CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR SAFETY PRECAUTIONS AND PROGRAMS AS THEY

CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, ENGINEERING, PERMITTING AND ERECTION OF ALL TEMPORARY SCAFFOLDING, HOISTS, BRACING, FORM WORK, SHEETING, SHORING AND UNDERPINNING NECESSARY TO PERFORM THE WORK. TEMPORARY BRACING, SHEETING, SHORING, ETC., REQUIRED TO ENSURE THE STRUCTURAL INTEGRITY/STABILITY OF THE EXISTING BUILDING, SIDEWALKS. UTILITIES, ETC. DURING CONSTRUCTION SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINIA

THIS PROJECT IS DESIGNED AS A DESIGN-BUILD PROJECT. AS SUCH, NOT ALL DETAILS, EQUIPMENT, SYSTEMS OR MATERIAL SELECTIONS ARE INCLUDED IN THE DOCUMENTS. CONTRACTOR SHALL BASE HIS BID ON THE SUPPLIED INFORMATION, AND SHALL ALSO INCLUDE ANY ADDITIONAL DETAILS, EQUIPMENT, SYSTEMS OR MATERIALS REQUIRED TO DELIVER A COMPLETE AND FINISHED PRODUCT TO THE OWNER, OR REASONABLY AND NORMALLY INCLUDED IN A COMPLETED PROJECT OF SIMILAR SCOPE, IN COMPLIANCE WITH ALL LAWS, CODES AND ORDINANCES.

ALL AREAS SHALL BE ACCESSIBLE TO THE HANDICAPPED, IN ACCORDANCE WITH VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC) AND AMENDMENTS AND APPLICABLE AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES.

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DRAWING DIMENSIONS PRIOR TO COMMENCING ANY WORK. ANY INCONSISTENCIES WITH THE DRAWINGS SHALL BE REPORTED TO THE ARCHITECT IN WRITING PRIOR TO COMMENCING WORK. FAILURE TO REPORT INCONSISTENCIES WILL RELIEVE ARCHITECT AND OWNER FROM ANY CLAIM FOR ADDITIONAL WORK REQUIRED RELATED TO

1.7 UNDER NO CIRCUMSTANCES SHALL THESE DRAWINGS BE USED FOR SHOP DRAWINGS.

WORK NOTED AS "N.I.C." IS NOT PART OF THIS CONTRACT, AND WILL BE HANDLED BY OWNER UNDER SEPARATE CONTRACT. ALL ITEMS NOT NOTED AS THUS ON DRAWINGS SHALL BE ASSUMED

WORK NOT INDICATED ON A PART OF THE DRAWINGS. BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PIECES, SHALL BE REPEATED.

CONTRACTOR SHALL BE RESPONSBILE FOR ALL NECESSARY TEMPORARY UTILITIES AND SUPPORT FACILITIES NECESSARY TO COMPLETE THE WORK. ALL REQUIRED FEES FOR TEMPORARY SERVICES SHALL BE INCLUDED IN THE CONTRACT. PROVIDE ANY NECESSARY TEMPORARY CONSTRUCTION REQUIRED TO MAINTAIN OWNER/TENANT/PATRON USE OF THE EXISTING PROPERTY OUTSIDE OF THE

1.11 SUBSTITUTIONS FOR SPECIFIED MATERIALS AND PRODUCTS SHALL BE MADE ONLY WITH PRIOR APPROVAL FROM THE ARCHITECT.

ALL CONCRETE MATERIALS, PROCESSES, AND WORK SHALL BE IN ACCORDANCE WITH ACI 318-05 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", UNLESS OTHERWISE NOTED OR DETAILED ON THE CONTRACT DRAWINGS. DETAIL. FABRICATE AND PLACE REINFORCEMENT IN ACCORDANCE WITH ACI 318-05 UNLESS OTHERWISE SHOWN.

