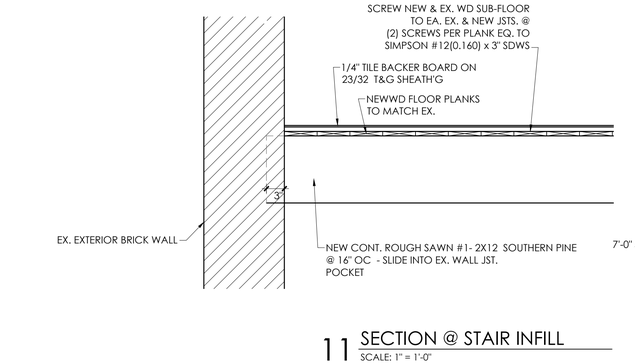
10 HSS FOUNDATION DETAIL
SCALE: 1" = 1'-0"



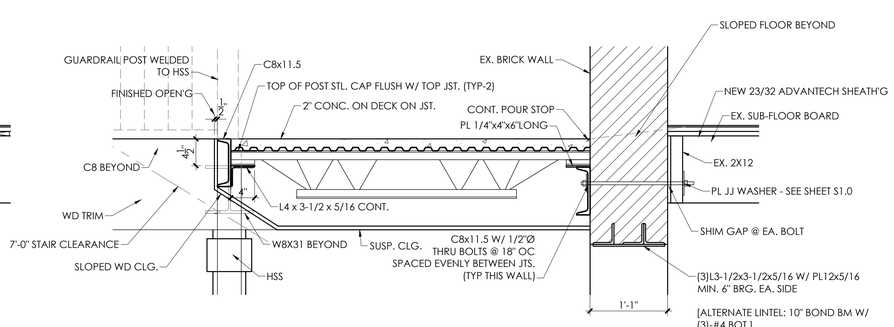
06 SECTION @ STAIR
SCALE: 1" = 1'-0"



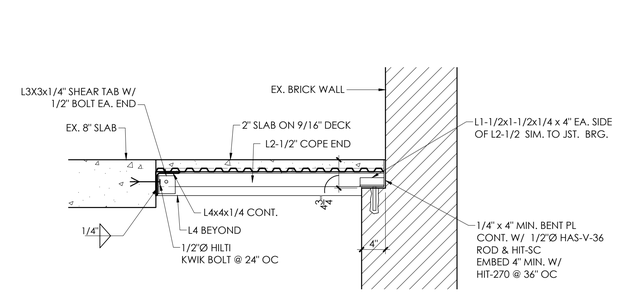
02 SECTION @ RAMP
SCALE: 3/4" = 1'-0"



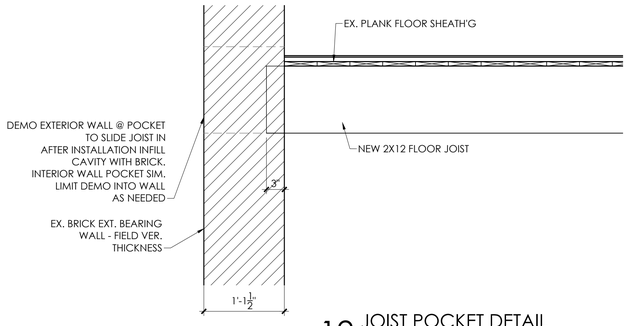
11 SECTION @ STAIR INFILL
SCALE: 1" = 1'-0"



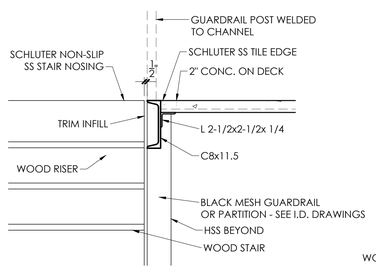
07 DECK FRAMING DETAIL
SCALE: 1" = 1'-0"



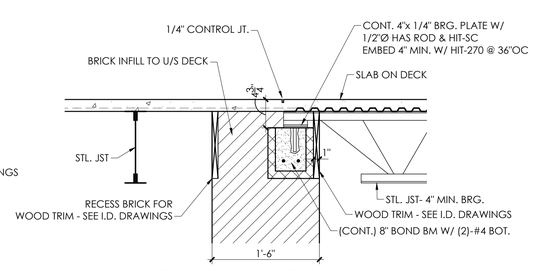
03 DECK FRAMING DETAIL
SCALE: 1" = 1'-0"



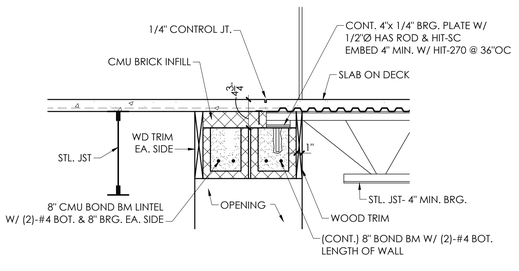
12 JOIST POCKET DETAIL
SCALE: 1" = 1'-0" INT. WALL POCKET SIM.



08 STAIR OPENING DETAIL
SCALE: 1" = 1'-0"



04A JOIST BEARING @ WALL
SCALE: 1" = 1'-0"



04 JOIST BEARING @ OPENING
SCALE: 1" = 1'-0"

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Lic. No. 8814
07-30-24
ARCHITECT

REVISIONS:
1-PLAN REVIEW 10-25-24

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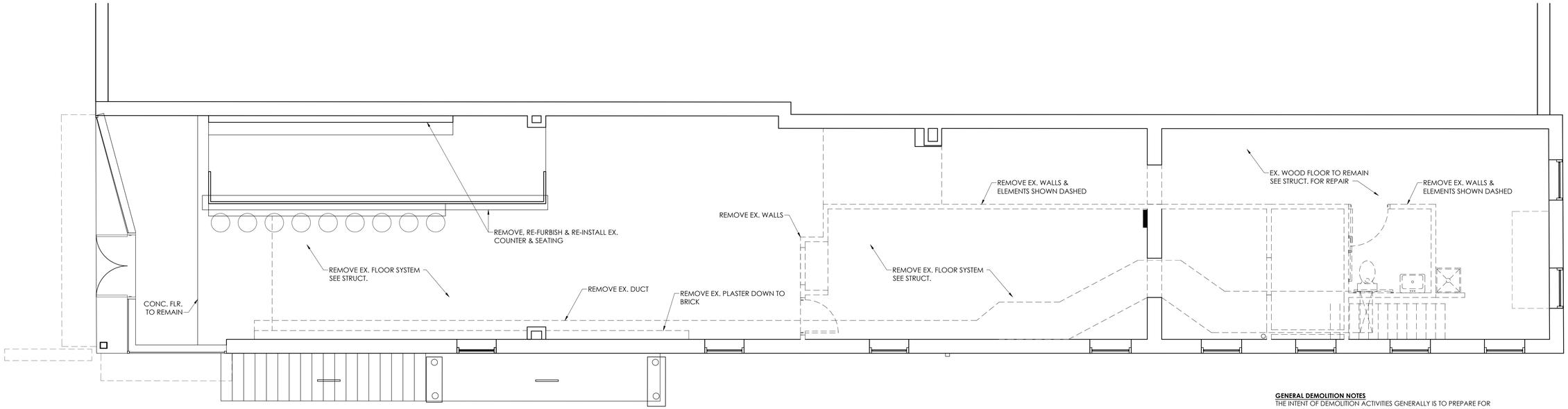
CHECKED:	
SCALE:	NOTED
DATE:	07-30-24
PROJECT #:	2212

FRAMING DETAILS

S2.1



FIRST FLOOR PLAN - DEMOLITION

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

N

WALL LEGEND

- DEMOLISH PARTITION
- EXISTING PARTITION TO REMAIN

GENERAL DEMOLITION NOTES

THE INTENT OF DEMOLITION ACTIVITIES GENERALLY IS TO PREPARE FOR NEW FINISHED WORK AND TO RETURN EXISTING DISTURBED AREAS TO A CONDITION TO MATCH EXISTING ADJACENT FINISHES TO REMAIN. IT IS IMPERATIVE THAT THE CONTRACTOR AND ANY SUB- CONTRACTORS INVOLVED IN THE WORK EXAMINE THE SITE PRIOR TO SUBMITTING A BID TO IDENTIFY MISC. AREAS OF REPAIR NECESSARY TO COMPLETE THE WORK.

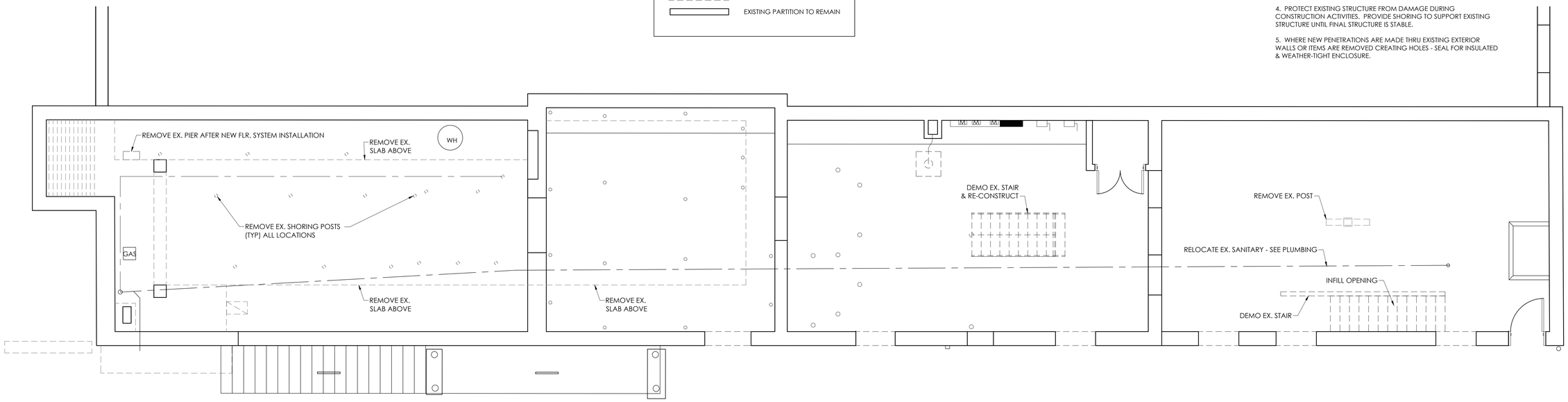
1. WHERE FLOOR, WALLS OR CEILING ARE REMOVED, REPAIR EXISTING ADJACENT FLOOR, BASE, WALLS & CEILING TO MATCH ADJACENT FINISHES UNLESS OTHERWISE SCHEDULED. PROVIDE NEW COVER PLATES WHERE PLATES ARE MISSING OR DAMAGED. UNLESS OTHERWISE NOTED, TOUCH UP REPAINTING SHALL COVER ENTIRE WALL SURFACE AFFECTED BY DEMOLITION. RE-PAINT BOTH SIDES OF DOORS & FRAMES IN AREAS SCHEDULED FOR NEW FINISHES.

2. ALL DEMOLITION ACTIVITIES SHALL BE PERFORMED IN FULL COOPERATION AND COORDINATION W/ OWNER.

3. WHERE EXIST. ITEMS ARE RELOCATED, REPAIR DAMAGES TO ORIGINAL LOCATION AND PROVIDE HANGERS, SUPPORTS, WIRING, CONDUIT, ETC. NECESSARY FOR THE RELOCATION.

4. PROTECT EXISTING STRUCTURE FROM DAMAGE DURING CONSTRUCTION ACTIVITIES. PROVIDE SHORING TO SUPPORT EXISTING STRUCTURE UNTIL FINAL STRUCTURE IS STABLE.

5. WHERE NEW PENETRATIONS ARE MADE THRU EXISTING EXTERIOR WALLS OR ITEMS ARE REMOVED CREATING HOLES - SEAL FOR INSULATED & WEATHER-TIGHT ENCLOSURE.



BASEMENT PLAN - DEMOLITION

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

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL DIMENSIONS & CONDITIONS BEFORE CONSTRUCTION.

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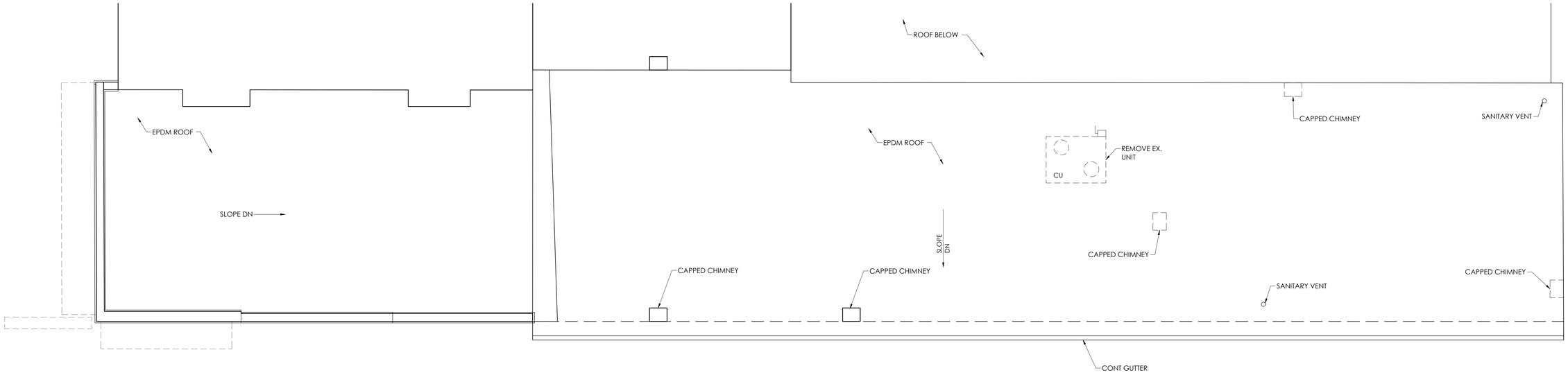
DEMOLITION PLANS

D1.1



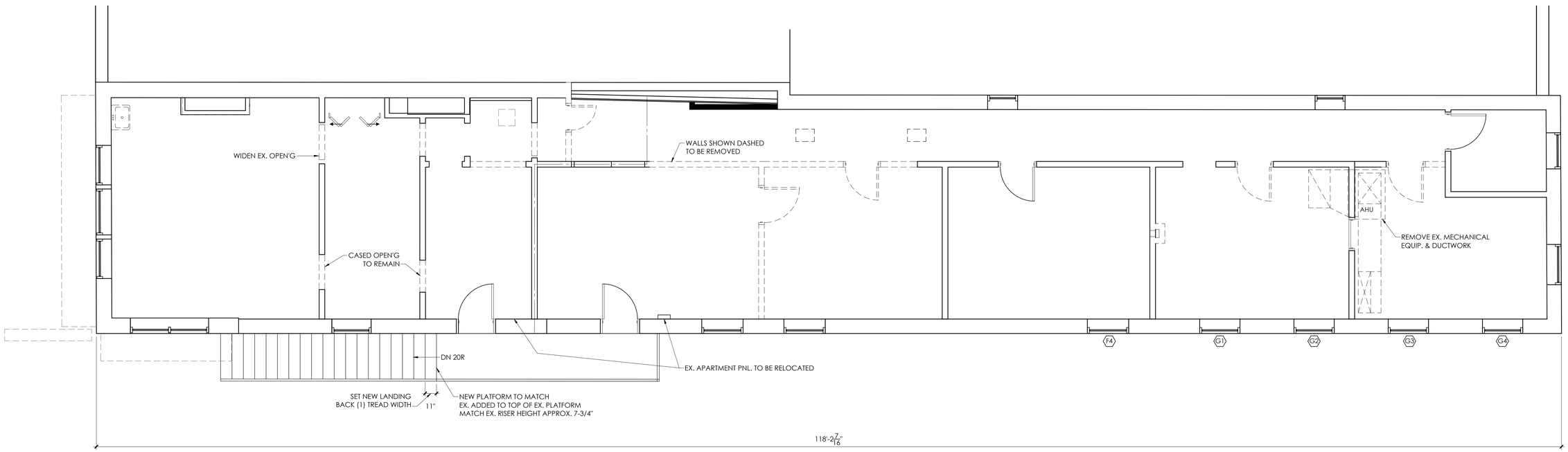
ROOF PLAN - DEMOLITION

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

N

WALL LEGEND

- DEMOLISH PARTITION
- EXISTING PARTITION TO REMAIN



2ND FLOOR PLAN - DEMOLITION

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

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL DIMENSIONS & CONDITIONS BEFORE CONSTRUCTION.

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PROJECT #:	2212

2ND & ROOF DEMO PLANS

D1.2

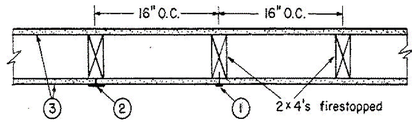
Design No. U317

August 15, 2018

Bearing Wall Rating -- 3/4 Hr.

Finish Rating -- See Item 3.

Indicates such products shall bear the UL Certification Mark



1.**Nailheads --** Exposed or covered with joint compound.

2. **Joints --** Exposed joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape.

3. **Gypsum Board* --** 1/2 in. thick wallboard, paper or vinyl surfaced with beveled, square, or tapered edges. Wallboard nailed 7 in. OC with 5d cement coated nails 1-5/8 in. long, 0.086 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., wallboard is to be installed horizontally.

GEORGIA-PACIFIC GYPSUM L L C -- Types 6, C (finish rating 15 min), Type 5 (finish rating 15 min), Type GPFS1 (finish rating 15 min), DAP, DA, DAPC, TG-C.

NATIONAL GYPSUM CO -- Type FSK-1, FSK-G, FSW-1, FSW-G (finish rating 15 min), Type FSK or FSW (finish rating 15 min), FSK-C, FSW-C, or FS45.

UNITED STATES GYPSUM CO -- Type C (finish rating 20 min), Type WRC (finish rating 20 min), Type IP-X2 (finish rating 20 min), Type IPC-AR (finish rating 20 min).

4. **Steel Corner Fasteners --** (Optional) -- For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 1/2 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the wallboard, no greater than 2 in. from corner of wallboard, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wallboard shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. **Batts and Blankets* --** (Not shown) -- Optional-Glass fiber or mineral wool insulation placed in stud cavities.

CERTAINTEED CORP

JOHNS MANVILLE

5A. **Fiber, Sprayed* --** As an alternate to Batts and Blankets (Item 5) -- Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft3, in accordance with the application instructions supplied with the product.

U S GREENFIBER L L C -- INS735& INS745 for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS770LD are to be used for dry application only.

* **Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

INTERIOR WALL TYPES

NOTES:

1. PROVIDE 3" SOUND BATTS INSULATION IN ALL INTERIOR PARTITIONS SEPARATING OCCUPIED SPACES NOT LOCATED IN THE SAME SLEEPING OR DWELLING UNIT.
2. SEAL AROUND ALL EDGES AT SOUND PARTITIONS.
3. PROVIDE MR GWB AT WET WALLS (WHERE NOT FIRE RATED)
4. U.N.O. EXTEND PARTITIONS & GWB TO UNDERSIDE OF FLOOR FRAMING OR ROOF TRUSSES ABOVE.

TYPE '**A**' 1/2" TYPE 'C' GWB EACH SIDE ON 2X4 STUDS @ 16" OC MAX W/ 3" SOUND BATTS (U.L. U317 @ 30 MINUTE FIRE PARTITION)
TYPICAL INTERIOR WALL TYPE AT RESIDENTIAL UNITS - USE WHERE NOT OTHERWISE INDICATED.

TYPE '**A1**' 5/8" GWB EACH SIDE ON 2X4 STUDS @ 16" OC MAX W/ 3" SOUND BATTS
TYPICAL COMMERCIAL INTERIOR WALL TYPE - USE WHERE NOT OTHERWISE INDICATED.

TYPE '**B**' 1/2" GWB EACH SIDE ON 2X6 STUDS @ 16" OC MAX. W/ 6" SOUND BATTS (U.L. U317 @ 30 MINUTE FIRE PARTITION)

TYPE '**B1**' 5/8" GWB EACH SIDE ON 2X6 STUDS @ 16" OC MAX W/ 3" SOUND BATTS

TYPE '**C**' 1/2" GWB ON 2X4 FURR'G @ 16" OC MAX.

TYPE '**C1**' 5/8" GWB ON 2X4 FURR'G @ 16" OC MAX.

TYPE '**F.1**' (1) HOUR RATED FIRE BARRIER: (1) LAYER 5/8" TYPE 'X' GWB EACH SIDE ON 2X4 AT 16" OC MAX. (UL U305)

(1) HOUR RATED HORIZONTAL ASSEMBLY

FROM VCC TABLE 721.1(3)21-1.1:

[BASE LAYER 5/8" TYPE 'X' GYPSUM WALLBOARD APPLIED AT RIGHT ANGLES TO JOIST OR TRUSS 24" OC WITH 1-1/4" TYPE 'S' OR TYPE 'W' DRYWALL SCREWS 24" OC. FACE LAYER 5/8" TYPE 'X' GYPSUM WALL BOARD OR VENEER BASE APPLIED AT RIGHT ANGLES TO JOISTS OR TRUSS THROUGH BASE LAYERS WITH 1-7/8" TYPE 'S' OR TYPE 'W' DRYWALL SCREWS 12" OC AT JOINTS AND INTERMEDIATE JOISTS OR TRUSS. FACE LAYER TYPE 'G' DRYWALL SCREWS PLACED 2" BACK ON EITHER SIDE OF FACE LAYER END JOINTS, 12" OC.]

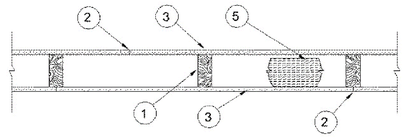
Design No. U305

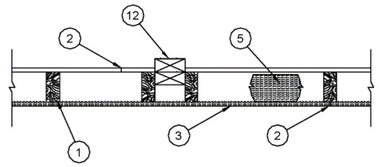
July 01, 2010

Bearing Wall Rating -- 1 HR.

Finish Rating -- See Items 3, 3A, 3D, 3E, 3F, 3G, 3H and 3I.

STC Rating - 56 (See Item 9)





1. **Wood Studs --** Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

2. **Joints and Nail-Heads --** Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.

Gypsum Board* -- 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

NATIONAL GYPSUM CO -- Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min).

UNITED STATES GYPSUM CO -- Type AR (finish rating 24 min), Type SCX (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type FCV (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type FRX-G (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min).

3. **Steel Corner Fasteners -- (Optional) --** For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

4. **Batts and Blankets* --** (Optional - Required when Item 6A is used) Glass fiber or mineral wool insulation. Placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be placed to completely fill the stud cavities and shall be secured to the studs 24 in. OC with staples, nails or screws.

CERTAINTEED CORP

CORNING -- Corning Fiberglas Corp.

5. **Caulking and Sealants --** (not shown, optional) A bead of acoustical sealant applied around the partition perimeter for sound control.

6. **STC Rating --** The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

A. Item 2, above - Nailheads Shall be covered with joint compound.

B. Item 2, above - Joints As described, shall be covered with fiber tape and joint compound.

C. Item 5, above - Batts and Blankets* The cavities formed by the studs shall be friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.

D. Item 6, above - Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall assembly.

E. Item 8, above - Caulking and Sealants (not shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound control.

F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives for obtaining STC rating.

7. **Non-Bearing Wall Partition Intersection --** (Optional) --Two nominal 2 by 4 in. studs or nominal 2 by 6 in. studs nailed together with two 3 in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

*Bearing the UL Classification Mark

JARRELL PROPERTIES, INC.

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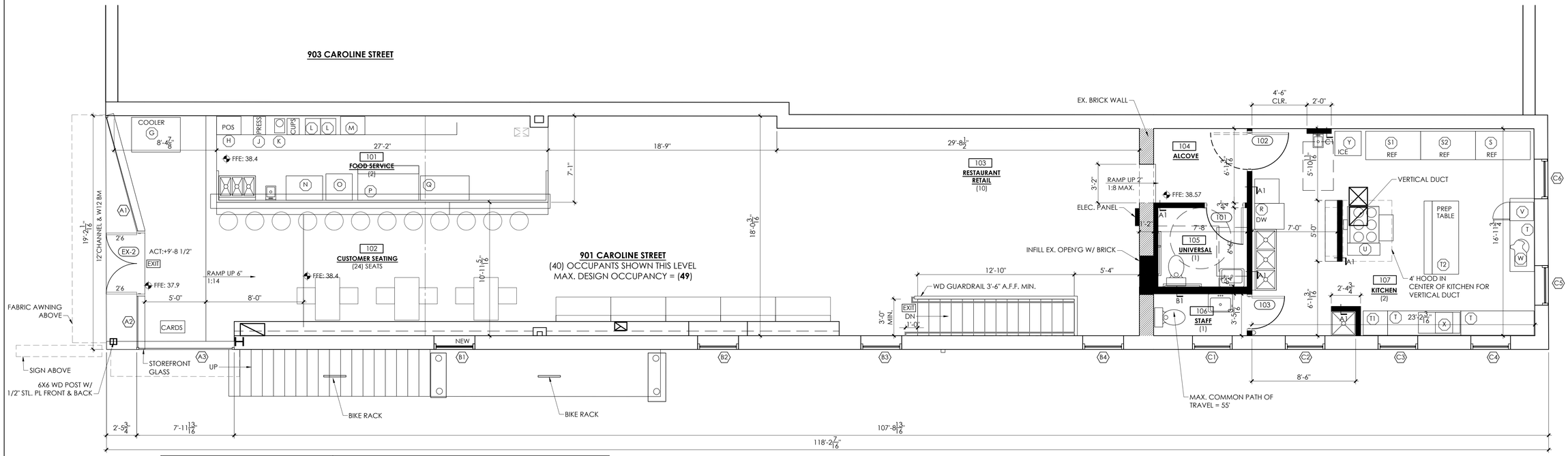
PARTITION TYPES

A0.1



DOOR SCHEDULE

NOTE: REFER TO INTERIOR DESIGN DRAWINGS FOR DOOR STYLE AND FINISHES. DOORS ON ACCESSIBLE ROUTE TO HAVE HAVE LEVER STYLE HANDLES AND ADA COMPLIANT THRESHOLDS & CLOSERS. SEE SHT. A4.1 FOR EXTERIOR DOORS.

B01 EX. CABINET DOOR - PR. 1'-10" x 6'-0"

B02 3'-0" x 7'-0" W/ PASSAGE LATCHSET

B03 3'-0" x 7'-0" W/ PRIVACY LOCKSET & CLOSER.

101 3'-0" x 7'-0" W/ PRIVACY LOCKSET & CLOSER

102 3'-0" x 7'-0" DOUBLE SWING KITCHEN DOOR W/ VIEW WINDOW

103 2'-8" x 7'-0" W/ PRIVACY LOCKSET & CLOSER

WASHROOM ACCESSORIES (PROVIDE IN EACH ACCESSIBLE TOILET)

1. TOILET TISSUE HOLDER: BOBRICK DOUBLE ROLL HOLDER. (1) AT EACH TOILET.
2. TOWEL DISPENSER: PROVIDED BY OWNER. MOUNT 48" TO TOP OF OPERABLE PARTS.
3. MIRROR: LENGTH OF COUNTER OR LAV. (24" WIDE MIN) x 3'-0" HIGH ¼" FLOAT GLASS BEVEL EDGE FRAME LESS - SECURELY GLUED & CLIPPED TO WALL. MIRROR SHALL BE GUARANTEED AGAINST SILVER SPOILAGE FOR 15 YEARS.
4. TOILET STALL GRAB BARS: EQ. TO ASI 3800 SERIES W/ INTEGRAL NON-SLIP SURFACE. PROVIDE (1)-42" LONG & (1)-36" & (1) 18" LONG GRAB BAR AS INDICATED IN EACH ACCESSIBLE TOILET STALL.

NOTE: CONTRACTOR TO VERIFY BLOCKING LOCATIONS.

FIRST FLOOR PLAN

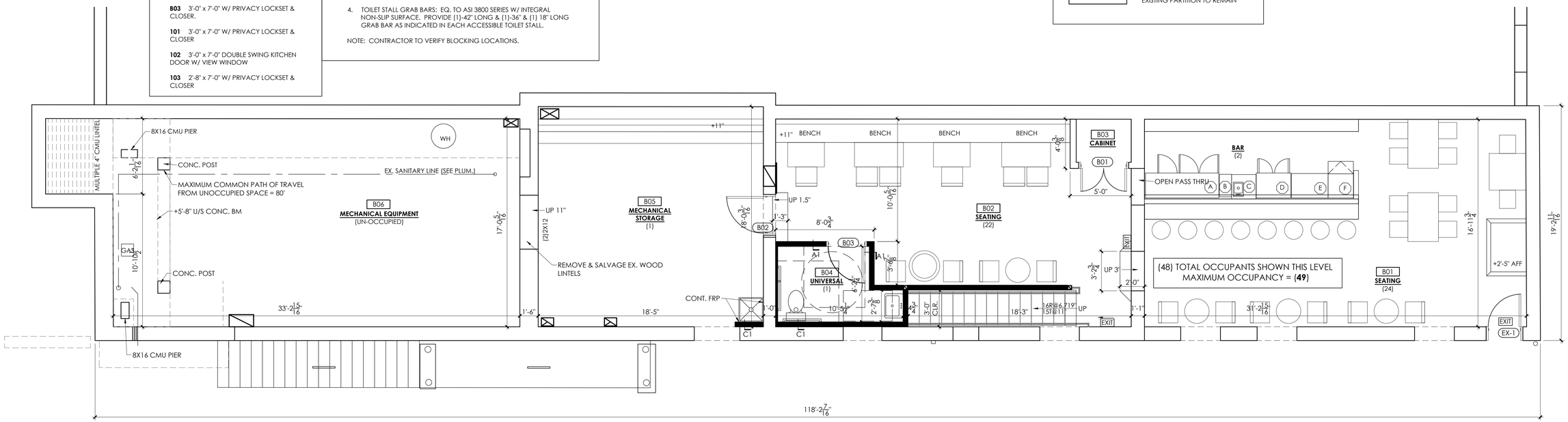
SCALE: 1/4" = 1'-0" 2,022 SF INTERIOR AREA
2,334 SF BUILDING FOOTPRINT

N

WALL LEGEND

NEW FRAME PARTITION - 5/8" GWB EA. SIDE ON 2X4@16" OC MAX. PROVIDE 2X6 FRAMING AT WET WALLS. PROVIDE KDPT FRAMING AT ALL KITCHEN AND TOILET WALLS

EXISTING PARTITION TO REMAIN



BASEMENT FLOOR PLAN

SCALE: 1/4" = 1'-0" 1,985 SF INTERIOR AREA

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL DIMENSIONS & CONDITIONS BEFORE CONSTRUCTION.

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JARRELL PROPERTIES, INC.
TENANT ALTERATIONS
901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

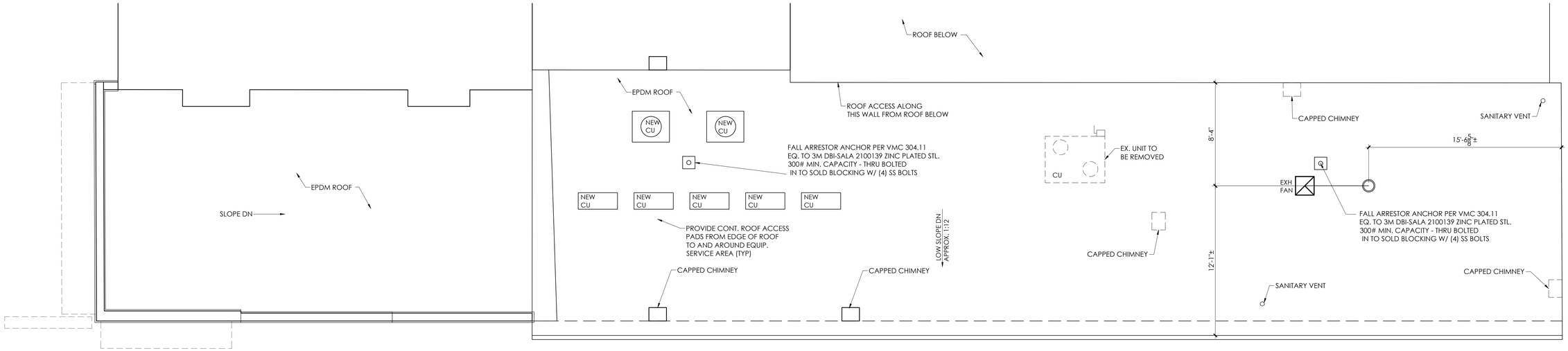
COMMONWEALTH OF VIRGINIA
DEX A. SANDERS
Lic. No. 8814
07-30-24
ARCHITECT

REVISIONS:
1-PLAN REVIEW 10-25-24

DRAWN:	DAS
CHECKED:	
SCALE:	NOTED
DATE:	07-30-24
PROJECT #:	2212

NEW WORK PLAN

A1.1



ROOF PLAN

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

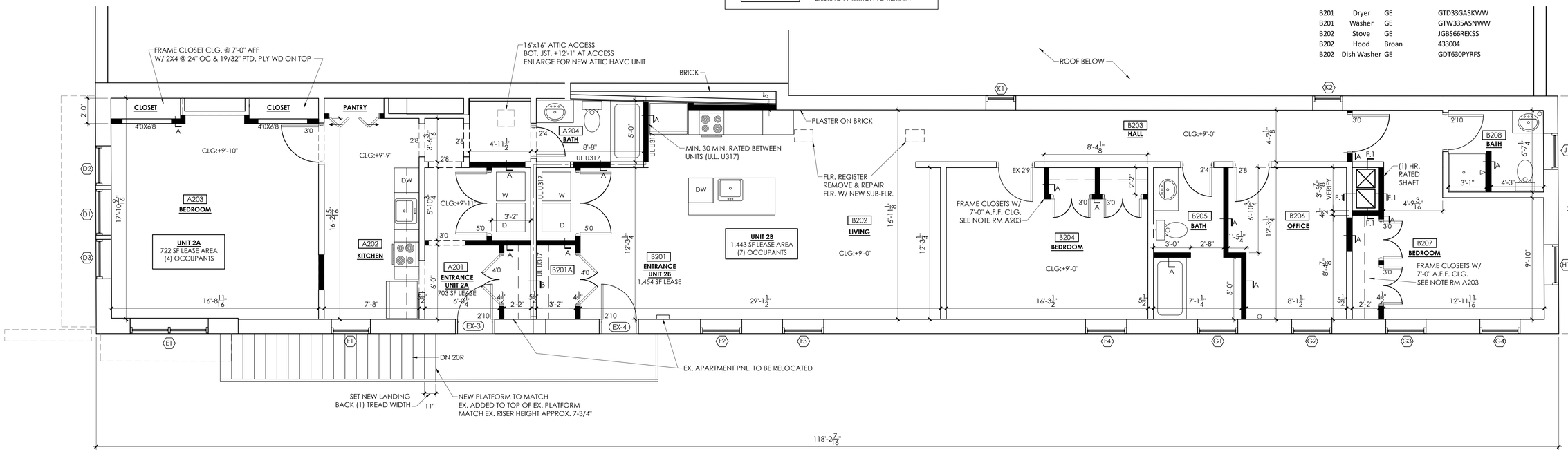
N

WALL LEGEND

- NEW FRAME PARTITION - 1/2" GWB EA. SIDE ON 2X4@16" OC MAX. PROVIDE KDPT WOOD AT TOILETS AND KITCHEN
- EXISTING PARTITION TO REMAIN

RESIDENTIAL EQUIPMENT SCHEDULE

Room	Label	Brand	Model
A201	Dryer	GE	GTD33GASKWW
A201	Washer	GE	GTW335ASNWW
A202	Stove	GE	JGBS66REKSS
A202	Hood	Broan	433004
A202	Dish Washer	GE	GDT630PYRFS
A202	Fridge	GE	GTS18HYNRFS
B201	Dryer	GE	GTD33GASKWW
B201	Washer	GE	GTW335ASNWW
B202	Stove	GE	JGBS66REKSS
B202	Hood	Broan	433004
B202	Dish Washer	GE	GDT630PYRFS



2ND FLOOR PLAN

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

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL DIMENSIONS & CONDITIONS BEFORE CONSTRUCTION.

JJ

JARRELL PROPERTIES, INC.

FOR CONSTRUCTION

SANDERS ARCHITECTURE PC
16125 RACCOON FORD RD
CULPEPER, VIRGINIA 22701
(v)540-829-2590

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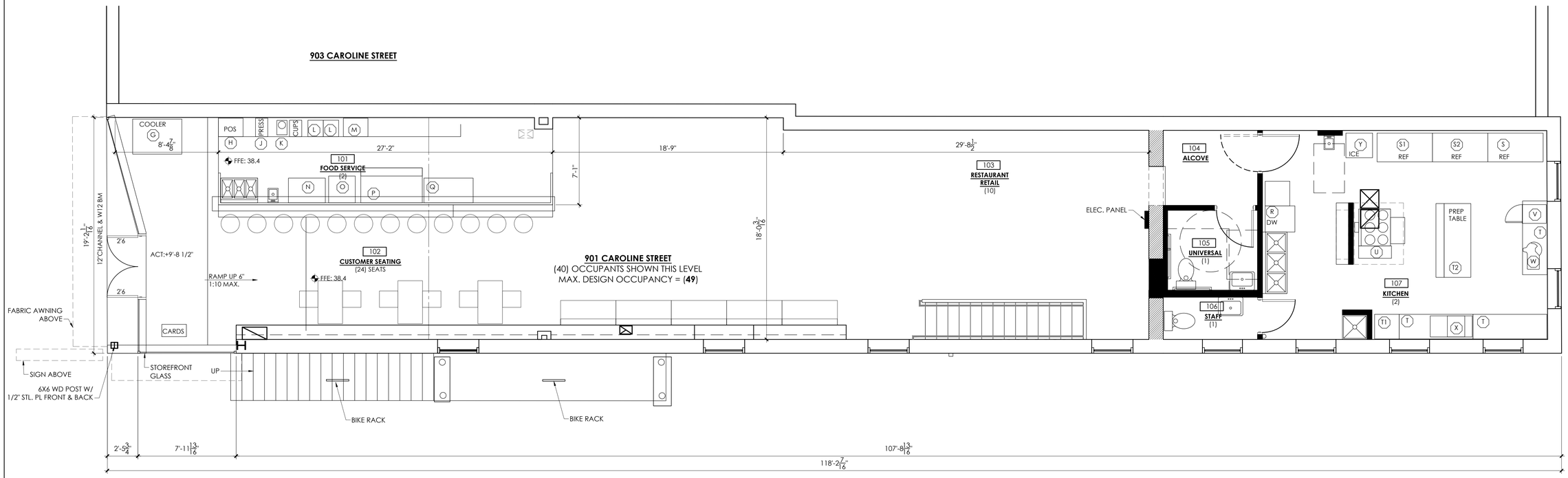
2ND & ROOF FLOOR PLANS

A1.2



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0" 2,022 SF INTERIOR AREA
2,334 SF BUILDING FOOTPRINT

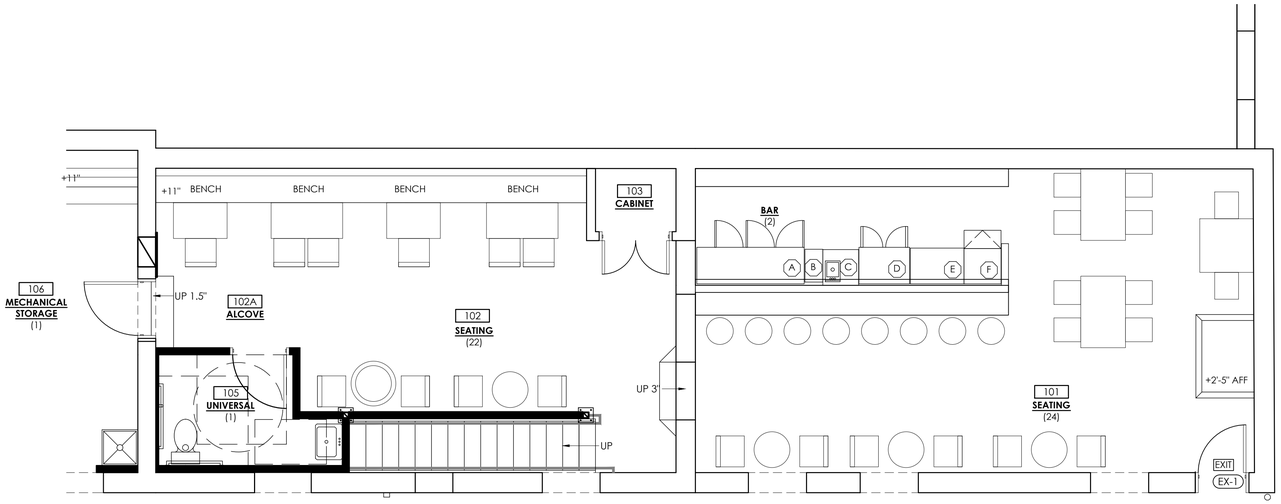
N

WALL LEGEND

- NEW PARTITION
- EXISTING PARTITION

KITCHEN EQUIPMENT SCHEDULE

	DESCRIPTION	MANUFACTURER	MODEL NO.	AMPS	BTUs	NOTES
A	BAR REFRIGERATOR - 72"x24"	BEVERAGE-AIR	BB72HC-1-G-B-27	-	-	-
B	TRASH -12"x24" UNDER COUNTER	-	-	-	-	-
C	WET BAR SINK - 24"x24"	-	-	-	-	-
D	UNDER COUNTER REFRIGERATOR - 34"x24"	BEVERAGE -AIR	UCR34HC-25	-	-	-
E	DRY STORAGE - 36"x24"	-	-	-	-	-
F	ICE MACHINE - 24"x24"	HOSHIZAKI	IM-50BAA-Q	-	-	-
G	REACH-IN COOLER - 48x34.25" x 79"	TURBO AIR	TOM-48-DX	16.5	-	-
H	POINT OF SALE	-	-	-	-	-
I	-	-	-	-	-	-
J	LEMON / LIME PRESS - 12" x 16"	-	-	-	-	-
K	MILK DISPENSER - 10"x14"	SPRING USA	2528-6/5	-	-	5-1/4 QT WITH ICE TUBE
L	MULTI-MIXER MILKSHAKE - 12.6"x9" x 20.5"	HAMILTON BEACH	HMD400	7.5	-	-
M	COFFEE - 16.2" x 18.8" x 17.3"	BUNN	VP17-3	13.9	-	-
N	SODA TOWER - 36" WIDE	-	-	-	-	-
O	ICE CREAM FREEZER - 28"x26"	TURBO AIR	TIDC-26W-N	1.9	-	-
P	PREP-TABLE W/ CUTTING BOARD - 60" x 24"	TURBO AIR	MST-60-24-N	4.4	-	45" TALL
Q	DRY PREP TABLE - 48" x 24"	-	-	-	-	-
R	DISHWASHER - 25-1/2" x 29" x 86-1/4"	CMA	CMA-180VL	-	-	W/ 24" SIDE TABLE
S	REACH-IN REFRIGERATOR 54-3/8" x 30-3/8" x 78-1/4"	TURBO AIR	TSR-49SD-N6	2.3	-	-
S1	REACH-IN REFRIGERATOR 54-3/8" x 30-3/8" x 78-1/4"	TURBO AIR	TSR-49SD-N6	2.3	-	-
S2	REACH-IN REFRIGERATOR 54-3/8" x 30-3/8" x 78-1/4"	TURBO AIR	TSR-49SD-N6	2.3	-	-
T	PREP TABLE - 72"x 24"					
T1	PREP TABLE - 24"x 24"	-	-	-	-	-
T2	PREP TABLE - 72"x 24" W/ CUTTING BOARD	-	-	-	-	-
U	GRIDDLE / OVEN - 36" x 32" W/ 12" PREP TABLE	TURBO AIR	TAR-36G	-	94,000	-
V	MICROWAVE OVEN - 18.25" x 23.5" x 14.5"	TURBO AIR	TMW-1200HD	18	-	-
W	MEAT SLICER	HOBART	HS8-1	5.4	-	-
X	CONVEYOR OVEN - 40-7/8" x 20-5/8" x 12-1/2"	VOLLRATH	S02-20814.5	17.3	-	240V
Y	ICE MACHINE - 24" x 22"x 23" PLUS BIN	SCOTSMAN	NS0422A-1	12.9	-	-



BASEMENT FLOOR PLAN

SCALE: 1/4" = 1'-0" 1,985 SF INTERIOR AREA

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL DIMENSIONS & CONDITIONS BEFORE CONSTRUCTION.

