MATERIALS LEGEND

COMPACTED GRAVEL FILL
CONCRETE
BRICK MASONRY
CONCRETE MASONRY
MARBLE, STONE
METAL
PLYWOOD
GLASS
CERAMIC TILE
FINISHED WOOD
ROUGH WOOD
PLASTER, GYPSUM
BATT INSULATION
RIGID INSULATION

SYMBOLS LEGEND

SectionNo. / 3 / A2 — BUILDING SECTION REFERENCE NO. / Drawing No.
SectionNo. / 5 / A4 — WALL SECTION REFERENCE NO. / Drawing No.
Detail No. / 1 / A1 — DETAIL REFERENCE / Drawing No.
2 / Elevation No. / A4.2 / 3 / ELEVATION REFERENCE / Drawing No. / 4
NEW DOOR & FRAME

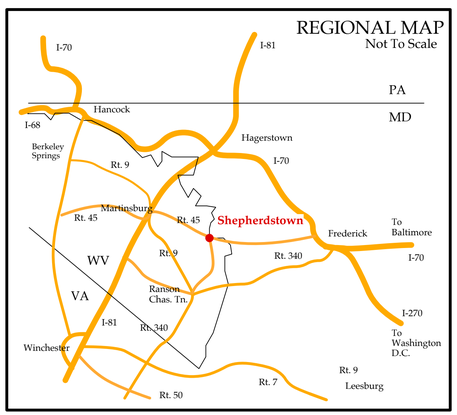
101A — ROOM NUMBER
105 A — Room Reference / Door Desig. — DOOR NUMBER
A — WINDOW DESIGNATION
1 — REVISION NUMBER
1 — PARTITION TYPE
CENTER LINES OR MATCH LINES
PROJECT LIMIT LINES OR PROPERTY LINES
HIDDEN LINES

ABBREVIATIONS

ATC	Acoustical Tile Ceiling	HM	Hollow Metal
ADJUST	Adjustable	HPL	High Pressure Laminate
AFF	Above Finish Floor	HR	Hour
ALUM	Aluminum	HW	Hardware
CPT	Carpet	INSUL	Insulation
CAB	Cabinet	JB	Junction Box
CL	Closet	MAX	Maximum
CT	Ceramic Tile	MIN	Minimum
CLG	Ceiling	MTL	Metal
CONT	Continuous	NIC	Not in Contract
COTR	Contract Officer's Tech'l Representative	NO	Number
CMU	Concrete Masonry Unit	NTS	Not to Scale
DF	Drinking Fountain	OC	On Center
DN	Down	OH	Opposite Hand
DWG	Drawing	PLAM	Plastic Laminate
ELEC	Electrical	PT	Paint
EQ	Equal	PWD	Plywood
EQUIP	Equipment	SS	Stainless Steel
EXG	Existing	TBD	To Be Determined
FEC	Fire Extinguisher Cabinet	Temp	Tempered
FFE	Finish Floor Elevation	TYP	Typical
GA	Gauge	UON	Unless Otherwise Noted
GC	General Contractor	VCT	Vinyl Composition Tile
GL	Glass	VIF	Verify in Field
GWB	Gypsum Wallboard	WD	Wood
GWB-X	5/8" Type X Gypsum Wallboard	WR	Water Resistant

GENERAL NOTES

1. All contractors doing work on site shall have a Business License from the State of West Virginia and a business license with the Town of Shepherdstown.
2. Locating Openings: Unless otherwise dimensioned, center doors and framed openings between adjacent walls.
3. Schedule: The Contractor shall prepare a construction schedule prior to the start of the job which will be reviewed at each progress payment request.
4. Fire Safety:
   a) All materials stored at construction area, and/or in any area of the building, are to be secured in a locked area. Access to such areas is to be controlled by Owner and General Contractor.
   b) All materials to be stored in an orderly fashion.
   c) All flammable materials to be kept tightly sealed in their respective manufacturer's containers. Such materials are to be kept away from heat.
   d) All flammable materials to be used and stored in an adequately ventilated space.
5. Dust Control:
   a) Debris, dirt, and soot shall be kept to a minimum, and be confined to the immediate construction area.
   b) Debris, dirt and dust to be cleaned up and cleared from building periodically to avoid any excessive accumulation.
   c) Tape off and poly. doorways between work area and non work areas.
6. Furnish all labor, materials, appurtenances, equipment, and services necessary and required to complete all work so noted or depicted on the following drawings.
7. All interior partition dimensions are from stud to stud, unless noted otherwise.
8. Examine the conditions and preparations made for the performance of all work and notify the Architect in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with work until conditions are made satisfactory for performance of work.
9. Order all specified materials and fabricated items with sufficient lead time so as not to delay work in any manner.
10. Care should be taken to protect all site and construction conditions throughout the course of construction. Should any damage occur, the contractor shall restore to the prior condition.
11. The Contractor shall make arrangements with the Architect to coordinate and direct connection of service so as not to delay the progress of the job.
12. Manufacturer's recommendations and installation instructions shall be adhered to for all materials used.
13. The Contractor shall not scale the drawings. In the event that a needed dimension is not clearly indicated, notify the Architect at once. Proceed with the affected work only upon receipt of explicit direction by the Architect.
14. The Contractor shall alert the Architect a minimum of 48 hours in advance of the following field inspections: The Architect shall verify floor layout of walls prior to their construction. The Architect shall verify framing installation prior to installation of wall board panels or block.
15. The Contractor shall collect all product warranties and relevant receipts on the project. The Contractor shall compile this information and turn it over to the Architect prior to final payment. All work shall be warrented by the Contractor for one year from the date of Substantial Completion.
16. Unless noted specifically that work is to be done by others or by the Owner, the Contractor shall provide and install all work shown or described in the Contract Documents.
17. All penetrations through fire and smoke rated construction shall be sealed. See mechanical drawings for locations of fire and smoke rated dampers.
18. Provide and maintain in a sanitary condition during the construction period adequate toilet facilities for use of all employees from beginning to end of work; install at an approved location to meet the requirements of the local health department. Equip temporary toilets with weatherproof enclosure doors. Shield toilets to insure privacy. Use of permanent plumbing fixtures within the building during construction will not be permitted.
19. A retainage amount of 5% will be witheld from each application for payment and shall be paid in full to the Contractor upon total completion of the project.
20. Asbestos containing material (siding) exists on east and west exterior walls beneath some vinyl siding on the older sections of the building. No work is called for in these areas. However, workers encounter this ACM or other suspected ACM, the General Contractor shall contact the Owner and Architect immediately. The environmental study conducted on this building has been made available to the Contractor for their information and records.
21. Contractor is required is required to carry Builder's Risk Insurance during the construction phase for the full value of the existing building plus the value of improvements made.



LIFE SAFETY NOTES

Code Analysis for the Opera House
March 2020

County: Jefferson County
Town: Shepherdstown, WV
Zoning: Residential/Commercial
Allowable uses: All

Building Code: 2015 NFPA 101, WV State Fire Code
2015 IBC

Existing & Proposed Use Groups:
First Floor: Assembly (<300 people)
Second & Third Floors: Apartment Building

Separation Required: 1 hour

Construction Type: V (000)

Fire Suppression System: Yes (new)

Area of allowable uses: 3,000 sf/floor

Maximum Floor Height: up to 40', actual floor height is 30'

Fire Resistance Rating Requirements:
frame - 0 hour*
ext bearing walls - 0 hours
int. bearing walls - 0 hour
floor joists & beams - 0 hr.
roof beams/joists – 0

Fire Resistance Rating Provided:
separation between uses: 1 hour

First floor Area

1. WV State Code 2.2a and table 2.2a Sprinkler Protection and Area of Limitation Approved automatic sprinkler system in accordance with applicable NFPA Standards for limitation. More than 2 stories and up to 40'.
2. WV State code 2.2.d Fire alarm system
   2.2.d.1 General requirements for all occupancies
   Applies in addition to NFPA 101 Life Safety Code Chapter 9
3. NFPA 101 12.2.2.3.1 Stairs for balcony and stage areas see 12.4.6.1.2
   Stage stairs shall not exceed 42" in height, may have railing on one side only and may be built of combustible material.
4. Main entrance area Exit NFPA 12.2.3.6, Other exits 12.2.3.7.
   Main exit must have capacity to accommodate 2/3s of occupants. Second exit must have capacity to accommodate 1/2 of occupants. Both do.
5. General requirements for access and egrees routes within assembly areas. NFPA 101 12.2.5.4
6. Aisle width. NFPA 101 12.2.5.4.4. 156 occupants x .22 = 34.33"
7. Aisle markings. NFPA 101 12.2.5.6.10.1
8. Emergency lighting NFPA 101 12.2.9
9. Stage area construction. NFPA 101 12.4.6.3
10. Projection rooms. NFPA 10112.4.7 No longer functions as projection room.
11. Separation ceiling rating two second floor apartments. NFPA 101 Chapter 8
12. All separations and repairs need to be complete and all penetrations throughout need to be sealed.

Second and third floor Apartments

13. Doors - NFPA 101 30.3.6.1.2 Based on building being sprinklered. Doors to apartments shall be not less than 20-minute rating
14. Door closures. NFPA 101 30.3.6.2.3
15. Egress and exiting building shall comply with NFPA 101 Chapter 30
16. Emergency l ighting and exit signage throughout structure.
17. All separations and repairs need to be completed and all penetrations throughout need to be sealed.
18. All electrical work shall be performed by a WV Licensed Electrician
19. All sprinkler work shall be performed by WV Licensed Sprinkler Worker.
20. All HVAC work shall WV licensed.
21. All Alarm System work shall be performed by WV Licensed Worker

Minimum Egress Corridor width: 44"

Occupant Load:

Max. Floor Area per occupant:

1st Floor =	2435 sf (incl stair C)	226 total max. persons incl. staff	
2d Floor =	1772 sf / 200 =	9	
3d Floor =	1200 sf / 200 =	6	
Totals =		241 people	

First Floor # Exits Required: 2

Exit Width required: .3" per person exit width x 226 occupants = 67.8"
Actual Provided: 36" wide near stage, 36" wide from backstage,
(2) 34" wide at main entry from street

Restroom Requirements:
241 occupants / 75 = 3.21 or 4 unisex bathrooms

ADA Requirements: yes (1) accessible/family bathroom provided

BID SET 6/22/20

LIST OF DRAWINGS

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House
RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects plc AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
325 Migration Lane, Gerrardstown, WV 25420, 304-267-2120
18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue/Revision
6/4/20 Issued to WV Fire Marshal
6/22/20 Issued for bid

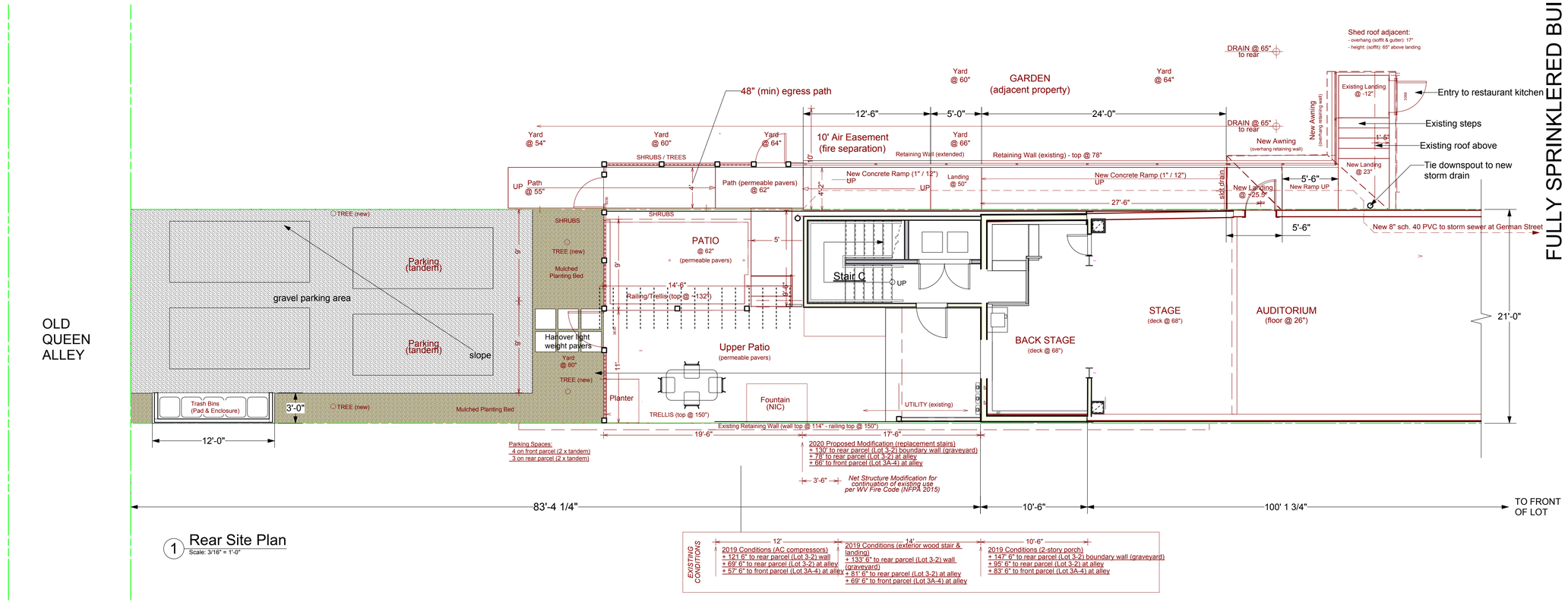
Seal
STATE OF WEST VIRGINIA — MATTHEW W. GROVE NO. 2616 — REGISTERED ARCHITECT

Drawing Title

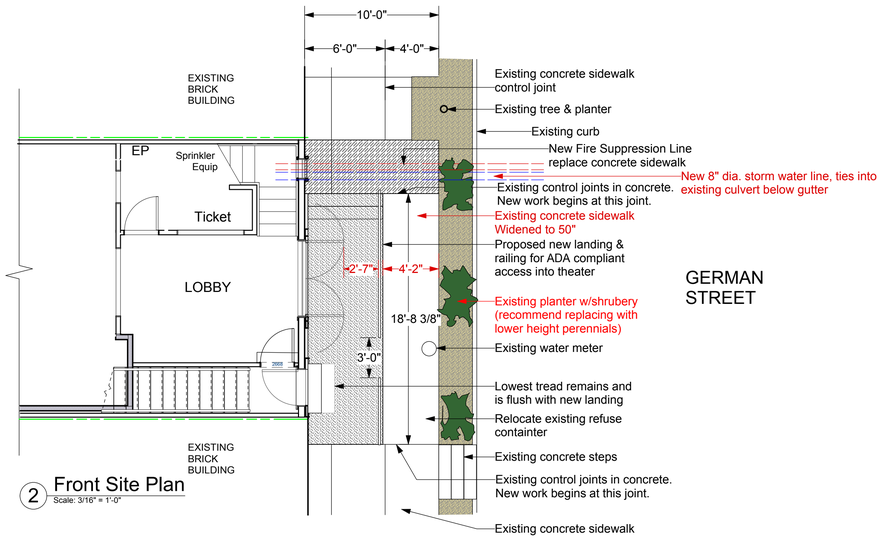
Notes, Legend, List of Drawings

Date May 28, 2020
Scale As Noted
Project Number 19820
Drawing Number

A1.1



1 Rear Site Plan
Scale: 3/16" = 1'-0"



2 Front Site Plan
Scale: 3/16" = 1'-0"

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GDA Grove & Dall'Olio Architects plic — Architecture Planning Interiors Landscape — AIA, LEED AP
Matthew W. Grove — matthew@GDAaia.com • GDAaia.com
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STATE OF WEST VIRGINIA — MATTHEW W. GROVE NO. 2616 — REGISTERED ARCHITECT

Drawing Title

Site Plans

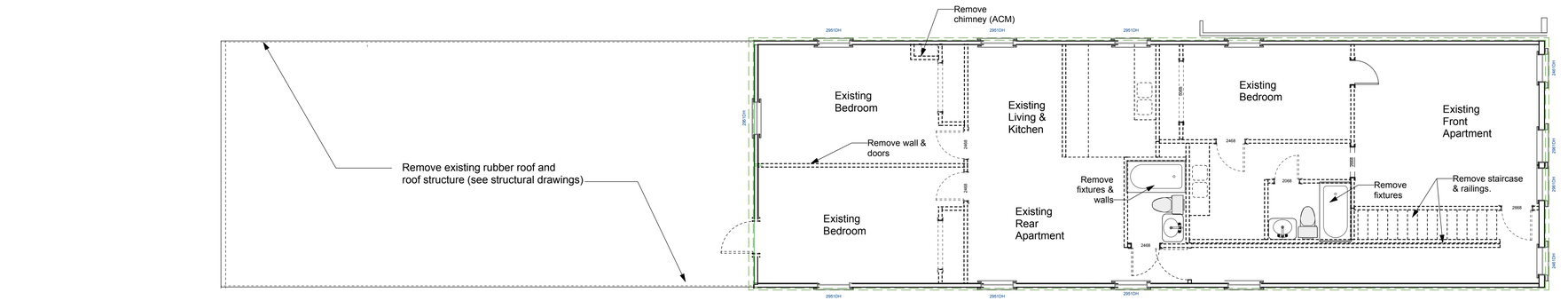
Date May 28, 2020

Scale As Noted

Project Number 19820

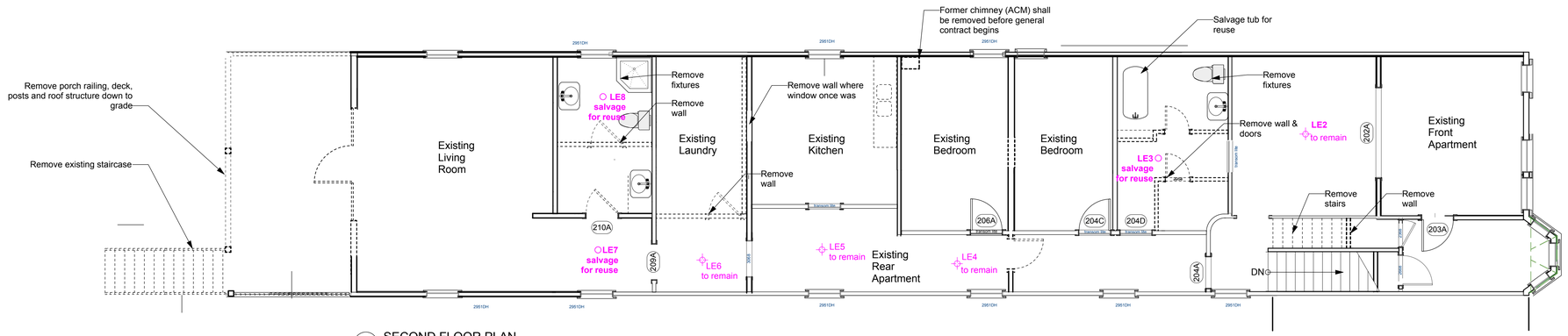
Drawing Number

A1.2

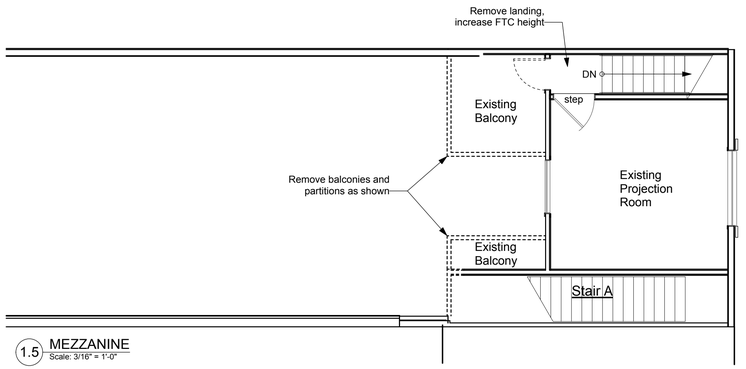


3 THIRD FLOOR PLAN
Scale: 3/16" = 1'-0"

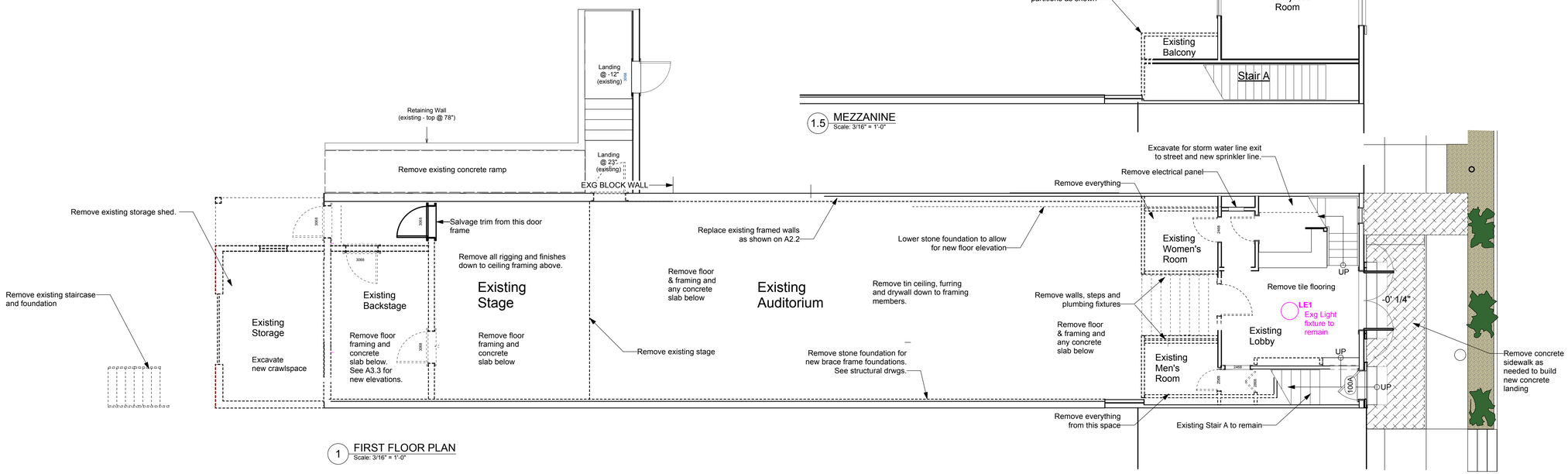
NOTE: Majority 3d floor drywall and beaded board has been removed.



2 SECOND FLOOR PLAN
Scale: 3/16" = 1'-0"



1.5 MEZZANINE
Scale: 3/16" = 1'-0"



1 FIRST FLOOR PLAN
Scale: 3/16" = 1'-0"

FULLY SPRINKLERED BUILDING

NORTH (building)

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Seal
STATE OF WEST VIRGINIA — MATTHEW W. GROVE NO. 2616 — REGISTERED ARCHITECT

Drawing Title

Demolition Floor Plans

Date May 28, 2020
Scale As Noted Project Number 19820

Drawing Number

A2.1

2.0 SITEWORK
2.1 EARTHWORK - Perform earthwork, excavating, and trenching for laying pipe, installing new utilities, grading, landscaping, prepping for new concrete slabs and foundations per the construction drawings. Provide subbase materials, drainage fill, and common fill materials for slabs, pavements, and improvements. Provide suitable fill from offsite if on-site quantities are insufficient or unacceptable,and legally dispose of excess fill offsite.

A. Subbase material: Gravel or crushed stone graded for intended use as subbase forpaving materials specified.

B. Drainage fill: Washed gravel or crushed stone, 1/4" to 3/4" size; ASTM C33, Size 67.

C. Common fill: Mineral soil substantially free from organic and unsuitable materials, and free from rock or gravel larger than 2" in diameter; 80 percent passing No. 40 sieve and not more than 50 percent passing No. 200 sieve.

D. Structural fill: Gravel or sandy gravel free of organic and unsuitable materials and within the following gradation limits: 4" sieve, 100 percent finer by weight; 1" sieve, 60 to 100 percent; No. 4 sieve, 25 to 85 percent; No.20 sieve, 1 0 to 60 percent; No. 50 sieve, 4 to 35 percent; No. 200 sieve, 0 to 5 percent.

2.2 DRAINAGE - Provide materials, labor, equipment and services necessary to furnish, deliver and install interior building perimeter drainage system including drainage board,filter aggregate, fabric and bedding. Shop Drawings: Indicate dimensions, layout of piping, high and low points of pipe inverts, gradient of slope between corners and intersections. Use perforated pipe at subdrainage system; unperforated through sleeved walls.

A. Lay pipe to slope gradients noted on Drawings; with maximum variation from true slope of 1/8 inch in 1 foot.
B. Bed pipe with perforations facing down. Mechanically join pipe ends.
C. Install pipe couplings.
D. Install aggregate at sides, over joint and top of pipe. Provide top cover compacted thickness of 12 inches.
E. Place filter fabric over levelled top surface of aggregate cover prior to subsequent backfilling operations.
F. Place aggregate in maximum 8 inch lifts, consolidating each lift as specified in Civil Engineering notes.
G. Do not displace or damage pipe when compacting.
H. Place impervious fill over drainage pipe aggregate cover and compact.
I. Connect to stone media system with perforated pipe as directed by plans.
J. Extend drainage pipe eastward away from building to daylight.
K. Install drainage board as per manufacturer's recommendations.

3.0 CONCRETE See Structural Specifications, and construction drawings.

4.0 MASONRY See Structural Specifications, and construction drawings.

5.0 METALS See Structural Specifications, and construction drawings.
5.1 EXTERIOR HANDRAILING - Weld and paint all handrail and ballusters shown on the drawings. Railing connections to be submitted on the railing shop drawings for review and approval.

5.2 MISC. METALS - Provide handrail hardware, thresholds, countertops and other misc. metal items.

6.0 WOOD & PLASTICS See Structural Specifications, and construction drawings.
6.1 CABINETRY - See interior elevations for images of cabinetry. Provide shop painted shaker style recessed panel fronts, drawer and door pulls, soft close drawers and doors. Provide plywood boxes w/solid wood drawers.

6.2 COUNTER TOPS - Provide solid surface countertops/backsplashes at kitchens and bathrooms by Formica.

6.3 FINISH CARPENTRY - All new door frames, framed openings, baseboard, wall trim and other miscellaneous finish carpentry to be painted shall be made of select quality clear pine or poplar stock or an approved equal. Wood which is cracked or warped will not be accepted. Wood shall be secured with finish nails, sunk, filled and sanded.

6.4 HANDRAILS - Provide and install round maple, stained handrails with brown or black brackets. Provide blocking in walls for new handrailing. Return handrailings into walls in the exit path direction.

6.5 BEADED BOARD - Provide and install 3/8" thick x 3 1/2" wide pine or fir tongue & groove beaded board as shown on the drawings. Prime and paint beaded board.

6.6 FENCING & DECKING - Provide and install Seclusions fence and Enhance decking systems by Trex. Install Trex material for sleepers beneath the roof decking in a manner that allows for roof drainage. Provide shop welded steel reinforced posts and anchor plates as detailed. Provide blocking for all anchorages. Use non-rusting hardware.

7.0 INSULATION/ROOFING
7.1 Batts should be Certainteed fiberglass or approved equal, paper faced. Insulation shall be installed according to manufacturer's recommendations to provide an R-value of 38 at all uppermost ceilings except where rafter depth limits the depth. Overlap flaps of batts onto joist face. Paper-faced R-21 (5-1/2") is to be installed at insulated stud walls. Provide unfaced batt insulation at acoustical walls.

7.2 Provide rigid extruded polystyrene insulation under concrete slabs and in walls as called for.

7.3 Provide damproofing on the exterior face of foundation walls. Seal foundation walls with dimple board plastic waterproofing sheets.

7.4 Provide and install moisture barrier beneath interior concrete slabs and in new partitions.

7.5 Gutters & Downspouts: Provide & install custom run 24 gauge galvanized aluminum gutters, downspouts, gutter guards and appurtances. System to include guttering, downspouts and all necessary accessories to complete the installation as shown and noted. Run continuous, seamless lengths. Use non-corrosive fasteners.

7.6 Siding
A. Siding at new Stair C and other new additions to the building shall be fiber cement lap siding. Siding shall be smooth, 4" exposure and factory primed.
B. Corner trim, skirt board, soffit and fascia shall be factory primed.
C. Caulk all vertical joints where siding meets doors, windows and trim with silicone.
D. Fasteners shall be stainless steel siding and trim nails.

7.7 Provide sealants for all interior and exterior conditions for locations that may allow moisture to enter the building. Colors of sealants shall be selected by the Architect.

7.8 Provide fire rated sealants for locations where pipe and conduits pass through fire rated construction.

7.9 Metal Roofing: Install 24 gauge natural finished galvanized aluminum roofing w/ one inch high standing seam roof on 3/4" ext. grade plywood & 30# felt. Provide 18" wide pans. Provide and install drip edge and flashing. Provide ridge cap, eave trim, drip edges and other appurtenances. Install Berger RT300 snow birds at Metal roofing mill aluminum finish.

7.10 EPDM Roofing: Furnish Sure-Seal .060 inch thick EPDM (Ethylene, Propylene, Diene Terpolymer) in the largest sheet possible. The membrane shall conform to the minimum physical properties of ASTM D4637. When a 10 foot wide membrane is to be used, the membrane shall be manufactured in a single panel with no factory splices to reduce splice intersections. Grade: standard. Concealed Face Color: Charcoal. Exposed Face Color: WHITE. Install 2" rigid extruded Polystyrene and 1/2" thick bond board. Provide manufacturer's 15 year Golden Seal Total System Warranty covering both labor and material with no dollar limitation. Provide rake and drip flashing to complete installation.

8.0 DOORS & WINDOWS
8.1 WOOD DOORS - shall be of pre-primed solid paint grade doors by Simpson Door Co. Heights and widths of doors shall be as indicated on plans and elevations. Doors shall be hung square and plumb with proper clearances at all four sides. Repair existing doors due to hardware scars and prep for paint.

8.2 WINDOW UNITS - Units shall be the Ultimate as manufactured by Marvin. The exterior and interior finish shall be White with white hardware. Glazing shall be sealed insulated glass constructed of one pane of clear float glass and one pane of low-E coated float glass. The insect screen frame shall be white. Install units according to the manufacturer's instructions. Install units within towards exterior plane in order to maximize the sill depth on the interior. Provide sill and jamb extensions for 2 x 6 exterior wall areas. Installation shall include insect screens and shall be upgraded to the high transparency mesh screening.

8.3 HARDWARE - Provide all miscellaneous hardware and appurtenances to compliment and complete the installation of the following hardware sets:

QTY.	Description	Manufacturer	Model #	Finish
Hardware Set #1 - Stair A Entry		**Each to have:**		
1-1/2 Pr.	Hinges 4.5 X 4.5	Stanley	Existing	10B
1	Digital Entry	Yale	YRC2016- MO lever	10B
1	Closer	LCN	4110	10B
1	Floor stop	Stanley	CD80-4110	10B
Hardware Set #2 - Theater Entry Pair of Doors		**Each to have:**		
3 Pr.	Hinges 4.5 X 6	Stanley	FBB168 NRP	10B
1 Pr.	Fire Exit Devices	VonDuprin	8827NL-F (less trim)	10B
1 Pr.	Pulls	Ives	8115-5	10B
2	Fire Rated Closer	LCN	4040XP-3049EDA/62G	10B
1 Pr.	Manual Wall Holders	Ives	WS449	10B
Hardware Set #3 - Stair A - Lobby		**Each to have:**		
1 set	Spring Hinges 4.5 X 4.5	Stanley	2079	10B
1	Passage Set	Baldwin	5000	10B
1	Deadbolt	Baldwin	8200	10B
Hardware Set #4 - Janitor's Closet		**Each to have:**		
1 set	Spring Hinges 4.5 X 4.5	Stanley	2079	10B
1	Passage Set	Baldwin	5000	10B
1	Deadbolt	Baldwin	8200	10B
Hardware Set #5 - Knob Set		**Each to have:**		
1 1/2 pr.	Hinges 4.5 X 4.5	Stanley	CB168	10B
1	Privacy Set	Baldwin	5500	10B
1	Wall Stop	Ives	408	10B

Hardware Set #5A - Same as 5 except substitute Passage Set 5000 for Privacy

Hardware Set #6 - Privacy Toilet		**Each to have:**		
1 set	Spring Hinges 4.5 X 4.5	Stanley	2079	10B
1	Mortised Lever Set	Baldwin	6315	10B
1	Wall Stop	Ives	408	10B
1	Kick & Mop Plate	Ives		10B
1	Weatherstripping	Zero	926	
Hardware Set #7 - Auditorium Entry		**Each to have:**		
2 Pr.	Hinges 4.5 X 4.5	Stanley	CB168	10B
1 Set	Push/Pulls	Ives	8100/8200	10B
1	Closer	LCN	4110F	10B
1	Wall Stop	Ives	408	10B
1	Kick & Mop Plate	Ives		10B
1	Weatherstripping	Zero	926 -	
Hardware Set #8 - Auditorium Exit		**Each to have:**		
1 1/2" Pr.	Hinges 4.5 X 4.5	Stanley	CB168	10B
1	Exit Device	Von Duprin	88NL-F	10B
1	Closer	LCN	4110	10B
1	Kick & Mop Plate	Ives		10B
1	Weatherstripping	Zero	926	
Hardware Set #9 - Stage Exit		**Each to have:**		
1 1/2" Pr.	Hinges 4.5 X 4.5	Stanley	CB168	32D
1	Lockset	Schlage	ND70RD ATH	32D
1	Closer	LCN	4110F	32D
1	Kick & Mop Plate	Ives		32D
1	Weatherstripping	Zero	926	
Hardware Set #10- Stage Loading		**Same as Set #9 Except:**		
1 set	Spring Hinges 4.5 X 4.5 Delete Closer	Stanley	2079	32D
Hardware Set #11 - HVAC Closet Pair of Doors		**Each to have:**		
2 set	Spring Hinges 4.5 X 4.5	Stanley	2079	26D
1	Lockset	Schlage	ND70RD ATH	26D
2	Top & Bottom Flush Bolts	Rockwood	557	26D
1	Weatherstripping	Zero	926	
Hardware Set #12 - Apartment Entry		**Each to have:**		
1 set	Spring Hinges 4.5 X 6	Stanley	2079	10B
1	Mortised Lever Set	Baldwin	6001	10B
1	Kick Plate	Ives		10B
1	Weatherstripping	Zero	926	
Hardware Set #13 - Apartment Entry		**Each to have:**		
1 set	Spring Hinges 4.5 X 4.5	Stanley	2079	10B
1	Digital Entry	Yale	YRC2016- MO lever	10B
1	Kick Plate	Ives		10B
1	Weatherstripping	Zero	926	
1	Wall Stop	Ives	WS-11	10B
Hardware Set #14 - Communicating Corridor		**Each to have:**		
1 set	Spring Hinges 4.5 X 4.5	Stanley	2079	10B
1	Mortised Lever Set	Baldwin	6005 MO	10B
1	Kick & Mop Plate	Ives		10B
1	Wall Stop	Ives	WS-11	10B
3	Silencers	Ives	SR-65	
Hardware Set #15 - Laundry Room		**Each to have:**		
1 set	Spring Hinges 4.5 X 4.5	Stanley	2079	10B
1	PassageSet	Baldwin	5000	10B
1	Wall Stop	Ives	408	10B
1	Kick & Mop Plate	Ives		10B
3	Silencers	Ives	SR-65	
Hardware Set #16 - Pocket Door Bedroom		**Each to have:**		
1 set	Johnson Heavy Duty single track concealled hardware			
1	Edge pulls	Baldwin		10B
1 pr.	Dummy pulls	Baldwin	2.5" x 6.5"	10B
Hardware Set #17 - Bi-fold Pair of Doors		**Each to have:**		
1 set	Bi-fold hardware set for a pair of Closet Doors			
1	Door pulls	Baldwin	4708	10B
Hardware Set #18 - Barn/Rolling		**Each to have:**		
1	Barn Dr Hdwr	Winsoon	13' Barn Track and Hardware Kit	Black
4	Track Hangers	Custom Blacksmith work		
1	Door Pull Set	Smart Standard	12" pull	Black

8.4 HOLLOW METAL DOORS & FRAMES
A. Metal: best quality American Open Hearth sheet metal furniture stock, cold rolled, full pickled, annealed, stretcher leveled and free from scale, blisters, pits and other defects, conforming to ASTM A-366 for door and hot rolled prime quality carbon steel for frames.
B. Steel reinforcements, supports, bracing and sub framing shall conform to ASTM A-36. Commercial grade hot rolled and pickled steel shall conform to ASTM A-569.
C. Insulating material for hollow metal doors: styrenes, cork, felt, fiber mill board, or similar type material resistant to fire, moisture, vermin, mildew and rot to meet requirements of this section. Provide required cores for labeled doors.
D. Shop applied prime coat: fast dry primer No. 50-79 manufactured by Tnemec Company. Prime to be completely compatible with the finish coats of epoxy-polyamide coating.
1. Surfaces concealed in masonry shall conform to SSPC-12, bituminous type.
E. Exterior doors and frames shall be formed from galvanized sheets and shall be insulated.
F. Gauges for hollow metal work shall be U.S. Standard. The following are gages to be used on this project:
1. Doors 16
2. Door frames 14
3. Removable glass stops & Stirrups for adjustable anchors 14
4. Adjustable jamb anchors 18
5. Floor knees 12
6. Structural reinforcing 10
7. Hardware reinforcement:Hinges, butts 3/16" plates
G. Jamb Anchors
1. Frames for installation at gypsum drywall stud partitions shall be provided with 14-gauge angle struts to slab construction above and floor clip angles in accordance with the approved shop drawings.
2. Frames in masonry walls shall be provided with adjustable jamb anchors, UL approved, "T" strap or stirrup and strap type. Anchors shall be not less that 12" long, 1-1/2" wide, corrugated and/or perforated. stirrups shall be spot welded to frames to support non-removable anchors.
3. Anchoring of frames to in-place concrete shall be accomplished with anchors of suitable design in accordance with reviewed shop drawings.
4. Provide a minimum of three (3) anchors per jamb for frames 7'-2 1/2" high and under, and one (1) additional anchor for each 30" or less of frame height. Position anchors at level of butts and locks. Jamb anchors shall permit passage of electrical conduit as required by job conditions.
H. Reinforce hollow metal frames from 3'-1" to 6'-0" wide at heads with 10 gauge steel plate or channel, welded in place.

8.5 ROOF HATCH - Bilco skylight roof hatch GS-50TB. Provide necessary rough-in framing, flashing and sealants to complete installation.

8.6 LEADED GLASS WINDOW - Replicate leaded glass window sash and glazing (Unit 1S1). Use existing leaded windows above entry doors serve as a reference to size and detail of diamond pattern. Employ skilled craftspeople to complete this work. Paint wood components.

9.0 FINISHES:
9.1 RESILIENT FLOORING - Linoleum Sheet Flooring: LinoArt™ with NATURCote™ II manufactured by Armstrong World Industries, Inc.
The product shall consist of a polyurethane-coated homogeneous mixture of linoleum cement (linseed oil, natural tree resins, drying oil catalysts), wood flour, limestone, color pigments mixed and calendered onto a jute fabric backing.
LinoArt Marmorette Sheet - color TBD - 98.4 x 6.5 x 0.100
Provide solid color linoleum weld rod as produced by Armstrong World Industries, Inc., and intended for heat welding of seams.
Color shall be compatible with field color of flooring or as selected by Architect to contrast with field color of flooring.
Provide Armstrong S-761 Seam Adhesive at seams as recommended by the resilient flooring manufacturer.
Use low-VOC adhesive during installation. Water based is preferred over solvent based adhesives.
Determine the type of underlayment selected for use by the condition to be corrected.

9.2 PORCELAIN FLOOR TILE - Tile for theater lounge, lobby and bathrooms shall be Merrill Landing by Trinity Tile. Color: Fauna Size: 4 x 48 layed in a randum pattern as wood flooring would be. Thin set tile on concrete slab. Set tiles minimum space apart, but no more than 1/8". Grout color TBD. After tile is installed, cover with heavy duty cardboard and securely tape all joints in order to maintain pristine condition of new flooring.

9.3 PORCELAIN WALL TILE - Submit samples of tile and grout for selection by the Architect. Install all units level and true with joints uniform in width and accurately aligned. The contractor shall use all necessary tile accessories.
A. Theater & Mezzanine Bathroom wall tile shall be Merrill Landing by Trinity Tile. Color: TBD. Sizes as per interior elevations. Install moisture resistant GWB substrate for all wainscot tile work. Grout color TBD.
B. Bathroom wall tile on the second and third floor shower surrounds shall be Allure by Trinity Tile. Tile sizes as shown on interior elevations. Provide cement board substrate. Grout color TBD.

9.3 WOOD FLOOR - 3/4" thick White Oak Live Sawn randum width solid flooring by Allegheny Mountain Hardwood Flooring. See pattern on FFE floor plans. Provide white oak panels permenantly attached to the 4-seat standards AND a second interchangeable floor panel without seating. See architectural details. Provide shop drawings for this and stage flooring. Provide solid wood nosings and treads. Risers and stringers and other non-flooring components shall be paint grade hardwood. All flooring fasteners shall be concealed. Provide red rosin paper between sub-floor and finish flooring. Provide oil based stain finish options. Condition flooring in space for 20 days minimum.

9.4 GYPSUM DRYWALL - All GWB shall be both glued and screwed - nails are not to be used to hold boards in place before screwing.

9.5 PAINTING: Prior to painting, the surfaces shall be wiped down with a damp cloth. All surfaces to be painted shall receive one coat primer and two finish coats (Sherwin Williams or approved equal).
A. Paint materials shall conform to the restrictions of the local Environmental and Toxic Control jurisdiction.
1. Volatile Organic Compounds (VOC): VOC content of paint materials shall not exceed 10g/l for interior latex paints/primers and 50g/l for exterior latex paints and primers.
2. Lead-Base Paint:
a. Comply with Section 410 of the Lead-Based Paint Poisoning Prevention Act, as amended, and with implementing regulations promulgated by Secretary of Housing and Urban Development.
B. Safety: Observe required safety regulations and manufacturer's warning and instructions for storage, handling and application of painting materials.
1. Take necessary precautions to protect personnel and property from hazards due to falls, injuries, toxic fumes, fire, explosion, or other harm.
2. Deposit soiled cleaning rags and waste materials in metal containers approved for that purpose. Dispose of such items off the site at end of each days work.
C. Atmospheric and Surface Conditions. Do not apply coating when air or substrate conditions are:
1. Less than 3 degrees C (5 degrees F) above dew point.
2. Below 10 degrees C (50 degrees F) or over 35 degrees C (95 degrees F), unless specifically pre-approved by the Contracting Officer and the product manufacturer. Under no circumstances shall application conditions exceed manufacturer recommendations.
3. Maintain interior temperatures until paint dries hard.
4. Do not paint in direct sunlight or on surfaces that the sun will soon warm.
D. Wood:
1. Sand to a smooth even surface and then dust off.
2. Sand surfaces showing raised grain smooth between each coat.
3. Wipe surface with a tack rag prior to applying finish.
4. Surface painted with an opaque finish:
a. Coat knots, sap and pitch streaks with MPI 36 (Knot Sealer) before applying paint.
b. Apply two coats of MPI 36 (Knot Sealer) over large knots.
5. After application of prime or first coat of stain, fill cracks, nail and screw holes, depressions and similar defects with wood filler paste. Sand the surface to make smooth and finish flush with adjacent surface.
6. Before applying finish coat, reapply wood filler paste if required, and sand surface to remove surface blemishes. Finish flush with adjacent surfaces.
E. Metals:
1. Remove oil, grease, soil, drawing and cutting compounds, flux and other detrimental foreign matter in accordance with SSPC-SP 1 (Solvent Cleaning).
2. Remove loose mill scale, rust, and paint, by hand or power tool cleaning, as defined in SSPC-SP 2 (Hand Tool Cleaning) and SSPC-SP 3 (Power Tool Cleaning).
3. Fill dents, holes and similar voids and depressions in flat exposed surfaces of hollow steel doors and frames, access panels, roll-up steel doors and similar items specified to have semi-gloss or gloss finish with TT-F-322D (Filler, Two-Component Type, For Dents, Small Holes and Blow-Holes). Finish flush with adjacent surfaces.
F. Gypsum Plaster and Gypsum Board:
1. Remove efflorescence, loose and chalking plaster or finishing materials.
2. Remove dust, dirt, and other deterrents to paint adhesion.
3. Fill holes, cracks, and other depressions with CID-A-A-1272A [Plaster, Gypsum (Spackling Compound) finished flush with adjacent surface, with texture to match texture of adjacent surface. Patch holes over 25 mm (1-inch) in diameter as specified in Section for plaster or gypsum board.
G. Clean, patch and repair existing surfaces as specified under surface preparation.
H. Refinish areas as specified for new work to match adjoining work unless specified or scheduled otherwise.
I. Sand or dull glossy surfaces prior to painting.Sand existing coatings to a feather edge so that transition between new and existing finish will not show in finished work.
J. Paint Schedule
1. Drywall Surfaces: Primer: *1 coat B28 PrepRite 200,* Wall Finish: *2 coats B31 ProMar 200 (semi-gloss),* Ceiling Finish: *2 coats B30 ProMar 200 (flat)*
2. Ferrous Metal (non galvanized): Primer: *1 coat B66 Pro-Cryl,* Finish: *2 coats B66 Sher-Cryl (semi-gloss)*
3. New Wood scheduled for paint: Primer: *1 coat B49 PrepRite Wall and Wood Alkyd Primer,* Finish: *2 coats B31 ProMar 200 (semi-gloss)*
4. Existing Wood and previously painted surfaces scheduled for paint: Primer: *1 coat B51 PrepRite ProBlock,* Finish: *2 coats B31 ProMar 200 (semi-gloss)*
5. Existing Wood Windows & Doors: Primer: *1 coat Y24 A-100 Exterior Oil Wood Primer,* Finish: *2 coats A02 SWP Exterior Oil*

10.0 SPECIALTIES
10.1 BATH ACCESSORIES - Owner will provide and Contractor will install the following: Towel bars, towel hoops, bathroom mirrors, toilet paper holders, and grab bars at master shower. Provide blocking for all accessories when framing.

10.2 TEMPERED GLASS BATH/SHOWER DOORS - Provide and install Bosco Coppia frameless 3/8" clear swinging glass shower doors or Bosco Rotolo 3/8" semi-frameless sliding shower door as shown on plans. Finishes to match those in respective bathrooms.

10.3 LIGHT BEAM FABRIC - Trapeze Plus, color: Titanium, by Dazian (dazian.com).

14.0 LIFTS - Shall be the Garaventa Genesis Shaftway GLV-SW-42, 90º entry/exit, large platform 42"x60", hydraulic drive system. Lower level entry shall be 41 1/8"x80"non rated door with power operator and frosted tempered glass panel. Upper level entry shall be 41 1/8"x42" gate with power operator and frosted tempered glass panel. All components to receive baked on enamel finish from RAL color pallet. Recess concrete floor slab 3" below adjacent Lounge floor. Door and gate hardware to be dark bronze finish. Call/send stations wall mounted. Provide keyed option. GC to provide required blocking/framing to support mast.