3.2 ANY CONCRETE SLAB REPAIR INFILL SHALL BE 3500 PSI.

ANY EXTERIOR CONCRETE EXPOSED TO THE WEATHER (ABOVE GRADE) SHALL BE 4000 PSI WITH 6% AIR ENTRAINED

### **DIVISION 4 - MASONRY (not used)**

STRUCTURAL STEEL WORK AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, AISC "MANUAL OF STEEL CONSTRUCTION", AND AISC "CODE OF STANDARD PRACTICE". INCLUDING THE "COMMENTARY" AND SUPPLEMENTS

STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS: A. WIDE FLANGE SHAPES - ASTM A992 (FY = 50 KSI); B. ANGLES, CHANNELS, PLATES, MISC. SHAPES -ASTM A36 (FY = 36 KSI); C. PIPE COLUMNS - ASTM A500, GRADE B (FY = 42 KSI); D. HOLLOW STRUCTURAL SECTIONS (HSS) - ASTM A500, GRADE B (FY = 46 KSI)

COLD FORMED STEEL FRAMING SHALL BE DESIGNED IN ACORDANCE WITH THE LATEST REQUIREMENTS OF THE IBC INTERNATIONAL BUILDING CODE.

ALL STRUCTURAL PROPERTIES FOR COLD FORMED STEEL FRAMING SHALL BE COMPUTED IN ACCORDANCE WITH THE A.I.S.I. "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".

ALL LIGHT GAGE STEEL STUD\$ AND JOI\$TS, INCLUDING ACCESSORIES, SHALL BE GALVANIZED WITH A MINIMUM G-60 COATING.

STUDS, RUNNERS, BRACING AND BRIDGING SHALL BE MANUFACTURED PER ASTM C-955.

ALL GALVANIZED STUDS, JOISTS AND ACCESSORIES, 16 GA. OR HEAVIER, SHALL BE FORMED FROM STEEL THAT CONFORMS TO THE REQUIREMENTS OF ASTM A-446 WITH A YIELD OF 50 KSI AND AS SET FORTH IN SECTION 1/2 OF THE A.I.S.I. "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION.

WOOD CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION (NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION)

UNLESS OTHERWISE NOTED, ALL WOOD NAILING OR FASTENING SHALL CONFORM TO THE "FASTENING SCHEDULE", 2021 VCC TABLE 2304.10.2.

ALL WOOD FRAMING MATERIALS SHALL BE NO. 2 SOUTHERN PINE, OR NO. 2 SPRUCE-PINE-FIR, SURFACED DRY AND USED AT 19% MAXIMUM MOISTURE CONTENT OR EQUAL. ALL MEMBERS EXPOSED TO THE WEATHER, OR IN CONTACT WITH MASONRY OR CONCRETE, SHALL BE PRESSURE-TREATED. SEE SPECIFICATIONS FOR COMPLETE REQUIREMENTS.

CONTRACTOR TO PROVIDE WALL BLOCKING FOR ALL SHELVING, EQUIPMENT, GRAB BARS, MOP HOLDERS, FIXTURES, ETC. FOR FIRM SUPPORT. COORDINATE WITH ALL CONTRACTOR, OWNER AND

WOOD TREATMENT: PRESSURE TREAT ALL SILLS AND PLATES AND ANY OTHER WOOD IN CONTACT WITH MASONRY, CONCRETE OR GROUND, AND AS SHOWN ELSEWHERE ON DRAWINGS PRESSURE TREATMENT SHALL COMPLY WITH AWPB STANDARDS C2 AND LP-22.

FASTENERS FOR PRESERVATIVE TREATED AND FIRE RETARDANT-TREATED WOOD SHALL BE HOT-DIPPED ZINC COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE, OR COPPER PER 2021

FRAMES FOR HARDWARE INSTALLATION.

EDGE) ROTARY CUT RED BIRCH- BOOK MATCH.