JARRELL PROPERTIES, INC.

FOR CONSTRUCTION

SANDERS ARCHITECTURE PC
16125 RACCOON FORD RD
CULPEPER, VIRGINIA 22701
(v)540-829-2590

JARRELL PROPERTIES, INC.
TENANT ALTERATIONS
901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

COMMONWEALTH OF VIRGINIA
DEX A. SANDERS
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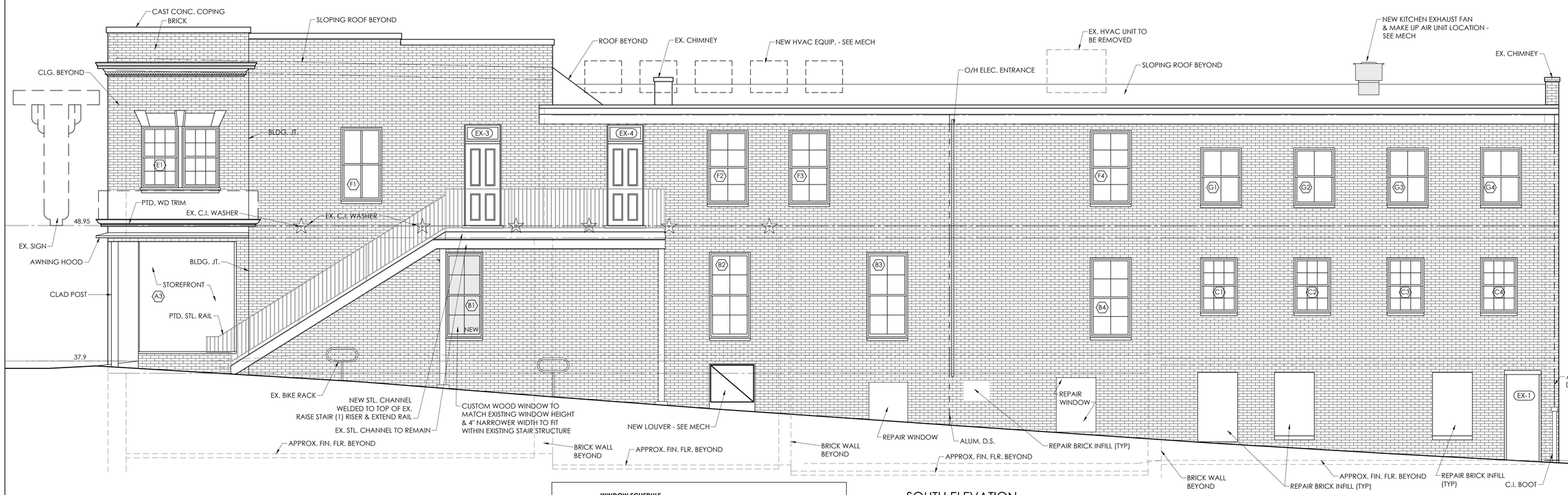
EQUIPMENT PLANS

A2.1



SOUTH ELEVATION

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

NOTE: BRICK IS SHOWN GRAPHICALLY. ACTUAL BRICK COURSING VARIES.

WINDOW SCHEDULE

NEW CUSTOM TYPE 'B' WINDOW UNIT TO MATCH EXISTING TYPE 'B' UNITS. GLAZING MAX. U-FACTOR = 0.45; MAXIMUM SHGC = 0.33

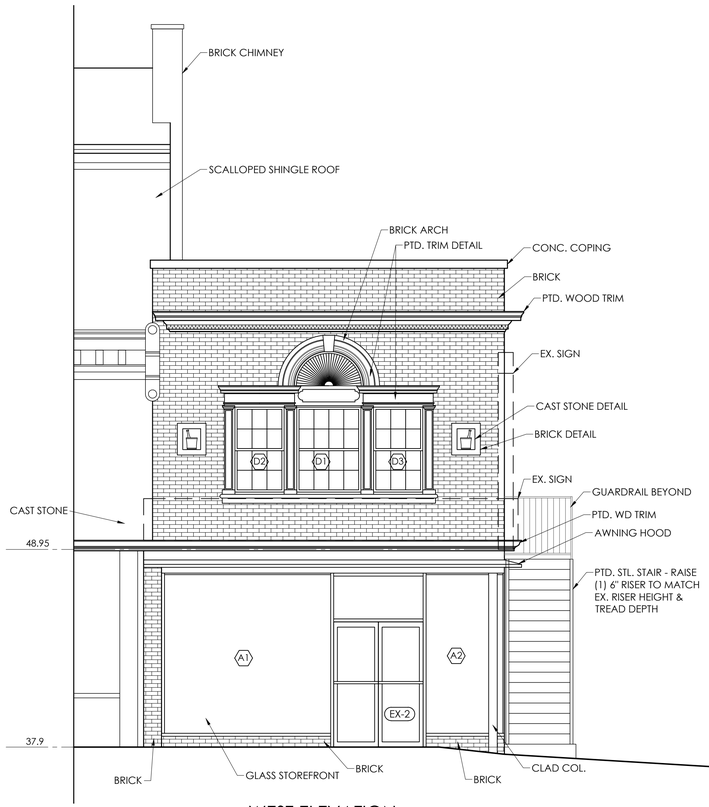
EXISTING WINDOWS TO BE EITHER REPLACED WITH MATCHING SIZE WINDOWS OR RE-FURBISHED AS APPROVED BY THE CITY ARCHITECTURAL REVIEW BOARD.

NOTE:CONFIRM ALL WINDOW SIZES WITH FIELD CONDITIONS AND ROUGH-IN DIMENSIONS WITH WINDOW MANUFACTURER PRIOR TO ROUGH-IN.

	MODEL	UNIT SIZE (NOM)	TYPE
A1	EXISTING	9'-9" x 9'-1"	STOREFRONT
A2	EXISTING	4'-4" x 9'-1"	STOREFRONT
A3	EXISTING	8'-0" x 9'-1"	STOREFRONT
B1	NEW	3'-0" x 7'-0"	DH
B2	EXISTING	3'-4" x 7'-0"	DH
B3	EXISTING	3'-4" x 7'-0"	DH
B4	EXISTING	3'-4" x 6'-6"	DH
C1	EXISTING	3'-0" x 4'-6"	DH
C2	EXISTING	3'-0" x 4'-6"	DH
C3	EXISTING	3'-0" x 4'-6"	DH
C4	EXISTING	3'-0" x 4'-6"	DH
C5	EXISTING	3'-0" x 4'-6"	DH
C6	EXISTING	3'-0" x 4'-6"	DH
D1	EXISTING	3'-7" x 4'-10 1/2"	DH
D2	EXISTING	2'-9" x 4'-10 1/2"	DH
D3	EXISTING	2'-9" x 4'-10 1/2"	DH
E1	EXISTING	PR. 3'-0" x 5'-0"	DH
F1	EXISTING	3'-4" x 6'-0"	DH
F2	EXISTING	3'-4" x 6'-0"	DH
F3	EXISTING	3'-4" x 6'-0"	DH
F4	EXISTING	3'-4" x 6'-0"	DH
G1	EXISTING	3'-4" x 4'-8"	DH
G2	EXISTING	3'-4" x 4'-8"	DH
G3	EXISTING	3'-4" x 4'-8"	DH
G4	EXISTING	3'-4" x 4'-8"	DH
H1	EXISTING	3'-4" x 6'-0"	DH
J1	EXISTING	3'-0" x 5'-7 1/2"	DH
K1	EXISTING	3'-4" x 4'-8"	DH
K2	EXISTING	2'-5" x 5'-4"	DH

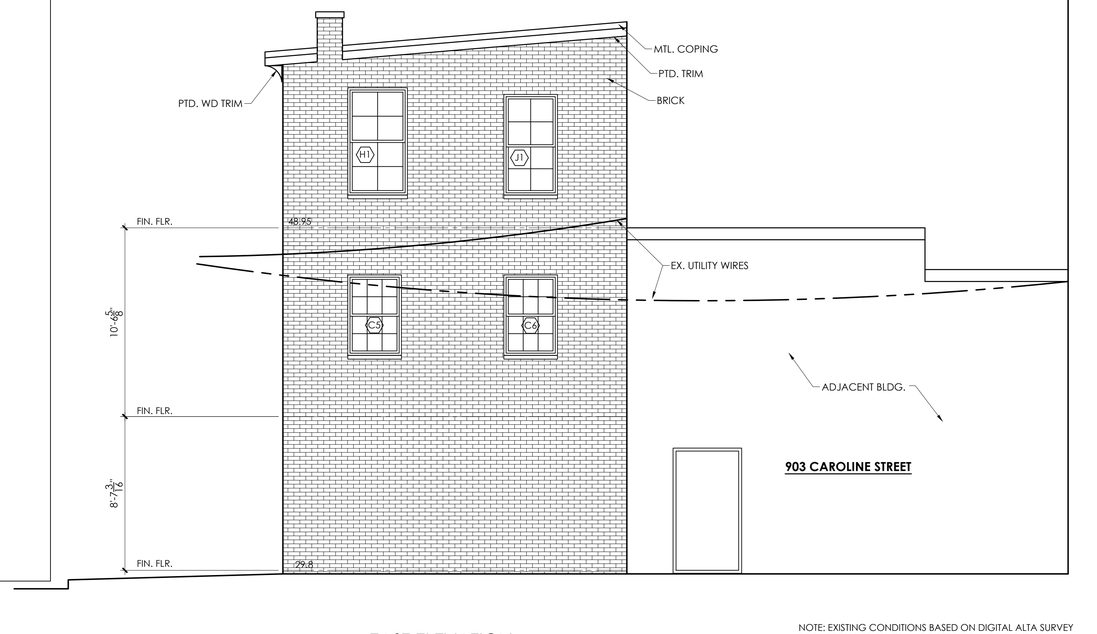
EXTERIOR DOOR SCHEDULE

	MODEL	SIZE	REMARKS
EX-1	EXISTING	2'-8" x 7'-0"	LEVER LOCKSET
EX-2	EXISTING	PR. 2'-6" x 7'-0"	STOREFRONT W/ TRANSOM
EX-3	ENTRANCE	2'-10" x 6'-8"	WD PANEL W/ TRANSOM
EX-4	ENTRANCE	2'-10" x 6'-8"	WD PANEL W/ TRANSOM



WEST ELEVATION

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



EAST ELEVATION

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

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL EXISTING DIMENSIONS & CONDITIONS PRIOR TO CONSTRUCTION.

JARRELL PROPERTIES, INC.

FOR CONSTRUCTION

SANDERS ARCHITECTURE PC
16125 RACCOON FORD RD
CULPEPER, VIRGINIA 22701
(v)540-829-2590

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TENANT ALTERATIONS

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CITY OF FREDERICKSBURG, VA 22401

COMMONWEALTH OF VIRGINIA
DEX A. SANDERS
Lic. No. 8814
07-30-24
ARCHITECT

REVISIONS:
1-PLAN REVIEW 10-25-24

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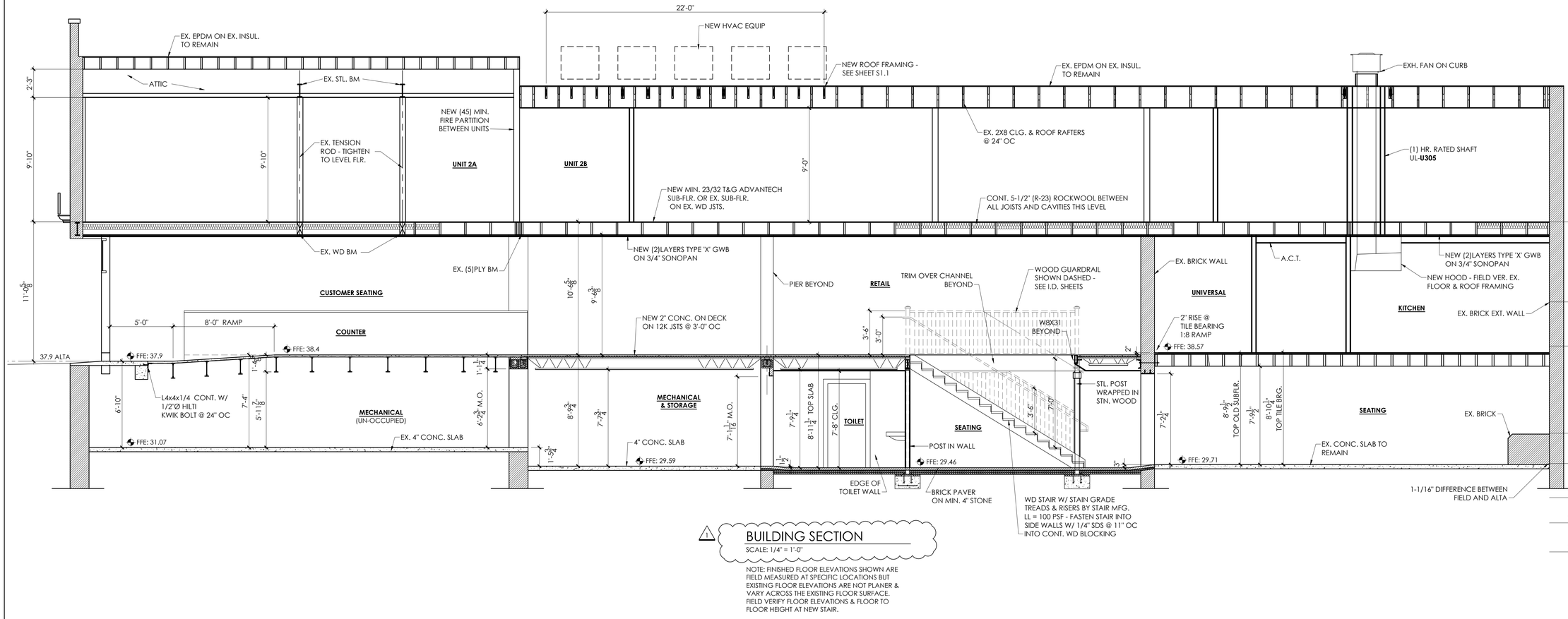
DATE:	07-30-24
PROJECT #:	2212

EXTERIOR ELEVATIONS

A4.1



1 BUILDING SECTION

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

NOTE: FINISHED FLOOR ELEVATIONS SHOWN ARE FIELD MEASURED AT SPECIFIC LOCATIONS BUT EXISTING FLOOR ELEVATIONS ARE NOT PLANER & VARY ACROSS THE EXISTING FLOOR SURFACE. FIELD VERIFY FLOOR ELEVATIONS & FLOOR TO FLOOR HEIGHT AT NEW STAIR.

JARRELL PROPERTIES, INC.

FOR CONSTRUCTION

SANDERS ARCHITECTURE PC
16125 RACCOON FORD RD
CULPEPER, VIRGINIA 22701
(v)540-829-2590

JARRELL PROPERTIES, INC.
TENANT ALTERATIONS
901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

COMMONWEALTH OF VIRGINIA
DEX A. SANDERS
Lic. No. 8814
07-30-24
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1-PLAN REVIEW 10-25-24

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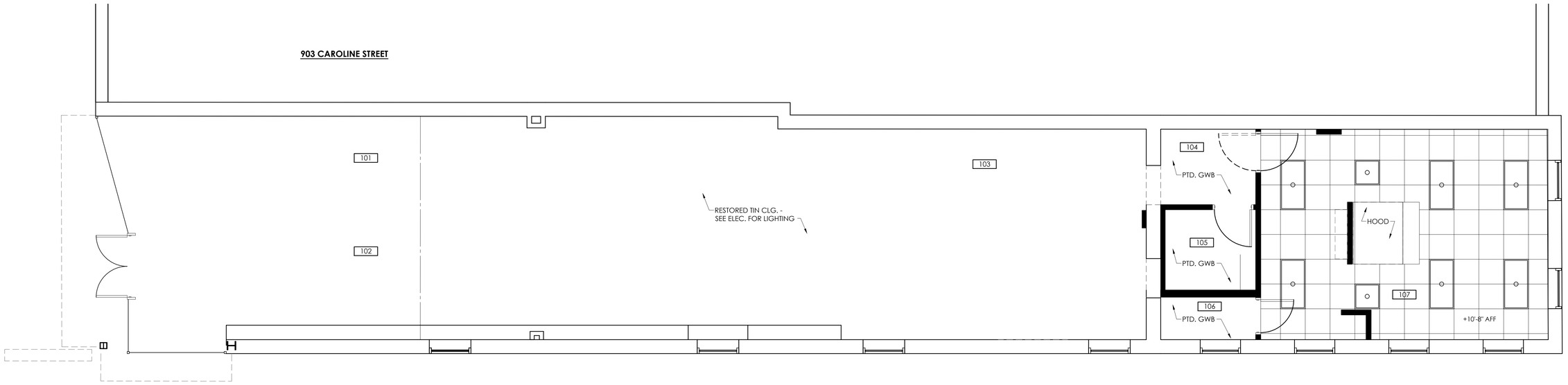
BUILDING SECTION

A5.1



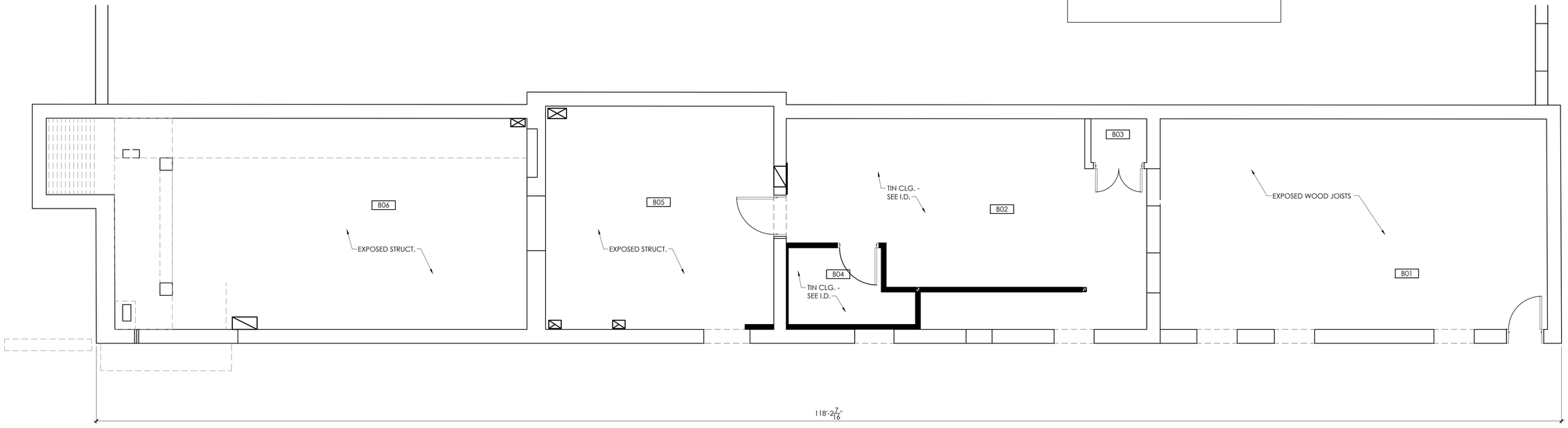
FIRST FLOOR CEILING PLAN

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

N

WALL LEGEND

- NEW FRAME PARTITION - 5/8" GWB EA. SIDE ON 2X4@16" OC MAX. PROVIDE 2X6 FRAMING AT WET WALLS
- EXISTING PARTITION TO REMAIN



BASEMENT CEILING PLAN

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

NOTE: EXISTING CONDITIONS BASED ON DIGITAL ALTA SURVEY DATA PROVIDED BY JPI & ARCHITECTURAL FIELD SURVEY MEASUREMENTS. FIELD VERIFY ALL DIMENSIONS & CONDITIONS BEFORE CONSTRUCTION.

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DATE:	07-30-24
PROJECT #:	2212

NEW WORK CEILING PLAN

A10.1

OWNER / APPLICANT:
JFH-FREDERICKSBURG III LLC
1005 CAROLINE STREET
FREDERICKSBURG, VA 22401
(540)-373-3411
JJARRELL4@JARRELLINC.COM

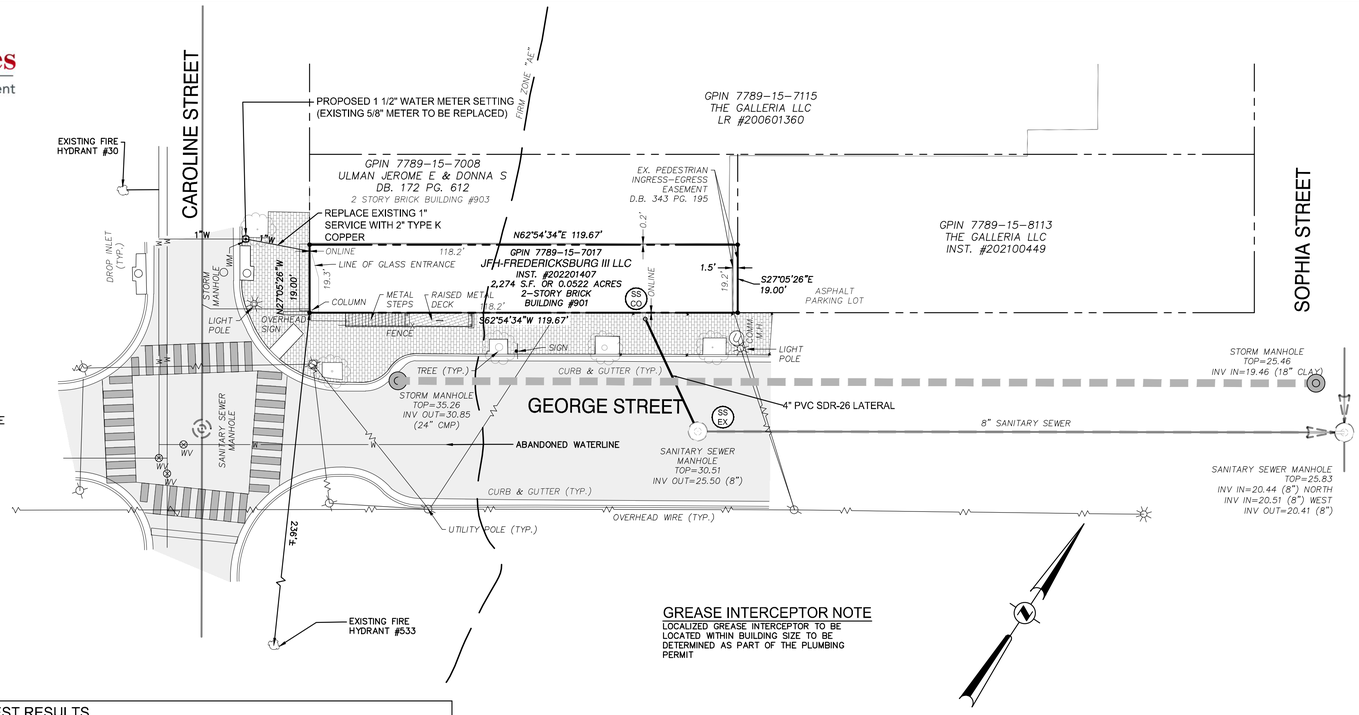
Jarrell Properties
Real Estate Development

SITE DATA:

GPIN:	7789–15–7017
TOTAL AREA:	0.0584 AC/2,543.904 SQ. FT.
EXISTING ZONE:	CD– COMMERCIAL DOWNTOWN
OVERLAY DISTRICT(S):	HISTORIC FREDERICKSBURG DISTRICT–DOWNTOWN
EXISTING USE:	GOOLRICK'S MODERN PHARMACY AND APARTMENTS
PROPOSED USE:	GOOLRICK'S AND APARTMENTS
MAXIMUM BUILDING HEIGHT:	REQUIRED: 50'
GROSS FLOOR AREA:	4,780 SQ. FT.
HYDRAULIC UNIT CODE:	RA–L
WATERSHED:	RAPPAHANOCK RIVER–MASSAPONAX CREEK
WATER:	PUBLIC
SEWER:	PUBLIC
HISTORIC FEATURES:	EXISTING STRUCTURE IS A CONTRIBUTING STRUCTURE IN THE HISTORIC DISTRICT
KNOWN PLACES OF BURIAL:	NOT KNOWN
WETLANDS ON SITE:	NO
LAND DISTURBANCE:	LESS THAN 2,500 S.F.

WATER SERVICE FLOW ANALYSIS

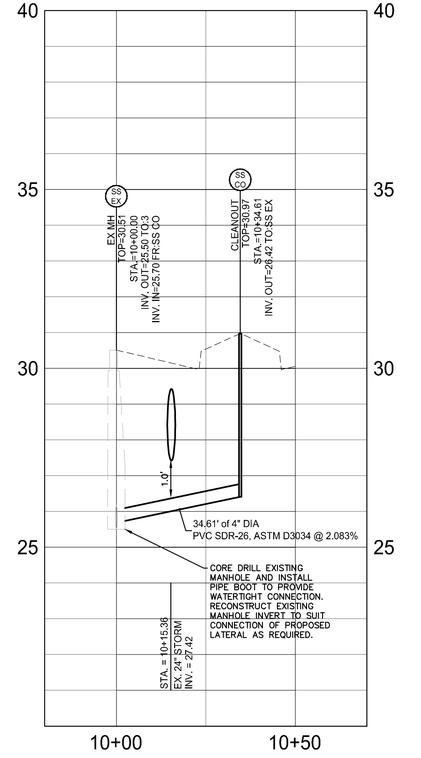
STATIC PRESSURE	68 PSI
FLOW RATE	51 GPM
PSI BEFORE METER	67.25 PSI
METER LOSS	15 PSI
PSI AFTER METER	52.25 PSI
PSI AT BUILDING	51.69 PSI



GREASE INTERCEPTOR NOTE

LOCALIZED GREASE INTERCEPTOR TO BE LOCATED WITHIN BUILDING SIZE TO BE DETERMINED AS PART OF THE PLUMBING PERMIT

PROPOSED SANITARY LATERAL



PROFILE HORZ. 20' 0 20' 40'
PROFILE VERT. 2' 0 2' 4'
PROFILE GRAPHIC SCALE

HYDRANT FLOW TEST RESULTS

FIRE HYDRANT #	STATIC PRESSURE (PSI)	RESIDUAL PRESSURE (PSI)	FLOW (GPM)	PITOT READING (PSI)
503			590	12.5
30	68	62		

HYDRANT FLOW TEST PEFORMED ON 04/19/2024 BY SAMUEL CARTER, OF ETEC FIRE PROTECTION, LLC.

FOR REVIEW ONLY

DATE	REVISIONS
06/13/2024	PER CLIENT & CITY COMMENTS

SULLIVAN, DONAHOE & INGALLS, PC
ENGINEERS - LAND PLANNERS - SURVEYORS - RIGHT-OF-WAY
10720 COLUMBIA DRIVE
FREDERICKSBURG, VA 22408
P.O. BOX 614
FREDERICKSBURG, VA 22404
sdi-pc.com
540-898-5878

SDI SINCE 1965

901 CAROLINE STREET
WARD 4 MAGISTERIAL DISTRICT
CITY OF FREDERICKSBURG, VIRGINIA

PUBLIC UTILITIES CONNECTIONS EXHIBIT

DES/DRFT: JTT
CHECKED: MMW
APPROVED: RHF
JOB NO.: 24–FB–0002
DATE: 03–25–2024
SCALE: 1"=20' H
1"=2' V

SHEET 1
OF 1 SHEETS

Water and Sewer Design and Construction Manual
October, 2018

Department of Utilities, Spotsylvania County, Virginia
Fill in all spaces

Customer: GOOLRICK'S Address: UNIT 2A

Building Address: 901 CAROLINE STREET Type of Occupancy:

Development Name: Tax Map No. Parcel No.

Applicant: Signature:

Title/Company: Daytime Phone #:

I certify that the information on this form is true and correct.
Applicant's Signature:

Fixture		Fixture Value @ 35 psi		No. of Fixtures		Fixture Value
Bathtub		8	x	1	=	8
Bedpan Washers		10	x		=	
Combination Sink and Tray		3	x		=	
Dental Unit		1	x		=	
Dental Lavatory		2	x		=	
Drinking Fountain	- Cooler	1	x		=	
	- Public	2	x		=	
Kitchen Sink	- 1/2" Connection	3	x	1	=	3
	- 3/4" Connection	7	x		=	
Lavatory	- 3/8" Connection	2	x	1	=	2
	- 1/2" Connection	4	x		=	
Laundry Tray	- 1/2" Connection	3	x		=	
	- 3/4" Connection	7	x		=	
Shower Head (Shower Only)		4	x		=	
Service Sink	- 1/2" Connection	3	x		=	
	- 3/4" Connection	7	x		=	
Urinal	- Pedestal Flush Valve	35	x		=	
	- Wall Flush Valve	12	x		=	
	- Trough (2 Ft. Unit)	2	x		=	
Wash Sink (Each Set of Faucets)		4	x		=	
Water Closet	- Flush Valve	35	x	1	=	3
	- Tank Type	3	x		=	
Dishwasher	- 1/2" Connection	4	x	1	=	4
	- 3/4" Connection	10	x		=	
Washing Machine	- 1/2" Connection	5	x	1	=	5
	- 3/4" Connection	12	x		=	
	- 1" Connection	25	x		=	
Hose Connection (Wash Down)	- 1/2"	6	x		=	
	- 3/4"	10	x		=	
Hose (50 Ft. Wash Down)	- 1/2"	6	x		=	
	- 5/8"	9	x		=	
	- 3/4"	12	x		=	
Other:			x		=	
Combined Fixture Value Total					=	25

Water and Sewer Design and Construction Manual
October, 2018

Department of Utilities, Spotsylvania County, Virginia
Fill in all spaces

Customer: GOOLRICKS Address: UNIT 2B

Building Address: 901 CAROLINE STREET Type of Occupancy:

Development Name: Tax Map No. Parcel No.

Applicant: Signature:

Title/Company: Daytime Phone #:

I certify that the information on this form is true and correct.
Applicant's Signature:

Fixture		Fixture Value @ 35 psi		No. of Fixtures		Fixture Value
Bathtub		8	x		=	
Bedpan Washers		10	x		=	
Combination Sink and Tray		3	x		=	
Dental Unit		1	x		=	
Dental Lavatory		2	x		=	
Drinking Fountain	- Cooler	1	x		=	
	- Public	2	x		=	
Kitchen Sink	- 1/2" Connection	3	x	1	=	3
	- 3/4" Connection	7	x		=	
Lavatory	- 3/8" Connection	2	x	2	=	4
	- 1/2" Connection	4	x		=	
Laundry Tray	- 1/2" Connection	3	x		=	
	- 3/4" Connection	7	x		=	
Shower Head (Shower Only)		4	x	2	=	8
Service Sink	- 1/2" Connection	3	x		=	
	- 3/4" Connection	7	x		=	
Urinal	- Pedestal Flush Valve	35	x		=	
	- Wall Flush Valve	12	x		=	
	- Trough (2 Ft. Unit)	2	x		=	
Wash Sink (Each Set of Faucets)		4	x		=	
Water Closet	- Flush Valve	35	x	2	=	6
	- Tank Type	3	x		=	
Dishwasher	- 1/2" Connection	4	x	1	=	4
	- 3/4" Connection	10	x		=	
Washing Machine	- 1/2" Connection	5	x	1	=	5
	- 3/4" Connection	12	x		=	
	- 1" Connection	25	x		=	
Hose Connection (Wash Down)	- 1/2"	6	x		=	
	- 3/4"	10	x		=	
Hose (50 Ft. Wash Down)	- 1/2"	6	x		=	
	- 5/8"	9	x		=	
	- 3/4"	12	x		=	
Other:			x		=	
Combined Fixture Value Total					=	30

Water and Sewer Design and Construction Manual
October, 2018

Department of Utilities, Spotsylvania County, Virginia
Fill in all spaces

Customer: GOOLRICKS Address: GOOLRICKS COMMERCIAL SPACE (GROUND/1ST FLOOR)

Building Address: 901 CAROLINE STREET Type of Occupancy:

Development Name: Tax Map No. Parcel No.