FULLY SPRINKLERED BUILDING

NORTH (building)

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RENOVATIONS

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West Virginia

Owner

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Stephen & Harriet Pearson

Mech/Elect Engineer

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Structural Engineer

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Issue/Revision Seal

6/4/20 Issued to WV Fire Marshal

6/22/20 Issued for bid

STATE OF WEST VIRGINIA · MATTHEW W. GROVE · NO. 2616 · REGISTERED ARCHITECT

Drawing Title

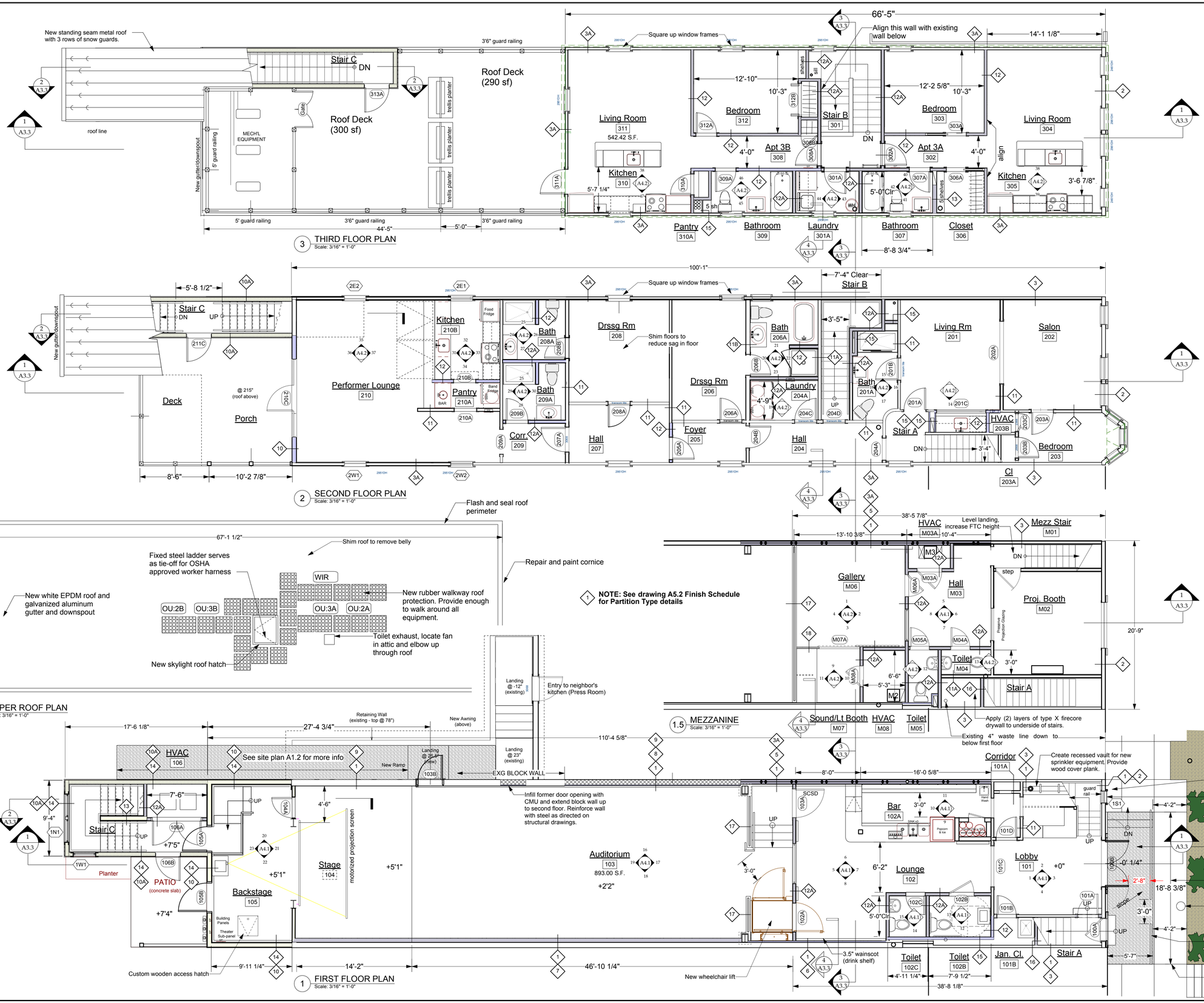
Specifications

Date May 28, 2020
Scale As Noted Project Number 19820

Drawing Number

A1.3

FULLY SPRINKLERED BUILDING



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6/22/20 Issued for bid	

Drawing Title

Construction Floor Plans

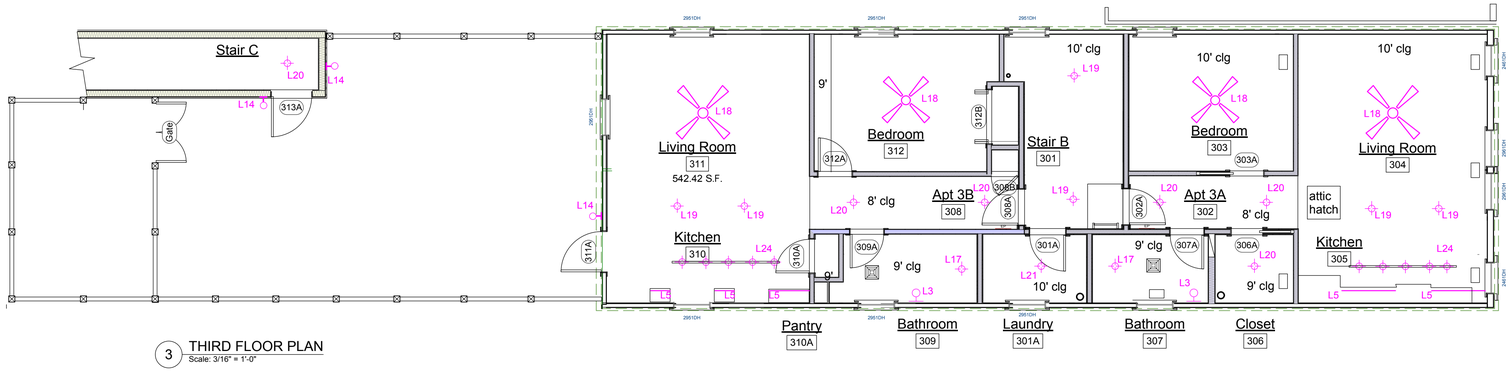
Date May 28, 2020

Scale As Noted Project Number 19820

Drawing Number

A2.2

FULLY SPRINKLERED BUILDING



3 THIRD FLOOR PLAN
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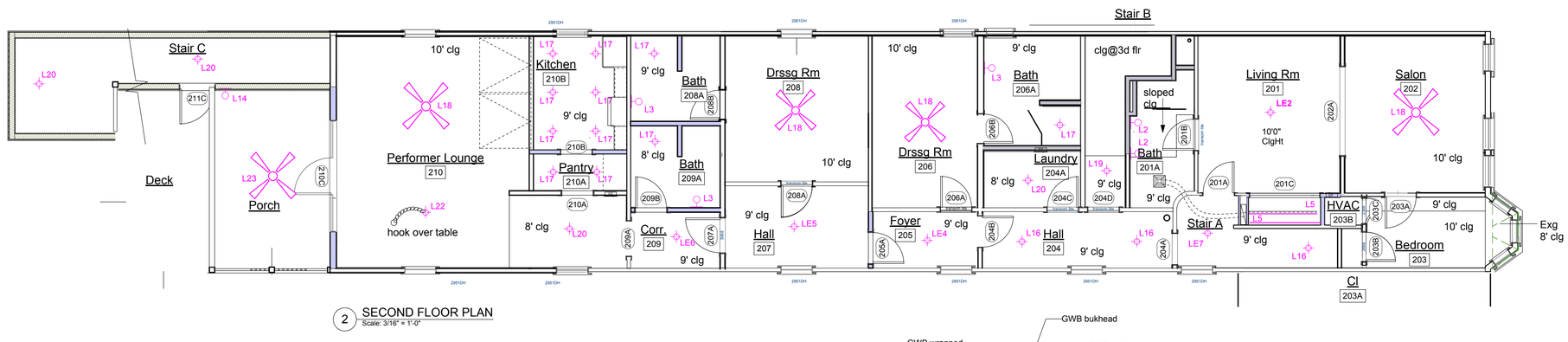

2 SECOND FLOOR PLAN
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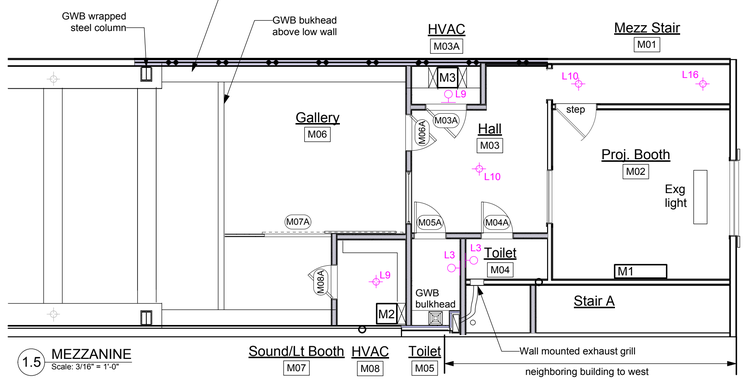

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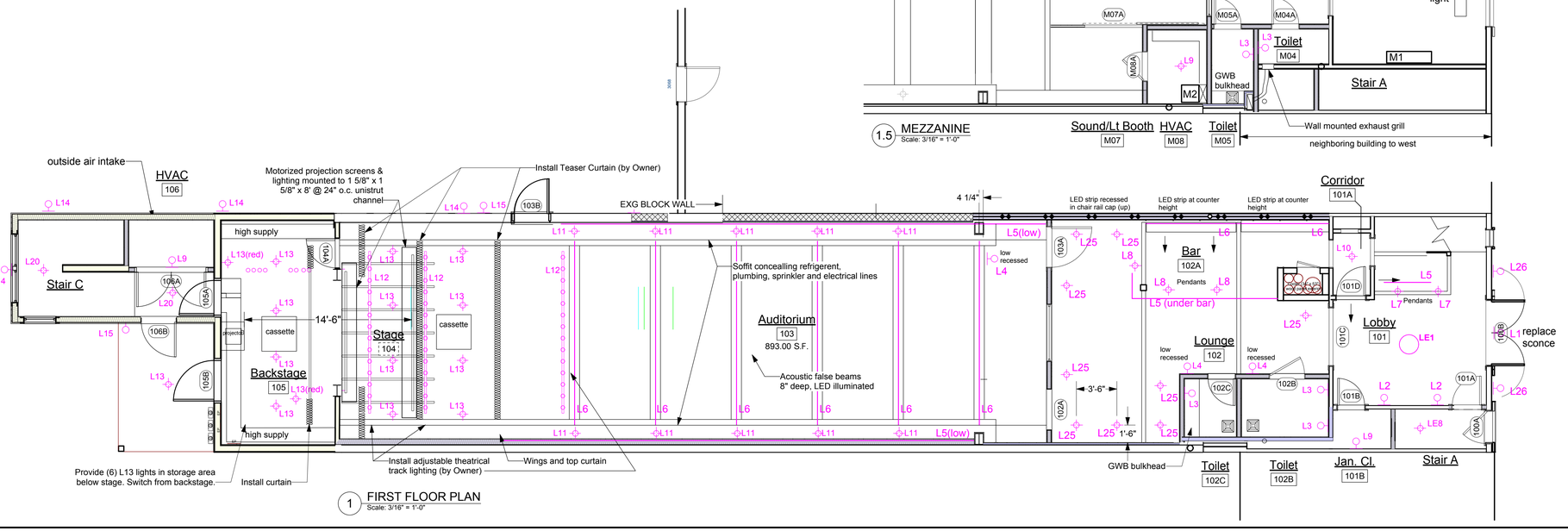

1 FIRST FLOOR PLAN
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STATE OF WEST VIRGINIA MATTHEW W. GROVE NO. 2616 REGISTERED ARCHITECT

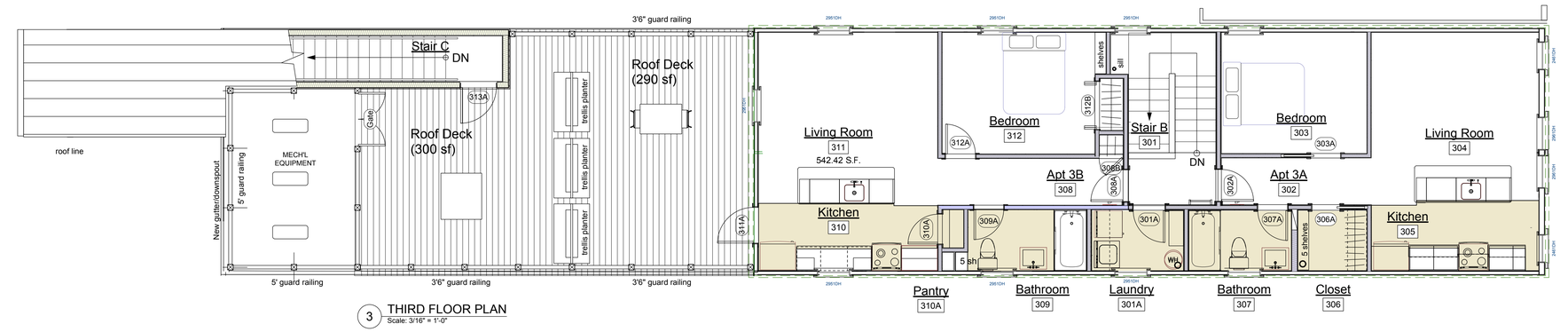
Drawing Title

RCP
Floor Plans

Date May 28, 2020
Scale As Noted
Project Number 19820

Drawing Number

A2.3



3 THIRD FLOOR PLAN
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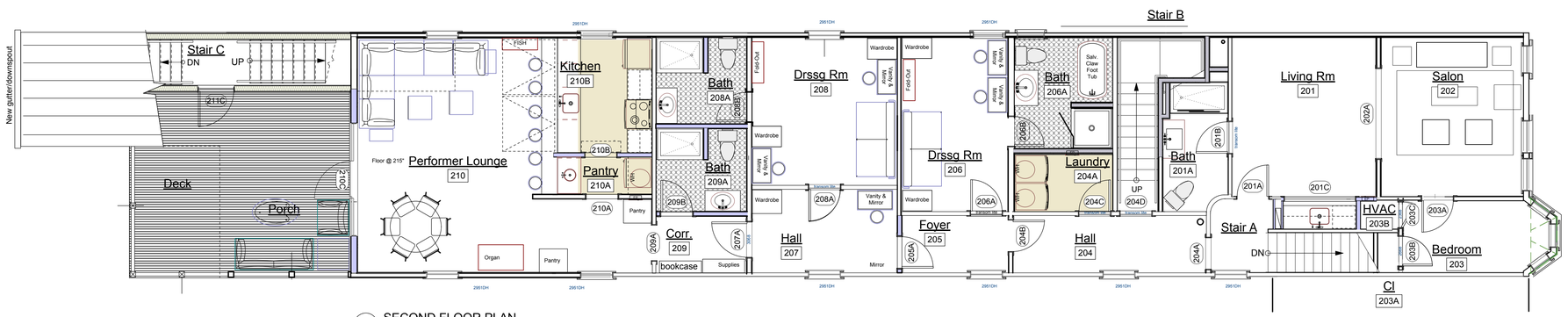

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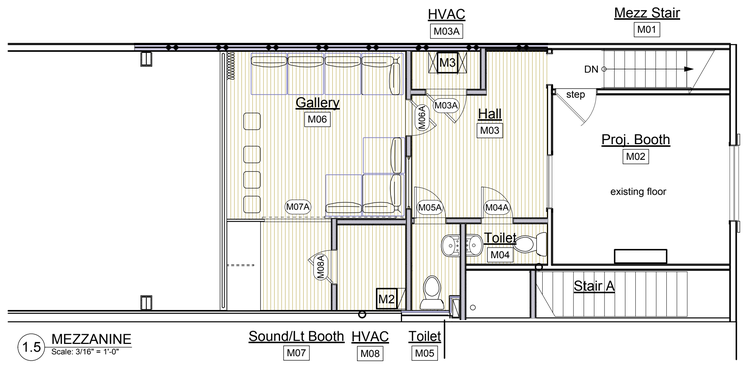

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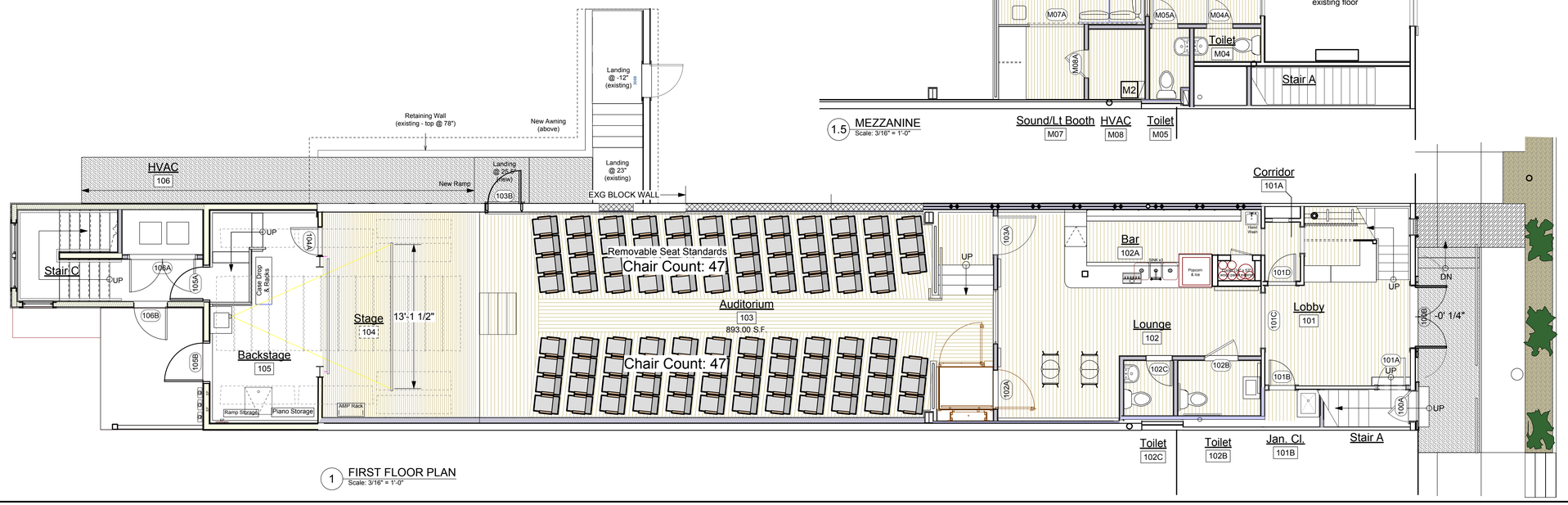

1 FIRST FLOOR PLAN
Scale: 3/16" = 1'-0"

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House
RENOVATIONS

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STATE OF WEST VIRGINIA
MATTHEW W. GROVE
NO. 2616
REGISTERED
ARCHITECT

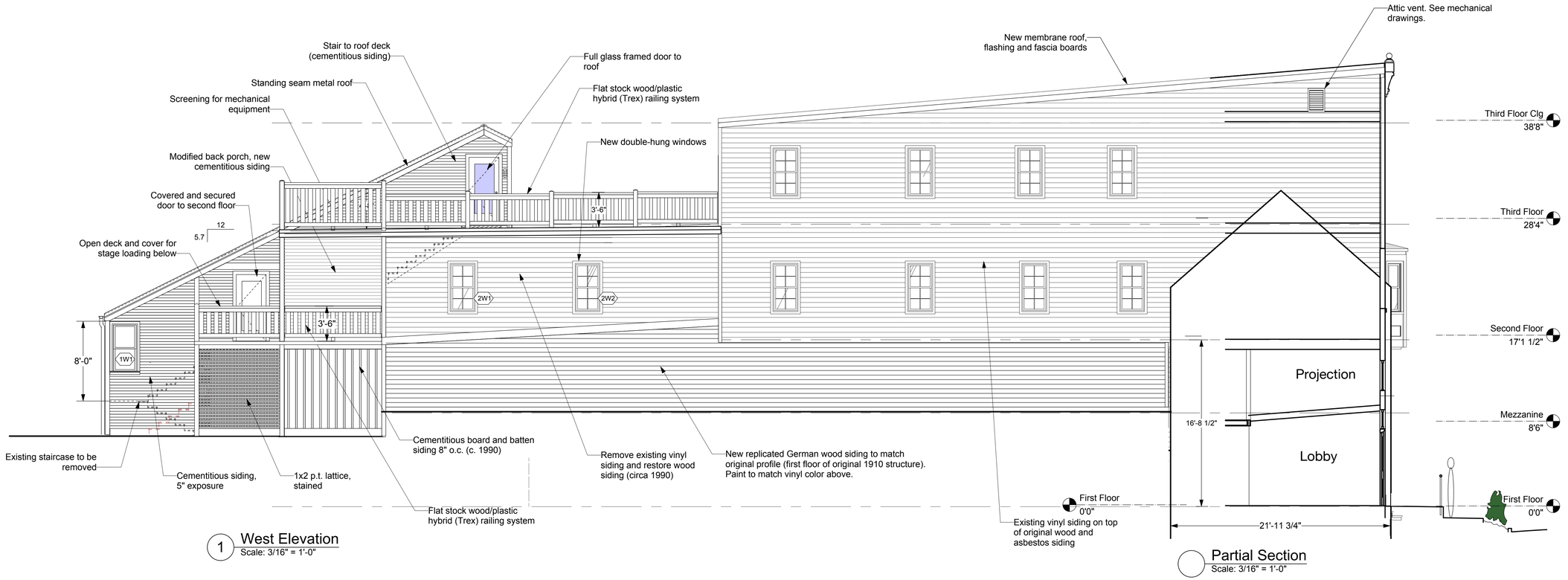
Drawing Title

FFE
Floor Plans

Date May 28, 2020
Scale As Noted
Project Number 19820

Drawing Number

A2.4



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Partial Section
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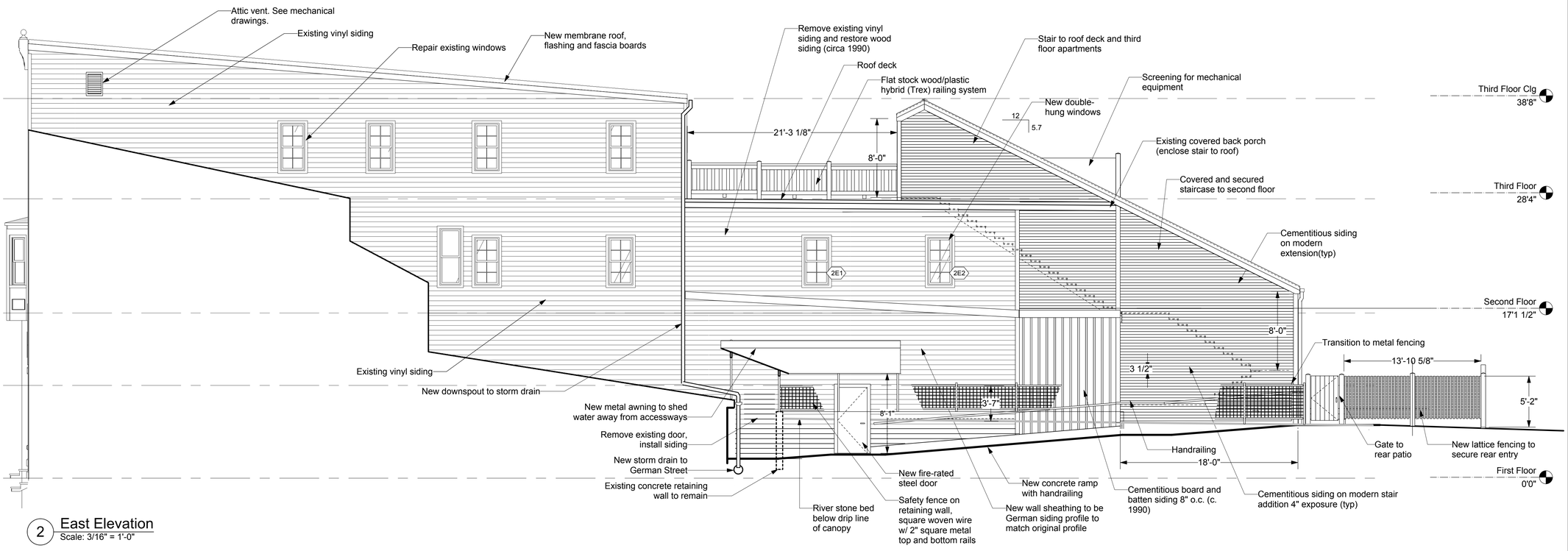

2 East Elevation
Scale: 3/16" = 1'-0"

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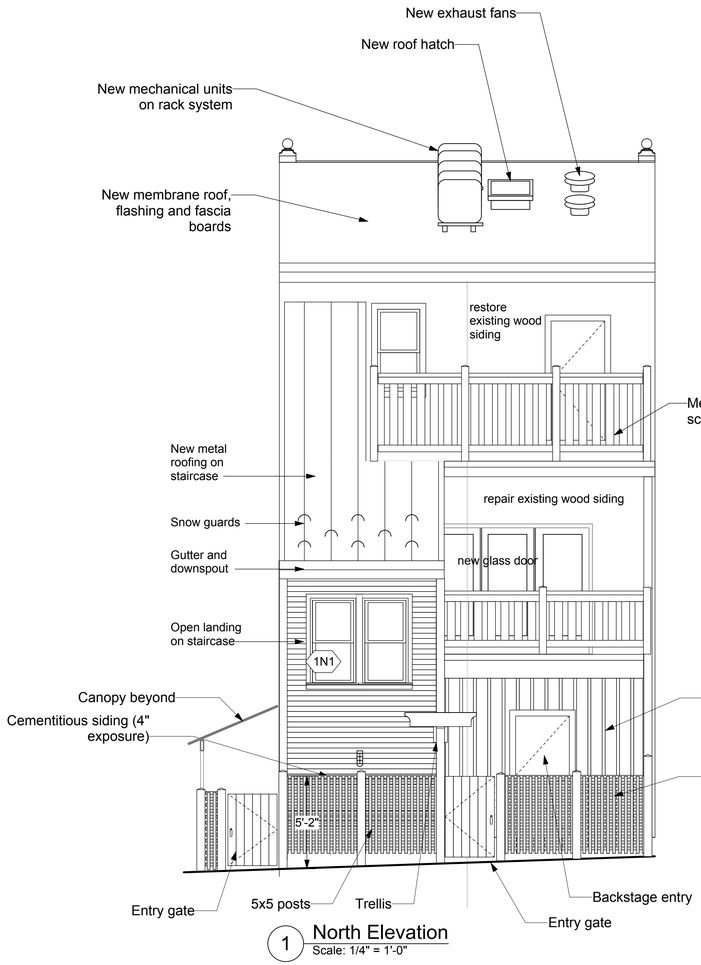
STATE OF WEST VIRGINIA — MATTHEW W. GROVE NO. 2616 — REGISTERED ARCHITECT
NOT FOR CONSTRUCTION

Drawing Title

Ext. Elevations

Date May 28, 2020
Scale As Noted
Project Number 19820
Drawing Number

A3.1



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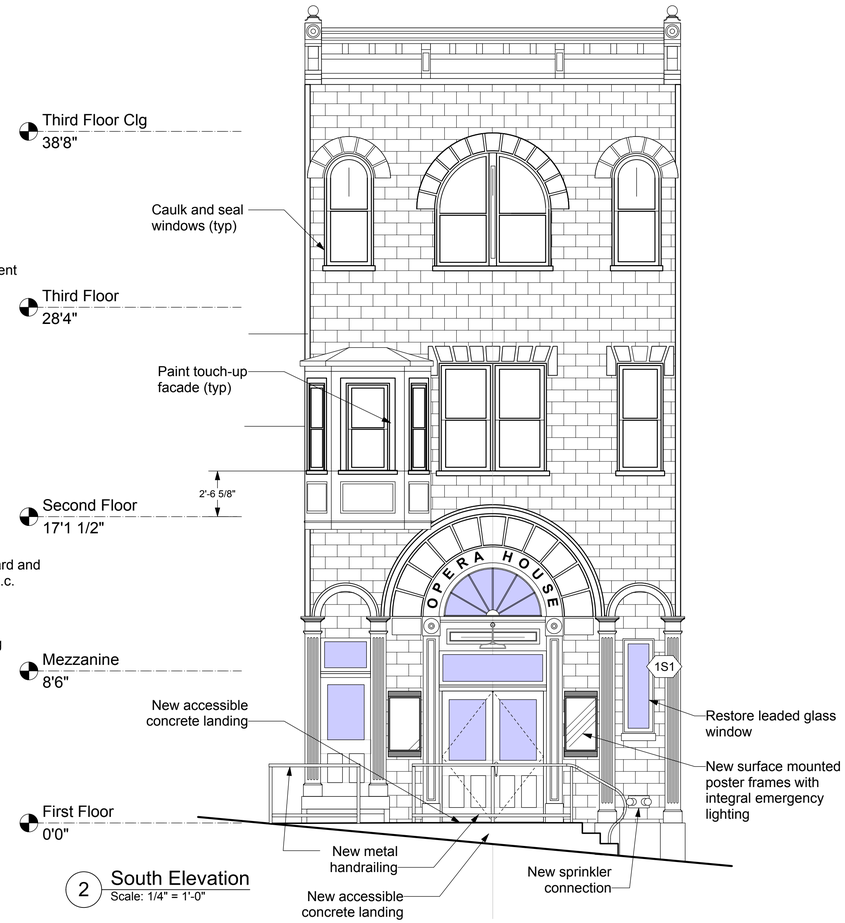

2 South Elevation
Scale: 1/4" = 1'-0"

FULLY SPRINKLERED BUILDING

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STATE OF WEST VIRGINIA
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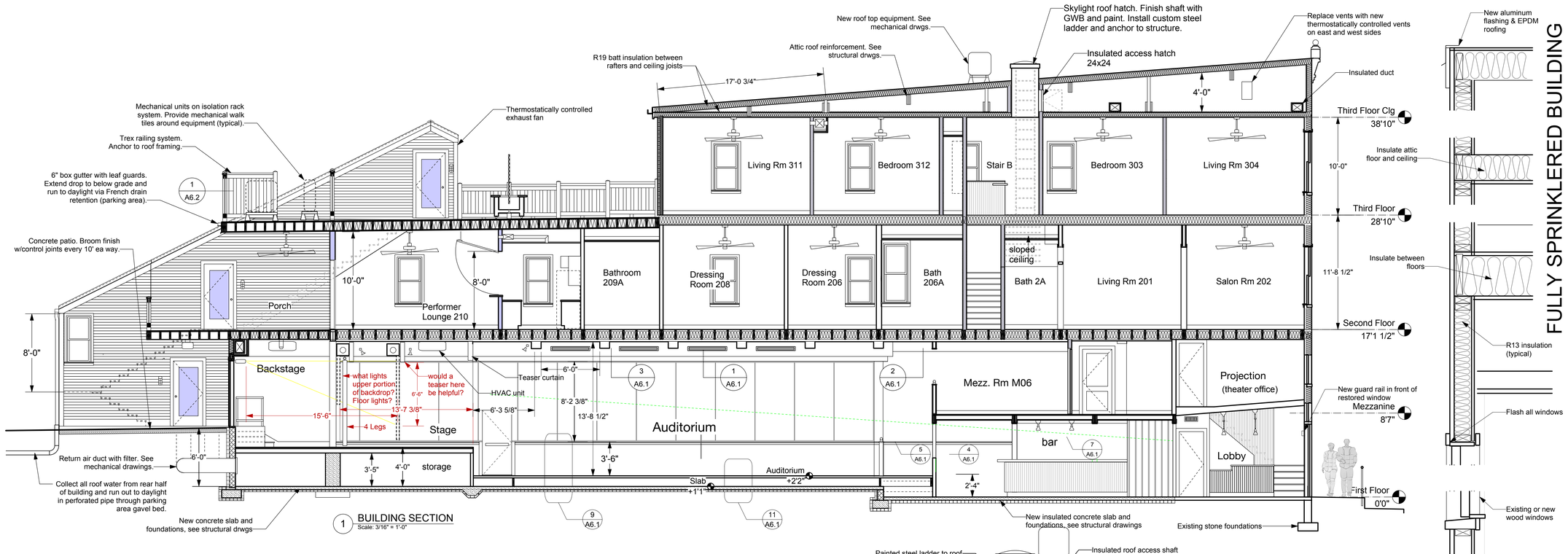
Drawing Title

Ext. Elevations

Date May 28, 2020
Scale As Noted
Project Number 19820

Drawing Number

A3.2



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STATE OF WEST VIRGINIA — MATTHEW W. GROVE NO. 2616 — REGISTERED PROFESSIONAL ARCHITECT

Drawing Title

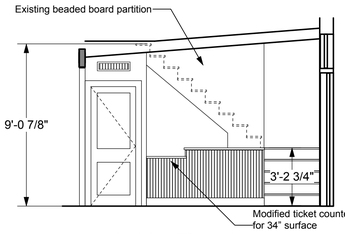
Building & Wall Sections

Date May 28, 2020

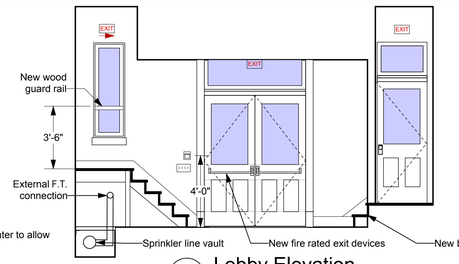
Scale As Noted Project Number 19820

Drawing Number

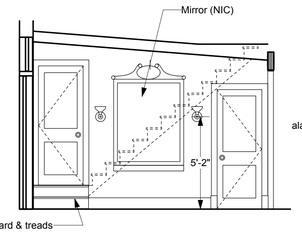
A3.3



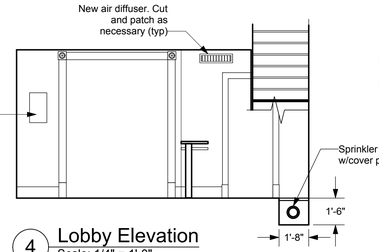
1 Lobby Elevation
Scale: 1/4" = 1'-0"



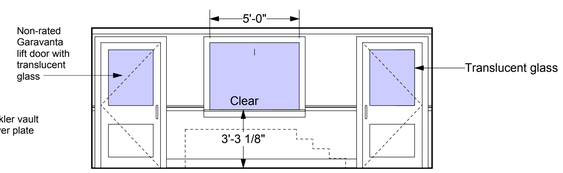
2 Lobby Elevation
Scale: 1/4" = 1'-0"



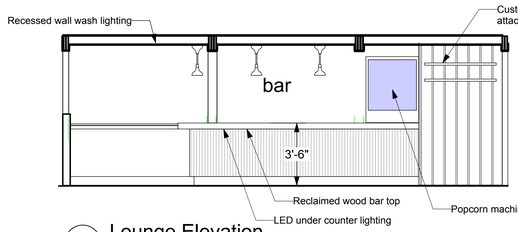
3 Lobby Elevation
Scale: 1/4" = 1'-0"



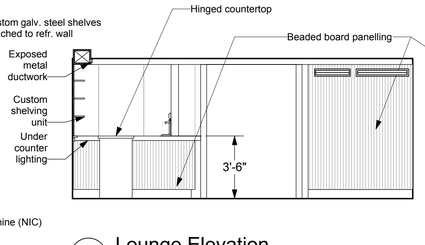
4 Lobby Elevation
Scale: 1/4" = 1'-0"



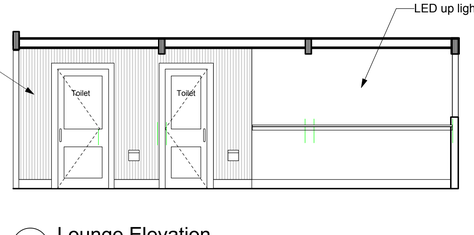
5 Lounge Elevation
Scale: 1/4" = 1'-0"



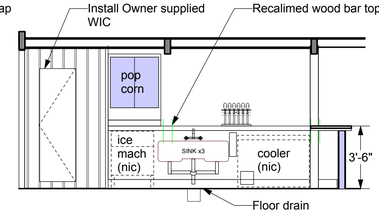
6 Lounge Elevation
Scale: 1/4" = 1'-0"



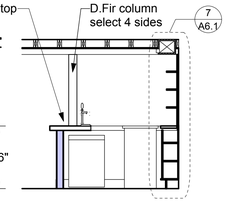
7 Lounge Elevation
Scale: 1/4" = 1'-0"



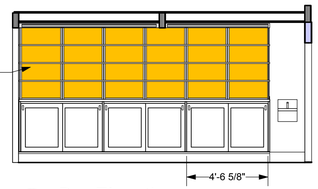
8 Lounge Elevation
Scale: 1/4" = 1'-0"



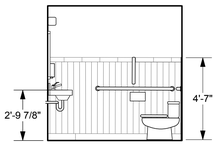
9 Bar Elevation
Scale: 1/4" = 1'-0"



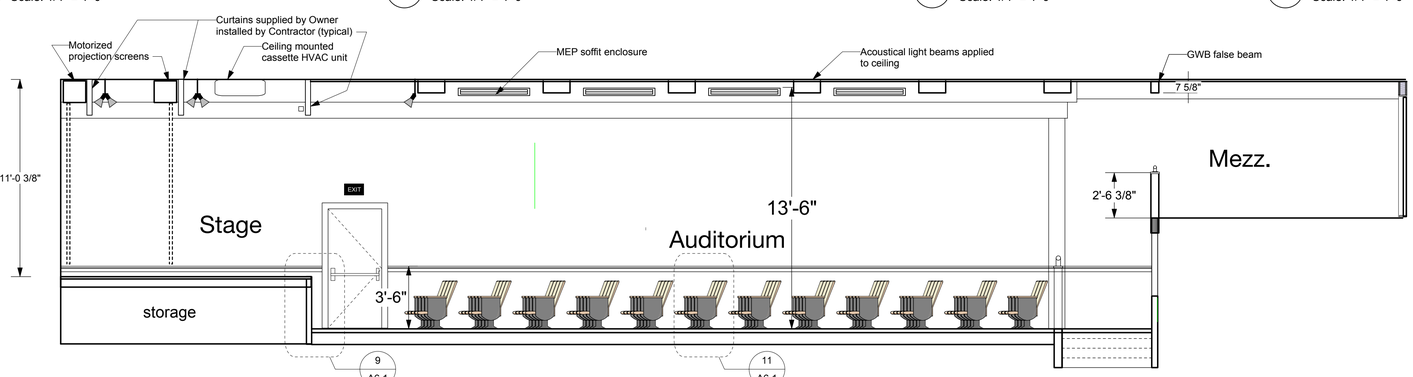
10 Bar Elevation
Scale: 1/4" = 1'-0"



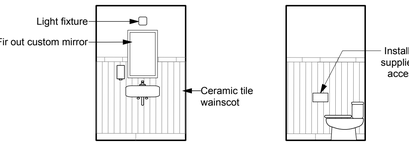
11 Bar Elevation
Scale: 1/4" = 1'-0"



12 Bath Elev
Scale: 1/4" = 1'-0"

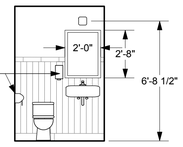


16 Stage and House Elevation
Scale: 1/4" = 1'-0"

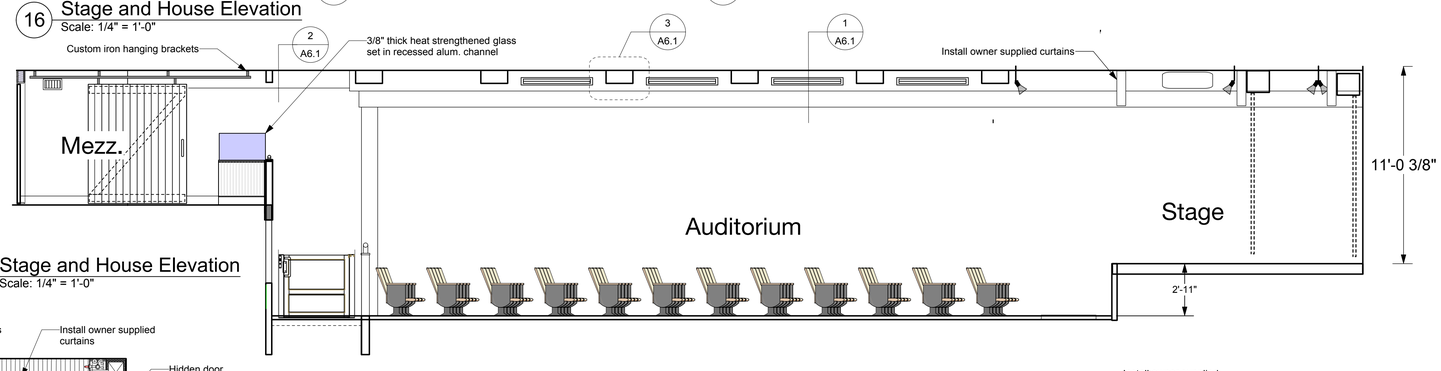


13 Bath Elev
Scale: 1/4" = 1'-0"

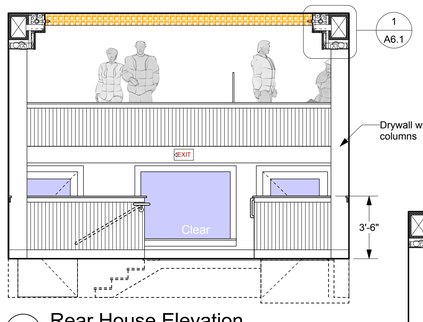
14 Bath Elev
Scale: 1/4" = 1'-0"



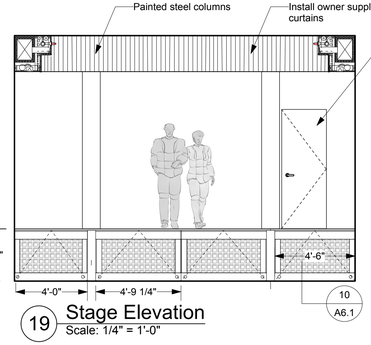
15 Bath Elev
Scale: 1/4" = 1'-0"



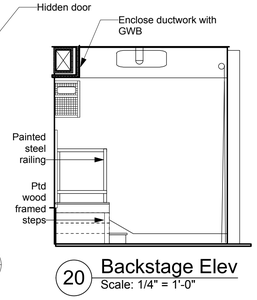
18 Stage and House Elevation
Scale: 1/4" = 1'-0"



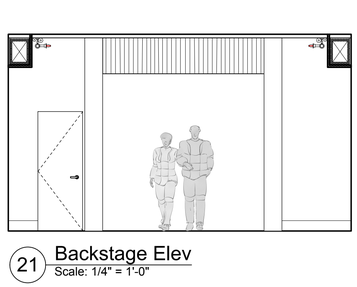
17 Rear House Elevation
Scale: 1/4" = 1'-0"



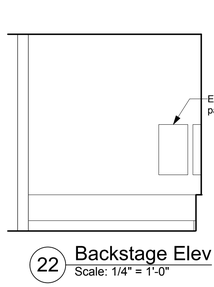
19 Stage Elevation
Scale: 1/4" = 1'-0"



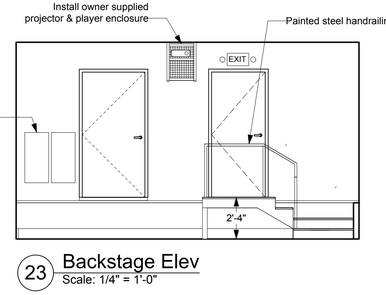
20 Backstage Elev
Scale: 1/4" = 1'-0"



21 Backstage Elev
Scale: 1/4" = 1'-0"



22 Backstage Elev
Scale: 1/4" = 1'-0"



23 Backstage Elev
Scale: 1/4" = 1'-0"

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House
RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech / Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects plic AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
325 Migration Lane, Gerrardstown, WV 25420, 304-267-2120
18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue / Revision
6/4/20 Issued to WV Fire Marshal
6/22/20 Issued for bid

Seal
STATE OF WEST VIRGINIA — MATTHEW W. GROVE NO. 2616 — REGISTERED ARCHITECT

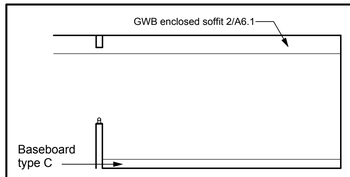
Drawing Title

Interior Elevations

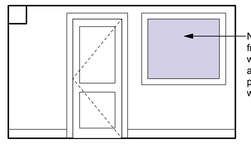
Date May 28, 2020
Scale As Noted
Project Number 19820

Drawing Number

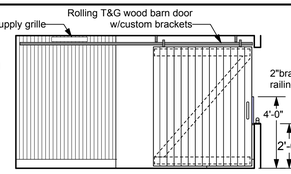
A4.1



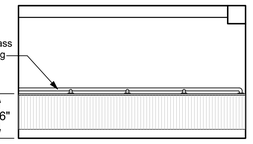
1 Gallery
Scale: 1/4" = 1'-0"



2 Gallery
Scale: 1/4" = 1'-0"



3 Gallery
Scale: 1/4" = 1'-0"



4 Gallery
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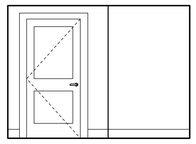
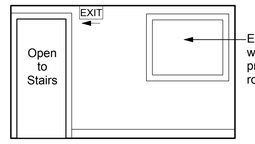
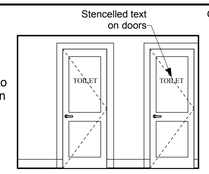


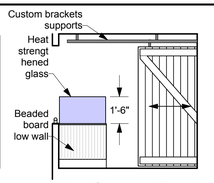
5 Hall
Scale: 1/4" = 1'-0"



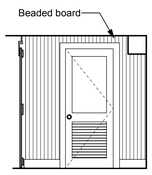
6 Hall
Scale: 1/4" = 1'-0"



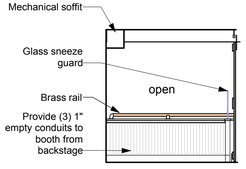
7 Hall
Scale: 1/4" = 1'-0"



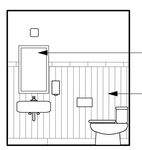
9 Sound Booth
Scale: 1/4" = 1'-0"



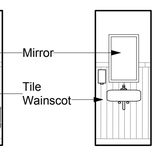
10 Sound Booth
Scale: 1/4" = 1'-0"



11 Sound Booth
Scale: 1/4" = 1'-0"



12 Toilet M05
Scale: 1/4" = 1'-0"



13 Toilet M04
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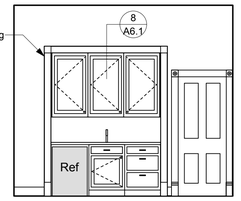
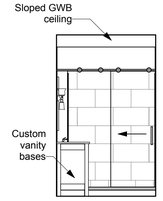
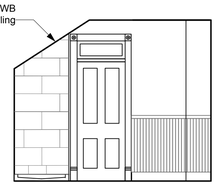


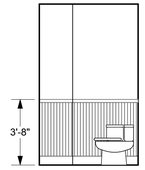
14 Apartment 2A
Scale: 1/4" = 1'-0"



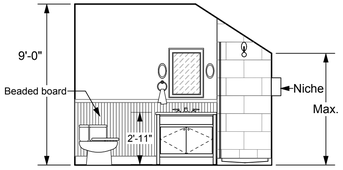
15 Bath 201A
Scale: 1/4" = 1'-0"



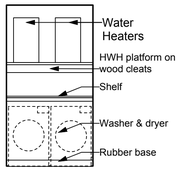
16 Bath 201A
Scale: 1/4" = 1'-0"



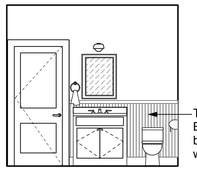
17 Bath 201A
Scale: 1/4" = 1'-0"



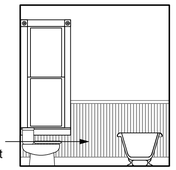
18 Bath 201A
Scale: 1/4" = 1'-0"



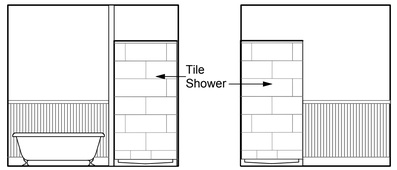
19 Laundry 204A
Scale: 1/4" = 1'-0"



20 Bath 206A
Scale: 1/4" = 1'-0"

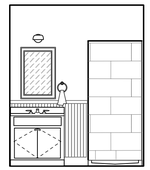


21 Bath 206A
Scale: 1/4" = 1'-0"

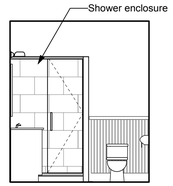


22 Bath 206A
Scale: 1/4" = 1'-0"

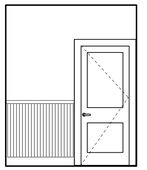
23 Bath 206A
Scale: 1/4" = 1'-0"



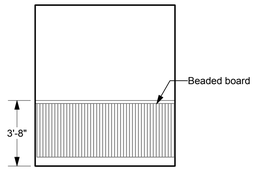
24 Bath 208A
Scale: 1/4" = 1'-0"



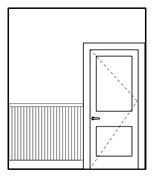
25 Bath 208A/209A
Scale: 1/4" = 1'-0"



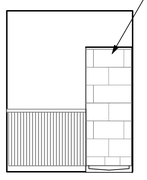
26 Bath 208A
Scale: 1/4" = 1'-0"



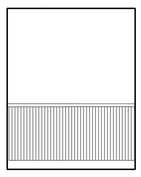
27 Bath 208A
Scale: 1/4" = 1'-0"



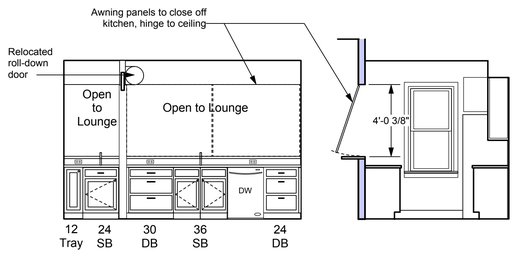
28 Bath 209A
Scale: 1/4" = 1'-0"



29 Bath 209A
Scale: 1/4" = 1'-0"

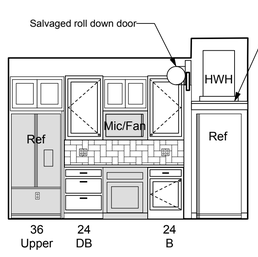


30 Bath 208A
Scale: 1/4" = 1'-0"

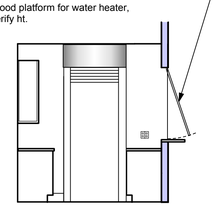


31 Pantry 210A/Kitchen 210B
Scale: 1/4" = 1'-0"

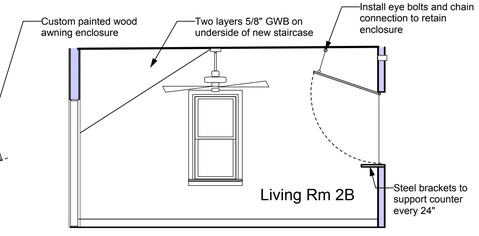
32 Kitchen 210B
Scale: 1/4" = 1'-0"



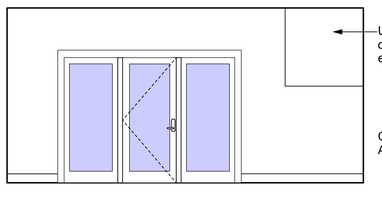
33 Kitchen 210B
Scale: 1/4" = 1'-0"



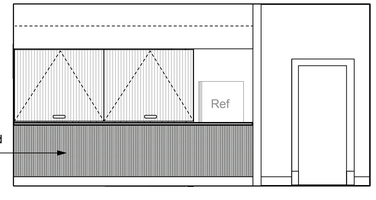
34 Kitchen 210B
Scale: 1/4" = 1'-0"



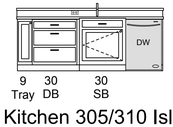
35 Performer Lounge 210
Scale: 1/4" = 1'-0"



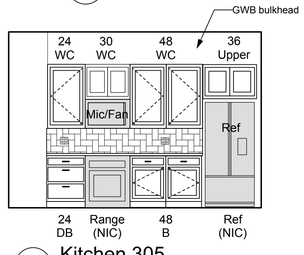
36 Performer Lounge 210
Scale: 1/4" = 1'-0"



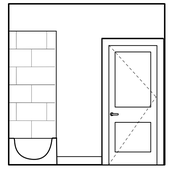
37 Performer Lounge 210
Scale: 1/4" = 1'-0"



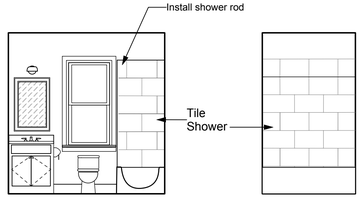
38 Kitchen 305/310 Island
Scale: 1/4" = 1'-0"



39 Kitchen 305
Scale: 1/4" = 1'-0"



40 Bath 307
Scale: 1/4" = 1'-0"



41 Bath 307
Scale: 1/4" = 1'-0"

42 Bath 307/309
Scale: 1/4" = 1'-0"

43 Laundry 308
Scale: 1/4" = 1'-0"

44 Laundry 308
Scale: 1/4" = 1'-0"

45 Bath 309
Scale: 1/4" = 1'-0"

46 Bath 309
Scale: 1/4" = 1'-0"

47 Kitchen 310
Scale: 1/4" = 1'-0"

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

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Architecture Planning Interiors Landscape
AIA, LEED AP
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18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue / Revision

6/4/20 Issued to WV Fire Marshal

6/22/20 Issued for bid

Seal

STATE OF WEST VIRGINIA
MATTHEW W. GROVE
NO. 2616
REGISTERED PROFESSIONAL
ARCH. LEC.