FIBERGLASS BATT INSULATION FOR CONCEALED INSTALLATIONS: KRAFT-FACED THERMAL BATT INSULATION COMPLYING WITH ASTM C665, TYPE II, CLASS C, WITH MAXIMUM FLAME SPREAD OF 25 AND SMOKE-DEVELOPMENT OF 450 OR LESS. FOR EXPOSED INSTALLATION: HEAVY DUTY FIBERGLASS MESH REINFORCED, PSK-FACED COMPLYING WITH ASTM C665, TYPE II, CLASS A, CATEGORY 1, WITH FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPMENT OF 50 OR LESS. INCLUDE VINYL FACED MOISTURE BARRIER (.02 PERMS) WHERE EXPOSED TO VIEW. TAPE SEAMS.

7.2 EXTERIOR SEALANTS SHALL BE NON-SAG, ACRYLIC EPOXIDIZED POLYURETHANE, TWO PART MATERIAL BY TREMCO "DYMERIC" OR PECORA "DYNATRO II". COLOR TO MATCH ADJACENT EXTERIOR

NON-SPECIFIC METAL FLASHINGS SHALL BE 24 GAGE ALUMINUM, FACTORY FINISHED, COLOR TO MATCH SURROUNDING CONSTRUCTION, FIELD-FORMED ON SITE. ALL FLASHINGS TO HAVE WATERTIGHT SEAMS WITHOUT EXPOSED FASTENERS, DETAILED PER SMACNA STANDARDS.

ALL NEW DOORS TO BE MINIMUM 3'0" WIDE X 7'0" TALL UNLESS OTHERWISE NOTED. PROVIDE "LEVER STYLE" KNOBS. HARDWARE SHALL BE HEAVY DUTY COMMERCIAL CUSTOM GRADE. ALL LOCKS, LATCHES AND OTHER OPERATING HARDWARE SHALL COMPLY WITH 2021 VCC 1010.2.

EXTERIOR DOORS: ANSI/SDI-100, GRADE III, EXTRA HEAVY DUTY, MINIMUM 16 GAGE GALVANIZED STEEL FACES, SEAMS WELDED AND GROUND SMOOTH. LABEL WHERE INDICATED ON SCHEDULE.

INSULATED CORE, R-5 MINIMUM. INTERIOR DOORS: ANSI/SDI -100, GRADE II, HEAVY DUTY, MINIMUM 18 GAGE GALVANIZED FACES, SEAMS WELDED AND GROUND SMOOTH. LABEL WHERE INDICATED ON SCHEDULE.

FRAMES: FABRICATE FROM 1/6 GAGE GALVANIZED STEEL FOR EXTERIOR APPLICATIONS, 18 GAGE FOR INTERIOR DOORS. FRAMES WITH WELDED CORNERS FOR EXTERIOR DOORS, KNOCK-DOWN TYPE FOR INTERIOR DOORS, UNLESS INSTRUCTED BY OWNER OTHERWISE. PROVIDE WEATHER STRIPPING FOR EXTERIOR DOORS, SILENCERS ON INTERIOR FRAMES. ALL FRAMES TO RECEIVE MINIMUM 26 GAGE MORTAR BOXES IN MORTARED IN FRAMES. PROVIDE ALL ANCHORAGE DEVICES AS REQUIRED FOR WALL TYPE. ANCHORS TO BE CONCEALED TYPE. FACTORY CUT DOORS AND

RATED DOORS: 1-3/4" THICK, 5-PLY, CROSSBANDED CONSTRUCTION, NON-COMBUSTIBLE CORE, PREMIUM GRADE WOOD FACE. FACTORY STAIN FINISH WITH SATIN POLYURATHANE (MATCHING NON-RATED DOORS: 1-3/4" THICK, 7-PLY, CROSSBANDED CONSTRUCTION, PARTICLE BOARD CORE, PREMIUM GRADE WOOD FACE. FACTORY STAIN FINISH WITH SATIN POLYURATHANE (MATCHING

**DIVISION 9 - FINISHE** 

ALL NEW INTERIOR FINISHES SHALL HAVE A MAXIMUM FLAMESPREAD RATING OF ASTM CLASS C (76-200) IN ROOMS AND ENCLOSED SPACES AND CLASS B (26-75) IN EXIT ACCESS CORRIDORS AND OTHER EXITWAYS (2021 VCC TABLE 803.13). NEW INTERIOR FLOOR FINISHES TO MEET THE REQUIREMENTS AS OUTLINED IN 2021 VCC SECTION 804.0.