Applicant: Signature:

Title/Company: Daytime Phone #:

I certify that the information on this form is true and correct.
Applicant's Signature:

Fixture		Fixture Value @ 35 psi		No. of Fixtures		Fixture Value
Bathtub		8	x		=	
Bedpan Washers		10	x		=	
Combination Sink and Tray		3	x		=	
Dental Unit		1	x		=	
Dental Lavatory		2	x		=	
Drinking Fountain	- Cooler	1	x		=	
	- Public	2	x		=	
Kitchen Sink	- 1/2" Connection	3	x	2	=	6
	- 3/4" Connection	7	x	2	=	14
Lavatory	- 3/8" Connection	2	x	3	=	6
	- 1/2" Connection	4	x		=	
Laundry Tray	- 1/2" Connection	3	x		=	
	- 3/4" Connection	7	x		=	
Shower Head (Shower Only)		4	x		=	
Service Sink	- 1/2" Connection	3	x		=	
	- 3/4" Connection	7	x	2	=	14
Urinal	- Pedestal Flush Valve	35	x		=	
	- Wall Flush Valve	12	x		=	
	- Trough (2 Ft. Unit)	2	x		=	
Wash Sink (Each Set of Faucets)		4	x		=	
Water Closet	- Flush Valve	35	x	3	=	9
	- Tank Type	3	x		=	
Dishwasher	- 1/2" Connection	4	x	1	=	4
	- 3/4" Connection	10	x		=	
Washing Machine	- 1/2" Connection	5	x	1	=	5
	- 3/4" Connection	12	x		=	
	- 1" Connection	25	x		=	
Hose Connection (Wash Down)	- 1/2"	6	x		=	
	- 3/4"	10	x		=	
Hose (50 Ft. Wash Down)	- 1/2"	6	x		=	
	- 5/8"	9	x		=	
	- 3/4"	12	x		=	
Other:			x		=	
Combined Fixture Value Total					=	59

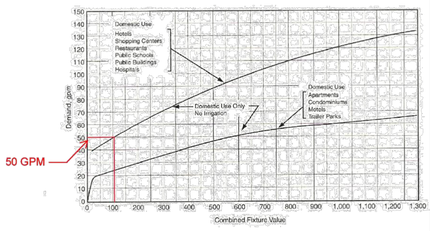


Figure 4-2 Water flow demand per fixture value—low range

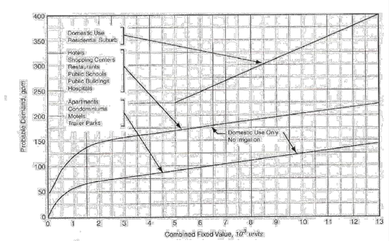


Figure 4-3 Water flow demand per fixture value—high range

AWWA Meter Standards for RCID

Meter Type/ Size	Minimum Flow Rate (gpm)	Low Normal Flow Rate (gpm)	Change-over Rate (Compound Meters)	High Normal Flow Rate (gpm)	Maximum Flow Rate (gpm)	Head Loss at Maximum Flow (psi)
Positive Displacement						
½ in.	0.25	1	N/A	7.5	15	15
5/8 in.	0.25	1	N/A	10	20	15
¾ in.	0.5	2	N/A	15	30	15
1 in.	0.75	3	N/A	25	50	15
1-1/2 in.	1.5	5	N/A	50	100	15
2 in.	2	8	N/A	80	160	15
Compound						
2 in.	0.25	2	20	80	160	20
3 in.	0.5	4	23	160	320	20
4 in.	0.75	6	28	250	500	20
6 in.	1.5	10	32	500	1,000	20
8 in.	2	16	50	800	1,600	20
Turbine class 2						
1-1/2 in.	4	N/A	N/A	80	120	7
2 in.	4	N/A	N/A	100	160	7
3 in.	8	N/A	N/A	240	350	7
4 in.	15	N/A	N/A	420	630	7
6 in.	30	N/A	N/A	920	1,400	7
8 in.	50	N/A	N/A	1,600	2,400	7
10 in.	75	N/A	N/A	2,500	3,800	7
12 in.	120	N/A	N/A	3,300	5,000	7

50 gpm

Adapted from Table 6.1, AWWA Manual M-22

MECHANICAL SCHEDULES

SPLIT SYSTEM SCHEDULE — TRANE / MITSUBISHI

MARK	OUTDOOR UNIT	SPACE SERVED	MODEL	TYPE / DESCRIPTION	NOMINAL CAPACITY (BTU/H)		AIRFLOW RANGE (CFM WET COIL)	OUTSIDE AIR (CFM)	AIRFLOW BALANCING (CFM)	ELECTRICAL DATA			WEIGHT (LBS)	NOTES
					COOLING	HEATING	LOW - MED - HIGH			VOLTAGE / PHASE	MCA (AMPS)	MOP (AMPS)		
INDOOR UNITS														
AHU-B	HP-BH	BASEMENT HVAC	TPVFYP036AM141A	MULTI-POSITION DUCTED AIR HANDLER	36,000	40,000	767 - 931 - 1,095	800	1,090	208 / 1	4.13	15	141	1 - 5, 9
OAP-B	HP-BV	VENTILATION	TPEFYP072OA140A	DUCTED FAN COIL 100% OUTSIDE AIR	72,000	43,000	700 - 800 - 900	800	800	208 / 1	4.8	15	177	1 - 3, 5, 8 - 9
AHU-1	HP-1H	FIRST FLOOR HVAC	TPVFYP048AM141A	MULTI-POSITION DUCTED AIR HANDLER	48,000	54,000	980 - 1,190 - 1,400	0	1,400	208 / 1	5.63	15	172	1 - 5
CCU-1-AA	HP-1AA	FIRST FLOOR HVAC (ADD ALT)	NTXUKS12A112BA	CEILING CASETTE 1-WAY RECESSED FAN COIL	12,000	15,000	180 - 219 - 252 - 282	N/A	252	208 / 1	1.0	NOTE 6	34	1, 2, 6 - 7
AHU-2A	HP-2A	SECOND FLOOR APT 2A	TPVA0A0301AA70A	MULTI-POSITION DUCTED AIR HANDLER	30,000	34,000	613 - 744 - 875	N/A	875	208 / 1	4.13	NOTE 6	119	1 - 5
CCU-2B-1	HP-2B	SECOND FLOOR APT 2B	NTXUKS18A112BA	CEILING CASETTE 1-WAY RECESSED FAN COIL	18,000	20,000	212 - 311 - 346 - 403	N/A	346	208 / 1	1.0	15	34	1 - 4, 8, 10
CCU-2B-2	HP-2B	SECOND FLOOR APT 2B	NTXUKS09A112BA	CEILING CASETTE 1-WAY RECESSED FAN COIL	9,000	12,000	212 - 247 - 282 - 311	N/A	247	208 / 1	1.0	15	34	1 - 4, 8, 10
CCU-2B-3	HP-2B	SECOND FLOOR APT 2B	NTXUKS09A112BA	CEILING CASETTE 1-WAY RECESSED FAN COIL	9,000	12,000	212 - 247 - 282 - 311	N/A	247	208 / 1	1.0	15	34	1 - 4, 8, 10
CCU-2B-4	HP-2B	SECOND FLOOR APT 2B	NTXUKS12A112BA	CEILING CASETTE 1-WAY RECESSED FAN COIL	12,000	15,000	212 - 272 - 297 - 332	N/A	272	208 / 1	1.0	15	34	1 - 4, 8, 10
HWU-K1	HP-KH	KITCHEN HVAC	NTXWST12B112AA	HIGH WALL MOUNTED FAN COIL	12,000	14,400	121 - 144 - 200 - 276 - 343	N/A	276	208 / 1	1.0	15	23	1 - 4, 10
HWU-K2	HP-KH	KITCHEN HVAC	NTXWST12B112AA	HIGH WALL MOUNTED FAN COIL	12,000	14,400	121 - 144 - 200 - 276 - 343	N/A	276	208 / 1	1.0	15	23	1 - 4, 10
OUTDOOR UNITS														
HP-BH	N/A	BASEMENT HVAC	NTXMSM36A142BA	VARIABLE SPEED INVERTER HEAT PUMP	36,000	41,000	N/A	N/A	N/A	208 / 1	29	40	271	1 - 3, 9
HP-BV	N/A	VENTILATION	TUHYE0723AN414AN	VRF HEAT PUMP	72,000	80,000	N/A	N/A	N/A	208 / 3	32	50	512	1 - 3, 9
HP-1H	N/A	FIRST FLOOR HVAC	NTXMSM48A182BA	VARIABLE SPEED INVERTER HEAT PUMP	48,000	50,000	N/A	N/A	N/A	208 / 1	29	40	271	1 - 3
HP-1AA	N/A	FIRST FLOOR HVAC (ADD ALT)	NTXSKH12A112AA	VARIABLE SPEED INVERTER HEAT PUMP	12,000	15,000	N/A	N/A	N/A	208 / 1	14	25	129	1 - 3, 7
HP-2A	N/A	SECOND FLOOR APT 2A	TRUZA0301HA70NA	VARIABLE SPEED INVERTER HEAT PUMP	30,000	34,000	N/A	N/A	N/A	208 / 1	19	25	129	1 - 3
HP-2B	N/A	SECOND FLOOR APT 2B	NTXMSM48A182BA	4-ZONE VARIABLE SPEED INVERTER HEAT PUMP	48,000	50,000	N/A	N/A	N/A	208 / 1	29	40	271	1 - 3
HP-KH	N/A	KITCHEN HVAC	NTXMMX24A132C	2-ZONE VARIABLE SPEED INVERTER HEAT PUMP	22,000	25,000	N/A	N/A	N/A	208 / 1	22.1	25	142	1 - 3

NOTES

1. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COOLING COIL EAT OF 80°F / 67°F (DB / WB), OUTDOOR OF 95°F (DB).
2. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 47°F (WB).
3. ROUTE ALL REFRIGERANT PIPING CONCEALED WHERE POSSIBLE. ROUTE AND SIZE PER MANUFACTURERS RECOMMENDATIONS.
4. PROVIDE INDOOR UNIT WITH WALL MOUNTED SIMPLE MA WIRED WALL CONTROLLER. HWU-K1 & HWU-K2 SHALL SHARE WALL CONTROLLER.
5. PROVIDE UNIT WITH MERV-8 FILTERS AND RETURN FILTER BANK FOR 1" THICK FILTER AT UNIT RETURN CONNECTION.
6. INDOOR UNIT IS POWERED BY OUTDOOR UNIT.
7. UNIT PROVIDED AS PART OF ADD ALTERNATE.
8. INDOOR UNIT INCLUDES FACTORY CONDENSATE LIFT PUMP.
9. OAP-B, AHU-B AND ASSOCIATED OUTDOOR HEAT PUMPS SHALL INCLUDE INTERLOCK/PROGRAMMING TO OPERATE DURING ALL OCCUPIED HOURS. ALSO INCLUDE INTERLOCK TO OPERATION OF KITCHEN EXHAUST SYSTEM AND KEF-1.
10. UNIT SHALL INCLUDE FACTORY PROVIDED WASHABLE RETURN FILTER.

AIR DISTRIBUTION TERMINAL DEVICE SCHEDULE: — KRUEGER

MARK	SERVICE	TYPE	DESCRIPTION AND AIR PATTERN	MOUNTING	MATERIAL	FINISH	DAMPER	MODEL NUMBER	NOTES
A	SUPPLY	DIFFUSER	4-WAY SQUARE, THREE-CONE	CEILING, SURFACE MOUNTED	ALUMINUM	WHITE	OBD	51450	1 - 3
B	RETURN	GRILLE	35° FIXED BLADES, 3/4" O.C., HORIZONTAL FRONT BLADES	DUCT / SIDEWALL SURFACE MOUNTED	ALUMINUM	WHITE	N/A	S580H	1, 3
BF	RETURN	GRILLE	35° FIXED BLADES, 3/4" O.C., HORIZONTAL FRONT BLADES	CEILING SURFACE MOUNTED	ALUMINUM	WHITE	N/A	S580H-04	1, 3, 4
C	SUPPLY	REGISTER	DOUBLE DEFLECTION ADJUSTABLE BLADES, 3/4" O.C.VERTICAL FRONT BLADES	DUCT / SIDEWALL SURFACE MOUNTED	ALUMINUM	WHITE	OBD	5880V	1 - 3
D	EXHAUST	REGISTER	35° FIXED BLADES, 3/4" O.C., HORIZONTAL FRONT BLADES	CEILING / SIDEWALL SURFACE MOUNTED	ALUMINUM	WHITE	OBD	S580H	1 - 3
E	SUPPLY	REGISTER	0° FIXED DEFLECTION, 1/8" BAR, 1/4" O.C., LINEAR BAR GRILLE	SILL MOUNTED, FRAME STYLE C	ALUMINUM	NOTE 5	OBD	1600	1 - 3, 5

NOTES:

1. DIFFUSER, REGISTER OR GRILLE SHALL BE SUPPORTED BY THE STRUCTURE, NOT THE BY CEILING SYSTEM.
2. PROVIDE WITH OPPOSED BLADE DAMPER, MATERIAL TO MATCH DIFFUSER.
3. DIFFUSER FINISH SHALL BE COLOR AS SELECTED BY ARCHITECT OR FIELD PAINTABLE.
4. PROVIDE WITH 1" FILTER FRAME.
5. PROVIDE COLOR CHART FOR SELECTION BY ARCHITECT.

EXHAUST FANS:

MARK	CAPACITY CFM	E.S.P. IN-H2O	FAN RPM	DRIVE TYPE	ELECTRICAL DATA VOLTS / PH / HZ	MOTOR POWER	MODEL NO.	WEIGHT LBS	SERVICE	NOTES
EF-1	225	0.375	891	DIRECT	120 / 1 / 60	81 W	GREENHECK CSP-A410	36	GENERAL EXHAUST	1 - 3, 5
EF-2	75	0.3	755	DIRECT	120 / 1 / 60	80 W	GREENHECK SP-B110	10	TOILET ROOM EXHAUST	1, 3 - 4
EF-3	70	0.2	NOTE 7	DIRECT	120 / 1 / 60	NOTE 7	BROAN NUTONE, HB80RL	10	TOILET ROOM EXHAUST	3 - 4, 7
EF-4	70	0.2	NOTE 7	DIRECT	120 / 1 / 60	NOTE 7	BROAN NUTONE, HB80RL	10	BATH ROOM EXHAUST	4, 7
EF-5	70	0.2	NOTE 7	DIRECT	120 / 1 / 60	NOTE 7	BROAN NUTONE, HB80RL	10	BATH ROOM EXHAUST	4, 7
EF-6	70	0.2	NOTE 7	DIRECT	120 / 1 / 60	NOTE 7	BROAN NUTONE, HB80RL	10	BATH ROOM EXHAUST	4, 7
KEF-1	800	1.5	1,500	DIRECT	208 / 1 / 60	1 HP	CAPTIVE AIRE USBI13DD-RM	250	KITCHEN COOKING EXHAUST	6

NOTES:

1. PROVIDE WITH FACTORY MOUNTED DISCONNECT SWITCH AND SPEED CONTROLLER.
2. PROVIDE WITH VIBRATION ISOLATION KIT.
3. PROVIDE WITH BRICK VENT.
4. INTERLOCK FAN OPERATION TO LOCAL LIGHT SWITCH.
5. PROVIDE FAN WITH DIGITAL TIME CLOCK. INTERLOCK OPERATION TO BUILDING OCCUPANCY.
6. KEF-1 PROVIDED BY KITCHEN HOOD SUPPLIER. MECHANICAL CONTRACTOR TO INSTALL AND PROVIDE ALL ACCESSORIES REQUIRED OPTIONS FOR UL APPROVED INSTALLATION.
7. EXHAUST FAN IS AN INTEGRATED EXHAUST/LIGHT PROVIDED AS PART OF DIVISION 26, LIGHTING FIXTURE L-5.

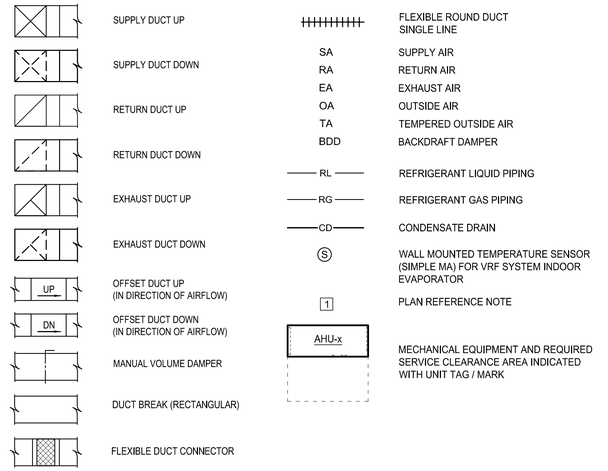
INTAKE LOUVER: — GREENHECK

MARK	MAX CFM	SERVICE	WIDTH x HEIGHT (INCHES)	FREE AREA (SQFT)	VELOCITY (FT/MIN)	MAX PD IN-H2O	MODEL	WEIGHT (LBS.)	BLADE ORIENTATION	NOTES
IL-1	800	INTAKE	42 x 36	5.5	262	0.011	ESD-435	36	HORIZONTAL	1 - 4

NOTES:

1. PROVIDE COLOR CHART WITH SUBMITTAL FOR SELECTION BY OWNER AND ARCHITECT.
2. COORDINATE INSTALLATION WITH EXISTING ARCHITECTURAL AND STRUCTURAL ELEMENTS.
3. PROVIDE EXTENDED LOUVER SILL. PROVIDE MESH INSECT SCREEN AND 1/2" WIRE MESH.
4. AIR VOLUME CFM, VELOCITY AND PRESSURE DROP ARE PERFORMANCE OF A 30"x30" ACTIVE AREA.

MECHANICAL LEGEND

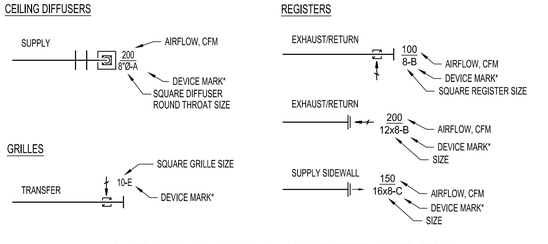


MECHANICAL NOTES

1. WORK INCLUDES PROVIDING A FIRST CLASS WORKING SYSTEM, TESTED AND READY FOR OPERATION, COMPLETE WITH LABOR, MATERIALS, APPARATUS, TRANSPORTATION, AND TOOLS REQUIRED FOR THE INSTALLATION, AS INDICATED.
2. ALL WORK SHALL COMPLY WITH 2021VIRGINIA UNIFORM STATEWIDE BUILDING CODE AND LOCAL BUILDING CODES, THE VIRGINIA PLUMBING AND MECHANICAL CODES (VMC 2021, VPC 2021, VFGC 2021, VECC 2021) , NFPA CODES AND ALL OTHER APPLICABLE CODES. OBTAIN PERMITS, INSPECTIONS, LICENSES AND TESTS REQUIRED FOR THIS WORK AND PAY ALL FEES IN CONNECTION THEREWITH.
3. COORDINATE WORK CLOSELY WITH OTHER TRADES. ALL DIMENSIONS SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR, AND SHALL BE VERIFIED AND COORDINATED IN THE FIELD PRIOR TO INSTALLATION. FAILURE TO COORDINATE WORK WILL NOT BE CONSIDERED AS A BASIS FOR EXTRA PAYMENTS.
4. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EXACT LOCATIONS OF DUCTWORK, PIPING AND EQUIPMENT. DO NOT SCALE DRAWINGS. ALL OFFSETS AND FITTINGS FOR COMPLETE INSTALLATION MAY NOT BE DEFINED ON THE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXACT DIMENSIONS AT THE BUILDING AND ANY NECESSARY CHANGES MADE IN ACCORDANCE WITH STRUCTURAL CONDITIONS. WHERE TRANSITIONS ARE REQUIRED, CROSS SECTIONAL AREA OF DUCT SHALL NOT BE REDUCED. MEASUREMENTS FOR VERTICAL CLEARANCES OF DUCTWORK SHALL BE TAKEN AT THE JOB SITE BEFORE FABRICATION OF ANY DUCTWORK. EQUIPMENT TO BE INSTALLED AND COORDINATED WITH OTHER SYSTEMS. IF CONFLICTS CANNOT BE RESOLVED THEY SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER.
5. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTOR OR OF THE SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL TO THE WORK OF THE CONTRACTOR. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE FAILURE OF THE CONTRACTOR TO PERFORM THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
6. GUARANTEE / WARRANTY: ALL MECHANICAL EQUIPMENT, MATERIALS AND LABOR REQUIRED BY THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT EXCEPT EXTENDED WARRANTIES, AS SPECIFIED ELSEWHERE IN THESE DOCUMENTS ON SPECIFIED ITEMS OF EQUIPMENT, WILL BE FURNISHED BY THE TRADE PROVIDING THE EQUIPMENT.
7. ALL MATERIALS SHALL BEAR THE MANUFACTURER'S NAME, TRADE NAME AND BE U.L. LABELED IF REQUIRED. UNLESS NOTED OTHERWISE, ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. ALL EQUIPMENT OF A SIMILAR TYPE SHALL BE OF THE SAME MANUFACTURER.
8. CONTRACTOR SHALL LOCATE AND SIZE ALL OPENINGS REQUIRED FOR HVAC EQUIPMENT, DUCTWORK AND PIPING, AND PROVIDE THIS INFORMATION TO THE GENERAL CONTRACTOR IN TIME NOT TO DELAY BUILDING CONSTRUCTION.
9. PIPE SIZES SHOWN ARE NPS INSIDE DIMENSIONS. COPPER TUBE SIZES ARE FOR NOMINAL TYPE L..
10. ALL DUCTWORK DIMENSIONS SHOWN ARE IN INCHES AND INDICATE AIRFLOW SIZE.

DIFFUSER, REGISTER & GRILLE LEGEND

* REFER TO AIR DISTRIBUTION TERMINAL DEVICE SCHEDULE



MECHANICAL SHEET INDEX

JARRELL PROPERTIES, INC.

SANDERS ARCHITECTURE PC
16125 RACCOON FORD RD
CULPEPER, VIRGINIA 22701
(v)540-829-2590

FOR CONSTRUCTION

JARRELL PROPERTIES, INC.
TENANT ALTERATIONS
901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

COMMONWEALTH OF VIRGINIA
RICHARD A. POLO
Lic. No. 047236
10/25/2024
PROFESSIONAL ENGINEER

REVISIONS:

DRAWN:	JAF
CHECKED:	RAP
SCALE:	NO SCALE
DATE:	10-25-2024
PROJECT #:	2212

MECHANICAL LEGEND, NOTES & SCHEDULES

M0.1

MECHANICAL SPECIFICATIONS

<u>MATERIAL AND WORKMANSHIP:</u> ALL EQUIPMENT AND MATERIALS USED IN THE PROJECT SHALL BE NEW AND UNDAMAGED. THE INSTALLATION SHALL FIT INTO THE SPACE ALLOTTED AND SHALL ALLOW ADEQUATE AND ACCEPTABLE CLEARANCES FOR ENTRY, SERVICING AND MAINTENANCE.

SIMILAR TYPES OF EQUIPMENT SHALL BE THE PRODUCTS OF THE SAME MANUFACTURER UNLESS SPECIFIED OTHERWISE. WORK SHALL BE PERFORMED BY MECHANICS OR TRADESMEN SKILLED IN THE TRADE INVOLVED.

ALL DUCTWORK, PIPING AND CONDUIT SHALL BE INSTALLED IN A NEAT AND ORGANIZED MANNER, PARALLEL TO OTHER WORK AND THE NEAREST BUILDING ELEMENTS, UNLESS SPECIFICALLY SHOWN OTHERWISE ON THE DRAWINGS. EQUIPMENT AND MATERIALS SHALL BE SUITABLE FOR USE IN THE ENVIRONMENT IN WHICH THEY ARE INSTALLED.

EQUIPMENT EXPOSED TO OUTSIDE CONDITIONS SHALL BE ADEQUATELY PROTECTED FROM THE WEATHER, MANUFACTURED FROM MATERIALS SUITABLE FOR OUTDOOR USE, AND DESIGNED SPECIFICALLY FOR USE IN OUTDOOR ENVIRONMENTS.

<u>GUARANTEE / WARRANTY:</u> ALL MECHANICAL EQUIPMENT, MATERIALS AND LABOR REQUIRED BY THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT EXCEPT EXTENDED WARRANTIES AS SPECIFIED ELSEWHERE IN THESE DOCUMENTS ON SPECIFIC ITEMS OF EQUIPMENT WILL BE FURNISHED BY THE TRADE PROVIDING THE EQUIPMENT.

<u>ELECTRICAL WIRING AND EQUIPMENT</u>: WIRING, LOW VOLTAGE (100 VOLTS OR LESS) CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR IN STRICT ACCORDANCE WITH NEC STANDARDS AND SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO COMPLY WITH THE SEQUENCE OF CONTROL INDICATED. VERIFY THAT WIRING OF ALL MOTORS AND CONTROLS REQUIRED BY EQUIPMENT FURNISHED IS ACCOMPLISHED FOR THE CORRECT SEQUENCE OF OPERATION. LINE VOLTAGE (101 VOLTS OR HIGHER), POWER WIRING SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. DISCONNECTS FOR EACH ITEM OF EQUIPMENT SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFIED OTHERWISE. MISCELLANEOUS MANUAL OR AUTOMATIC CONTROL AND PROTECTIVE OR SIGNAL DEVICES REQUIRED FOR THE SEQUENCE OF OPERATION INDICATED FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR WHERE THE ITEM OF EQUIPMENT IS SPECIFIED UNLESS INDICATED OTHERWISE

<u>IDENTIFICATION FOR HVAC EQUIPMENT:</u> EACH ITEM OF MECHANICAL EQUIPMENT AND EQUIPMENT CONTROL DEVICES SUCH AS MOTOR STARTERS, DISCONNECT SWITCHES, ETC. SHALL BE PROPERLY MARKED WITH LAMINATED ENGRAVED PLASTIC NAMEPLATES FASTENED WITH SHEET METAL SCREWS, BOLTS OR PERMANENT ADHESIVE. EQUIPMENT IDENTIFICATION SHALL MATCH EQUIPMENT MARKS AS SCHEDULED ON THE DRAWINGS. PIPING SYSTEM MARKERS SHALL BE PROVIDED FOR ALL HVAC PIPING AT MAXIMUM 20 FOOT SPACING. PIPE MARKERS SHALL BE PRESSURE SENSITIVE VINYL, 12 INCHES LONG WITH 1-1/4 INCH HIGH LETTERS. ATTACH TO PIPING WITH 2 INCH WIDE TAPE WITH INTEGRAL CLEAR PROTECTIVE COATING AND DIRECTIONAL ARROWS. PIPE MARKERS AND TAPE SHALL BE IN ANSI COLORS.

<u>TESTING, ADJUSTING AND BALANCING</u>: FOR THE AIR CONDITIONING, HEATING AND VENTILATION SYSTEMS, THE CONTRACTOR SHALL PROVIDE ALL SERVICES (IF QUALIFIED) OR SHALL OBTAIN THE SERVICES OF QUALIFIED INDEPENDENT TESTING ORGANIZATION FOR TOTAL SYSTEM AIR TESTING AND BALANCING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING CHANGES IN PULLEYS, BELTS AND DAMPERS WHERE NECESSARY TO OBTAIN THE REQUIRED AIR VOLUME. THE CONTRACTOR SHALL PROVIDE ALL LABOR, ENGINEERING AND TEST EQUIPMENT REQUIRED TO ADJUST, TEST AND BALANCE ALL HEATING, VENTILATING, AIR CONDITIONING AS SPECIFIED. ALL PERSONNEL INVOLVED IN THE WORK SHALL BE EXPERIENCED AND TRAINED SPECIFICALLY IN THE TOTAL BALANCING OF MECHANICAL SYSTEMS. TEST DATA SHALL BE SUBMITTED FOR ALL EQUIPMENT AND SYSTEMS WHERE SPECIFICALLY REQUIRED BY THIS SPECIFICATION. DUCTWORK SHALL BE THOROUGHLY BLOWN OUT OR FLUSHED AND CLEANED OF ALL FOREIGN MATTER BEFORE CONNECTIONS ARE MADE TO EQUIPMENT. AFTER COMPLETION OF TEST AND BALANCING, NEW FILTERS SHALL BE INSTALLED IN ALL HVAC UNITS THAT ARE PART OF THIS PROJECT.

<u>TESTING AND BALANCING PROCEDURES</u>:

DUCTS SHALL BE TESTED AND MADE SUBSTANTIALLY AIR TIGHT AT SMACNA PRESSURE CLASS VALUE INDICATED FOR THE SYSTEM DUCT CONSTRUCTION. SUBSTANTIALLY AIR TIGHT SHALL BE CONSTRUED TO MEAN ACHIEVING INDICATED SMACNA LEAKAGE CLASS INDICATED. PLACE ALL RELATED SUPPLY, EXHAUST AND RETURN AIR SYSTEMS IN OPERATION WITH FANS RUNNING AT DESIGN RPM. MEASURE SUPPLY AIR VOLUMES BY MEANS OF AIR FLOW HOOD.

ADJUST BALANCING DAMPERS FOR REQUIRED BRANCH DUCT AIR QUANTITIES. DUCTS WITH MULTIPLE BRANCHES SHALL HAVE AT LEAST ONE BRANCH WITH VOLUME DAMPER(S) COMPLETELY OPEN. ADJUST GRILLES AND DIFFUSERS TO WITHIN 10% OF INDIVIDUAL REQUIREMENTS SPECIFIED. RESTRICTION IMPOSED BY FLOW REGULATING DEVICES IN OR AT TERMINALS SHALL BE MINIMAL. FINAL MEASUREMENT OF AIR QUANTITY SHALL BE MADE AFTER OPTIMUM AIR PATTERN HAS BEEN ACHIEVED.

<u>DUCTWORK:</u>

DUCT SIZES SHOWN ON DRAWINGS ARE INSIDE CLEAR FREE AREA DIMENSIONS.

DELEGATED DUCT DESIGN: DUCT CONSTRUCTION, INCLUDING SHEET METAL THICKNESS, SEAM AND JOINT CONSTRUCTION, REINFORCEMENTS, AND HANGERS AND SUPPORTS, SHALL COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS -METALAND FLEXIBLE" AND PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED IN "DUCT SCHEDULE" ARTICLE.

STRUCTURAL PERFORMANCE: DUCT HANGERS AND SUPPORTS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS DESCRIBED IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS -METAL AND FLEXIBLE"

ASHRAE COMPLIANCE: APPLICABLE REQUIREMENTS IN ASHRAE 62.1, SECTION 5 -"SYSTEMS AND EQUIPMENT" AND SECTION 7 -"CONSTRUCTION AND SYSTEM START-UP." AND IN ASHRAE 90.1, SECTION 6.4.4 -"HVAC SYSTEM CONSTRUCTION AND INSULATION." RECTANGULAR AND ROUND DUCTS AND FITTINGS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" AND CHAPTER 3,"ROUND, OVAL, AND FLEXIBLE DUCT," FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESS, AND DUCT CONSTRUCTION METHODS, BASED ON INDICATED STATIC-PRESSURE CLASS.

SHEET METAL MATERIALS: SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS AND OTHER IMPERFECTIONS.

GALVANIZED SHEET STEEL: ASTM A 653, COATING DESIGNATION G90. FINISHES FOR SURFACES EXPOSED TO VIEW: MILL PHOSPHATIZED.

SEALANT AND GASKETS: SURFACE-BURNING CHARACTERISTICS FOR SEALANTS AND GASKETS SHALL BE A MAXIMUM FLAME-SPREAD INDEX OF 25 AND A MAXIMUM SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO UL 723; CERTIFIED BY AN NRTL. WATER-BASED JOINT AND SEAM SEALANT: BRUSH ON; SOLIDS CONTENT: MINIMUM 65 PERCENT; SHORE A HARDNESS: MINIMUM 20;WATER RESISTANT, MOLD AND MILDEW RESISTANT; VOC: MAXIMUM 75 G/L (LESS WATER); MAXIMUM STATIC-PRESSURE CLASS: 10-INCH WG, POSITIVE AND NEGATIVE; INDOOR OR OUTDOOR, COMPATIBLE WITH GALVANIZED SHEET STEEL (BOTH PVC COATED AND BARE), STAINLESS STEEL, OR ALUMINUM SHEETS.

HANGERS AND SUPPORTS: STRAP HANGERS: GALVANIZED SHEET STEEL ASTM A 653, COATING DESIGNATION G90. HANGER RODS: CADMIUM-PLATED STEEL ALL-THREAD RODS AND NUTS. STRAP AND ROD SIZES: SMACNA TABLE 5-1 "RECTANGULAR DUCT HANGERS MINIMUM SIZE," AND TABLE 5-2, "MINIMUM HANGER SIZES FOR ROUND DUCT."

STEEL CABLES: GALVANIZED STEEL COMPLYING WITH ASTM A 603. CADMIUM-PLATED STEEL ASSEMBLIES WITH BRACKETS, SWIVEL, AND BOLTS DESIGNED FOR DUCT HANGER SERVICE; WITH AN AUTOMATIC-LOCKING AND CLAMPING DEVICE. DUCT ATTACHMENTS: SHEET METAL SCREWS, BLIND RIVETS, OR SELF-TAPPING METAL SCREWS; COMPATIBLE WITH DUCT MATERIALS. TRAPEZE AND RISER SUPPORTS: GALVANIZED-STEEL SHAPES AND PLATES.

LOW PRESSURE DUCTWORK: STATIC PRESSURE RATING TO 2"W.G. AND VELOCITIES LESS THAN 1500 FPM.

RECTANGULAR DUCT: SMACNA FIGURE 4-2, "RECTANGULAR ELBOWS."

VELOCITY 1000 FPM OR LOWER: RADIUS TYPE RE 1 WITH MINIMUM 1.0 RADIUS-TO-DIAMETER RATIO. MITERED TYPE RE 4 WITHOUT VANES.

VELOCITY ABOVE 1000 FPM: RADIUS TYPE RE 1 WITH MINIMUM 1.5 RADIUS-TO-DIAMETER RATIO. MITERED TYPE RE 2 WITH VANES, SMACNA FIGURE 4-3, "VANES AND VANE RUNNERS," AND FIGURE 4-4, "VANE SUPPORT IN ELBOWS."BRANCH CONFIGURATION:

RECTANGULAR DUCT: SMACNA FIGURE 2-6, "BRANCH CONNECTION."

RECTANGULAR MAIN TO RECTANGULAR BRANCH: 45-DEGREE ENTRY.

RECTANGULAR MAIN TO ROUND BRANCH: 45-DEGREE ENTRY SQUARE-TO-ROUND OR HIGH EFFICIENCY TAKE-OFF (HETO) 24 GAUGE G-90 GALVANIZED STEEL.

DUCT SCHEDULE:

LOW PRESSURE SUPPLY DUCTS, DOWNSTREAM OF UNITS TO DIFFUSERS:

PRESSURE CLASS: POSITIVE, 2-INCH WG.

MINIMUM SMACNA SEAL CLASS: A.

SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.

SMACNA LEAKAGE CLASS FOR ROUND: 3.

LOW PRESSURE EXHAUST DUCTS AND OUTSIDE AIR INTAKE DUCTS, FROM INLET TO UNIT:

PRESSURE CLASS: NEGATIVE, 1-INCH WG.

MINIMUM SMACNA SEAL CLASS: B.

SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.

SMACNA LEAKAGE CLASS FOR ROUND: 3.

<u>KITCHEN GREASE EXHAUST DUCT:</u> EXHAUST DUCTWORK SHALL BE CONSTRUCTED FROM EITHER PREMANUFACTURED DOUBLE WALL ROUND GREASE EXHAUST DUCTWORK OR FIELD FABRICATED 16 GAUGE BLACK SHEET STEEL WITH ALL JOINTS, SEAMS AND PENETRATIONS WELDED LIQUIDTIGHT.MECHANICAL FASTENERS SHALL NOT BE USED FOR ASSEMBLY OR SUPPORT WHERE SUCH FASTENERS COULD PENETRATE THE DUCT WALLS. DUCTS SHALL RUN CONTINUOUS FROM THE HOOD CONNECTION UP THROUGH ROOF AND HORIZONTALLY ACROSS ROOF (MINIMUM 18" CLEARANCE ABOVE ROOF) TO THE EXHAUST FAN CONNECTION.

ACCESS DOORS SHALL BE PROVIDED IN THE SIDE OF HORIZONTAL SECTIONS OF DUCT FOR CLEANING PURPOSES. HORIZONTAL GREASE EXHAUST DUCT SHALL SLOPE 1/4" PER FOOT SO ALL GREASE GRAVITY DRAINS BACK TO THE HOOD. ACCESS DOORS SHALL BE A MINIMUM OF 12 INCHES OR SHALL BE THE FULL WIDTH OF THE DUCT AND SHALL BE LOCATED AT A MAXIMUM SPACING OF 20 FEET. THE EXHAUST DUCT SHALL BE INSULATED WITH 2" THICK CALCIUM SILICATE BLOCKS FROM THE CEILING ABOVE THE HOOD TO A POINT MINIMUM 18" ABOVE THE ROOF LINE. INSULATION SHALL BE HELD AWAY FROM THE DUCT AT LEAST ONE INCH AND ANCHORED WITH ANGLES, WELDED STUDS OR CLIPS. INSULATION SHALL BE SECURED WITH NO. 12 GAUGE ANNEALED WIRE NOT OVER 12" ON CENTER. FINISH WITH INSULATING CEMENT TROWELED ON IN A 1/2" THICK COAT OVER CHICKEN WIRE. THE ENTIRE INSULATED DUCT ASSEMBLY SHALL BE ENCASED IN A 22 GAUGE GALVANIZED SHEET METAL JACKET. UL APPROVED FIRE RESISTANT DUCT WRAP MAY BE UTILIZED AT THE CONTRACTORS OPTION.

<u>DUCTWORK ACCESSORIES</u>: APPARATUS CONNECTIONS: AT POINTS WHERE SHEET METAL CONNECTIONS ARE MADE TO FANS OR WHERE DUCTS OF DISSIMILAR METAL ARE CONNECTED, PROVIDE A FLEXIBLE CONNECTION OF NEOPRENE COATED CANVAS OF SUFFICIENT LENGTH TO ELIMINATE TRANSMISSION OF VIBRATION. FLEXIBLE CONNECTIONS SHALL BE SECURELY FASTENED AND AIR-TIGHT.

<u>FLEXIBLE ROUND DUCT</u>: SHALL BE EQUAL TO FLEXMASTER TYPE 8M OR THERMAFLEX TYPE M-KE. DUCT SHALL INCORPORATE ACOUSTIC RATED CPE INNER LINER, 1" THICK FIBERGLASS INSULATION, AND REINFORCED METALIZED VAPOR BARRIER. MAXIMUM C FACTOR SHALL BE 0.24 BTU/HR/SQ.FT./F AT 75°F MEAN TEMPERATURE. DUCT SHALL HAVE A WORKING PRESSURE OF NOT LESS THAN 6 INCHES W.G. FOR POSITIVE PRESSURE AND 1 INCH W.G. FOR NEGATIVE PRESSURE AND SUITABLE FOR VELOCITIES UP TO 4000 FPM. VAPOR TRANSMISSION SHALL BE LESS THAN 0.05 PERM WHEN TESTED IN ACCORDANCE WITH ASTM E96, PROCEDURE A. THE ENTIRE ASSEMBLY SHALL BE RATED AND MARKED AS UL 181 CLASS. FLEXIBLE DUCT SHALL BE PROPERLY SUPPORTED TO PREVENT ANY SHORT RADIUS BENDS OR KINKS. FLEXIBLE DUCT SHALL NOT PENETRATE ANY TYPE OF WALL CONSTRUCTION.

<u>DUCT INSULATION</u>: ALL INSULATION MATERIALS, JACKETS AND FITTING COVERS SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25, AND SMOKE DEVELOPED RATING NOT EXCEEDING 50 AS TESTED UNDER PROCEDURE ASTM E-84, NFPA 255 AND UL 723. DUCT COVERINGS AND LININGS SHALL NOT FLAME, GLOW, SMOLDER OR SMOKE WHEN TESTED IN ACCORDANCE WITH ASTM C411.

<u>FLEXIBLE EXTERNAL DUCT INSULATION</u>: SHALL BE OWENS CORNING SERIES SOFTR ALL-SERVICE DUCT WRAP OR APPROVED EQUAL. PROVIDE FLEXIBLE FIBROUS GLASS INSULATION, 1.0 LB. DENSITY, 0.27 BTU-IN./SQ.FT./°F/HR. MAXIMUM "K"VALUE AT 75°F, WITH FACTORY APPLIED FRK JACKET, REINFORCED ALUMINUM FOIL VAPOR BARRIER, ASTM C 1136, TYPE II. PROVIDED WITH A MINIMUM 2" FACING FLAP OVERLAPPING ADJACENT AND CONNECTING INSULATION. SECURE WITH ADHESIVE, 50% COVERAGE. SEAMS SHALL BE STAPLED APPROXIMATELY 6" ON CENTER WITH 1/2" OUTWARD CLINCHING STAPLES AND SEALED WITH VAPOR BARRIER MASTIC. ALL INSULATION JOINTS SHALL BE TIGHTLY BUTTED. ALL JOINTS, VOIDS AND PUNCTURES IN FACING SHALL BE SEALED VAPOR TIGHT WITH MASTIC OR TAPE.

<u>RIGID EXTERNAL DUCT INSULATION</u>: SHALL BE KNAUF EARTHWOOL INSULATION BOARD OR APPROVED EQUAL. PROVIDE RIGID FIBROUS GLASS INSULATION, 3.0 LB. DENSITY, 0.23 BTU-IN./SQ.FT./°F/HR. MAXIMUM "K" VALUE AT 75°F, ASTM C 612, TYPE IA, WITH FACTORY APPLIED FRK JACKET, REINFORCED ALUMINUM FOIL VAPOR BARRIER, ASTM C 1136, TYPE II. PROVIDE WITH A MINIMUM 2" FACING FLAP OVERLAPPING ADJACENT AND CONNECTING INSULATION. SECURE WITH ADHESIVE, 50% COVERAGE. SEAMS SHALL BE STAPLED APPROXIMATELY 6" ON CENTER WITH 1/2" OUTWARD CLINCHING STAPLES AND SEALED WITH VAPOR BARRIER MASTIC. ALL INSULATION JOINTS SHALL BE TIGHTLY BUTTED. ALL JOINTS, VOIDS, AND PUNCTURES IN FACING SHALL BE SEALED VAPOR TIGHT WITH MASTIC OR TAPE.

DUCT INSULATION THICKNESS: PER 2021 VIRGINIA ENERGY CODE.

<u>PIPING AND EQUIPMENT INSTALLATION</u>:

GENERAL: SLEEVES AND SEALANT SHALL BE PROVIDED WHERE PIPES PASS THROUGH WALLS. PIPE SHALL BE CUT ACCURATELY TO MEASUREMENTS ESTABLISHED AT THE JOB SITE AND WORKED INTO PLACE WITHOUT SPRINGING OR FORCING, PROPERLY CLEARING ALL WINDOWS, DOORS AND OTHER OPENINGS. PIPE INSTALLATION SHALL NOT OBSTRUCT REQUIRED EQUIPMENT CLEARANCES. EXCESSIVE CUTTING OR OTHER WEAKENING OF THE BUILDING STRUCTURE TO FACILITATE PIPING INSTALLATION WILL NOT BE PERMITTED.

PIPE AND SUSPENDED EQUIPMENT HANGER RODS SHALL BE ATTACHED TO THE STRUCTURE AS FOLLOWS: ENGINEERED WOODEN TRUSSES SHALL NOT BE DRILLED OR CUT UNDER ANY CIRCUMSTANCES. WHERE EQUIPMENT OR PIPING IS SUPPORTED FROM TRUSSES, THE CONTRACTOR SHALL PROVIDE STEEL SUPPORTS BEARING AT PANEL POINTS AND SPANNING A MINIMUM OF TWO TRUSSES. ANY WOODEN BLOCKING SHALL BE FIRE RETARDANT-TREATED LUMBER IN ACCORDANCE WITH ASTM E-84 AND SHALL BEAR THE MARK OF AN APPROVED TESTING AGENCY.ALL CONNECTIONS TO WOODEN FRAMING SHALL BE MADE WITH SHEAR HANGERS AT THE FACE OF WOODEN MEMBERS. ALL CONNECTIONS SHALL BE MADE BY SCREWS. HANGERS FOR MULTIPLE PIPES OR DUCTS SHALL BE STAGGERED TO DISTRIBUTE WEIGHT ON TRUSSES AS EVENLY AS POSSIBLE.

PIPING CONNECTIONS TO EQUIPMENT SHALL BE PROVIDED WITH UNIONS OR FLANGES. CONNECTIONS SHALL NOT BE MADE TO ANY EQUIPMENT UNTIL THE PIPING SYSTEMS HAVE BEEN CLEANED COMPLETELY AND ARE FREE OF ALL DIRT AND DEBRIS. OPEN ENDS OF PIPELINES AND EQUIPMENT SHALL BE PROPERLY CAPPED OR PLUGGED DURING INSTALLATION TO KEEP DIRT AND FOREIGN MATERIAL OUT OF THE SYSTEM.