Drawing Title

Interior Elevations

Date May 28, 2020

Scale As Noted

Project Number 19820

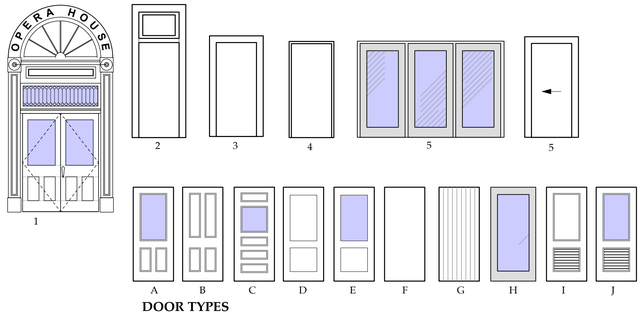
Drawing Number

A4.2

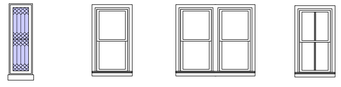
Door Schedule

Mark		Door Location	Type	Door Material	Nominal Size: Width	Height	Thk	Operation	Door Style: Shape	Style	Door Frame: Glaz. Style	Jamb Thk	Jamb Depth	Frame Type	Material	Frame Details: Head Detail	Jamb Detail	Sill Detail	Fire Rating: Frame	Door Slab	HW Set	Openings: RO Width	RO Height	Comments
													VIF											
100	A	Stair A Ext Door	Exg A	Wood/Glass	2'10"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 2	Wood	13	10-1	Exg	-	-	1	2'11 1/2"	6'8 3/4"	Existing historic doors
100	B	Opera House Entry	Exg A	Wood/Glass	5'8"	6'8"	1 3/4"	Swing Bi-part	Square	Solid	None	3/4"	4 1/2"	Exg 1	Wood	13	10-1	Exg	-	-	2	5'9 1/2"	6'8 3/4"	Existing historic doors
101	A	Lobby-Stair A	D	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	11-5	11-5	-	45 min	45 min	3	2'7 1/2"	6'8 3/4"	1 hr separation between use groups
101	B	Janitor's Closet	D	Wood	2'4"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-1	10-1	16	-	-	4	2'5 1/2"	6'8 3/4"	
101	C	Lobby-Lounge	-	-	4'11 1/2"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-1	10-1	-	-	-	-	5'1"	6'8 3/4"	
101	D	Lobby-Ticket Cntr	D	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-1	10-1	-	-	-	5	2'7 1/2"	6'8 3/4"	
102	A	Wheelchair Lift	Garavanta	Metal/Glass	3'6"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	3	Wood/HM	Garavanta*	Garavanta*	Garavanta*	-	-	-*	3'7 1/2"	6'8 3/4"	*Garavanta supplied. Add wood trim
102	B	ADA Toilet	D	Wood	3'0"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	16	-	-	6	3'1 1/2"	6'8 3/4"	
102	C	Toilet	D	Wood	2'4"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	16	-	-	6	2'5 1/2"	6'8 3/4"	
103	A	Lounge-Auditorium	E	Wood/Glass	3'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood/HM	11-5	11-5	-	-	-	7	3'7 1/2"	6'8 3/4"	
103	B	Auditorium Exit	F	HM	3'0"	7'0"	1 3/4"	Swing Simple	Square	Solid	None	2"	7 1/2"	3	Wood/HM	11-5	11-5	14	45 min	45 min	8	3'4"	7'2"	
104	A	Stage-Backstage	F	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	-	-	-	5A	2'7 1/2"	6'8 3/4"	This door may be trimless, acoustic treatment
105	A	Backstage Exit	F	HM	3'0"	7'0"	1 3/4"	Swing Simple	Square	Solid	None	2"	7 1/2"	4	HM	12	12	18	45 min	45 min	9	3'4"	7'2"	
105	B	Backstage Loading	F	HM	3'6"	7'0"	1 3/4"	Swing Simple	Square	Solid	None	2"	7 1/2"	4	HM	12	12	17	-	-	10	3'10"	7'2"	
106	A	HVAC Closet	F	HM	6'0"	6'8"	1 3/4"	Swing Bi-part	Square	Solid	None	2"	4 1/2"	4	HM	12	12	18	45 min	45 min	11	6'4"	6'10"	
106	B	Stair C Exit	F	HM	3'0"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	4	HM	12	12	17	-	-	9	3'1 1/2"	6'8 3/4"	
201	A	Apartment Entry	Exg B	Wood	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	3"	Exg 3	Wood	10-1	10-1	Exg 15	Exg	20 min	12	2'9 1/2"	6'8 3/4"	
201	B	Bathroom	Exg B	Wood	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 2	Wood	13	10-2	Exg 15	-	-	Exg	2'9 1/2"	6'8 3/4"	
201	C	Kitchenette	-	-	6'0"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	Flush wood	-	-	-	6'1 1/2"	6'8 3/4"	
202	A	Salon	-	-	7'8"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-2	10-2	Exg	-	-	-	7'9 1/2"	6'8 3/4"	
203	A	Bedroom	Exg B	Wood	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-4	10-4	Exg	-	-	5	2'9 1/2"	6'8 3/4"	
203	B	Closet	Exg B	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-2	10-2	Exg	-	-	Exg	2'7 1/2"	6'8 3/4"	Adjust door to close properly
203	C	HVAC Closet	Exg B	Wood	2'2"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-2	10-2	Exg	-	-	Exg	2'3 1/2"	6'8 3/4"	Adjust door to close properly
204	A	Stair A - Hall	-	-	2'8"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-2	10-2	Exg			-	2'9 1/2"	6'8 3/4"	
204	B	Apartment Entry	B	Wood	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3*	Wood	10-5	10-5	15	Exg	20 min	13	2'9 1/2"	6'8 3/4"	*widen door frme
204	C	Laundry	Exg B*	Wood/Glass	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 2	Wood/Glass	13	10-2	Exg	-	-	Exg	2'9 1/2"	6'8 3/4"	*reverse swing of door
204	D	Stair B Opening	-	-	2'8"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	Exg 2	Wood/Glass	13	10-2	Exg	-	-	-	2'9 1/2"	6'8 3/4"	
205	A	Foyer	D	Wood	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	15	20 min	20 min	14	2'9 1/2"	6'8 3/4"	
206	A	Dressing Room	Exg C	Wood/Glass	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 2	Wood/Glass	13	10-4	Exg	-	-	Exg	2'9 1/2"	6'8 3/4"	Adjust door hardware to improve function
206	B	Bathroom	D	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	6 1/2"	3	Wood	10-5	10-5	16	-	-	5	2'7 1/2"	6'8 3/4"	
207	A	Hall-Corridor	D	Wood	3'0"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 3	Wood	10-2	10-2	Exg	-	-	14	3'1 1/2"	6'8 3/4"	
208	A	Dressing Room	Exg C	Wood/Glass	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Exg 2	Wood/Glass	13	10-4	Exg	-	-	5	2'9 1/2"	6'8 3/4"	Reverse swing of door
208	B	Bathroom	Exg C*	Wood/Glass	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	6 1/2"	Salvaged 3	Wood	10-2	10-2	15	-	-	5	2'7 1/2"	6'8 3/4"	*Owner supplied door, trim salvaged on site
209	A	Corridor	-	-	3'0"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	Exg 2	Wood	10-2	10-2	Exg	-	-	-	3'1 1/2"	6'8 3/4"	
209	B	Bathroom	Exg C*	Wood/Glass	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	Salvaged 3	Wood	10-4	10-4	15	-	-	5	2'9 1/2"	6'8 3/4"	
210	A	Pantry	-	-	2'8"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	Exg 2	Wood	10-4	10-4	Exg	-	-	-	2'9 1/2"	6'8 3/4"	
210	B	Kitchen	Exg	Exg Metal	2'8"	6'8"	1 3/4"	Cased Opening	Square	Solid	None	3/4"	4 1/2"	3	Wood/Metal	10-5	10-5	-	-	-	Exg	2'9 1/2"	6'8 3/4"	Salvaged roll-down door
210	C	Performer Entry	H	Wood/Gl/Metal	9'6"	6'8"	1 3/4"	Swing Complex	Square	Solid	None	3/4"	4 1/2"	5	Wood/Metal	10-5	10-5	Integral	-	-	13	9'7 1/2"	6'8 3/4"	
211	C	Stair C Entry	H	Wood/Gl/Metal	3'0"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	14	-	-	9	3'1 1/2"	6'8 3/4"	
301	A	Laundry	I	Wood	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	6 1/2"	3	Wood	10-5	10-5	16	-	-	15	2'9 1/2"	6'8 3/4"	
302	A	Aprtmnt 3A Entry	D	Wood	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	6 1/2"	3	Wood	10-5	10-5	15	20 min	20 min	13	2'9 1/2"	6'8 3/4"	
303	A	Bedroom	D	Wood	2'6"	6'8"	1 3/4"	Pocket Simple	Square	Solid	None	3/4"	4 5/8"	6	Wood	10-5	10-5	15	-	-	16	2'7 1/2"	6'8 3/4"	
306	A	Pantry	I	Wood	2'4"	6'8"	1 3/4"	Pocket Simple	Square	Solid	None	3/4"	6 1/2"	6	Wood	10-5	10-5	15	-	-	16	2'5 1/2"	6'8 3/4"	
307	A	Bathroom	D	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	6 1/2"	3	Wood	10-5	10-5	15	-	-	5	2'7 1/2"	6'8 3/4"	
308	A	Aprtmnt 3B Entry	D	Wood	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	6 1/2"	3	Wood	10-5	10-5	15	20 min	20 min	13	2'9 1/2"	6'8 3/4"	
308	B	Closet	D	Wood	2'0"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	0"	4 5/8"	3	Wood	10-5	10-5	-	-	-	5A	2'0"	6'8"	
309	A	Bathroom	D	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 5/8"	3	Wood	10-5	10-5	15	-	-	5	2'7 1/2"	6'8 3/4"	
310	A	Closet	I	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 5/8"	3	Wood	10-5	10-5	-	-	-	5A	2'7 1/2"	6'8 3/4"	
311	A	Roof Deck Entry	H	Wood/Glass	3'0"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 5/8"	3	Wood	11-5	11-5	17	-	-	13	3'1 1/2"	6'8 3/4"	
312	A	Bedroom	D	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 5/8"	3	Wood	10-5	10-5	15	-	-	5	2'7 1/2"	6'8 3/4"	
312	B	Closet	I	Wood	4'0"	6'8"	1 3/4"	Bi-fold Bi-part	Square	Solid	None	3/4"	4 5/8"	3	Wood	10-5	10-5	-	-	-	17	4'1 1/2"	6'8 3/4"	
313	A	Roof Deck-Stair C	H	Wood/Glass	3'0"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	11-5	11-5	17	-	-	9	3'1 1/2"	6'8 3/4"	
Gate		HVAC Deck	G	Trex	4'6"	6'8"	1 3/4"	Swing Bi-part	Square	Solid	None	0"	0"	3	Wood	-	-	-	-	-	*	4'6"	6'8"	*Lockable gate latch
M03	A	HVAC Closet	I	Wood	3'0"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	-	-	-	4	3'1 1/2"	6'8 3/4"	
M04	A	Toilet	D	Wood	2'4"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	16	-	-	6	2'5 1/2"	6'8 3/4"	
M05	A	Toilet	D	Wood	2'4"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	16	-	-	6	2'5 1/2"	6'8 3/4"	
M06	A	Gallery	E	Wood/Glass	2'8"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	-	-	-	4	2'9 1/2"	6'8 3/4"	
M07	A	Sound/Light Booth	G	Wood	5'0"	6'8"	1 3/4"	Barn	Square	Solid	None	0"	4 1/2"	6	Wood	-	-	-	-	-	18	5'0"	6'8"	
M08	A	Storage	I	Wood	2'6"	6'8"	1 3/4"	Swing Simple	Square	Solid	None	3/4"	4 1/2"	3	Wood	10-5	10-5	-	-	-	4	2'7 1/2"	6'8 3/4"	

FRAME TYPES

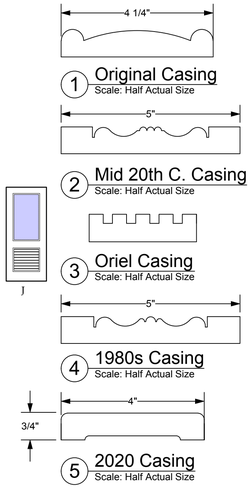


DOOR TYPES

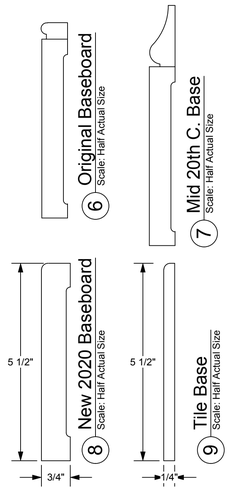


WINDOW TYPES

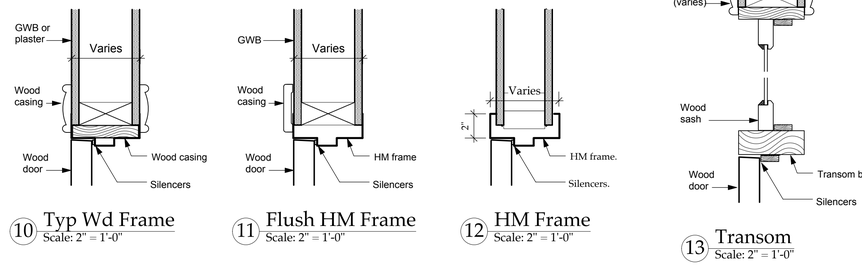
CASING DETAILS



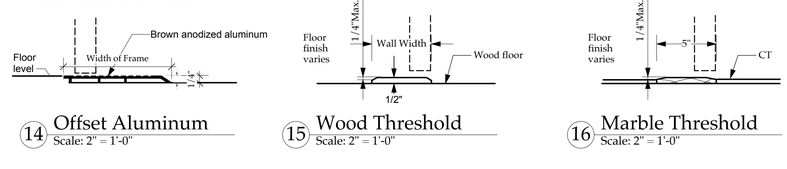
BASEBOARD DETAILS

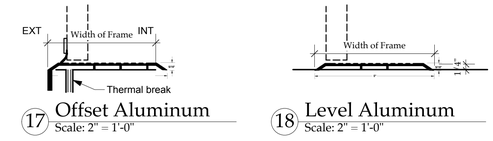


DOOR FRAME DETAILS



THRESHOLD DETAILS





Window Schedule

Des.	Type	Size	Location	Frame Material	Glazing	Low E	Remarks/Options
1S1	A	VIF (existing frame)	Mezzanine Stair	Wood	Leaded glass to match transom	No	Provide new interior window guard
1W1	B	30" x 60"	Stair C	Metal Clad Wood	5/8" insulated	Yes	
1N1	C	(2) 30" x 60"	Stair C	Metal Clad Wood	5/8" insulated	Yes	
2E1	B	30" x 60"	Performer Lounge	Metal Clad Wood	5/8" insulated	Yes	
2E2	B	30" x 60"	Performer Lounge	Metal Clad Wood	5/8" insulated	Yes	
2W1	B	30" x 60"	Performer Lounge	Metal Clad Wood	5/8" insulated	Yes	
2W2	B	30" x 60"	Performer Lounge	Metal Clad Wood	5/8" insulated	Yes	

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown
Opera House
RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects pllc AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
325 Migration Lane, Gerrardstown, WV 25420, 304-267-2120
18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue/Revision Seal

6/4/20 Issued to WV Fire Marshal
6/22/20 Issued for bid

STATE OF WEST VIRGINIA MATTHEW W. GROVE NO. 2616 REGISTERED ARCHITECT

Drawing Title

Door Schedule

Date May 28, 2020
Scale As Noted Project Number 19820

Drawing Number

A5.1

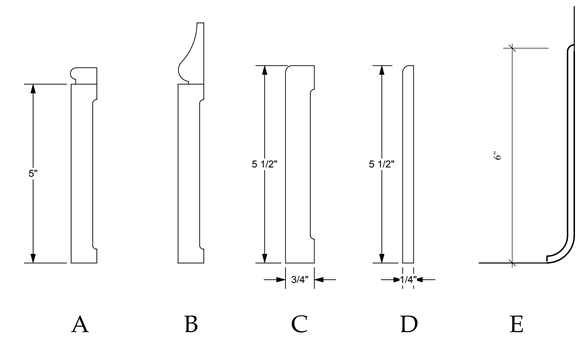
Finish Schedule & Notes

Room		Floor			Base	North Wall			East Wall			South Wall			West Wall			Ceiling				Remarks
No.	Name	Material	Finish	R Value	Material	Finish code	Finish	R Value	Finish code	Finish	R Value	Finish code	Finish	R Value	Finish code	Finish	R Value	Material	Finish	Height	R Value	
Stair A	First Floor Landing	Wood	Stain	Exg Slab	Wood-A	-	-	-		Paint	-		Paint	13		Paint	13	Plaster	Paint		-	One hour rated walls and ceiling
101	Lobby	C.T. Plank	-	Exg Slab	Wood-A	Plaster	Paint	-	GWB 1	Paint	-	Plaster	Paint	13		Paint	-	Plaster	Paint	Varies	-	
101A	Corridor	C.T. Plank	-	Exg Slab	Wood-A					Paint	13		Paint	13		Paint	-		Paint	Varies	-	
101B	Janitor's Closet	C.T. Plank	-	Exg Slab	C.Tile	GWB 2	Paint	13	GWB 2	Paint		GWB 2	Paint		GWB 2	Paint		GWB 1	Paint	Varies	-	
102	Lounge	C.T. Plank	-	11	Wood-C	GWB 1/WD	Paint	13	GWB 1/WD	Paint	19	GWB 1/WD	Paint	13	GWB 1/WD	Paint	13	Plaster	Paint	7'10"	19	
102A	Bar	C.T. Plank	-	11	C. Tile	GWB 2	Paint	-	GWB 2	Paint	19	GWB 2	Paint	-	GWB 2	Paint	-	GWB 1	Paint	7'10"	19	
102B	ADA Toilet	C.T. Plank	-	11	C.Tile	GWB 2/CTile	Paint	13	GWB 2/CTile	Paint	13	GWB 2/CTile	Paint	13	GWB 2/CTile	Paint	13	GWB 1	Paint	7'10"	19	
102C	Toliet	C.T. Plank	-	11	C.Tile	GWB 2/CTile	Paint	13	GWB 2/CTile	Paint	13	GWB 2/CTile	Paint	13	GWB 2/CTile	Paint	13	GWB 1	Paint	7'10"	19	
103	Auditorium	Wood	Stain	11	Wood-C	GWB 1	Paint	-	GWB 1	Paint	11	GWB 1	Paint	13	GWB 1	Paint	11	Plaster	-	13'8"	30	One hour rated walls and ceiling
104	Stage	Wood	Stain	11	Wood-C	GWB 1	Paint	-	GWB 1	Paint	19	GWB 1	Paint	-	GWB 1	Paint	19	Plaster	-	10'10"	30	One hour rated walls and ceiling
105	Backstage	Wood	Stain	11	Wood-C	GWB 1	Paint	19	GWB 1	Paint	19	GWB 1	paint	-	GWB 1	Paint	19	GWB 2	Paint	10'10"	30	
	Stair C	Rubber	-	11	Rubber	GWB 1	Paint	19	GWB 1	Paint	19	GWB 1	Paint	19	GWB 1	Paint	19	GWB 1	Paint	Varies	30	One hour rated walls and ceiling
M01	Mezz. Stair	Wood	Stain	-	Wood-A	GWB1/Tile2	-/Paint	-	GWB1/Tile2	-/Paint	13	GWB1/Tile2	-/Paint	13	GWB1/Tile2	-/Paint	-	GWB 2	Paint	10'0"	Exg	
M02	Old Projection Booth	Wood	Stain	-	Wood-A	GWB1/Tile2	-/Paint	-	GWB1/Tile2	-/Paint	-	GWB1/Tile2	-/Paint	13	GWB1/Tile2	-/Paint	-	GWB 2	Paint	10'0"	Exg	
M03	Hall	Wood	Stain	19	Wood-C	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	-	GWB 1	Paint	13	GWB 1	Paint	7'5"	30	
M03A	HVAC Closet	Wood	Stain	19	Wood-C	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	7'5"	30	
M04	Toilet	C.T. Plank	-	19	C.Tile	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	7'5"	30	
M05	Toilet	C.T. Plank	-	19	C.Tile	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	19	GWB 1	Paint	7'5"	30	
M06	Gallery	Wood	Stain	19	Wood-C	GWB 1	Paint	-	GWB 1	Paint	19	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	7'5"	30	
M07	Sound Booth	Wood	Stain	19	Wood-C	GWB 1	Paint	-	GWB 1	Paint	-	GWB 1	Paint	13	GWB 1	Paint	19	GWB 1	Paint	7'5"	30	
M08	HVAC Closet	Wood	Stain	19	Wood-C	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	19	GWB 1	Paint	7'5"	30	
Stair A	Second Floor Landing	Wood	Stain	30	Wood-A	Plaster	Paint	-	Plaster	Paint	-	GWB 1	Paint	13	GWB 1	Paint	19	GWB 1	Paint	9'0"	30	
201	Living Room	Wood	-	30	Wood-B	Plaster	Paint	-	Plaster	Paint	13	Plaster	Paint	-	Plaster	Paint	13	Plaster	Paint	10'0"	30	
201A	Bathroom	Wood	Stain	30	Wood-C	GWB3/Plstr	Paint	13	Tile 2	-/Paint	13	Tile2/Plstr	-/Paint	-	Plaster	Paint	-	GWB 2	Paint	Varies	30	Apply beaded board wainscot to walls
202	Salon	Wood	Stain	30	Wood-B	Plaster	Paint	-	Plaster	Paint	13	Plaster	Paint	13	Plaster	Paint	-	Plaster	Paint	10'0"	30	
203	Bedroom	Wood	Stain	30	Wood-B	Plaster	Paint	-	Plaster	Paint	-	Plaster	Paint	13	Plaster	Paint	13	Plaster	Paint	*10'0"	30	*Drop builkhead for ductwork enclosure
204	Hall	Wood	Stain	30	Wood-B	Beaded Bd	Paint	-	Plaster	Paint	-	Plaster	Paint	-	Plaster	Paint	13	GWB 1	Paint	9'0"	30	
Stair B	2nd Floor Landing	Wood	Stain	30	Wood-C	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	Plaster	Paint	-	GWB 1	Paint	9'0"	30	
204A	Laundry	Linoleum	-	30	Rubber	GWB 1	Paint	19	GWB 1	Paint	13	Plaster	Paint	-	Plaster	Paint	-	GWB 1	Paint	8'0"	30	
205	Foyer	Wood	Stain	30	Wood-B	GWB 1	Paint	13	Plaster	Paint	-	Beaded Bd	Paint	-	Plaster	Paint	13	GWB 1	Paint	9'0"	30	
206	Dressing Room	Wood	Stain	30	Wood-B	GWB/Plstr	Paint	13	Plaster	Paint	13	GWB 1	Paint	19	Plaster	Paint	13	Plaster	Paint	10'0"	30	
206A	Bathroom	C.T. Plank	-	30	Wood-C	GWB 2/BB	Paint	19	GWB 2/BB	Paint	13	GWB 2/BB	Paint	13	GWB 2/BB	Paint	13	GWB 1	Paint	9'0"	30	Ceramic tile shower enclosure
207	Hall	Wood	Stain	30	Wood-B		Paint	-	Plaster	Paint	-	GWB/Plstr	Paint	13	Plaster	Paint	13	GWB 1	Paint	9'0"	30	
208	Dressing Room	Wood	Stain	30	Wood-B	GWB/Plstr	Paint	13		Paint	13		Paint	13	Plaster	Paint	-	GWB 1	Paint	10'0"	30	
208A	Bathroom	C.T. Plank	-	30	Wood-C	GWB2/BB	Paint	13	GWB2/BB	Paint	13	GWB2/BB	Paint	13	GWB2/BB	Paint	13	GWB 2	Paint	9'0"	30	
209	Corridor	Wood	Stain	30	Wood-B	GWB 1	Paint	-	GWB 1	Paint	13	GWB 1	Paint	-	GWB 1	Paint	13	GWB 1	Paint	9'0"	30	
209A	Bathroom	C.T. Plank	-	30	Wood-C	GWB2/BB	Paint	13	GWB2/BB	Paint	13	GWB2/BB	Paint	13	GWB2/BB	Paint	13	GWB 2	Paint	8'0"	30	Ceramic tile shower enclosure
210	Performer Lounge	Wood	Stain	30	Wood-B	GWB 1	Paint	19	GWB 1	Paint	19	GWB 1	Paint	-	GWB 1	Paint	19	GWB 1	Paint	10'0"*	30	*Portion of ceiling at 9'0", see A2.3 RCP
210A	Pantry	Linoleum	-	30	Rubber	GWB 1	Paint	-	GWB 1	Paint	-	GWB 1	Paint	-	GWB 1	Paint	-	GWB 1	Paint	9'0"	30	
210B	Kitchen	Linoleum	-	30	Rubber	GWB 1	Paint	-	GWB 1	Paint	19	GWB 1	Paint	13	GWB 1	Paint	-	GWB 1	Paint	9'0"	30	
Stair C	2nd Floor Landing	Rubber	-	-	Rubber	-	Paint	-	GWB 1	Paint	19	-	Paint	-	GWB 1	Paint	19	GWB 1	Paint	Varies	30	
301	Stair B Floor Landing	Wood	Stain	30	Wood-C	GWB 1	Paint	13	Plaster	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	Varies	30	
301A	Laundry	Linoleum	-	30	Rubber	GWB 2	Paint	13	GWB 2	Paint	13	GWB 2	Paint	13	Plaster	Paint	13	GWB 1	Paint	10'0"	30	
302	Apartment 3A Foyer	Wood	Stain	30	Wood-C	GWB 1	Paint	13	GWB 1	Paint	13	-	-	-	GWB 1	Paint	13	GWB 1	Paint	8'0"	30	
303	Bedroom	Wood	Stain	30	Wood-C	GWB 1	Paint	13	Plaster	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	10'0"	30	
304	Living Room	Wood	Stain	30	Wood-C	GWB 1	Paint	13	Plaster	Paint	13	Plaster	Paint	13	-	-	-	GWB 1	Paint	10'0"	30	
305	Kitchen	Linoleum	-	30	Wood-C	GWB 1	Paint	13		-		Plaster	Paint	13	Plaster	Paint	13	GWB 1	Paint	10'0"	30	
306	Closet	Linoleum	-	30	Wood-C	GWB 1	Paint	19	GWB 1	Paint	13	GWB 1	Paint	13	Plaster	Paint	13	GWB 1	Paint	9'0"	30	
307	Bathroom	Linoleum	-	30	Wood-C	GWB 2/BB	Paint	13	GWB 2/BB	Paint	13	GWB 2/BB	Paint	13	GWB 2/BB	Paint	13	GWB 2	Paint	9'0"	30	
308	Apartment 3B Foyer	Wood	Stain	30	Wood-C	-	-	-	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	8'0"	30	
309	Bathroom	Linoleum	-	30	Wood-C	GWB 2/BB	Paint	13	GWB 2/BB	Paint	13	GWB 2/BB	Paint	13	GWB 2/BB	Paint	13	GWB 2	Paint	9'0"	30	
310	Kitchen	Linoleum	-	30	Wood-C	GWB 1	Paint	13	-	-	-	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	10'0"	30	
310A	Pantry	Linoleum	-	30	Wood-C	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	8'0"	30	
311	Living Room	Wood	Stain	30	Wood-C	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	10'0"	30	
312	Bedroom	Wood	Stain	30	Wood-C	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	13	GWB 1	Paint	10'0"	30	*Portion of ceiling at 9'0", see A2.3 RCP
Stair C	3rd Floor Landing	Rubber	-	-	Rubber	-	Paint	-	GWB 1	Paint	19	GWB 1	Paint	19	GWB 1	Paint	19	GWB 1	Paint	Varies	30	

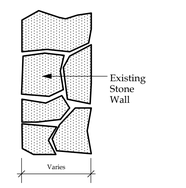
Key:

GWB 1	Type X Gypsum Wallboard taped and finished, primed, 2 finish coats of paint
GWB 2	Water resistant Type X Gypsum Wallboard taped and finished, primed, 2 finish coats of paint
BB	Beaded Board Wainscot

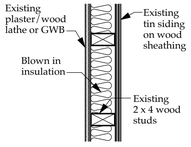
C.Tile	As shown on interior elevations
	Use cement board in all shower and tub areas, moisture resistant GWB behind other tilework



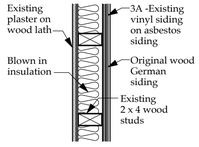
BASEBOARD DETAILS



1 Exg Stone Foundation
Scale: 1" = 1'-0"

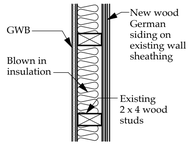


2 Tin Clad Ext Wall
Scale: 1" = 1'-0"

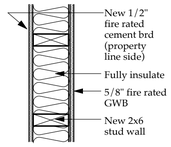


3 Ext Wood Framed Wall
Scale: 1" = 1'-0"

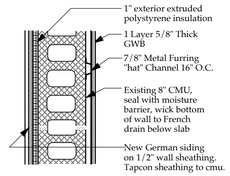
3A Same w/Asbestos & Vinyl Sdg
Scale: 1" = 1'-0"



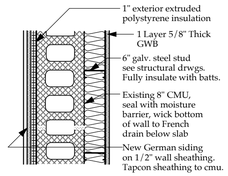
4 Ext Wd Wall w/new Sdg
Scale: 1" = 1'-0"



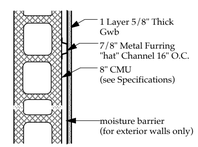
5 Ext 6" Wood Siding Wall
Scale: 1" = 1'-0"



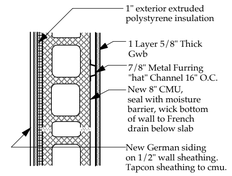
6 Furred EXG CMU Wall
Scale: 1" = 1'-0"



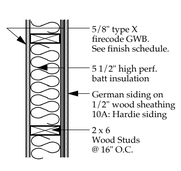
7 Furred EXG CMU Wall
Scale: 1" = 1'-0"



8 Furred CMU Wall
Scale: 1" = 1'-0"

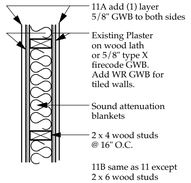


9 Furred CMU Wall
Scale: 1" = 1'-0"



10 New Ext Partition
Scale: 1" = 1'-0"

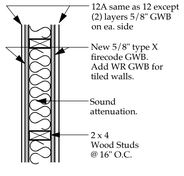
10A New Ext Partition
Scale: 1" = 1'-0"



11 Exg Wood Partition
Scale: 1" = 1'-0"

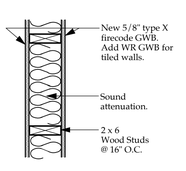
11A Exg Wood Partition
Scale: 1" = 1'-0"

11B Exg Wood Partition
Scale: 1" = 1'-0"

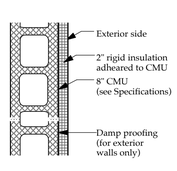


12 New 4" Wood Partition
Scale: 1" = 1'-0"

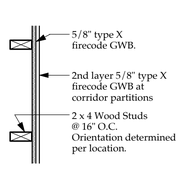
12A New 4" Wood Partition
Scale: 1" = 1'-0"
2 hour rated: U301



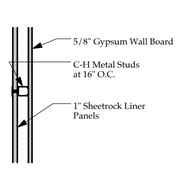
13 New 6" Wood Partition
Scale: 1" = 1'-0"



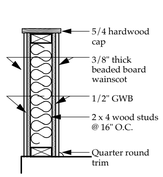
14 CMU Foundation
Scale: 1" = 1'-0"



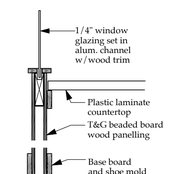
15 Furred Partition
Scale: 1" = 1'-0"



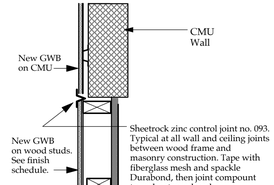
16 2 hr Shaft Wall
Scale: 1" = 1'-0"
UL: U415



17 Low Wall
Scale: 1" = 1'-0"



18 Beaded Bd Wall
Scale: 1" = 1'-0"



19 Vertical Control Joint
Scale: 1" = 1'-0"

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House

RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
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Seal

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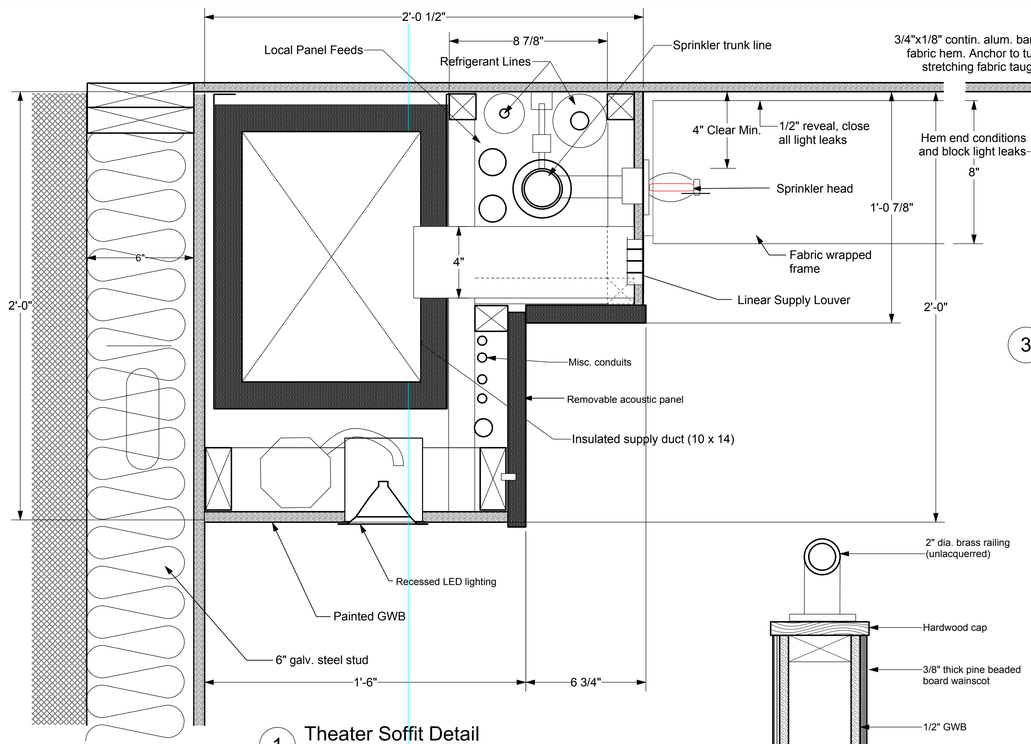
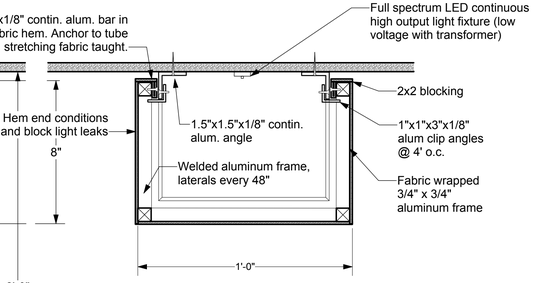
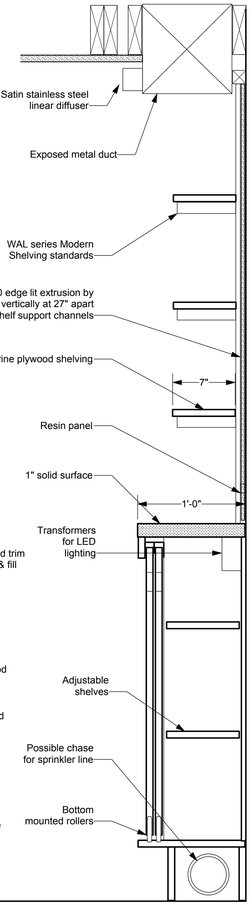
A5.2

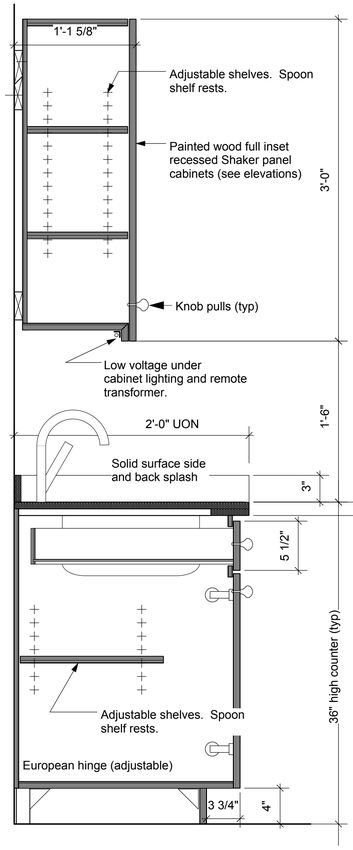


1 Theater Soffit Detail
Scale: 3" = 1'-0"



3 Theater False Beam Detail
Scale: 3" = 1'-0"

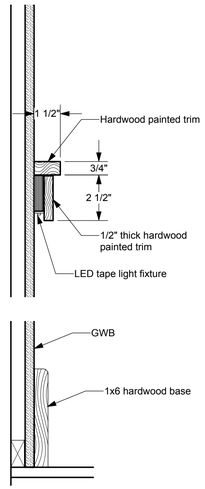




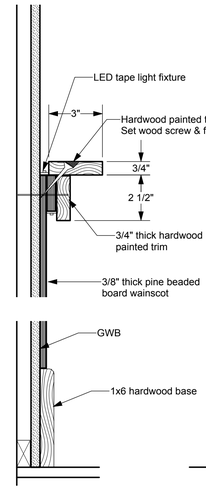
8 Wall & Base Cabinets
Scale: 1 1/2" = 1'-0"

2 Mezzanine Soffit Detail
Scale: 3" = 1'-0"

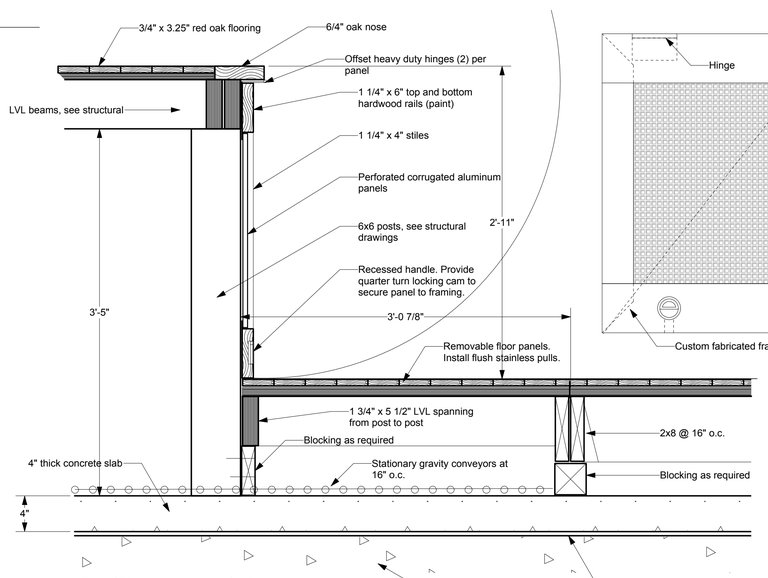
4 Low wall Detail
Scale: 3" = 1'-0"



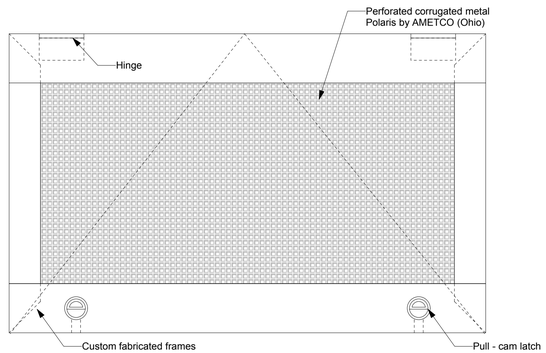
5 Chair Rail Detail
Scale: 3" = 1'-0"



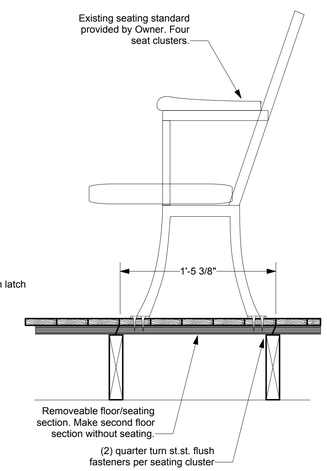
6 Chair Rail Detail
Scale: 3" = 1'-0"



9 Stage Front Detail
Scale: 1 1/2" = 1'-0"



10 Stage Front Panel Detail
Scale: 1 1/2" = 1'-0"



11 Seating-Floor Detail
Scale: 1 1/2" = 1'-0"

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House
RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

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540 247-2939

Structural Engineer

Ruckman Engineering, PLC
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Issue / Revision
6/4/20 Issued to WV Fire Marshal
6/22/20 Issued for bid

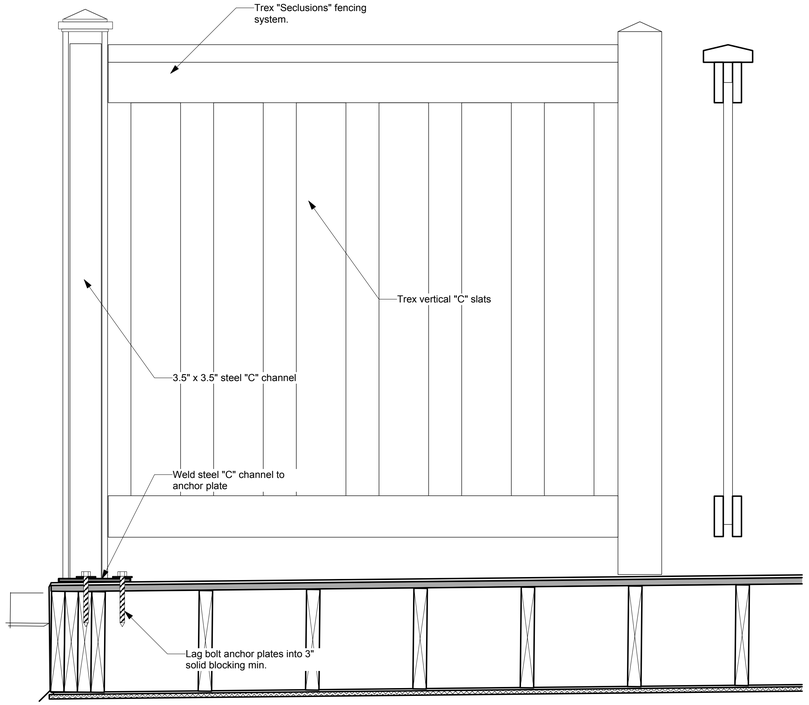
Seal
STATE OF WEST VIRGINIA MATTHEW W. GROVE NO. 2616 REGISTERED ARCHITECT

Drawing Title

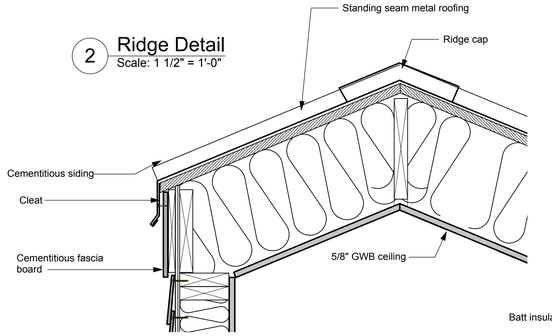
Interior Details

Date May 28, 2020
Scale As Noted
Project Number 19820
Drawing Number

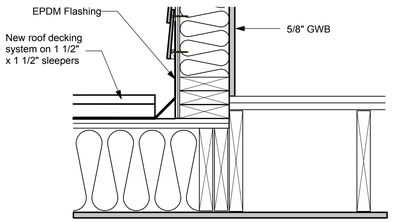
A6.1



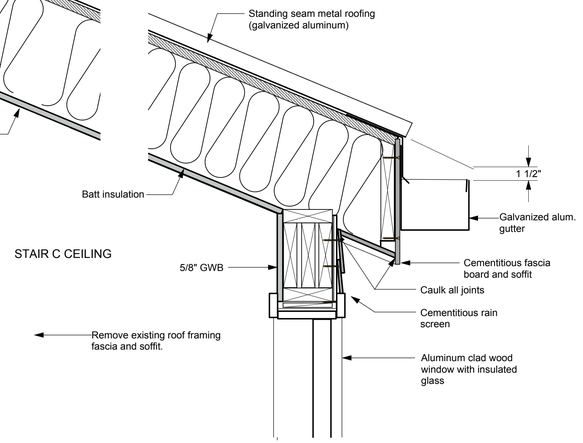
1 Roof Deck Railing Detail
Scale: 1 1/2" = 1'-0"



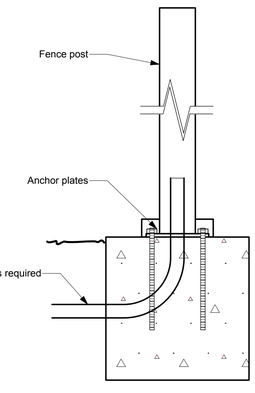
2 Ridge Detail
Scale: 1 1/2" = 1'-0"



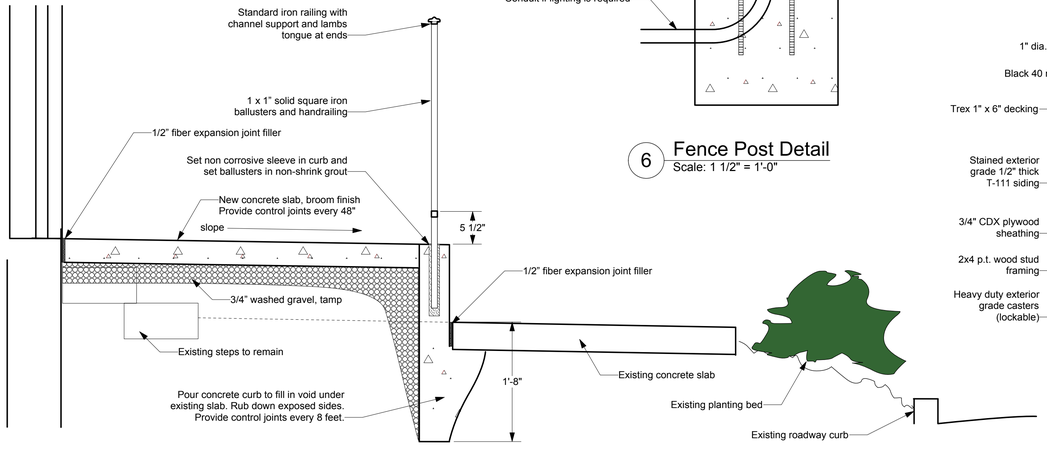
3 Roof Deck-Wall Detail
Scale: 1 1/2" = 1'-0"



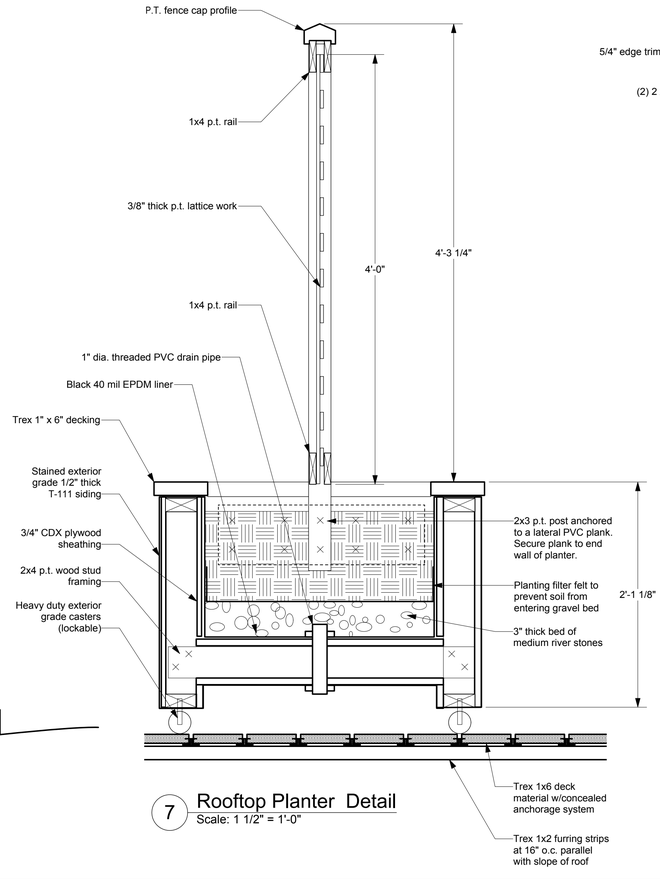
4 Eave Detail
Scale: 1 1/2" = 1'-0"



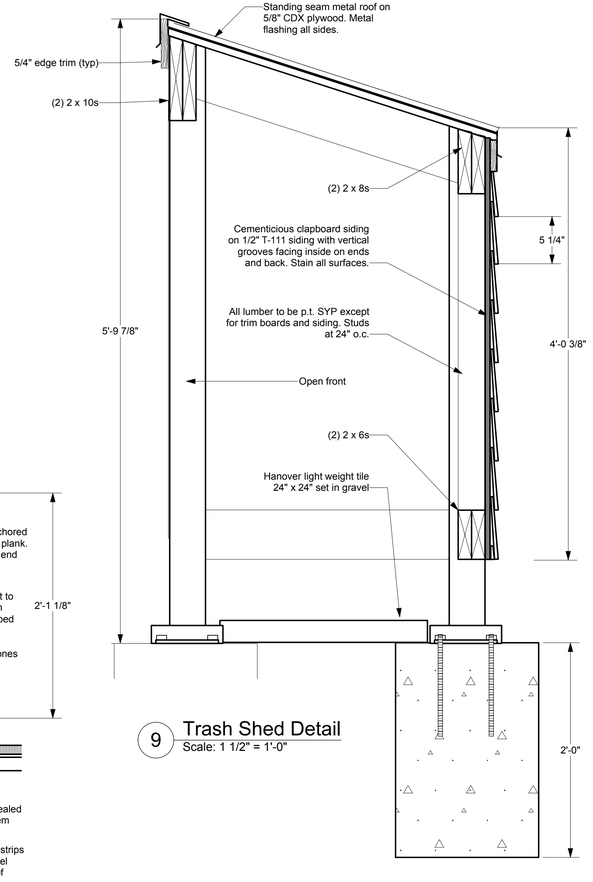
6 Fence Post Detail
Scale: 1 1/2" = 1'-0"



5 Roof Deck-Wall Detail
Scale: 1" = 1'-0"



7 Rooftop Planter Detail
Scale: 1 1/2" = 1'-0"



9 Trash Shed Detail
Scale: 1 1/2" = 1'-0"

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House
RENOVATIONS

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18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue/Revision

6/4/20 Issued to WV Fire Marshal

6/22/20 Issued for bid

Seal

STATE OF WEST VIRGINIA
MATTHEW W. GROVE
NO. 2616
REGISTERED ARCHITECT

Drawing Title

Exterior Details

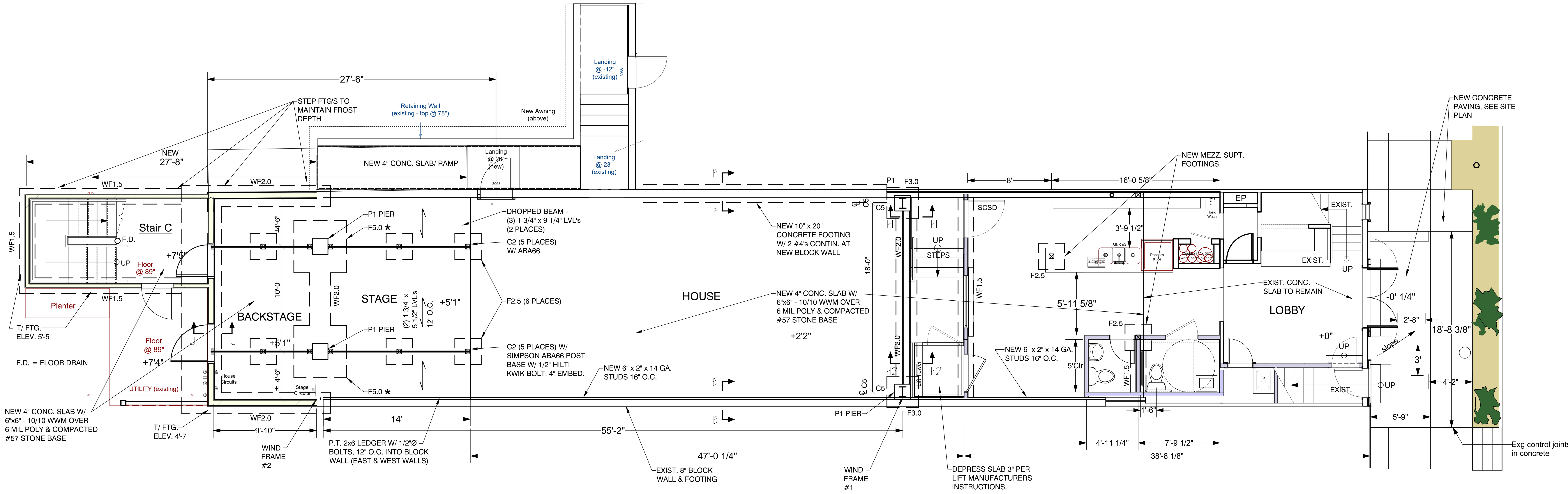
Date May 28, 2020

Scale As Noted

Project Number 19820

Drawing Number

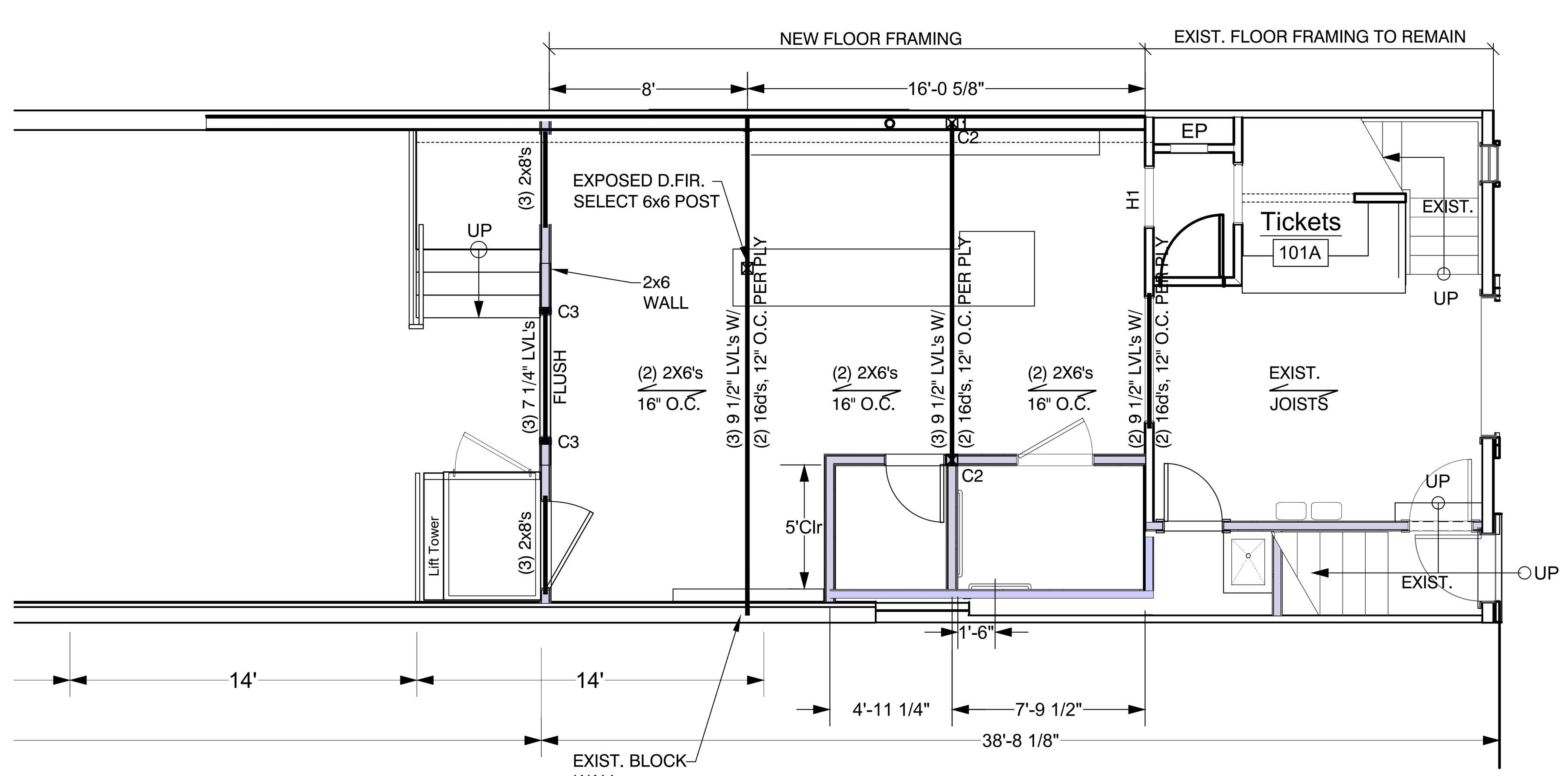
A6.2



TOP OF FTG. ELEVATIONS ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL TOP OF FTG. ELEVATIONS MAY VARY DEPENDING ON SITE SOIL CONDITIONS.