GYPSUM BOARD ASSEMBLIES SHALL BE SECURED TO STUDS AT SPACING INDICATED BY GYPSUM BOARD MANUFACTURER WITH FASTENERS SPECIFIED BY SAME. PROVIDE SHEET STEEL ZINC COATED BY HOT DIP PROCESS TRIM ACCESSORIES COMPLYING WITH ASTM C1047. TRIM INCLUDES CORNER BEAD, LC BEAD, SCREW HEADS, AND IRREGULARITIES. SAND SMOOTH. PROVIDE MOISTURE RESISTANT BOARD IN EXTERIOR SOFFITS, BATHROOMS, AROUND OPEN TUBS, AND IN LAUNDRY AND JANITOR ROOMS.

INTERIOR PAINT: UTILIZE PAINT MATERIALS CONTAINING 0% VOC'S (VOLATILE ORGANIC COMPOUNDS), CONSISTING OF (1) COAT OF INTERIOR LATEX PRIMER AND (2) COATS OF LATEX FINISH.

ALL TRANSITIONS BETWEEN DIFFERENT TYPES OF FLOORING SHALL BE ADA COMPLIANT. PROVIDE VINYL TRANSITION STRIP AT ALL DOORWAYS/OPENINGS BETWEEN ROOMS WITH CARPET AND ROOMS

SEE ADDITIONAL FINISH DOCUMENTS PROVIDED BY OWNER/TENANT. COLOR/MATERIAL SELECTIONS TO BE MADE BY OWNER/TENANT

WITH VCT. PROVIDE TILE TRANSITION/THRESHOLD AT ALL DOORSWAYS/OPENINGS BETWEEN ROOMS WITH TILE AND CARPET OR VCT.

ALL MECHANICAL AND PLUMBING DESIGNS, CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL PROVISIONS OF THE 2021 VIRGINIA PLUMBING CODE (VPC) AND THE 2021 VIRGINIA MECHANICAL CODE (VMC), AS A MINIMUM LEVEL OF CONSTRUCTION DETAIL AND QUALITY.

PROVIDE VENTILATION FANS TO OUTSIDE FOR ALL TOILETS AND JANITOR ROOMS. OPERATION TO ACTIVATE WHEN LIGHT IS SWITCHED. PROVIDE VENTILATION TO ALL OTHER SPACES AS REQUIRED IN 2018 VCC 1202.1. AND ALL CORRESPONDING PROVISIONS OF 2018 VMC.

15.4 HOT WATER AT TAPS SHALL BE MAINTAINED WITH A RANGE OF 105-120 DEGREES FAHRENHEIT.

INSULATE ALL ABOVE GRADE WATER SUPPLY PIPING WITH 1/2" FIBERGLASS PIPE COVERING.

PRESSURE TEST ALL WATER LINES WITH 100 PSI FOR LEAKS, AND GRAVITY TEST ALL SANITARY LINES WITH TEN FOOT (10'0") STANDING HEAD (OR AS DIRECTED BY THE BUILDING OFFICIAL).

15.10 VACUUM BREAKERS ARE REQUIRED AT ALL HOSE BIBS AND ANY OUTLET OR CONNECTION SUBJECT TO BACKFLOW.

PROVIDE SHUT-OFF VALVE AT EACH FIXTURE AND EQUIPMENT CONNECTION FOR FUTURE SERVICE AND REMOVAL.

15.13 HOT WATER LINES AND EXPOSED DRAIN LINES ARE TO BE INSULATED IN ACCORDANCE WITH ADA REQUIREMENTS.

15.14 ALL HANDICAP CONTROLS SHALL COMPLY WITH 2021 VCC 1110.15.

ALL ELECTRICAL DESIGNS, CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL PROVISIONS OF THE 2021 VCC AND THE 2020 NATIONAL ELECTRIC CODE (NEC), AS A

16.2 PROVIDE EXIT SIGNS/LIGHTS IN ACCORDANCE WITH 2021 VCC 1013. PROVIDE EMERGENCY EGRESS LIGHTS IN ACCORDANCE WITH 2021 VCC 1008.