ESCUTCHEONS SHALL BE PROVIDED WHERE EXPOSED PIPES PASS THROUGH FINISHED WALLS OR FLOORS. MISCELLANEOUS PIPING TERMINATING AT FLOOR DRAINS OR IN THE AIR SHALL BE RESILIENTLY ANCHORED TO PROTECT AGAINST FATIGUE OR DAMAGE INCURRED AS A RESULT OF VIBRATION OR ABUSE.

<u>CONDENSATE DRAIN PIPING:</u>

SOLID PVC SCHEDULE 40 PIPE WITH DWV PATTERN FITTINGS, MATERIAL ASTM D 784, DIMENSIONS ASTM D 1785 AND ASTM D 2665, SOLVENT WELDED JOINTS.

<u>REFRIGERANT PIPING</u>:

COPPER TUBE, TYPE ACR, ANNEALED OR DRAWN-TEMPER TUBING, MATERIAL ASTM B 280, WROUGHT COPPER FITTINGS ASTM B 16.22, BRAZED JOINTS, FILLING MATERIAL AWS A5.8. OR REFRIGERANT LINE SET, COPPER TUBE, TYPE ACR, ANNEALED-TEMPER TUBING, MATERIAL ASTM B 280, WITH FLARED-END AND FORGED BRASS NUTS WITH PLASTIC INSERTS, BOTH REFRIGERANT PIPES FACTORY INSULATED WITH FLEXIBLE CLOSED-CELL ELASTOMERIC INSULATION, SIMILAR TO MPLS LINE SET BY DIAMONDBACK.

PROVIDE PIPING ACCESSORIES AND COMPONENTS PARTICULAR AND NECESSARY TO THE SYSTEM OPERATION AND INSTALL PIPING PER THE MANUFACTURER'S RECOMMENDATIONS. INSULATE ALL REFRIGERANT PIPING (SUCTION AND LIQUID) WITH 1" ELASTOMERIC INSULATION. PRE-MOLDED CLOSED CELL FLEXIBLE ELASTOMERIC INSULATION WITH A SELF-SEAL TAPE LAP SEAL SYSTEM, AP ARMAFLEX LAPSEAL TUBE INSULATION OR APPROVED EQUAL. -20 TO 250 DEG F: NBR / PVC BASED MATERIAL FOR 3/8" THROUGH 1" WALL, COMPLY WITH ASTM C 534, TYPE I - GRADE 1, WITH FACTORY-APPLIED LAP SEAL SYSTEM. FITTINGS SHALL BE INSULATED AND COVERED WITH PVC COVERS. SEAL ALL INSULATION SEAMS AND JOINTS VAPOR-TIGHT USING COMPATIBLE PRODUCTS RECOMMENDED BY THE INSULATION MANUFACTURER.

JACKET TYPES: EXTERIOR INSULATION SHALL BE COVERED WITH 0.016 INCH ALUMINUM JACKET WITH ALL JOINTS SEALED WEATHERTIGHT.

<u>WALL LOUVERS - INTAKE: (IL-1)</u>

BASIS OF DESIGN MANUFACTURER: SHALL BE GREENHECK MODEL ESD-435 OR APPROVED EQUAL. SEE SCHEDULE ON DRAWING M0.1 FOR DESIGN SIZE, CAPACITY AND PERFORMANCE. FRAME AND BLADES CONSTRUCTION OF MECHANICALLY FASTENED HEAVY GAUGE EXTRUDED 6063-T5 ALUMINUM, BLADE AND HEAD DESIGN WITH DRAIN GUTTERS TO CHANNEL WATER TO VERTICAL DOWNSPOUTS AND OUT AT SILL. EXPANDED ALUMINUM INSECT SCREEN IN REMOVABLE FRAME. AAMA 2603 BAKED ENAMEL FINISH, COLOR SELECTION BY ARCHITECT.

<u>AIR DISTRIBUTION - GRILLES, REGISTERS AND DIFFUSERS: (A, B, ETC)</u>

BASIS OF DESIGN MANUFACTURER: SHALL BE KRUEGER OR APPROVED EQUAL. SEE MECHANICAL FLOOR PLANS AND SCHEDULE ON DRAWING M0.1 FOR DESIGN SIZE, CAPACITY AND PERFORMANCE.

<u>INLINE MOUNTED EXHAUST FANS: (EF-1)</u>

SHALL BE GREENHECK MODEL CSP-A410 OR APPROVED EQUAL. SEE SCHEDULE ON DRAWING M0.1 FOR DESIGN SIZE, CAPACITY, AND PERFORMANCE. UL LISTED, DOUBLE INLET FORWARD CURVED POLYPROPYLENE WHEEL, HEAVY GAUGE GALVANIZED STEEL SCROLL AND HOUSING, SOUND INSULATED CABINET. VIBRATION ISOLATED MOTOR COMPATIBLE FOR USE WITH SOLID STATE SPEED CONTROLLER, RATED FOR CONTINUOUS DUTY, THERMAL OVERLOAD PROTECTED. ALUMINUM BACKDRAFT DAMPER, STEEL DUCT COLLAR AT INLET AND OUTLET. PLUG TYPE DISCONNECT, ADJUSTABLE MOUNTING BRACKETS.

<u>BATHROOM EXHAUST FANS (EF-2):</u>

SHALL BE EQUAL TO GREENHECK MODEL SP-B110 OR APPROVED EQUAL.SEE SCHEDULE ON DRAWING M0.1 FOR DESIGN SIZE, CAPACITY, AND PERFORMANCE. FAN SHALL BE COMPLETE WITH ALUMINUM INLET GRILLE, FORWARD CURVED FAN, VIBRATION ISOLATED MOTOR, FAN SPEED CONTROLLER, DISCHARGE DUCT, ALUMINUM BACKDRAFT DAMPER IN DISCHARGE OUTLET, AND FIELD PROVIDED BRICK VENT OR ROOF CAP EXHAUST TERMINATION. INTERLOCK OPERATION TO LOCAL WALL SWITCH.

<u>BATHROOM EXHAUST FANS (EF-3, EF-4, EF-5 & EF-6):</u>

SHALL BE EQUAL TO BROAN MODEL HB80RL OR APPROVED EQUAL, PROVIDED BY DIVISION 26 AS LIGHT FIXTURE L-5. SEE SCHEDULE ON DRAWING M0.1 FOR DESIGN SIZE, CAPACITY, AND PERFORMANCE. FAN SHALL BE COMPLETE WITH BACKDRAFT DAMPER IN DISCHARGE OUTLET, AND FIELD PROVIDED BRICK VENT OR ROOF CAP EXHAUST TERMINATION. INTERLOCK OPERATION TO LOCAL WALL SWITCH.

<u>KITCHEN HOOD EXHAUST FAN (EF-7):</u>

KITCHEN EXHAUST FAN SHALL BE PROVIDED AND MANUFACTURED BY CAPTIVE AIRE, INSTALLED BY MECHANICAL CONTRACTOR. FAN SHALL BE DIRECT DRIVE UTILITY FAN TYPE IN AMCA ARRANGEMENT 10 WITH A SINGLE WIDTH, SINGLE INLET HOUSING, IN CW ROTATION UPBLAST DISCHARGE AS SPECIFIED. THE HOUSING SHALL BE CONSTRUCTED OF HEAVY GAUGE STEEL WITH AIR TIGHT LOCK FORMED SEAMS. THE HOUSING SHALL BE FIELD ROTATABLE TO ANY OF THE EIGHT STANDARD DISCHARGE POSITIONS AND SHALL BE FIELD SET TO UPBLAST DISCHARGE, MINIMUM 40" ABOVE ROOF SURFACE. HOUSING AND BEARING SUPPORTS SHALL BE CONSTRUCTED OF WELDED STEEL MEMBERS TO PREVENT VIBRATION AND TO RIGIDLY SUPPORT THE SHAFT AND BEARINGS. FAN SHALL BE UL 762 LISTED FOR OUTDOOR INSTALLATION AND USE AS A POWER VENTILATOR FOR RESTAURANT EXHAUST APPLICATIONS.

PROVIDE FAN WITH WEATHERHOOD, 1" THREADED DRAIN CONNECTION FOR FAN UNIT HOUSING AND ACCESS DOOR. PROVIDE 1" FIELD DRAIN PIPE FROM HOUSING TO SPLASH BLOCK ON PROVIDE FAN WITH GALVANIZED STEEL EQUIPMENT SUPPORTS. EQUIPMENT SUPPORT HEIGHT SHALL BE FIELD DETERMINED TO ACCOUNT FOR MINIMUM FAN DISCHARGE HEIGHT AND

FAN PERFORMANCE SHALL BE BASED ON TESTS CONDUCTED IN ACCORDANCE WITH AMCA STANDARD 210 FOR AIR MOVING DEVICES, AND FAN SHALL BE LICENSED TO BEAR THE AMCA CERTIFIED RATINGS SEAL FOR AIR PERFORMANCE.

<u>KITCHEN CANOPY EXHAUST HOOD</u>: EXHAUST HOOD SHALL BE PROVIDED AND MANUFACTURED BY CAPTIVE AIRE. HOOD SHALL BE A TYPE 1 KITCHEN WALL MOUNTED CANOPY HOOD SUITABLE FOR GREASE HOOD APPLICATION. HOOD SHALL BE CONSTRUCTED OF 304 STAINLESS STEEL. HOOD SHALL INCLUDE UTILITY CABINET, ANSUL FIRE SUPPRESSION SYSTEM, HEAT DETECTOR, LIGHTS, MATCHING STAINLESS STEEL CEILING SKIRT AND ALL ACCESSORIES AS REQUIRED BY CODE AND APPLICATION.

<u>SPLIT SYSTEM HVAC HEAT PUMP UNITS:(ALL)</u>

BASIS OF DESIGN MANUFACTURER: TRANE MITSUBISHI ELECTRIC SPLIT SYSTEM WITH VARIABLE SPEED INVERTER COMPRESSOR TECHNOLOGY. THE SYSTEMS SHALL CONSIST OF A HORIZONTAL OR VERTICAL DISCHARGE, SINGLE PHASE OUTDOOR UNIT, A MATCHED CAPACITY MULTIPOSITION, HIGH WALL, 1-WAY RECESSED OR 100% OUTSIDE AIR INDOOR FAN COIL.AIR HANDLING UNIT. EACH SHALL BE EQUIPPED WITH A WIRED WALL MOUNTED REMOTE CONTROLLER WHERE APPLCIABLE. INDOOR AND OUTDOOR UNITS SELECTION AND CAPACITY AS SCHEDULED ON DRAWING M0.1.

SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF SPLIT-SYSTEM AIR-CONDITIONING UNITS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD. FOR COMPRESSOR: SEVEN YEARS FROM DATE OF INSTALLATION. FOR PARTS: TWO YEARS FROM DATE OF INSTALLATION. FOR LABOR: TWO YEARS FROM DATE OF INSTALLATION.

BOTH REFRIGERANT LINES TO THE INDOOR UNITS SHALL BE INSULATED IN ACCORDANCE WITH THE INSTALLATION MANUAL. REFRIGERANT PIPES SHALL BE CHARGED WITH DEHYDRATED AIR BEFORE SHIPMENT FROM THE FACTORY.

ELECTRICAL: THE INDOOR AND OUTDOOR UNIT ELECTRICAL POWER SHALL BE 208 VOLTS, 1-PHASE, 60 HERTZ. INDOOR UNITS ARE POWERED BY OUTDOOR UNIT WHERE SCHEDULED AS SUCH.

WIRED WALL MOUNTED CONTROLLER: EACH INDOOR UNIT OTHER THAN THE OUTSIDE AIR PROCESSOR SHALL INCLUDE WIRED WALL MOUNTED UNIT CONTROLLER. CONTROLLER SHALL BE COMPACT IN SIZE, APPROXIMATELY 3"x5" AND HAVE LIMITED USER FUNCTIONALITY. THE BACKLIT CONTROLLER SHALL SUPPORTS TEMPERATURE DISPLAY SELECTION OF FAHRENHEIT OR CELSIUS. THE CONTROLLER SHALL ALLOW THE USER TO CHANGE ON/OFF, MODE (COOL, HEAT, AUTO, TEMPERATURE SETTING, AND FAN SPEED SETTING. THE CONTROLLER SHALL BE CAPABLE OF NIGHT SETBACK CONTROL WITH UPPER AND LOWER SET TEMPERATURE SETTINGS. THE ROOM TEMPERATURE SHALL BE SENSED AT CONTROLLER OR THE INDOOR UNIT DEPENDENT. ON THE INDOOR UNIT DIPSWITCH SETTING. THE CONTROLLER SHALL DISPLAY A FOUR-DIGIT ERROR CODE IN THE EVENT OF SYSTEM ABNORMALITY/ERROR.

<u>INDOOR UNIT: (AHU-B, AHU-1 & AHU-2A)</u>

GENERAL: EQUAL TO TRANE MITSUBISHI MODEL TPVFY. THE UNIT SHALL BE A MULTIPOSITION INDOOR FAN COIL DESIGN WITH A FIXED BOTTOM RETURN, A FIXED VERTICAL DISCHARGE SUPPLY, AND A MODULATING LINEAR EXPANSION DEVICE. THE UNIT SHALL HAVE THE CAPABILITY TO BE MOUNTED IN EITHER THE VERTICAL OR HORIZONTAL (LEFT OR RIGHT). UNITS SHALL HAVE THE ABILITY TO OUTPUT FAN SPEED VIA A RELAY KIT. THE UNIT SHALL BE TESTED IN ACCORDANCE WITH ANSI/ASHRAE 193 AND HAVE LESS THAN 2% AIR LEAKAGE AT MAXIMUM AIRFLOW SETTING.

UNIT SHALL BE FACTORY ASSEMBLED, WIRED AND RUN TESTED. CONTAINED WITHIN THE UNIT SHALL BE ALL FACTORY WIRING, PIPING, ELECTRONIC MODULATING LINEAR EXPANSION DEVICE, CONTROL CIRCUIT BOARD AND FAN MOTOR. THE UNIT SHALL HAVE A SELF-DIAGNOSTIC FUNCTION, 3-MINUTE TIME DELAY MECHANISM, AND AN AUTO RESTART FUNCTION.

UNIT CABINET: THE CABINET SHALL BE PRE-PAINTED, PRE-INSULTATED, 22 GAUGE GALVANIZED STEEL.

FAN: THE INDOOR UNIT FAN SHALL BE AN ASSEMBLY WITH A SINGLE DIRECT DRIVE FAN WITH A HIGH EFFICIENCY DC MOTOR. THE INDOOR FAN SHALL BE STATICALLY AND DYNAMICALLY BALANCED AND RUN ON A MOTOR WITH PERMANENTLY LUBRICATED BEARINGS. THE INDOOR UNIT SHALL HAVE A DUCTED AIR OUTLET SYSTEM AND DUCTED RETURN AIR SYSTEM. THE FAN SHALL HAVE 3-SPEEDS WITH THE CAPABILITY TO OPERATE BETWEEN 0.3-0.8 IN.W.G. SELECTABLE.

COIL: THE INDOOR COIL SHALL BE OF NONFERROUS CONSTRUCTION WITH SMOOTH PLATE FINS ON COPPER TUBING. THE TUBING SHALL HAVE INNER GROOVES FOR HIGH EFFICIENCY HEAT EXCHANGE. ALL TUBE JOINTS SHALL BE BRAZED WITH PHOS-COPPER OR SILVER ALLOY. THE COILS SHALL BE PRESSURE TESTED AT THE FACTORY. A CONDENSATE PAN AND DRAIN SHALL BE PROVIDED UNDER THE COIL. THE CONDENSATE SHALL BE GRAVITY DRAINED FROM THE FAN COIL.

<u>INDOOR UNIT (OUTSIDE AIR PROCESSING UNIT OAP-B)</u>

GENERAL: EQUAL TO TRANE-MITSUBISHI MODEL TPEFY. THE UNIT SHALL BE A HORIZONTAL INDOOR FAN COIL DESIGN WITH A FIXED BACK RETURN DUCT FLANGE, A FIXED FRONT DISCHARGE SUPPLY DUCT FLANGE, AND A MODULATING LINEAR EXPANSION DEVICE. PROVIDE ACCESSORY FILTER BOX WITH 2" MERV-13 FILTER. UNITS SHALL HAVE ABILITY TO ADJUST OUTPUT FAN SPEED VIA A RELAY KIT. THE UNIT SHALL BE TESTED IN ACCORDANCE WITH ANSI / ASHRAE 193 AND HAVE LESS THAN 2% AIR LEAKAGE AT MAXIMUM AIRFLOW SETTING.

UNIT SHALL BE FACTORY ASSEMBLED, WIRED AND RUN TESTED. CONTAINED WITHIN THE UNIT SHALL BE ALL FACTORY WIRING, PIPING, ELECTRONIC MODULATING LINEAR EXPANSION DEVICE, CONTROL CIRCUIT BOARD AND FAN MOTOR. THE UNIT SHALL HAVE A SELF-DIAGNOSTIC FUNCTION, 3-MINUTE TIME DELAY MECHANISM, AND AN AUTO RESTART FUNCTION. INDOOR UNIT AND REFRIGERANT PIPES SHALL BE CHARGED WITH DEHYDRATED AIR BEFORE SHIPMENT FROM THE FACTORY.

UNIT CABINET: THE CABINET SHALL BE PRE-PAINTED, PRE-INSULATED, 22 GAUGE GALVANIZED STEEL.

FAN: THE INDOOR UNIT FAN SHALL BE AN ASSEMBLY WITH TWO DIRECT DRIVE SIROCCO FANS WITH A HIGH EFFICIENCY DC MOTOR. THE INDOOR FAN SHALL BE STATICALLY AND DYNAMICALLY BALANCED AND RUN ON A MOTOR WITH PERMANENTLY LUBRICATED BEARINGS. THE FAN SHALL HAVE 3-SPEEDS WITH THE CAPABILITY TO OPERATE BETWEEN 0.6-1.0 IN.WG, SELECTABLE.

COIL: THE INDOOR COIL SHALL BE OF NONFERROUS CONSTRUCTION WITH SMOOTH PLATE FINS ON COPPER TUBING. THE TUBING SHALL HAVE INNER GROOVES FOR HIGH EFFICIENCY HEAT EXCHANGE. ALL TUBE JOINTS SHALL BE BRAZED WITH PHOS-COPPER OR SILVER ALLOY. THE COILS SHALL BE PRESSURE TESTED AT THE FACTORY. A CONDENSATE PAN AND DRAIN SHALL BE PROVIDED UNDER THE COIL, WITH BUILT-IN CONDENSATE LIFT PUMP. BOTH REFRIGERANT LINES TO THE INDOOR UNITS SHALL BE INSULATED IN ACCORDANCE WITH THE INSTALLATION MANUAL.

<u>INDOOR UNIT - 1-WAY CEILING RECESSED (CCU-1-AA, CCU-2B-1, CCU-2B-1, CCU-2B-3 & CCU-2B-4)</u>

GENERAL: EQUAL TO TRANE-MITSUBISHI MODEL NTXUKS. THE ONE-WAY CASSETTE INDOOR UNIT SHALL BE FACTORY ASSEMBLED, WIRED AND RUN TESTED. CONTAINED WITHIN THE UNIT SHALL BE ALL FACTORY WIRING, PIPING, ELECTRONIC MODULATING LINEAR EXPANSION DEVICE, CONTROL CIRCUIT BOARD AND FAN MOTOR. THE UNIT SHALL HAVE A SELF-DIAGNOSTIC FUNCTION, 3-MINUTE TIME DELAY MECHANISM, AN AUTO RESTART FUNCTION, AN EMERGENCY OPERATION FUNCTION AND A TEST RUN SWITCH. INDOOR UNIT AND REFRIGERANT PIPES SHALL BE CHARGED WITH DEHYDRATED AIR BEFORE SHIPMENT FROM THE FACTORY. THE UNIT SHALL BE SUITABLE FOR USE IN PLENUMS IN ACCORDANCE WITH UL1995 ED 4.

UNIT CABINET: THE CABINET PANEL SHALL HAVE PROVISIONS FOR A FIELD INSTALLED FILTERED OUTSIDE AIR INTAKE. BRANCH DUCTING SHALL BE ALLOWED FROM CABINET. THE ONE-WAY GRILLE SHALL BE FIXED TO BOTTOM OF CABINET ALLOWING FOR ONE-WAY AIRFLOW.

FAN: THE INDOOR FAN SHALL BE AN ASSEMBLY WITH ONE LINE-FLOW FAN DIRECT DRIVEN BY A SINGLE MOTOR WITH PERMANENTLY LUBRICATED BEARINGS. THE INDOOR FAN SHALL CONSIST OF FOUR (4) SPEEDS, LOW, MID1, MID2, AND HIGH.

FILTER: RETURN AIR SHALL BE FILTERED BY MEANS OF A LONG-LIFE WASHABLE PERMANENT FILTER.

COIL: THE INDOOR COIL SHALL BE OF NONFERROUS CONSTRUCTION WITH SMOOTH PLATE FINS ON COPPER TUBING. THE TUBING SHALL HAVE INNER GROOVES FOR HIGH EFFICIENCY HEAT EXCHANGE. ALL TUBE JOINTS SHALL BE BRAZED WITH PHOS-COPPER OR SILVER ALLOY. THE COILS SHALL BE PRESSURE TESTED AT THE FACTORY.

THE UNIT SHALL BE PROVIDED WITH AN INTEGRAL CONDENSATE LIFT MECHANISM ABLE TO RAISE DRAIN WATER 23 INCHES ABOVE THE CONDENSATE PAN.

<u>INDOOR UNIT - HIGH WALL UNIT (HWU-K1 & HWU-K2)</u>

GENERAL: EQUAL TO TRANE-MITSUBISHI MODEL NTXWST. THE WALL-MOUNTED INDOOR UNIT SHALL BE FACTORY ASSEMBLED, WIRED AND RUN TESTED. CONTAINED WITHIN THE UNIT SHALL BE ALL FACTORY WIRING, PIPING, ELECTRONIC MODULATING LINEAR EXPANSION DEVICE, CONTROL CIRCUIT BOARD AND FAN MOTOR. THE UNIT SHALL HAVE A SELF-DIAGNOSTIC FUNCTION, 3-MINUTE TIME DELAY MECHANISM, AN AUTO RESTART FUNCTION, AND A TEST RUN SWITCH. INDOOR UNIT AND REFRIGERANT PIPES SHALL BE CHARGED WITH DEHYDRATED AIR BEFORE SHIPMENT FROM THE FACTORY.

UNIT CABINET: ALL CASINGS, REGARDLESS OF MODEL SIZE, SHALL HAVE THE SAME WHITE FINISH MULTI DIRECTIONAL DRAIN AND REFRIGERANT PIPING OFFERING FOUR (4) DIRECTIONS FOR REFRIGERANT PIPING AND TWO (2) DIRECTIONS FOR DRAINING ARE REQUIRED. THERE SHALL BE A SEPARATE BACK PLATE WHICH SECURES THE UNIT FIRMLY TO THE WALL.

FAN: THE INDOOR FAN SHALL BE STATICALLY AND DYNAMICALLY BALANCED TO RUN ON A SINGLE MOTOR WITH PERMANENTLY LUBRICATED BEARINGS. A MANUAL ADJUSTABLE GUIDE VANE SHALL BE PROVIDED WITH THE ABILITY TO CHANGE THE AIRFLOW FROM SIDE TO SIDE (LEFT TO RIGHT). A MOTORIZED AIR SWEEP LOUVER SHALL PROVIDE AN AUTOMATIC CHANGE IN AIRFLOW BY DIRECTING THE AIR UP AND DOWN TO PROVIDE UNIFORM AIR DISTRIBUTION.

FILTER: RETURN AIR SHALL BE FILTERED BY MEANS OF AN EASILY REMOVABLE, WASHABLE FILTER.

COIL: THE INDOOR COIL SHALL BE OF NONFERROUS CONSTRUCTION WITH SMOOTH PLATE FINS ON COPPER TUBING. THE TUBING SHALL HAVE INNER GROOVES FOR HIGH EFFICIENCY HEAT EXCHANGE. ALL TUBE JOINTS SHALL BE BRAZED WITH PHOS-COPPER OR SILVER ALLOY. THE COILS SHALL BE PRESSURE TESTED AT THE FACTORY.

<u>OUTDOOR UNIT: (HP-BH, HP-1H & HP-2B)</u>

GENERAL: EQUAL TO TRANE MITSUBISHI MODEL NTXMS. THE OUTDOOR UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED, PIPED AND WIRED. EACH UNIT SHALL BE RUN TESTED AT THE FACTORY. OUTDOOR UNIT SHALL HAVE A SOUND RATING NO HIGHER THAN 59 DB(A).

THE OUTDOOR UNIT SHALL HAVE A HIGH PRESSURE SAFETY SWITCH, LOW PRESSURE SAFETY SWITCH AND OVER-CURRENT PROTECTION AND DC BUS PROTECTION. THE OUTDOOR UNIT SHALL HAVE THE ABILITY TO OPERATE WITH A MAXIMUM HEIGHT DIFFERENCE OF 98 FEET AND TOTAL LENGTH NOT TO EXCEED 262 FEET BETWEEN THE OUTDOOR UNIT AND THE INDOOR UNIT AND SHALL NOT REQUIRE LINE SIZE CHANGES NOR TRAPS. THE OUTDOOR UNIT SHALL HAVE RATED PERFORMANCE FOR HEAT OPERATION AT 0°F LOW AMBIENT TEMPERATURE WITHOUT ADDITIONAL LOW AMBIENT CONTROLS. THE OUTDOOR UNIT SHALL HAVE A HIGH EFFICIENCY OIL SEPARATOR PLUS ADDITIONAL LOGIC CONTROLS TO ENSURE ADEQUATE OIL VOLUME IN THE COMPRESSOR IS MAINTAINED.

UNIT CABINET: THE CASING SHALL BE FABRICATED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH A POWDER COATED BAKED ENAMEL.

FAN: THE UNIT SHALL BE FURNISHED WITH TWO DIRECT DRIVE, VARIABLE SPEED MOTORS. THE FANS WILL BE FORWARD CURVED TYPE BLADES FOR QUIET OPERATION. THE FAN MOTOR SHALL HAVE INHERENT PROTECTION, HAVE PERMANENTLY LUBRICATED BEARINGS, AND BE COMPLETELY VARIABLE SPEED. THE FAN MOTOR SHALL BE MOUNTED FOR QUIET OPERATION. THE FAN SHALL BE PROVIDED WITH A RAISED GUARD TO PREVENT CONTACT WITH MOVING PARTS. THE OUTDOOR UNIT SHALL HAVE HORIZONTAL DISCHARGE AIRFLOW.

FAN: THE OUTDOOR COIL SHALL BE OF NONFERROUS CONSTRUCTION WITH LANCED OR CORRUGATEDFINS ON COPPER TUBING. THE COIL FINS WILL HAVE A FACTORY APPLIED CORROSION RESISTANT BLUE-FIN FINISH. THE COIL SHALL BE PROTECTED WITH AN INTEGRAL METAL GUARD. REFRIGERANT FLOW FROM THE OUTDOOR UNIT SHALL BE CONTROLLED BY MEANS OF AN INVERTER DRIVEN COMPRESSOR.

COMPRESSOR: THE COMPRESSOR SHALL BE A SINGLE HIGH PERFORMANCE, INVERTER DRIVEN, MODULATING CAPACITY SCROLL COMPRESSOR. THE OUTDOOR UNIT COMPRESSOR SHALL HAVE AN INVERTER TO MODULATE CAPACITY. THE CAPACITY SHALL BE COMPLETELY VARIABLE DOWN TO 33% OF RATED CAPACITY. THE COMPRESSOR SHALL BE EQUIPPED WITH AN INTERNAL THERMAL OVERLOAD. THE COMPRESSOR SHALL BE MOUNTED TO AVOID THE TRANSMISSION OF VIBRATION.

<u>OUTDOOR UNIT (OUTSIDE AIR PROCESSING HEAT PUMP OAP-HP)</u>

GENERAL: EQUAL TO TRANE-MITSUBISHI MODEL TUHY. THE OUTDOOR UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED, PIPED AND WIRED. EACH UNIT SHALL BE RUN TESTED AT THE FACTORY. OUTDOOR UNIT SHALL HAVE A SOUND RATING NO HIGHER THAN 59 DB(A). BOTH REFRIGERANT LINES FROM THE OUTDOOR UNIT TO INDOOR UNITS SHALL BE INDIVIDUALLY INSULATED. THE OUTDOOR UNIT SHALL HAVE AN ACCUMULATOR WITH REFRIGERANT LEVEL SENSORS AND CONTROLS. THE OUTDOOR UNIT SHALL HAVE A HIGH PRESSURE SAFETY SWITCH, LOW PRESSURE SAFETY SWITCH AND OVER-CURRENT PROTECTION AND DC BUS PROTECTION. THE OUTDOOR UNIT SHALL HAVE THE ABILITY TO OPERATE WITH A MAXIMUM HEIGHT DIFFERENCE OF 98 FEET AND TOTAL LENGTH NOT TO EXCEED 262 FEET BETWEEN THE OUTDOOR UNIT AND THE INDOOR UNITS AND SHALL NOT REQUIRE LINE SIZE CHANGES NOR TRAPS. THE OUTDOOR UNIT SHALL HAVE RATED PERFORMANCE FOR HEAT OPERATION AT 0°F LOW AMBIENT TEMPERATURE WITHOUT ADDITIONAL LOW AMBIENT CONTROLS. THE OUTDOOR UNIT SHALL HAVE A HIGH EFFICIENCY OIL SEPARATOR PLUS ADDITIONAL LOGIC CONTROLS TO ENSURE ADEQUATE OIL VOLUME IN THE COMPRESSOR IS MAINTAINED.

UNIT CABINET: THE CASING SHALL BE FABRICATED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH A POWDER COATED BAKED ENAMEL.

FAN: THE UNIT SHALL BE FURNISHED WITH DIRECT DRIVE, VARIABLE SPEED MOTORS. THE FANS WILL BE PROPELLER TYPE BLADES FOR QUIET OPERATION. THE FAN MOTOR SHALL HAVE INHERENT PROTECTION, HAVE PERMANENTLY LUBRICATED BEARINGS, AND BE COMPLETELY VARIABLE SPEED. THE FAN MOTOR SHALL BE MOUNTED FOR QUIET OPERATION. THE FANS SHALL BE PROVIDED WITH A RAISED GUARD TO PREVENT CONTACT WITH MOVING PARTS. THE OUTDOOR UNIT SHALL HAVE VERTICAL DISCHARGE AIRFLOW.

COIL: THE OUTDOOR COIL SHALL BE OF NONFERROUS CONSTRUCTION WITH LANCED OR CORRUGATED FINS ON COPPER TUBING. THE COIL FINS WILL HAVE A FACTORY APPLIED CORROSION RESISTANT BLUE-FIN FINISH. THE COIL SHALL BE PROTECTED WITH AN INTEGRAL METAL GUARD. REFRIGERANT FLOW FROM THE OUTDOOR UNIT SHALL BE CONTROLLED BY MEANS OF AN INVERTER DRIVEN COMPRESSOR.

COMPRESSOR: THE COMPRESSOR SHALL BE A SINGLE HIGH PERFORMANCE, INVERTER DRIVEN, MODULATING CAPACITY SCROLL COMPRESSOR. THE OUTDOOR UNIT COMPRESSOR SHALL HAVE AN INVERTER TO MODULATE CAPACITY. THE COMPRESSOR SHALL BE EQUIPPED WITH AN INTERNAL THERMAL OVERLOAD. THE COMPRESSOR SHALL BE MOUNTED TO AVOID THE TRANSMISSION OF VIBRATION.

<u>OUTDOOR UNIT: (HP1-AA, HP-2A & HP-KH)</u>

GENERAL: EQUAL TO TRANE MITSUBISHI MODEL NTXSKH, TRUZA, OR NTXMM AS SCHEDULED ON M0.01. THE OUTDOOR UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED, PIPED, AND WIRED. EACH UNIT SHALL BE RUN TESTED AT THE FACTORY. OUTDOOR UNIT SHALL HAVE A SOUND RATING NO HIGHER THAN 59 DB(A). BOTH REFRIGERANT LINES FROM THE OUTDOOR UNIT TO THE INDOOR UNIT SHALL BE INDIVIDUALLY INSULATED. THE OUTDOOR UNIT SHALL HAVE AN ACCUMULATOR WITH REFRIGERANT LEVEL SENSORS AND CONTROLS. THE OUTDOOR UNIT SHALL HAVE A HIGH-PRESSURE SAFETY SWITCH, LOW PRESSURE SAFETY SWITCH AND OVER-CURRENT PROTECTION, AND DC BUS PROTECTION. VRF SYSTEM SHALL MEET PERFORMANCE REQUIREMENTS PER SCHEDULE AND BE WITHIN PIPING LIMITATIONS & ACCEPTABLE AMBIENT TEMPERATURE RANGES AS DESCRIBED IN RESPECTIVE MANUFACTURERS' PUBLISHED PRODUCT CATALOGS. THE OUTDOOR UNIT SHALL BE CAPABLE OF GUARANTEED OPERATION IN HEATING MODE DOWN TO -13°F AMBIENT TEMPERATURES AND COOLING MODE UP TO 115°F WITHOUT ADDITIONAL RESTRICTIONS ON LINE LENGTH & VERTICAL SEPARATION BEYOND THOSE PUBLISHED IN RESPECTIVE PRODUCT CATALOGS. THE OUTDOOR UNIT SHALL HAVE A HIGH EFFICIENCY OIL SEPARATOR PLUS ADDITIONAL LOGIC CONTROLS TO ENSURE ADEQUATE OIL VOLUME IN THE COMPRESSOR IS MAINTAINED.

UNIT CABINET: THE CASING SHALL BE FABRICATED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH A POWDER COATED BAKED ENAMEL.

FAN: THE UNIT SHALL BE FURNISHED WITH ONE OR TWO DIRECT DRIVE, VARIABLE SPEED FAN(S). THE FANS WILL BE PROPELLER TYPE BLADES. THE FAN MOTORS SHALL HAVE INHERENT PROTECTION, HAVE PERMANENTLY LUBRICATED BEARINGS, AND BE COMPLETELY VARIABLE SPEED. THE FAN MOTORS SHALL BE MOUNTED FOR QUIET OPERATION. THE FANS SHALL BE PROVIDED WITH A RAISED GUARD TO PREVENT CONTACT WITH MOVING PARTS. THE OUTDOOR UNIT SHALL HAVE A HORIZONTAL DISCHARGE AIRFLOW.

COIL: THE OUTDOOR COIL SHALL BE OF NONFERROUS CONSTRUCTION WITH LANCED OR CORRUGATED FINS ON COPPER TUBING. THE COIL FINS WILL HAVE A FACTORY APPLIED CORROSION RESISTANT BLUE-FIN FINISH. THE COIL SHALL BE PROTECTED WITH AN INTEGRAL METAL GUARD. REFRIGERANT FLOW FROM THE OUTDOOR UNIT SHALL BE CONTROLLED BY MEANS OF AN INVERTER DRIVEN COMPRESSOR.

COMPRESSOR: THE COMPRESSOR SHALL BE A SINGLE HIGH PERFORMANCE, INVERTER DRIVEN, MODULATING CAPACITY SCROLL COMPRESSOR. THE OUTDOOR UNIT COMPRESSOR SHALL HAVE AN INVERTER TO MODULATE CAPACITY. THE COMPRESSOR SHALL BE EQUIPPED WITH AN INTERNAL THERMAL OVERLOAD. THE COMPRESSOR SHALL BE MOUNTED TO AVOID THE TRANSMISSION OF VIBRATION.

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Lic. No. 047236
10/25/2024
PROFESSIONAL ENGINEER

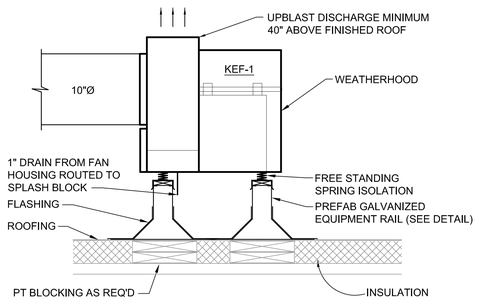
REVISIONS:

DRAWN:	JAF
CHECKED:	RAP
SCALE:	NO SCALE
DATE:	10-25-2024
PROJECT #:	2212

MECHANICAL SPECIFICATIONS

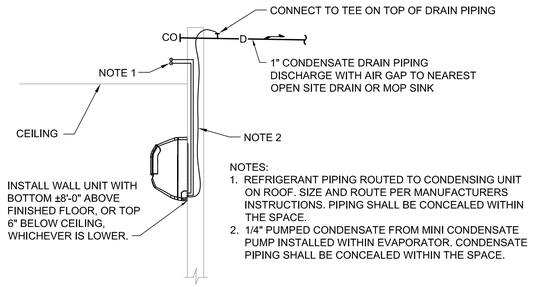
M0.2

MECHANICAL DETAILS



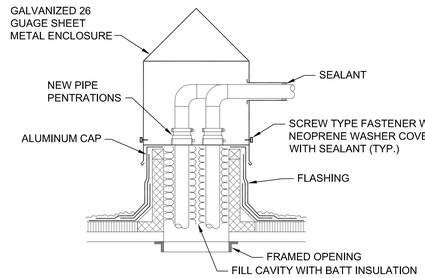
KEF-1 INSTALLATION DETAIL

NO SCALE



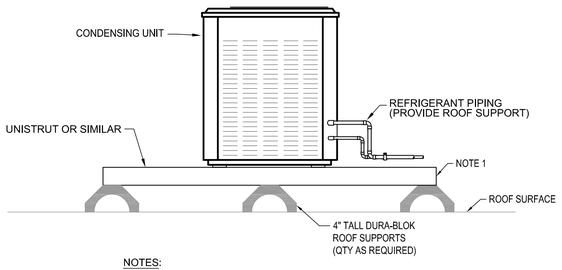
HALL WALL UNIT INDOOR UNIT INSTALLATION DETAIL

NO SCALE TYPICAL HWU-K1 & HWU-K2



ROOF PIPE PENETRATION DETAIL

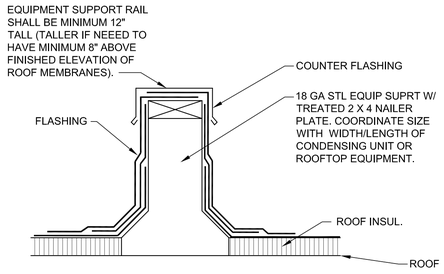
NO SCALE



NOTES:
1. WIDTH OF UNISTRUT BASE SHALL BE SUFFICIENT FOR OVERALL WEIGHT AND LOADING OF ROOFTOP EQUIPMENT.

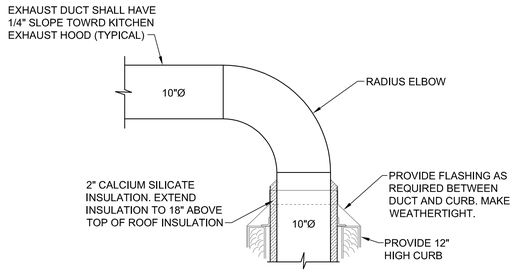
ROOFTOP HVAC EQUIPMENT SUPPORT DETAIL

NO SCALE TYPICAL FOR HP-X UNITS



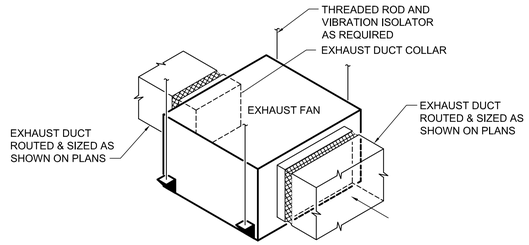
ROOFTOP EQUIPMENT SUPPORT RAIL DETAIL

NO SCALE



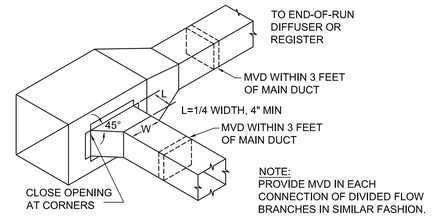
EXHAUST DUCT THROUGH ROOF INSTALLATION DETAIL

NO SCALE



INLINE EXHAUST FAN (EF-1) CONNECTION

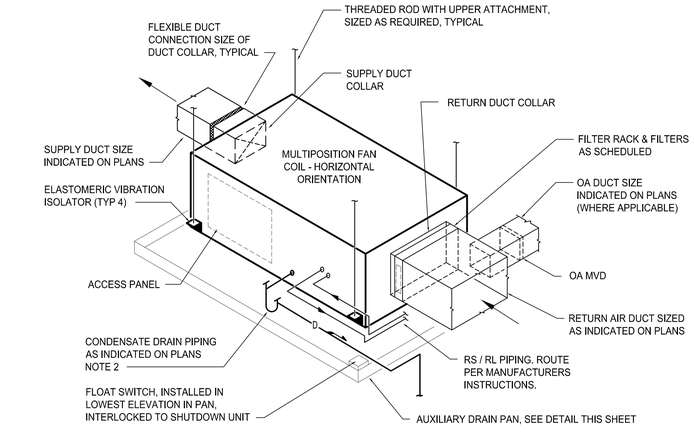
NO SCALE



NOTE:
PROVIDE MVD IN EACH CONNECTION OF DIVIDED FLOW BRANCHES IN SIMILAR FASHION.