★ TOP OF FTG. F5.0 TO BE 12" BELOW T/ SLAB

FOUNDATION PLAN - 1ST FLOOR PLAN
Scale: 3/16" = 1'-0"

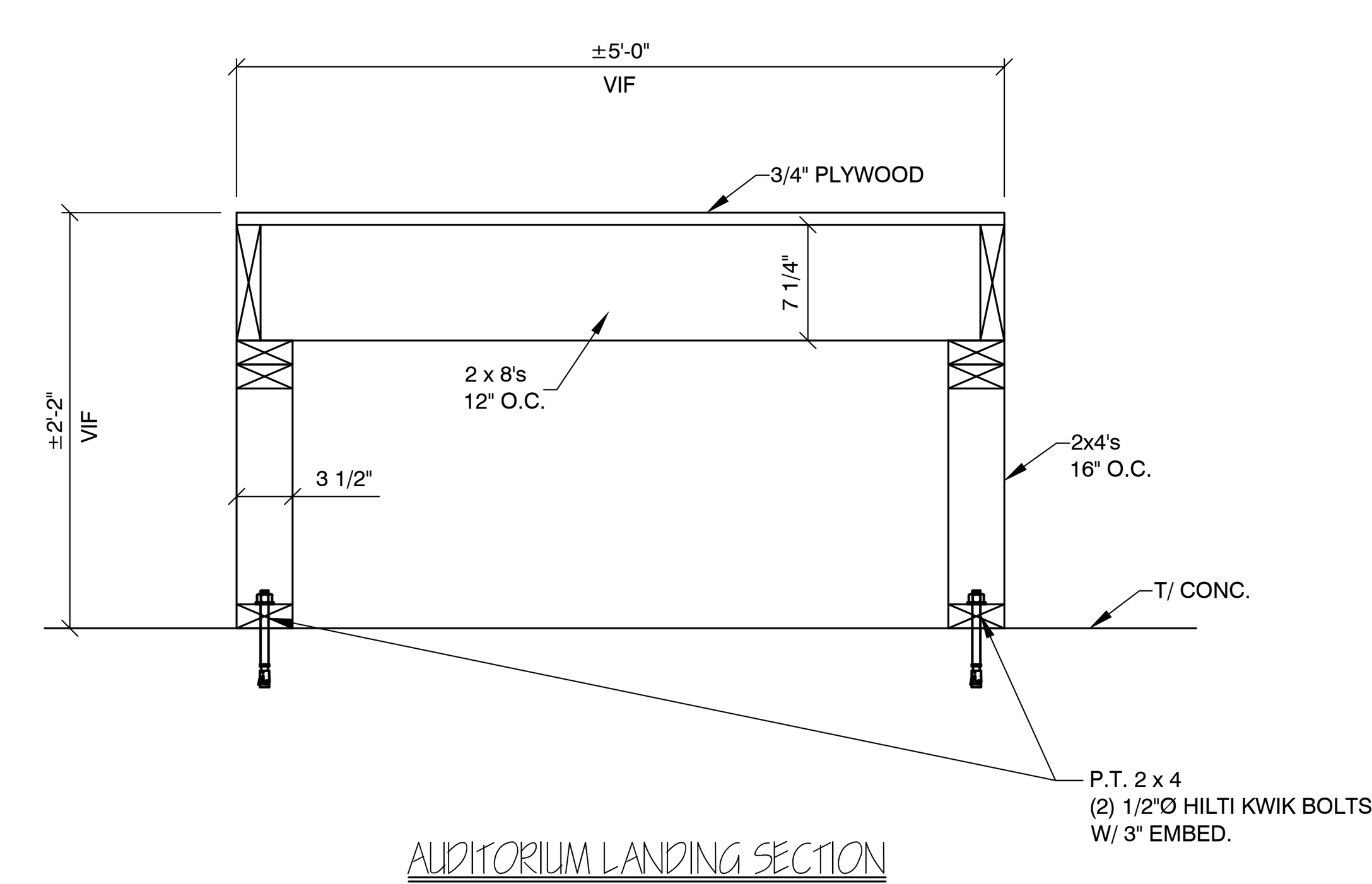


MEZZANINE FLOOR FRAMING PLAN (1ST FLOOR PLAN)
Scale: 3/16" = 1'-0"

COLUMNS:
C1 - (4) 2x4's, NAILED & GLUED
C2 - 6x6 POST
C3 - (2) 2x4's / 2x6's
C4 - W6x25
C5 - W12x40

FOOTING/PIER SCHEDULE

MARK	SIZE	DEPTH	REINFORCING EA. WAY	REMARKS
F2.5	2'-6" x 2'-6"	1'-3"	N/A	3000 PSI
F3.0	3'-0" x 3'-0"	1'-0"	4 #4's, EW, T&B	3000 PSI
F5.0	5'-0" x 5'-0"	1'-4"	5 #5's, EW, T&B	3000 PSI
WF 1.5	1'-6"	0'-9"	(2) #4's CONTIN.	3000 PSI
WF 2.0	2'-0"	1'-0"	(2) #4's CONTIN.	3000 PSI



AUDITORIUM LANDING SECTION

NORTH (building)

Shepherdstown
Opera
House
RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

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Issue/Revision | Seal
JUNE 12, 2020 | ISSUED FOR BID

Drawing Title
FOUNDATION AND MEZZANINE PLAN VIEWS

Date APRIL 30, 2020
Scale As Noted
Project Number 19820
Drawing Number

S.1

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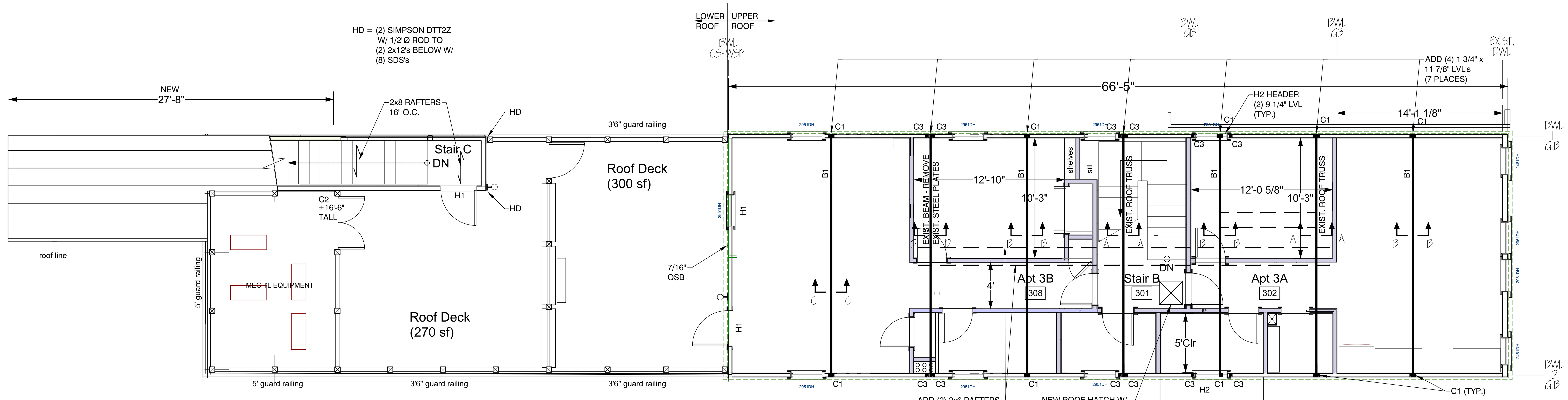
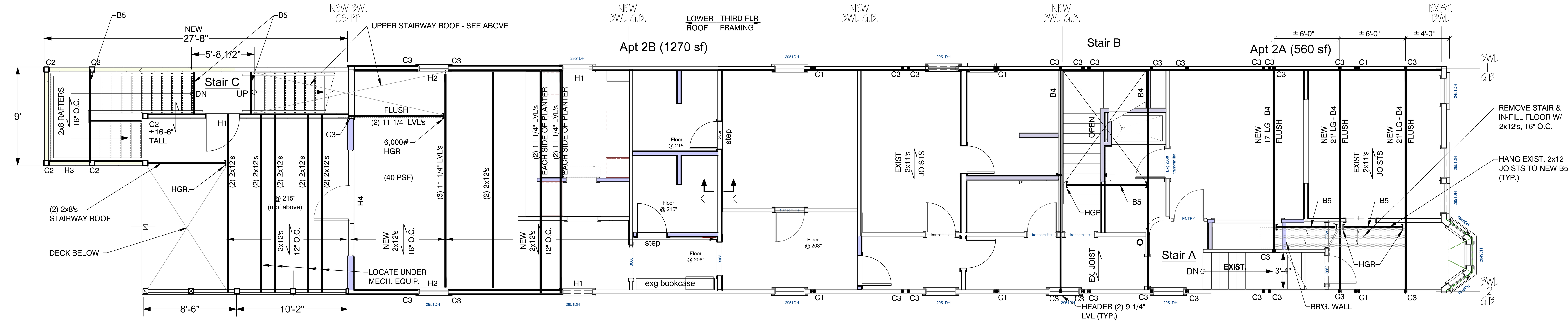


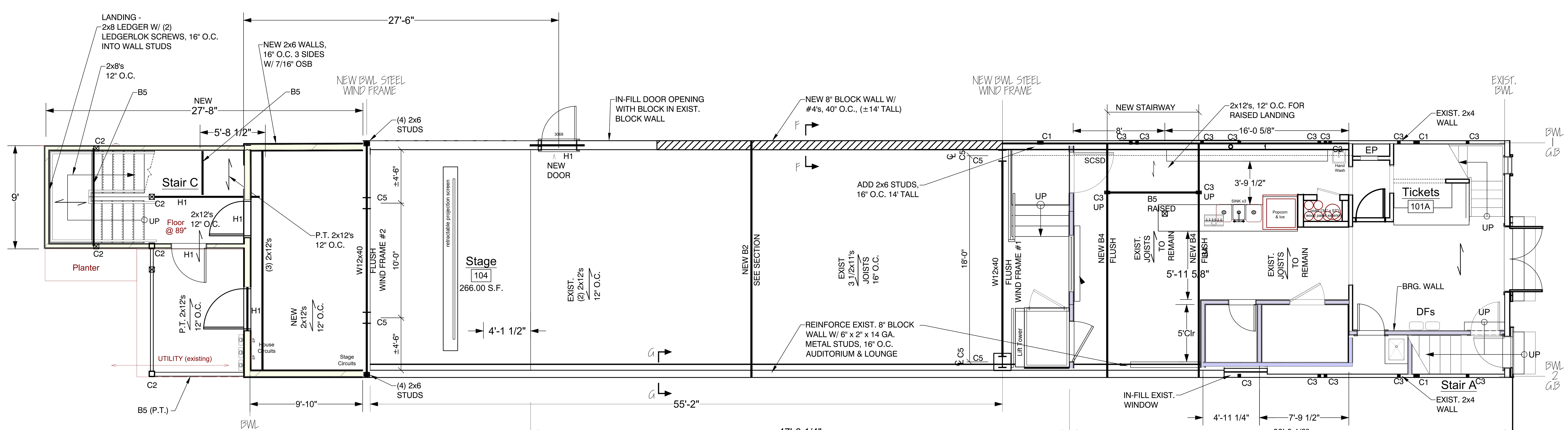
UPPER MAIN & STAIRWAY "C" ROOF FRAMING PLAN (3RD FLOOR PLAN)
Scale: 3/16" = 1'-0"



LOWER ROOF & THIRD FLOOR FRAMING PLAN (2ND FLOOR PLAN)
Scale: 3/16" = 1'-0"

BEAMS:
B1 - (4) 1 3/4" x 11 1/4" LVL's
B2 - (2) C10x15.3's
B3 - (2) 1 3/4" x 11 7/8" LVL's W/ (3) 16d's, 12" O.C.
B4 - (2) 1 3/4" x 11 1/4" LVL's W/ (3) 16d's, 12" O.C.
B5 - (2) 2x12's

HEADERS:
H1 - (2) 2x10's
H2 - (2) 1 3/4" x 9 1/4" LVL's
H3 - (2) 2x8's
H4 - (3) 2x12's



SECOND FLOOR FRAMING PLAN (1ST FLOOR PLAN)
Scale: 3/16" = 1'-0"

FULLY SPRINKLERED BUILDING

NORTH (building)

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Owner
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Stephen & Harriet Pearson

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Issue/Revision	Seal
JUNE 12, 2020	ISSUED FOR BID

Drawing Title
FRAMING PLAN VIEWS

Date APRIL 30, 2020
Scale As Noted
Project Number 19820
Drawing Number
S.2

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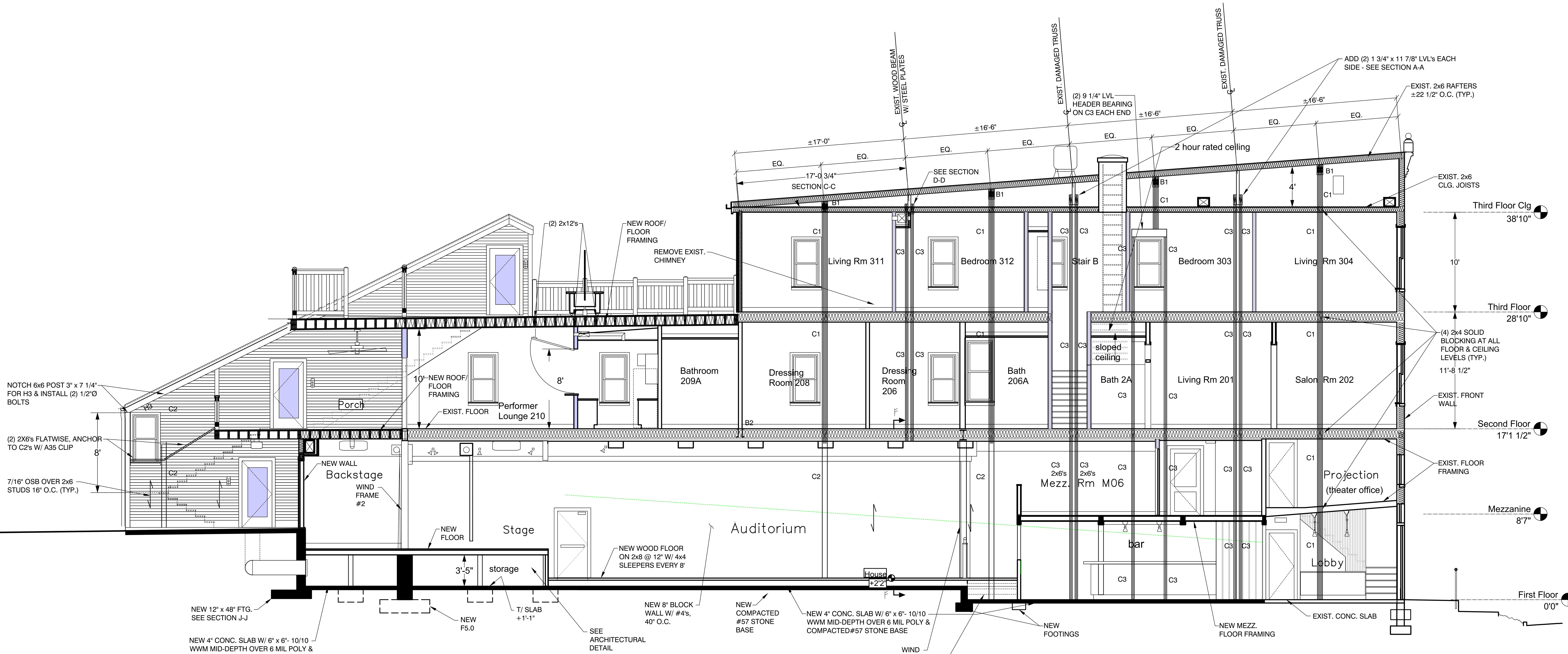
FULLY SPRINKLERED BUILDING



1 BUILDING SECTION
Scale: 3/16" = 1'-0"

COLUMNS:
C1 - (4) 2x4's, NAILED & GLUED
C2 - 6x6 POST
C3 - (2) 2x4's / 2x6's
C4 - W6x25
C5 - W12x40

BEAMS
B1 - (4) 1 3/4" x 11 7/8" LVL's
B2 - ADD (2) C10x15.3's BOLTED
B3 - (2) 1 3/4" x 11 7/8" LVL's W/ (3) 16d's, 12" O.C.
B4 - (2) 1 3/4" x 11 1/4" LVL's W/ (3) 16d's, 12" O.C.
B5 - (2) 2x12's

NORTH (building)

Shepherdstown Opera House RENOVATIONS
131 W. German St.
Shepherdstown
West Virginia

Owner
OPERA HOUSE ALIVE LLC
Stephen & Harriet Pearson

RICHARD A. ... REGISTERED No. 10... 06/12/2020 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

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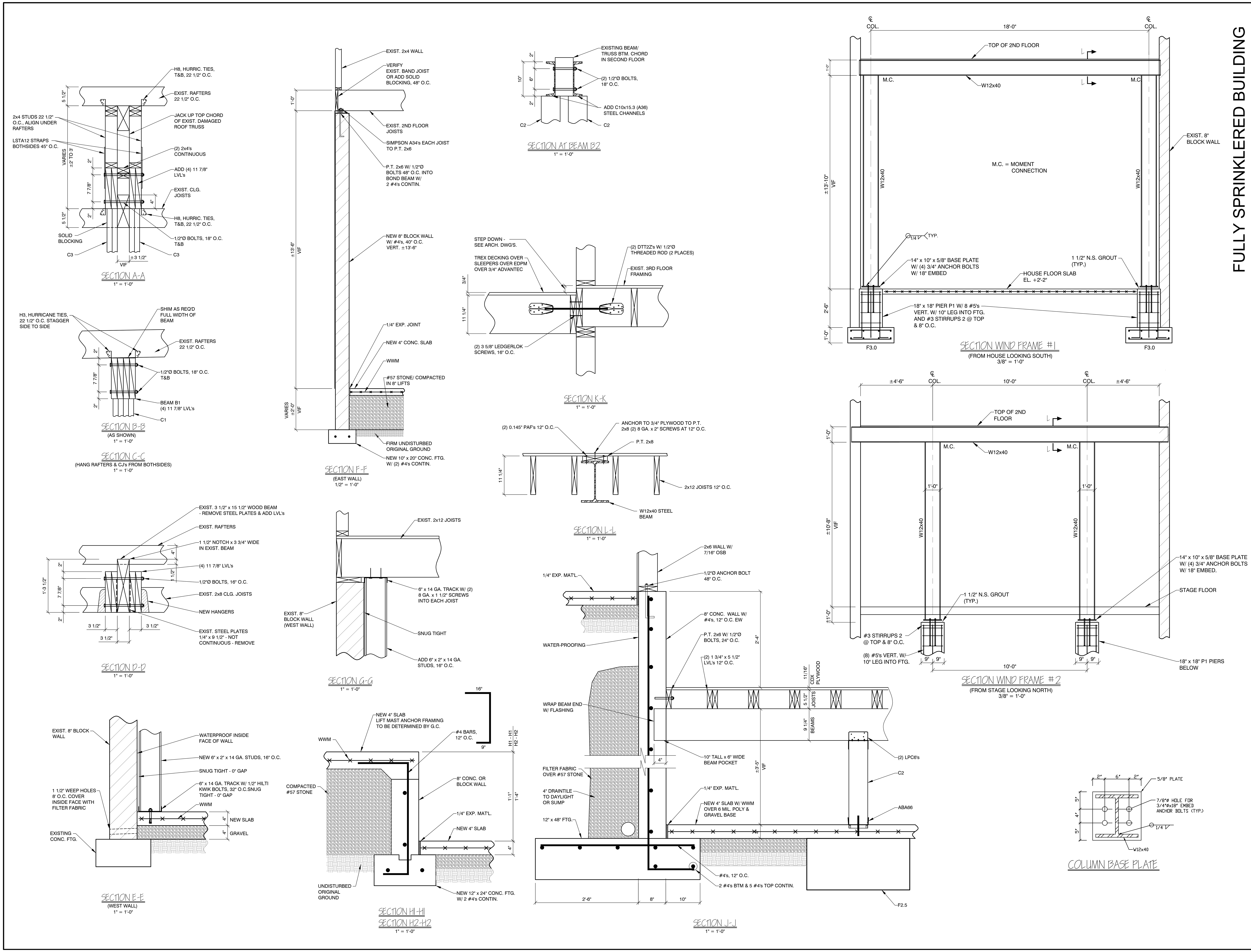
Issue/Revision Seal
JUNE 12, 2020 ISSUED FOR BID

Drawing Title
BUILDING SECTION

Date APRIL 30, 2020
Scale As Noted Project Number 19820
Drawing Number
S.3



FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House RENOVATIONS

131 W. German St.
Shepherdstown
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Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

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Issue/Revision	Seal
JUNE 12, 2020	ISSUED FOR BID

Drawing Title

DETAILS

Date APRIL 30, 2020
Scale As Noted
Project Number 19820
Drawing Number

S.4

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GENERAL REQUIREMENTS:

1. WORK PERFORMED SHALL COMPLY WITH THE FOLLOWING:
A. THESE GENERAL NOTES UNLESS OTHERWISE NOTED ON PLANS OR SPECIFICATIONS.
B. ALL APPLICABLE LOCAL AND STATE CODES, ORDINANCES AND REGULATIONS.
C. IN AREAS WHERE THE DRAWINGS DO NOT ADDRESS METHODOLOGY, THE CONTRACTOR SHALL BE BOUND TO PERFORM IN STRICT COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS AND/OR RECOMMENDATIONS.

2. ON-SITE VERIFICATION OF ALL DIMENSIONS AND CONDITIONS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALE.

3. THE GENERAL NOTES AND TYPICAL DETAILS APPLY THROUGHOUT THE JOB UNLESS OTHERWISE NOTED OR SHOWN.

4. DISCREPANCIES: THE CONTRACTOR SHALL COMPARE AND COORDINATE ALL DRAWINGS; WHEN IN THE OPINION OF THE CONTRACTOR, A DISCREPANCY EXISTS HE SHALL PROMPTLY REPORT IT FOR PROPER ADJUSTMENT BEFORE PROCEEDING WITH THE WORK.

5. OMISSIONS: IN THE EVENT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS FOR SIMILAR CONDITIONS THAT ARE SHOWN OR NOTED.

6. THE DESIGNER WILL NOT BE RESPONSIBLE FOR AND WILL NOT HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE FAILURE OF THE CLIENT OR HIS CONTRACTORS, SUBCONTRACTORS, OR ANYONE PERFORMING ANY OF THE WORK, TO CARRY OUT THE WORK IN ACCORDANCE WITH THE APPROVED CONTRACT DOCUMENTS.

7. DESIGN LOADS

ROOF DEAD LOAD	20 PSF
ROOF LIVE LOAD	20 PSF
GROUND SNOW LOAD	35 PSF
FLOOR DEAD LOAD	20 PSF/UNO
FLOOR LIVE LOAD	
APARTMENTS	40 PSF
ASSEMBLY AREAS	100 PSF
STAGE / BACK STAGE	150 PSF

8. WIND LOAD - 115 MPH (ULTIMATE), EXPOSURE "B" PER IBC CODE.

CONCRETE/FOUNDATIONS:

CONCRETE

1. THE CONCRETE PROPERTIES SHALL BE AS FOLLOWS:

EXT. SLABS & PAVING:
MIN. COMP. STRENGTH AT 28 DAYS = 3500 PSI
MIN. AGGREGATE SIZE = 1/2 - 1
SLUMP = 4" ±1"
5% TO 8% AIR ENTRAIN

FOOTINGS:
MIN. COMP. STRENGTH AT 28 DAYS = 3000 PSI
MIN. AGGREGATE SIZE = 1/2 - 1
SLUMP = 4" ±1"

SLAB-ON-GRADE:
MIN. COMP. STRENGTH AT 28 DAYS = 3000 PSI
MIN. AGGREGATE SIZE = 1/2 - 1
SLUMP = 4" ±1"

WALLS:
MIN. COMP. STRENGTH AT 28 DAYS = 3000 PSI
MIN. AGGREGATE SIZE = 1/2 - 1
SLUMP = 4" ±1"

2. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI-318 AND ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.

3. ALL REINFORCEMENT, ANCHOR BOLTS, PIPE SLEEVES AND OTHER INSERTS SHALL BE POSITIVELY SECURED IN PLACE BEFORE CONCRETE IS PLACED.

4. PROVIDE 95% BACKFILL COMPACTION IN 6" LAYERS AT ALL SLABS AND FOOTINGS. BACKFILL TO BE OF APPROVED MATERIAL.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE INTERMEDIATE GRADE NEW BILLET DEFORMED BARS CONFORMING TO ASTM A615, 60 KSI. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.

2. DETAILING, FABRICATING AND PLACING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI-315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES". FURNISH SUPPORT BARS AND ALL REQUIRED ACCESSORIES IN ACCORDANCE WITH CRSI STANDARDS.

3. ALL REINFORCING BARS WHICH INTERCEPT PERPENDICULAR ELEMENTS SHALL TERMINATE IN HOOKS, PLACED 2 INCHES CLEAR FROM OUTER FACE OF ELEMENT.

4. THE CONTRACTOR SHALL NOTIFY THE BUILDING OFFICIAL AT LEAST 48 HOURS PRIOR TO EACH CONCRETE POUR. NO CONCRETE SHALL BE PLACED UNTIL ALL REINFORCING HAS BEEN INSTALLED BY THE CONTRACTOR AND INSPECTED BY THE BUILDING OFFICIAL.

5. PROTECTIVE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
A. FOOTINGS - 3"
B. WALLS - 1" AT INTERIOR FACE; 2" AT EXTERIOR FACE.
C. WIRE MESH TO BE PLACED AT MID-DEPTH OF SLAB.

FOUNDATION

1. FOOTING DEPTHS ARE SHOWN ON THE SECTIONS UNLESS OTHERWISE NOTED, FOOTINGS SHALL BEAR A MINIMUM OF 1'-0" INTO ORIGINAL UNDISTURBED SOIL AND A MINIMUM OF 2'-0" BELOW FINISHED GRADE. WHERE REQUIRED, STEP FOOTINGS TO A RATIO OF 2 HORIZONTAL TO 1 VERTICAL.

2. WHERE CONDITIONS DEVELOP REQUIRING CHANGES IN EXCAVATIONS, SUCH CHANGES SHALL BE MADE AS DIRECTED BY THE ENGINEER.

3. ALL FOOTINGS EXCAVATIONS SHALL BE INSPECTED BY THE BUILDING OFFICIAL PRIOR TO THE PLACING OF ANY CONCRETE. THE BUILDING OFFICIAL SHALL BE GIVEN NOTICE FOR THIS OBSERVATION.

4. CONCRETE SLAB AND FOOTING CALCULATIONS ARE BASED ON A 2000 PSF VALUE. IF ON SITE TESTING INDICATES LESSER VALUES, NOTIFY ENGINEER SO THAT NECESSARY STRUCTURAL MODIFICATIONS CAN BE MADE.

5. SLAB-ON-GRADE AREAS SHALL BE 4" THICK REINFORCED WITH 6x6-10/10 WWM AND SHALL BE PLACED ON 10 MIL. VAPOR BARRIER ON GRAVEL. SEE ARCHITECTURAL FOR SLAB INSULATION.

MASONRY:

1. MORTAR TO CONFORM TO ASTM C270, TYPE S.

2. REINFORCING STEEL ASTM A615 - 60 GRADE, NEW DEFORMED BARS.

3. FOR MASONRY CONSTRUCTION ONLY:
- #5 BARS HORIZONTALLY IN BOND BEAMS SHALL BE LAPPED 32" MINIMUM.
- FOR ALL OTHER BAR LAPS IN CMU, SEE SCHEDULE.

4. VERTICAL REINFORCING SPECIFIED ON PLAN SHALL BE INSTALLED AT ALL CORNERS IN CMU WALLS INTERLOCKING THE PERPENDICULAR BLOCK.

5. HORIZONTAL REINFORCING SHALL BE CONTINUOUS AROUND ALL CORNERS.

6. MORTAR TO CONFORM TO ASTM C270, TYPE S. MORTAR SHALL BE INSTALLED W/ FULL BED & HEAD JOINTS.

7. GROUT SHALL BE A 3000 PSI FINE GROUT WITH A SLUMP OF 10" ±1".

8. FOR GROUT PLACEMENT OVER 5'-0", CLEAN OUTS (MIN. 3" x 3") SHALL BE CUT INTO THE BOTTOM COURSE OF EACH CELL BEING REINFORCED / GROUTED, DURING EACH GROUT PLACEMENT, & A MAXIMUM OF 32" O.C. VERTICALLY.

9. GROUT PLACEMENT HEIGHTS SHALL NOT EXCEED 12'-0" DURING EACH PLACEMENT.

10. GROUT SHALL BE CONSOLIDATED AT THE TIME OF PLACEMENT WITH A MECHANICAL VIBRATOR. AFTER THE INITIAL ABSORPTION OF WATER FROM THE GROUT INTO THE MASONRY BLOCK OCCURS, THE GROUT SHALL BE RECONSOLIDATED WITH A MECHANICAL VIBRATOR. THE G.C. SHALL NOT EXCESSIVELY VIBRATE THE GROUT, SO AS TO DAMAGE THE MASONRY BLOCK FACE SHELLS.

11. WALLS SHALL BE GROUTED IN ACCORDANCE W/ ACI 530.

12. MASONRY WALLS TO HAVE "DUR-O-WALL" (OR APPROVED EQUAL) TRUSS TIES AT 16" O.C. VERTICALLY.

13. INSTALL CONTROL AND EXPANSION JOINT MATERIALS IN UNIT MASONRY AS MASONRY PROGRESSES. PROVIDE CONTROL JOINT SPACING IN ABOVE GRADE EXPOSED CONCRETE MASONRY (CMU) WALL IN ACCORDANCE WITH NCMA RECOMMENDATIONS (TEK 10-2B & TEK 10-2C) OF THE LESSER OF WALL LENGTH-TO-HEIGHT RATION OF 1.5 TO 1, OR 25 FEET. CONFIRM PROJECT-SPECIFIC JOINT LOCATIONS AND DETAILS OF ADDITIONAL EXPANSION AND CONTROL JOINTS WITH ARCHITECT PRIOR TO INSTALLATION TO COMPLY WITH TEK STANDARD.

14. PROVIDE AT LEAST ONE CONTROL JOINT WITHIN 24 INCHES OF DOOR AND WINDOW OPENINGS 6 FEET WIDE OR LESS. PROVIDE A CONTROL JOINT WITHIN 24 INCHES OF EACH JAMB FOR DOOR AND WINDOW OPENINGS OVER 6 FEET WIDE.

STRUCTURAL STEEL:

1. STEEL COLUMNS SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS: W SHAPES - A992, 50 KSI.

2. ALL STRUCTURAL STEEL (BASE PLATES, BRACING ANGLES, MISC. STEEL) SHALL CONFORM TO ASTM SPECIFICATION A-36.

3. ALL STRUCTURAL STEEL SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.

4. ALL BEAMS AND COLUMNS SHALL BE FULL LENGTH WITHOUT SPLICES UNLESS OTHERWISE INDICATED ON PLANS.

5. SHOP DRAWINGS SHALL BE PREPARED FOR ALL STRUCTURAL STEEL AND SUBMITTTED FOR REVIEW BY ENGINEER. ENGINEERING DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS.

6. ALL CONNECTIONS SHALL DEVELOP FULL STRENGTH OF THE BEAM. GENERAL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" A-325 BOLTS.

7. ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GR. 36 UNLESS OTHERWISE SHOWN OR NOTED. FURNISH HARDENED WASHERS AT ALL BOLTED CONNECTIONS, INCLUDING ANCHOR BOLTS.

8. ALL SHOP & FIELD WELDS SHALL BE MADE BY WELDERS WHO HAVE BEEN QUALIFIED & CERTIFIED TO MAKE THE REQUIRED WELDS WITHIN THE PREVIOUS TWELVE MONTHS IN ACCORDANCE WITH THE LATEST AMERICAN WELDING SOCIETY SPECIFICATIONS (A.W.S. D-1.1.)

9. FIELD STRUCTURAL STEEL TO BE INSPECTED BY QUALIFIED INSPECTORS APPROVED BY THE STRUCTURAL ENGINEER. FIELD INSPECTION REPORTS TO BE FILED WITH THE STRUCTURAL ENGINEER WITHIN 5 DAYS OF TIME OF ACTUAL INSPECTION. INSPECTORS MUST BE NOTIFIED OF ALL PHASES OF CONSTRUCTION AND WELDING BY GENERAL CONTRACTOR.

10. STRUCTURAL STEEL SHALL BE PRIMED ONLY.

CARPENTRY:

LUMBER GRADE:

1. ALL LUMBER SHALL BE , UNLESS OTHERWISE NOTED, NO. 2 GRADE, SPRUCE-PINE-FIR WITH THE FOLLOWING MINIMUM ALLOWABLE STRESSES AND MODULUS OF ELASTICITY:

A. EXTREME FIBER STRESS: $Fb = 1000$ PSI

B. HORIZONTAL SHEAR: $Fv = 135$ PSI

C. COMPRESSION PARALLEL TO GRAIN: $Fc_{//} = 1150$ PSI

D. COMPRESSION PERPENDICULAR TO GRAIN: $Fc_{\perp} = 425$ PSI

E. MODULUS OF ELASTICITY: $E = 1,400,000$ PSI

2. SPRUCE-PINE-FIR MAY BE SUBSTITUTED, SUBSTITUTED SPECIES SHALL MEET OR EXCEED REQUIREMENTS NOTED ABOVE.

3. MOISTURE CONTENT: ALL LUMBER 6" AND DEEPER SHALL HAVE A MOISTURE CONTENT NOT GREATER THAN 20%, AIR DRIED LUMBER IS DESIRED BUT NOT NECESSARY. LUMBER MAY BE KILN DRIED, HOWEVER DRYING PROCESS MUST BE SLOW AND REGULATED TO CAUSE A MINIMUM AMOUNT OF CHECKING, COMPARABLE WITH AIR DRIED STOCK.

4. ALL EXTERIOR LUMBER AND LUMBER IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE PRESERVATIVE TREATED SYP #2 IN ACCORDANCE WITH AWPA STANDARDS.

JOIST HANGERS:

1. ALL PURLINS, JOISTS AND BEAMS NOT FRAMED OVER SUPPORTING MEMBERS SHALL BE SUPPORTED BY MEANS OF JOISTS HANGERS.

2. JOIST HANGERS SHALL BE "SIMPSON" UNLESS OTHERWISE NOTED OR AN APPROVED EQUAL.

ALTERING STRUCTURAL MEMBERS:

1. NO STRUCTURAL MEMBER SHALL BE OMITTED, NOTCHED, CUT, BLOCKED OUT OR RELOCATED WITHOUT PRIOR APPROVAL BY THE ENGINEER. DO NOT ALTER SIZES OF MEMBERS WITHOUT APPROVAL OF ENGINEER.

CUTTING OF BEAMS, JOISTS AND RAFTERS:

1. CUTTING OF WOOD BEAMS, JOISTS AND RAFTERS SHALL BE LIMITED TO CUTS AND BORED HOLES NOT DEEPER THAN ONE-SIXTH (1/6th) THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED IN THE MIDDLE ONE THIRD OF THE SPAN. NOTCHES LOCATED CLOSER TO SUPPORTS THAN THREE TIMES THE DEPTH OF THE MEMBER SHALL NOT EXCEED ONE-FIFTH (1/5th) THE DEPTH. HOLES BORED OR CUT INTO JOISTS SHALL NOT BE CLOSER THAN 2 INCHES TO THE TOP OR BOTTOM OF THE JOISTS AND THE DIAMETER OF THE HOLE SHALL NOT EXCEED ONE-THIRD (1/3rd) THE DEPTH OF THE JOIST.

BUILT-UP BEAMS & POSTS:

1. BUILT-UP BEAMS OR JOISTS FORMED BY A MULTIPLE OF 2 x MEMBERS SHALL BE INTERCONNECTED AS FOLLOWS:

A. HEADERS: (3) 12d's @ 12" OC PER PLY [14" DEEP OR GREATER => (4) 12d's].

B. BUILT-UP STUDS: (2) 12d's @ 12" OC PER PLY.

C. BUILT-UP LVL's: IN ACCORDANCE W/ MANUFACTURER'S RECOMMENDATIONS.

PIPES IN STUD BEARING OR SHEAR WALLS:

1. NOTCHES OR BORED HOLES IN STUDS OF BEARING WALLS OR PARTITIONS SHALL NOT BE MORE THAN ONE-THIRD THE DEPTH OF THE STUD. WHEN STUD IS CUT OR BORED IN EXCESS OF THE ABOVE IT SHALL BE NOT MORE THAN ONE-THIRD DEPTH.

BRIDGING AND BLOCKING:

1. THERE SHALL BE NOT LESS THAN ONE LINE OF BRIDGING IN EVERY EIGHT FEET OF SPAN IN FLOOR FRAMING. THE BRIDGING SHALL CONSIST OF NOT LESS THAN ONE BY THREE INCH LUMBER DOUBLE NAILED AT EACH END OR OF EQUIVALENT METAL BRACING OF EQUAL RIGIDITY. BLOCK SOLID AT ALL BEARING SUPPORTS WHERE ADEQUATE LATERAL SUPPORT IS NOT OTHERWISE PROVIDED. BLOCK ALL STUD WALLS AT MAXIMUM INTERVALS OF EIGHT FEET WITH A MINIMUM OF TWO BY SOLID MATERIAL WITH TIGHT JOINTS. PROVIDE 2 BY FIRESTOPS AT MID-POINT OF STUD WALL.

2. REFER TO SHEAR WALL REQUIREMENTS FOR ADDITIONAL WALL BLOCKING REQUIRED.

OSB:

1. OSB SHALL BE APA RATED SHEATHING, WALLS ONLY.

2. EACH OSB SHEET SHALL BEAR THE "APA" GRADE TRADEMARK.

3. NAILS SHALL BE PLACED 3/8" MINIMUM FROM THE EDGE OF THE SHEETS. THE MINIMUM NAIL PENETRATION INTO FRAMING MEMBERS SHALL BE 1-1/2" FOR 8d NAILS AND 1-3/8" FOR 10d NAILS.

PLYWOOD:

1. USE 11/16" CDX PLYWOOD FOR NEW ROOF & FLOOR AREAS.

GYPSUM BOARD:

1. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATION OF TYPE OF GB TO BE USED AT FIRE WALLS ETC. (GB SHALL BE MINIMUM AS SPECIFIED ON THE STRUCTURAL DRAWINGS AND FASTENED IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS).

2. WHERE SHEAR WALLS ARE DESIGNATED TO BE BLOCKED PROVIDE (2) 2x BLOCKING AT ALL PERPENDICULAR PANEL JOINTS.

3. PROVIDE DOUBLE STUDS AT ALL JOINTS IN OSB PANELS AT SHEAR WALLS.

4. NAILS / SCREWS SHALL BE A MINIMUM OF 3/8" FROM EDGES AND ENDS OF PANELS.

5. PANELS SHALL BE MINIMUM 4'-0" x 8'-0", EXCEPT AT BOUNDARIES, CHANGES IN FRAMING AND OPENINGS IN WALLS. MINIMUM 2'-0" WIDE PIECES OF PANEL SHALL BE APPLIED PERPENDICULAR TO STUDS.

NAILING:

1. ALL NAILING SHALL COMPLY WITH IBC CODE, LATEST EDITION AND ALL STATE AND LOCAL BUILDING CODES.

FIRE STOPPING:

1. FIRE STOPPING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH VERTICAL AND HORIZONTAL) IN THE FOLLOWING LOCATIONS:

A. IN ALL STUD WALLS AND PARTITIONS INCLUDING FURRED SPACES AT FLOOR AND CEILING LEVELS AND NOT MORE THAN 8'-0" APART.

2. FIRESTOPS, WHEN OF WOOD, SHALL BE 2" NOMINAL THICKNESS AND MAY BE MADE OF GYPSUM BOARD, CEMENT ASBESTOS, MINERAL WOOD OR OTHER NONCOMBUSTIBLE MATERIAL.

FULLY SPRINKLERED BUILDING

NORTH (building)

Shepherdstown Opera House RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

RICHARD A. RUCKMAN
REGISTERED
No. 10178
06/12/2020
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
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Issue/Revision	Seal
JUNE 12, 2020	ISSUED FOR BID

Drawing Title

NOTES

Date APRIL 30, 2020
Scale As Noted Project Number 19820
Drawing Number

S.5

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METAL DUCT SYSTEMS SCHEDULE

(THIS IS A SCHEDULE OF STANDARD SYSTEMS, ALL SYSTEMS MAY NOT APPEAR ON THIS PROJECT)

LOCATION	SERVICE	PRESSURE, SEAL & LEAKAGE CLASS				JOINING METHOD		MATERIAL				INSULATION				
		2-INCH WG	SEAL CLASS	LEAKAGE CLASS (RECTANGULAR)	LEAKAGE CLASS (ROUND)	SMACNA TRANSVERSE JOINT REINFORCEMENT	WELDED	GALVANIZED SHEET STEEL (0" - 30") (SEE NOTE 1)	GALVANIZED SHEET STEEL (25" - 42") (SEE NOTE 1)	GALVANIZED SHEET STEEL (43" - 48") (SEE NOTE 1)	CARBON SHEET STEEL	MINERAL-FIBER BLANKET	MINERAL-FIBER BOARD	MINERAL-FIBER BOARD W/FIELD APPLIED JACKET	FIRE RATED BLANKET OR BOARD
CONCEALED (CONDITIONED)	SUPPLY	X	C	12	6	NOTE 2		26GA.	24GA.	22GA.		1-½"			
	RETURN	X	C	12	6			26GA.	24GA.	22GA.		1-½"			
	EXHAUST	X	B	12	6			26GA.	24GA.	22GA.		–			
	OUTDOOR AIR	X	C	12	6			26GA.	24GA.	22GA.		1-½"			
CONCEALED (UNCONDITIONED)	SUPPLY	X	B	12	6			26GA.	24GA.	22GA.		1-½"			
	RETURN	X	B	12	6			26GA.	24GA.	22GA.		1-½"			
	EXHAUST	X	C	12	6			26GA.	24GA.	22GA.		–			
	OUTDOOR AIR	X	C	12	6			26GA.	24GA.	22GA.		1-½"			
EXPOSED (CONDITIONED)	SUPPLY	X	C	12	6			26GA.	24GA.	22GA.			1-½"		
	RETURN	X	C	12	6			26GA.	24GA.	22GA.			1-½"		
	EXHAUST	X	B	12	6			26GA.	24GA.	22GA.			–		
	OUTDOOR AIR	X	C	12	6			26GA.	24GA.	22GA.			1-½"		
EXPOSED (UNCONDITIONED)	SUPPLY	X	B	12	6			26GA.	24GA.	22GA.			1-½"		
	RETURN	X	B	12	6			26GA.	24GA.	22GA.			1-½"		
	EXHAUST	X	C	12	6			26GA.	24GA.	22GA.			–		
	OUTDOOR AIR	X	C	12	6			26GA.	24GA.	22GA.			1-½"		
OUTDOORS	SUPPLY	X	A	12	6			26GA.	24GA.	22GA.				2"	
	RETURN	X	C	12	6			26GA.	24GA.	22GA.				2"	
	EXHAUST	X	C	12	6			26GA.	24GA.	22GA.				2"	
	OUTDOOR AIR	X	C	12	6			26GA.	24GA.	22GA.				2"	
UNDERGROUND	SEE NOTE 2														

NOTES:

1. SHEET METAL GAUGES ARE BASED ON THE CONTRACTOR PROVIDING SMACNA DESIGNATED TRANSVERSE JOINT REINFORCEMENT CONNECTIONS USING A MAXIMUM OF 4 FOOT DUCT LENGTHS. DEVIATIONS ARE PERMITTED PROVIDED THE DUCTWORK MEETS MINIMUM SMACNA STANDARDS.

2. CONCRETE ENCASED PVC-COATED GALVANIZED SHEET STEEL WITH THICKER COATING ON DUCT EXTERIOR.

HVAC PIPING SYSTEMS SCHEDULE

(THIS IS A SCHEDULE OF STANDARD SYSTEMS. SOME SYSTEMS MAY NOT APPEAR ON THIS PROJECT)

SYSTEM	PIPE SIZE OR SERVICE	PIPE MATERIAL			CONNECTION				FITTINGS			INSULATION				
		TYPE C1220 PHOSPHOROUS DEOXIDIZED SEAMLESS COPPER	COPPER (TYPE)	PVC (SCH)	THREAD AND COUPLE	WELD	SOLDER	NEOPRENE GASKET	SOLVENT WELD	PRESSURE CLASS (PSIG)	WROUGHT COPPER	PVC	THICKNESS	GLASS FIBER	CLOSED CELLULAR FOAM	KRAFT VP JACKET (ASJ)	KEYED NOTES
COOLING SYSTEMS REFRIGERANT PIPING	LIQUID		L				X			535	X		1"		X		
	SUCTION		L				X			535	X		1"		X		
	HOT-GAS		L				X			535	X		1"		X		
VRF REFRIGERANT PIPING	LIQUID, GAS & DISCHARGE (ALL SIZES)	X					X						1"		X		
CONDENSATE DRAIN PIPING	ALL SIZES		L	40			X		X			DWV	1"		X		1

MECHANICAL SPECIFICATIONS

GENERAL

A. DESCRIPTION OF THE WORK – The scope of work indicated on these drawings shall include fully functioning mechanical systems, adjusted, tested, balanced and ready for use. Provide all items necessary to complete the systems. Examine the drawings of other trades (including but not limited too architectural, structural, electrical, plumbing, etc.) to become familiar with all aspects of those designs. Coordinate work with that to be performed by others, and that affecting mechanical systems, to determine the extent of mechanical work required. It shall be the responsibility of the mechanical sub-contractor to obtain all drawings of all trades.

CODES AND STANDARDS

A. Provide work conforming in all respects to the latest applicable codes of the Authority Having Jurisdiction and all applicable rules, regulations, laws and ordinances of Local Authorities. Install all equipment in compliance with accepted industry standards and manufacturer's recommendations.

B. The referenced codes shall include any and all supplements, addenda, memoranda, information bulletins and any other changes and additions effective prior to the permit issue date by adoption of the local Authority Having Jurisdiction.

C. Make any and all modifications required by the Authorities Having Jurisdiction without additional charge to the Owner.

D. Where alterations to and/or deviations from the Contract Documents are required by the Authorities, report the requirements to the Architect and secure approval before starting the alterations.

E. All work shall comply with the following codes:
2015 Virginia Construction Code (IBC) | USBC, Part 1
2015 Virginia Energy Conservation Code (w/ASHRAE 90.1 – 2004)
2015 Virginia Mechanical Code (IMC)
2015 Virginia Plumbing Code (IPC)
2015 Virginia Fire Code (IFC)
2014 National Electric Code
2015 Virginia Existing Building Code (IEBC) | USBC, Part I
2015 Virginia Fire Code (IFC)

F. All work shall comply with the following standards:
American Society of Mechanical Engineers (ASME).
Air Conditioning and Refrigeration Institute (ARI).
American National Standards Institute (ANSI).
Air Diffusion Council (ADC).
American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE).
American Society for Testing and Materials (ASTM).
National Fire Protection Association (NFPA).
Air Moving and Conditioning Association (AMCA).
Underwriters Laboratories (UL).
National Electric Manufacturer's Association (NEMA).
Sheet Metal and Air Conditioning Contractor's National Association "Duct Construction Standards"(SMACNA).
Manufacturer's Standardization Society of the Valves and Fittings Industry, Inc. (MSS).
Associated Air Balance Council (AABC).
National Environmental Balancing Bureau (NEBB).

PERMITS

A. Obtain and pay for all permits, licenses and inspection certificates required for all work in accordance with the provisions of the Contract Documents.

GUARANTEE

A. Guarantee in form satisfactory to the Owner, that all Work installed is free from defects in workmanship and/or materials. Guarantee that all apparatus will develop capacities and characteristics specified for a period of one year, to include one full heating and one full cooling season, from the date of final acceptance by the Owner or certification of substantial completion, whichever occurs later.

B. During the guarantee period, remedy, without cost to the Owner, defective workmanship, materials, and apparatus performance. Remedial work shall be completed within a reasonable time specified by the Owner. In default thereof, the Owner may have such work done and charge all costs to the Contractor.

COMPLETE PERFORMANCE OF WORK

A. Execute work in strict accordance with the best practice of the trades in a thorough, substantial, workmanlike manner by competent workmen.

B. Provide labor, materials, apparatus, and appliances essential to the complete functioning of the systems described and indicated, or which may be reasonably implied as essential whether mentioned in the Contract Documents or not.

C. In cases of doubt as to the Work intended, or in the event of need for explanation thereof, request supplementary instructions from the Architect.

GENERAL CONTRACTOR COORDINATION OF ALL TRADES

A. It is the GC's responsibility to coordinate all trades. Where the work of various trades will be installed in close proximity to one another, or where there is evidence that the work of one trade will interfere with work of other trades, assist in working out space conditions to make a satisfactory adjustment. If one trade installs his work before coordinating with work of other trades, make necessary changes to correct the condition without extra charge.

DRAWINGS

A. These drawings are diagrammatic and indicate the general location of systems and components. Provide all items necessary for a properly working system at no additional cost, even if not specifically shown or mentioned on the drawings.