# ROANOKE COUNTY

# PARKS, RECREATION & TOURISM OFFICE BUILDING RENOVATIONS

**4818 STARKEY ROAD** 

**ROANOKE COUNTY, VIRGINIA** 

REVISIONS

7 6 5 4 3 2

BALZER PROJECT NO. 03220077.00

### PROJECT DIRECTORY **DRAWING INDEX**

**COUNTY OF ROANOKE** 5204 Bernard Drive

Contact: George Assaid Roanoke, Virginia 24018 Phone: 540-777-6348

**ARCHITECT** Balzer and Associates. Inc. **Contact: Robert Pilkingtor** 1208 Corporate Circle Roanoke, Virginia 24018 Phone: 540-772-9580

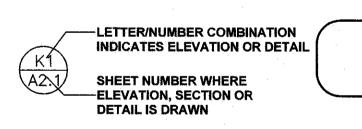
MDR Engineering Contact: Melinda Ruble, PE P.O. Box 20812 Roanoke, Virginia 24018 Phone: 540-915-1576

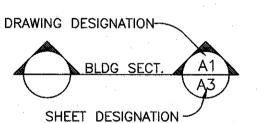
**ELECTRICAL ENGINEER** Gibson Engineering Contact: Daniel Gibson 2100 Lubna Drive Christiansburg, Virginia 24073 Phone: 540-998-6069

### **SYMBOLS & MATERIALS**

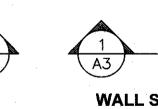
WINDOW NUMBER TAG

**WALL TAG** DOOR NUMBER TAG **ROOM NUMBER TAG NOTE TAG** 





BUILDING SECTION



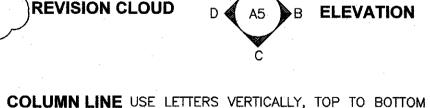


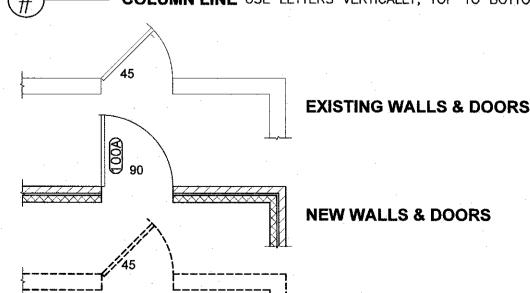
**DEMOLITION WALLS & DOORS** 



**REVISION TAG** 

DETAIL





WALL-MOUNTED EMERGENCY EGRESS LIGHT W/ BACKUP BATTERY

ILLUMINATED EXIT LIGHT W/ BATTERY BACKUP

COMBINATION ILLUMINATED EXIT LIGHT W/ **EMERGENCY EGRESS LIGHT W/ BACKUP BATTERY** 

# RENOVATION MAIN FLOOR PLAN

RENOVATION MAIN FLOOR CEILING PLAN A1.3 | SCHEDULES & DETAILS A1.4 MAIN FLOOR FURNITURE PLAN X A1.5 ACCESSIBLE ENTRY DETAILS (note: all work NIC) A1.6 ROOF PLAN MECHANICAL SPECIFICATIONS MECHANICAL LEGEND, SCHEDULES **DEMOLITION MAIN FLOOR PLAN-MECHANICAL** DEMOLITION UPPER FLOOR PLAN-MECHANICAL

COVER & CODE ANALYSIS

SHEET TITLE

A0.1 LIFE SAFETY PLANS

EXISTING BSMT & UPPER LEVEL FLOOR PLANS

EXISTING / DEMOLITION MAIN FLOOR PLAN

D1.2 EXISTING / DEMOLITION MAIN FLOOR CEILING PLAN

DEMOLITION ROOF PLAN-MECHANICAL RENOVATION MAIN FLOOR PLAN-MECHANICAL RENOVATION UPPER FLOOR PLAN-MECHANICAL RENOVATION ROOF PLAN-MECHANICAL DEMOLITION MAIN FLOOR PLAN - ELECTRICAL DEMOLITION UPPER FLOOR PLAN - ELECTRICAL GENERAL NOTES, ELECTRICAL LEGEND, LIGHTING SCHEDULE