BRANCH CONNECTIONS DETAIL FOR SUPPLY, RETURN AND EXHAUST DUCT (TYP)

SCHEMATIC

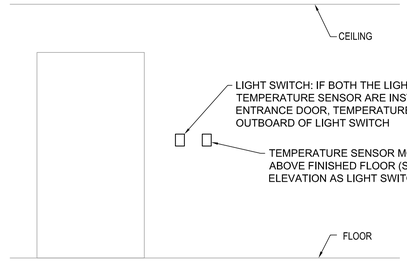


NOTES:

1. ALL UNITS SHALL HAVE MANUFACTURER RECOMMENDED SERVICE CLEARANCES MAINTAINED. COORDINATE LOCATION OF PIPING, DUCTWORK, POWER CONNECTIONS, CONTROL WIRE CONNECTION, ETC. AS TO NOT RESTRICT ACCESS TO THE UNIT IN ANY WAY.
2. PROVIDE EXTERNALLY TRAPPED CONDENSATE DRAIN IF NOT INTERNALLY TRAPPED. CONDENSATE DRAIN TO DROP THROUGH ATTIC TO CEILING SPACE BEFORE BEING ROUTED TO JANITOR SINK AS INDICATED ON PLANS.

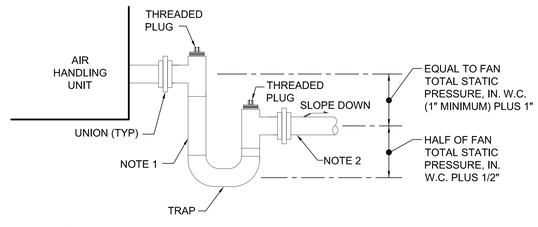
SUSPENDED MULTI-POSITION DUCTED INDOOR AIR HANDLING UNITS

NO SCALE



TEMPERATURE SENSOR INSTALLATION HEIGHT DETAIL

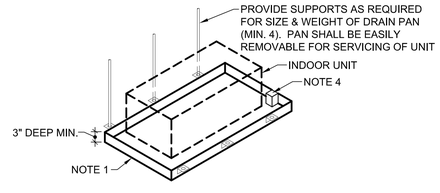
NOT TO SCALE



NOTES:
1. DRAIN LINE SHALL BE FULL SIZE OF UNIT CONNECTION, BUT NO SMALLER THAN 3/4".
2. ARRANGEMENT SHOWN IS SUITABLE FOR DRAW-THROUGH UNITS ONLY.

GRAVITY COOLING COIL CONDENSATE DRAIN

NO SCALE



NOTES:
1. 18 GAGE GALV STEEL WITH HEM AT TOP AND SEAMS SOLDERED OR WELDED WATERTIGHT, CLEANED AND PRIME PAINTED.
2. DRAIN PAN SHALL BE REINFORCED WITH GALVANIZED STEEL ANGLES TO PREVENT SAGGING OR FLEXING WHEN FULL OF WATER.
3. PAN SHALL EXTEND A MINIMUM 3" BEYOND SIDES OF SUSPENDED UNIT.
4. PROVIDE FLOOR SWITCH IN BASE OF PAN TO DETECT FAILURE OF PRIMARY DRAIN. INTERLOCK TO SHUTDOWN UNIT IN EVENT OF PRIMARY DRAIN FAILURE.

AUXILIARY DRAIN PAN DETAIL

NO SCALE

JJ
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RICHARD A. POLO
Lic. No. 047236
10/25/2024
PROFESSIONAL ENGINEER

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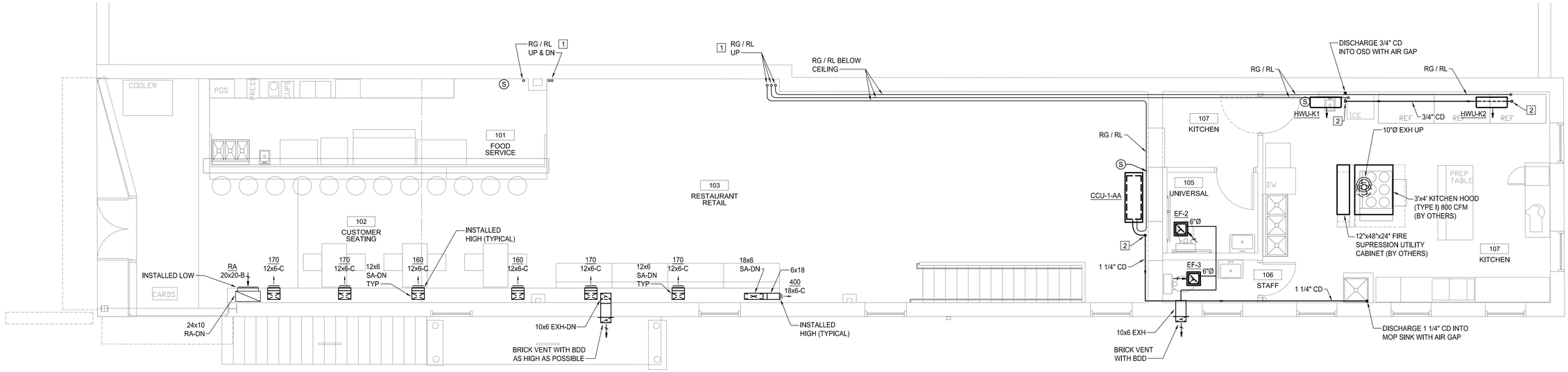
DRAWN:	JAF
CHECKED:	RAP
SCALE:	NO SCALE
DATE:	10-25-2024
PROJECT #:	2212

MECHANICAL DETAILS

M0.3

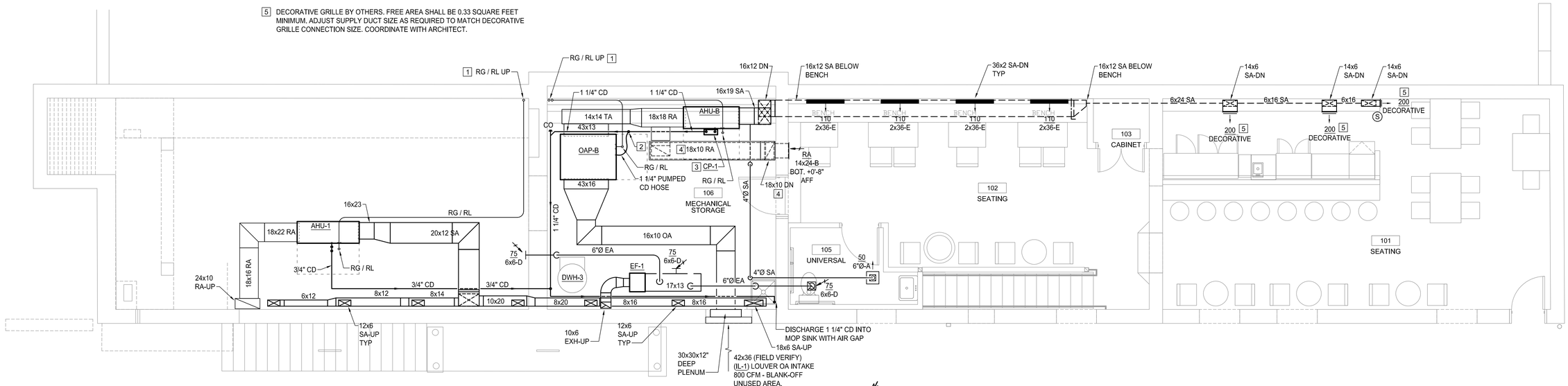


FIRST FLOOR HVAC PLAN

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

PLAN REFERENCE NOTES

1. RG & RL PIPING UP / DOWN TO OUTDOOR & INDOOR UNITS.
2. PROVIDE OPEN VERTICAL TEE FOR CD DRAIN HOSE DISCHARGE.
3. CP-1: CONDENSATE PUMP- LITTLE GIANT MODEL 554425, 1/30HP, 115V / 1 PH / 60 HZ.
4. PROVIDE 1" THICK CLOSED-CELL ACOUSTIC DUCT LINER IN VERTICAL RA DUCT TO POINT INDICATED.
5. DECORATIVE GRILLE BY OTHERS. FREE AREA SHALL BE 0.33 SQUARE FEET MINIMUM. ADJUST SUPPLY DUCT SIZE AS REQUIRED TO MATCH DECORATIVE GRILLE CONNECTION SIZE. COORDINATE WITH ARCHITECT.



BASEMENT HVAC PLAN

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

GRAPHIC SCALE

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

4' 2' 0 4' 8'

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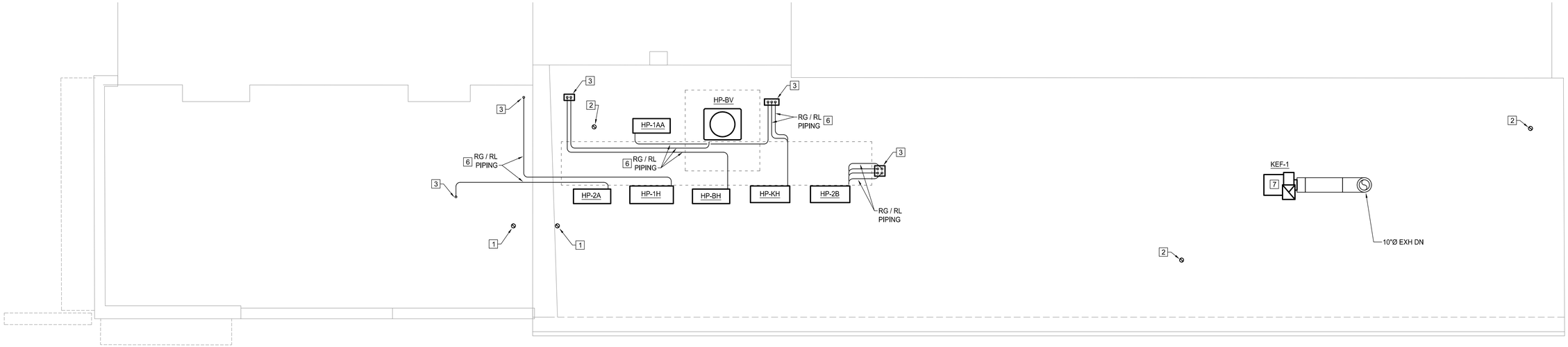
REVISIONS:

DRAWN:	JAF
CHECKED:	RAP
SCALE:	1/4" = 1'-0"
DATE:	10-25-2024
PROJECT #:	2212

MECHANICAL BASEMENT & FIRST FLOOR PLANS

M1.1

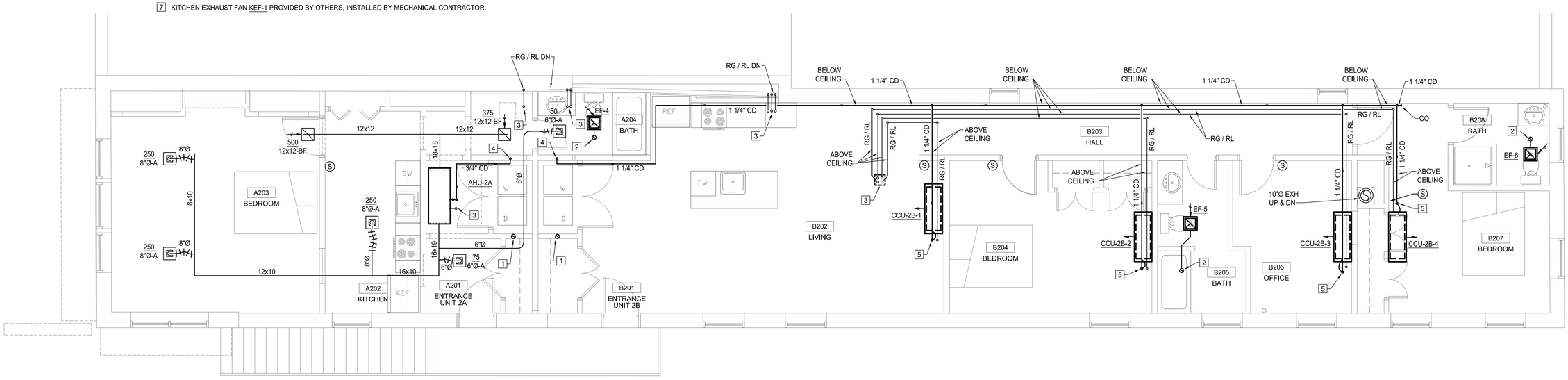


PLAN REFERENCE NOTES

1. PROVIDE 4"Ø DRYER EXHAUST DUCT UP TO ROOF CAP.
2. PROVIDE 4"Ø EXHAUST DUCT UP TO ROOF CAP.
3. RG & RL PIPING UP / DOWN TO OUTDOOR & INDOOR UNITS.
4. CD DOWN TO WMB, DISCHARGE WITH AIR GAP.
5. PROVIDE OPEN VERTICAL TEE FOR CD DRAIN HOSE DISCHARGE.
6. WHERE POSSIBLE, ROUTE REFRIGERANT PIPING IN CEILING SPACE BELOW TO MINIMIZE PIPING ON ROOF.
7. KITCHEN EXHAUST FAN KEF-1 PROVIDED BY OTHERS, INSTALLED BY MECHANICAL CONTRACTOR.

ROOF HVAC PLAN

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



SECOND FLOOR HVAC PLAN

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

GRAPHIC SCALE

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

4' 2' 0 4' 8'

JARRELL PROPERTIES, INC.

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DRAWN:	JAF
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SCALE:	1/4" = 1'-0"
DATE:	10-25-2024
PROJECT #:	2212

MECHANICAL SECOND FLOOR & ROOF PLANS

M1.2

ELECTRICAL SPECIFICATIONS:

1. ALL ELECTRICAL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2021 VIRGINIA UNIFORM STATEWIDE BUILDING CODE, 2021 VIRGINIA ENERGY CONSERVATION CODE, AND THE 2020 NATIONAL ELECTRICAL CODE (NEC).

2. ALL ELECTRICAL EQUIPMENT AND MATERIAL USED SHALL BEAR THE UNDERWRITER'S LABORATORY (UL) LABEL FOR THE INTENDED APPLICATION.

3. THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS REQUIRED TO PROVIDE COMPLETE WORKING ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND ACQUIRE ALL PERMITS NECESSARY TO PERFORM WORK. ALL WORK SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER AND SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT/ENGINEER (A/E) AND OWNER. THE CONTRACTOR SHALL WARRANT FOR A PERIOD OF ONE YEAR ALL WORK PROVIDED UNDER THE CONTRACT TO INCLUDE, BUT NOT NECESSARILY LIMITED TO, ALL SYSTEMS, EQUIPMENT, MATERIALS, AND WORKMANSHIP. THIS SHALL NOT BE CONSTRUED TO LIMIT ANY EXTENDED WARRANTY PERIODS OF LONGER THAN ONE YEAR FOR SPECIFIC ITEMS AS CALLED FOR IN THESE SPECIFICATIONS. THE WARRANTY PERIOD SHALL COMMENCE ON THE DATE OF ACCEPTANCE BY THE OWNER AND SHALL COVER ALL PARTS AND LABOR AS REQUIRED TO FULFILL THE WARRANTY AT NO COST TO THE OWNER.

4. THE ELECTRICAL TRADE IS REQUIRED TO VISIT THE JOB SITE AND SURVEY ALL EXISTING CONDITIONS WHICH MAY AFFECT HIS WORK PRIOR TO CONTRACT PRICE AGREEMENT. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO ACCURATELY ESTIMATE THE DIFFICULTIES AND COST TO PERFORM WORK. THE ELECTRICAL TRADE SHALL COORDINATE ALL WORK WITH THE WORK OF OTHER TRADES. CONFLICTS DUE TO FAILURE OF THE ELECTRICAL TRADE TO COORDINATE WORK WILL BE CORRECTED AT THE EXPENSE OF THE ELECTRICAL TRADE, INCLUDING COSTS FOR REPAIRS TO WORK OF OTHER TRADES.

5. THE ELECTRICAL TRADE SHALL SUBMIT ALL ELECTRICAL MATERIALS REQUIRED BY THESE SPECIFICATIONS FOR REVIEW BY A/E IN ACCORDANCE WITH SUBMITTAL PROCEDURES. SUBMITTALS ARE REQUIRED FOR ALL EQUIPMENT AND MATERIALS . ALL SUBMITTAL DATA SHALL BE CORRECTLY IDENTIFIED TO SHOW PROJECT NAME, AND THE EXACT MODEL, STYLE, OR SIZE OF ITEM BEING SUBMITTED AND SHALL BEAR THE SUBCONTRACTOR'S STAMP WHICH STATES THAT THEY HAVE REVIEWED THE SUBMISSION, IT IS COMPLETE, AND THAT IN THEIR OPINION IT MEETS THE CONTRACT REQUIREMENTS. THE CONTRACTOR'S STAMP SHALL CLEARLY INDICATE THE NAME OF THE REVIEWING CONTRACTOR. REFER TO THE GENERAL CONDITIONS IN THE ARCHITECT'S SPECIFICATIONS FOR ALL SUBMITTAL REQUIREMENTS.

6. AT COMPLETION OF PROJECT, THE ELECTRICAL TRADE SHALL SUBMIT IN ACCORDANCE WITH ARCHITECT'S SUBMITTAL PROCEDURE, OPERATION AND MAINTENANCE DATA (O/M) FOR ALL ELECTRICAL ITEMS WHICH WILL REQUIRE SERVICING BEFORE THE DURATION OF THEIR USEFUL LIFE HAS BEEN REACHED. O/M MANUALS SHALL INCLUDE A COMPLETE PRODUCT INDEX, INSTALLATION AND MAINTENANCE DATA, SEQUENCE OF CONTROLS, PARTS LISTS, AND THE NAME, ADDRESS, AND TELEPHONE NUMBER OF SUPPLIER OR NEAREST REPRESENTATIVE.

7. ALL WIRING FOR CIRCUITRY 120 VOLT OR GREATER SHALL BE COPPER THWN OR THHN IN METALLIC CONDUIT, OR LISTED METAL-CLAD (MC) CABLE IN WALLS OR CONCEALED ABOVE CEILINGS (NO MC VISIBLE IN EXPOSED CEILINGS). NON-METALLIC SHEATHED CABLE IS NOT PERMITTED FOR THIS PROJECT. ALL 120V CIRCUIT WIRING SHALL BE #12 OR LARGER. ALL WIRE #8 AWG OR LARGER SHALL BE STRANDED. ALL CIRCUITS SHALL BE PROVIDED WITH A SEPARATE NEUTRAL. FOR 120/208V SYSTEMS, COLOR SCHEME SHALL BE AS FOLLOWS: PHASE A - BLACK, PHASE B - RED, PHASE C - BLUE, NEUTRAL - WHITE, GROUND - GREEN.

8. METAL CLAD OR ROMEX (MC) (NM) CABLING MAY BE USED FOR BRANCH CIRCUITRY AS PERMITTED BY THE NEC AND SHALL BE CONCEALED IN WALLS OR CEILINGS, AND SHALL BE SUBJECT TO ALL NEC INSTALLATION REQUIREMENTS. IT SHALL NOT BE PERMITTED TO BE INSTALLED EXPOSED IN FINISHED AND NORMALLY OCCUPIED AREAS OR IN ANY AREAS WHERE MC CABLE IS NOT ALREADY CURRENTLY INSTALLED.

9. ALL POWER LIMITED SHIELDED TWISTED PAIR CABLE SHALL BE AS MANUFACTURED BY BELDEN, ALPHA, WEST PENN, OR ANIXTER. FURNISH PROPER NUMBER OF CONTROL WIRING PAIRS, SHIELDING, INSULATION, ETC. AS REQUIRED BY CONTROLLED SYSTEM MANUFACTURER.

10. GROUNDING: ALL GROUNDING SHALL BE IN ACCORDANCE WITH NEC AND DETAILS SHOWN ON THE DRAWINGS. ALL CIRCUITRY SHALL INCLUDE AN EQUIPMENT GROUNDING CONDUCTOR (GEC). ALL CONNECTIONS TO THE GROUNDING ELECTRODE CONDUCTOR SHALL BE VIA EXOTHERMIC WELDING OR A CONNECTOR LISTED FOR GROUNDING AND BONDING EQUIPMENT.

11. ALL CONDUIT SHALL BE RIGID HEAVY WALL CONDUIT (GRS), INTERMEDIATE METAL CONDUIT (IMC), OR ELECTRICAL METALLIC TUBING (EMT) AS PERMITTED BY NEC. MINIMUM SIZE SHALL BE 3/4" EXCEPT FOR FLEXIBLE CONDUIT. CONDUIT SHALL BE BY REPUBLIC, STEELDUCT, ALLIED TUBING, WHEATLAND, OR OTHER ACCEPTABLE MANUFACTURER. PVC CONDUIT IS NOT PERMITTED FOR THIS PROJECT.

12. FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL FLEXIBLE CONNECTIONS, PLUS ALL SHORT MOTOR CONNECTIONS, TRANSFORMERS, AND ALL EQUIPMENT SUBJECT TO MOVEMENT OR VIBRATION. FLEXIBLE METAL CONDUIT MAY ALSO BE USED AS THE FLEXIBLE CONNECTION TO RECESSED LIGHTING FIXTURE ASSEMBLIES AND IN EXISTING WALL VOIDS. FLEXIBLE METAL CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL LIMITATIONS THEREIN AND SHALL BE LIMITED TO 6' MAXIMUM LENGTH. LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE USED IN WET LOCATIONS.

13. FURNISH AND INSTALL CONDUIT RUNS TO PRODUCE CIRCUIT CONTROL INDICATED ON THE DRAWINGS. ALLOW FOR MAKING CONNECTIONS TO ALL OUTLETS, LIGHT FIXTURES, ETC. INDICATED AND CHECK PLANS TO INSURE ALL OUTLETS, ETC., HAVE A DESIGNATED CIRCUIT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOUND. CIRCUITS SHALL BE IN INDIVIDUAL HOMERUNS. MULTI-WIRE BRANCH CIRCUITS ARE NOT PERMITTED.

14. SURFACE RACEWAYS: ARE NOT ACCEPTABLE UNLESS PRIOR APPROVED BY THE OWNER.

15. OUTLET BOXES:

   A. ALL OUTLET IN COMMERCIAL SPACES, BOXES SHALL BE ONE-PIECE CONSTRUCTION WITH PROPER CONDUIT KNOCKOUTS AS REQUIRED, AND EQUAL TO STEEL CITY OR RACO. PROVIDE PROPER DEVICE COVER AS REQUIRED FOR DEVICES AND WALL FINISH. ALL BOXES SHALL BE RIGIDLY AND SECURELY FASTENED IN PLACE IN ACCORDANCE WITH NEC. BOXES ACCEPTABLE PER NEC ALLOWED IN APARTMENTS.

   B. ALL CEILING OUTLET BOXES SHALL HAVE ADJUSTABLE BAR HANGERS AND PROPER FIXTURE ADAPTER COVER.

   C. ALL OUTLET BOX COVER PLATES SHALL BE HIGH IMPACT THERMOPLASTIC OR POLYCARBONATE WITH SMOOTH FINISH UNLESS OTHERWISE INDICATED. PLATE COLOR SHALL BE AS DIRECTED BY THE ARCHITECT. "JUMBO" COVERS ARE NOT ACCEPTABLE.

   D. ALL UNUSED KNOCKOUTS IN BOXES SHALL BE PLUGGED WITH STEEL SNAP-IN KNOCKOUT BLANKS. BLANKS SHALL BE BY SAME MANUFACTURER AS OUTLET BOX.

16. FIRESTOPPING: PROVIDE FIRE SEALS FOR ANY CONDUIT OR CABLE PASSING THROUGH FIRE-RATED WALLS AND FLOORS WHERE THE WALL, FLOOR, OR SMOKE PARTITION HAS A RATING UP TO THREE (3) HOURS IN ACCORDANCE WITH MANUFACTURER'S APPLICATION DATA. INSTALL IN ACCORDANCE WITH THE APPROPRIATE UL LISTED ASSEMBLY FOR THE TYPE OF CONSTRUCTION AND FIRE-RATING OF THE PARTITION.

17. WIRING DEVICES:

   A. SWITCH WITH BUILT-IN OCCUPANCY SENSOR: SHALL BE SINGLE POLE, DUAL TECHNOLOGY (INFRARED AND ULTRASONIC) OCCUPANCY WALL SWITCH WITH 180 DEGREE FIELD OF VIEW. TIME DELAY SHALL BE SET FOR 30 MINUTES. ALL OTHER SWITCHES AS INDICATED SHALL BE COMMERCIAL GRADE, COLOR BY ARCHITECT. IN PUBLIC SPACES DECORATIVE WALL PLATES WILL BE USED, SELECTED BY OWNER.

   B. RECEPTACLES: SPECIFICATION GRADE, 20A RATED, DUPLEX, GFCI, ETC. AS REQUIRED WITH SPECIFIED COVER PLATES. DEVICE COLOR BY ARCHITECT, DECORATIVE FACE PLATES IN PUBLIC SPACES, COORDINATE LOCATIONS AND TYPE WITH OWNER.

19. LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE FOR SUBSTITUTIONS OF LIGHTING FIXTURES THAT ARE PART OF THE EMERGENCY EGRESS PATH, SUBMIT POINT-BY-POINT FOOTCANDLE CALCULATIONS. PROVIDE LIGHTING FIXTURES COMPLETE WITH ALL REQUIRED LAMPS, PLATES, RINGS, HANGERS, TRIM AND ALL ACCESSORIES NECESSARY FOR A COMPLETE AND SECURE INSTALLATION. ALL FIXTURES SHALL BE ADEQUATELY SUPPORTED BY FIXTURE STUDS, CONDUIT STEMS, STEEL RODS, OR BAR HANGERS. RECESSED FIXTURES IN ACT CEILINGS SHALL BE PROVIDED WITH A MINIMUM OF TWO (2) AUXILIARY SUPPORT WIRES AT THE DIAGONAL CORNERS OF THE FIXTURE. THE AUXILIARY SUPPORT WIRES SHALL BE ATTACHED TO THE STRUCTURE AND CAPABLE OF SUPPORTING THE FIXTURE IF THE CEILING SYSTEM SUPPORT WIRES ARE COMPROMISED. FIXTURES SHALL NOT BE MOUNTED TO OR SUSPENDED FROM ANY MECHANICAL SYSTEM.

20. PANELBOARDS [S]: SQUARE D. FAULT CURRENT SHALL BE DETERMINED BY DOMINION ENERGY. LOAD CENTERS ARE ACCEPTABLE IN APARTMENTS. NQ STYLE PANELBOARDS OR EQUAL IN COMMERCIAL SPACE.

21. DISCONNECT SWITCHES [S]: DISCONNECT SWITCHES SHALL BE GENERAL DUTY WITH GROUNDING KIT, SQUARE D OR ACCEPTABLE EQUAL, AND RATED FOR THE VOLTAGE ENCOUNTERED, POLES AND AMPERAGE AS REQUIRED, WITH PROPER NEMA ENCLOSURE. ALL SWITCHES SHALL BE NON-FUSIBLE.

22. COORDINATE EXACT LOCATIONS AND REQUIREMENTS OF MECHANICAL EQUIPMENT WITH THE PROVIDERS/INSTALLERS OF THE EQUIPMENT. FURNISH ALL CONTROL DEVICES AS CALLED FOR BY ALL MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.

   C. LIGHTING CONTROL SYSTEM: PROVIDE CONTROL SYSTEM WHERE SYSTEM COMPONENTS ARE SHOWN ON THE DRAWINGS. SYSTEM SHALL BE COMPLETE WITH ALL REQUIRED COMPONENTS, WIRING, PROGRAMMING, ETC. THE SYSTEM SHALL INCLUDE RELAYS FOR EACH IDENTIFIED "DIMMER ZONE" ON THE DRAWINGS. EACH ZONE SHALL HAVE AN INDEPENDENT DIMMER AND SHALL BE ABLE TO BE CONTROLLED BY A 4 SCENE BUTTON, WHERE MULTIPLE "SCENES CAN BE CREATED WITH MULTIPLE DIMMED ZONE LEVELS. SUBMIT SHOP DRAWINGS OF SYSTEM FOR APPROVAL. BASIS OF DESIGN FOR ALL CONTROLS IS STEINEL DIGITAL CONTROL SOLUTION. PROVIDE TWO SS4 DCS IN LOCATIONS DIRECTED BY OWNER. ALL CONTROL DEVICES SHALL NOT BE VIEWABLE BY PUBLIC.

   D. PROVIDE ADDITIONAL OCCUPANCY SENSORS IF REQUIRED BY AHJ. TO CONTROL ALL ZONES OF LIGHTING THROUGH OUT.

   E. POWER PACKS: SHALL BE RATED BY THE LOAD.

26. FIRE ALARM SYSTEM: NOT REQUIRED. PROVIDE LOCAL INTERWIRED SMOKE DETECTORS AS SHOWN. SMOKE DETECTORS SHALL HAVE CO2 SENSING CAPABILITIES.

27. INFRASTRUCTURE FOR LOW VOLTAGE COMMUNICATIONS ARE ELECTRONIC SECURITY SYSTEMS:

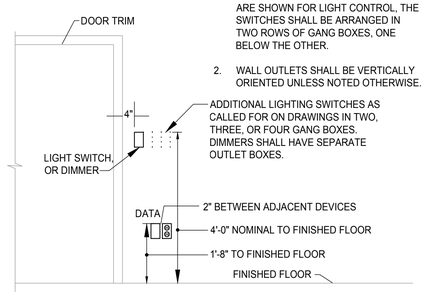
   A. PROVIDE ALL EMPTY RACEWAYS, EMPTY OUTLET BOXES, ETC. AND 120V CIRCUITRY AS NECESSARY TO SUPPORT INSTALLATION OF LOW VOLTAGE COMMUNICATIONS AND ELECTRONIC SECURITY SYSTEMS (TELEPHONE, DATA, ACCESS CONTROL, ETC.) IN THE RENOVATED AREA. PROVIDE A MINIMUM OF A SINGLE GANG EMPTY OUTLET BOX WITH 1" EMPTY CONDUIT STUBBED ABOVE THE ACCESSIBLE (ACT) CEILING FOR ALL SUCH OUTLETS SHOWN ON THE DRAWINGS. ALL WIRING AND EQUIPMENT FOR SUCH SYSTEMS SHALL BE PROVIDED BY THE OWNER OR HIS DESIGNATED INSTALLER. REVIEW INFRASTRUCTURE REQUIREMENTS WITH THE OWNER PRIOR TO ROUGH-IN AND INSTALLATION.

   B. PULL STRINGS SHALL BE LEFT IN ALL EMPTY OUTLET BOXES AND RACEWAYS. DIVISION 26 SHALL BE RESPONSIBLE FOR INSTALLING BLANK COVER PLATES ON ANY OUTLETS THAT ARE NOT USED BY THE OWNER FOR LOW VOLTAGE SERVICES.

   C. NOT ALL LOW-VOLTAGE REQUIREMENTS ARE SHOWN, COORDINATE WITH PROVIDER.

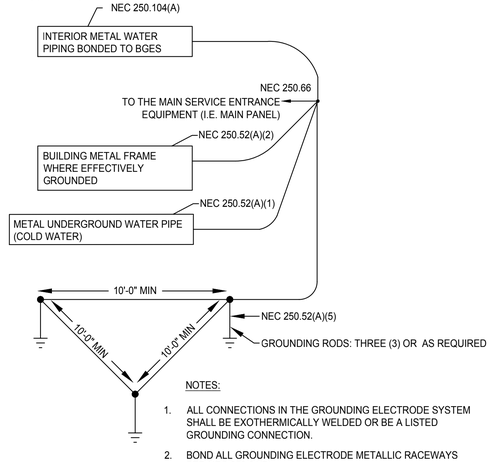
NOTES:

1. WHEN MORE THAN FOUR SWITCHES ARE SHOWN FOR LIGHT CONTROL, THE SWITCHES SHALL BE ARRANGED IN TWO ROWS OF GANG BOXES, ONE BELOW THE OTHER.
2. WALL OUTLETS SHALL BE VERTICALLY ORIENTED UNLESS NOTED OTHERWISE.



TYPICAL ELEVATION FOR MOUNTING OUTLET BOXES AT DOORS

SCALE: NTS



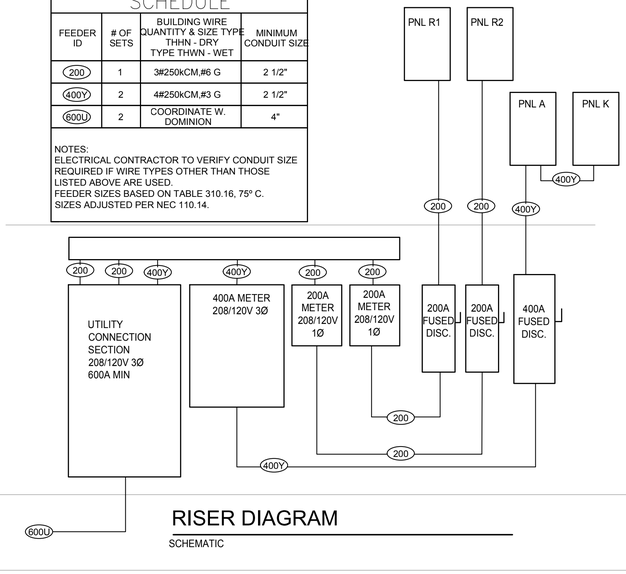
NOTES:

1. ALL CONNECTIONS IN THE GROUNDING ELECTRODE SYSTEM SHALL BE EXOTHERMICALLY WELDED OR BE A LISTED GROUNDING CONNECTION.
2. BOND ALL GROUNDING ELECTRODE METALLIC RACEWAYS PER NEC 250.64(B).
3. 3/4X 10' COPPER GROUND RODS.
4. BOND ANY OTHER METAL PIPING OR BUILDING METAL FRAME NOT INTENTIONALLY OR INHERENTLY GROUNDED THAT IS LIKELY TO BECOME ENERGIZED TO THE BGES IN ACCORDANCE WITH NEC 250.104(B) & 250.104(C).
5. CONDUCTORS SIZED BASED ON TABLES REFERENCED.

ALUMINUM FEEDER WITH COPPER GROUND SCHEDULE

FEEDER ID	# OF SETS	BUILDING WIRE QUANTITY & SIZE TYPE THHN - DRY TYPE THWN - WET	MINIMUM CONDUIT SIZE
200	1	3#250kCM,#6 G	2 1/2"
400Y	2	4#250kCM,#3 G	2 1/2"
600LI	2	COORDINATE W. DOMINION	4"

NOTES:
ELECTRICAL CONTRACTOR TO VERIFY CONDUIT SIZE REQUIRED IF WIRE TYPES OTHER THAN THOSE LISTED ABOVE ARE USED.
FEEDER SIZES BASED ON TABLE 310.16, 75° C.
SIZES ADJUSTED PER NEC 110.14.



RISER DIAGRAM

SCHEMATIC

BUILDING GROUNDING ELECTRODE SYSTEM (BGES)

SCHEMATIC

LIGHTING SCHEDULE

TAG	ITEM	DESCRIPTION	LOCATION	FINISH	NOTES
L-1	APARTMENT CEILING FAN	VISUAL COMFORT, DISCUS CLASSIC 44" LED CEILING FAN, 5DIC44BKD-V1	APARTMENTS	MATTE BLACK	INTEGRATED LED LAMP.
L-2	APARTMENT VANITY LIGHT	KOHLER, HAUKSBEE TWO-LIGHT SONCE, K-32286-SC02-CPL	APARTMENTS	POLISHED CHROME	PROVIDE WITH (2) E26 G16.5 5.5W FROSTED LAMP - 2700K
L-3	APARTMENT ISLAND ACCENT PENDANT	VISUAL COMFORT, MILTON ROAD PENDANT, TOB 5158HAB-WG	APARTMENTS	HAND-RUBBED ANTIQUE BRASS	PROVIDE WITH (1) E26 A19 15W LAMP 2700K
L-4	APARTMENTS	LURALINE LIGHTING, LEGACY PRODUCT, SH12 CM	APARTMENTS	COPPER MINE OR GOLD RUSH	PROVIDE WITH (1) E26 A19 15W LAMP 2700K
L-5	APARTMENT BATHROOM LIGHT/FAN	SEE MECHANICAL SCHEDULE	APARTMENTS	WHITE	PROVIDE WITH (1) E26 A19 15W LAMP 2700K
L-6	APARTMENT SHOWER LIGHT	LITELINE, SLIM LED ORIGINAL, 6" RECESSED DOWNLIGHT, SML6-CCT-WH	APARTMENTS	WHITE	CCT SET TO 2700K /1040 LUMENS
L-7	FIRST FLOOR ANTIQUE ACCENT PENDANT	BENJAMIN FRENCH, EARLY 1900S CHANDELIER, SINGLE SOCKET WITH BUILT-IN REFLECTOR; 20"X20" PLUS CHAIN	FIRST FLOOR RETAIL	POLISHED BRASS WITH CARAMEL SLAG GLASS PANELS AND MILK GLASS BOTTOM	PROVIDE WITH (1) E26 A19 15W LAMP 2700K DIMMABLE
L-8	FIRST FLOOR ANTIQUE PENDANTS	BENJAMIN FRENCH, 1930 SCHOOLHOUSE PENDANT WITH VICTORIAN BRASS FITTER; SINGLE SOCKET, SALVAGED FROM KING AND QUEEN COUNTY, VA, APPX 12"-14" DIAMETER	FIRST FLOOR	POLISHED BRASS WITH MILK GLASS	PROVIDE WITH (1) E26 A19 15W LAMP 2700K DIMMABLE
L-9	FIRST FLOOR ANTIQUE PENDANTS AT LUNCH COUNTER	BENJAMIN FRENCH, 1920 ANTIQUE MILK GLASS WAFFLE PENDANTS, 8" DIAMETER, CHORD	FIRST FLOOR LUNCH COUNTER	POLISHED BRASS FITTINGS, WAFFLE MILK GLASS, 1000681 ADL# D9323 CHORD	PROVIDE WITH (1) CLEAR A19 LAMP WITH EDISON STYLE FILAMENT. DIMMABLE
L-10	FIRST FLOOR FLUSH MOUNT	BENJAMIN FRENCH, 1930 SCHOOLHOUSE WITH BRASH FLUSHMOUNT FITTER.	FIRST FLOOR ALCOVE AND BATHROOM	BLACK, OPAL GLASS	PROVIDE WITH (1) E26 A19 15W LAMP 2700K
L-11	BASEMENT WALL SCONCE	VISUAL COMFORT, MODERN LIBRARY SCONCE, OB-TOB 2327HAB-L	BASEMENT	HAND-RUBBED ANTIQUE BRASS WITH LINEN SHADE	PROVIDE WITH ONE E12 LED CANDELABRA LAMP 40W EQUIVALENT DIMMABLE
L-12	LED STRIP LIGHT	Q-TRAN MICRO 5 ATOM STATIC WHITE 4.0, DIMMABLE LED LIGHT - 2700K	BASEMENT DISPLAY SHELVING; UNDERBAR	BLACK	PROVIDE ALL REQ'D DRIVERS
L-13	BASEMENT WALL SCONCE	"THE FREDERICKSBURG SCONCE" BY JARRELL PROPERTIES	BASEMENT		PROVIDE LAMP AS REQ'D
L-14	BASEMENT BATHROOM SCONCE	KOHLER, KERNEN SCONCE	BASEMENT BATHROOM	BRUSHED BRASS	PROVIDE LAMP AS REQ'D
L-15	ADJUSTABLE ART SPOTS	TECH LIGHTING, TELLIUM LED HEAD, MONOPOINT, 12" 700MPTLML12Z-LED MOD 2700	BASEMENT	ANTIQUE BRONZE	INTEGRATED LED LAMP.
L-16	BOH FIXTURES	UTOPIA LIGHTING, ELS LED STRIP LIGHT. 4'	BASEMENT MECHANICAL ROOMS	WHITE	INTEGRATED LED LAMP.
L-17	COMMERCIAL KITCHEN	UTOPIA LIGHTING, 2X2 FLAT PANEL LSP-2G	FIRST FLOOR COMMERCIAL KITCHEN	WHITE	INTEGRATED LED LAMP.
L-18	BAR TABLE LAMP	VISUAL COMFORT, DORIS MEDIUM TABLE LAMP, RL 3127NB-SBP	BASEMENT BAR	NATURAL BRASS WITH SILK BOX PLEAT	PROVIDE WITH (1) E26 A19 15W LAMP 2700K
L-19	BASEMENT BATHROOM FLUSH MOUNT	RBW, PRINT FLUSH MOUNT, SMALL GLOBE, CLEAR GLASS, PRFM-A-CF-PC20-27-1_UNV	BASEMENT BATHROOM	MATTE WHITE	NTEGRATED LED LAMP.
L-20	SPEAKEASY LIGHTING	FLEXA LIGHTING, KOINE 6 KW65227DWCCE	BASEMENT	BLACK WIRE/FINISH	PROVIDE ALL REQ'D DRIVERS
L-21	LED STRIP FIXTURE	QTRAN MICRO 5 TILT FLAT WARM DIM, TILT-01-DW	BASEMENT STAIRWELL	BLACK WIRE/FINISH	PROVIDE ALL REQ'D DRIVERS
L-22	ANTIQUE VANITY SCONCE	ANTIQUE SCHONCES, BENJAMIN FRENCH	FIRST FLOOR BATHROOM	CHROME	PROVIDE LAMP AS REQ'D
X-1	ANTIQUE EXIT SIGN WITH EM LIGHTS	VINTAGE HARDWARE & LIGHTING 1920 STYLE CAST EXIT 420R-SBSM-XN1NN WITH LED TOP LIGHTS & TEST BUTTON	PUBLIC AREAS		PROVIDE WITH BATTERY BACKUP 90 MINS OF SUPPLY ARROWS AS SHOWN.
X-2	THERMOPLASTIC EXIT FIXTURE WITH EM FIXTURE AND BATTERY BACKUP	CARPENTER CCXLB-X-R-W-RC-E	NON PUBLIC AREAS	WHITE	PROVIDE WITH BATTERY BACKUP 90 MINS OF SUPPLY ARROWS AS SHOWN.
EL-1	4" DOWNLIGHT W. BATTERY BACKUP.	LITE LINE SLMPRO4-35K-EM-WH	EXTERIOR EGRESS FIXTURE	WHITE	PROVIDE WITH BATTERY BACKUP 90 MINS OF SUPPLY ARROWS AS SHOWN.
EL-2	10" WALL LANTERN	VISUAL COMFORT FREDRICKSBURG SMALL ONE LIGHT OUTDOOR WALL LANTERN 8547701-12	EXTERIOR FIXTURE	BLACK	PROVIDE WITH BATTERY BACKUP 90 MINS OF SUPPLY ARROWS AS SHOWN.
EM	EMERGENCY LIGHTING UNIT	CARPENTER PMRL-B	EMERGENCY UNIT	BLACK (CONFIRM W. OWNER)	PROVIDE WITH BATTERY BACKUP 90 MINS OF SUPPLY ARROWS AS SHOWN.