SUBMITTALS

A. After the Contract is awarded, but prior to proceeding with the Work, obtain complete submittals from the manufacturers, suppliers, vendors, subcontractors, for all materials and equipment shown or specified on these drawings and submit data and details of such materials and equipment to the Architect and Engineer.

B. Prior to forwarding submittals to the Architect and Engineer, review and certify that the equipment, materials, methods, etc. represented by the submittals are in compliance with the Contract Documents.

C. Check all materials and equipment after their arrival on the job site and verify their compliance with the Contract Documents.

D. Approval of product data shall not relieve the Contractor of the responsibility for errors that may be contained therein, or for deviations from requirements in the Contract Documents. It shall be clearly understood that the Architect or Engineer noting some errors but overlooking others does not grant the Contractor permission to proceed in error. Regardless of any information contained in the product data the Contract Documents shall govern the work and are neither waived nor superseded in any way by submittal review.

ELECTRICAL EQUIPMENT PRECAUTIONS

A. Do not install ductwork or piping for heating, refrigeration, plumbing, fire protection, process piping, or any piping systems not included as part of the electrical work, above any electric equipment, transformer, or telephone and electrical equipment.

ACCESSIBILITY

A. Locate all equipment which must be serviced, operated, or maintained in fully accessible position. Equipment shall include, but not be limited to, valves, traps, cleanouts, motors, controllers, drain points, etc. If required for better accessibility, furnish access doors (minimum of 18"x18") for this purpose. Minor deviations from the Contract Documents may be made to allow for better accessibility. Submit any desired change to the Architect for approval prior to performing the work.

B. Wherever access is required through walls or ceilings to equipment, valves, fire dampers, or other concealed equipment installed under this Division, provide a hinged access door and frame.

EQUIPMENT NOISE AND VIBRATION

A. Provide equipment and systems that, as defined herein, are quiet and free of apparent vibration in operation.

B. It is intended that vibration shall not be apparent to the senses in occupied areas of the building. To this end, provide both the balancing of rotating machinery and vibration isolation devices at various locations.

OPERATING INSTRUCTIONS

A. Provide the services of a factory trained specialist to supervise the start-up of all equipment shown and/or specified on these drawings and to instruct the Owner's operators on the operation of the mechanical system.

OPERATING AND MAINTENANCE MANUALS

A. Provide three (3) copies of operating instructions and maintenance data manuals for each specific item of equipment and materials.

RECORD DRAWINGS (REFER TO OWNER'S DIVISION 1 REQUIREMENTS)

A. Maintain a complete set of "Record Drawings" reflecting an accurate as-built record of all Work. In addition, mark the "Record Drawings" to show the precise location of hidden-from-view work and equipment, including air distribution equipment above ceilings, concealed or embedded piping, valves, and all changes and deviations in the Work from that shown on the Contract Documents. This requirement shall not be construed as authorization for the Contractor to make changes in the layout or work without definite instructions from the Owner.

TESTING, ADJUSTING AND BALANCING

A. Provide an independent testing, adjusting and balancing (TAB) agency to perform all tests and adjustments necessary to accomplish complete balancing of the HVAC system. The TAB agency shall perform all tests and make all adjustments necessary to ensure that water and air systems are balanced to within +10%, -5% of the specified quantities. The TAB agency shall submit reports of all work conducted for approval. The TAB agency shall be an AABC member in good standing, or a firm certified by NEBB.

IDENTIFICATION FOR HVAC DUCTWORK, PIPING AND EQUIPMENT

A. Install plastic laminated, permanent self-adhesive duct labels on air ducts as follows:
Blue – For cold-air supply ducts.
Yellow – for hot-air supply ducts.
Green – for exhaust, outside, relief, return and mixed air ducts.

B. Label refrigerant piping (liquid, suction, hot-gas, discharge) with black letters on white background.

INSULATION

A. MATERIALS

i. FOAMED PLASTIC PIPE INSULATION
Closed-cell synthetic foam in continuous lengths with a maximum K-factor of 0.27 per inch of thickness at 75 degrees F mean temperature. Where piping is located outside of the building, wrap piping insulation with weather-resistant jacketing. Basis of Design: Armstrong "AP Armaflex". Foamed plastic insulation, regardless of fire hazard classification, shall not be used in contact with HVAC air streams.

ii. BLANKET DUCT INSULATION
Flexible glass fiber type of a density which produces a maximum K-factor of 0.26 per inch of thickness at 75 degrees F mean temperature. Jacket shall be aluminum foil reinforced with fiberglass scrim laminated to kraft paper. Provide UL label. Basis of Design: Manville "Microlite" with FSKL facing.

B. APPLICATION

i. PIPING THERMAL INSULATION
Insulate the following piping systems with 1/2-inch thick heat resistant polyethylene foam. Foamed plastic tubing shall not be installed in plenum ceilings, air shafts, or any other air passageways; utilize 1/2-inch thick glass fiber insulation with flame-retardant, vapor barrier jacket in these cases.
- Condensate drain lines and auxiliary drain pans
- Refrigerant piping (all refrigerant pipes shall be insulated: suction gas, discharge gas and liquid.

ii. DUCTWORK BLANKET THERMAL INSULATION
All ducts shall be insulated as follows unless specified otherwise:
- Concealed Rectangular: Insulate with 1-1/2-inch thick blanket type insulation adhered to ductwork with 4-inch wide bands of duct insulation adhesive applied on 12-inch centers and fastened with metal clips on 18-inch centers. Joints, seams and stick-clip penetrations shall be sealed with vapor barrier sealer and tape of same type as facing.
- Round Ducts: Insulate with 1-1/2-inch thick blanket type insulation adhered to ducts with 4-inch wide bands of insulation adhesive applied every 90 degrees around duct as a minimum, or on 12-inch longitudinal centers as a maximum and bound with cord or wire half-hitched on 8-inch centers. Joints, seams, and penetrations shall be sealed with vapor barrier sealer and 4-inch wide adhered strips of same type as facing.
- Transitions from Round to Rectangular: Insulate with 1-1/2-inch thick blanket as specified for round duct.
- Flexible ductwork: Insulate all flex duct with 1-1/2" thick fibrous glass insulation faced with reinforced foil vapor barrier. At the Contractor's option, factory-insulated flex duct may be utilized.

AIR DISTRIBUTION

A. DUCTWORK

i. Provide constant air volume ductwork fabricated of galvanized sheet steel suitable for 2-inch static pressure class with duct transverse joint reinforcement and intermediate reinforcement as specified in the SMACNA duct construction standards. Ductwork seal and leakage classes shall be as specified in the "Mechanical Duct Systems Schedule" on this sheet.

ii. All ductwork shall be constructed and erected in a workmanlike manner. Ducts shall be straight and smooth on the inside with neatly finished joints, airtight, and shall be free from vibration under all conditions of operation. The internal ends of slip joints shall be made in the direction of air flow. The ducts shall be securely attached to the building construction in an approved manner. Changes in dimensions and shape of ducts shall be gradual and made using transitions detailed in SMACNA figure 2-9. All duct sizes shall fall within the limiting dimensions indicated on the Drawings, unless otherwise approved. Radius elbows, unless otherwise specified on the Drawings, shall have centerline radius equal to 1-1/2 times the width of the duct. Air turns shall be installed in all 90 degree elbows and shall permit the air to make the turns without appreciable turbulence. Provide double thickness turning vanes for ducts 31 inches or wider. Single thickness turning vanes may be used for ducts between 13 and 30 inches wide. Support all ducts from building structure in a neat, secure manner and, wherever possible, group parallel runs of horizontal ducts together on trapeze hangers. Support vertical riser ducts at the floor line with steel angles to the floor construction. Hanging ducts from other pipes or ducts will not be permitted. Support ducts in accordance with SMACNA.

iii. All round flex duct taps shall be made using conical spin-in fittings; straight dovetail round fittings will not be acceptable. All flex duct taps on spiral ductwork shall be factory-fabricated. When the depth of tapped ductwork will not accept a round fitting, a factory-fabricated oval dovetail fitting of equivalent free area shall be used. Oval dovetail fittings shall have liquid sealant applied all around.

iv. Sheet metal ductwork Drawings shall be made after actual job measurements are obtained. Sheet metal ductwork drawings shall indicate the coordination by the Contractor with sprinkler piping, other mechanical and electrical services installed under Divisions 23 and 26, and the Structural and Architectural requirements.

v. The interior of all ductwork, casings, grilles, registers, diffusers, etc. shall be thoroughly cleaned. Dust/dirt marks at air distribution devices shall necessitate system disassembly as required for proper cleaning of component interiors. No equipment shall be operated until the air conveying systems are clean.

vi. All ductwork shall be installed tight to and supported from the structure above unless indicated otherwise on the Drawings.

vii. Flex duct – No flex duct is allowed.

viii. Duct insulation shall not be continuous through fire and combination fire/smoke dampers. Provide insulation on all sleeves at fire and combination fire/smoke dampers in insulated or sound lined ductwork.

ix. Sealant on exposed metal ductwork shall be limited to the surfaces within the metal joints and not on the surface of the ductwork. Exposed ductwork with visible sealant on the surface of the metal will be rejected and replaced.

B. FLEXIBLE CONNECTIONS

Provide sound isolating flexible connections at ductwork connections (supply & return) of all equipment with rotating machinery (including, but not limited to, air handlers, fans, energy recovery ventilators and where shown on the Drawings. Flexible connections shall be fire, water, and weather resistant canvas "Ventglas." Flexible connections shall be installed with a minimum of one inch slack and a minimum of two inch uniform gap between adjoining metal. The fabric shall be folded in with the metal or attached with metal collar frames at each end to prevent air leakage.

C. FLEXIBLE AIR DUCT

i. Provide flexible air duct material shown on the Contract Documents. Flex duct shall have a maximum installed length of five feet. Provide rigid round ductwork as necessary to meet this requirement. The drawings are diagrammatic, where the flex duct shown on the plans appears to exceed five feet, this written specification shall prevail.

ii. Flexible duct shall be constructed of machine wound spiral aluminum or galvanized steel helix or reinforced aluminum foil fabric mechanically locked into a spiral aluminum helix suitable for a positive working pressure of at least 3" w.c. It shall not be installed with more than two 90 degree elbows. The flexible duct assembly shall be listed as Class I by the Underwriters' Laboratory with a flame spread of not over 25 and a smoke developed rating of not over 50 and shall comply with NFPA Standard 90A.

iii. Insulated flexible duct shall be a factory glass fiber assembly with vapor barrier jacket and a maximum thermal conductance (C-factor) of 0.23 Btu/Hr SF of @ 75oF.

iv. Flexible duct clamps shall be stainless steel with swivel action screw or 100% nylon self-locking clamp manufactured by Pandult Corporation.
Basis of Design: Thermaflex.

MECHANICAL SYMBOLS LIST

(THIS IS A LIST OF STANDARD SYMBOLS, ALL SYMBOLS MAY NOT APPEAR ON THIS PROJECT)

- 26x12 — RECTANGULAR DUCT (INCHES) – FIRST DIMENSION VISIBLE SIDE
- 10# — NEW ROUND DUCT (INCHES)
- 26x12 — EXISTING RECTANGULAR DUCT (INCHES) – FIRST DIMENSION VISIBLE SIDE
- 26x12 — DUCT TO BE REMOVED (INCHES) – FIRST DIMENSION VISIBLE SIDE
- 26x12 — DUCT WITH INTERNAL INSULATION OR ACOUSTICAL LINING. DUCT SIZE IS SHEETMETAL SIZE REQUIRED.
- 26x12 — DUCT WITH OUTER TREATMENT (OTHER THAN INSULATION)
- SUPPLY AIR DUCT TURNING DOWN
- SUPPLY AIR DUCT TURNING UP
- RETURN AIR DUCT TURNING DOWN
- RETURN AIR DUCT TURNING UP
- R — DUCT RISING UP
- D — DUCT DROPPING DOWN
- 26x12 / 12x12 — ECCENTRIC TRANSITION
- 26x12 / 12x12 — CONCENTRIC TRANSITION
- FOT — TRANSITION (FOT = FLAT ON TOP; FOB = FLAT ON BOTTOM)
- VD — FLEX DUCT (SINGLE LINE) AND SPIN-IN CONNECTION WITH VOLUME DAMPER
- VD — FLEX DUCT (DOUBLE LINE) AND SPIN-IN CONNECTION WITH VOLUME DAMPER
- FLEXIBLE CONNECTION
- MITERED ELBOW WITH TURNING VANES
- RADIUS ELBOW
- FD — FIRE DAMPER
- MOD — MOTORIZED DAMPER
- SFD — COMBINATION MOTORIZED SMOKE/FIRE DAMPER
- VD — VOLUME DAMPER
- SCREENED OPENING
- AIR FLOW (OUT OF DEVICE/OPENING)
- AIR FLOW (INTO DEVICE/OPENING)
- 4-WAY BLOW LOUVERED FACE CEILING DIFFUSER WITH ROUND NECK
- 4-WAY BLOW PERFORATED FACE DIFFUSER
- T — THERMOSTAT

- UC — DOOR UNDER CUT (SEE ARCH.)
- DL — DOOR LOUVER (SEE ARCH.)
- DIRECTION OF FLOW
- 2 — PITCH IN DIRECTION SHOWN
- PIPE TURNING DOWN
- PIPE TURNING UP
- TOP TAKE OFF
- BOTTOM TAKE OFF
- GATE VALVE
- BALL VALVE
- GLOBE VALVE
- CHECK VALVE
- DEZURIK SHUT-OFF AND BALANCING VALVE
- UNION
- FLEXIBLE COUPLING
- STRAINER
- TWO WAY CONTROL VALVE
- BUTTERFLY VALVE
- THREE WAY CONTROL VALVE
- FTS — FLOW SWITCH
- PRESSURE GAUGE
- D — CONDENSATE DRAIN
- G — GAS
- R — REFRIGERANT PIPING
- ⅝"X1-⅛"X⅞" — VRF HEAT RECOVERY REFRIGERANT PIPE SIZES (LIQUID,GAS, DISCHARGE)
- ¼"X ½" — VRF NON-HEAT RECOVERY REFRIGERANT PIPE SIZES (LIQUID, GAS)
- F — FIRE SPRINKLER PIPING
- NEW TO EXISTING
- LIMIT OF DEMOLITION
- 1 — SHEET NOTE TAG
- F-# — EQUIPMENT DESIGNATIONS

F	FAN
P	PUMP
H	HEATER
AHU	AIR HANDLING UNIT
CU	CONDENSING UNIT
RTU	ROOF TOP UNIT
IU	INDOOR UNIT
OU	OUTDOOR UNIT

- A / M-3 — SECTION MARKER — SHEET WHERE SECTION IS SHOWN
- 1 / M-2 — DETAIL MARKER — SHEET WHERE DETAIL IS SHOWN
- C / 55 — DESIGNATION / SUPPLY AIR DIFFUSER ID TAG / CFM

ABBREVIATIONS

(THIS IS A LIST OF STANDARD ABBREVIATIONS, ALL ABBREVIATIONS MAY NOT APPEAR ON THIS PROJECT)

ABV.	ABOVE	EXH	EXHAUST	S.C.S.	SMOKE CONTROL SYSTEM
A/C	AIR CONDITIONING	EXIST.	EXISTING	S.F.	SQUARE FEET
ADJ	ADJUSTABLE	F.D.	FIRE DAMPER	S.F.D.	COMBINATION SMOKE/FIRE DAMPER
A.F.F.	ABOVE FINISHED FLOOR	FL	FLOOR	SHT	SHEET
ARCH.	ARCHITECTURAL	FLEX	FLEXIBLE	S.L.	ACOUSTICAL SOUND LINING
@	AT	F.P.S.	FIRE PRESSURIZATION SYSTEM	S.O.	SCREENED OPENING
B.D.	BACK DRAFT DAMPER (GRAVITY)	GA.	GAUGE	SPEC.	PROJECT SPECIFICATIONS
BLDG.	BUILDING	HC	HEATING COIL (DUCT)	S.R.	SUPPLY REGISTER
BLW	BELOW	HP	HORSEPOWER	S.R.O.	SCREENED RETURN OPENING
B.S.	BIRD SCREEN	2-HR	2-HOUR RATED DUCT ENCLOSURE	STAT.	THERMOSTAT
CAP.	CAPACITY	L.D.	LINEAR DIFFUSER	STRUCT.	STRUCTURAL
CAV	CONSTANT AIR VOLUME	L.F.	LINEAR FOOT	T.G.	TRANSFER GRILLE
C.D.	CEILING DIFFUSER	MAX.	MAXIMUM	TRAN.	TRANSITION
CFM	CUBIC FEET PER MINUTE	MIN	MINIMUM	TYP.	TYPICAL
C.G.	CEILING GRILLE	M.O.D.	MOTOR OPERATED DAMPER	U.H.	UNIT HEATER
CLG.	CEILING	N.C.	NORMALLY IN CLOSED POSITION	U.T.R.	UP THRU ROOF
CONN.	CONNECTION	NK	NECK	VAV	VARIABLE AIR VOLUME
CONT.	CONTINUATION	N.O.	NORMALLY IN OPEN POSITION	V.D.	MANUAL VOLUME DAMPER
C.R.	CEILING REGISTER	O.A.	OUTSIDE AIR	VERT.	VERTICAL
DN.	DOWN	O.A.I.L.	OUTSIDE AIR INTAKE LOUVER	W/	WITH
D.	CONDENSATE DRAIN	R.A.	RETURN AIR	W/O	WITHOUT
DTL.	DETAIL	R.G.	RETURN GRILLE		
DWG. NO.	DRAWING NUMBER	RM.	ROOM		
EA.	EACH	R.R.	RETURN REGISTER		
E.A.	EXHAUST AIR	S.A.	SUPPLY AIR		
E.G.	EXHAUST GRILLE				
E.R.	EXHAUST REGISTER				
E.S.P.	EXTERNAL STATIC PRESSURE				

NORTH (building)

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Issue/Revision Seal

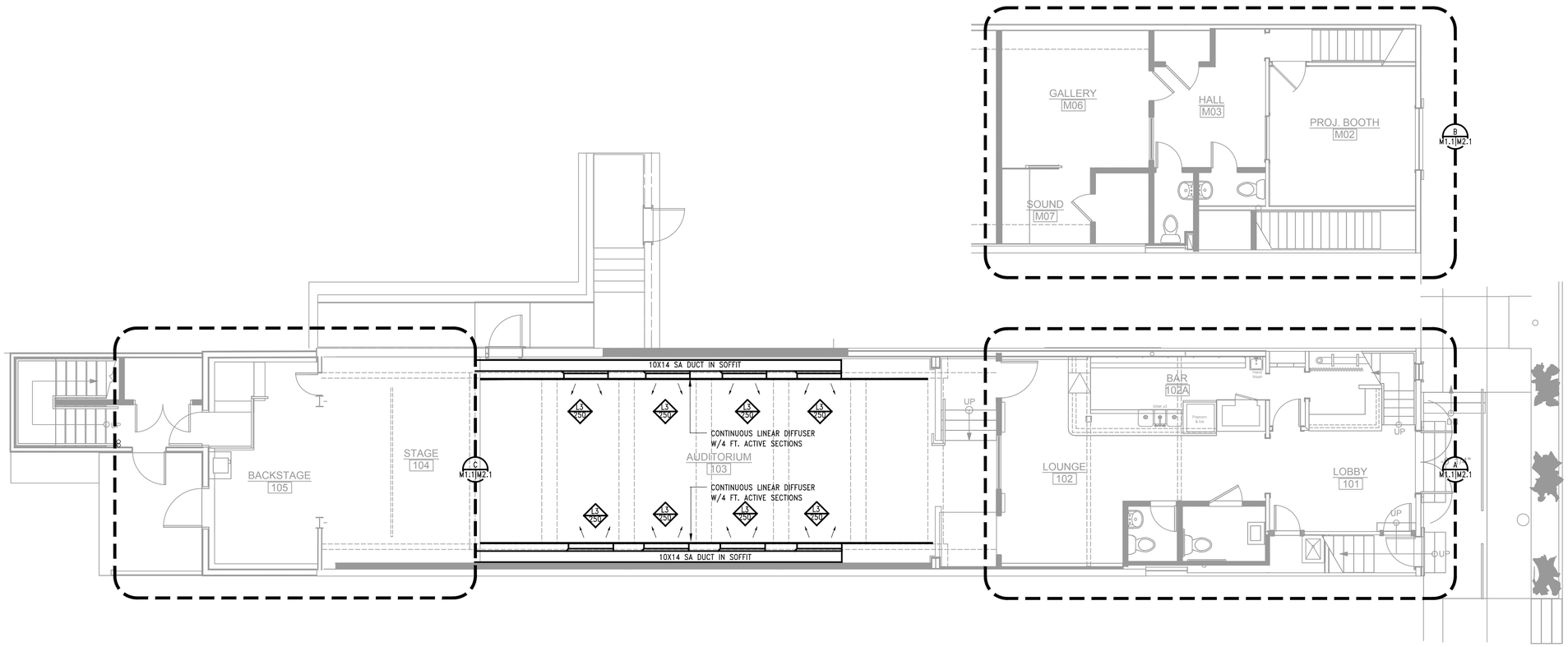
ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
06/04/2020

Drawing Title

GENERAL NOTES & SYMBOLS

Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number

M0.1



MAIN LEVEL AND MEZZANINE FLOOR PLANS

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

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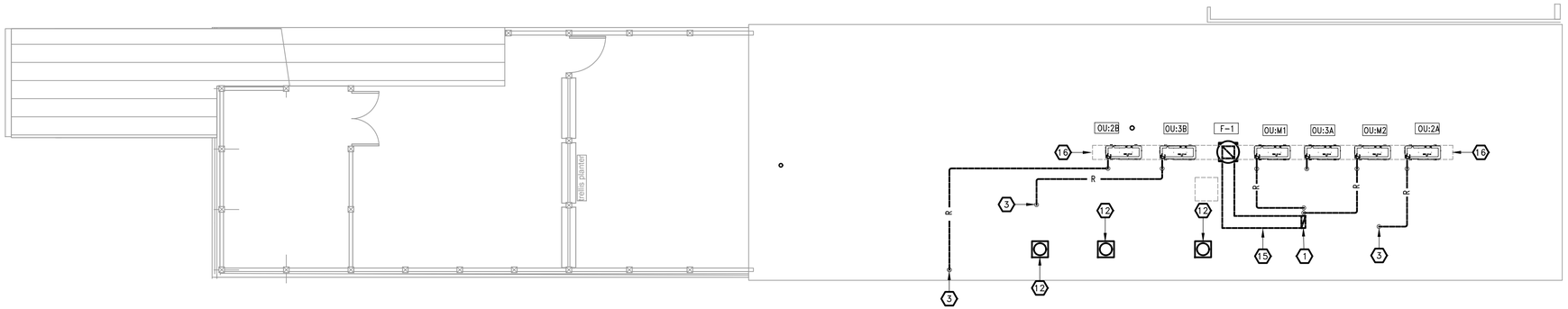
06/04/2020

Drawing Title

MAIN LEVEL AND MEZZANINE FLOOR PLANS

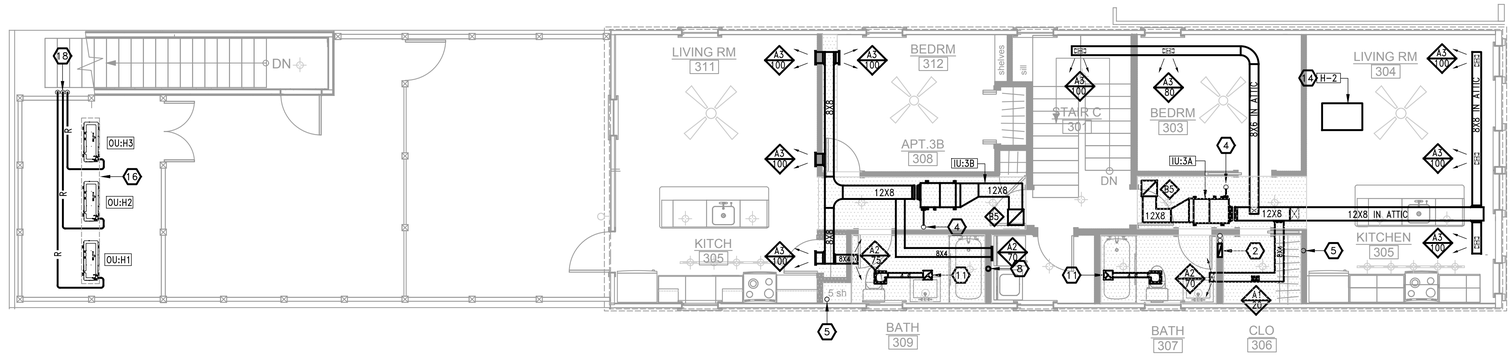
Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number

M1.1



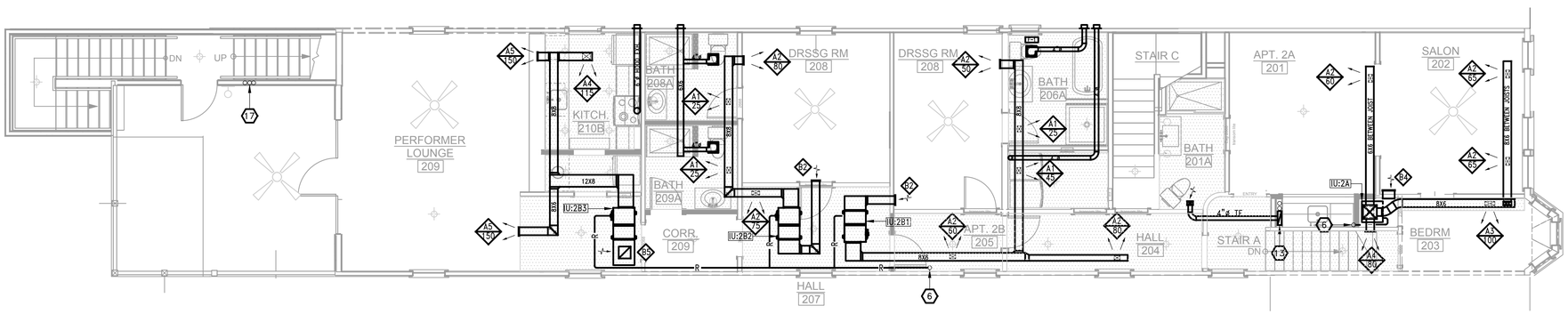
ROOF PLAN

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



THIRD FLOOR PLAN

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



SECOND FLOOR PLAN

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

KEYED SHEET NOTES

1. 12"X4" TOILET EXHAUST DUCT DOWN.
2. 12"X4" UP TO ATTIC AND DOWN TO 2ND FLOOR.
3. REFRIGERANT LINES DOWN THROUGH ATTIC FLOOR
4. REFRIGERANT LINES UP TO ATTIC SPACE
5. REFRIGERANT LINES UP TO TO ATTIC AND DOWN TO 2ND FLOOR
6. REFRIGERANT LINES UP TO 3RD FLOOR
7. REFRIGERANT LINES IN ATTIC (TYPICAL)
8. 4" DRYER VENT UP THROUGH ROOF TO ROOF CAP.
9. NOT USED.
10. NOT USED
11. 8"X8" TOILET EXHAUST DUCT UP TO ROOF CAP.
12. EXHAUST ROOF CAP – PENN VENTILATOR MODEL WCC06 MOUNTED ON COMPATIBLE 12" HIGH ROOF CURB (TYPICAL OF 3).
13. 14"x4" TOILET EXHAUST DUCT UP AND DOWN.
14. LOCATED IN ATTIC
15. 12"X4" TOILET EXHAUST DUCT IN ATTIC
16. MOUNT CONDENSING UNITS ON FIELD FABRICATED RACK (FABRICATED FROM STEEL ANGLES OR TREATED WOOD – CONTRACTOR TO SUBMIT RACK DETAILS AS A SUBMITTAL FOR REVIEW BY AE TEAM.
17. THREE SETS OF REFRIGERANT LINES UP AND DOWN – REFER TO M3.1 FOR SIZING.
18. THREES SETS OF REFRIGERANT LINES DOWN – REFER TO M3.1 FOR SIZING.

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ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Drawing Title

2ND & 3RD FLOOR PLANS

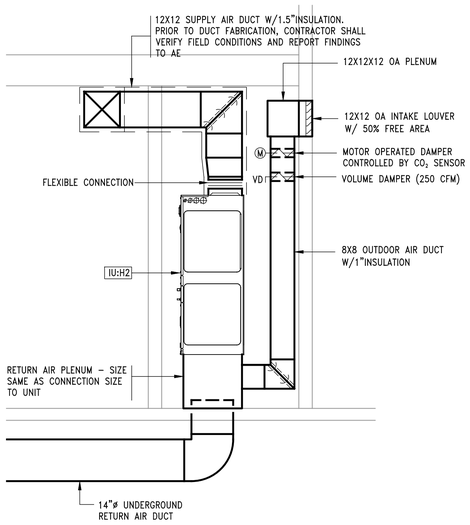
Date JUNE 04, 2020

Scale As Noted

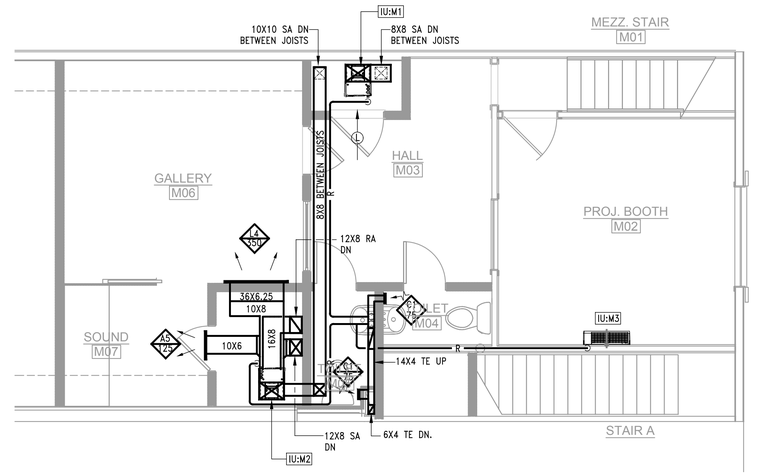
Project Number 19820

Drawing Number

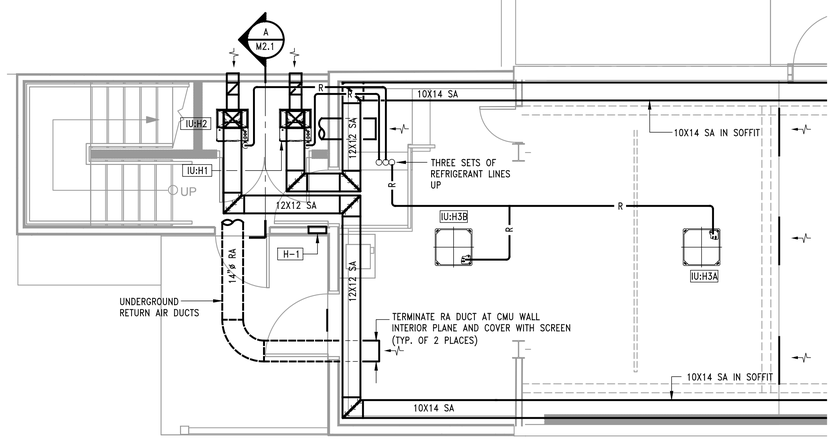
M1.2



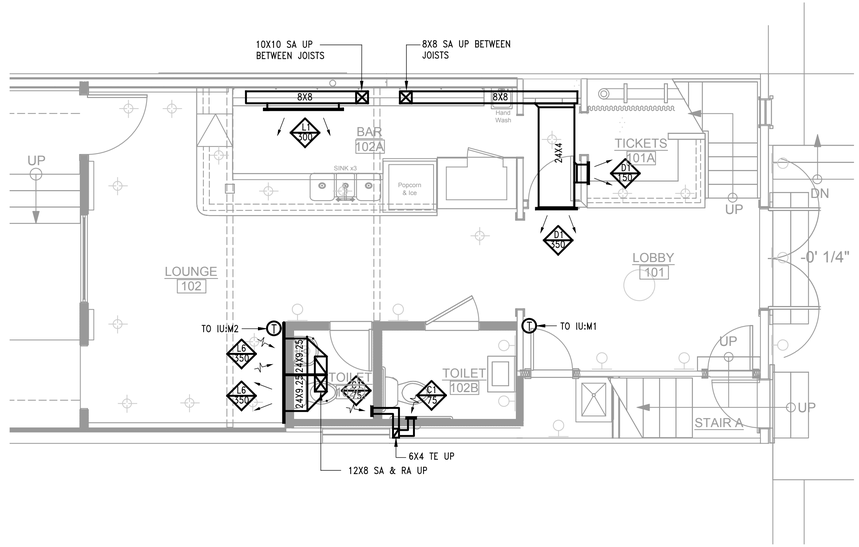
A M2.1|M2.1 **SECTION**
SCALE: 1/2"=1'-0"



B M1.1|M2.1 **MEZZANINE PLAN**
SCALE: ¼" = 1'-0"



C M1.1|M2.1 **PARTIAL 1ST FLOOR PLAN**
SCALE: ¼" = 1'-0"



A M1.1|M2.1 **PARTIAL 1ST FLOOR PLAN**
SCALE: ¼" = 1'-0"

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06/04/2020

Drawing Title

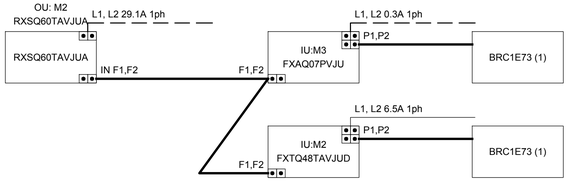
ENLARGED PARTIAL PLANS

Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number

M2.1

APARTMENT 3A

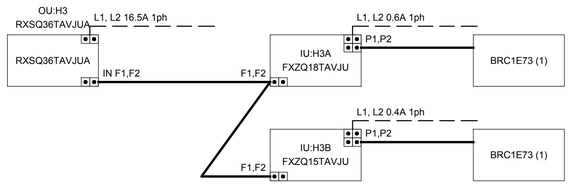
APARTMENT 3A



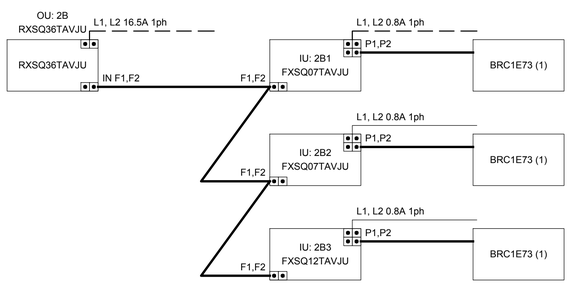
APARTMENT 2A

APARTMENT 3B

APARTMENT 2A



STAGE / BACKSTAGE SYSTEM



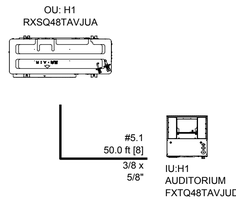
APARTMENT 2B

AUDITORIUM SYSTEM #1

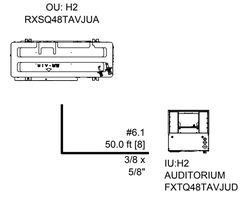
AUDITORIUM SYSTEM #2

VRV WIRING DIAGRAMS

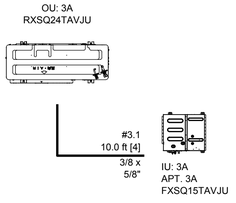
SCALE: NONE



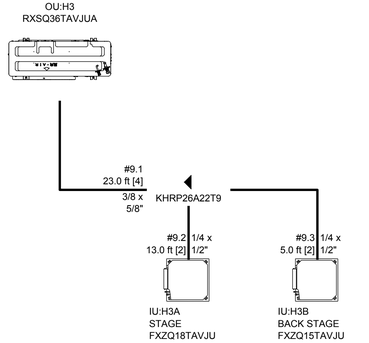
AUDITORIUM SYSTEM #1



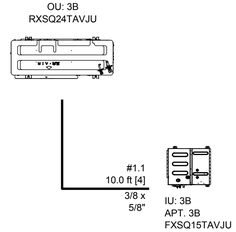
AUDITORIUM SYSTEM #2



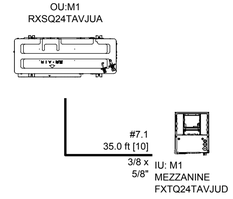
APARTMENT 3A



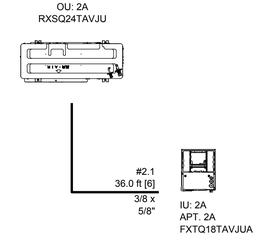
STAGE/BACK STAGE



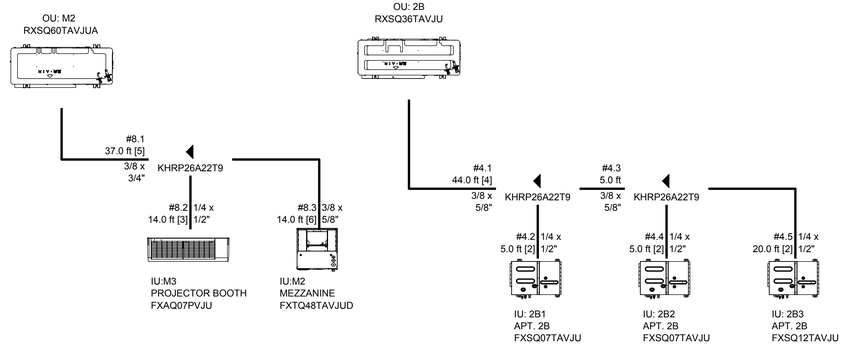
APARTMENT 3B



MEZZANINE



APARTMENT 2A



MEZZANINE

APARTMENT 2B

VRV REFRIGERANT PIPING DIAGRAMS

SCALE: NONE

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ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
06/04/20

Drawing Title

VRV PIPE & WIRING DIAGRAMS

Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number

M3.1

VARIABLE REFRIGERANT VOLUME - AIR-COOLED CONDENSING UNIT SCHEDULE

TAG: ROOM	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	DESCRIPTION	COOLING CAPACITY		HEATING CAPACITY		REFRIGERANT CHARGE		CONNECTION RATIO (%)	ELECTRICAL				DIMENSIONS		EFFICIENCY (NonDucted/Ducted)				
				BTU/h	AMBIENT DESIGN (°F DB)	BTU/h	AMBIENT DESIGN (°F DB / WB)	Factory Charge (lbs)	Add'l Refrigerant (lbs)		VOLTAGE-PHASE	MIN CIRCUIT AMPS (MCA)	MAX OVERCURRENT PROTECTION (MOP)	RUNNING CURRENT(RLA)	(WxHxD) (inch)	WEIGHT (lbs)	EER	IEER	COP 47	COP17	SCHE
OU: 3B	RXSQ24TAVJU	2	Air cooled heat pump (1)	20,745	95.0	25,527	6.0 / 5.5	6.4	0.4	62.5	208-230V 1ph	16.5	25.0	15.3	37.0 x 39.0 x 12.6	172.0	14.3/11	18/15.7	n/a/3.69	n/a/2.54	n/a/n/a
OU: 2A	RXSQ24TAVJU	2	Air cooled heat pump (1)	20,578	95.0	25,389	6.0 / 5.5	6.4	1.4	75.0	208-230V 1ph	16.5	25.0	15.3	37.0 x 39.0 x 12.6	172.0	14.3/11	18/15.7	n/a/3.69	n/a/2.54	n/a/n/a
OU: 3A	RXSQ24TAVJU	2	Air cooled heat pump (1)	20,745	95.0	25,514	6.0 / 5.5	6.4	0.4	62.5	208-230V 1ph	16.5	25.0	15.3	37.0 x 39.0 x 12.6	172.0	14.3/11	18/15.7	n/a/3.69	n/a/2.54	n/a/n/a
OU: 2B	RXSQ36TAVJU	3	Air cooled heat pump (1)	33,935	95.0	30,412	6.0 / 5.5	6.4	2.4	75.0	208-230V 1ph	16.5	25.0	15.3	37.0 x 39.0 x 12.6	172.0	12/10	18/16	n/a/3.75	n/a/2.7	n/a/n/a
OU: H1	RXSQ48TAVJUA	4	Air cooled heat pump (1)	41,846	95.0	37,845	6.0 / 5.5	7.5	2.0	100.0	208-230V 1ph	29.1	35.0	19.0	37.0 x 39.0 x 12.6	176.4	10.3/9.4	18/16	n/a/3.8	n/a/2.82	n/a/n/a
OU: H2	RXSQ48TAVJUA	4	Air cooled heat pump (1)	41,846	95.0	37,845	6.0 / 5.5	7.5	2.0	100.0	208-230V 1ph	29.1	35.0	19.0	37.0 x 39.0 x 12.6	176.4	10.3/9.4	18/16	n/a/3.8	n/a/2.82	n/a/n/a
OU:M1	RXSQ24TAVJUA	2	Air cooled heat pump (1)	20,710	95.0	24,707	6.0 / 5.5	6.4	1.4	100.0	208-230V 1ph	16.5	25.0	15.3	37.0 x 39.0 x 12.6	172.0	14.3/11	18/15.7	n/a/3.69	n/a/2.54	n/a/n/a
OU: M2	RXSQ60TAVJUA	5	Air cooled heat pump (1)	48,076	95.0	42,649	6.0 / 5.5	7.9	2.2	97.4	208-230V 1ph	29.1	35.0	23.2	35.4 x 53.0 x 12.6	224.9	9.8/9.2	18/16	n/a/4	n/a/2.65	n/a/n/a
OU:H3	RXSQ36TAVJUA	3	Air cooled heat pump (1)	30,023	95.0	30,729	6.0 / 5.5	6.4	1.2	91.7	208-230V 1ph	16.5	25.0	15.3	37.0 x 39.0 x 12.6	172.0	12/10	18/16	n/a/3.75	n/a/2.7	n/a/n/a

Schedule Notes:

Manufacturer must be certified, listed, and labeled per AHRI 1230.
System rating data based on design ambient conditions for cooling and for heating.
Manufacturer must provide 10 years parts warranty on all FCUs and Condensing Units. Warranty conditions must be clarified during submittal phase.
Submitted performance data must be fully de-rated for all components and accessories, including but not limited to, line length, vertical separation, connection ratio, design conditions, condenser coil coating.
Condensing units must have fully modulating INVERTER compressors.
Condensing units must have auto changeover functions
Demand limiting relay contact must be provided.
EEV actuators must be removable from valve body without disturbing the refrigerant system.
FCU thermostats must provide +/- 1 degree dead-band set-point and control capability.
Manufacturers submittal must include refrigerant piping diagram with pipe diameters, lengths, and refrigerant volume.
Substitute manufacturer shall be responsible for additional piping and refrigerant.
Contractor to verify piping dimensions.
Installing contractor must have successfully completed manufacturers certified installation class within past 36 months.
Contractor to furnish and install insulation on refrigerant piping.
Manufacturers Representative must have local stock of parts and factory certified technician on staff.
Manufacturers Representative shall provide proof of ongoing installation training at their local facility for at least the past 5 years.
Manufacturers Representative shall provide proof of continuous sales and support of their products for at least 15 years.

VARIABLE REFRIGERANT VOLUME - INDOOR UNIT SCHEDULE

TAG	ROOM	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	TYPE	CONNECTED TO:		SUPPLY FAN	COOLING CAPACITY			HEATING CAPACITY		ELECTRICAL			DIMENSIONS	WEIGHT	Options and Accessories
					CONDENSING UNIT	ZONE CHANGEOVER DEVICE	AIR FLOW RATE cfm	TOTAL BTU/h	SENSIBLE BTU/h	ENTERING AIR °F DB / °F WB	TOTAL BTU/h	ENTERING AIR °Fdb	POWER SUPPLY	Min Circuit Amps	Max Overcurrent Protection	WxHxD	Net	
													Voltage - Phase	MCA	MOP	inch	lbs	
IU: 3B	APT. 3B	FXSQ15TAVJU	1.3	MSP Concealed Ducted Unit	OU: 3B	No	530	12,779	10,228	75.0 62.4	17,067	70.0	208-230V 1ph	1.4	15.0	27.6 x 9.7 x 31.5	60.0	BRC1E73 (1)
IU: 2A	APT. 2A	FXTQ18TAVJUA	1.5	Multi Position Air Handler	OU: 2A	No	600	14,960	11,206	75.0 62.2	19,999	70.0	208-230V 1ph	4.9	15.0	17.5 x 45.0 x 21.0	115.0	BRC1E73 (1)
IU: 3A	APT. 3A	FXSQ15TAVJU	1.3	MSP Concealed Ducted Unit	OU: 3A	No	530	12,779	10,228	75.0 62.4	17,060	70.0	208-230V 1ph	1.4	15.0	27.6 x 9.7 x 31.5	60.0	BRC1E73 (1)
IU: 2B1	APT. 2B	FXSQ07TAVJU	0.6	MSP Concealed Ducted Unit	OU: 2B	No	281	7,179	5,484	78.8 65.5	8,530	70.0	208-230V 1ph	0.8	15.0	21.7 x 9.7 x 31.5	55.0	BRC1E73 (1)
IU: 2B2	APT. 2B	FXSQ07TAVJU	0.6	MSP Concealed Ducted Unit	OU: 2B	No	281	7,179	5,484	78.8 65.5	8,530	70.0	208-230V 1ph	0.8	15.0	21.7 x 9.7 x 31.5	55.0	BRC1E73 (1)
IU: 2B3	APT. 2B	FXSQ12TAVJU	1.0	MSP Concealed Ducted Unit	OU: 2B	No	335	11,458	9,237	78.8 65.5	13,648	70.0	208-230V 1ph	0.8	15.0	21.7 x 9.7 x 31.5	55.0	BRC1E73 (1)
IU:H1	AUDITORIUM	FXTQ48TAVJUD	4.0	Multi Position Air Handler (Factory Disconnect)	OU: H1	No	1,520	40,448	29,054	75.0 62.5	53,998	70.0	208-230V 1ph	6.5	15.0	21.0 x 53.4 x 21.0	149.9	BRC1E73 (1)
IU:H2	AUDITORIUM	FXTQ48TAVJUD	4.0	Multi Position Air Handler (Factory Disconnect)	OU: H2	No	1,520	40,448	29,054	75.0 62.5	53,998	70.0	208-230V 1ph	6.5	15.0	21.0 x 53.4 x 21.0	149.9	BRC1E73 (1)
IU: M1	MEZZANINE	FXTQ24TAVJUD	2.0	Multi Position Air Handler (Factory Disconnect)	OU:M1	No	800	20,166	15,325	75.0 62.4	26,999	70.0	208-230V 1ph	4.9	15.0	17.5 x 45.0 x 21.0	115.0	BRC1E73 (1)
IU:M3	PROJECTOR BOOTH	FXAQ07PVJU	0.6	Wall Mounted Unit	OU: M2	No	260	6,273	5,609	75.0 62.4	8,500	70.0	208-230V 1ph	0.3	15.0	31.3 x 11.4 x 9.3	26.5	BRC1E73 (1)
IU:M2	MEZZANINE	FXTQ48TAVJUD	4.0	Multi Position Air Handler (Factory Disconnect)	OU: M2	No	1,520	40,279	29,132	75.0 62.4	53,998	70.0	208-230V 1ph	6.5	15.0	21.0 x 53.4 x 21.0	149.9	BRC1E73 (1)
IU:H3A	STAGE	FXZQ18TAVJU	1.5	4-Way Discharge Ceiling Cassette (2' x 2')	OU:H3	No	511	15,127	11,496	75.0 62.4	20,121	70.0	208-230V 1ph	0.6	15.0	22.6 x 10.2 x 22.6	41.9	BRC1E73 (1), BYFQ60C3V
IU:H3B	BACK STAGE	FXZQ15TAVJU	1.3	4-Way Discharge Ceiling Cassette (2' x 2')	OU:H3	No	405	12,738	9,565	75.0 62.4	17,057	70.0	208-230V 1ph	0.4	15.0	22.6 x 10.2 x 22.6	36.4	BRC1E73 (1), BYFQ60C3V

Schedule Notes:

1. Standard Limited Warranty: 10-year warranty on compressor and all parts
2. **Provide IU:H1 AND IU:H2 with Global Plasma Solutions Bipolar Ionization System Model GPS-FC24-AC**
3. **Provide IU:H1 and IU:H2 with Merv 13 Hepa filters.**

COMMERCIAL RETURN /EXHAUST GRILLE SCHEDULE

DESIG.	TYPE	CFM RANGE	NECK SIZE	MAX P.D. (IN. W.C.)	MAX. VEL. (FPM)	MAX NC	DEF./BLOW	BASIS OF DESIGN (TITUS)
C1	EXHAUST	0 - 133	6"X6"	<0.10	600	<30	3/4"BLADE SPACING, 35° DEFLECTION	350RL
C2	EXHAUST	134 - 222	8"X8"	<0.10	600	<30	3/4"BLADE SPACING, 35° DEFLECTION	350RL
C3	EXHAUST	223 - 355	10"X10"	<0.10	600	<30	3/4"BLADE SPACING, 35° DEFLECTION	350RL
C4	EXHAUST	356 - 528	12"X12"	<0.10	600	<30	3/4"BLADE SPACING, 35° DEFLECTION	350RL

LINEAR BAR GRILLE SCHEDULE

DESIG.	TYPE	CFM RANGE	DEPTH	MAX P.D. (IN. W.C.)	MAX. VEL. (FPM)	MAX NC	DEF./BLOW	BASIS OF DESIGN (TITUS)
C1	SUPPLY	1 - 175 CFM/LF	4"	<0.10	600	<30	1/8" BAR THICKNESS, 1/4" SPACING, 0° DEFLECTION	CT-480

ELECTRIC HEATER SCHEDULE

DESIG.	DESCRIPTION	AREA SERVED	CFM	CAPACITY		TEMP. RISE	ELECTRICAL DATA			BASIS OF DESIGN (QMARK)	NOTES
				KW	MBH	(°F)	AMP	VOLT	PH		
H-1	WALL HEATER	STAIR	200	6.00	20.5	45	13.4	208	3	EFQ6008-EFQSM	INTEGRAL T-STAT

FAN SCHEDULE

DESIG. F-	SERVICE	CFM	E.S.P. ("H_20)	RPM	VOLTS	PHASE	HP (FLA)	ACCESSORIES	WEIGHT (LBS.)	BASIS OF DESIGN
1	TOILET EXH.	50	0.125	1700	115	1	55 WATTS	-	-	PENN ZEPHR Z1

RESIDENTIAL 2-WAY SUPPLY REGISTER SCHEDULE

DESIG.	TYPE	CFM RANGE	NECK SIZE	MAX P.D. (IN. W.C.)	MAX. VEL. (FPM)	MAX NC	DEF./BLOW	BASIS OF DESIGN (HART & COOLEY)
A1	2-WAY	0 - 55	6"X4"	0.03	700	<30	1/3" SPACED FINS, SET AT 20°	661
A2	2-WAY	56 - 75	8"X4"	0.03	700	<31	1/3" SPACED FINS, SET AT 20°	661
A3	2-WAY	76 - 100	10"X4"	0.03	700	<32	1/3" SPACED FINS, SET AT 20°	661
A4	2-WAY	101 - 125	8"X6"	0.03	700	<33	1/3" SPACED FINS, SET AT 20°	661
A5	2-WAY	126 - 170	10"X6"	0.03	700	<34	1/3" SPACED FINS, SET AT 20°	661
A6	2-WAY	171 - 205	12"X6"	0.03	700	<35	1/3" SPACED FINS, SET AT 20°	661
A7	2-WAY	206 - 240	10"X8"	0.03	700	<36	1/3" SPACED FINS, SET AT 20°	661

RESIDENTIAL FILTER RETURN GRILLE SCHEDULE

DESIG.	TYPE	CFM RANGE	NECK SIZE	MAX P.D. (IN. W.C.)	MAX. VEL. (FPM)	MAX NC	DEF./BLOW	BASIS OF DESIGN (HART & COOLEY)
B1	RETURN	0 -101	6"X6"	<.10	600	<30	1/2" SPACED FINS, SET AT 20°	673
B2	RETURN	102 - 178	8"X8"	<.11	600	<30	1/3" SPACED FINS, SET AT 20°	673
B3	RETURN	178 - 276	10"X10"	<.12	600	<30	1/3" SPACED FINS, SET AT 20°	673
B4	RETURN	277 - 395	12"X12"	<.13	600	<30	1/3" SPACED FINS, SET AT 20°	673
B5	RETURN	395 - 535	14"X14"	<.14	600	<30	1/3" SPACED FINS, SET AT 20°	673