RENOVATION MAIN FLOOR PLAN - ELECTRICAL RENOVATION UPPER FLOOR PLAN - ELECTRICAL EXISTING, MODIFIED & NEW PANEL SCHEDULES RENOVATION MAIN FLOOR PLAN - ELECTRICAL

SPECIFICATIONS E5.2 SPECIFICATIONS

**SCOPE OF WORK** GENERAL CONTRACTOR'S SCOPE OF WORK INCLUDES ALL WORK DEPICTED ON ARCHITECTURAL DRAWINGS ("A" SHEETS), MECHANICAL DRAWINGS ("M" SHEETS) AND

ANY WORK NOTED IN THESE DRAWINGS NOTED AS "N.I.C." IS NOT INCLUDED IN THE GENERAL CONTRACTOR'S WORK AND WILL BE PROVIDED VIA ONWER'S SEPARATE

WORK TO BE PROVIDED BY OWNER'S SEPARATE VENDORS UNDER SEPARATE AGREEMENTS INCLUDES:

ELECTRICAL DRAWINGS ("E" SHEETS), EXCEPT AS NOTED BELOW.

ROOF REPLACEMENT OR ROOF RE—COVERING.

I.T./PHONE WIRING AND TERMINATIONS.

## SITE / ZONING INFORMATION

087.07-01-16.00-0000

TAX PARCEL ID #: SITE ADDRESS: MAGISTERIAL DISTRICT: PROPERTY ZONING: PROPERTY USE: PROPERTY AREA:

**BUILDING AREA:** 

4818 STARKEY ROAD CAVE SPRING OFFICE/BUSINESS (NOTE: EXISTING, NO CHANGE) 2.71 ACRES (NOTE: EXISTING, NO CHANGE) 14,031 TOTAL S.F. (GROSS) (NOTE: NO CHANGE)

EXISTING LOT FRONTAGE: APPROX. 350' ON STARKEY ROAD

SETBACKS: N/A (BLDG RENOVATION WITH NO CHANGE OF USE AND NO PROPOSED ADDITIONAL FLOOR AREA)

PARKING REQUIRED: N/A (BLDG RENOVATION WITH NO CHANGE OF USE AND NO PROPOSED CHANGE TO NUMBER OF PARKING SPACES PROVIDED)

FLOODWAY: BUILDING IS NOT WITHIN A 100-YR. FLOODPLAIN.

EXISTING PARKING PROVIDED: N/A, NO PARKING CHANGES

SITE DISTURBANCE WITH THIS PERMIT: ± 1.500 S.F. (MINOR SIDEWALK CHANGES ONLY, TO BE PROVIDED BY OWNER'S SEPARATE SIDEWALK VENDOR/CONTRACTOR).

ROANOKE COUNTY BLDG PERMIT # B-2505824

### **BUILDING CODE ANALYSIS**

THIS SET OF CONSTRUCTION DOCUMENTS ADDRESSES INTERIOR AND EXTERIOR RENOVATIONS IN AN EXISTING BUILDING @ THE ABOVE REFERENCED ADDRESS. THERE WILL BE MINIMAL STRUCTURAL MODIFICATIONS TO THE EXISTING BUILDING CONSISTING OF ONLY MINOR ROOF STRUCTURE CHANGES IF REQUIRED FOR REPLACEMENT ROOF-MOUNTED HVAC (HVAC REPLACEMENT BY SEPARATE VENDOR, N.I.C.). THERE WILL BE NO ADDITIONAL FLOOR AREA ADDED TO THE EXISTING BUILDING. EXTERIOR MODIFICATIONS ARE LIMITED TO MINOR MODIFICATIONS TO EXISTING EXTERIOR DOORS, ENTRY RAMP, ROOF REPLACEMENT AND EXTERIOR REPAIRS.