ELECTRICAL SYMBOLS

AFF TOP OF OUTLET UNLESS NOTED	SYMBOL	DESCRIPTION
AS NOTED		PENDANT OUTLET WITH LED FIXTURE, REFER TO SCHEDULE
GRID		CEILING OUTLET WITH LED FIXTURE - PENDANT OR RECESSED, REFER TO SCHEDULE
CEILING		CEILING OR BAR MOUNTED OUTLET WITH LED FIXTURE. (B)INDICATES BATTERY BACKUP
CEILING		CEILING MOUNTED OUTLET WITH DIRECTIONAL LED FIXTURE.
AS REQ'D		WALL OUTLET WITH LED FIXTURE
CEILING		FAN/LIGHT COMBO OUTLET
		LIGHTING CONTROL WIRE, PROVIDE 2 WIRE 0-10V CONTROL WIRING (GREY/PURPLE).
		HOME RUN
8'-0"		EXIT SIGN WITH EMERGENCY HEADS
8'-0"		EMERGENCY LIGHTING UNIT WITH BATTERY BACKUP
4'-0"	S	LOCAL SWITCH, SINGLE, THREE OR FOUR WAY AS INDICATED.
4'-0"	S^{M}	LOCAL SWITCH, OCCUPANCY SENSING, 120-277V, 20A
4'-0"	$D^{\#}$	LOCAL DIMMER, MATCHING FIXTURE DIMMING REQUIREMENTS (TRIAC/PHASE/0-10V)
4'-0"	F_S	LOCAL FAN SPEED CONTROLLER
CEILING		CEILING FAN OUTLET
1'-8"		125V, 3W, 20A, 2P, 1Ø DUPLEX RECEPTACLE, WALL - "C" INDICATES ABOVE COUNTER ELEVATION
1'-8"		125V, 3W, 20A, 2P, 1Ø DOUBLE DUPLEX RECEPTACLE, WALL - "C" INDICATES ABOVE COUNTER ELEVATION
1'-8"	G^{C}	125V, 3W, 20A, 2P, 1Ø, DUPLEX GROUND FAULT RECEPTACLE WALL - "GC" INDICATED ABOVE COUNTER ELEVATION.
CEILING	S	SMOKE DETECTOR
1'-8"	## ##	DRYER/RANGE OUTLET. PROVIDE NEMA CODE INDICATED.
5'-4"		DISCONNECT SWITCH, MATCH EQUIPMENT NAME PLATE RATING.
6'-0"	PNL	ELECTRICAL PANELBOARD SURFACE MOUNTED
6'-0"	PNL	ELECTRICAL PANELBOARD RECESS MOUNTED
AS REQ'D		LOW VOLTAGE OUTLET COORDINATE REQUIREMENTS WITH INSTALLER.

SPLIT SYSTEM SCHEDULE

MARK	ELECTRICAL DATA		
	VOLTAGE / PHASE	MCA (AMPS)	MOP (AMPS)
INDOOR UNITS			
AHU-B	208 / 1	4.13	15
OAP-B	208 / 1	4.8	15
AHU-1	208 / 1	5.63	15
CCU-1-AA	208 / 1	1.0	NOTE 6
AHU-2A	208 / 1	4.13	NOTE 6
CCU-2B-1	208 / 1	1.0	15
CCU-2B-2	208 / 1	1.0	15
CCU-2B-3	208 / 1	1.0	15
CCU-2B-4	208 / 1	1.0	15
HWU-K1	208 / 1	1.0	15
HWU-K2	208 / 1	1.0	15
OUTDOOR UNITS			
HP-BH	208 / 1	29	40
HP-BV	208 / 3	32	50
HP-1H	208 / 1	29	40
HP-1AA	208 / 1	14	25
HP-2A	208 / 1	19	25
HP-2B	208 / 1	29	40
HP-KH	208 / 1	22.1	25

ELECTRICAL ABBREVIATIONS

A	-	AMPS	HP	-	HORSEPOWER
AC	-	AIR CONDITIONING	HW	-	HOT WATER
ACS	-	ABOVE COUNTER SPLASHBACK	HZ	-	HERTZ
BRKR	-	BREAKER	JB	-	JUNCTION BOX
C	-	CONDUIT	KVA	-	KILOVOLT-AMPS
CLG	-	CEILING	KW	-	KILOWATT
COMB	-	COMBINATION	MS	-	MOTOR STARTER
CRT	-	CIRCUIT	NF	-	NON-FUSIBLE
CT	-	CURRENT TRANSFORMER	PNL	-	PANEL
CUH	-	CABINET UNIT HEATER	REC	-	RECEPTACLE
CW	-	COLD WATER	S/N	-	SOLID NEUTRAL
DISC	-	DISCONNECT SWITCH	S/O	-	SPACE ONLY
DP	-	DOUBLE POLE	SP	-	SINGLE POLE
(E) EX	-	EXISTING	ST	-	SINGLE THROW
EGC	-	EQUIPMENT GROUND CONDUCTOR	SW	-	SWITCH
EM	-	EMERGENCY	TRANS	-	TRANSFORMER
EMT	-	ELECTRIC METALLIC TUBING	UH	-	UNIT HEATER
EUH	-	ELECTRIC UNIT HEATER	V	-	VOLT
EWC	-	ELECTRIC WATER COOLER	W	-	WATTS
FA	-	FIRE ALARM	WL	-	WHILE-IN-USE
FLA	-	FULL LOAD AMPS	WP	-	WEATHERPROOF
GEC	-	GROUND ELECTRODE CONDUCTOR	Ø	-	PHASE
GF	-	GROUND FAULT INTERRUPT			
GRS	-	GALVANIZED RIGID STEEL CONDUIT			

ELECTRICAL SHEET INDEX

JARRELL PROPERTIES, INC.

SANDERS ARCHITECTURE PC
16125 RACCOON FORD RD
CULPEPER, VIRGINIA 22701
(v)540-829-2590

JARRELL PROPERTIES, INC.
TENANT ALTERATIONS
901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

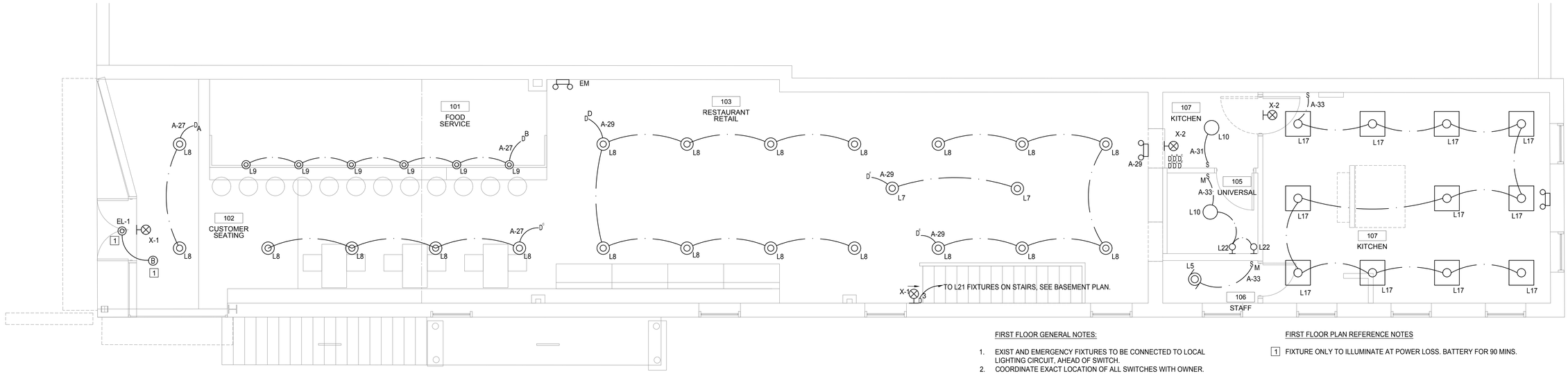
COMMONWEALTH OF VIRGINIA
DAVID E. MINOR
Lic. No. 038199
10/25/2024
PROFESSIONAL ENGINEER

REVISIONS:

DRAWN:	CRN
CHECKED:	DEM
SCALE:	AS NOTED
DATE:	10-25-2024
PROJECT #:	2212

ELECTRICAL LEGEND & DETAILS

E0.1



FIRST FLOOR LIGHTING PLAN

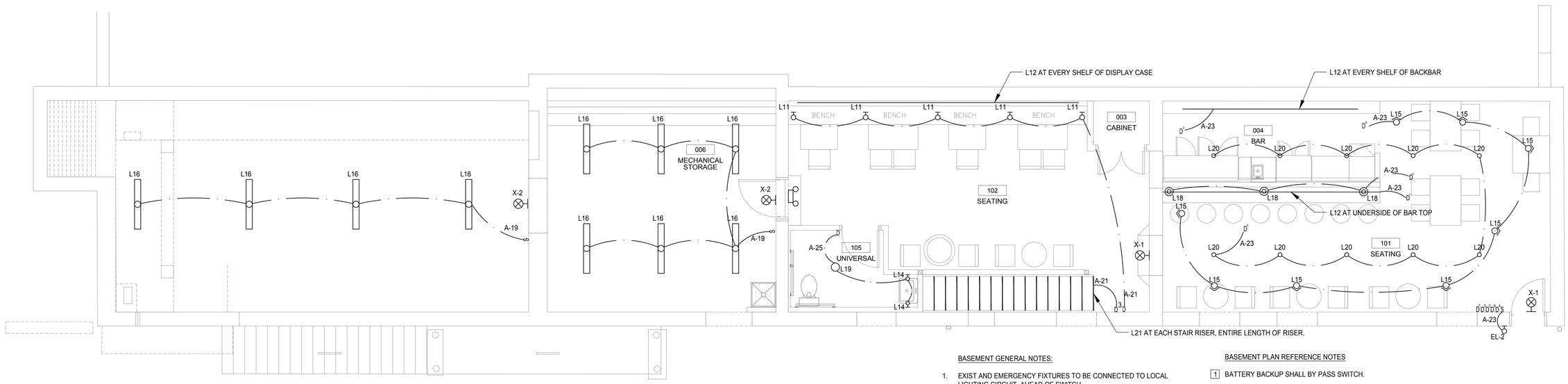
SCALE: 1/4" = 1'-0"

FIRST FLOOR GENERAL NOTES:

1. EXIST AND EMERGENCY FIXTURES TO BE CONNECTED TO LOCAL LIGHTING CIRCUIT, AHEAD OF SWITCH.
2. COORDINATE EXACT LOCATION OF ALL SWITCHES WITH OWNER.

FIRST FLOOR PLAN REFERENCE NOTES

[1] FIXTURE ONLY TO ILLUMINATE AT POWER LOSS. BATTERY FOR 90 MINS.



BASEMENT LIGHTING PLAN

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

BASEMENT GENERAL NOTES:

1. EXIST AND EMERGENCY FIXTURES TO BE CONNECTED TO LOCAL LIGHTING CIRCUIT, AHEAD OF SWITCH.

BASEMENT PLAN REFERENCE NOTES

[1] BATTERY BACKUP SHALL BY PASS SWITCH.

GRAPHIC SCALE

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

4' 2' 0 4' 8'

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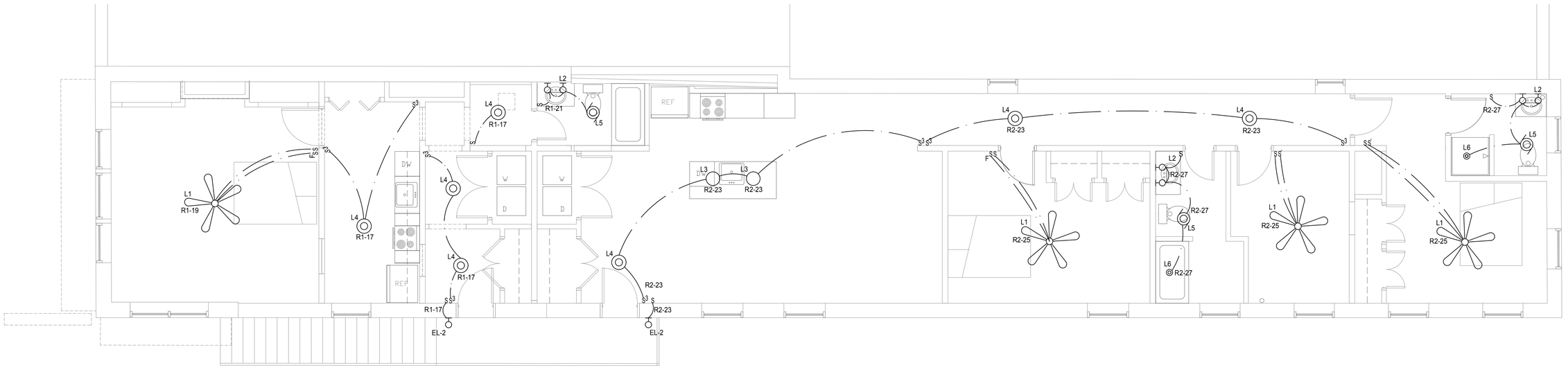
REVISIONS:

DRAWN:	NOTED
CHECKED:	NOTED
SCALE:	1/4" = 1'-0"
DATE:	10-25-2024
PROJECT #:	2212

ELECTRICAL
BASEMENT & FIRST
FLOOR LIGHTING PLANS

E1.1



SECOND FLOOR LIGHTING PLAN

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

GRAPHIC SCALE

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

4' 2' 0 4' 8'

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DRAWN:	CRN
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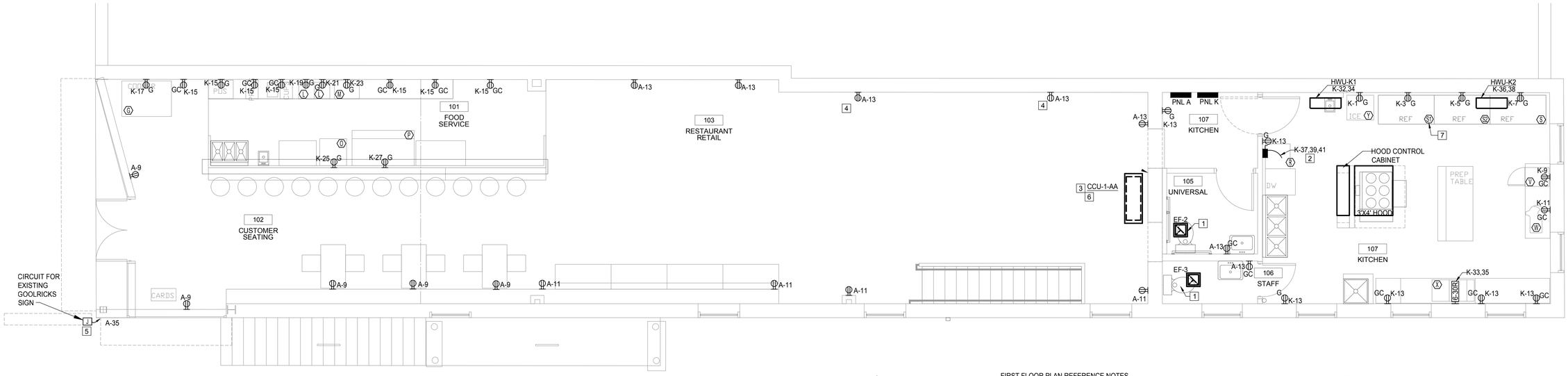
SCALE:	1/4" = 1'-0"
DATE:	10-25-2024
PROJECT #:	2212

ELECTRICAL
SECOND FLOOR
LIGHTING PLAN

E1.2



FIRST FLOOR POWER PLAN

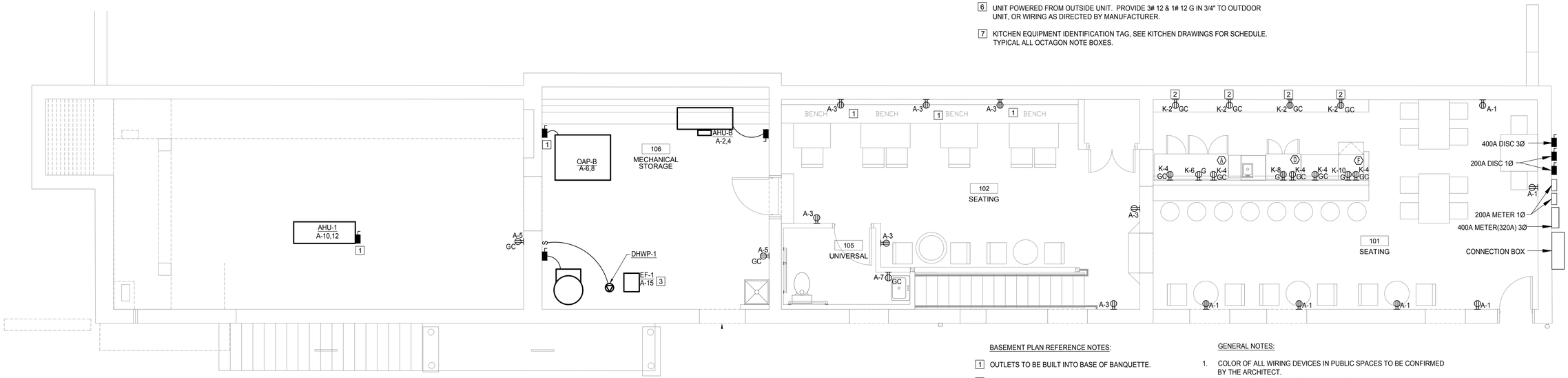
SCALE: 1/4" = 1'-0"

FIRST FLOOR PLAN REFERENCE NOTES

1. CONNECT TO SWITCHED LIGHTING CIRCUIT IN ROOM. SEE SHEET E1.1 FOR CIRCUITING INFORMATION.
2. PROVIDE 3P 208V 60A NEMA 3R NON-FUSED DISCONNECT
3. UNIT TO BE PRICED AS ADD ALTERNATE.
4. RECEPTACLE TO BE MOUNTED HORIZONTALLY IN KICK PLATE OF CASEWORK.
5. CIRCUIT TO BE ROUTED THROUGH EXTERIOR LIGHTING CONTACTOR. CONTACTOR TO BE CONTROLLED BY ASTRONOMICAL TIME CLOCK.
6. UNIT POWERED FROM OUTSIDE UNIT. PROVIDE 3# 12 & 1# 12 G IN 3/4" TO OUTDOOR UNIT, OR WIRING AS DIRECTED BY MANUFACTURER.
7. KITCHEN EQUIPMENT IDENTIFICATION TAG, SEE KITCHEN DRAWINGS FOR SCHEDULE. TYPICAL ALL OCTAGON NOTE BOXES.

FIRST FLOOR GENERAL NOTES:

1. COLOR OF ALL WIRING DEVICES IN PUBLIC SPACES TO BE CONFIRMED BY THE ARCHITECT.
2. NO WIRING IS TO BE EXPOSED IN PUBLIC SPACES.
3. DECORATIVE WALL PLATES SHALL BE USED IN PUBLIC SPACES. COORDINATE WALL PLATE TYPES WITH OWNER PRIOR TO INSTALLATION.
4. EXACT LOCATIONS FOR KITCHEN EQUIPMENT CONNECTIONS AND RECEPTACLES FOR BAR EQUIPMENT MUST BE COORDINATED WITH EQUIPMENT PROVIDER PRIOR TO ROUGH-IN. LOCATIONS SHOWN FOR REFERENCE ONLY.



BASEMENT POWER PLAN

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

BASEMENT PLAN REFERENCE NOTES:

1. OUTLETS TO BE BUILT INTO BASE OF BANQUETTE.
2. ALL OUTLET LOCATIONS IN THIS AREA TO BE COORDINATED WITH BACK BAR DESIGNER.
3. FAN CONTROLLED BY TIMECLOCK, SEE MECHANICAL DRAWINGS.

GENERAL NOTES:

1. COLOR OF ALL WIRING DEVICES IN PUBLIC SPACES TO BE CONFIRMED BY THE ARCHITECT.
2. NO WIRING IS TO BE EXPOSED IN PUBLIC SPACES.
3. DECORATIVE WALL PLATES SHALL BE USED IN PUBLIC SPACES. COORDINATE WALL PLATE TYPES WITH OWNER PRIOR TO INSTALLATION.
4. COORDINATE EXACT PLACEMENT OF DISCONNECT SWITCHES WITH MECHANICAL EQUIPMENT INSTALLER. DO NOT BLOCK ACCESS PANELS, PROVIDE SELF SUPPORTED STRUT STAND IF REQUIRED

GRAPHIC SCALE

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

4' 2' 0 4' 8'

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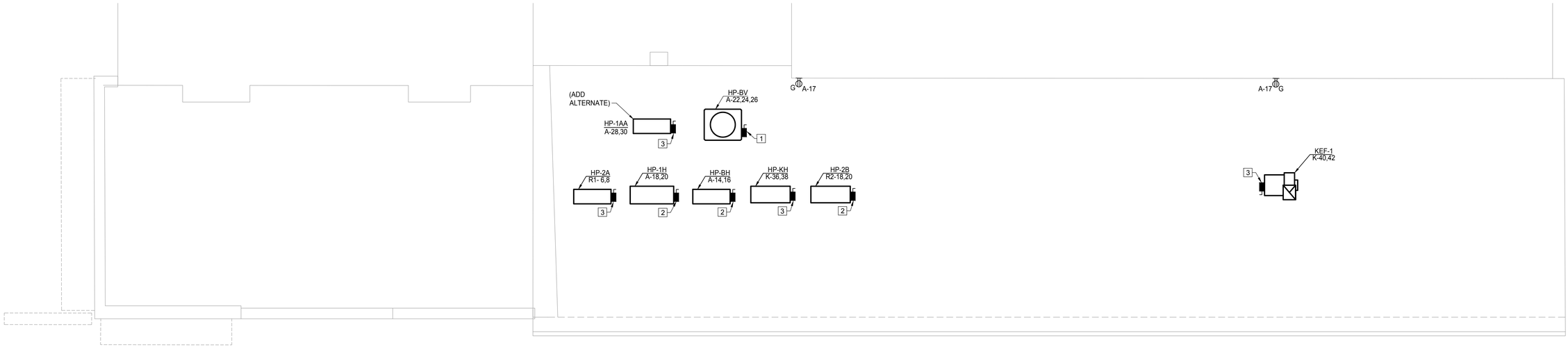
PROFESSIONAL ENGINEER

REVISIONS:

DRAWN:	NOTED
CHECKED:	NOTED
SCALE:	1/4" = 1'-0"
DATE:	10-25-2024
PROJECT #:	2212

ELECTRICAL BASEMENT & FIRST FLOOR POWER PLANS

E2.1



ROOF POWER PLAN

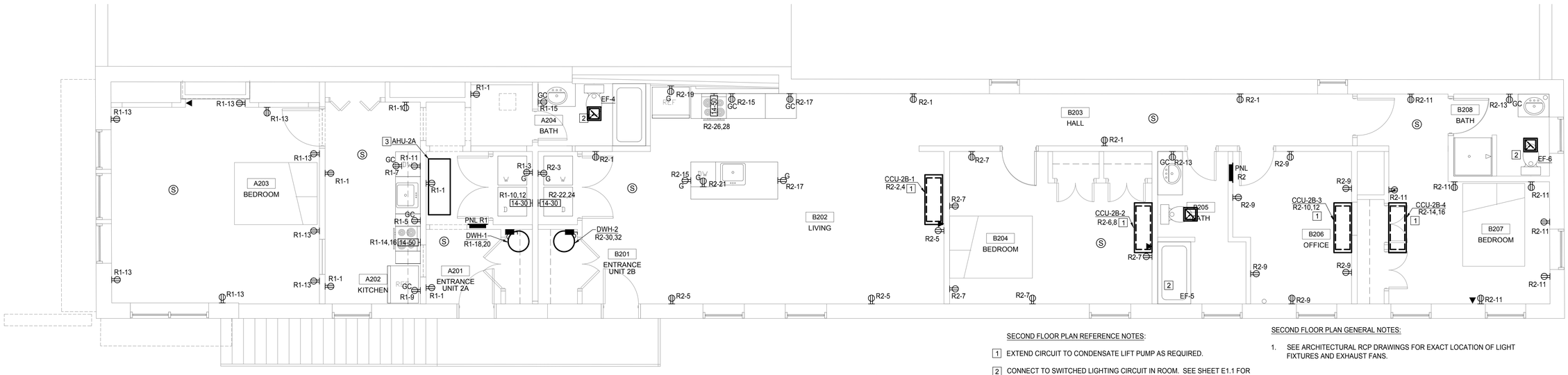
SCALE: 1/4" = 1'-0"

ROOF PLAN REFERENCE NOTES:

1. PROVIDE 3P 208V 60A NEMA 3R NON-FUSED DISCONNECT.
2. PROVIDE 2P 208V 60A NEMA 3R NON-FUSED DISCONNECT.
3. PROVIDE 2P 208V 30A NEMA 3R NON-FUSED DISCONNECT.

PLAN GENERAL NOTES:

1. COORDINATE EXACT PLACEMENT OF DISCONNECT SWITCHES WITH MECHANICAL EQUIPMENT INSTALLER. DO NOT BLOCK ACCESS PANELS, PROVIDE SELF SUPPORTED STRUT STAND IF REQUIRED.



SECOND FLOOR POWER PLAN

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

SECOND FLOOR PLAN REFERENCE NOTES:

1. EXTEND CIRCUIT TO CONDENSATE LIFT PUMP AS REQUIRED.
2. CONNECT TO SWITCHED LIGHTING CIRCUIT IN ROOM. SEE SHEET E1.1 FOR CIRCUITING INFORMATION.
3. UNIT FED ELECTRICAL FROM OUTDOOR UNIT HP-2A.

SECOND FLOOR PLAN GENERAL NOTES:

1. SEE ARCHITECTURAL RCP DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES AND EXHAUST FANS.

GRAPHIC SCALE

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

4' 2' 0 4' 8'

JARRELL PROPERTIES, INC.

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10/25/2024
PROFESSIONAL ENGINEER

REVISIONS:

DRAWN:	CRN
CHECKED:	DEM
SCALE:	1/4" = 1'-0"
DATE:	10-25-2024
PROJECT #:	2212

ELECTRICAL SECOND FLOOR & ROOF POWER PLANS

E2.2

PANEL A | VOLTS 120/208 | MAIN AMPS 400
MFG SQUARE-D | WIRE 4 | NEUTRAL AMPS 400
PNL TYPE NQ | PHASE 3
ENCLOSURE SURFACE

CIRCUIT NO	CIRCUIT DESCRIPTION	KVA	BRKR. FRAME	BRKR. POLES	BRKR. AMPS	WIRE KAIC	WIRE PHASE	WIRE NEUT	WIRE EGC	CONDUIT	MAIN LUGS	CONDUIT	WIRE EGC	WIRE NEUT	WIRE PHASE	BRKR. KAIC	BRKR. AMPS	BRKR. POLES	BRKR. FRAME	KVA	CIRCUIT DESCRIPTION	CIRCUIT NO
1	REC - (BSMT) RM101 GEN USE	1.08	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	15	2	QOB	0.86	(BSMT) RM106 AHU-B	2
3	REC - (BSMT) RM102 GEN USE	1.08	QOB	1	20	10	12	12	12	3/4												4
5	REC - (BSMT) RM106 GEN USE	0.36	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	15	2	QOB	1.00	(BSMT) RM106 OAP-B	6
7	REC - (BSMT) BATHROOMS	0.18	QOB	1	20	10	12	12	12	3/4												8
9	REC - (1 FL) RM102 GEN USE	0.90	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	15	2	QOB	1.17	(BSMT) RM106 AHU-1	10
11	REC - (1 FL) RM103 GEN USE #1	0.90	QOB	1	20	10	12	12	12	3/4												12
13	REC - (1 FL) RM103 GEN USE #2	0.90	QOB	1	20	10	12	12	12	3/4		3/4	10	8	8	10	40	2	QOB	6.04	(ROOF) HP-BH	14
15	(BSMT) RM106 EF-1	0.09	QOB	1	20	10	12	12	12	3/4												16
17	REC - (ROOF)	0.36	QOB	1	20	10	12	12	12	3/4		3/4	10	8	8	10	40	2	QOB	6.04	(ROOF) HP-1H	18
19	LTS - (BSMT) RM006 MECHANICAL STORAGE	0.45	QOB	1	20	10	12	12	12	3/4												20
21	LTS - (BSMT) RM102 SEATING	0.43	QOB	1	20	10	12	12	12	3/4		1	8	6	6	10	50	3	QOB	11.5	(ROOF) HP-BV	22
23	LTS - (BSMT) RM101 SEATING & RM004 BAR	0.25	QOB	1	20	10	12	12	12	3/4												24
25	LTS - (BSMT) RM105 BATHROOM	0.20	QOB	1	20	10	12	12	12	3/4												26
27	LTS - (1 FL) RM102 SEATING	0.78	QOB	1	20	10	12	12	12	3/4		3/4	10	10	10	10	25	2	QOB	2.9	(ROOF) HP-1AA - CCU-1-AA ADD ALTERNATE	28 30
29	LTS - (1 FL) RM103 RESTAURANT	1.04	QOB	1	20	10	12	12	12	3/4												30
31	LTS - (1 FL) RM107 KITCHEN	0.60	QOB	1	20	10	12	12	12	3/4												32
33	LTS - (1 FL) BATHROOMS	0.13	QOB	1	20	10	12	12	12	3/4		1	8		6	10	50	3	QOB	50	(BSMT) DWH-3	34
35	SIGNAGE	0.10	QOB	1	20	10	12	12	12	3/4												36
37	SPARE	-	QOB	1	20	10										10	20	1	QOB	-	SPARE	38
39	SPARE	-	QOB	1	20	10										10	20	1	QOB	-	SPARE	40
41	SPARE	-	QOB	1	20	10										10	20	1	QOB	-	SPARE	42
	TOTAL	9.73	ADD														TOTAL			22.26	= TOTAL	PNL A 32.0 KVA / PNL K 43.5 KVA / TOTAL 75.5 KVA (209 AMPS)

PANEL LOCATION: 1ST FLOOR - KITCHEN RM107

SERVICE LISTED/RATED

REMARKS: PROVIDE FEED THRU LUGS FOR PNL K

BRANCH BREAKERS TO SERIES RATE WITH EXTERIOR MAIN DISCONNECT FUSES.

PANEL K | VOLTS 120/208 | MAIN AMPS 400
MFG SQUARE-D | WIRE 4 | NEUTRAL AMPS 400
PNL TYPE NQ | PHASE 3
ENCLOSURE SURFACE

CIRCUIT NO	CIRCUIT DESCRIPTION	KVA	BRKR. FRAME	BRKR. POLES	BRKR. AMPS	WIRE KAIC	WIRE PHASE	WIRE NEUT	WIRE EGC	CONDUIT	MAIN LUGS	CONDUIT	WIRE EGC	WIRE NEUT	WIRE PHASE	BRKR. KAIC	BRKR. AMPS	BRKR. POLES	BRKR. FRAME	KVA	CIRCUIT DESCRIPTION	CIRCUIT NO
1	REC - (1 FL) RM107 ICE MACHINE MAKER (Y)	1.55	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	0.72	REC - (BSMT) RM101 GEN USE	2
3	REC - (1 FL) RM107 REACH-IN FRIDGE (S1)	0.28	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	0.90	REC - (BSMT) RM101 GEN USE	4
5	REC - (1 FL) RM107 REACH-IN FRIDGE (S2)	0.28	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	0.38	REC - (BSMT) RM101 BAR FRIDGE (A)	6
7	REC - (1 FL) RM107 REACH-IN FRIDGE (S)	0.28	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	0.24	REC - (BSMT) RM101 UNDER COUNTER FRIDGE (D)	8
9	REC - (1 FL) RM107 MICROWAVE (V)	2.16	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	0.60	REC - (BSMT) RM101 ICE MACHINE (F)	10
11	REC - (1 FL) RM107 MEAT SLICER (W)	0.65	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	0.10	HOOD CONTROLS/LIGHTING	12
13	REC - (1 FL) RM107 GEN USE	1.08	QOB	1	20	10	12	12	12	3/4						10	20	1	QOB	-	SPARE	14
15	REC - (1 FL) RM101 GEN USE	1.26	QOB	1	20	10	12	12	12	3/4						10	20	1	QOB	-	SPARE	16
17	REC - (1 FL) RM101 REACH-IN COOLER (G)	1.86	QOB	1	20	10	12	12	12	3/4						10	20	1	QOB	-	SPARE	18
19	REC - (1 FL) RM101 MULTI-MIXER (L)	0.90	QOB	1	20	10	12	12	12	3/4						10	20	1	QOB	-	SPARE	20
21	REC - (1 FL) RM101 MULTI-MIXER (L)	0.90	QOB	1	20	10	12	12	12	3/4						10	20	1	QOB	-	SPARE	22
23	REC - (1 FL) RM101 COFFEE MAKER (M)	1.60	QOB	1	20	10	12	12	12	3/4						10	20	1	QOB	-	SPARE	24
25	REC - (1 FL) RM101 ICE CREAM FREEZER (O)	0.23	QOB	1	20	10	12	12	12	3/4						10	20	1	QOB	-	SPARE	26
27	REC - (1 FL) RM101 PREP-TABLE W/ CUTTING BOARD (P)	0.53	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	15	1	QOB	0.21	(1 FL) RM107 HWU-K1	28
29	SPARE	-	QOB	1	20	10																30
31	SPARE	-	QOB	1	20	10						3/4	12	12	12	10	15	1	QOB	0.21	(1 FL) RM107 HWU-K2	32
33	(1 FL) RM107 CONVEYOR OVEN (X)	3.60	QOB	2	30	10	10	10	10	3/4												34
35												3/4	12	10	10	10	25	1	QOB	4.60	(ROOF) HP-KH	36
37																						38
39	(1 FL) RM107 DISHWASHER (R)	16.86	QOB	3	50	10	6	6	8	1		3/4	12	12	12	10	20	1	QOB	1.44	(ROOF) KEF-1	40
41																						42
	TOTAL	34.1	ADD														TOTAL			9.4	= TOTAL	43.5 KVA (120 AMPS)

PANEL LOCATION: 1ST FLOOR - KITCHEN RM107

SERVICE LISTED/RATED

REMARKS: BRANCH BREAKERS TO SERIES RATE WITH EXTERIOR MAIN DISCONNECT FUSES.

PROVIDE SHUNT TRIP FOR DEVICES BELOW HOOD

PANEL R1 | VOLTS 120/208 | MAIN AMPS 200
MFG SQUARE-D | WIRE 3 | NEUTRAL AMPS 200
PNL TYPE NQ | PHASE 1
ENCLOSURE SURFACE

CIRCUIT NO	CIRCUIT DESCRIPTION	KVA	BRKR. FRAME	BRKR. POLES	BRKR. AMPS	WIRE KAIC	WIRE PHASE	WIRE NEUT	WIRE EGC	CONDUIT	MAIN LUGS	CONDUIT	WIRE EGC	WIRE NEUT	WIRE PHASE	BRKR. KAIC	BRKR. AMPS	BRKR. POLES	BRKR. FRAME	KVA	CIRCUIT DESCRIPTION	CIRCUIT NO
* 1	REC - ENTRANCE AND HALLWAYS	0.72	QOB	1	20	10	12	12	12	3/4						10	20	2	QOB	--	SPARE	2
* 3	REC - A201 LAUNDRY/WASHER	1.50	QOB	1	20	10	12	12	12	3/4												4
* 5	REC - A202 KITCHEN #1	0.54	QOB	1	20	10	12	12	12	3/4		3/4	10	10	10	10	25	2	QOB	3.54	(ROOF) HP-2A	6
* 7	REC - A202 KITCHEN #2	0.36	QOB	1	20	10	12	12	12	3/4												8
* 9	REC - A202 KITCHEN REFRIGERATOR	0.18	QOB	1	20	10	12	12	12	3/4		3/4	10	10	10	10	20	2	QOB	5.00	REC - A201 LAUNDRY DRYER	10
*11	REC - A202 KITCHEN DISH WASHER	1.44	QOB	1	20	10	12	12	12	3/4												12
*13	REC - A203 BEDROOM	1.08	QOB	1	20	10	12	12	12	3/4		1	10	6	6	10	50	2	QOB	8.32	REC - A202 KITCHEN RANGE	14
*15	REC - A204 BATHROOM	0.18	QOB	1	20	10	12	12	12	3/4												16
17	LTS - LIVING SPACE/KITCHEN	-	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	30	3	QOB	4.5	DWH-1	18
19	LTS - BEDROOMS	-	QOB	1	20	10	12	12	12	3/4												20
21	LTS - BATHROOM	-	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	-	SPARE	22
23	SPARE	-	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	-	SPARE	24
25	SPARE	-	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	-	SPARE	26
27	SPARE	-	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	20	1	QOB	-	SPARE	28
29	S/O	-	QOB	1	20	10															S/O	30
31	S/O	-	QOB	1	20	10															S/O	32
33	S/O	-	QOB	1	20	10															S/O	34
35	S/O	-	QOB	1	20	10															S/O	36
37	S/O	-	QOB	1	20	10															S/O	38
39	S/O	-	QOB	1	20	10															S/O	40
41	S/O	-	QOB	1	20	10															S/O	42

PANEL LOCATION: 2ND FLOOR - APT 2A - ENTRANCE A201

SERVICE LISTED/RATED
S/O = SPACE ONLY

REMARKS: * PROVIDE ACFI BREAKER

BRANCH BREAKERS TO SERIES RATE WITH EXTERIOR MAIN DISCONNECT FUSES.