CONTINUOUS LINEAR DIFFUSER SCHEDULE

DESIG.	# OF 3/4" SLOTS	MAX. AIRFLOW (CFM/FT)	MAX P.D. (IN. W.C.)	MAX NC	DUCT SIZE	BORDER TYPE	BASIS OF DESIGN (TITUS)	COMMENTS
L1	1	31	<0.10	30	1- 5/8"	15	ML-38	1. BLANK NON-ACTIVE SECTIONS
L2	2	62	<0.10	30	3-1/8"	15	ML-38	1. BLANK NON-ACTIVE SECTIONS
L3	3	93	<0.10	30	4-5/8"	15	ML-38	1. BLANK NON-ACTIVE SECTIONS
L4	4	124	<0.10	30	6-1/8"	15	ML-38	1. BLANK NON-ACTIVE SECTIONS
L5	5	155	<0.10	30	7-5/8"	15	ML-38	1. BLANK NON-ACTIVE SECTIONS
L6	6	186	<0.10	30	9-1/8"	15	ML-38	1. BLANK NON-ACTIVE SECTIONS

NORTH (building)

Shepherdstown Opera House RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects pllc AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
325 Migration Lane, Gerrardstown, WV 25420, 304-267-2120
18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue/Revision Seal

ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
06/04/20

Drawing Title

EQUIPMENT SCHEDULES

Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number

M4.1

ELECTRICAL ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR	KW	KILOWATT
A	AMP	M.C.B.	MAIN CIRCUIT BREAKER
C.B.	CIRCUIT BREAKER	M.H.	MOUNTING HEIGHT
C.	CONDUIT	M.L.O.	MAIN LUGS ONLY
D	DEDICATED	N.E.C.	NATIONAL ELECTRIC CODE
E.C.	EMPTY CONDUIT	N.F.S.S.	NON-FUSED SAFETY SWITCH
EPO	EMERGENCY POWER OFF	PNL	PANEL
E.W.C.	ELECTRIC WATER COOLER	PC	PERSONAL COMPUTER
F.A.	FIRE ALARM	ø	PHASE
FAAP	FIRE ALARM ANNUNCIATOR PANEL	P	POLE
FACP	FIRE ALARM CONTROL PANEL	REC.	RECEPTACLE
F.S.S.	FUSED SAFETY SWITCH	RM.	ROOM
G.A.P.	GRAPHIC ANNUNCIATOR PANEL	TYP.	TYPICAL
G.F.I.	GROUND-FAULT INTERRUPTER	TR	TAMPER RESISTANT
HP	HORSEPOWER	U.O.N.	UNLESS OTHERWISE NOTED
H.W.HTR.	HOT WATER HEATER	V	VOLT
I.G.	ISOLATED GROUND	W	WATT
J.B.	JUNCTION BOX	WP.	WEATHERPROOF
		XFMR	TRANSFORMER

LIGHTING FIXTURE SCHEDULE

FIXT. TYPE	SYMBOL	BRAND	DESCRIPTION	CATALOG NO.	COLOR TEMP.	LUMENS	MAX. INPUT WATTS	VOLTAGE
1		BARNLIGHT	EXTERIOR WALL SCONCE	BLE-G-DCS16-355-G65-355-NA-NA-NA-CLR-DD-E26	2700	1000	-	120
2		REJUVENATION	ROSE CITY 2-1/4" SCONCE	ITEM#: A7468; FINISH: OLD BRASS SOCKET TYPE: E26; SHADE: B0466	2700	800	-	120
3		REJUVENATION	THURMAN WALL SCONCE	ITEM#: A0744 FINISH: BRUSHED NICKEL; SOCKET TYPE: E26; SHADE: B0351	-	-	-	120
4		WAC LIGHTING	HORIZONTAL LED LEDGE STEP & WALL LIGHT	WL-LED140-C-BR	3000K	-	-	120
5		WAC LIGHTING	LOW VOLTAGE LED TAPE LIGHT	INVISILED 24V PRO HIGH OUTPUT WHITE LIGHT	3000K	lm/ft	-	24 (NOTE 1)
6		WAC LIGHTING	LOW VOLTAGE LED TAPE LIGHT	MULTI-SPECTRUM H.O.	3000K	lm/ft	-	24 (NOTE 1)
7		REJUVENATION	ROSE CITY 2-¼"FITTER CHAIN PENDANT	ITEM#: A1245 FINISH: OLD BRASS; SOCKET TYPE: E26; SHADE: B0462	2700	800	-	120
8		REJUVENATION	ROSE CITY 2-¼"FITTER CHAIN PENDANT 20" O.A.	ITEM#: A5959 FINISH: OLD BRASS; SOCKET TYPE: E26; SHADE: B0467	-	-	-	120
9		LEVITON	PORCELAIN SOCKET	#9874	2700	800	-	120
10		REJUVENATION	EASTMORELAND 10" FLUSH MOUNT	ITEM#: A5959 FINISH: OLD BRASS; SOCKET TYPE: E26; SHADE: B0467	2700	800	60	120
11		WILLIAMS	TUNABLE 4.5" RECESSED DOWNLIGHT	4DR-L13/9TC-DIM-120-A-WW-OF-BL-BL	-	-	24	120
12	-	TBD	STAGE LIGHTING	FURNISHED BY OWNER INSTALLED BY CONTRACTOR	-	-	-	120
13		STONCO	VAPOR PROOF LIGHTING	#VK1GC	2700	800	100	120
14		SOUTHWIRE (HOMEDEPOT)	OUTDOOR WALL SCONCE	L1707SVBLK INDUSTRIAL, HAMMERED BLK, WEATHER TIGHT	2700	800	-	120
15		CARPENTER EMERGENCY	OUTDOOR WALL SCONCE	AWEL2-N-E-CW-PC	-	-	9.0	120
16		REJUVENATION	ROSE CITY 2-¼"FITTER CHAIN PENDANT 32" O.A.	ITEM#: A5959 FINISH: OLD BRASS; SOCKET TYPE: E26; SHADE: B0467	-	-	-	120
17		CREE LIGHTING	RECESSED LED DOWNLIGHT	CR4 575L 35K 120 E26	3500K	575	-	120
18		HUNTER	52" WINGATE TUNABLE WHITE LED	-	TUNABLE LED	-	-	120
19		REJUVENATION	ROSE CITY	ITEM#: A5959 FINISH: OLD BRASS; SOCKET TYPE: E26; SHADE: B0467	-	-	-	120
20		REJUVENATION	THURMAN 3 ¼" SURFACE MOUNTED	ITEM#: A4976 FINISH: BRUSHED NICKEL; SOCKET TYPE: E26; SHADE: B3584-OP	-	-	100	120
21		REJUVENATION	ROSE CITY 6" FITTER LED ROD PENDANT	ITEM#: A0016 FINISH: OLD BRASS SHADE: B0473	2700K	990	12	120
22		REJUVENATION	BALDWIN SINGLE CHAIN PENDANT 84" LONG	ITEM#: A3167 FINISH: OIL RUBBED BRONZE SHADE: B5344	2700K	800	-	120
23		HUNTER	52" OCEANA OUTDOOR WITH LED LIGHT	-	-	-	-	120
24		WAC LIGHTING	FIVE (5) LED TRACK LUMINAIRES MODEL L-LED20S-35-WT AND 8' LONG TYPE L TRACK		3500	1400	23	120
25		WAC LIGHTING	LOW VOLTAGE WALL WASHER	HR-D425LED W/ HR-8402E HOUSING	-	750	-	120
26		TBD	POSTER LIGHT BOX	TBD	-	-	-	120
27		RAB LIGHTING	RECESSED EMERGENCY WAFER LIGHT	WFR6R129FA120WS W/DRI-25-EMGR-DC EMERGENCY DRIVER	4000	990	12	120 (NOTE 2)
		EXITLIGHT COMPANY	LED RECESSED EMERGENCY LIGHT	EL-RSLIM	-	-	3	120
		EXITLIGHT COMPANY	EDGE LIT LED EXIST SIGN	ELSM-R-RM (PROVIDE SINGLE OR DOUBLE SIDED AS REQUIRED; WHITE HOUSING FINISH)	-	-	5	120
		EXITLIGHT COMPANY	WET LOCATION COMBINATION EXIT SIGN & EMERGENCY LIGHT	WLCOHD	-	-	5	120
		EXITLIGHT COMPANY	COMBINATION EXIT SIGN & EMERGENCY LIGHT	COMBOJR-R	-	-	5	120
E	-	-	NEW LOCATION OF EXISTING SALVAGED LIGHT FIXTURE - REFER TO ARCHITECTUAL PLANS		-	-	-	120

NOTES:
1. CONTRACTOR SHALL PROVIDE 120V-24V TRANSFORMER(S) PER LIGHTING MANUFACTURER'S RECOMMENDATIONS. LOCATION OF TRANSFORMER(S) SHALL BE FIELD COORDINATED WITH ARCHITECT.
2. THESE LIGHTS ARE INTENDED FOR EMERGENCY USE ONLY - NORMALLY OFF, ENERGIZE UPON LOSS OF POWER.

ELECTRICAL SPECIFICATIONS

WIRING METHODS
A. ALL CONDUCTORS SHALL BE COPPER, CONFORMING TO THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, STRANDED FOR NO. 8 AWG AND LARGER, SOLID FOR NO. 10 AWG AND SMALLER.
B. THE USE OF ALUMINUM CONDUCTORS FOR ANY PURPOSE SHALL NOT BE ACCEPTABLE.
C. MINIMUM SIZE CONDUCTOR SHALL BE NO. 12 AWG.
D. CONDUCTORS SHALL BE THERMOPLASTIC TYPE THHN/THWN. ALL WIRE AMPACITIES SHALL BE LIMITED TO THE 75 DEGREES CENTIGRADE COLUMN OF TABLE 310-16 OF THE NEC.
E. ALL CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
G. ALL WIRING IN NON-PATIENT CARE AREAS SHALL BE INSTALLED IN CONDUIT (EMT OR FLEXIBLE METAL CONDUIT). MINIMUM CONDUIT SIZE SHALL BE 1/2 INCH. INSTALL ALL CONDUITS IN RUNS WHICH ARE PARALLEL AND PERPENDICULAR WITH BUILDING LINES. TYPE MC OR AC CABLE MAY BE USED IN LIEU OF EMT IN CONCEALED SPACES WHERE PERMITTED BY CODE.
H. INSTALL ALL CONDUITS IN RUNS WHICH ARE PARALLEL AND PERPENDICULAR WITH BUILDING LINES.
I. ALL VOICE, DATA AND TV OUTLETS SHALL BE PROVIDED WITH PLASTER RING AND NYLON PULL STRING UP TO CEILING PLENUM ABOVE, IN HOLLOW SLAB TO CEILING WALLS. IN WALLS THAT ARE SLAB TO SLAB OR INSULATED, PROVIDE A 1900 BOX WITH A SINGLE GANG PLASTER RING, EXTEND A 1-INCH CONDUIT UP TO CEILING PLENUM FROM 1900 BOX AND INSTALL A NYLON PULL STRING.
J. CONTRACTOR SHALL PROVIDE MINIMUM NO. 10 AWG CONDUCTOR SIZE IN BRANCH CIRCUIT RUNS OVER 75 FEET IN LENGTH FOR 120V CIRCUITS.
K. ALL RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE. WHERE RACEWAYS CANNOT BE CONCEALED, IT SHALL BE INSTALLED AT ARCHITECT'S DIRECTION.
L. CONTRACTOR SHALL PROVIDE TYPED PANEL DIRECTORIES FOR ALL PANELS. THE DIRECTORY SHALL INDICATE DEVICE SERVED AND LOCATION OF DEVICE.
M. ALL CONNECTORS AND/OR COUPLERS SHALL BE STEEL. CAST FITTINGS ARE NOT ACCEPTABLE.
N. CONTRACTOR SHALL DERATE CONDUCTORS PER NATIONAL ELECTRICAL CODE AND PROVIDE ONE NEUTRAL CONDUCTOR FOR EACH THREE PHASE CONDUCTORS IF MORE THAN THREE PHASE CONDUCTORS ARE INSTALLED IN A SINGLE PIPE.
O. CONTRACTOR SHALL PROVIDE AND INSTALL TYPE AC, HCF, OR 4-CONDUCTOR MC CABLE FOR ALL BRANCH CIRCUIT WIRING SERVING ISOLATED GROUND TYPE RECEPTACLES (I.G.). THE CONTRACTOR SHALL ENSURE THAT THE ISOLATED GROUND CONDUCTOR IS A MINIMUM NO. 12 AWG COPPER CONDUCTOR AND THAT A SEPARATE EQUIPMENT GROUND PATH IS PROVIDED (UL LISTED). THE ISOLATED GROUND AND EQUIPMENT GROUND MAY NOT BE COMBINED.

SERVICE EQUIPMENT
A. PROVIDE THE ELECTRICAL SERVICE ENTRANCE AND DUCT BANK REQUIREMENTS AS SHOWN AND IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE ELECTRIC COMPANY PROVIDING SERVICE TO THE PROJECT.
B. COORDINATE ALL WORK FOR ELECTRICAL SERVICE WITH POWER COMPANY SERVICING THE PROJECT AND PROVIDE SERVICE ENTRANCE DUCT BANKS, PADS, TRANSFORMERS, AND METERS TO THEIR STANDARDS AND REGULATIONS.
C. THE CONTRACTOR SHALL NOTIFY THE LOCAL ELECTRIC UTILITY COMPANY OF THE REQUIREMENTS AND SHALL ARRANGE FOR ALL SERVICE FACILITIES, CONNECTIONS, AND METERING EQUIPMENT.
D. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NOT FURNISHED BY THE UTILITY COMPANY FOR BRINGING SERVICE INTO THE BUILDING. ANY COSTS FOR THE UTILTY COMPANY'S WORK WILL BE PAID BY THE OWNER.
E. PROVIDE MAIN SERVICE EQUIPMENT OF THE SIZE AND TYPE INDICATED BEARING A UL LABEL.

GROUNDING
A. GENERAL
i. MINIMUM REQUIREMENTS FOR EQUIPMENT GROUNDING SHALL BE GOVERNED BY THE LATEST NATIONAL ELECTRIC CODE AND OSHA. GROUNDING REQUIREMENTS FOR THIS PROJECT ARE INTENDED TO EXCEED SUCH MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL FURNISH AND INSTALL ANY AND ALL ITEMS NECESSARY TO MEET THESE REQUIREMENTS AT NO EXTRA COST, EVEN IF SUCH ITEMS ARE NOT DETAILED ON THE DRAWINGS OR LISTED HEREIN.
ii. THE WORK SPECIFICALLY ENTAILS AN EQUIPMENT SYSTEM WHICH SHALL BE A PERMANENT, CONTINUOUS-BONDING SYSTEM WITH NONCURRENT-CARRYING PARTS OF THE ELECTRICAL SYSTEM, BUILDING STEEL, AND MAJOR STRUCTURAL AND EQUIPMENT.
B. MAIN GROUNDING SYSTEM
THE MAIN GROUNDING SYSTEM SHALL EXTEND FROM A GROUND BUS LOCATED AT THE MAIN ELECTRICAL SERVICE. GROUND CONNECTION SHALL BE MADE FROM THE GROUND BUS TO THE STREET SIDE OF THE MAIN WATER SERVICE PIPE AHEAD OF ALL METERS AND VALVES AND TWO 10-FOOT LONG GROUND RODS PLACED A MINIMUM OF 10 FEET APART LOCATED OUTSIDE OF THE BUILDING.
C. DISTRIBUTION SYSTEM GROUNDING
ALL FEEDERS, IF RUNNING IN METAL RACEWAY SYSTEM USING COMPRESSION CONNECTORS, NEED NOT CARRY A GROUND WIRE, UNLESS OTHERWISE REQUIRED BY CODE. THE CONDUIT IS THEN DEPENDED ON FOR GROUND CONTINUITY. ALL COUPLINGS SHALL BE MADE TIGHT TO PERSERVE THIS CONTINUITY. EACH CONDUIT ORIGINATING FROM A PANEL WHERE A GROUNDING BUSHING IS BONDED TO THE GROUNDING BUS OF THE PANEL SHALL HAVE A SEPARATE GROUND CONDUCTOR.

FEEDERS AND BRANCH CIRCUITS
A. FEEDERS
i. CLASSIFY CIRCUITS AS FEEDERS IF CONDUCTORS ARE LARGER THAN NO. 4 AWG.
ii. INSTALL FEEDERS OF 208 VOLTS IN ELECTRIC METALLIC TUBING IN THE INTERIOR OF THE BUILDING, PROVIDING THE FOLLOWING CONDITIONS ARE STRICTLY ADHERED TO; IF NOT, PROVIDE RIGID STEEL CONDUIT FO THESE FEEDERS.
a. METALLIC TUBING SHALL NOT BE INSTALLED IN CONTACT WITH THE EARTH OR WHERE PROHIBITED BY NEC OR LOCAL CODES.
iii. FITTINGS FOR ELECTRIC METALLIC TUBING SHALL BE COMPRESSION TYPE; HOWEVER, AT THE OPTION OF THE CONTRACTOR, FITTINGS MAY BE SET SCREW OR INDENTOR TYPE IF MADE OF STEEL. A SEPARATE GROUND CONDUCTOR SHALL BE PROVIDED IF NECESSARY.
iv. WHERE TWO OR MORE FEEDERS PASS THROUGH A PULL BOX, EACH SHALL BE CLEARLY IDENTIFIED WITH TAGS GIVING THE ELECTRICAL CHARACTERISTICS, SOURCE, AND DESTINATION OF EACH FEEDER CIRCUIT.
B. BRANCH CIRCUITS
i. HOMERUNS TO THE PANELBOARD MAY BE RUN TOGETHER IN ONE CONDUIT, PROVIDED ALL CONNECTIONS ARE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL ELECTRICAL CODE REQUIREMENTS AND THE MAXIMUM UNBALANCED CURRENT IN NEUTRAL DOES NOT EXCEED THE CAPACITY OF THE WIRE. NO MORE THAN THREE SINGLE PHASE CIRCUITS SERVED FROM DIFFERENT PHASES OR ONE THREE PHASE CIRCUIT SHALL BE INSTALLED IN ONE RACEWAY.
ii. ALL BRANCH CIRCUIT WIRING FOR MECHANICAL EQUIPMENT SHALL BE INSTALLED IN EMT OF 1/2" MINIMUM.
iii. CONDUCTORS SHALL BE CONTINUOUS (SPLICE FREE) FROM TERMINATION TO TERMINATION. PROVIDE PULLBOXES AS NECESSARY TO ELIMINATE SPLICES WHERE SPLICES ARE ABSOLUTELY NECESSARY; SPLICE IN READILY ACCESSIBLE PULL, JUNCTION OR OUTLET BOX.

WIRING DEVICES
A. ALL WIRING DEVICES SHALL BE PROVIDED AS LOCATED IN THE ARCHITECTURAL PLANS AND AS IDENTIFIED IN THE SYMBOL LIST.
B. ALL OUTLET BOXES SHALL BE GALVANIZED STEEL, AT LEAST 1 - 1/2 INCH DEEP AND OF SUFFICIENT SIZE TO ACCOMMODATE THE WIRING DEVICES AND/OR WIRING TO BE INSTALLED.
C. OUTLET BOXES FOR WIRING DEVICES IN FINISHED WALLS SHALL BE ONE PIECE STANDARD GANG TYPE OF SIZE TO ACCOMMODATE NUMBER OF DEVICES NOTED. BOXES SHALL HAVE PLASTIC COVERS TO BRING BOX OPENING FLUSH WITH FINISHED WALL OR NOT MORE THAN 1/4 INCH IN BACK OF SAME.
D. WIRING DEVICES OF THE SAME OR SIMILAR TYPE SHOWN ADJACENT TO EACH OTHER ON THE DRAWINGS SHALL BE INSTALLED IN A MULTI-GANGED OUTLET BOX AND UNDER A COMMON COVERPLATE. REFER TO ALL APPLICABLE NOTES.
E. PROVIDE THE FOLLOWING TYPE OF DEVICES FOR THE PROJECT: NOTE: FINAL APPROVAL OF DEVICE AND COVERPLATE COLOR SHALL BE BY ARCHITECT.
1) DUPLEX RECEPTACLES 2P, 3W, 20A, 125V; P&S CAT. NO. 26352-W (WHITE).
2) DUPLEX RECEPTACLES 2P, 3W, 20A, 125V; GROUND FAULT CIRCUIT INTERRUPTER; P&S CAT.
6) SINGLE-WAY FLUSH TUMBLER SWITCH (20A); P&S CAT. NO. 2621-W (WHITE).
8) THREE-WAY FLUSH TUMBLER SWITCH (20A); P&S CAT. NO. 2623-W (WHITE).
9) COVER PLATES FOR DEVICES LISTED ABOVE SHALL BE (WHITE).
10) COVER PLATES AT WALL COVERING SHALL BE PAINTED TO MATCH, SEE ARCHITECTURAL FINISH PLANS.
F. CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE NEUTRAL CONDUCTOR FOR EACH GROUND FAULT INTERRUPTER RECEPTACLE.

PANELBOARDS
A. PROVIDE DEAD FRONT PANELBOARDS SIZED, RATED AND COMPLETE WITH THE QUANTITY AND SIZE OF CIRCUIT BREAKERS AS SHOWN ON THE CONTRACT DRAWINGS AND AS SPECIFIED BELOW.
B. PANEL BOARDS SHALL BE STANDARD CATALOG ITEMS COMPLYING WITH NEC, UL, AND NEMA STANDARDS AND BEAR THE LABEL OF UL.
C. PANELBOARDS SHALL BE IDENTIFIED BY LAMINATED PLASTIC NAMEPLATES INDICATING PANELBOARD DESIGNATION.
D. PROVIDE COPPER FULL-SIZE PHASE AND NEUTRAL BUSSES WHICH HAVE BEEN RATED IN ACCORDANCE WITH UL 67 HEAT-RISE TESTS. BUS BAR CONNECTIONS SHALL BE COLUMN CONSECUTIVE PHASE-SEQUENCE TYPE. PANELBOARDS SHALL HAVE BUS BARS DRILLED AND EQUIPPED WITH ALL HARDWARE FOR BOLT-IN BREAKERS.
E. PROVIDE BOLTED ON GROUNDING BUS(ES) WITH MAIN LUG(S) UNLESS OTHERWISE NOTED.
F. PANELBOARD SHORT CIRCUIT BRACING AND BREAKER INTERRUPTING CAPACITY SHALL BE AS INDICATED ON THE MANUFACTURERS' SHORT CIRCUIT AND FAULT CURRENT STUDY. LEVELS SHALL NOT BE LESS THAN 10,000 AMPERES RMS SYMMETRICAL FOR 120/208 VOLT SERVICE.
G. PROVIDE MANUFACTURES' STANDARD #16-GAGE (MINIMUM) GALVANIZED SHEET STEEL CABINETS WITH ENAMEL HINGED FRONT COVER FOR DOOR IN DOOR CONSTRUCTION TO BOX, MASTER-KEYED DOOR LOCKS, MULTIPLE KNOCKOUTS, WIRING GUTTERS, AND TYPED CIRCUIT DIRECTORY DEPICTING EACH POLE POSITION IN A TWO COLUMN FASHION.
H. BUSBARS SHALL BE SIZED TO LIMIT THE TEMPERATURE RISE WITHIN THE PANELBOARD TO 50°C WITH A 40°C AMBIENT TEMPERATURE. BUSBARS SHALL BE ROUND EDGE COPPER WITH BOLTED JOINT CONNECTIONS. BOLTED JOINT CONNECTION LOCATIONS SHALL BE READILY ACCESSIBLE FOR MAINTENANCE.
I. PANELBOARD MAIN LUGS CONNECTED TO #6 AWG OR LARGER CONDUCTORS SHALL BE FURNISHED TO ACCOMMODATE COMPRESSION CONNECTORS. ADEQUATE WIRING SPACE SHALL BE PROVIDED TO ACCOMMODATE THE COMPRESSION CONNECTORS.
J. ALL TWO SECTION PANELBOARDS SHALL HAVE EQUIVALENT SHORT CIRCUIT BRACING AND BE CONNECTED WITH COPPER CABLE EQUAL TO OR GREATER THAN THE MAIN BUS AMPERAGE CAPACITY.
K. PANELBOARD NEUTRAL BARS SHALL BE SIZED TO ACCOMMODATE THE NEUTRAL FEEDER SIZES NEUTRAL BARS AS MUCH AS 200% ABOVE THE NEC MINIMUM REQUIREMENTS.
L. CONTRACTOR SHALL PROVIDE BRANCH CIRCUIT WIRING, CONDUIT AND OVERCURRENT PROTECTION MEETING SUBMITTED AND APPROVED EQUIPMENT'S RESPECTIVE NAMEPLATE DATA (MAXIMUM OVERCURRENT PROTECTION (MOCP) AND MINIMUM CIRCUIT AMPACITY (MCA)).
M. ALL SURFACE-MOUNTED PANELS SHALL BE MOUNTED ON 12 GAUGE FORMED STEEL CHANNEL HAVING A CROSS-SECTION DIMENSION OF AT LEAST 1-½ INCHES. THE CHANNEL AND FITTINGS SHALL HAVE GALVKROM OR HOT-DIPPED GALVANIZED FINISH. CHANNELS SHALL BE INSTALLED VERTICALLY AND OR HORIZONTALLY.
N. CONTRACTOR SHALL INSTALL PANELBOARDS WITH PROPER NEC CLEARANCES. NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED, ENTER OR PASS THROUGH SUCH REQUIRED CLEARANCE SPACE.

ELECTRICAL GENERAL NOTES

GENERAL
A. Provide under this Division complete plumbing and fire protection systems, fully adjusted, tested, and commissioned for use as indicated on the Drawings and as specified herein.CODES AND STANDARDS
A. Codes and standards listed herein, insofar as they apply, form a part of these Specifications, the same as if they were fully written and shall be followed as minimum requirements. Where standards conflict, that standard with the more stringent requirements shall be applicable. Where these specifications require higher grade material or workmanship than the referenced standards, provide the highest grade of material and workmanship specified.
B. Prior to purchase or installation, give written notice to the Architect of any materials or apparatus believed in violation of laws, ordinances, rules or regulations, or Authorities Having Jurisdiction.
C. The referenced codes shall include any and all supplements, addenda, memoranda, information bulletins and any other changes and additions effective prior to the permit issue date by adoption of the local Authority Having Jurisdiction.
D. Make any and all modifications required by the Authorities Having Jurisdiction without additional charge to the Owner.
E. Where alterations to and/or deviations from the Contract Documents are required by the Authorities, report the requirements to the Architect and secure approval before starting the alterations.
F. Where Contract Documents' requirements are in excess of Code requirements and are permitted under the Code, the Contract Documents shall govern.
G. All rules and regulations of the Underwriters Laboratories shall be complied with whether or not indicated in the Contract Documents.
H. All work shall comply with the following codes and standards.
1. Codes:
2015 INTERNATIONAL CONSTRUCTION CODE (IBC) | USBC, Part I
2015 INTERNATIONAL ENERGY CONSERVATION CODE (w/ASHRAE 90.1 - 2004)
2015 INTERNATIONAL MECHANICAL CODE (IMC)
2015 INTERNATIONAL PLUMBING CODE (IPC)
2015 INTERNATIONAL FUEL GAS CODE (IFGC)
2014 INTERNATIONAL ELECTRIC CODE (NEC) www.nfpa.org
2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC) | USBC, Part II
2015 INTERNATIONAL FIRE CODE (IFC)
2. Standards: In addition to the requirements shown or specified, comply with the latest current applicable standards, specifications and codes published by the following (where the following publications list recommendations and guidelines, the recommendations and guidelines shall be considered requirements of this contract and the items and systems shall be constructed and/or tested in accordance with the recommendations and guidelines):
American Society of Mechanical Engineers (ASME).
American National Standards Institute (ANSI).
American Water Works (AWWA).
American Society for Testing and Materials (ASTM).
National Fire Protection Association (NFPA).
Underwriters Laboratories (UL).
Plumbing Drainage Institute
Manufacturer's Standardization Society of the Valves and Fittings Industry, Inc. (MSS).

PERMITS
A. Obtain and pay for all permits, licenses, and inspection certificates required for all work in accordance with the provisions of the Contract Documents.

GUARANTEE
A. Guarantee in form satisfactory to the Owner, that all Work installed is free from defects in workmanship and/or materials. Guarantee that all apparatus will develop capacities and characteristics specified for a period of one year from the date of final acceptance by the Owner or certification of substantial completion, whichever occurs later.
B. During the guarantee period, remedy, without cost to the Owner, defective workmanship, materials, and apparatus performance. Remedial work shall be completed within a reasonable time specified by the Owner. In default thereof, the Owner may have such work done and charge all costs to the Contractor.

COMPLETE PERFORMANCE OF WORK
A. Execute work in strict accordance with the best practice of the trades in a thorough, substantial, workmanlike manner by competent workmen.
B. Provide labor, materials, apparatus, and appliances essential to the complete functioning of the systems described and indicated, or which may be reasonably implied as essential whether mentioned in the Contract Documents or not.
C. In cases of doubt as to the Work intended, or in the event of need for explanation thereof, request supplementary instructions from the Architect.

COOPERATION WITH OTHER TRADES
A. Coordinate efforts of all trades and furnish in writing, with copies to the Architect and Owner, any information necessary to permit the work of all trades to be installed satisfactorily and with least possible interference or delay.
B. Where the work of various trades will be installed in close proximity to one another, or where there is evidence that the work of one trade will interfere with work of other trades, assist in working out space conditions to make a satisfactory adjustment. If one trade installs his work before coordinating with work of other trades, make necessary changes to correct the condition without extra charge.

DRAWINGS
A. The Drawings show the general layout of the various items of equipment. However, layout of equipment, accessories, specialties, ductwork, and piping systems are diagrammatic unless specifically dimensioned, and do not necessarily indicate every required valve, fitting, trap, duct, elbow, transition, turning vane, or similar items required for a complete installation. Consult the Architectural Drawings and details for exact location of rough-ins, fixtures and equipment. Where same is not definitely located, obtain the information from the Architect before proceeding.
B. Follow the Drawings in laying out the work and check drawings of all trades to verify spaces in which work will be installed. Maintain maximum headroom throughout. Where space conditions appear inadequate, request clarification from the Architect before proceeding with the installation.

MANUFACTURER'S RECOMMENDATIONS
A. Except where specifically indicated differently in the Contract Documents, apply, install, connect, erect, use, clean, and condition manufactured articles, materials, and equipment per manufacturer's current printed recommendations. Keep copies of such printed recommendations at job site.

SUBMITTALS
A. After the Contract is awarded, but prior to proceeding with the Work, obtain complete submittals from the manufacturers, suppliers, vendors, subcontractors, for all materials and equipment specified in this Division and submit data and details of such materials and equipment to the Architect.
B. Prior to forwarding submittals to the Architect, review and certify that the equipment, materials, methods, etc. represented by the submittals are in compliance with the Contract Documents.
C. A minimum period of two weeks, exclusive of transmittal time, will be required in the Engineer's office each time a submittal is submitted or resubmitted for review. This time period shall be considered by the Contractor when scheduling his work.
D. Approval of product data shall not relieve the Contractor of the responsibility for errors that may be contained therein, or for deviations from requirements in the Contract Documents. It shall be clearly understood that the Architect or Engineer noting some errors but overlooking others does not grant the Contractor permission to proceed in error. Regardless of any information contained in the product data the Contract Documents shall govern the work and are neither waived nor superseded in any way by submittal review

MATERIALS
A. The word "Provide" is defined as requiring the Contractor to "furnish, erect, test, adjust and install complete and ready for use" the item to which it refers.
B. Unless otherwise specified, provide new, first-class quality materials and apparatus required for the work. Furnish, deliver, erect, connect and finish work in every detail, and select and arrange work to fit properly into the building spaces. Where no specific kind or quality of material is given, provide a first class standard article as approved by the Architect.
C. Equipment designated as "Basis of Design" has been coordinated for structural penetrations; duct, piping, and electrical connection; operating and service (maintenance) requirements; and physical size with regard to space where equipment is housed. Other specified manufacturers of like equipment are acceptable contingent on the Contractor providing a complete installation and maintaining full responsibility to provide, at no additional cost, any modifications to the structure or configuration of adjoining equipment and the installation that is required to properly install, operate, and service the equipment being used.

SLEEVES, FORMED OPENINGS, PLATES, AND INSERTS
A. Provide sleeves for all piping passing through masonry, concrete, tile and gypsum wall construction.
B. Provide sleeves and formed openings of sufficient size to pass continuous, uninterrupted insulation of the specified thickness.
C. Check floor and wall construction finishes to determine proper length of sleeves for various locations and make actual lengths to suit the following.
1. Terminate sleeves flush with walls, partitions, and ceilings.
2. In areas where pipes are exposed, extend sleeves 2 inches above finished floor.

RECORD DRAWINGS
A. Maintain at the project site a complete set of "Record Drawings" reflecting an accurate as-built record of all Work. In addition, mark the "Record Drawings" to show changes and deviations in the Work from that shown on the Contract Documents. This requirement shall not be construed as authorization for the Contractor to make changes in the layout or work without definite instructions from the Architect.

FIRE ALARM
A. Fire alarm system design shall be design-build by a licensed fire alarm contractor. The contractor shall perform a system design that will provide all devices as required by the Fire Marshal to accommodate this facility. The fire alarm contractor will prepare and provide stamped and signed fire alarm system shop drawings (by a separate registered fire protection engineer) and submit them for review and approval by the Fire Marshal.

ELECTRICAL SYMBOLS LIST

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	2'X4' LED TROFFER WITH EMERGENCY BATTERY BALLAST/INVERTER	N/A
	2'X4' LED TROFFER	N/A
	COMMERCIAL CEILING MOUNTED (RECESSED) DOWNLIGHT	N/A
	CEILING MOUNTED (RECESSED) DOWNLIGHT WITH EMERGENCY BATTERY BALLAST/INVERTER	N/A
	SURFACE MOUNTED PENDANT LIGHT	N/A
	WALL SCONCE	AS NOTED
	WALL SCONCE WITH EMERGENCY BATTERY BALLAST/INVERTER	AS NOTED
	SURFACE MOUNTED LED LIGHT	N/A
	CEILING MOUNTED LED EXIT LIGHT W/ EMERGENCY BATTERY PACK AND FULLY CONCEALED DRIVER - ARROWS INDICATE DIRECTION	PER CODE
	WALL MOUNTED LED EXIT LIGHT W/ EMERGENCY BATTERY PACK AND FULLY CONCEALED DRIVER - ARROWS INDICATE DIRECTION	PER CODE
	WALL MOUNTED EXIT LIGHT W/EMERGENCY BATTERY PACK & TWIN LED HEADS.	PER CODE
	EMERGENCY LIGHT WITH TWIN LED HEADS	
S	SINGLE POLE FLUSH TUMBLER SWITCH	42"
S_O	WALL MOUNTED OCCUPANCY SENSOR - LEVITON MODEL OSSMT-MD	42"
S_3	WALL MOUNTED THREE-WAY SWITCH	42"
S_4	WALL MOUNTED FOUR-WAY SWITCH	42"
	MULTI-TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR - LEVITON MODEL OSC10-MOW.	NA
A	SYMBOL AND LETTER INDICATES TYPE OF LIGHTING FIXTURE	NA
#	KEYED NOTE DESIGNATION	NA
	WALL MOUNTED DUPLEX RECEPTACLE 2P-3W-20A-125V (MOUNTED VERTICALLY)	18" AFF U.O.N.
	WALL MOUNTED DUPLEX RECEPTACLE 2P-3W-20A-125V (MOUNTED HORIZONTALLY)	18" AFF U.O.N.
	WALL MOUNTED DUPLEX RECEPTACLE 2P-3W-20A-125V GROUND FAULT INTERRUPTER TYPE	46" AFF U.O.N.
	WALL MOUNTED QUAD RECEPTACLE 2P-3W-20A-125V	18" AFF U.O.N.
	WALL MOUNTED QUAD RECEPTACLE 2P-3W-20A-125V GROUND FAULT INTERRUPTER TYPE	46" AFF U.O.N.
V	TELEVISION CABLE J-BOX (SINGLE GANG PLASTER RING WITH WHITE COVERPLATE AND TV/CABLE SYSTEM JACK INSTALLED	AS NOTED
W	PROVIDE FLUSH MOUNTED CONNECTION BOX FOR WASHING MACHINE AND DRYER (INCLUDING HOT AND COLD WATER CONNECTIONS WITH SHUT-OFF VALVES) PROVIDE WITH PROVIDE SINGLE 2P,3W,20A,125V RECEPTACLE FOR WASHER AND SINGLE 3P,4W,30A,250V RECEPTACLE FOR DRYER. COORDINATE WITH PLUMBING CONTRACTOR.	48" AFF U.O.N.
G	JUNCTION BOX FOR GARBAGE DISPOSAL	12" AFF U.O.N.
D	JUNCTION BOX FOR DISHWASHER	12" AFF U.O.N.
	DATA LOCATION - FINAL DATA DISTRIBUTION TO BE DETERMINED BY OWNER. GC TO PROVIDE JUNCTION BOX WITH 1" CONDUIT AND PULL STRING TO CEILING CAVITY. OWNER WILL PROVIDE FACE PLATES, CABLING AND FINAL CONNECTIONS.	18" AFF U.O.N.
	VOICE OUTLET	18" AFF U.O.N.
J J	WALL OR CEILING MOUNTED JUNCTION BOX.	AS REQUIRED
S_m	MOTOR RATED TOGGLE DISCONNECT SWITCH	NA
	METAL RACEWAY (OR TYPE AC OR MC WITH OUTER METAL ARMOR OR SHEATH) FOR USE IN PATIENT CARE AREAS.	NA
	FLEXIBLE METAL RACEWAY (TYPE AC OR MC) FOR USE IN NON-PATIENT CARE AREAS.	NA
	CONDUCTORS IN RACEWAY - TICK MARKS INDICATE NUMBER OF CONDUCTORS I.E. 3 #12 CONDUCTORS WITH A SEPARATE EQUIPMENT GROUND PATH (GROUNDING WIRE IS NOT GENERALLY SHOWN BY TICK MARKS). WHERE ONLY TWO WIRES WILL BE IN THE RACEWAY, NO TICK MARKS WILL BE INDICAED.	NA NA
P-1,3,5	MULTIPLE BRANCH CIRCUIT HOMERUN TO PANEL BOARD - NUMBER OF ARROWHEADS INDICATE NUMBER OF CIRCUITS IN RUN. LETTERS & NUMBERS NEXT TO ARROWHEADS DESIGNATE PANEL BOARD AND CIRCUIT NUMBERS.	NA
P-1	SINGLE BRANCH CIRCUIT HOME RUN TO PANELBOARD (LETTER AND NUMBER DESIGNATE PANELBOARD AND CIRCUIT)	
	HOMERUN TO SWITCH LOCATION	NA
#	POWER DISTRIBUTION PANEL DESIGNATION	NA
	FUSED SAFETY SWITCH 3/30/20 (# OF POLES / SWITCH RATING / FUSE RATING)	NA
	DISCONNECT SWITCH SUPPLIED WITH MECHANICAL EQUIPMENT	NA

FIRE ALARM SYMBOLS LIST
(IN ACCORDANCE WITH NFPA 170)

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
30	FIRE ALARM ADA STROBE LIGHT (NUMBER INDICATES CANDELA)	80" AFF U.O.N.
30	COMBINATION HORN/STROBE (NUMBER INDICATES CANDELA)	80" AFF U.O.N.
	HORN	80" AFF U.O.N.
P	MANUAL PULL STATION	48" AFF U.O.N.

NORTH (building)

Shepherdstown
Opera
House
RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC
Stephen & Harriet Pearson

Mech/Elect Engineer
FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer
Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

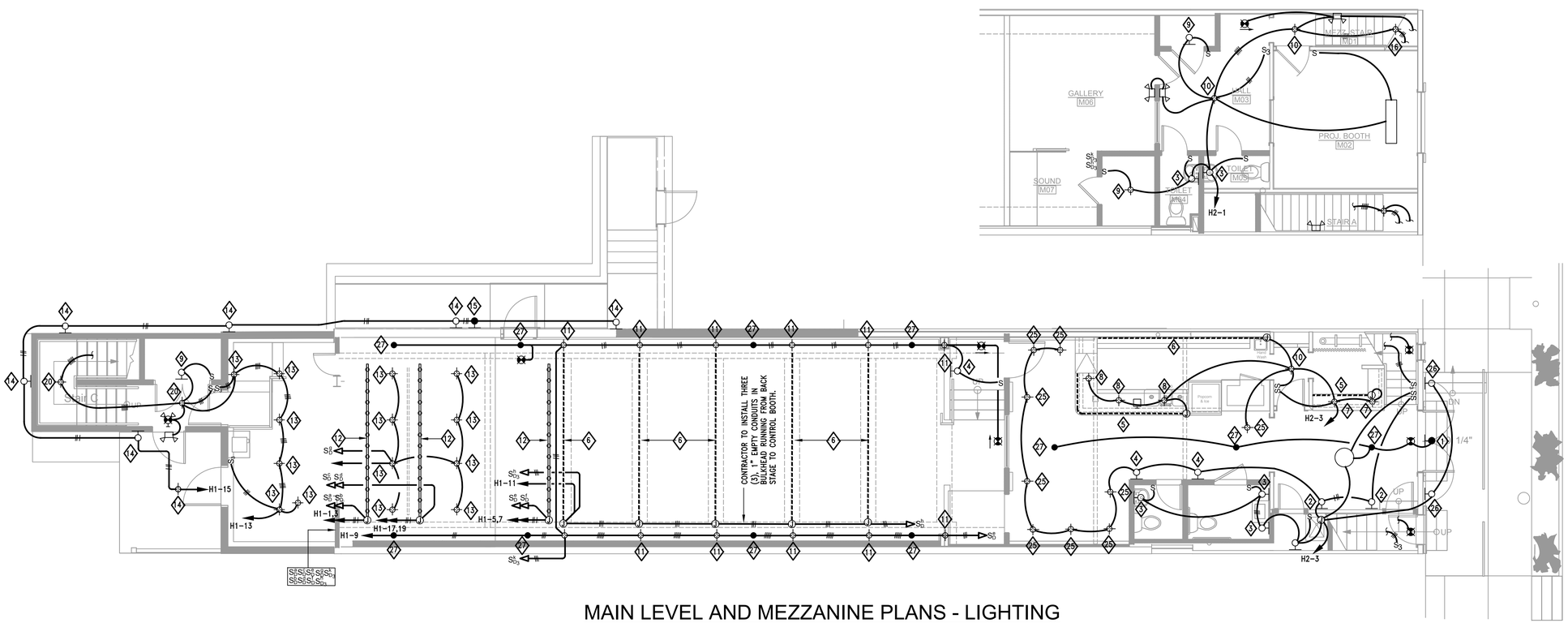
GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects pllc AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
325 Migration Lane Gerrardstown, WV 25420 304-267-2120
18 West Boscawen Street Winchester, VA 22601 540-773-2328

Issue/Revision Seal

ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
06/04/2020.

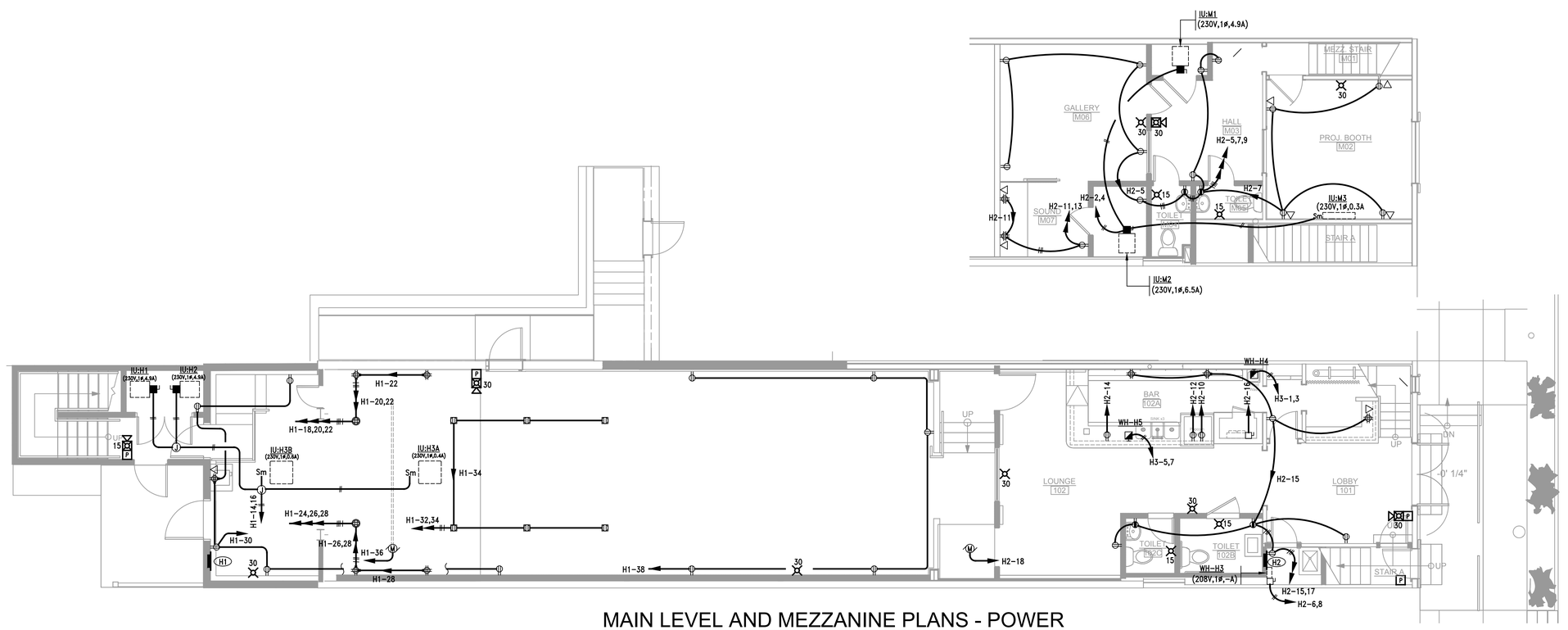
Drawing Title
GENERAL NOTES & SYMBOLS

Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number
E0.1



MAIN LEVEL AND MEZZANINE PLANS - LIGHTING

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



MAIN LEVEL AND MEZZANINE PLANS - POWER

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

NORTH (building)

Shepherdstown Opera House RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects pllc AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
325 Migration Lane, Gerrardstown, WV 25420, 304-267-2120
18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue/Revision

Seal

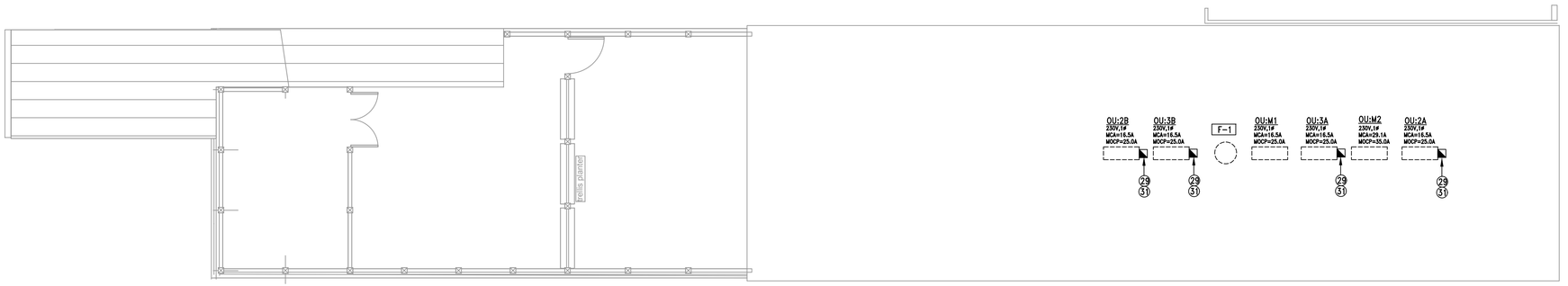
ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
6/04/2020

Drawing Title

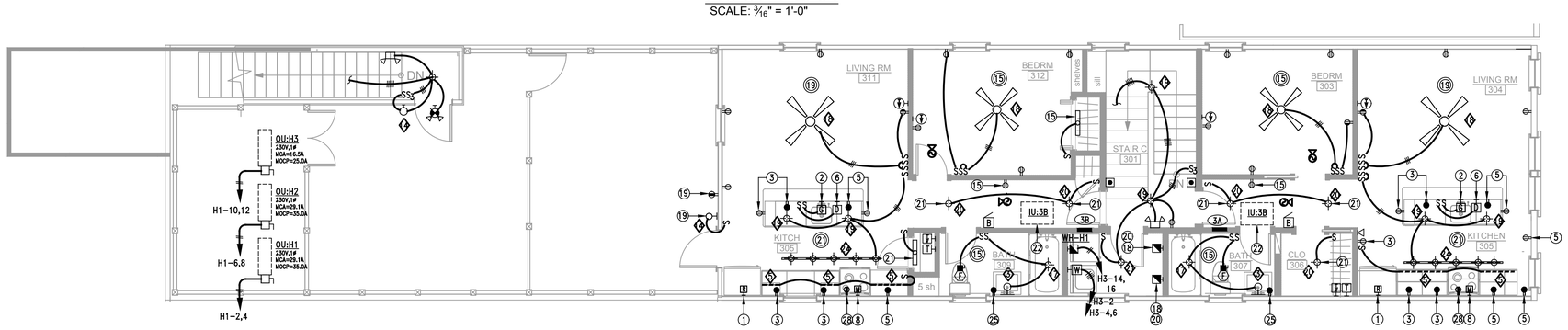
MAIN LEVEL & MEZZANINE PLANS

Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number

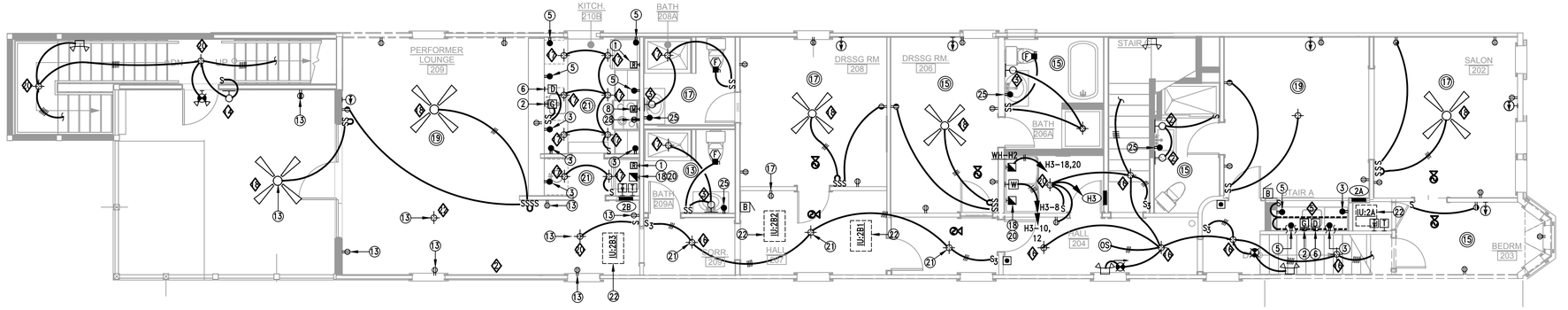
E1.1



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



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



2ND FLOOR PLAN
SCALE: 3/16" = 1'-0"

GENERAL SHEET NOTES

1. ALL WORK IN APARTMENTS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF NEC CURRENTLY IN FORCE WITHIN THE PROJECT JURISDICTION FOR SPACING OF ALL OUTLETS, AND ALL OTHER RESIDENTIAL REQUIREMENTS.
2. ALL BRANCH CIRCUIT WIRING FOR APARTMENTS SHALL BE INSTALLED IN METAL CLAD RACEWAY (MC) WITH SEPERATE GROUND CONDUCTOR. REFER TO LOAD CENTER SCHEDULE FOR WIRE SIZE AND CIRCUIT ASSIGNMENTS.
3. CONTRACTOR SHALL PRE-WIRE, SEPARATE HOMERUNS, ALL APARTMENT TV OUTLETS TO MASTER TV OUTLET APARTMENT USING THE CABLE NOTED IN SYMBOLS LIST.
4. CONTRACTOR SHALL PRE-WIRE, WITH SEPARATE HOMERUNS, ALL APARTMENT TELEPHONE OUTLETS USING THE CABLE NOTED IN THE SYMBOLS LIST.
5. CONTRACTOR MUST TEST ALL PRE-WIRED SYSTEMS BEFORE CLOSING UP WALLS.
6. BACK-TO-BACK OUTLETS OF ANY TYPE SHALL NOT BE PERMITTED BETWEEN APARTMENT UNITS.
   A. OUTLETS ON THESE WALLS MUST BE SEPARATED A MINIMUM OF 24" TO MAINTAIN FIRE RATING OF THE WALLS.
   B. OR OUTLETS SHALL BE WRAPPED WITH UL APPROVED FIRE RATING ASSEMBLIES MATERIAL EQUAL TO 3M FIRE BARRIER PADS.
   C. PROVIDE LOWERYS SOUND PADS INSIDE OUTLET BOXES.
7. PROVIDE GFI PROTECTED OUTLETS FOR ENTIRE KITCHEN
8. PROVIDE GFI OUTLET IN WEATHERPROOF BOX (P&S WP-26 COVERPLATE) FOR TERRACE/BALCONIES.
9. ALL APARTMENT SMOKE DETECTORS SHALL BE CIRCUITED TOGETHER AND EXTENDED TO THE DESIGNATED CIRCUIT.
10. IN ACCORDANCE WITH NEC PARAGRAPHS 422-D, 440-12 EXCEPTIONS 430-102 THE INTENDED DISCONNECT FOR AIR CONDITIONING UNITS IS A KEY LOCKABLE CIRCUIT BREAKER OR HANDLE LOCKS IN THE OFF POSITION UTILIZING A KEY CONTROLLED ONLY BY BUILDING MANAGEMENT.
11. WIRING DEVICES - PRIOR TO ORDERING, THE CONTRACTOR SHALL RE-VERIFY STYLE, COLOR, AND PLATE COVERS WITH ARCHITECT. PRIOR TO LOCATING SWITCHES, RE-VERIFY ALL LOCATIONS WITH THE ARCHITECT.
12. REFER TO ARCHITECTURAL PLANS FOR THICKNESS OF WALL TO ACCOMMODATE RECESSED LOAD CENTER.
13. CONTRACTOR SHALL PROVIDE "ARC FAULT" TYPE CIRCUIT BREAKERS FOR ALL BRANCH CIRCUITS SERVING RECEPTACLES IN BEDROOMS.