EXISTING BUILDING IS A "B" (BUSINESS) USE. THERE WILL BE NO "CHANGE-OF-OCCUPANCY" CLASSIFICATION TO THIS BUILDING.

THIS RENOVATION IS BEING DESIGNED UNDER THE 2021 VIRGINIA EXISTING BUILDING CODE (VEBC), CHAPTER 6 "ALTERATIONS" AND CHAPTER 7 "CHANGE-OF-OCCUPANCY" (WITH COMPLIANCE WITH APPROPRIATE PROVISIONS OF 2021 VCC).

CODE EDITION: 2021 VEBC AND 2021 VCC (IEBC AND IBC w/ Virginia Amendments) EXISTING BUILDING USE GROUP: B (NO CHANGE) EXISTING BLDG. CONSTRUCTION TYPE: 2B (NON-COMBUSTIBLE, NON-PROTECTED)

BLDG. TABULAR ALLOWABLE AREA: 23,000 S.F. FOOTPRINT (VCC TABLE 506.2, A-3 USE) EXISTING BLDG. AREA: 9.303 S.F. (NET FOOTPRINT TO INSIDE OF EXTERIOR WALLS)

1,337 S.F. (NET) EXISTING BUILDING FLOOR AREA: BASEMENT= MAIN FLOOR= 9,303 S.F. (NET) 2,578 S.F. (NET) UPPER FLOOR=

BLDG. TABULAR ALLOWABLE HEIGHT: 3-STORY / 55' (VCC TABLES 504.3 AND 504.4) EXISTING BLDG. HEIGHT= 2-STORY + BASEMENT / ± 30' (EXISTING, NO CHANGE)

WORK AREA UNDER THIS PERMIT= 5,930 S.F. (NOTE: ALL ON MAIN FLOOR)

FIRE PROTECTION SYSTEMS (2021 VCC CHAPTER 9): AUTOMATIC FIRE SPRINKLER SYSTEM NOT REQUIRED PER VCC 903.2 (NO REQUIREMENT FOR "B" USE).

FIRE ALARM SYSTEM NOT REQUIRED PER VCC 907.2.2 (LESS THAN 500 OCCS. TOTAL, LESS THAN 100 OCCS. ABOVE OR BELOW LEVEL OF EXIT DISCHARGE).

OCCUPANT LOAD (2021 VCC TABLE 1004.5): 1,337 S.F. @ 1:500= 3 OCCS. (MECH SPACE ONLY) BASEMENT= 9,303 S.F. @ 1:150= 63 OCCS. MAIN FLOOR= 2,578 S.F. @ 1:150= 18 OCCS. UPPER FLOOR=

EXIT REQUIREMENTS (2021 VCC CHAPTER 10 & VEBC CHAPTER 4):

 3 EXITS PROVIDED FROM MAIN LEVEL (2 EXITS REQUIRED PER VCC TABLE 1006.3.2) 1 EXIT PROVIDED FROM BASEMENT (NO WORK BEING DONE, NO CHANGE REQ.)

 1 EXIT PROVIDED FROM UPPER LEVEL (NO WORK BEING DONE, NO CHANGE REQ.) ACCESSIBLE MEANS-OF-EGRESS NOT REQ. PER VEBC 404.2, EXCEPTION 2. EXIT TRAVEL DISTANCE = 250' MAX. FROM MAIN FLOOR PER VCC TABLE 1017.2

(99' MAX. PROVIDED WORST CASE FROM ANY POINT IN BLDG) COMMON PATH OF TRAVEL (FROM NEW WORK AREAS)= 75' MAX. FOR "B" USE WITH GREATER THAN 30 OCCS. PER VCC 1006.2.1 (54' MAX. PROVIDED)

COMMON PATH OF TRAVEL (FROM EXISTING/NON-WORK AREAS): SEE LIFE SAFETY PLANS (NO CHANGE/NO ALTERATIONS REQUIRES NO UPGRADE)