PANEL R2 | VOLTS 120/208 | MAIN AMPS 200
MFG SQUARE-D | WIRE 3 | NEUTRAL AMPS 200
PNL TYPE NQ | PHASE 1
ENCLOSURE SURFACE

CIRCUIT NO	CIRCUIT DESCRIPTION	KVA	BRKR. FRAME	BRKR. POLES	BRKR. AMPS	WIRE KAIC	WIRE PHASE	WIRE NEUT	WIRE EGC	CONDUIT	MAIN LUGS	CONDUIT	WIRE EGC	WIRE NEUT	WIRE PHASE	BRKR. KAIC	BRKR. AMPS	BRKR. POLES	BRKR. FRAME	KVA	CIRCUIT DESCRIPTION	CIRCUIT NO
* 1	REC - B201 ENTRANCE/HALL	0.72	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	15	2	QOB	0.21	B202 LIVING CCU-2B-1	2
* 3	REC - CLOTHES WASHER	1.50	QOB	1	20	10	12	12	12	3/4												4
* 5	REC - B202 LIVING	0.36	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	15	2	QOB	0.21	B204 BEDROOM CCU-2B-2	6
* 7	REC - B204 BEDROOM	0.90	QOB	1	20	10	12	12	12	3/4												8
* 9	REC - B206 OFFICE	1.08	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	15	2	QOB	0.21	B206 OFFICE CCU-2B-3	10
*11	REC - B207 BEDROOM	0.90	QOB	1	20	10	12	12	12	3/4												12
*13	REC - BATHROOMS	0.36	QOB	1	20	10	12	12	12	3/4		3/4	12	12	12	10	15	2	QOB	0.21	B207 BEDROOM CCU-2B-4	14
*15	REC - KITCHEN #1	0.36	QOB	1	20	10	12	12	12	3/4												16
*17	REC - KITCHEN #2	0.36	QOB	1	20	10	12	12	12	3/4		3/4	12	10	8	8	40	2	QOB	6.04	(ROOF) HP-2B	18
*19	REC - KITCHEN REFRIGERATOR	0.18	QOB	1	20	10	12	12	12	3/4												20
*21	REC - KITCHEN DISHWASHER	1.44	QOB	1	20	10	12	12	12	3/4		3/4	10	10	10	10	20	2	QOB	5.00	REC - B201 LAUNDRY DRYER	22
23	LTS - LIVING SPACE/KITCHEN	1.2	QOB	1	20	10	12	12	12	3/4												24
25	LTS - BEDROOMS	1.2	QOB	1	20	10	12	12	12	3/4		1	10	6	6	10	50	2	QOB	8.32	REC - KITCHEN RANGE	26
27	LTS - BATHROOM	1.2	QOB	1	20	10	12	12	12	3/4												28
29	SPARE	-	QOB	1	20	10						3/4	12	12	12	10	20	2	QOB	4.5	WATER HEATER DWH-2	30
31	SPARE	-	QOB	1	20	10																32
33	SPARE	-	QOB	1	20	10										10	20	1	QOB	-	SPARE	34
35	SPARE	-	QOB	1	20	10										10	20	1	QOB	-	SPARE	36
37	SPARE	-	QOB	1	20	10										10	20	1	QOB	-	SPARE	38
39	SPARE	-	QOB	1	20	10										10	20	1	QOB	-	SPARE	40
41	SPARE	-	QOB	1	20	10										10	20	1	QOB	-	SPARE	42

PANEL LOCATION: 2ND FLOOR - APT 2B - ENTRANCE B201

SERVICE LISTED/RATED
S/0 = SPACE ONLY

REMARKS: * PROVIDE ACFI BREAKER

BRANCH BREAKERS TO SERIES RATE WITH EXTERIOR MAIN DISCONNECT FUSES.

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COMMONWEALTH OF VIRGINIA
DAVID E. MINOR
Lic. No. 038199
10/25/2024
PROFESSIONAL ENGINEER

REVISIONS:

DRAWN:	CRN
CHECKED:	DEM
SCALE:	AS NOTED
DATE:	10-25-2024
PROJECT #:	2212

ELECTRICAL PANELBOARD SCHEDULES

E3.1

PLUMBING FIXTURES

MARK	FIXTURE	WASTE	VENT	HOT WATER	COLD WATER	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	DESCRIPTION	NOTES
FCO	FLOOR CLEANOUT	PIPE SIZE	-	-	-	JAY R. SMITH	4021S-PB	CI BODY, ADJUSTABLE TOP & FRAME, 5 3/4" ROUND POLISHED BRONZE TOP, GASKET SEAL BRONZE PLUG	-
FD-1	FLOOR DRAIN	2"	1 1/2"	-	-	JAY R. SMITH	2005Y-F37-NB	CI BODY, ADJUSTABLE STRAINER HEAD, 7" DIAMETER POLISHED NICKEL BRONZE TYPE "F37" STRAINER, EXTENED RIM, ASME A112.6.3	4
FD-2	FLOOR DRAIN	2" OR 3"	1 1/2"	-	-	JAY R. SMITH	2005Y-B-NB	CI BODY, ADJUSTABLE STRAINER HEAD, 5" / 6" SQUARE POLISHED NICKEL BRONZE, ASME A112.6.3	4
SD-1	SHOWER DRAIN	2"	1 1/2"	-	-	JAY R. SMITH	2005Y-A-NB	CI BODY, ADJUSTABLE STRAINER HEAD, 6" ROUND POLISHED NICKEL BRONZE, ASME A112.6.3	-
HB-1	HOSE BIBB	-	-	-	1/2"	WOODFORD	MODEL 19	BRASS BODY, STAINLESS STEEL SEAT, 3/4" MALE HOSE THREAD NOZZLE, INTEGRAL BACKFLOW PREVENTION, ASSE 1019, OVAL ALUMINUM WHEEL HANDLE, POLYCARBONATE WALL FLANGE	-
KS-1	KITCHEN SINK	1 1/2"	1 1/2"	1/2"	1/2"	TBD BY OWNER		KITCHEN SINK, 29"x18"x6 1/2" DOUBLE BOWL, 18 GA. TYPE 304 SS, DROP-IN STYLE WITH HARDWARE, SINGLE-HOLE, ASME A112.19.3, LKPD1 PERFECT DRAIN, STRAINER AND TAILPIECE, LKDS99 DISPOSAL STOPPER / STRAINER, P-TRAP, 1/2" STOPS AND SUPPLIES, ADA COMPLIANT, DECK MOUNTED FAUCET, 1.5 GPM, FOOD WASTE DISPOSER	
LAV-1	LAVATORY WALL MOUNT	1 1/4"	1 1/2"	1/2"	1/2"	TBD BY OWNER		LAVATORY, 19"x16"x5 1/2", OVAL VITREOUS CHINA BASIN, WALL-MOUNT, GRID DRAIN, 1 1/4" TAILPIECE AND P-TRAP, 1/2" STOPS AND SUPPLIES, ASME 112.19.2. PROVIDE DECK MOUNTED SINGLE HOLE FAUCET, xxxxxx MODEL xxxxxx, 0.5 GPM, ASME A112.18.1, ADA COMPLIANT	
LAV-2	LAVATORY COUNTER MOUNT	1 1/4"	1 1/2"	1/2"	1/2"	TBD BY OWNER		LAVATORY, 19"x16"x5 1/2", OVAL VITREOUS CHINA BASIN, UNDER-MOUNT, GRID DRAIN, 1 1/4" TAILPIECE AND P-TRAP, 1/2" STOPS AND SUPPLIES, ASME 112.19.2. PROVIDE DECK MOUNTED SINGLE HOLE FAUCET, xxxxx MODEL xxxxx, 0.5 GPM, xxx, ASME A112.18.1, ADA COMPLIANT	
MS-1	MOP SINK FLOOR MOUNT	3"	1 1/2"	1/2"	1/2"	TBD BY OWNER		MOP SINK, 24"x24"x10" DEEP, FLOOR MOUNTED, MOLDED COMPOSITE BASIN WITH INTEGRAL SS DRAIN, DOME STRAINER AND LINT BASKET, P-TRAP, AND WALL MOUNT SERVICE SINK FAUCET WITH INTEGRAL STOPS	
SH-1	SHOWER FIXTURE AND FITTINGS	SD-1	-	1/2"	1/2"	TBD BY OWNER (MOEN)		TEMPERATURE MIXING VALVE, ADJUSTABLE TEMPERATURE LIMIT, PRESSURE BALANCING, WITH 1/4 TURN STOPS MOEN 8371HD, SHOWER HEAD 1.5 GPM MOEN 6304EP15, SINGLE HANDLE TUB/SHOWER TRIM KIT TL183. ASME A112.18.1, ASME A112.18.3	
SHP-1	SHOWER PAN	-	-	-	-				
SOB-1	SUPPLY OUTLET BOX	-	-	-	1/2"	GUY GRAY - IPS CORP.	MIB1HAAB	WALL MOUNTED, METAL POWDER-COATED OUTLET BOX WITH QUARTER-TURN HAMMER ARRESTER VALVE ASSE 1010, NSF61, NSF / ANSI 372 AND ASME A112.18.1	-
TUB-1	BATHTUB	2"	1 1/2"	-	-	TBD BY OWNER (AMERICAN STANDARD)	(PRINCETON 2392.202 OR 2393.202)	COMPOSITE WITH PORCELAIN ENAMEL FINISH, ABOVE FLOOR ROUGH-IN, RECESS BATH WITH INTEGRAL APRON AND TILING FLANGE, SLIP RESISTANT FLOOR SURFACE, ALCOVE 60"x30", LEFT OR RIGHT DRAIN, ASME A112.19.1, PROVIDE WASTE AND OVERFLOW DRAIN WITH ROTARY OPERATED POP-UP DRAIN, MODEL 1583.470	
TSF-1	BATHTUB / SHOWER FITTINGS	-	-	1/2"	1/2"	TBD BY OWNER (MOEN)	(8371HD 6304EP15 TL183)	TEMPERATURE MIXING VALVE, ADJUSTABLE TEMPERATURE LIMIT, PRESSURE BALANCING, WITH 1/4 TURN STOPS MOEN 8371HD, SHOWER HEAD 1.5 GPM MOEN 6304EP15, DIVERTER TUB SPOUT, SINGLE HANDLE TUB/SHOWER TRIM KIT TL183. ASME A112.18.1, ASME A112.18.3	
WC-1	WATER CLOSET FLOOR OUTLET TANK TYPE	4"	2"	-	1/2"	TBD BY OWNER (PROFLO)	(PF1403TWH / PF9312WH)	DUAL FLUSH TWO-PIECE, FLOOR MOUNTED, BOTTOM OUTLET, ELONGATED BOWL, VITREOUS CHINA, FLUSH TANK AND PF5112LIDWH, 17" RIM HEIGHT, 1.1 - 1.6 GPF, ASME A112.18.2. ADA COMPLIANT	
WMB-1	WASHING MACHINE BOX	2"	1 1/2"	1/2"	1/2"	GUY GRAY - IPS CORP.	MBS1200HA	WALL MOUNTED, HI-IMPACT RESIN SUPPLY AND DRAIN BOX WITH QUARTER-TURN HAMMER ARRESTER VALVES, ASSE 1010, ASME A112.18.1	-

NOTES:

1. MOUNTING HEIGHTS OF ALL ACCESSIBLE FIXTURES SHALL BE IN ACCORDANCE WITH ICC A117.1 "ACCESSIBLE AND USABLE BUILDING AND FACILITIES".
2. INSULATE EXPOSED TRAP AND SUPPLIES IN ACCORDANCE WITH ICC A117.1 "ACCESSIBLE AND USABLE BUILDING AND FACILITIES".
3. WC-1 FIXTURE BOWL RIM HEIGHT 17.0", SEAT HEIGHT 17.5" AFF. PROVIDE WITH OPEN FRONT SEAT SIMILAR TO PROFLO PFTSCOFE2000WH.
4. PROVIDE FLOOR DRAIN WITH WATERLESS INLINE DRAIN TRAP SEAL MODEL SURESEAL AS MANUFACTURED BY RECTORSEAL.
5.

PLUMBING PIPING MATERIALS

SERVICE	SIZE RANGE	SLOPE	MATERIAL	STANDARD
ABOVE GROUND DOMESTIC WATER (COPPER DOMESTIC PIPING IN COMMERCIAL SPACES)	1" AND SMALLER 1 1/4" TO 2" 1/2" TO 2"	- - -	PEX TUBE AND FITTINGS CPVC PIPE AND FITTINGS, CTS, SOLVENT AND THREADED JOINTS OR TYPE L HARD COPPER TUBE W/ CAST OR WROUGHT SOLDER JOINT FITTINGS	ASTM F 877 / ASTM F 1807 ASTM D 2846 / ASTM F 437 ASTM B 88 / ASME B16.18 / B16.22
ABOVE GROUND SANITARY / WASTE	2" AND SMALLER 3" AND LARGER	2% 1%	PVC SCHEDULE 40 W/ DWV FITTINGS OR NO-HUBCAST IRON PIPE, COUPLINGS AND FITTINGS	ASTM D 2665 / ASTM F 1866 ASTM A 888 / ASTM C 1277
BELOW GROUND SANITARY / WASTE	2" AND SMALLER 3" AND LARGER	2% 1%	PVC SCHEDULE 40 W/ DWV FITTINGS	ASTM D 2665 / ASTM F 1866
VENT	ALL	1%	PVC SCHEDULE 40 W/ DWV FITTINGS	ASTM D 2665 / ASTM F 1866
NATURAL GAS	ALL	-	BLACK STEEL SCHEDULE 40, THREADED (ASME B16.3) OR WELDING FITTINGS	ASTM A 35 / ASTM A 234
AC CONDENSATE DRAIN	3/4" TO 2"	1%	PVC SCHEDULE 40 W/ DWV FITTINGS	ASTM D 2665 / ASTM F 1866

PLUMBING PIPING INSULATION

SERVICE	SIZE RANGE	THICKNESS	MATERIAL	MAX. THERMAL CONDUCTIVITY
ABOVEGROUND DOMESTIC HOT WATER AND RECIRC	1/2" TO 1 1/4" 1 1/2" TO 4"	1" 1.5"	MINERAL OR GLASS FIBER PRE-FORMED PIPE INSULATION WITH FACTORY APPLIED VAPOR BARRIER JACKET OR FLEXIBLE ELASTOMERIC TUBULAR PIPE INSULATION WITH FIELD FINISH	0.25 BTU/ (IN*HR*FT2**F)
AC CONDENSATE DRAIN	ALL	1/2"	MINERAL OR GLASS FIBER PRE-FORMED PIPE INSULATION WITH FACTORY APPLIED VAPOR BARRIER JACKET OR FLEXIBLE ELASTOMERIC TUBULAR PIPE INSULATION WITH FIELD FINISH	0.25 BTU/ (IN*HR*FT2**F)

PLUMBING SHEET INDEX

PLUMBING GENERAL NOTES

A. WORK INCLUDES PROVIDING A FIRST CLASS WORKING SYSTEM, TESTED AND READY FOR OPERATION, COMPLETE WITH LABOR, MATERIALS, APPARATUS, TRANSPORTATION, AND TOOLS REQUIRED FOR THE INSTALLATION, AS INDICATED.

B. ALL WORK SHALL COMPLY WITH 2021 VIRGINIA RESIDENTIAL CODE AND LOCAL BUILDING CODES, THE VIRGINIA PLUMBING AND MECHANICAL CODES (VPC 2021, VMC 2021, VFGC 2021, VECC 2021), NFPA CODES AND ALL OTHER APPLICABLE CODES. OBTAIN PERMITS, INSPECTIONS, LICENSES AND TESTS REQUIRED FOR THIS WORK AND PAY ALL FEES IN CONNECTION THEREWITH.

C. COORDINATE WORK CLOSELY WITH OTHER TRADES. ALL DIMENSIONS SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL BE VERIFIED AND COORDINATED IN THE FIELD PRIOR TO INSTALLATION. FAILURE TO COORDINATE WORK WILL NOT BE CONSIDERED AS A BASIS FOR EXTRA PAYMENTS.

D. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EXACT LOCATIONS OF FIXTURES, PIPING AND EQUIPMENT. DO NOT SCALE DRAWINGS. ALL OFFSETS AND FITTINGS FOR COMPLETE INSTALLATION MAY NOT BE INDICATED ON THE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AT THE BUILDING AND FOR ANY CHANGES NECESSARY FOR COORDINATION WITH EXISTING CONDITIONS. PLUMBING SYSTEMS AND EQUIPMENT SHALL BE INSTALLED AND COORDINATED WITH OTHER WORK. IF CONFLICTS CANNOT BE RESOLVED THEY SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT / ENGINEER.

E. GUARANTEE / WARRANTY: ALL PLUMBING EQUIPMENT, MATERIALS AND LABOR REQUIRED BY THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT EXCEPT EXTENDED WARRANTIES, AS SPECIFIED ELSEWHERE IN THESE DOCUMENTS ON SPECIFIC ITEMS OF EQUIPMENT, WILL BE FURNISHED BY THE TRADE PROVIDING THE EQUIPMENT.

F. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTOR OR OF THE SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL TO THE WORK OF THE CONTRACTOR. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE FAILURE OF THE CONTRACTOR TO PERFORM THE WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

G. ALL MATERIALS SHALL BEAR THE MANUFACTURER'S NAME, TRADE NAME AND BE U.L. LABELED IF REQUIRED. UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. ALL EQUIPMENT OF A SIMILAR TYPE SHALL BE OF THE SAME MANUFACTURER.

H. CONTRACTOR SHALL LOCATE AND SIZE ALL OPENINGS REQUIRED FOR PLUMBING FIXTURES, EQUIPMENT AND PIPING, AND PROVIDE THIS INFORMATION TO THE GENERAL CONTRACTOR IN TIME NOT TO DELAY BUILDING CONSTRUCTION.

I. PIPE SIZES SHOWN ARE NPS INSIDE DIMENSIONS. COPPER TUBE SIZES ARE FOR NOMINAL TYPE L.

ABBREVIATIONS

ABV	- ABOVE	EX	- EXISTING
AD	- ACCESS DOOR	EL	- ELEVATION
BEL	- BELOW	FL	- FLOOR
DN	- DOWN	INV	- INVERT
DFU	- DRAINAGE FIXTURE UNIT	SFU	- SUPPLY FIXTURE UNIT

PLUMBING PIPING SYSTEMS

C	- COLD WATER	S	- SANITARY
CD	- CONDENSATE DRAIN	TW	- TEMPERED WATER
H	- HOT WATER	V	- VENT
HR	- HOT WATER RECIRCULATING	VTR	- VENT THRU ROOF
IW	- INDIRECT WASTE	W	- WASTE
KW	- GREASE-LADEN WASTE		
NG	- NATURAL GAS		
PD	- PUMPED DISCHARGE		

FIXTURE & EQUIPMENT MARKS

AAV	- AIR ADMITTANCE VALVE	P&T	- PRESSURE & TEMPERATURE RELIEF VALVE
BFP	- BACKFLOW PREVENTOR		
CO	- CLEANOUT	S	- SINK
DHWP	- DOMESTIC HOT WATER PUMP	SD	- SHOWER DRAIN
DWH	- DOMESTIC WATER HEATER	SEP	- SEWAGE EJECTOR PUMP
ET	- EXPANSION TANK	SH	- SHOWER FITTINGS
FCO	- FLOOR CLEANOUT	SOB	- SUPPLY OUTLET BOX
FD	- FLOOR DRAIN	TMV	- THERMOSTATIC MIXING VALVE
GI	- GREASE INTERCEPTOR	TUB	- BATHTUB
HB	- HOSE BIBB	TSF	- BATH / SHOWER FITTINGS
KS	- KITCHEN SINK	WC	- WATER CLOSET
LAV	- LAVATORY	WCO	- WALL CLEANOUT
MS	- MOP SINK	WH	- WALL HYDRANT
OSD	- OPEN SIGHT DRAIN	WHA	- WATER HAMMER ARRESTER
		WMB	- WASHING MACHINE BOX

PLUMBING LEGEND

- TEE OR ELBOW FROM TOP OF MAIN
- TOP OF MAIN
- BOTTOM OF MAIN
- SIDE OF MAIN
- RISER IN PLAN
- COLD WATER
- HOT WATER
- HOT WATER RECIRC
- SANITARY SOIL & WASTE
- SANITARY VENT
- DIRECTION OF SLOPE DOWN
- SHUTOFF / SERVICE VALVE (IN PLAN)
- BALANCING VALVE
- CHECK VALVE
- BFP — BACKFLOW PREVENTER
- WHA — WATER HAMMER ARRESTER
- CONNECTION TO EXISTING
- 1 — PLAN REFERENCE NOTE

PLUMBING INSTALLATION NOTES

1. MAKE PROPER SUPPLY AND DRAINAGE PIPING CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH EVERY BRANCH PIPE AND FITTING MAY NOT BE GRAPHICALLY INDICATED.
2. VERIFY FIXTURE LOCATIONS WITH ARCHITECTURAL WORKING DRAWINGS BEFORE ROUGHING-IN PLUMBING FIXTURES.
3. PIPING SLOPES AND INVERT ELEVATIONS OF SEWERS, MANHOLES, SEPTIC TANKS, ETC., SHALL BE ESTABLISHED AND VERIFIED BY THE PLUMBING CONTRACTOR PRIOR TO PIPING INSTALLATION IN ORDER THAT PROPER SLOPES ARE MAINTAINED AND NECESSARY INVERT ELEVATIONS MET.
4. COORDINATE THE LOCATION OF ALL PIPING WITH ELECTRICAL WORK AND LIGHTING FIXTURES, HVAC PIPING AND DUCTWORK, FIRE PROTECTION PIPING, STRUCTURAL ELEMENTS AND CEILING CONSTRUCTION, ETC.
5. PROVIDE ALL FLOOR DRAINS AND OPEN SIGHT DRAINS WITH STANDARD SEAL P-TRAPS UNLESS OTHERWISE NOTED. FLOOR DRAIN TRAP SEALS SUBJECT TO LOSS BY EVAPORATION SHALL BE EQUIPPED WITH WATERLESS INLINE DRAIN TRAP SEAL MODEL SURESEAL AS MANUFACTURED BY RECTORSEAL.
6. ALL SHUTOFF / SERVICE VALVES, WATER HAMMER ARRESTERS, ETC. IN CONCEALED LOCATIONS SHALL BE ACCESSIBLE. PROVIDE ACCESS DOOR OR PANEL AS REQUIRED.
7. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL POINTS OF CONNECTION FOR NEW-TO-EXISTING WORK PRIOR TO NEW WORK BEING INSTALLED.
8. PROVIDE CLEANOUT AT THE BASE OF ALL NEW SOIL OR WASTE STACKS.

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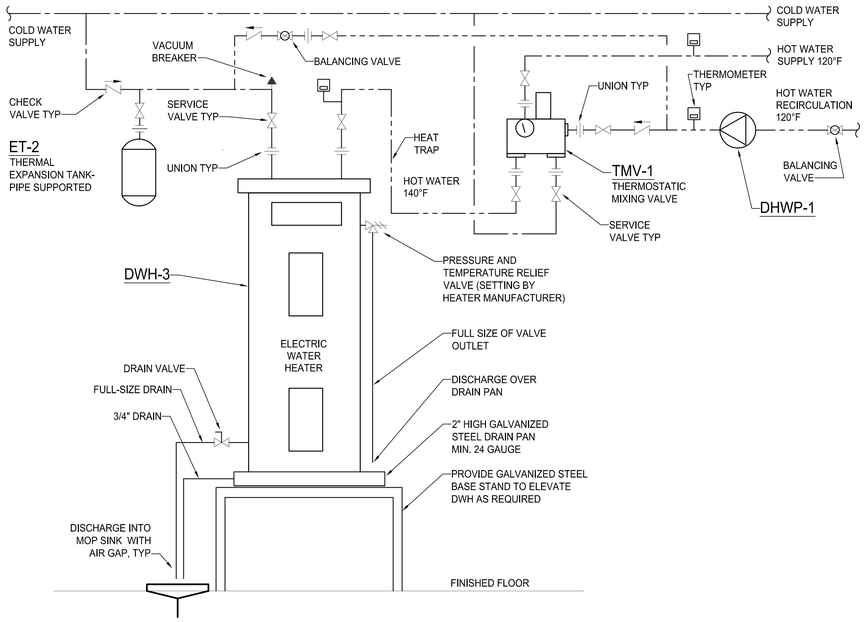
10/25/2024
PROFESSIONAL ENGINEER

REVISIONS:

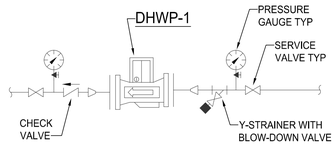
DRAWN:	JAF
CHECKED:	RAP
SCALE:	NO SCALE
DATE:	10-25-2024
PROJECT #:	2212

PLUMBING LEGEND, SCHEDULES & NOTES

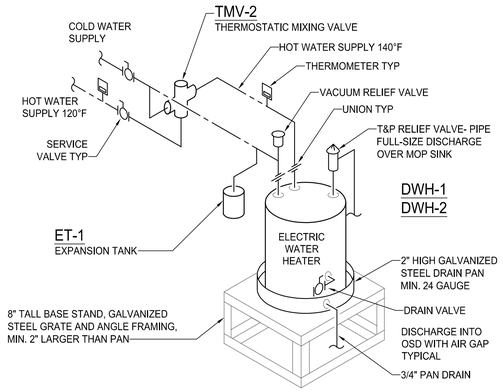
P0.1



FLOOR MOUNTED ELECTRIC WATER HEATER DETAIL
NO SCALE



RECIRCULATION PUMP DETAIL
NO SCALE



APARTMENT UNIT ELECTRIC WATER HEATER DETAIL
NO SCALE

ELECTRIC DOMESTIC WATER HEATERS

MARK	DESCRIPTION	APARTMENT UNITS & AREAS SERVED	TANK VOLUME GALLONS	RECOVERY AT 80°F RISE GPH	ELECTRICAL DATA		BASIS OF DESIGN		OPERATING WEIGHT LBS	NOTES
					KW	V / PH / HZ	MANUFACTURER	MODEL NO		
DWH-1	ELECTRIC STORAGE TANK	UNIT 2A - 1 BR	30	23	4.5	208 / 1 / 60	AO SMITH	DEL-30	350	1 - 3
DWH-2	ELECTRIC STORAGE TANK	UNIT 2B - 2 BR	40	23	4.5	208 / 1 / 60	AO SMITH	DEL-40	465	1 - 3
DWH-3	ELECTRIC STORAGE TANK	FOOD SERVICE, BAR & KITCHEN	80	92	18	208 / 3 / 60	AO SMITH	DRE-80-18	960	1 ,2, 4

NOTES:
1. ELECTRICAL DISCONNECT SWITCH SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.
2. INSTALL UNIT PER MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.
3. DUAL ELEMENT HEATER, 21.6 FLA (NON SIMULTANEOUS OPERATION).
4. THREE ELEMENT HEATER, 50 FLA (SIMULTANEOUS OPERATION).

POTABLE WATER EXPANSION TANKS

MARK	TANK TYPE	TANK VOLUME GALLONS	ACCEPTANCE VOLUME GALLONS	OPERATING WEIGHT LBS	DIMENSIONS - INCHES		BASIS OF DESIGN		NOTES
					DIA	LENGTH	MANUFACTUER	MODEL NO	
ET-1	DIAPHRAGM	2.1	0.94	15	8	11.6	PROFLO	PFXT5I	1
ET-2	DIAPHRAGM	4.8	3.5	40	11	14.5	PROFLO	PFXT12I	1

NOTES:
1. BUTYL DIAPHRAGM-TYPE, AIR PRE-CHARGED STEEL TANK, NSF / ANSI 6.1 CERTIFIED, 3/4" SYSTEM CONNECTION.

THERMOSTATIC MIXING VALVES

MARK	MINIMUM FLOW GPM	CAPACITY GPM	PRESSURE DROP PSI	BASIS OF DESIGN		TEMPERATURE SETTING	STANDARD	NOTES
				MANUFACTUER	MODEL NO			
TMV-1	3.4	19	1 - 30	WATTS-POWERS	LFLM492	120°F	ASSE 1017	1
TMV-2	0.5	4.0	8	WATTS-POWERS	LFMMV-M1	120°F	ASSE 1017	2
TMV-3	0.25	4.0	8	SIOUX CHIEF	696 SERIES	95°F	ASSE 1070	3

NOTES:
1. PROVIDE TMV-1 AT DWH-3, INSTALL AS INDICATED IN DETAIL.
2. PROVIDE 3/4" TMV-2 AT DWH-1 & 2, INSTALL AS INDICATED IN DETAIL.
3. PROVIDE TMV-3 AT EACH LAVATORY, INSTALL AS INDICATED IN DETAIL BELOW LAVATORY MOUNTING, CONCEALED FROM VIEW.

DOMESTIC HOT WATER RECIRCULATION PUMPS

MARK	CAPACITY GPM	HEAD FT-H2O	MOTOR HP	ELECTRICAL DATA	BASIS OF DESIGN		SYSTEM / AREA SERVED	NOTES
				V / PH / HZ	MANUFACTUER	MODEL NO		
DHWP-1	2	10	1/25	120 / 1 / 60	TACO	008-BC6	HR BRANCH	1

NOTES:
1. PROVIDE TIMER TO CONTROL RECIRCULATION PUMP OPERATION. COORDINATE SCHEDULE OF OPERATION WITH OWNER.

BACKFLOW PREVENTER SCHEDULE

MARK	PIPE SIZE	TYPE	STANDARD	SERVICE	BASIS OF DESIGN		LOCATION	NOTES
					MANUFACTURER	MODEL NO		
BFP-1	1"	REDUCED PRESSURE ZONE	ASSE 1013	DOMESTIC WATER	WATTS	009M2QT	BASEMENT MECHANICAL ROOM	1

NOTES:
1. BRONZE BODY CONSTRUCTION. PROVIDE WITH BRONZE BODY STRAINER AND QUARTER TURN BALL VALVES.
2. MOUNT WITH CENTERLINE 3-0" AFF. PROVIDE WATTS MODEL 909AG-C AIR GAP DRAIN AND 1" DRAIN PIPE ROUTED TO FLOOR DRAIN.
3. BACKFLOW PREVENTERS SHALL BE LEAD FREE CONSTRUCTION.

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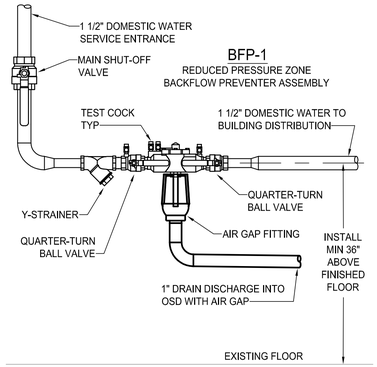
JARRELL PROPERTIES, INC.
TENANT ALTERATIONS
901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

REVISIONS:

DRAWN:	JAF
CHECKED:	RAP
SCALE:	NO SCALE
DATE:	10-25-2024
PROJECT #:	2212

PLUMBING SCHEDULES & DETAILS

P0.2



REDUCED PRESSURE ZONE BACKFLOW PREVENTER DETAIL

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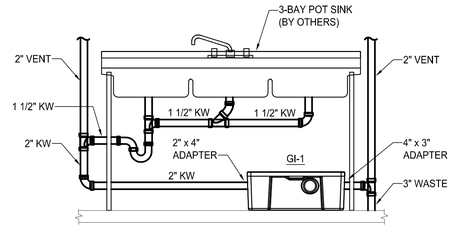


NOTES

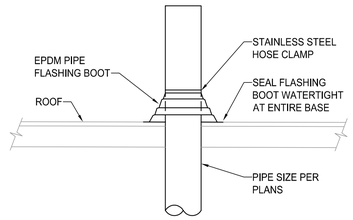
1. FLOW CONTROL FITTING NOT REQUIRED PER INTERCEPTOR MANUFACTURER. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

GREASE INTERCEPTOR SIZING CALCULATION - FLOW RATE METHOD
2021 VPC 1003.3.5 : SIZED AND PERFORMANCE-TESTED TO ASME A112.14.3 (TYPE D) AND GREASE RETENTION CAPACITY EXCEEDING TABLE 1003.3.5.1.

CAPACITY OF FIXTURE IN CUBIC INCHES:	18" x 18" x 14" DEPTH x 3-BOWLS = 13,608 CU-IN
NUMBER OF FIXTURES:	1
TOTAL WATER VOLUME:	13,608 CU-IN
CONVERT CU-IN TO GPM (CU-IN / 231):	58.90 GPM
ADJUST FOR DISPLACEMENT (GPM x 0.75):	44.18 GPM
MINIMUM INTERCEPTOR FLOW RATE TO DRAIN IN TWO MINUTES:	22.09 GPM
GREASE INTERCEPTOR FLOW RATE INSTALLED:	70 LBS GREASE AT 20 GPM 64.9 LBS GREASE AT 25 GPM
MODEL GREASE INTERCEPTOR INSTALLED:	SCHIER GREAT BASIN MODEL GB-1
NOMINAL LIQUID CAPACITY: 10 GAL UNIT WEIGHT:	39 LBS, WET WEIGHT: 123 LBS

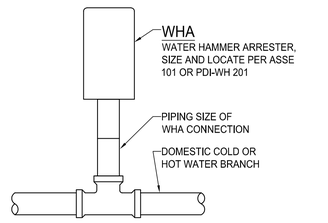
HYDRO-MECHANICAL GREASE INTERCEPTOR DETAIL

NO SCALE



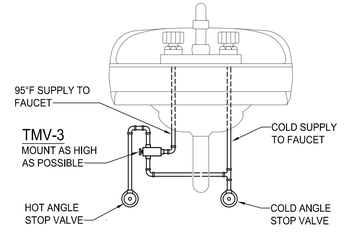
PIPE THROUGH ROOF FLASHING DETAIL

NO SCALE



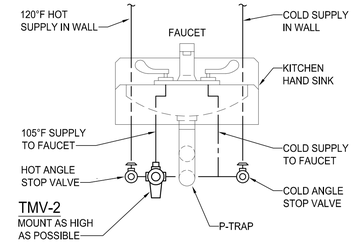
WATER HAMMER ARRESTER DETAIL

NO SCALE



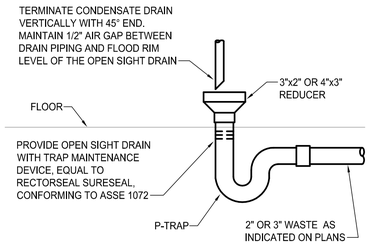
LAVATORY TEMPERING VALVE DETAIL

NO SCALE



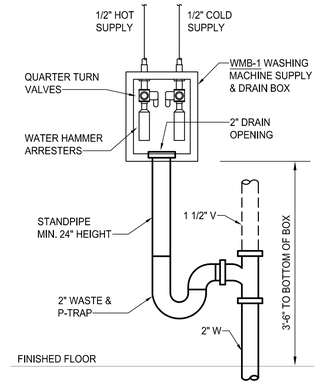
HAND SINK TEMPERING VALVE DETAIL

NO SCALE



OPEN SIGHT DRAIN (OSD) DETAIL

NO SCALE



WASHER BOX PIPING DETAIL

NO SCALE

JARRELL PROPERTIES, INC.

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JARRELL PROPERTIES, INC.
TENANT ALTERATIONS
901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

COMMONWEALTH OF VIRGINIA
RICHARD A. POLO
Lic. No. 047236
10/25/2024
PROFESSIONAL ENGINEER

REVISIONS:

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PLUMBING DETAILS

P0.3

PLUMBING SPECIFICATION NOTES

A. ALL SUBMITTALS OF ANY TYPE, AND ALL CORRESPONDENCE, SHALL FOLLOW THE REQUIRMENTS OF DIVISION 1.

B. ALL PIPING AND VALVE SYSTEMS SHALL BE IDENTIFIED WITH LABELS AND TAGS. MATERIALS SHALL BE AS MANUFACTURED BY SETON NAME PLATE CORPORATION OR APPROVED EQUAL.

C. THE NEW PLUMBING SYSTEMS AND EFFECTED PORTIONS OF ASSOCIATED EXISTING PLUMBING SYSTEMS SHALL BE TESTED HYDROSTATICALLY BEFORE PIPING IS CONCEALED OR COVERING IS APPLIED AND PROVED TIGHT UNDER THE FOLLOWING PRESSURES:

SANITARY, WASTE AND VENT PIPING — AS SPECIFIED BELOW
DOMESTIC WATER PIPING — 100 PSIG

ALL SOIL, WASTE AND VENT PIPING SHALL BE TESTED BY THE CONTRACTOR. THE ENTIRE DRAINAGE SYSTEM AND VENTING SYSTEM SHALL HAVE ALL NECESSARY OPENINGS PLUGGED AND FILLED WITH WATER TO THE LEVEL OF TEN (10) FEET ABOVE THE MAIN OR BRANCH BEING TESTED. THE SYSTEM SHALL HOLD THIS WATER FOR THIRTY (30) MINUTES WITHOUT SHOWING A DROP GREATER THAN FOUR (4) INCHES.

TEST SANITARY DRAINAGE AND VENT PIPING ACCORDING TO PROCEDURES OF AUTHORITIES HAVING JURISDICTION OR, IN ABSENCE OF PUBLISHED PROCEDURES, AS FOLLOWS:

TEST FOR LEAKS AND DEFECTS IN NEW PIPING, IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.

LEAVE UNCOVERED AND UNCONCEALED NEW DRAINAGE AND VENT PIPING UNTIL IT HAS BEEN TESTED AND APPROVED, EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.

ROUGHING-IN PLUMBING TEST PROCEDURE: TEST DRAINAGE AND VENT PIPING ON COMPLETION OF ROUGHING-IN, CLOSE OPENINGS IN PIPING SYSTEM AND FILL WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 10-FOOT HEAD OF WATER, FROM 15 MINUTES BEFORE INSPECTION STARTS TO COMPLETION OF INSPECTION, WATER LEVEL MUST NOT DROP. INSPECT JOINTS FOR LEAKS.

FINISHED PLUMBING TEST PROCEDURE: AFTER PLUMBING FIXTURES HAVE BEEN SET AND TRAPS FILLED WITH WATER, TEST CONNECTIONS AND PROVE THEY ARE GAS-TIGHT AND WATERTIGHT, PLUG VENT-STACK OPENINGS ON ROOF AND BUILDING DRAINS WHERE THEY LEAVE BUILDING, INTRODUCE AIR INTO PIPING SYSTEM EQUAL TO PRESSURE OF 1-INCH WG. USE U-TUBE OR MANOMETER INSERTED IN TRAP OF WATER CLOSET TO MEASURE THIS PRESSURE, AIR PRESSURE MUST REMAIN CONSTANT WITHOUT INTRODUCING ADDITIONAL AIR THROUGHOUT PERIOD OF INSPECTION. INSPECT PLUMBING FIXTURE CONNECTIONS FOR GAS AND WATER LEAKS.

REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING, OR PORTION THEREOF, UNTIL SATISFACTORY RESULTS ARE OBTAINED.

PREPARE REPORTS FOR TESTS AND REQUIRED CORRECTIVE ACTION.

POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY AND CODE REQUIREMENTS.

CLEAN, PURGE AND DISINFECT POTABLE DOMESTIC WATER PIPING. PROCEDURES UTILIZED SHALL NOT BE LESS THAN ALLOWED BY THE AUTHORITY HAVING JURISDICTION. UTILIZE ONE OF THE BELOW THREE OPTIONS:

1. USE PURGING AND DISINFECTING PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION.
2. USE DISINFECTING PROCEDURES DESCRIBED IN 2021 VPC SECTION 610, AWWA C651 AND AWWA C652.
3. FOLLOW PROCEDURES DESCRIBED BELOW:

FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT OUTLETS.

FILL AND ISOLATE SYSTEM ACCORDING TO EITHER OF THE FOLLOWING:

FILL SYSTEM OR PART THEREOF WITH WATER / CHLORINE SOLUTION WITH AT LEAST 50 PPM OF CHLORINE. ISOLATE WITH VALVES AND ALLOW TO STAND FOR 24 HOURS.