APARTMENT UNIT SYMBOLS LIST

SYMBOL	DESCRIPTION
	FLUSH CEILING MOUNTED LIGHT FIXTURE
	WALL-MOUNTED LIGHT FIXTURE
	WALL MOUNTED CLOSET LIGHT (MOUNT ABOVE DOOR HEADER INSIDE OF CLOSET)
S	SINGLE POLE FLUSH TUMBLER SWITCH (MOUNT 42" AFF/UON).
S_3	THREE-WAY FLUSH TUMBLER SWITCH (MOUNT 42" AFF/UON).
S_D	600 WATT DIMMER SWITCH (MOUNT @ 42" AFF UON) LIGHTOLIER TOGGLE STYLE TYPE MATCHING SWITCH STYLE.
	WALL-MOUNTED DUPLEX RECEPTACLE (2P, 3W, 15A, 125V) - MOUNT 18" AFF/UON.
	WALL-MOUNTED DUPLEX RECEPTACLE (2P, 3W, 15A, 125V) - TOP HALF SWITCHED (MOUNT 18" AFF/UON).
	WALL-MOUNTED DUPLEX RECEPTACLE (2P, 3W, 20A, 125V GFI) BATHROOM/APPLIANCE CIRCUIT - MOUNT 6" ABOVE COUNTERS (KITCHEN/BATHROOMS) 18"AFF OTHER AREAS EXTEND TO CIRCUITS NOTED.
	WALL-MOUNTED DUPLEX (2P, 3W, 15A, 125V) OUTLET TO BE GFCI TYPE WITH HINGED WEATHERPROOF COVERPLATE.
	RANGE RECEPTACLE (3P, 4W, 50A, 125/250V) NEMA 14-50R WITH 50A, 2P CIRCUIT BREAKER EXTEND TO CIRCUIT No.28 AND 30.
D	FLUSH-MOUNTED SINGLE RECEPTACLE (2P,3W,20V,125V) FOR DISHWASHER (EXTEND TO CIRCUIT NO. 6). PROVIDE MATCHING PLUG, PROVIDE CONNECTION TO DISHWASHER FOLLOWING DISHWASHER MANUFACTURER'S SPECIFICATIONS TO ASSURE INTEGRITY OF UL LISTING. COORDINATE PLUG INCLUSION WITH SUPPLIER OF DISHWASHER - MOUNT @ 24" A.F.F. - LOCATE BELOW SINK.
G	FLUSH-MOUNTED JUNCTION BOX FOR DISPOSAL, CONTROLLED BY HORIZONTALLY MOUNTED FLUSH TUMBLER SWITCH (EXTEND TO CIRCUIT No.2) MOUNT 24" AFF-LOCATE UNDER SINK.

SYMBOL	DESCRIPTION
M	MICROWAVE HOOD COMBINATION (2P,3W,20A,125V) MAX. 1480W 120V (EXTEND TO CIRCUIT NO. 8) MOUNTED ABOVE RANGE.
R	WALL-MOUNTED SINGLE RECEPTACLE (2P, 3W, 20A, 125V) FOR REFRIGERATOR (EXTEND TO CIRCUIT NO. 1) - MOUNT 48" AFF.
W	PROVIDE FLUSH MOUNTED CONNECTION BOX FOR WASHING MACHINE AND DRYER (INCLUDING HOT AND COLD WATER CONNECTIONS WITH SHUT-OFF VALVES) COORDINATE WITH PLUMBING INSTALLER PROVIDE SINGLE 2P,3W,20A,125V RECEPTACLE FOR WASHER - EXTEND 2#12+G TO UNITS LOAD CENTER PROVIDE SINGLE 3P,4W,30A,250V RECEPTACLE FOR DRYER - EXTEND 3#10+G TO UNITS LOAD CENTER
WH	FLUSH MOUNTED JUNCTION BOX FOR ELECTRIC WATER HEATER
TV	MASTER APARTMENT TELEVISION SYSTEM OUTLET (MOUNTED 12" ABOVE CLOSET SHELF). A. PROVIDE 6"X6"X2-⅛" FLUSH-MOUNTED BOX WITH TWO GANG COVER PLATES.
TV	TELEVISION SYSTEM OUTLET (SINGLE GANG PLASTER RING WITH WHITE COVER PLATE AND TV/CABLE SYSTEM JACK INSTALLED (MOUNT 18" AFF UON). A. PROVIDE RG6QUAD 90% SHIELDED TYPE COAXIAL CABLE FROM OUTLET TO CONDOMINIUM MASTER TELEVISION OUTLET. B. COORDINATE CABLE TYPE WITH CABLE TV SERVICE PROVIDER. C. PROVIDE FIRE RATED BOX WHERE REQUIRED.
T	MASTER APARTMENT SYSTEM TELEPHONE OUTLET A. PROVIDE 6"X6"X2-⅛" FLUSH-MOUNTED BOX WITH TWO GANG COVER PLATE.
▽	TELEPHONE SYSTEM OUTLET - MOUNT 18" AFF GENERAL A. APARTMENT OUTLETS - SINGLE GANG PLASTER RING WITH WHITE TELEPHONE OUTLET COVERPLATE. C. PROVIDE FIRE RATED BOX AT PARTY WALLS OR UTILIZE FIRE RATED WRAP ASSEMBLIES BY 3M.

SYMBOL	DESCRIPTION
	FUSED SAFETY SWITCH - IF FIELD FURNISHED AND INSTALLED, DO NOT MOUNT ON EQUIPMENT, MOUNT ON UNISTRUCT ATTACHED TO ROOF.
	SMOKE DETECTOR WITH AUDIBLE ALARM (APARTMENTS ONLY), SURFACE MOUNTED. A. UNIT SHALL HAVE 120V POWER SUPPLY (CIRCUIT #26) WITH BATTERY BACK-UP. B. UNITS LOCATED IN AREAS WITHOUT DROPPED CEILING SHALL BE WALL MOUNTED A MAXIMUM OF 12" BELOW FINISHED CEILING. C. ALL SMOKE DETECTORS SHALL BE INTERCONNECTED TO SIMULTANEOUSLY ALARM WHEN ANY SINGLE DETECTOR SENSES SMOKE.
	APARTMENT LOAD CENTER (DEPTH OF PANEL CAN NOT EXCEED 3 7/8")
F	RECESSED TOILET EXHAUST FAN. CONNECT TO CIRCUIT.
	DOOR BELL (PUSHBUTTON) - INTERCONNECT WITH CHIME.
#	GENERAL ROOM CIRCUIT DESIGNATION - SPECIFIC CIRCUIT DESIGNATIONS SHALL PREVAIL
#	SPECIFIC CIRCUIT DESIGNATION. IF NO SPECIFIC CIRCUIT IS INDICATED FOR LIGHTING AND/OR RECEPTACLES, CIRCUIT TO THE GENERAL ROOM CIRCUIT.
B	WALL MOUNTED DOORBELL/CHIME INTERCONNECTED WITH DOORBELL PUSHBUTTON. CONNECT WITH GENERAL LIGHTING CIRCUIT #21.
	FLUSH CEILING MOUNTED JUNCTION BOX FOR FUTURE COMBINATION FAN/LIGHT UNIT.

NORTH (building)

Shepherdstown Opera House RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC
Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects plic AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
325 Migration Lane, Gerrardstown, WV. 25420, 304-267-2120
18 West Boscawen Street, Winchester, VA. 22601, 540-773-2328

Issue/Revision | Seal

ALAN W. JOHNSON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
6/04/2020

Drawing Title

2ND & 3RD FLOOR PLANS

Date JUNE 04, 2020
Scale As Noted | Project Number 19820
Drawing Number

E1.2

RESIDENTIAL LOAD CENTER — APT. 2B

VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF
120 / 240	1	3	100A	-	10K	RECESSED	CH BR	-	-

TYPE LEGEND

L	LIGHTING		KITCHEN EQ
R	RECEPTACLES		EXISTING
M	MECH EQUIP		OTHER

REMARKS

CKT #	ITEM SERVED	WIRE	CONDUIT	CKT. BRK TRIP	P	LOAD (VA)	PHASE	LOAD (VA)	P	CKT. BRK TRIP	CONDUIT	WIRE	ITEM SERVED	CKT #
1	REFRIGERATOR	#12	-	20A	1	0	A	0	1	20A	-	#12	GARBAGE DISPOSAL	2
3	SMALL APPLIANCE	#12	-	20A	1	1500	B	0	1	15A	-	-	PROVISION	4
5	SMALL APPLIANCE	#12	-	20A	1	1500	C	1200	1	20A	-	#12	DISHWASHER	6
7	PROVISION	-	-	15A	1	0	A	0	1	20A	-	#12	MICROWAVE	8
9	PROVISION	-	-	15A	1	0	B	0	1	20A	-	#12	WASHER	10
11	PROVISION	-	-	15A	1	0	C	2500	2	30A	-	#10	DRYER	12
13	LIGHTS & RECEPT.	#12	-	20A	1	0	A	2500						14
15	LIGHTS & RECEPT.	#12	-	20A	1	0	B	0	1	15A	-	-	PROVISION	16
17	LIGHTS & RECEPT.	#12	-	20A	1	0	C	1250	2	20A	-	#12	WATER HEATER	18
19	LIGHTS & RECEPT.	#12	-	20A	1	0	A	1250						20
21	GENERAL LIGHTING	#12	-	20A	1	1640	B	100	2	15A	-	#12	IU	22
23	GENERAL LIGHTING	#12	-	20A	1	1640	C	100						24
25	BATHROOM GFI	#12	-	20A	1	0	A	0	1	15A	-	#12	SMOKE DETECTORS	26
27	PROVISION	-	-	15A	1	0	B	4000	2	50A	-	#8	RANGE	28
29	AC COND. UNIT	#10	-	25A	2	1932	C	4000						30
31						1932	A	0	-	-	-	-	WATER HEATER	32
33	SPACE	-	-	-	-	0	B	0	-	-	-	-	SPACE	34
35	SPACE	-	-	-	-	0	C	0	-	-	-	-	SPACE	36

RESIDENTIAL LOAD CENTER CALCULATION (NEC 220.20)

GENERAL LIGHTING LOAD (AREA X 3 WATTS/SF)	=	3,275 VA	1ST 10 KVA @ 100%	= 10,000 VA
SMALL APPLIANCE LOAD (TWO, 20A CIRCUITS)	=	3,000 VA	REMAINDER OF LOAD @ 40%	= 4,466 VA
RANGE	=	9,600 VA	HEAT PUMP	= 5000 VA
WATER HEATER	=	2,500 VA	TOTAL LOAD	= **19,466 VA**
DISHWASHER	=	1,200 VA		
DISPOSAL (3/4HP)	=	1,590 VA		
CLOTHES DRYER	=	0 VA		
CLOTHES WASHER	=	0 VA		
TOTAL	=	21,165 VA		**94 AMPS**

RESIDENTIAL LOAD CENTER — APT 2A

VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF
120 / 240	1	3	100A	-	10K	RECESSED	CH BR	-	-

TYPE LEGEND

L	LIGHTING		KITCHEN EQ
R	RECEPTACLES		EXISTING
M	MECH EQUIP		OTHER

REMARKS

CKT #	ITEM SERVED	WIRE	CONDUIT	CKT. BRK TRIP	P	LOAD (VA)	PHASE	LOAD (VA)	P	CKT. BRK TRIP	CONDUIT	WIRE	ITEM SERVED	CKT #
1	REFRIGERATOR	#12	-	20A	1	0	A	0	1	20A	-	#12	GARBAGE DISPOSAL	2
3	SMALL APPLIANCE	#12	-	20A	1	1740	B	0	1	15A	-	-	PROVISION	4
5	SMALL APPLIANCE	#12	-	20A	1	0	C	1200	1	20A	-	#12	DISHWASHER	6
7	PROVISION	-	-	15A	1	0	A	0	1	20A	-	#12	MICROWAVE	8
9	PROVISION	-	-	15A	1	0	B	0	1	20A	-	#12	WASHER	10
11	PROVISION	-	-	15A	1	0	C	2500	2	30A	-	#10	DRYER	12
13	PROVISION	-	-	15A	1	0	A	2500						14
15	LIGHTS & RECEPT.	#12	-	20A	1	0	B	0	1	15A	-	-	PROVISION	16
17	LIGHTS & RECEPT.	#12	-	20A	1	0	C	1250	2	20A	-	#12	WATER HEATER	18
19	LIGHTS & RECEPT.	#12	-	20A	1	0	A	1250						20
21	GENERAL LIGHTING	#12	-	20A	1	1890	B	100	2	15A	-	#12	IU	22
23	SPACE	-	-	-	-	0	C	100						24
25	BATHROOM GFI	#12	-	20A	1	0	A	0	1	15A	-	#12	SMOKE DETECTORS	26
27	PROVISION	-	-	15A	1	0	B	4000	2	50A	-	#8	RANGE	28
29	AC COND. UNIT	#10	-	25A	2	1932	C	4000						30
31						1932	A	0	-	-	-	-	SPACE	32
33	SPACE	-	-	-	-	0	B	0	-	-	-	-	SPACE	34
35	SPACE	-	-	-	-	0	C	0	-	-	-	-	SPACE	36

RESIDENTIAL LOAD CENTER CALCULATION (NEC 220.20)

GENERAL LIGHTING LOAD (AREA X 3 WATTS/SF)	=	1,650 VA	1ST 10 KVA @ 100%	= 10,000 VA
SMALL APPLIANCE LOAD (TWO, 20A CIRCUITS)	=	3,000 VA	REMAINDER OF LOAD @ 40%	= 3,816 VA
RANGE	=	9,600 VA	HEAT PUMP	= 5000 VA
WATER HEATER	=	2,500 VA	TOTAL LOAD	= **18,816 VA**
DISHWASHER	=	1,200 VA		
DISPOSAL (3/4HP)	=	1,590 VA		
CLOTHES DRYER	=	0 VA		
CLOTHES WASHER	=	0 VA		**90 AMPS**
TOTAL	=	19,540 VA		

RESIDENTIAL LOAD CENTER — APT 3B

VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF
120 / 240	1	3	100A	-	10K	RECESSED	CH BR	-	-

TYPE LEGEND

L	LIGHTING		KITCHEN EQ
R	RECEPTACLES		EXISTING
M	MECH EQUIP		OTHER

REMARKS

CKT #	ITEM SERVED	WIRE	CONDUIT	CKT. BRK TRIP	P	LOAD (VA)	PHASE	LOAD (VA)	P	CKT. BRK TRIP	CONDUIT	WIRE	ITEM SERVED	CKT #
1	REFRIGERATOR	#12	-	20A	1	0	A	0	1	20A	-	#12	GARBAGE DISPOSAL	2
3	SMALL APPLIANCE	#12	-	20A	1	1740	B	0	1	15A	-	-	PROVISION	4
5	SMALL APPLIANCE	#12	-	20A	1	0	C	1200	1	20A	-	#12	DISHWASHER	6
7	PROVISION	-	-	15A	1	0	A	0	1	20A	-	#12	MICROWAVE	8
9	PROVISION	-	-	15A	1	0	B	0	1	20A	-	#12	WASHER	10
11	PROVISION	-	-	15A	1	0	C	2500	2	30A	-	#10	DRYER	12
13	PROVISION	-	-	15A	1	0	A	2500						14
15	LIGHTS & RECEPT.	#12	-	20A	1	0	B	0	1	15A	-	-	PROVISION	16
17	LIGHTS & RECEPT.	#12	-	20A	1	0	C	1250	2	20A	-	#12	WATER HEATER	18
19	LIGHTS & RECEPT.	#12	-	20A	1	0	A	1250						20
21	GENERAL LIGHTING	#12	-	20A	1	1890	B	100	2	15A	-	#12	IU	22
23	SPACE	-	-	-	-	0	C	100						24
25	BATHROOM GFI	#12	-	20A	1	0	A	0	1	15A	-	#12	SMOKE DETECTORS	26
27	PROVISION	-	-	15A	1	0	B	4000	2	50A	-	#8	RANGE	28
29	AC COND. UNIT	#10	-	25A	2	1932	C	4000						30
31						1932	A	0	-	-	-	-	SPACE	32
33	SPACE	-	-	-	-	0	B	0	-	-	-	-	SPACE	34
35	SPACE	-	-	-	-	0	C	0	-	-	-	-	SPACE	36

RESIDENTIAL LOAD CENTER CALCULATION (NEC 220.20)

GENERAL LIGHTING LOAD (AREA X 3 WATTS/SF)	=	1,890 VA	1ST 10 KVA @ 100%	= 10,000 VA
SMALL APPLIANCE LOAD (TWO, 20A CIRCUITS)	=	3,000 VA	REMAINDER OF LOAD @ 40%	= 3,912 VA
RANGE	=	9,600 VA	HEAT PUMP	= 5000 VA
WATER HEATER	=	2,500 VA	TOTAL LOAD	= **18,912 VA**
DISHWASHER	=	1,200 VA		
DISPOSAL (3/4HP)	=	1,590 VA		
CLOTHES DRYER	=	0 VA		
CLOTHES WASHER	=	0 VA		**91 AMPS**
TOTAL	=	19,780 VA		

RESIDENTIAL LOAD CENTER — APT. 3A

VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF
120 / 240	1	3	100A	-	10K	RECESSED	CH BR	-	-

TYPE LEGEND

L	LIGHTING		KITCHEN EQ
R	RECEPTACLES		EXISTING
M	MECH EQUIP		OTHER

REMARKS

CKT #	ITEM SERVED	WIRE	CONDUIT	CKT. BRK TRIP	P	LOAD (VA)	PHASE	LOAD (VA)	P	CKT. BRK TRIP	CONDUIT	WIRE	ITEM SERVED	CKT #
1	REFRIGERATOR	#12	-	20A	1	0	A	0	1	20A	-	#12	GARBAGE DISPOSAL	2
3	SMALL APPLIANCE	#12	-	20A	1	1740	B	0	1	15A	-	-	PROVISION	4
5	SMALL APPLIANCE	#12	-	20A	1	0	C	1200	1	20A	-	#12	DISHWASHER	6
7	PROVISION	-	-	15A	1	0	A	0	1	20A	-	#12	MICROWAVE	8
9	PROVISION	-	-	15A	1	0	B	0	1	20A	-	#12	WASHER	10
11	PROVISION	-	-	15A	1	0	C	2500	2	30A	-	#10	DRYER	12
13	PROVISION	-	-	15A	1	0	A	2500						14
15	LIGHTS & RECEPT.	#12	-	20A	1	0	B	0	1	15A	-	-	PROVISION	16
17	LIGHTS & RECEPT.	#12	-	20A	1	0	C	1250	2	20A	-	#12	WATER HEATER	18
19	LIGHTS & RECEPT.	#12	-	20A	1	0	A	1250						20
21	GENERAL LIGHTING	#12	-	20A	1	1640	B	100	2	15A	-	#12	IU	22
23	SPACE	-	-	-	-	0	C	100						24
25	BATHROOM GFI	#12	-	20A	1	0	A	0	1	15A	-	#12	SMOKE DETECTORS	26
27	PROVISION	-	-	15A	1	0	B	4000	2	50A	-	#8	RANGE	28
29	AC COND. UNIT	#10	-	25A	2	1932	C	4000						30
31						1932	A	0	-	-	-	-	SPACE	32
33	SPACE	-	-	-	-	0	B	0	-	-	-	-	SPACE	34
35	SPACE	-	-	-	-	0	C	0	-	-	-	-	SPACE	36

RESIDENTIAL LOAD CENTER CALCULATION (NEC 220.20)

GENERAL LIGHTING LOAD (AREA X 3 WATTS/SF)	=	1,740 VA	1ST 10 KVA @ 100%	= 10,000 VA
SMALL APPLIANCE LOAD (TWO, 20A CIRCUITS)	=	3,000 VA	REMAINDER OF LOAD @ 40%	= 3,852 VA
RANGE	=	9,600 VA	HEAT PUMP	= 5000 VA
WATER HEATER	=	2,500 VA	TOTAL LOAD	= **18,852 VA**
DISHWASHER	=	1,200 VA		
DISPOSAL (3/4HP)	=	1,590 VA		
CLOTHES DRYER	=	0 VA		
CLOTHES WASHER	=	0 VA		**91 AMPS**
TOTAL	=	19,630 VA		

PANELBOARD SCHEDULE — H3

VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF
120 / 240	3	4	-	100	-	-	-	-	-

TYPE LEGEND

L	LIGHTING	K	KITCHEN EQ
R	RECEPTACLES	E	EXISTING
M	MECH EQUIP	O	OTHER

REMARKS

CKT #	ITEM SERVED	TYPE	WIRE	CONDUIT	CKT. BRK TRIP	P	LOAD (VA)	PHASE	LOAD (VA)	P	CKT. BRK TRIP	CONDUIT	WIRE	TYPE	ITEM SERVED	CKT #
1	WH-H4	O	#12,#12G	1/2"	20A	2	2100	A	1200	1	-	-	-	O	3RD FLOOR WASHER	2
3							2100	B	4800	2	40A	3/4"	#8,#10G	O	3RD FLOOR DRYER	4
5	WH-H5	O	#12,#12G	1/2"	20A	2	2100	C	4800							6
7							2100	A	1200	1	20A	1/2"	#12,#12G	O	2ND FLOOR WASHER	8
9	SPACE	-	-	-	-	-	0	B	4800	2	40A	3/4"	#8,#10G	O	2ND FLOOR DRYER	10
11	SPACE	-	-	-	-	-	0	C	4800							12
13	SPACE	-	-	-	-	-	0	A	750	2	20A	1/2"	#12,#12G	O	WH-H1	14
15	SPACE	-	-	-	-	-	0	B	750							16
17	SPACE	-	-	-	-	-	0	C	1250	2	20A	1/2"	#12,#12G	O	WH-H2	18
19	SPACE	-	-	-	-	-	0	A	1250							20
21	SPACE	-	-	-	-	-	0	B	0	-	-	-	-	-	SPACE	22
23	SPACE	-	-	-	-	-	0	C	0	-	-	-	-	-	SPACE	24

	A	B	C	TOTAL
CONNECTED LOAD (VA)	8600	12450	12950	34000

TYPE	LOAD (VA)	SUBLOADS (VA) PNL	PNL	PNL	CONN LD(VA)	SIZING FACTOR	SIZING LOAD (VA)	
LIGHTING	0	-	-	-	0	125%	0	
RECEPTACLES	0	-	-	-	0	*	0	
MECH EQUIP	0	-	-	-	0	100%	0	
KITCHEN EQ	0	-	-	-	0	100%	0	**
# OF KITCH EQ	0	-	-	-	0			
EXISTING	0	-	-	-	0	125%	0	
OTHER	34000	-	-	-	34000	100%	34000	
			CONNECTED TOTAL (VA)		34000		34000	SIZING TOTAL (VA)
			CONNECTED AMPACITY (A)		81.79		81.79	SIZING AMPACITY (A)
			DEMAND TOTAL (VA)		34000			
			DEMAND AMPACITY (A)		81.79	##		

NOTES
* 1ST 10KVA @ 100%, REMAINING @ 50%
** SIZE. FAC. IN ACCORDANCE TO NEC 220-20
***PROVIDE CIRCUIT BREAKER SHOWN.

PANELBOARD SCHEDULE — H2

VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF
120 / 240	3	4	-	100A	-	-	-	-	-

TYPE LEGEND

L	LIGHTING	K	KITCHEN EQ
R	RECEPTACLES	E	EXISTING
M	MECH EQUIP	O	OTHER

REMARKS

CKT #	ITEM SERVED	TYPE	WIRE	CONDUIT	CKT. BRK TRIP	P	LOAD (VA)	PHASE	LOAD (VA)	P	CKT. BRK TRIP	CONDUIT	WIRE	TYPE	ITEM SERVED	CKT #
1	LIGHTS: MEZZAINE	L	#12,#12G	1/2"	20A	1	1500	A	1345	2	20A	1/2"	#12,#12G	M	IU: MEZZANINE	2
3	LIGHTS: LOUNGE,BAR	L	#12,#12G	1/2"	20A	1	1500	B	1345							4
5	RECEPT: GALLERY	R	#12,#12G	1/2"	20A	1	720	C	2400	2	20A	1/2"	#12,#12G	M	WH-H1	6
7	RECEPT: PROJ. BOOTH	R	#12,#12G	1/2"	20A	1	720	A	2400							8
9	RECEPT: HALL, ETC.	R	#12,#12G	1/2"	20A	1	1080	B	1900	1	20A	1/2"	#12,#12G	O	POPCORN MACHINE	10
11	RECEPT: SOUND	R	#12,#12G	1/2"	20A	1	360	C	1900	1	20A	1/2"	#12,#12G	O	ICE MAKER	12
13	RECEPT: SOUND	R	#12,#12G	1/2"	20A	1	540	A	1900	1	20A	1/2"	#12,#12G	O	COOLER	14
15	RECEPT: BAR	R	#12,#12G	1/2"	20A	1	1260	B	1200	1	20A	1/2"	#12,#12G	O	WALK-IN COOLER EVAP	16
17	RECEPT: LOBBY, TOILET	R	#12,#12G	1/2"	20A	1	900	C	1900	1	20A	1/2"	#12,#12G	O	LIFT	18
19	LIGHTS: BAR & TICKET	L	#12,#12G	1/2"	20A	1	500	A	0	-	-	-	-	-	SPACE	20
21	SPACE	-	-	-	-	-	0	B	0	-	-	-	-	-	PANEL H3	22
23	SPACE	-	-	-	-	-	0	C	0	-	-	-	-	-		24

	A	B	C	TOTAL
CONNECTED LOAD (VA)	8905	8285	8180	25370

TYPE	LOAD (VA)	SUBLOADS (VA) PNL	PNL	PNL	CONN LD(VA)	SIZING FACTOR	SIZING LOAD (VA)	
LIGHTING	3500	-	-	-	3500	125%	4375	
RECEPTACLES	5580	-	-	-	5580	*	5580	
MECH EQUIP	7490	-	-	-	7490	100%	7490	
KITCHEN EQ	0	-	-	-	0	100%	0	**
# OF KITCH EQ	0	-	-	-	0			
EXISTING	0	-	-	-	0	125%	0	
OTHER	8800	-	-	-	8800	100%	8800	
			CONNECTED TOTAL (VA)		25370		26245	SIZING TOTAL (VA)
			CONNECTED AMPACITY (A)		61.03		63.14	SIZING AMPACITY (A)
			DEMAND TOTAL (VA)		25370			
			DEMAND AMPACITY (A)		61.03	##		

NOTES
* 1ST 10KVA @ 100%, REMAINING @ 50%
** SIZE. FAC. IN ACCORDANCE TO NEC 220-20
***PROVIDE CIRCUIT BREAKER SHOWN.

PANELBOARD SCHEDULE — H1

VOLTAGE	PHASE	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	MANUFAC.	MDL #	DWG REF
120 / 240	3	4	225A	-	-	-	-	-	-

TYPE LEGEND

L	LIGHTING	K	KITCHEN EQ
R	RECEPTACLES	E	EXISTING
M	MECH EQUIP	O	OTHER

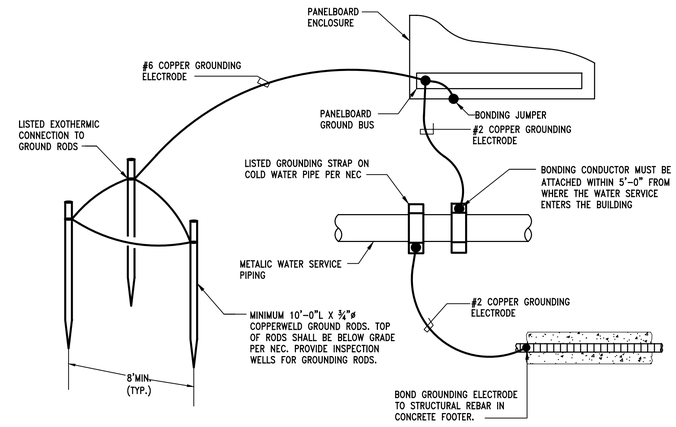
REMARKS

CKT #	ITEM SERVED	TYPE	WIRE	CONDUIT	CKT. BRK TRIP	P	LOAD (VA)	PHASE	LOAD (VA)	P	CKT. BRK TRIP	CONDUIT	WIRE	TYPE	ITEM SERVED	CKT #
1	LIGHTS: TRACK	L	#12,#12G	1/2"	20A	1	1050	A	3350	2	35A	3/4"	#8,#10G	M	OU:H1	2
3	LIGHTS: TRACK	L	#12,#12G	1/2"	20A	1	1050	B	3350							4
5	LIGHTS: TRACK	L	#12,#12G	1/2"	20A	1	1050	C	3350	2	35A	3/4"	#8,#10G	M	OU:H2	6
7	LIGHTS: TRACK	L	#12,#12G	1/2"	20A	1	1050	A	3350							8
9	LIGHTS: AUDITORIUM	L	#12,#12G	1/2"	20A	1	350	B	1900	2	25A	1/2"	#10,#10G	M	OU:H3	10
11	LIGHTS: AUDITORIUM	L	#12,#12G	1/2"	20A	1	1000	C	1900							12
13	LIGHTS: BACK STAGE	L	#12,#12G	1/2"	20A	1	600	A	1245	2	20A	1/2"	#12,#12G	M	IU:H1, H2, H3A, H3B	14
15	LIGHTS: EXTERIOR	L	#12,#12G	1/2"	20A	1	800	B	1245							16
17	SPACE	-	-	-	-	-	0	C	360	1	20A	1/2"	#12,#12G	R	RECEPT: STAGE (EAST)	18
19	SPACE	-	-	-	-	-	0	A	360	1	20A	1/2"	#12,#12G	R	RECEPT: STAGE (EAST)	20
21	SPACE	-	-	-	-	-	0	B	360	1	20A	1/2"	#12,#12G	R	RECEPT: STAGE (EAST)	22
23	SPACE	-	-	-	-	-	0	C	360	1	20A	1/2"	#12,#12G	R	RECEPT: STAGE (WEST)	24
25	SPACE	-	-	-	-	-	0	A	360	1	20A	1/2"	#12,#12G	R	RECEPT: STAGE (WEST)	26
27	SPACE	-	-	-	-	-	0	B	360	1	20A	1/2"	#12,#12G	R	RECEPT: STAGE (WEST)	28
29	SPACE	-	-	-	-	-	0	C	540	1	20A	1/2"	#12,#12G	R	RECEPT: BACK STAGE	30
31	SPACE	-	-	-	-	-	0	A	540	1	20A	1/2"	#12,#12G	R	RECEPT: AUDITORIUM	32
33	SPACE	-	-	-	-	-	0	B	540	1	20A	1/2"	#12,#12G	R	RECEPT: AUDITORIUM	34
35	SPACE	-	-	-	-	-	0	C	1587	1	20A	1/2"	#12,#12G	M	3/4 HP SCREEN MOTOR	36
37	SPACE	-	-	-	-	-	0	A	900	1	20A	1/2"	#12,#12G	R	RECEPT: AUDITORIUM	38
39	SPACE	-	-	-	-	-	0	B	0	-	-	-	-	-	PANEL H2	40
41	SPACE	-	-	-	-	-	0	C	0	-	-	-	-	-		42

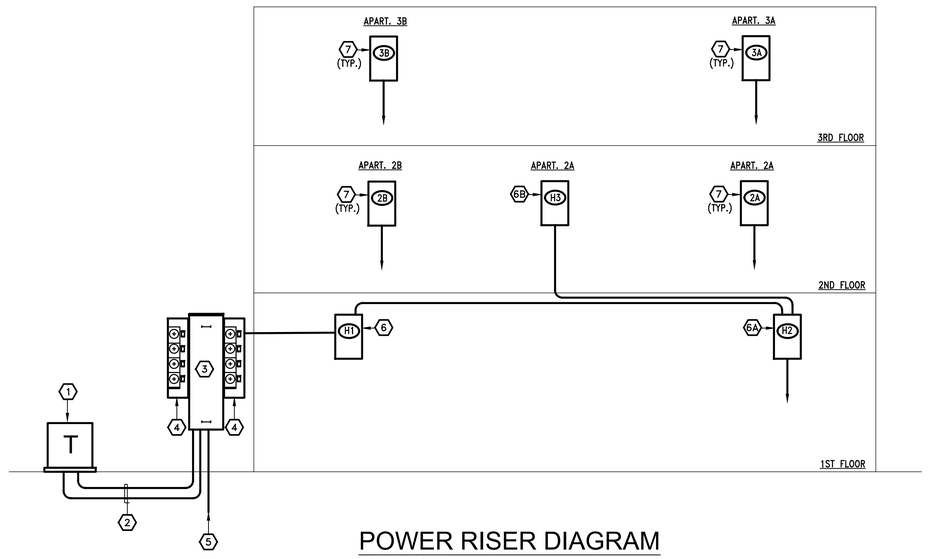
	A	B	C	TOTAL
CONNECTED LOAD (VA)	12805	9955	10147	32907

TYPE	LOAD (VA)	SUBLOADS (VA) H2	H3	PNL	CONN LD(VA)	SIZING FACTOR	SIZING LOAD (VA)	
LIGHTING	6950	3000	-	-	9950	125%	12438	
RECEPTACLES	4680	5580	-	-	10260	*	10130	
MECH EQUIP	21277	7490	-	-	28767	100%	28767	
KITCHEN EQ	0	-	-	-	0	100%	0	**
# OF KITCH EQ	0	-	-	-	0			
EXISTING	0	-	-	-	0	125%	0	
OTHER	0	6900	-	-	6900	100%	6900	
			CONNECTED TOTAL (VA)		55877		58235	SIZING TOTAL (VA)
			CONNECTED AMPACITY (A)		134.42		140.09	SIZING AMPACITY (A)
			DEMAND TOTAL (VA)		55747			
			DEMAND AMPACITY (A)		134.11	##		

NOTES
* 1ST 10KVA @ 100%, REMAINING @ 50%
** SIZE. FAC. IN ACCORDANCE TO NEC 220-20
***PROVIDE CIRCUIT BREAKER SHOWN.



GROUNDING DETAIL
SCALE: NONE



POWER RISER DIAGRAM
SCALE : NONE

POWER RISER KEYED SHEET NOTES

1. PAD MOUNTED UTILITY COMPANY TRANSFORMER.
2. SERVICE LATERAL CONDUITS – CONTRACTOR SHALL PROVIDE ALL NECESSARY EXCAVATING AND BACKFILL AND SHALL FURNISH AND INSTALL SERVICE LATERAL CONDUITS (TWO 3" SCHEDULE 40 PVC FOR PRICING PURPOSES ONLY), THE UTILITY COMPANY WILL SPECIFY THE TYPE, QUANTITY AND SIZE OF THE CONDUITS TO BE INSTALLED. THE CONTRACTOR SHALL INSTALL A ½" DIAMETER, NYLON OR POLYPROPYLENE PULLING ROPE IN EACH CONDUIT FOR THE UTILITY COMPANY'S USE IN INSTALLING THE CONDUCTORS.
3. MAIN SWITCHING DEVICE: 240Y/120Vac, 800A, 1ø INCOMING AND 1ø OUTGOING W/ MAIN FUSIBLE SWITCHES – SQUARE D MODEL EZM1800FSU OR APPROVED EQUAL.
4. METER STACK: 208Y/120Vac, 125A, 4 HOLE, 1ø INCOMING AND 1ø OUTGOING, 2-POLE BRANCH CIRCUIT BREAKERS – SQUARE D MODEL EZM114125 OR APPROVED EQUAL.
5. TO SERVICE GROUND – SEE DETAIL THIS SHEET.
6. 125A, 120/240V, 1ø, 3W, 65K AIC RATING, 42 POLE, MCB, HOUSE PANEL BOARD "H1" – SQUARE D OR APPROVED EQUAL.

6A.

6B.

7. APARTMENT UNIT LOAD CENTER – 100A, 120/240V, 1ø, 3W, 10K AIC RATING, 36 POLE, MCB – SQUARE D OR APPROVED EQUAL.
8. CONDO LOAD CENTER FEEDER – (2) #2/0 + (1) #4 GND.
9. HOUSE PANEL (H) FEEDER – (2) #2/0 + (1) #4 GND.

NORTH (building)

Shepherdstown Opera House RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC
Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247–2939

Structural Engineer

Ruckman Engineering, PLC
22–B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects pllc AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
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Issue/Revision | Seal

ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER 06/04/2020

Drawing Title

PANEL SCHEDULES

Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number

E2.1

PLUMBING FIXTURE SCEDEULE

DES.	FIXTURE	TRAP	WASTE	VENT	COLD WATER	HOT WATER	MANUFACTURER/ MODEL #	DESCRIPTION
WC	FLOOR MOUNTED TANK TYPE WATER CLOSET	INTEGRAL	3"	1-1/2"	½"	–	KOHLER "HIGHLINE" MODEL: #K-3427	FLOOR MOUNTED, SIPHON JET, WHITE, VITREOUS CHINA, ELONGATED BOWL, WATER SAVER 1.6 GPF. PROVIDE PLASTIC, CLOSED FRONT SEAT AND COVER, WITH CHECK HINGES. PROVIDE CHROME PLATED FLUSH VALVE.
LAV	LAVATORY	1-½"	1-½"	1 ¼" (U.O.N.)	½"	½"	FIXTURE: KOHLER "PENNINGTON" MODEL #K-2196N FAUCET: CHICAGO #802-V317CP W/ #327 DRAIN.	PROVIDE WHITE, VITREOUS CHINA, FRONT OVERFLOW, SELF-RIMMING, COUNTER TYPE, APPROXIMATELY 20"X17". FAUCET SHALL BE 4 INCH CENTERSET, CHROME PLATED WITH ½" GPM FLOW RESTRICTING AERATOR, INDIVIDUAL HOT AND COLD HANDLES AND GRID STRAINER. PROVIDE FLEXIBLE CHROME PLATED WATER SUPPLIES AND 17-GAUGE CHROME PLATED "P" TRAP AND EXTENSION TO WALL.
SH	SHOWER STALL	2"	2"	1 ¼"	½"	½"	FIXTURE: AKER PLASTICS BARRIER FREE SHOWER MODEL BF-S60SD/REZ9 COORDINATE RIGHT HAND & LEFT HAND UNITS AS REQUIRED. FAUCET: MOEN COMMERCIAL SHOWER SYSTEM MODEL 8342	BARRIER FREE, 60"X36", ONE-PIECE GELCOATED FIBERGLASS SHOWER WITH 2" DAM THRESHOLD, STRUCTURALLY ENFORCED WALL SURROUND, AND A FACTORY MOUNTED 1-¼" DIA. WHITE POWER COATED BAR PACKAGE.
SH/T	SHOWER TUB COMBINATION	2"	2"	1 ¼"	½"	½"	FIXTURE: AKER PLASTICS BARRIER FREE TUB/SHOWER MODEL BF-TS60 COORDINATE RIGHT HAND & LEFT HAND UNITS AS REQUIRED.	BARRIER FREE, 60"X33", ONE-PIECE GELCOATED FIBERGLASS TUB/SHOWER WITH 17-¾" APRON, STRUCTURALLY ENFORCED WALL SURROUND, AND A FACTORY MOUNTED WHITE BAR PACKAGE.
SK	KITCHEN SINK	1 ½"	1 ½"	1 ¼"	½"	½"	SINK: ELKAY LR3322 FAUCET: AMERICAN STANDARD HERITAGE 7231 (POLISHED CHROME)	SELF-RIMMING TYPE 302, 18 GA. STAINLESS STEEL. 33"W X 22"L X 8", DOUBLE BOWL, 4-HOLE PUNCHED, COATED UNDERSIDE. FAUCET: GOOSENECK, SWING SPOUT, LEVER HANDLES. WITHOUT FOOD WASTE DISPOSER.
WH	WALL HYDRANT	–	–	–	¾"	–	ZURN Z-1300	NON-FREEZE, FLUSH INSTALLATION, NICKLE BRONZE BOX AND HINGED COVER W/ OPERATING KEY LOCK AND "WATER" CAST IN COVER, ¾" HOSE OUTLET, W/AUTOMATIC DRAINING VACUUM BREAKER. VALVE SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH WALL AND PLACE THE VALVE SEAT INSIDE OF THE BUILDING TO FREEZING. BRONZE SEAT AND REPLACABLE WASHERS. MOUNT 24" ABOVE FINISHED GRADE.
WCO	WALL CLEANOUT	–	–	–	–	–	ZURN Z-1441-BP	DURA-COATED, CAST IRON BODY, GAS AND WATERTIGHT BRONZE THREADED PLUG, WITH ROUND SMOOTH STAINLESS STEEL ACCESS COVER AND SECURING SCREW.
FCO	FLOOR CLEANOUT	–	–	–	–	–	ZURN ZB-1400	ADJUSTABLE, DURA-COATED, CAST IRON BODY W/ POLISHED BRONZE SCORIATED TOP, GAS AND WATERTIGHT ABS THREADED PLUG.
IMB	ICE MAKER BOX	–	–	–	½"	–	GUY GRAY BIM875	
MS	MOP SINK	3"	3"	1 ½"	½"	½"	MOP SINK: MSB-2424 FAUCET: FIAT 830-AA	FLOOR MOUNTED 24"X24"X10" WHITE, MOLDED ONE PIECE CONSTRUCTION. 3" INTEGRAL DRAIN WITH REMOVABLE STAINLESS STEEL DOME STRAINER AND LINT BASKET. FAUCET SHALL BE CHROME PLATED W/ VACUUM BREAKER, PAIL HOOK, WALL SUPPORT AREM, ¾" HOSE CONNECTION, VALVES ON 8" CENTERS. PROVIDE WITH 30" FLEXIBLE HEAVY DUTY ⅝" RUBBER HOSE AND STAINLESS STEEL HOSE SUPPORT BRACKET. ANSI A-112.18.1-1975.
RD	ROOF DRAIN	–	–	–	–	–	JOSAM 21500 SERIES OR (APPROVED EQUAL)	4" PIPE OUTLET SIZE, COATED CAST IRON ROOF DRAIN, LARGE POLYPROPYLENE LOCKING DOME, WEJOC NON-PUNCTURING CLAMP RING WITH INTERGRAL GRAVEL STOP, LARGE SUMP WITH WIDE ROOF FLANGE AND BOTTOM OUTLET. PROVIDE WITH DECK CLAMP.
FD	FLOOR DRAIN	AS SHOWN	AS SHOWN	–	½"	–	JOSAM 30000-A SERIES W/ ½" TRAP PRIMER (OR APPROVED EQUAL)	CAST IRON FLOOR DRAIN, TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEJLOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER WITH INTERGRAL BRONZE BACKWATER VALVE.

PLUMBING SYMBOLS

(THIS IS A SCHEDULE OF STANDARD SYMBOLS AND MAY NOT ALL APPEAR ON THIS PROJECT)

SYMBOL	DESCRIPTION	ABBR.
—SAN—	SANITARY PIPING	SAN
SAN	SANITARY PIPING-UNDERGROUND	
— SD —	STORM DRAIN PIPING	SD
– – –SAN– – –	STORM DRAIN PIPING BELOW SLAB	SD
—SSD—	SUB-SOIL DRAIN	SSD
— FM —	FORCED MAIN	FM
– – –V– – –	VENT PIPE	V
	DOMESTIC COLD WATER	CW
	DOMESTIC HOT WATER	HW
— 110° —	DOMESTIC HOT WATER (110°F)	HW
— 140° —	DOMESTIC HOT WATER (140°F)	HW
	DOMESTIC HOT WATER RECIRC.	HWR
— IW —	INDIRECT WASTE	IW
— G —	NATURAL GAS FUEL	GAS
— F —	FIRE SUPPLY / SERVICE PIPE	F
— SP —	WET SPRINKLER PIPE	SP
— SED —	SPRINKLER EXPRESS DRAIN	SED
— IR —	IRRIGATION PIPE	IR
— CA —	COMPRESSED AIR	CA
	PIPE TURNING DOWN	DN
	PIPE TURNING UP	UP
	TOP TAKE OFF	
	BOTTOM TAKE OFF	
	PIPE CONTINUES	
	GATE VALVE	GV
	GATE VALVE	GV
	CHECK VALVE	CV
	BALANCING/REGULATING VALVE	BV
	OUTSIDE SCREW & YOKE VALVE	OS&Y
S	GAS SOLENOID VALVE	SOL
	GAS COCK	GC
	PRESSURE REDUCING VALVE	PRV
	BACKFLOW PREVENTER ASSEMBLY	BFP
	WALL HYDRANT	WH
	HOSE BIBB	HB
	UNION	
	MIXING VALVE ASSEMBLY	MV
	TAMPER SWITCH	TS
	BACKWATER VALVE	BWV
	PIPE REDUCER	RED
	PIPE SLEEVE	SLV
	FIRE HOSE VALVE	FHV

SYMBOL	DESCRIPTION	ABBR.
DCBP	DOUBLE CHECK VALVE BACKFLOW PREVENTOR	DCBP
RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR	RPBP
	FLOW SWITCH	FS
A-B	PRESSURE GAUGE (A-B IS RANGE, PSIG)	PG
A-B	THERMOMETER (A-B IS RANGE, °F)	T
A	SHOCK ARRESTOR (WITH PDI RATING INDICATED)	SA
	CLEANOUT (HORIZONTAL/VERTICAL)	CO
	VENT THRU ROOF	VTR
	DRY-PIPE VALVE ASSEMBLY	DPV
X / #	P — SANITARY/VENT STACK W — WATER RISERS SD — STORM DRAIN/RAINLEADER F — FIRE MAIN/STANDPIPE/RISER G — GAS PIPE RISER GD — GARAGE DRAIN DS — DRY STANDPIPE FD — FOUNDATION DRAIN SP — SPRINKLER PIPE RISER CD — CONDENSATE DRAIN RISER SED — SPRINKLER EXPRESS DRAIN	
1 / P-1	DETAIL DESIGNATION DETAIL LOCATION (REFER TO DRAWING/SHEET)	
	POINT OF TERMINATION OF DEMOLITION	
	CONNECT TO EXISTING	
0'-0"	GRADE ELEVATION	
	AIR VENT VALVE	AV
	TEMPERATURE AND PRESSURE RELIEF VALVE	TPV
	IN-LINE CIRCULATING PUMP	ILCP
	FLOOR DRAIN (SANITARY)	FD
	AREA DRAIN (STORM)	AD
	ROOF DRAIN (STORM)	RD
	OPEN SITE DRAIN	OSD
	EMERGENCY FLOOR DRAIN (SANITARY)	EFD
	TRAP PRIMER VALVE	TP
	SHUT-OFF VALVE IN VERTICAL	

PLUMBING SYSTEM SCHEDULE

(THIS IS A SCHEDULE OF STANDARD SYSTEMS. SOME SYSTEMS MAY NOT APPEAR ON THIS PROJECT)

SYSTEM	PIPE SIZE OR SERVICE	PIPE MATERIAL						CONNECTION						FITTINGS							INSULATION				
		SEAM	BLACK STL (SCH OR WT)	COPPER (TYPE)	PVC (SCH)	GALVANIZED (SCH)	CAST IRON NO-HUB	GROOVED	THREAD AND COUPLE	WELD	SOLDER	NEOPRENE GASKET	SOLVENT WELD	PRESSURE CLASS	BLACK STEEL	CAST IRON	DUCTILE IRON	MALLEABLE IRON	WROUGHT COPPER	PVC	THICKNESS	GLASS FIBER	CELLULAR FOAM	KRAFT VP JACKET (ASJ)	KEYED NOTES
SANITARY WASTE	UNDERGROUND				DWV								X							DWV					2
	UNDERGROUND						X					X				X									
	ABOVE GROUND						X					X				X									
SANITARY VENT	ABOVE GROUND				DWV								X							DWV					2
	ABOVE GROUND			DWV							X								DWV						
GAS	OUTDOOR $\leq$ 2"	CW	STD						X					150#				X							1
	OUTDOOR > 2"	CW	STD							X				STD	X										1
	INDOOR $\leq$ 2"	CW	STD						X					150#				X							
	INDOOR > 2"	CW	STD							X				STD	X										
	UNDERGROUND				POLYE								X							POLYE					
	UNDERGRD ALL	CW	STD							X				150#				X							3
DOMESTIC COLD WATER	UP TO 2"			L							X								X		1/2"		X		
	2 1/2"	CW				STD		CUT									GAL								
	2 1/2"			L				ROLL			X								X		1/2"	X			
	OVER 2 1/2"			L				ROLL			X								X		1"	X			
	OVER 2 1/2"	ERW				STD		CUT									GAL				1"	X			
DOMESTIC HOT WATER	UP TO 2"			L							X								X		1"		X		
	2 1/2"			L				ROLL			X								X		1"	X			
	2 1/2"	CW				STD		CUT									GAL								
	3" & 4"	CW		L				ROLL			X								X		1"	X			
	3" & 4"	CW				40		CUT									GAL				1"	X			
	OVER 4"	CW		L				ROLL			X								X		1-1/2"	X			
	OVER 4"	CW				40		CUT									GAL				1-1/2"	X			
STORM	UNDERGROUND				DWV								X							DWV					
	UNDERGROUND						X					X				X									
	ABOVE GROUND	CW					X					X				X									4
	ABOVE GROUND	CW			DWV								X							DWV					2,4

KEYED NOTES:
1. OUTDOOR PIPING TO BE PAINTED.
2. PVC NOT TO BE USED IN RETURN AIR PLENUMS OR THROUGH RATED WALLS.
3. UNDERGROUND PIPING TO BE PLASTIC COATED.
4. INSULATE HORIZONTAL PIPING 1/2" THICK
5. SLOPE HORIZONTAL STORM AND WASTE DRAINAGE PIPING:
   PIPE SIZE 2-½" OR LESS..............¼" PER FT.
   PIPE SIZE 3" TO 6"......................⅛" PER FT.
   PIPE SIZE 8" TO LARGER...............1/16" PER FT.

NORTH (building)

Shepherdstown
Opera
House
RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects pllc AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
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18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue/Revision | Seal

ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
06/04/2020.

Drawing Title

GENERAL NOTES & SYMBOLS

Date JUNE 04, 2020
Scale As Noted | Project Number 19820
Drawing Number

P0.1

FIRE PROTECTION SPECIFICATIONS

3.3 INTERIOR PIPING INSTALLATION
- A. Mechanical Joint shall be made up with Style A standard rubber gasket. Wash socket plain end and gasket thoroughly with soapy water before joining.
- B. Screw Thread Joint shall be made up with joint compound applied to male threads only. Threads exposed after joints are made up shall be mopped with the compound to prevent rust.
- C. Flanged Joints: Gaskets shall be buttered on both sides with joint compound.
- D. Grooved Pipe Coupling Gaskets: The gasket shall be suitable for intended service and shall be given a thin, uniform coat of lubricant in accordance with coupling manufacturer's recommendations. Gaskets and coupling housing shall then be positioned and tightened in accordance with coupling manufacturer's instructions.
- E. Water Supply Test and Drain Pipes: On the sprinkler system, provide suitable test and drain piping, valves and fittings. Provide drain piping extended to sewer receptacles.

3.4 SYSTEM WATER SOURCE CONNECTION
- A. The Contractor is advised that sprinkler system water is non-potable usage. Provide a backflow preventer as required by code at any fire protection water connection to a potable water source.

3.5 CLEANING OF PIPE
- A. Interior surfaces of pipes shall be smooth and entirely free from obstructions to flow. As work progresses, the pipe interior shall be cleaned of dirt and waste materials. Suitable and effective precautions shall be taken to minimize the possibility of foreign matter entering the pipe, before and during pipe installation. When installed, the entire system shall be thoroughly flushed before connections to equipment are made.

3.6 SPRINKLER SYSTEM
- A. Provide complete wet pipe system of automatic sprinklers in heated areas.
- B. The systems shall be installed in accordance with the rules and regulations of NFPA Pamphlet No. 13, local fire department and Owner's insurance company.
- C. System piping shall be hydraulically designed throughout all areas in accordance with the rules and regulations of NFPA Pamphlet No. 13 using the design densities required by code. Sprinkler system design shall accommodate a potential load of the greater density of mixed use. Provide mains and branches designed to support one head per 140 square feet installed at the completion of tenant fitout.
- D. The hydraulic calculations for the floor sprinkler system downstream of the floor control valve shall be based on the pressure actually available.
- E. Sprinkler piping shall be installed and coordinated with the ductwork and other mechanical and electrical services in the ceiling cavities by the Contractor to provide the clearances for lighting fixtures as indicated on the drawings.
- F. Provide sprinkler system with required drain lines, test connections, spare heads, tools, Siamese connections, alarms, circuit closers, monitor switches, alarm valves, isolation valves, air compressors, etc.
- G. Water Flow Alarm Switches: Provide water flow alarm switches at each sprinkler system connection to the wet pipe main where indicated on the drawings and as required by NFPA Standards.
- H. Supervisory Switches: Provide valve supervisory switches for each sprinkler system valve. Locations shall be as indicated on the drawings and as required by NFPA Standards.

3.7 SPRINKLER HEAD TYPES
- A. Unfinished Spaces (mechanical rooms, storage rooms, janitor's closets, other areas not having finished ceilings): Upright, pendent or sidewall type as required to provide specified coverage and maintain maximum headroom.
- B. Flat, White Ceiling Areas: Concealed type with white coverplate.
- C. Main Building Public Lobby: Concealed type with coverplate finish selected by Architect.

3.8 PIPING SUPPORTS
- A. Pipe supports shall conform to NFPA requirements.

3.9 PRESSURE TESTING
- A. Provide pressure tests for the entire system including all tenant improvements, changes, etc., in accordance with NFPA Standard No. 13 and local Authorities Having Jurisdiction.

3.10 SYSTEM COMMISSIONING
- A. Provide tests as necessary to demonstrate the proper operation of the sprinkler system, including fire alarm interface, in accordance with local authority requirements.

3.11 SPRINKLER SYSTEM DESIGN
- A. The Automatic Sprinkler Design/Build Contractor will perform the final spinkler system design, including hydraulic calculations, as required by all applicable codes and the local Fire Marshall to accommodate this facility. The fire sprinkler contractor will prepare and provide sprinkler shop drawings that have been stamped and signed by a professional engineer, liscensed in the State of Virginia, and submit them for review by the Fire Marshal.

3.12 FIRE ALARM SYSTEM DESIGN
- A. The Fire Alarm Design/Build Contactor will perform the final Fire Alarm system design as required by all applicable codes and the local Fire Marshal to accommodate this facility. The Fire Alarm Contractor will prepare Fire Alarm shop drawings that have been stamped and signed by a professional engineer liscenced in the State of Virginia, and submit them for approval by the Fire Marshal.

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK
- A. Provide all hydronic fire protection systems and equipment as shown on the drawings and as specified herein and as required to ensure finished and operable system.
- B. Provide all tests required by the Authority Having Jurisdiction.

1.2 CODES AND STANDARDS
- A. Codes and standards listed herein, insofar as they apply, form a part of these specifications, the same as if they were fully written and shall be followed as minimum requirements. Where standards conflict, that standard with the more stringent requirements shall be applicable. This shall not be construed as relieving the Contractor from providing the highest grade of material and workmanship available.
- B. The Contractor shall give written notice to the Architect of any materials or apparatus believed in violation of laws, ordinances, rules or regulations of Authorities Having Jurisdiction.
- C. All equipment shall comply with applicable requirements of laws, codes, ordinances, legislation, etc., of Federal, State and Local Authorities, whether or not indicated on the Contract Documents.
- D. The referenced codes shall include any and all supplements, addenda, memoranda, information bulletins and any other changes and additions effective prior to the Date of Substantial Completion by adoption of the local Authority Having Jurisdiction.
- E. Modifications required by the Authorities Having Jurisdiction shall be made without additional charge to the Owner.
- F. Where alterations to and/or deviations from the Contract Documents are required by the Authorities, report the requirements to the Architect and secure his approval before starting the alterations.
- G. Where Contract Documents' requirements are in excess of Code requirements, the Contract Documents shall govern.
- H. All rules and regulations of the Underwriters Laboratories (UL) shall be complied with whether or not indicated in the Contract Documents.
- I. Provide all work in accordance with the following codes and standards:
  1. International Building Code (IBC), latest edition in force.
  2. National Electric Code.
  3. Local Fire Prevention Code.
  4. NFPA Standard #13 – Installation of Sprinkler Systems, latest edition in force.
  5. NFPA Standard #24 – Installation of Private Water Supplies, latest edition in force.

1.3 QUALITY ASSURANCE
- A. Basis of Design: As indicated on the drawings and as specified in Part 2 of this section.
- B. Acceptable Manufacturers: If they comply with these specifications, products by the following manufacturers will be acceptable.
  1. Pipe and fittings: Allied Tube & Conduit, U.S. Pipe and Foundry, Victaulic.
  2. Valves: Mueller, Nibco, Stockham, Milwaukee, Grinell, Victaulic, Watts, Clay Valve.
  3. Fire department connections: Potter-Roemer, Allenco.
  4. Sprinkler heads: Reliable, Central, Viking.

PART 2 – PRODUCTS

2.1 PIPE, FITTINGS AND VALVES
- A. General: Pipe and fittings shall be products manufactured in the United States using materials of United States origin.
- B. Interior Piping:
  1. Interior pipe shall be new and designed for 175 psi working pressure.
  2. Pipe shall be black steel, conforming to ASTM A 135, Schedule 40. Schedule 40 pipe may be threaded (ANSI B 2.1), welded (ANSI B 31.10) or grooved (UL approved).
  3. Schedule 10 pipe (lightwall) may be welded (ANSI B 31.10, a, b) or roll-grooved (UL approved). Lightwall pipe shall not be cut-grooved.
- C. Underground Piping:
  1. Ductile Iron:

a. Pipe shall be Class 50 OR 51, with integrally cast bell and spigot for mechanical joints.
b. Fittings shall be Class 2, short body pattern to match spigot gland and rubber gasket on adjoining pipe or fitting.
c. Joining Gaskets shall be plain rubber Type A, ANSI A 21.11 and ASTM F 36.

- D. Fittings:
  1. Fittings shall be new and designed for 175 psi working pressure.
  2. Cast iron flange fittings shall conform to ANSI B 16.1 and shall be UL approved.
  3. Cast iron threaded fittings shall conform to ANSI B 16.4 and shall be UL approved. Malleable iron fittings may be used on 4-inch or smaller diameter pipe and shall conform to ANSI B 16.3 and shall be UL approved.
  4. Weld fittings shall be black steel, same weight as adjoining pipe, and shall conform to ANSI B 16.9, ANSI B 16.25, ASTM A 234, ANSI B 16.5 or ANSI B 16.11.
  5. Grooved couplings and mechanical fittings shall be malleable iron conforming to ASTM A 47 and shall be UL approved. Gasket material shall be EPDM or butyl rubber.
- E. Unions and Flanges:
  1. Cast-iron flange unions shall be black standard, 175 psi working pressure WOG, UL approved, conforming to ASTM A 126 and ANSI B 16.1.
  2. Mechanical couplings for use with grooved pipe/fittings shall be malleable iron (conforming to ASTM A 47) or ductile iron (conforming to ASTM A 536) and shall be UL approved. Couplings shall be of hinged, two-piece design, secured in position with tight fitting, heat treated carbon steel bolts and nuts (conforming to ASTM A 183). Gasket material shall be EPDM or butyl rubber.

2.2 VALVES
- A. Gate Valves:
  1. 2 inches and smaller: 200-pound WSP, bronze, OS&Y, rising stem, screwed bonnet, solid wedge disc, screwed, UL listed, ASTM A 126, Class B.
  2. 2 1/2 inches and larger: 175-pound WOG, IBBM, OS&Y, rising stem, bolted bonnet, solid wedge disc, flanged, UL listed, ASTM A 126, Class B.
- B. Check Valves:
  1. 2-1/2 inches and larger: 175-pound WOG, IBBM, swing, bolted cap, renewable seat, flanged, UL listed, ASTM A 126, Class B.
- C. Butterfly Valves:
  1. UL listed with full lug type ductile iron body, aluminum bronze disc, 316 stainless steel stem, Buna-N seat, phenolic ring, bubble-tight closure at 175 psi and worm gear manual operator with crank or handwheel and indicator. Provide a tapped hole in gear operator casing for attachment of supervisory switch.
  2. UL listed with grooved-end design, grade "H" butyl seat, bubble-tight closure at 200 psi, manual gear operator, standard trim. Provide a tapped hole in case of gear operator for attachment of supervisory switch.

2.3 FIRE DEPARTMENT CONNECTIONS
- A. Provide fire department connections with local fire department standard hose threads.
- B. Provide fire department connections with finish selected by Architect.
- C. Wall-Mounted Siamese Inlet: Provide flush wall-mounted, two-way, brass body, Siamese connections at locations indicated on the drawings. Provide double clapper valves, plugs, chains and wall plate. Factory raised lettering label on plate shall read as indicated on the drawings.
  1. Basis of Design: Potter-Roemer Series #5750; or Allenco Series #270.

2.4 SPRINKLER HEADS
- A. Sprinkler head discharge characteristics, identification, temperature ratings, classifications and performance shall comply with NFPA 13.
- B. Sprinkler heads shall have UL and FM approval.
- C. Provide sprinkler head orifice size as required by specified coverage and hydraulic calculations.
- D. Unless specified otherwise, provide sprinkler head finishes as follows:
  1. Concealed spaces: Rough bronze.
  2. Exposed in unfinished spaces: Rough bronze.
  3. Exposed in finished spaces: (polished) (satin) chrome.
- E. Upright Type, Standard: Encapsulated, fusible alloy and spring lever actuator. Basis of Design: Reliable Model G-SSU.
- F. Pendent Type, Standard: Encapsulated fusible alloy and spring lever actuator. Basis of Design: Reliable Model G-SSP.
- G. Concealed Type: Standard pendent head of either adjustable or non-adjustable type and two-piece cup/coverplate assembly. Provide white coverplates for heads installed in ceiling tiled spaces. Provide factory-standard coverplate finish, as selected by Architect, in all other areas. Basis of Design: Reliable Model C1.
- H. Provide sprinkler head cabinet manufactured of 20 gauge steel with red baked enamel finish. The cabinet shall accommodate 12 spare 3/4" heads. Mount cabinet on wall near fire pump, or as directed by owner. Provide 12 spare heads total representing all types used. Basis of Design: Allenco Model #211.

2.5 FLOOR CONTROL ASSEMBLIES
- A. At each connection between standpipes and sprinkler systems provide a supervised shut-off valve, a flow detector, a drain line and an inspector's test connection. Where the supply is from two or more sources, provide a check valve at each. The drain line and inspector's test shall discharge to storm sewer.
- B. At the Contractor's option, in locations where the full flow pressure does not exceed 100 psig, and as approved by the city and state Authorities Having Jurisdiction, UL listed Milwaukee Valve Model BB-SCS indicating type, slow-close butterfly control valve with threaded ends and complete with one (1) single pole double throw supervisory control tamper switch may be used in lieu of OS&Y gate valve with separate tamper switch. Switch rating shall be at least 7 amperes at 115 VAC – 60 hertz.

2.6 ACCESSORIES
- A. Water Flow Detector:
  1. For wet sprinkler systems, provide paddle-type, clamp-on flow switch with field-adjustable retard and automatic recycle. Flow switch shall have UL label. Provide electrical characteristics compatible with Division 16 Fire Alarm System. Provide auxiliary contacts on flow switch for connection to other building alarm systems.

a. Basis of Design: Reliable Model A.
- B. Valve Supervisory Switch: Provide UL listed valve-mounted supervisory switch arranged to detect the open or closed position of control valve. Provide tamper switch, required trim and electrical characteristics compatible with Division 16 Fire Alarm System. Provide auxiliary contacts for connection to other building alarm systems. Basis of Design: Potter-Roemer, Inc. Figure #6220 Series.
- C. Ball Drip: Provide cast brass automatic ball drip with 3/4-inch threaded outlet. Basis of Design: Allenco Model #2112NY; or Potter-Roemer, Inc. Model #5982.
- D. Inspector's Sight Test Connection: Provide semi-steel sight test connection with glass tube and having flow equivalent to one 1/2-inch sprinkler head.

PART 3 – EXECUTION

3.1 GENERAL
- A. Install all piping in accordance with the applicable NFPA requirements, and that which follows.
- B. Provide all necessary relays, contacts, etc., for proper and complete interface of the sprinkler system with the building fire alarm system.

3.2 UNDERGROUND PIPING INSTALLATION
- A. General: All underground fire line service main piping to point of connection with the exterior underground system shall be ductile iron, mechanical joint pipe laid at elevations as shown on the drawings. Lay each pipe to line and grade, and in such a manner as to form a close concentric joint with pipe. Lay all pipe on solid earth. Where it is necessary to lay piping on fill or above the present grade, reset each joint connection on a concrete foundation. All changes in direction of piping shall be made with 45 degree fittings or other long sweep fittings and with suitable tie rods and thrust blocks.
- B. No underground piping shall be concealed until successful conclusion of pressure tests and acceptance by the Authority Having Jurisdiction.

3.3 INTERIOR PIPING INSTALLATION
- A. Mechanical Joint shall be made up with Style A standard rubber gasket. Wash socket plain end and gasket thoroughly with soapy water before joining.
- B. Screw Thread Joint shall be made up with joint compound applied to male threads only. Threads exposed after joints are made up shall be mopped with the compound to prevent rust.
- C. Flanged Joints: Gaskets shall be buttered on both sides with joint compound.
- D. Grooved Pipe Coupling Gaskets: The gasket shall be suitable for intended service and shall be given a thin, uniform coat of lubricant in accordance with coupling manufacturer's recommendations. Gaskets and coupling housing shall then be positioned and tightened in accordance with coupling manufacturer's instructions.
- E. Water Supply Test and Drain Pipes: On the sprinkler system, provide suitable test and drain piping, valves and fittings. Provide drain piping extended to sewer receptacles.

GENERAL REQUIRMENTS

SECTION 15000 – GENERAL PLUMBING REQUIREMENTS

PART 1 GENERAL
- A. Provide under this Division complete plumbing and fire protection systems, fully adjusted, tested, and commissioned for use as indicated on the Drawings and as specified herein.

1.2 CODES AND STANDARDS
- A. Codes and standards listed herein, insofar as they apply, form a part of these Specifications, the same as if they were fully written and shall be followed as minimum requirements. Where standards conflict, that standard with the more stringent requirements shall be applicable. Where these specifications require higher grade material or workmanship than the referenced standards, provide the highest grade of material and workmanship specified.
- B. Prior to purchase or installation, give written notice to the Architect of any materials or apparatus believed in violation of laws, ordinances, rules or regulations, or Authorities Having Jurisdiction.
- C. The referenced codes shall include any and all supplements, addenda, memoranda, information bulletins and any other changes and additions effective prior to the permit issue date by adoption of the local Authority Having Jurisdiction.
- D. Make any and all modifications required by the Authorities Having Jurisdiction without additional charge to the Owner.
- E. Where alterations to and/or deviations from the Contract Documents are required by the Authorities, report the requirements to the Architect and secure approval before starting the alterations.
- F. Where Contract Documents' requirements are in excess of Code requirements and are permitted under the Code, the Contract Documents shall govern.
- G. All rules and regulations of the Underwriters Laboratories shall be complied with whether or not indicated in the Contract Documents.
- H. All work shall comply with the following codes and standards.
  1. Codes:
     Virginia Uniform Statewide Building Code
     International Building Code, latest edition in force
     International Plumbing Code, latest edition in force
     International Fuel Gas Code, latest edition in force
     National Electric Code.
  2. Standards: In addition to the requirements shown or specified, comply with the latest current applicable standards, specifications and codes published by the following (where the following publications list recommendations and guidelines, the recommendations and guidelines shall be considered requirements of this contract and the items and systems shall be constructed and/or tested in accordance with the recommendations and guidelines):
     American Society of Mechanical Engineers (ASME).
     American National Standards Institute (ANSI).
     American Water Works (AWWA).
     American Society for Testing and Materials (ASTM).
     National Fire Protection Association (NFPA).
     Underwriters Laboratories (UL).
     Plumbing Drainage Institute
     Manufacturer's Standardization Society of the Valves and Fittings Industry, Inc. (MSS).

1.3 PERMITS
- A. Obtain and pay for all permits, licenses, and inspection certificates required for all work in accordance with the provisions of the Contract Documents.

1.4 GUARANTEE
- A. Guarantee in form satisfactory to the Owner, that all Work installed is free from defects in workmanship and/or materials. Guarantee that all apparatus will develop capacities and characteristics specified for a period of one year from the date of final acceptance by the Owner or certification of substantial completion, whichever occurs later.
- B. During the guarantee period, remedy, without cost to the Owner, defective workmanship, materials, and apparatus performance. Remedial work shall be completed within a reasonable time specified by the Owner. In default thereof, the Owner may have such work done and charge all costs to the Contractor.

1.5 COMPLETE PERFORMANCE OF WORK
- A. Execute work in strict accordance with the best practice of the trades in a thorough, substantial, workmanlike manner by competent workmen.
- B. Provide labor, materials, apparatus, and appliances essential to the complete functioning of the systems described and indicated, or which may be reasonably implied as essential whether mentioned in the Contract Documents or not.
- C. In cases of doubt as to the Work intended, or in the event of need for explanation thereof, request supplementary instructions from the Architect.

1.6 COOPERATION WITH OTHER TRADES
- A. Coordinate efforts of all trades and furnish in writing, with copies to the Architect and Owner, any information necessary to permit the work of all trades to be installed satisfactorily and with least possible interference or delay.
- B. Where the work of various trades will be installed in close proximity to one another, or where there is evidence that the work of one trade will interfere with work of other trades, assist in working out space conditions to make a satisfactory adjustment. If one trade installs his work before coordinating with work of other trades, make necessary changes to correct the condition without extra charge.

1.7 DRAWINGS
- A. The Drawings show the general layout of the various items of equipment. However, layout of equipment, accessories, specialties, ductwork, and piping systems are diagrammatic unless specifically dimensioned, and do not necessarily indicate every required valve, fitting, trap, duct, elbow, transition, turning vane, or similar items required for a complete installation. Consult the Architectural Drawings and details for exact location of rough-ins, fixtures and equipment. Where same is not definitely located, obtain the information from the Architect before proceeding.
- B. Follow the Drawings in laying out the work and check drawings of all trades to verify spaces in which work will be installed. Maintain maximum headroom throughout. Where space conditions appear inadequate, request clarification from the Architect before proceeding with the installation.

1.8 MANUFACTURER'S RECOMMENDATIONS
- A. Except where specifically indicated differently in the Contract Documents, apply, install, connect, erect, use, clean, and condition manufactured articles, materials, and equipment per manufacturer's current printed recommendations. Keep copies of such printed recommendations at job site

1.9 SUBMITTALS
- A. After the Contract is awarded, but prior to proceeding with the Work, obtain complete submittals from the manufacturers, suppliers, vendors, subcontractors, for all materials and equipment specified in this Division and submit data and details of such materials and equipment to the Architect.
- B. Prior to forwarding submittals to the Architect, review and certify that the equipment, materials, methods, etc. represented by the submittals are in compliance with the Contract Documents.
- C. A minimum period of two weeks, exclusive of transmittal time, will be required in the Engineer's office each time a submittal is submitted or resubmitted for review. This time period shall be considered by the Contractor when scheduling his work.
- D. Approval of product data shall not relieve the Contractor of the responsibility for errors that may be contained therein, or for deviations from requirements in the Contract Documents. It shall be clearly understood that the Architect or Engineer noting some errors but overlooking others does not grant the Contractor permission to proceed in error. Regardless of any information contained in the product data the Contract Documents shall govern the work and are neither waived nor superseded in any way by submittal review.

PART 2 PRODUCTS

2.1 MATERIALS
- A. The word "Provide" is defined as requiring the Contractor to "furnish, erect, test, adjust and install complete and ready for use" the item to which it refers.
- B. Unless otherwise specified, provide new, first-class quality materials and apparatus required for the work. Furnish, deliver, erect, connect and finish work in every detail, and select and arrange work to fit properly into the building spaces. Where no specific kind or quality of material is given, provide a first class standard article as approved by the Architect.
- C. Equipment designated as "Basis of Design" has been coordinated for structural penetrations; duct, piping, and electrical connection; operating and service (maintenance) requirements; and physical size with regard to space where equipment is housed. Other specified manufacturers of like equipment are acceptable contingent on the Contractor providing a complete installation and maintaining full responsibility to provide, at no additional cost, any modifications to the structure or configuration of adjoining equipment and the installation that is required to properly install, operate, and service the equipment being used.

PART 3 EXECUTION

3.1 EXCAVATION AND BACKFILLING
- A. General: Provide excavation and backfilling of trenches required for the installation of all utility services and underground piping within the building, and to points of connection with exterior underground utilities outside of the building.
- B. Trenching: Excavate to the required depths and grade the bottoms of trenches to secure the required slope for pipe lines. Where encountered, excavate rock to a minimum depth of six inches below the bottom of pipe. Excavate the bottom of the trench by hand to provide firm, uniform bearing for the bottom quarter of the pipe. Excavate recesses for joints for pipe having bells, sleeves, other enlargement at the joints. Provide separate trenches for water and sewer lines.
- C. Backfilling: Do not backfill trenches until the piping has been tested as required and reviewed and approved by the Architect and/or any Local Authorities having jurisdiction thereof.
  1. Provide backfill consisting of sand or selected excavated material, placed to a depth of one foot above the top of the conduit or pipe and compacted by hand tamping. Provide backfill for the remainder of the trench in accordance with the requirements of Division 2, using materials as specified therein, and compact as required to produce the specified density.

3.2 SLEEVES, FORMED OPENINGS, PLATES, AND INSERTS
- A. Provide sleeves for all piping passing through masonry, concrete, tile and gypsum wall construction.
- B. Provide sleeves and formed openings of sufficient size to pass continuous, uninterrupted insulation of the specified thickness.
- C. Check floor and wall construction finishes to determine proper length of sleeves for various locations and make actual lengths to suit the following.
  1. Terminate sleeves flush with walls, partitions, and ceilings.
  2. In areas where pipes are exposed, extend sleeves 2 inches above finished floor.
- D. 3.3 RECORD DRAWINGS
- A. Maintain at the project site a complete set of "Record Drawings" reflecting an accurate as-built record of all Work. In addition, mark the "Record Drawings" to show changes and deviations in the Work from that shown on the Contract Documents. This requirement shall not be construed as authorization for the Contractor to make changes in the layout or work without definite instructions from the Architect.

NORTH (building)

Shepherdstown Opera House
RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC
Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects plc AIA, LEED AP
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Issue/Revision

Seal

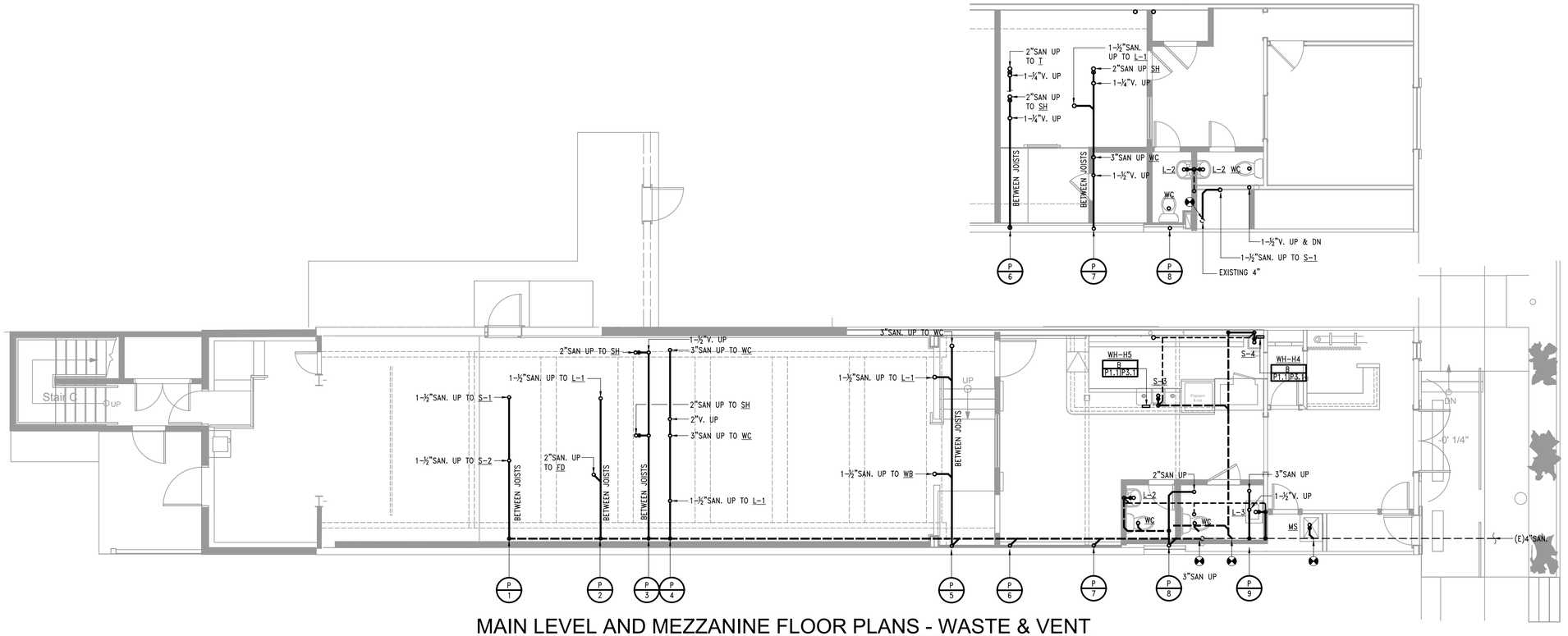
ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
06/04/2020

Drawing Title

SPECIFICATIONS

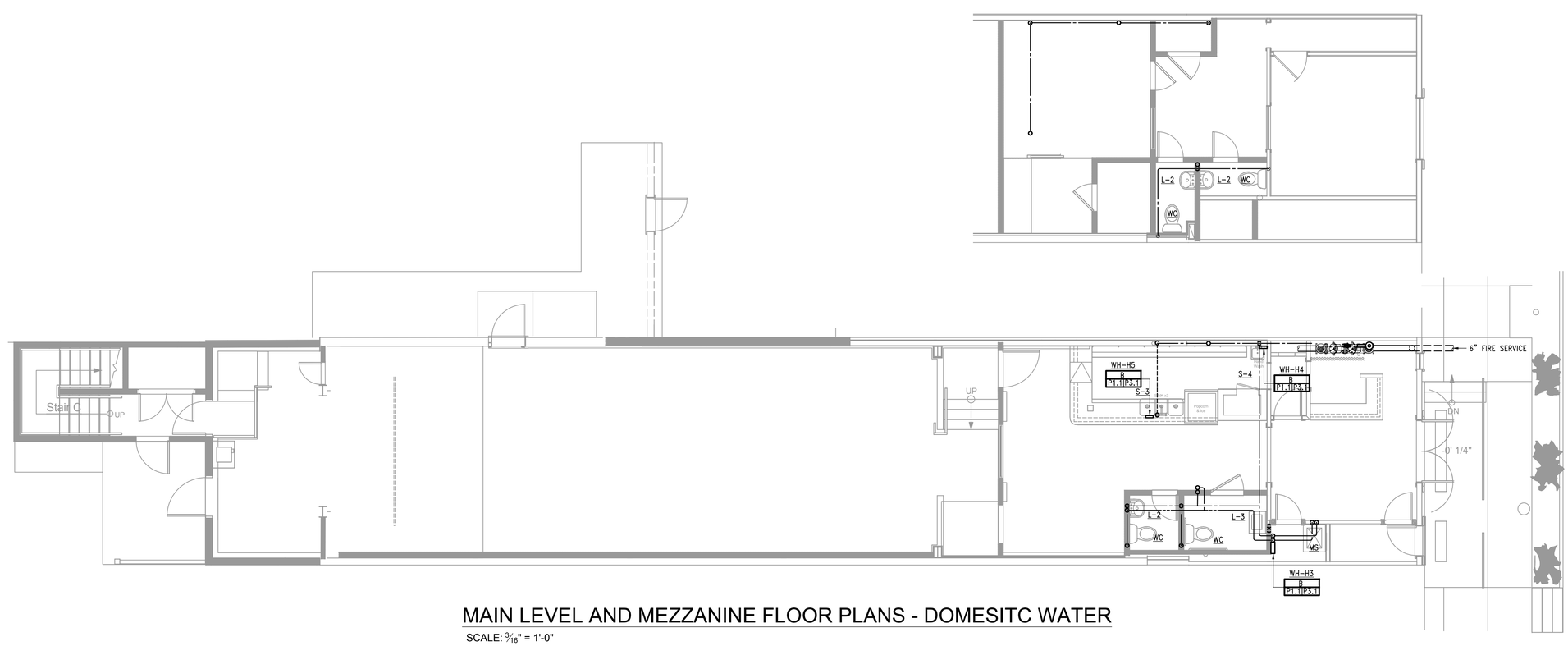
Date JUNE 04, 2020
Scale As Noted Project Number 19820
Drawing Number

P0.2



MAIN LEVEL AND MEZZANINE FLOOR PLANS - WASTE & VENT

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



MAIN LEVEL AND MEZZANINE FLOOR PLANS - DOMESITC WATER

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

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Issue/Revision Seal

ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
06/04/2020

Drawing Title

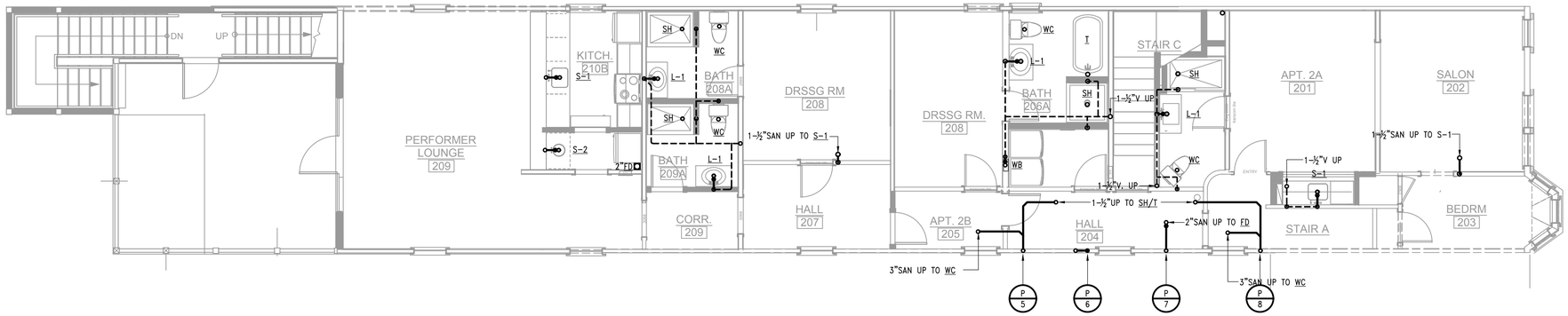
MAIN LEVEL & MEZZANINE FLOOR PLANS

Date JUNE 04, 2020

Scale As Noted Project Number 19820

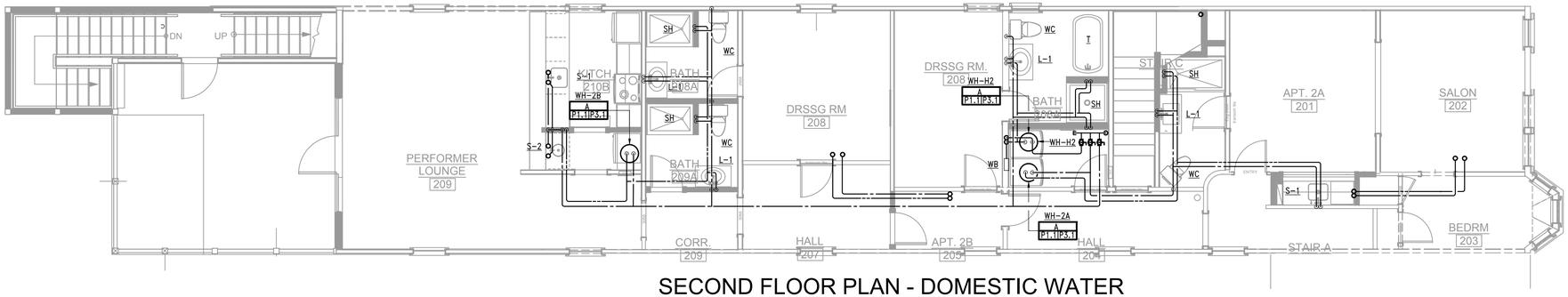
Drawing Number

P1.1



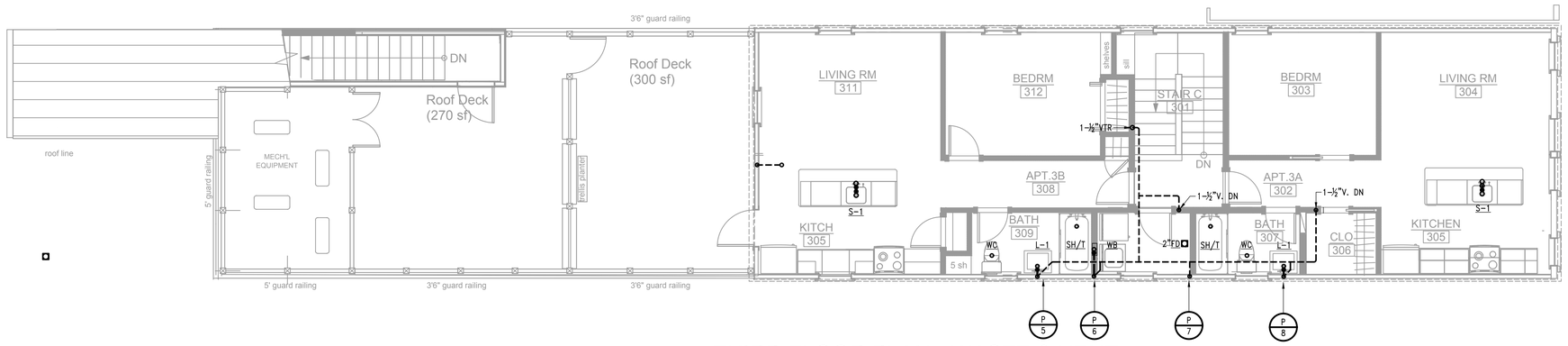
SECOND FLOOR PLAN - WASTE & VENT

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



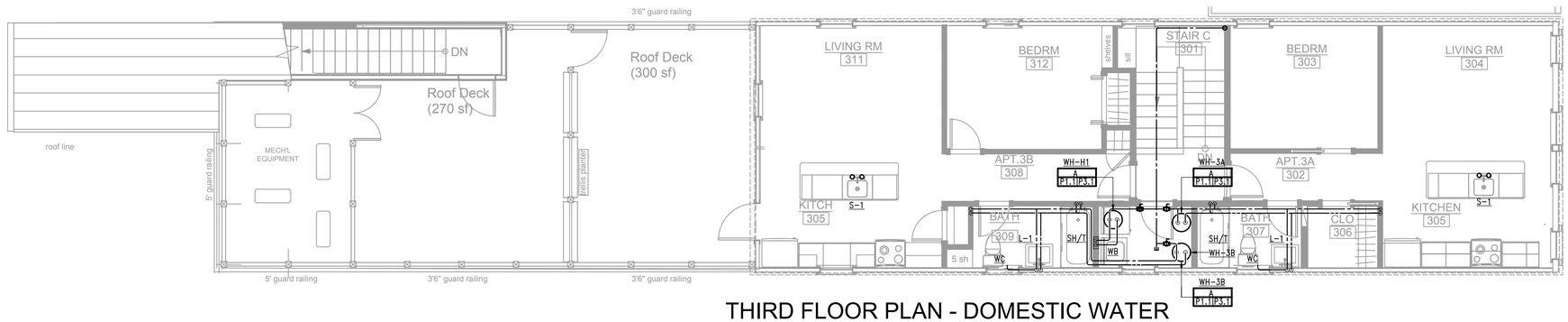
SECOND FLOOR PLAN - DOMESTIC WATER

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



THIRD FLOOR PLAN - WASTE & VENT

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



THIRD FLOOR PLAN - DOMESTIC WATER

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

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Issue/Revision

Seal

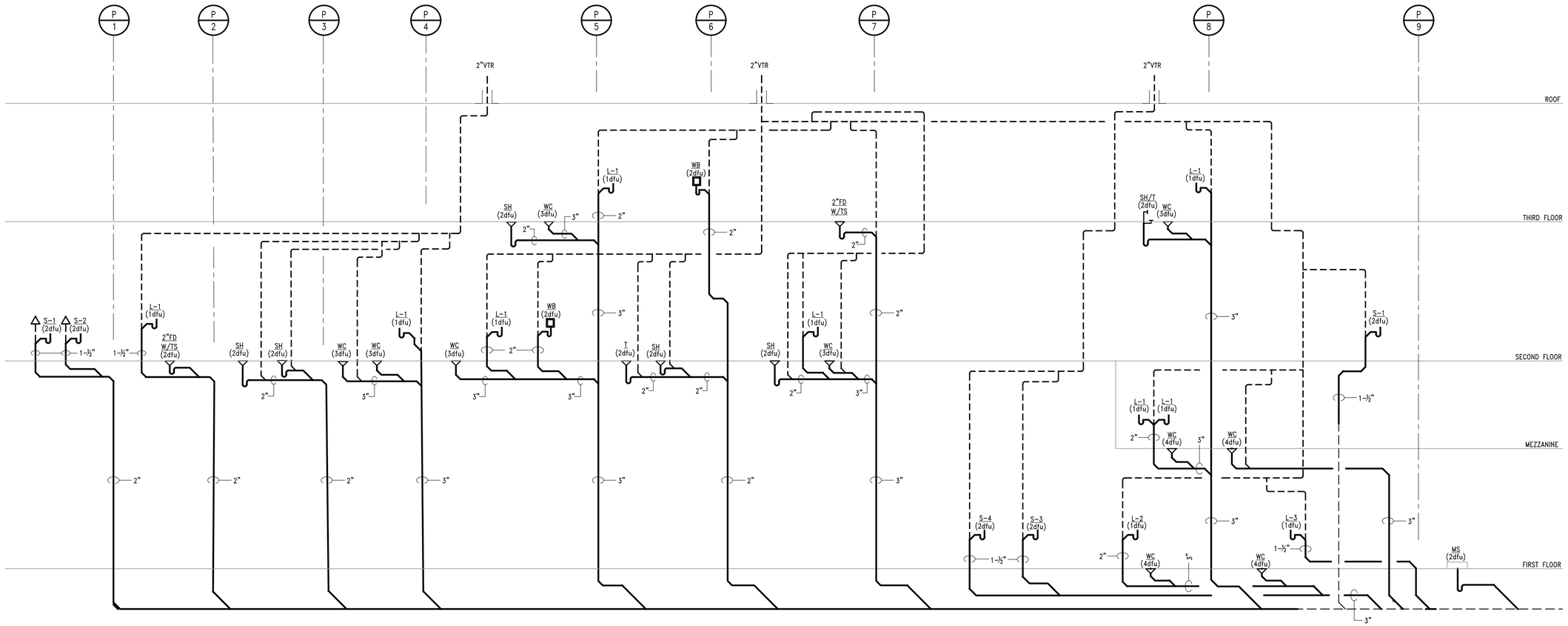
ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
6/04/2020

Drawing Title

2ND & 3RD FLOOR PLANS

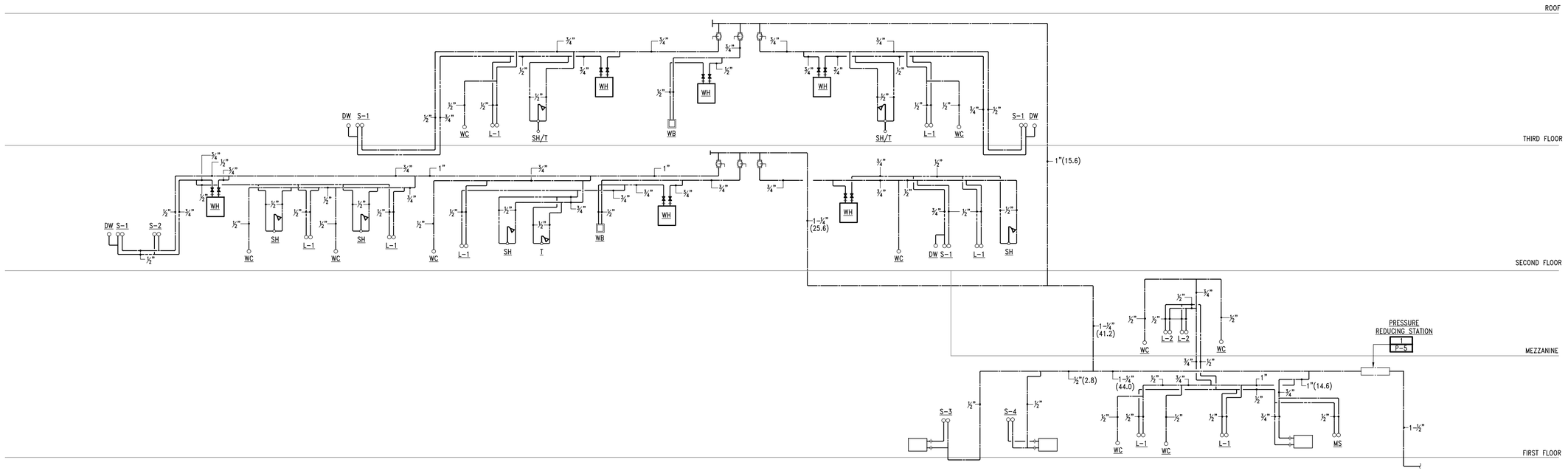
Date JUNE 04, 2020
Scale As Noted
Project Number 19820
Drawing Number

P1.2



WASTE & VENT RISER DIAGRAM

SCALE: NONE



DOMESTIC WATER RISER DIAGRAM

SCALE: NONE

NORTH (building)

Shepherdstown Opera House RENOVATIONS

131 W. German St.
Shepherdstown
West Virginia

Owner

OPERA HOUSE ALIVE LLC

Stephen & Harriet Pearson

Mech/Elect Engineer

FHC Engineering, PC
4 Weems Lane #277
Winchester, VA 22601
540 247-2939

Structural Engineer

Ruckman Engineering, PLC
22-B Ricketts Drive
Winchester, VA 22601

GDA Architecture Planning Interiors Landscape
Grove & Dall'Olio Architects plic AIA, LEED AP
Matthew W. Grove matthew@GDAaia.com • GDAaia.com
325 Migration Lane, Gerrardstown, WV 25420, 304-267-2120
18 West Boscawen Street, Winchester, VA 22601, 540-773-2328

Issue/Revision

Seal

ALAN W. JOHNSTON REGISTERED 11939 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
06/04/20

Drawing Title

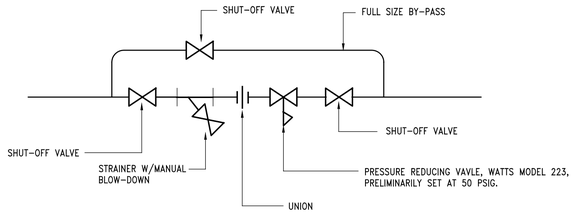
RISER DIAGRAMS

Date JUNE 04, 2020

Scale As Noted Project Number 19820

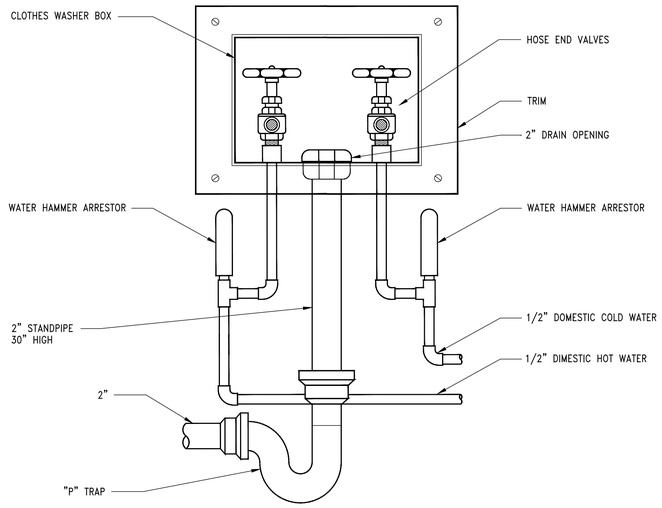
Drawing Number

P2.1



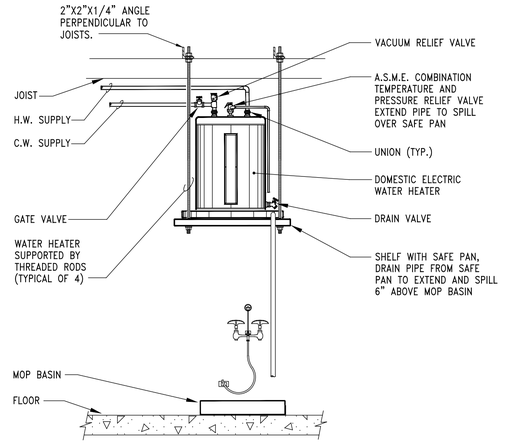
E P1.2|P3.1 PRESSURE REDUCING STATION DETAIL

SCALE : NONE



C P1.2|P3.1 WASHER SUPPLY & DRAIN DETAIL

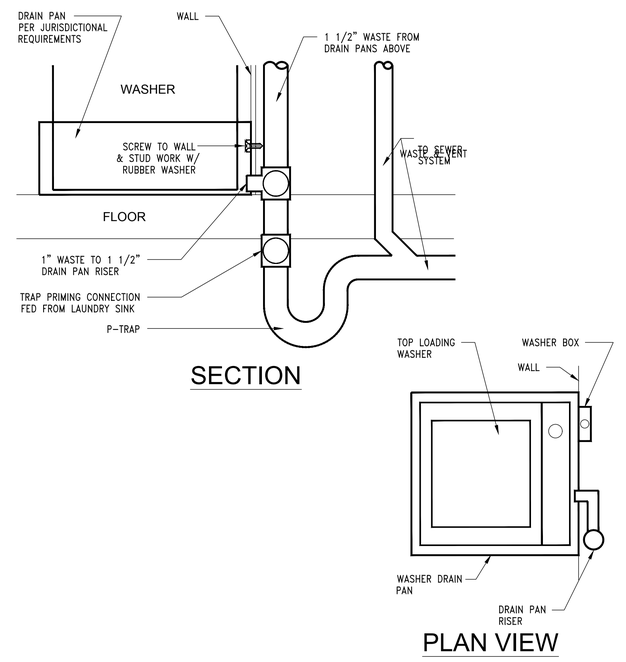
SCALE : NONE



SCHEDULE OF CAPACITIES								
W.H. NO.	STORAGE GALLONS	G.P.H. RECOVERY @ 80 F RISE	OPER. WGT. LBS.	ELECTRIC				BASIS OF DESIGN
				VOLTS	PH	Hz	KW	
2A	28	12.5	335	240	1	60	2.5	A.O. SMITH PROLINE MODEL ENJB-30
2B	28	12.5	335	240	1	60	2.5	A.O. SMITH PROLINE MODEL ENJB-30
3A	28	12.5	335	240	1	60	2.5	A.O. SMITH PROLINE MODEL ENJB-30
3B	28	12.5	335	240	1	60	2.5	A.O. SMITH PROLINE MODEL ENJB-30
H1	10	4.5	125	240	1	60	1.5	A.O. SMITH PROLINE MODEL EJC-10
H2	28	12.5	335	240	1	60	2.5	A.O. SMITH PROLINE MODEL ENJB-30

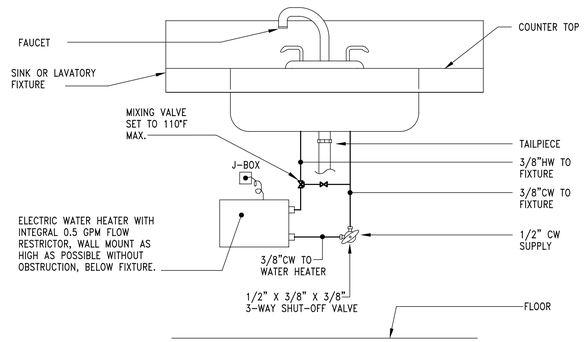
A P1.2|P3.1 DOMESTIC ELECTRIC WATER HEATER DETAIL

SCALE : NONE



D P1.2|P3.1 WASHER DRAIN PAN DETAIL

SCALE : NONE



SCHEDULE OF CAPACITIES						
W.H. NO.	TEMP. RISE °F		ELECTRIC			BASIS OF DESIGN
	0.5 GPM	1.0 GPM	KW	VOLTS	AMPS	
WH-3	57	-	4.2	240	20	CHRONOMITE MODEL SR-20L
WH-4	57	-	4.2	240	20	CHRONOMITE MODEL SR-20L
WH-5	57	-	4.2	240	20	CHRONOMITE MODEL SR-20L

B P1.1|P3.1 INSTANTANEOUS DOMESTIC WATER HEATER DETAIL

SCALE : NONE

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Issue/Revision Seal

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Drawing Title

DETAILS & SCHEDULES

Date JUNE 04, 2020

Scale As Noted Project Number 19820

Drawing Number

P3.1