FILL SYSTEM OR PART THEREOF WITH WATER / CHLORINE SOLUTION WITH AT LEAST 200 PPM OF CHLORINE. ISOLATE AND ALLOW TO STAND FOR THREE HOURS.

FLUSH SYSTEM WITH CLEAN, POTABLE WATER UNTIL NO CHLORINE IS IN WATER COMING FROM SYSTEM AFTER THE STANDING TIME.

REPEAT PROCEDURES IF BIOLOGICAL EXAMINATION SHOWS CONTAMINATION.

SUBMIT WATER SAMPLES IN STERILE BOTTLES TO AUTHORITIES HAVING JURISDICTION.

PREPARE AND SUBMIT REPORTS OF PURGING AND DISINFECTING ACTIVITIES, INCLUDE COPIES OF WATER-SAMPLE APPROVALS FROM AUTHORITIES HAVING JURISDICTION.

PLUMBING PIPING, BASIC MATERIALS AND METHODS

A. PROVIDE ALL LABOR AND MATERIALS NECESSARY TO FURNISH AND INSTALL ALL PIPING SYSTEMS ON THIS PROJECT, INCLUDING SANITARY, WASTE, VENT, AC CONDENSATE AND EQUIPMENT DRAINS, NATURAL GAS AND DOMESTIC WATER PIPING SYSTEMS.

B. PIPING SYSTEMS AND VALVES SHALL BE AS FOLLOWS:

1. DOMESTIC HOT AND COLD WATER PIPING INSIDE BUILDING: PEX TUBE AND FITTINGS, ASTM F 877, SDR 9 TUBING WITH ASTM F 1807 METAL-INSERT TYPE WITH COPPER OR STAINLESS-STEEL CRIMP RINGS AND MATCHING PEX TUBE DIMENSIONS. CONFORM TO NSF 14 AND 61, PRODUCT MARKED "NSF-pw".

2. DOMESTIC HOT AND COLD WATER PIPING INSIDE BUILDING: CPVC CTS SDR 11 TUBE AND FITTINGS, MATERIAL ASTM D 1784, DIMENSIONS ASTM D 2846. CONFORM TO NSF 14 AND 61, PRODUCT MARKED "NSF-pw". FLAME SPREAD / SMOKE DEVELOPED INDEX NOT MORE THAN 25 / 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. PLASTIC-TO-METAL TRANSITION FITTINGS: CPVC ONE-PIECE FITTING, SCHEDULE 40 DIMENSIONS, WITH THREADED BRASS INSERT AND SOLVENT-SOCKET OR THREAD END. SERVICE / SHUT-OFF CPVC UNION BALL VALVES: STANDARD MSS SP-122, PRESSURE RATING 125 PSIG AT 73 DEG F, CPVC UNION TYPE BODY, END CONNECTION SOCKET OR THREADED, CPVC FULL PORT BALL WITH PTFE OR EPDM-RUBBER O-RINGS, TEE HANDLE.

3. DOMESTIC HOT AND COLD WATER PIPING INSIDE BUILDING (COMMERCIAL SPACES): HARD COPPER PIPE, TYPE L ABOVE GROUND, ASTM B 88, SOLDER-TYPE WROUGHT COPPER FITTINGS, ASME B16.22. SERVICE / SHUT-OFF BRONZE BALL VALVES, 2" OR SMALLER: STANDARD MSS SP-110, 150 PSI, TWO PIECE BODY, END CONNECTIONS THREAD OR SOLDER, FULL PORT CHROME PLATED BRASS OR STAINLESS STEEL BALL, BLOWOUT-PROOF STEM, BRONZE BODY AND STEM, REINFORCED TFE SEAT RING. NIBCO S-585-70. UNIONS: 125 PSI, WROUGHT COPPER, GROUND JOINT SOLDER ENDS.

4. DOMESTIC COLD WATER PIPING INSIDE BUILDING, BENEATH BUILDING SLAB: PE COILED TUBING, ASTM D 2737, NO JOINTS BELOW SLAB. CONFORM TO NSF 14 AND 61, PRODUCT MARKED "NSF-pw".

5. SANITARY DRAINS, ABOVE GRADE, ABOVE BUILDING SLAB: CAST IRON HUBLESS PIPE AND FITTINGS ASTM A 888, NO-HUB STANDARD COUPLINGS, STAINLESS-STEEL RUBBER GASKETED, ASTM C 1277.

6. SANITARY DRAINS & VENTS AND AC CONDENSATE DRAINS ABOVE GRADE, ABOVE BUILDING SLAB: PVC PIPE SCH 40 AND DWV FITTINGS ASTM D 2665 / ASTM F 1866, SOLVENT WELD JOINTS.

7. SANITARY DRAINS & VENTS, BELOW GRADE, BENEATH BUILDING SLAB: PVC PIPE SCH 40 AND DWV FITTINGS ASTM D 2665 / ASTM F 1866, SOLVENT WELD JOINTS.

8. T&P RELIEF VALVE PIPING AND WATER HEATER DRAIN & DRAIN PAN PIPING: HARD COPPER PIPE, TYPE L ASTM B 88, SOLDER-TYPE WROUGHT COPPER FITTINGS, ASME B16.22.

9. NATURAL GAS PIPING: BLACK STEEL SCHEDULE 40, ASTM A53, THREADED (ASME B16.3) OR WELDING FITTINGS ASTM A 234, UNIONS ASME B16.39.

C. PIPE SHALL BE FREE FROM ALL DEFECTS WHICH MAY AFFECT THE DURABILITY OF THE INTENDED USE. EACH LENGTH OF PIPE SHALL BE STAMPED WITH THE MANUFACTURER'S NAME.

D. PIPE HANGERS AND SUPPORTS: COMPLY WITH MSS SP-69 AND MSS SP-89. PROVIDE HANGERS, SUPPORTS, CLAMPS, AND ATTACHMENTS AS REQUIRED TO PROPERLY SUPPORT PIPING FROM THE BUILDING STRUCTURE. CAST-IRON PIPE HANGERS: MSS SP-58, STEEL CLEVIS OR SPLIT-RING SWIVEL TYPES, FACTORY-FABRICATED COMPONENTS; NONMETALLIC COATINGS: PLASTIC COATING, JACKET, OR LINER; PADDED HANGERS: HANGER WITH FIBERGLASS OR OTHER PIPE INSULATION PAD OR CUSHION TO SUPPORT BEARING SURFACE OF PIPING. HANGER RODS: CONTINUOUS-THREAD ROD, NUTS, AND WASHER MADE OF CARBON STEEL. COPPER PIPE HANGERS: MSS SP-58, STEEL CLEVIS OR SPLIT-RING SWIVEL TYPES, COPPER-COATED-STEEL, FACTORY-FABRICATED COMPONENTS. HANGER RODS: CONTINUOUS-THREAD ROD, NUTS, AND WASHER MADE OF COPPER-COATED STEEL. ONE-PIECE NYLON PIPE HANGERS MAY BE USED ON UN-INSULATED PLASTIC PIPING SYSTEMS, SPEARS CLIC BRAND OR EQUAL.

E. MAXIMUM HORIZONTAL HANGER / SUPPORT SPACING:
1. PEX TUBING TUBING 1" AND SMALLER = 2.5 FT.
2. COPPER TUBING 1-1/4" AND SMALLER = 6 FT.
3. COPPER TUBING 1-1/2" AND LARGER = 10 FT.
4. CPVC TUBING 2" AND SMALLER = COLD AT 5 FT., HOT AT 2.5 FT.
5. CAST IRON PIPING = 5 FT.
6. PVC PIPING 2" AND SMALLER = 6 FT.
7. PVC PIPING 3" AND LARGER = 8 FT.,
8. STEEL PIPING 1" AND SMALLER = 8 FT.

F. PLUMBING PIPING INSULATION

1. ALL DOMESTIC HOT WATER PIPING SYSTEMS, AND INDOOR CONDENSATE DRAIN PIPING SHALL BE INSULATED, THICKNESS SHALL BE AS INDICATED IN THE PLUMBING INSULATION SCHEDULE. SEAL ALL INSULATION SEAMS AND JOINTS VAPOR-TIGHT USING COMPATIBLE PRODUCTS RECOMMENDED BY THE INSULATION MANUFACTURER.

2. PIPE INSULATION SHALL BE PRE-MOLDED FIBERGLASS INSULATION WITH ASJ-SSL, OWENS CORNING FIBERGLASS SSL-II OR APPROVED EQUAL. FITTINGS SHALL BE INSULATED AND COVERED WITH PVC COVERS. MINERAL-FIBER, PREFORMED PIPE INSULATION: TYPE I, 850 DEG F: MINERAL OR GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 547, TYPE I, GRADE A, WITH FACTORY-APPLIED ASJ-SSL.

3. JACKET TYPES: ASJ-SSL: ASJ WITH SELF-SEALING, PRESSURE-SENSITIVE, ACRYLIC-BASED ADHESIVE COVERED BY A REMOVABLE PROTECTIVE STRIP; COMPLYING WITH ASTM C 1136, TYPE I.

4. PIPE INSULATION SHALL BE PRE-MOLDED CLOSED-CELL FLEXIBLE ELASTOMERIC INSULATION WITH SELF-SEAL TAPE LAP SYSTEM, AP ARMAFLEX LAPSEAL TUBE SYSTEM OR APPROVED EQUAL, -20 TO 250 DEG F; NBR / PVC BASED MATERIAL FOR 3/8" THROUGH 1" WALL, EPDM BASED MATERIAL FOR 1 1/2" AND 2" WALL. COMPLY WITH ASTM C 534, TYPE I - GRADE 1, WITH FACTORY-APPLIED LAP SEAL SYSTEM. FITTINGS SHALL BE INSULATED AND COVERED WITH PVC COVERS.

PLUMBING FIXTURES, EQUIPMENT AND SPECIALTIES SPECIFICATIONS

PLUMBING FIXTURES: SHALL BE BY LISTED MANUFACTURER OR APPROVED EQUAL, SEE SCHEDULE, SHEET P0.01 FOR DESIGN REQUIREMENTS. COORDINATE AND VERIFY FIXTURE LOCATIONS WITH ARCHITECTURAL PLANS AND APPROVED SUBMITTALS PRIOR TO ROUGH-IN. INSTALL FIXTURES LEVEL AND PLUMB WITH RECOMMENDED SUPPORTS. PROVIDE REQUIRED PIPING CONNECTIONS AND SUPPLIES. SEAL JOINTS BETWEEN FINISHED SURFACES WITH APPROVED SEALANTS.

WATER HAMMER ARRESTER WHA: SHALL BE SIOUX CHIEF SERIES 650 OR APPROVED EQUAL. STANDARD: ASSE 1010 OR PDI-WH 201. TYPE: COPPER TUBE WITH PISTON. ASSE 1010, SIZES AA AND A THROUGH F OR PDI-WH 201, SIZES A TO F.

FINISHED FLOOR CLEANOUTS: SHALL BE MEDIUM DUTY CAST IRON FRAME AND COVER, WITH ANCHOR FLANGE, ROUND ADJUSTABLE NICKEL BRONZE TOP, SCORIATED FLOOR PLATE WITH "CO" CAST IN THE PLATE, ABS PLUG WITH STRAIGHT THREADS AND GASKET, JAY R. SMITH 4020 SERIES OR APPROVED EQUAL.

WALL CLEANOUTS: PROVIDE POLISHED STAINLESS STEEL OR CHROME PLATED BRONZE COVER PLATE, SECURED TO CLEANOUT PLUG WITH COUNTERSUNK SCREW.

BACKFLOW PREVENTERS: SHALL BE BY LISTED MANUFACTURER OR APPROVED EQUAL. SEE SCHEDULE, SHEET P0.01 FOR APPLICATIONS. INSTALL TO COMPLY WITH AUTHORITIES HAVING JURISDICTION AND AS DETAILED. ALL BFP'S SHALL BE LEAD-FREE CONSTRUCTION. TESTED AND CERTIFIED BY NSF.

BFP-1: REDUCED PRESSURE ZONE ASSEMBLY, ASSE 1013, INCLUDES BRONZE Y-STRAINER, QUARTER-TURN BALL VALVES, TEST COCKS, AIR GAP FITTING.
BFP-2: DUAL CHECK, ASSE 1022, CERTIFIED TO ANSI / NSF STANDARD 18, BEVERAGE DISPENSING EQUIPMENT. 316 SS BODY CONSTRUCTION, ALL RUBBER COMPONENTS COMPLY WITH FDA FOOD ADDITIVE REGULATIONS.
BFP-3: DUAL CHECK, ASSE 1024, LEAD-FREE BRONZE BODY INCLUDING NOT LESS THAN ONE UNION WITH TAMPER-PROOF LOCKING WIRE, AN ATTACHED BRASS ID TAG INDICATING DIRECTION OF FLOW. THE CHECK ASSEMBLIES SHALL BE ACETYL RESIN AND PPO, THE DISCS SILICONE, THE SPRINGS STAINLESS STEEL. THE SEAL RING AND O-RINGS SHALL BE BUNA NITRILE.

THERMOSTATIC MIXING VALVES: SHALL BE BY LISTED MANUFACTURER OR APPROVED EQUAL. SEE SCHEDULE, SHEET P0.02 FOR APPLICATIONS. INSTALLATION PER MANUFACTURERS INSTRUCTIONS AND AS DETAILED. ALL TMV'S SHALL BE LEAD-FREE CONSTRUCTION. LOCATE FOR ACCESS AND ADJUSTMENT. PROVIDE SERVICE VALVES ON INLETS AND OUTLETS WHERE NOT INTEGRAL WITH UNIT.

TMV-1: ASSE 1017 CERTIFIED, ANSI / NSF 61 & 372, LEAD-FREE BRASS BODY, THERMAL ACTUATOR PERFORMANCE AT LOW FLOW, ADJUSTABLE TEMPERATURE SELECTION (90°F-160°F) WITH LOCK DOWN, UNION CONNECTIONS, INTEGRAL CHECKS AND INLET SCREENS.
TMV-2: ASSE 1017 CERTIFIED, ANSI / NSF 61 & 372, LEAD-FREE COPPER SILICON ALLOY BODY, SHALL MAINTAIN AND LIMIT HOT WATER TO SELECTABLE TEMPERATURE (80°F-120°F), TAMPER RESISTENT LOCKING ADJUSMENT NUT, UNION CONNECTIONS, INTEGRAL CHECKS AND INLET SCREENS.
TMV-3: ASSE 1070 CERTIFIED, ANSI / NSF 61 & 372, LEAD-FREE BRASS BODY, THERMAL ACTUATOR PERFORMANCE AT LOW FLOW, ADJUSTABLE TEMPERATURE SELECTION (80°F-120°F), 1/2" INLET CONNECTIONS, INTEGRAL QUARTER-TURN IN-LINE ISOLATION VALVES, INTEGRAL CHECKS AND SS INLET SCREENS, 3/8" COMPRESSON TEMPERED OUTLET WITH OPTIONAL COLD BYPASS OUTLET, TMV SHALL BE MOUNTED IN RECESSEED ABS ACCESS BOX WITH FINISH FRAME.

DOMESTIC WATER HEATERS: SHALL BE BY LISTED MANUFACTURER OR APPROVED EQUAL. SEE SCHEDULE, SHEET P0.02 FOR SIZE, PERFORMANCE AND ELECTRICAL DATA, INSTALL PER MANUFACTURERS INSTRUCTIONS AND AS DETAILED. PROVIDE SERVICE VALVES, UNIONS AND THERMOMETERS ON INLETS AND OUTLETS, AND APPURTENANCES AS REQUIRED. STORAGE TYPE ELECTRIC WATER HEATER, GLASSLINED TANK, ANODE ROD, ZINC PLATED COPPER ELEMENTS, ADJUSTABLE TEMPERATURE CONTROLS, DRAIN VALVE, ASME RATED T&P RELIEF VALVE, PROVIDE GALVANIZED STEEL BASE STAND AT DWH-1 AND GALVANIZED STEEL BASE STAND AT DWH-2 & 3, AND 2" GALVANIZED STEEL DRAIN PAN MIN. 4" LARGER THAN TANK DIAMETER.

DOMESTIC HOT WATER RECIRCULATION PUMPS: SHALL BE BY LISTED MANUFACTURER OR APPROVED EQUAL. SEE SCHEDULE, SHEET P0.02 FOR SIZE, PERFORMANCE AND ELECTRICAL DATA. INSTALL PER MANUFACTURERS INSTRUCTIONS AND AS DETAILED, PROVIDE HERMETICALLY SEALED, REPLACABLE CARTRIDGE TYPE, MOTOR AND IMPELLER ON COMMON SHAFT, DESIGNED FOR HORIZONTAL INSTALLATION, BRONZE OR STAINLESS STEEL CASING, PLASTIC IMPELLER, SS SHAFT, SINGLE SPEED MOTOR, PROVIDE WITH ELECTRONIC TIMER TO CONTROL PUMP OPERATION, VERIFY SCHEDULE WITH OWNER.

POTABLE WATER EXPANSION TANKS: SHALL BE BY LISTED MANUFACTURER OR APPROVED EQUAL, SEE SCHEDULE, SHEET P0.02 FOR SIZE AND PERFORMANCE. INSTALL PER MANUFACTURERS INSTRUCTIONS AND AS DETAILED. DIAPHRAGM TYPE PRE-PRESSURIZED TANK, DEEP-DRAWN STEEL SHELL, 150 PSIG WORKING PRESSURE, HEAVY-DUTY BUTYL DIAPHRAGM, FIXED TO SHELL WITH GROVVED SEAL, ANSI / NSF 61.

METERS AND GAGES FOR PLUMBING: THERMOMETERS SHALL BE 4.5" TALL DIGITAL VARI-ANGLE THERMOMETER EQUAL TO WEISS DVIJ35, THERMOSTAT SHALL BE LIGHT POWERED (NO BATTERIES), MERCURY FREE WITH GLASS PASSIVATED THERMISTOR SENSOR, THERMOMETER SHALL INCLUDE 3-1/2" STEM AND LCD DISPLAY WITH 1/2" DIGITS. THERMOMETER SHALL BE ACCURATE TO ±1°F WITH RESOLUTION TO 0.1°F FROM THE RANGE OF -50°F TO 300°F.

PRESSURE GAUGES: SHALL BE EQUAL TO ASHCROFT BOURDON TUBE TYPE SUITABLE FOR 125 PSI SERVICE. GAUGES SHALL BE NOT LESS THAN 2 1/2" DIAL TYPE WITH ALUMINUM CASE AND BAR STOCK NEEDLE TYPE GAUGE COCK. GAUGES SHALL BE GRADUATED IN FEET OF WATER AND PSI. MINIMUM RANGE 1.5 TIMES NORMAL SYSTEM OPERATING PRESSURE.

GREASE INTERCEPTOR GI-1: SHALL BE BY LISTED MANUFACTURER OR APPROVED EQUAL. SEE SHEET P0.03 FOR SIZE AND PERFORMANCE. INSTALL PER MANUFACTURERS INSTRUCTIONS AND AS DETAILED. MOLDED POLYETHYLENE CONSTRUCTION WITH BUILT-IN FLOW CONTROL AND THREE OUTLET OPTIONS. WATER AND GAS-TIGHT COVER WITH MINIMUM 450 LBS LOAD CAPACITY.

JARRELL PROPERTIES, INC.

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COMMONWEALTH OF VIRGINIA
RICHARD A. POLO
Lic. No. 047236
10/25/2024
PROFESSIONAL ENGINEER

REVISIONS:

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PLUMBING SPECIFICATIONS

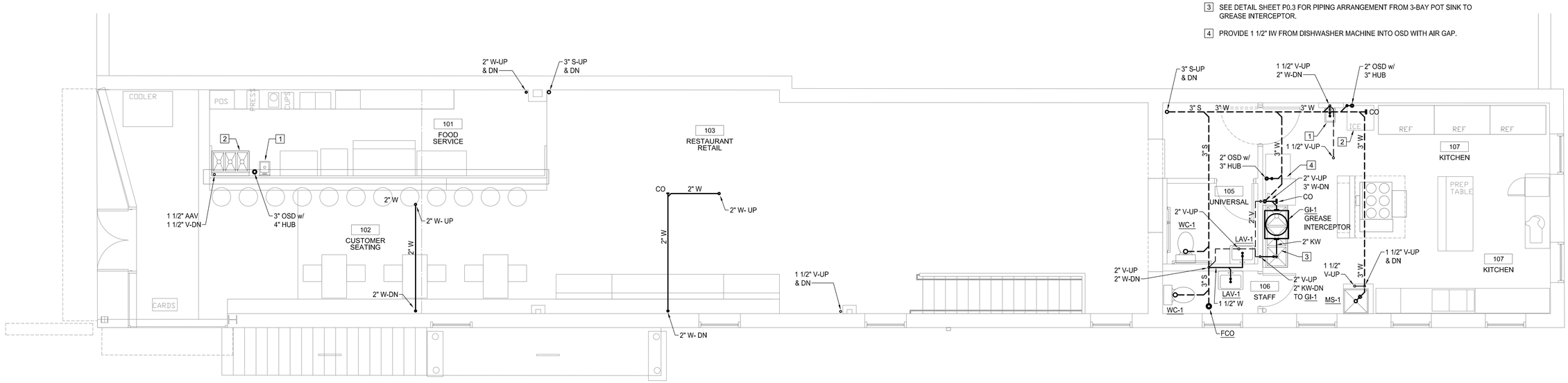
P0.4

FOOD SERVICE AREA PLAN REFERENCE NOTES

1. PROVIDE 1 1/2" IW FROM HAND SINK INTO OSD WITH AIR GAP.
2. PROVIDE 1 1/2" IW FROM 3-BAY SINK INTO OSD WITH AIR GAP.

KITCHEN AREA PLAN REFERENCE NOTES

1. PROVIDE 1 1/2" WASTE WITH P-TRAP FROM HAND SINK.
2. PROVIDE 3/4" IW FROM ICE MACHINE INTO OSD WITH AIR GAP.
3. SEE DETAIL SHEET P0.3 FOR PIPING ARRANGEMENT FROM 3-BAY POT SINK TO GREASE INTERCEPTOR.
4. PROVIDE 1 1/2" IW FROM DISHWASHER MACHINE INTO OSD WITH AIR GAP.

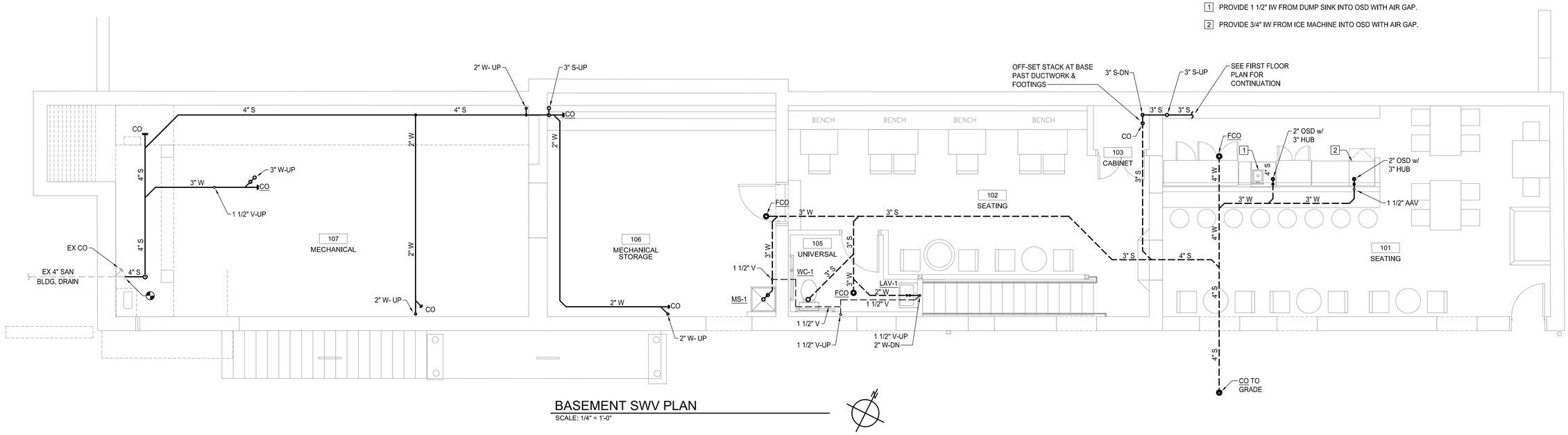


FIRST FLOOR SWV PLAN

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

BAR AREA PLAN REFERENCE NOTES

1. PROVIDE 1 1/2" IW FROM DUMP SINK INTO OSD WITH AIR GAP.
2. PROVIDE 3/4" IW FROM ICE MACHINE INTO OSD WITH AIR GAP.



BASEMENT SWV PLAN

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

GRAPHIC SCALE

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

4' 2' 0 4' 8'

JARRELL PROPERTIES, INC.

SANDERS ARCHITECTURE PC
16125 RACCOON FORD RD
CULPEPER, VIRGINIA 22701
(v)540-829-2590

FOR CONSTRUCTION

JARRELL PROPERTIES, INC.
TENANT ALTERATIONS

901 CAROLINE STREET
CITY OF FREDERICKSBURG, VA 22401

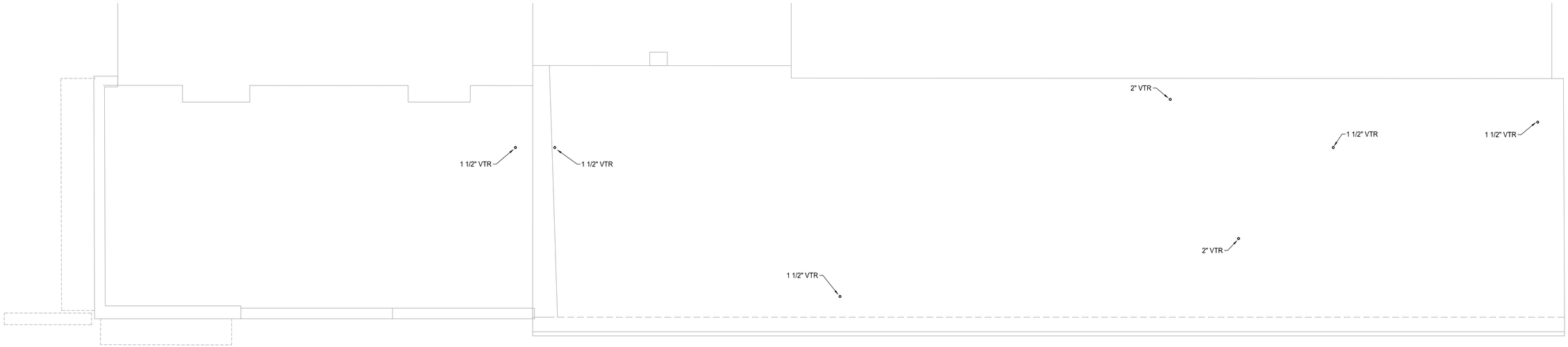
COMMONWEALTH OF VIRGINIA
RICHARD A. POLO
Lic. No. 047236
10/25/2024
PROFESSIONAL ENGINEER

REVISIONS:

DRAWN:	JAF
CHECKED:	RAP
SCALE:	1/4" = 1'-0"
DATE:	10-25-2024
PROJECT #:	2212

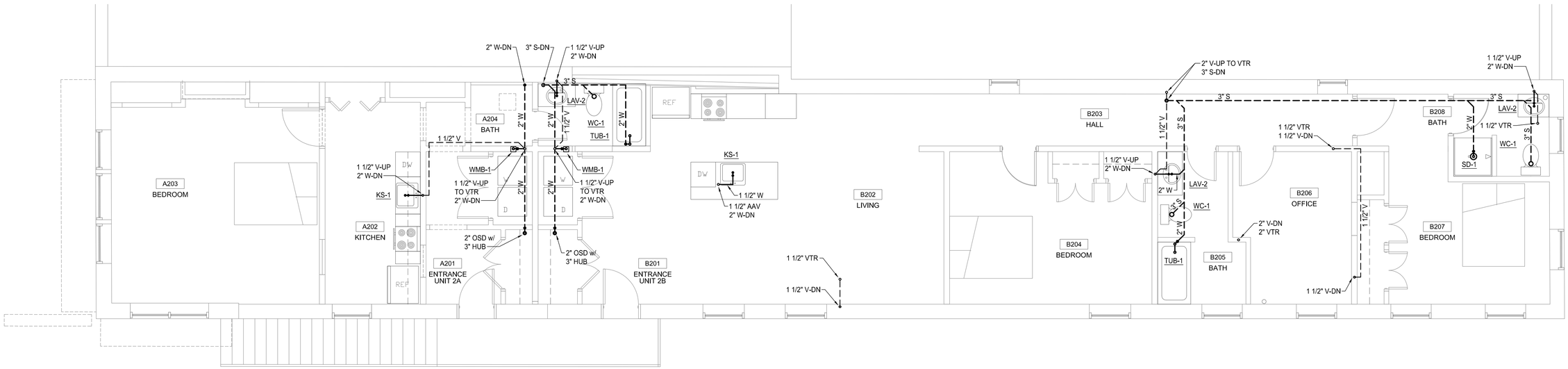
PLUMBING BASEMENT & FIRST FLOOR PLANS - SWV

P1.1



ROOF SWV PLAN

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



SECOND FLOOR SWV PLAN

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

GRAPHIC SCALE

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

4' 2' 0 4' 8'

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PLUMBING
SECOND FLOOR &
ROOF PLANS - SWV

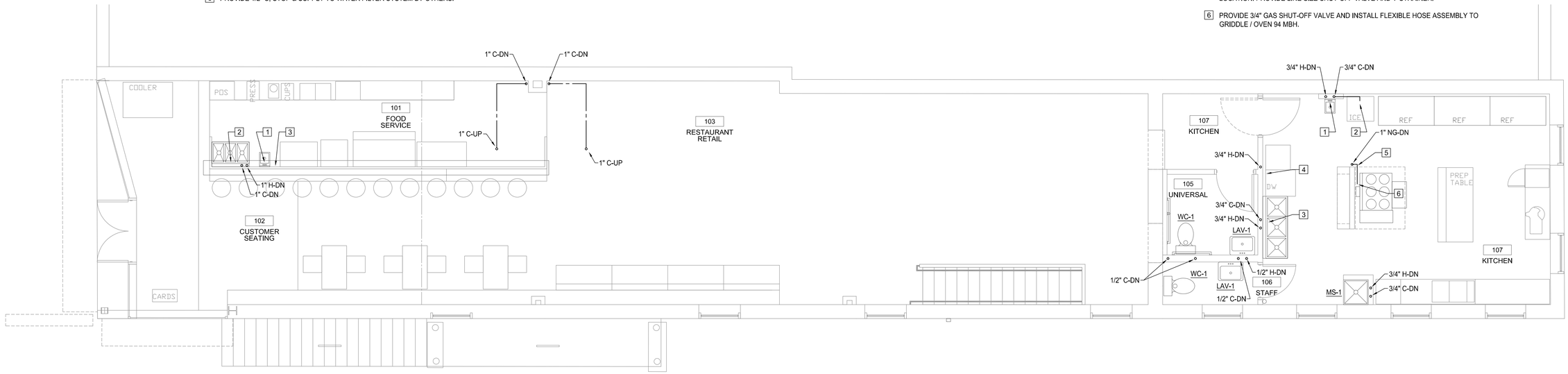
P1.2

FOOD SERVICE AREA PLAN REFERENCE NOTES

1. PROVIDE 1/2" C & H, STOPS & SUPPLIES TO HAND SINK FAUCET.
2. PROVIDE 3/4" C & H, STOPS & SUPPLIES TO 3-BAY SINK FAUCET.
3. PROVIDE 1/2" C, STOP & SUPPLY TO WATER FILTER SYSTEM BY OTHERS.

KITCHEN AREA PLAN REFERENCE NOTES

1. PROVIDE 1/2" C & H, STOPS & SUPPLIES TO HAND SINK FAUCET.
2. PROVIDE 1/2" C, BFP-2, STOP & SUPPLY TO ICE MACHINE.
3. PROVIDE 3/4" C & H, STOPS & SUPPLIES TO 3-BAY POT SINK FAUCET.
4. PROVIDE 1/2" H, STOP & SUPPLY TO DISHWASHER MACHINE.
5. INSTALL MOTORIZED GAS SHUT-OFF VALVE IN ACCESSIBLE AND UN-CONCEALED LOCATION. PROVIDE LINE SIZE SHUT-OFF VALVE AND Y-STRAINER.
6. PROVIDE 3/4" GAS SHUT-OFF VALVE AND INSTALL FLEXIBLE HOSE ASSEMBLY TO GRIDDLE / OVEN 94 MBH.



FIRST FLOOR DOMESTIC PLAN

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

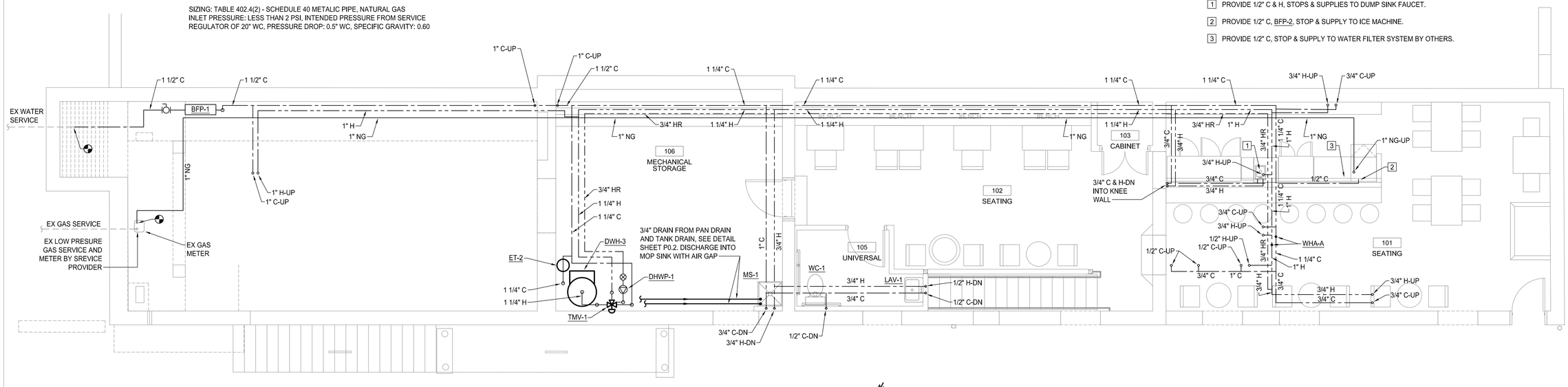
GAS PIPING SIZED PER 2021 VIRGINIA FUEL GAS CODE, USING THE LONGEST LENGTH METHOD IN ACCORDANCE WITH VFGC 402.2.1 AND 402.4.2.

LONGEST LENGTH: 130 FT TOTAL CONNECTED LOAD: 94 MBH

SIZING: TABLE 402.4(2) - SCHEDULE 40 METALIC PIPE, NATURAL GAS
INLET PRESSURE: LESS THAN 2 PSI, INTENDED PRESSURE FROM SERVICE REGULATOR OF 20" WC, PRESSURE DROP: 0.5" WC, SPECIFIC GRAVITY: 0.60

BAR AREA PLAN REFERENCE NOTES

1. PROVIDE 1/2" C & H, STOPS & SUPPLIES TO DUMP SINK FAUCET.
2. PROVIDE 1/2" C, BFP-2, STOP & SUPPLY TO ICE MACHINE.
3. PROVIDE 1/2" C, STOP & SUPPLY TO WATER FILTER SYSTEM BY OTHERS.



BASEMENT DOMESTIC PLAN

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

GRAPHIC SCALE

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

4' 2' 0 4' 8'

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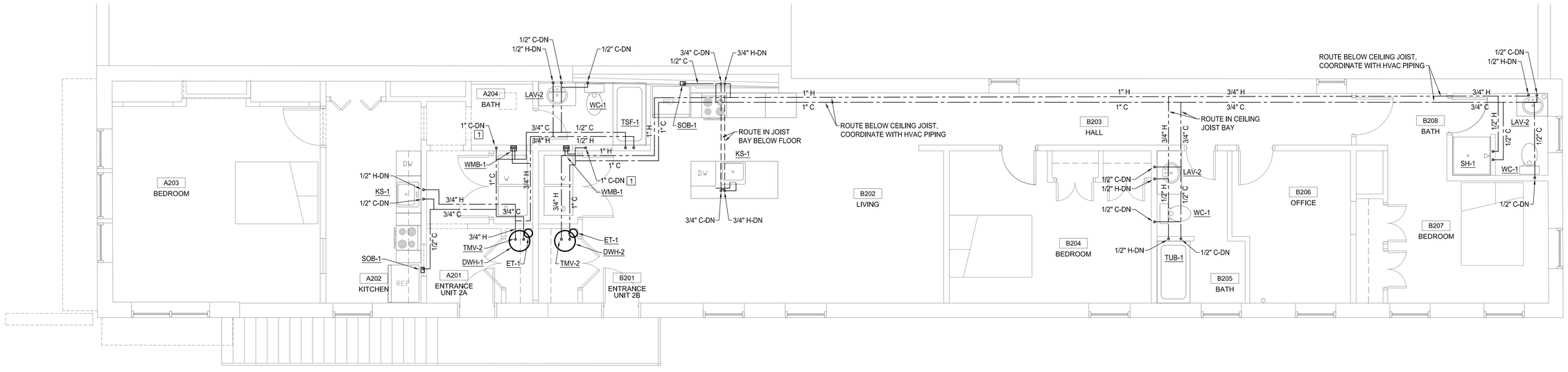
PLUMBING
BASEMENT & FIRST FLOOR PLANS - DOM

P2.1

SECOND FLOOR PLAN REFERENCE NOTES

1 PROVIDE UNIT COLD WATER SHUT-OFF VALVE IN ACCESSIBLE LOCATION.



SECOND FLOOR DOMESTIC PLAN

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

GRAPHIC SCALE

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

4' 2' 0 4' 8'

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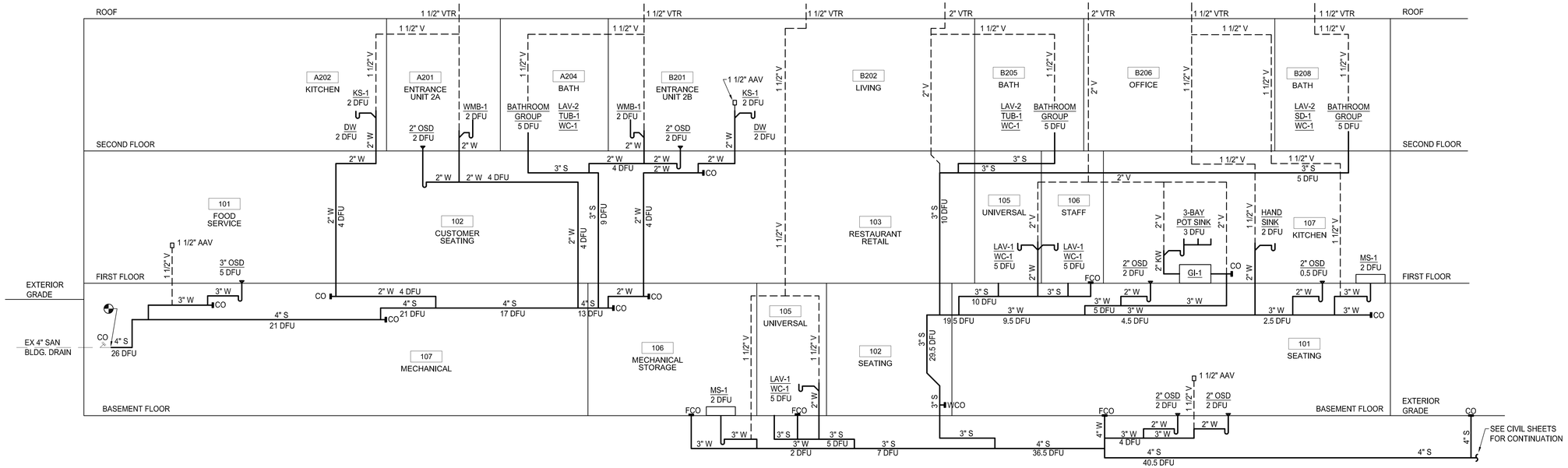
PLUMBING
SECOND FLOOR
PLAN - DOM

P2.2



SANITARY, WASTE & VENT RISER DIAGRAM

NO SCALE

JARRELL PROPERTIES, INC.

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PLUMBING
RISER DIAGRAM - SWV

P3.1