EXIT DOORS SHALL SWING IN THE DIRECTION OF EGRESS WHERE SERVING MORE THAN 50 OCCS. (SEE PLAN FOR ANY REQUIRED CHANGES) FIRE-RATED EXIT ACCESS CORRIDORS NOT REQUIRED PER VCC TABLE 1020.2 (LESS THAN 30 OCCS. USING ANY CORRIDOR FOR EXIT IN ALTERATION WORK AREA, SEE

LIFE SAFETY PLAN ON SHEET A1.0). EXIT STAIRS ARE "EXIT ACCESS STAIRS" (NOT REQUIRED TO BE ENCLOSED IN FIRE-RATED ENCLOSURE) PER VCC 1019.3, EXCEPTION 1, WITH EXIT TRAVEL DISTANCE MEASURED ALL THE WAY TO BUILDING EXTERIOR. AS SUCH, FIRE-RATING OF STAIRWAYS NOT REQUIRED.

PLUMBING FIXTURE REQUIREMENTS (2021 VCC 2902 / VPC TABLE 403.1):

 82 OCCUPANTS= 41 MALES, 41 FEMALES (41) "B" OCCS. @ 1:25= (2) TOILETS PER SEX (3 OR MORE EACH PROVIDED) • (41) "B" OCCS. @ 1:40= (2) LAVATORIES PER SEX (3 OR MORE EACH PROVIDED)

(82) "B" OCCS. @ 1:100= (1) DRINKING FOUNTAIN REQ. (2 EXIST. WATER DISPENSERS PROVIDED)

(1) MOP SINK REQUIRED PER VPC TABLE 403.1; (2) EXISTING PROVIDED. ACCESSIBILITY (2021 VCC CHAPTER 11 & VEBC CHAPTER 4):

 ALL PUBLIC AREAS ACCESSIBLE TO THE PUBLIC AS REQ. PER VCC CHAPTER 11. ACCESSIBLE ENTRY REQ. PER VEBC 404.4.1 (TO BE PROVIDED, SEE PLANS). ACCESSIBLE ROUTE PROVIDED TO SPACES OF PRIMARY FUNCTION (SEE PLAN).

ACCESSIBLE ROUTE TO UPPER FLOOR AND BASEMENT NOT REQUIRED PER VCC 1104.4, EXCEPTION 1 (LEVELS WITH LESS THAN 3,000 S.F.) ACCESSIBLE RESTROOMS PROVIDED (EXISTING, SEE PLAN).

ACCESSIBLE PARKING TO BE PROVIDED (SEE PLANS). SPECIFIC ACCESSIBILITY UPGRADES REQUIRED ARE ANTICIPATED TO BE LIMITED TO THE SITE AND EXTERIOR ENTRY UPGRADES PER THE 20% BUDGET REQUIREMENT OF VEBC 404.3. EXCEPTION 1.

2021 VEBC NOTES: (MOST RESTRICTIVE VEBC SECTION APPLIED) 601.1. GENERAL: ALTERATIONS TO ANY BUILDING SHALL COMPLY WITH THE REQUIREMENTS OF THE VCC FOR NEW CONSTRUCTION. PORTIONS OF BLDG NOT BEING ALTERED SHALL NOT BE REQUIRED TO COMPLY WITH VCC. (NOTE: NEW WORK IN ALTERATION "WORK AREAS" SHOWN MEETS VCC. SEE ABOVE.)

601.2.2, ALTERATION LEVEL 2: THIS PROJECT APPEARS TO BE A LEVEL 2 ALTERATION.

601.3, FLOOD HAZARD AREA: N/A (NOT IN A FLOOD HAZARD AREA).

601.4.1, ENERGY CONSERVATION: ANY MODIFIED BUILDING ENVELOPE ELEMENTS SHALL BE MADE TO BE COMPLIANT WITH CURRENT ENERGY CODE. (OPENING OF EXTERIOR WALLS NOT ANTICIPATED TO BE REQUIRED.

601.4.6, LIGHTING: LIGHTING ALTERATIONS SHALL MEET THE VECC. (ALL NEW OR MODIFIED LIGHTING WILL MEET VECC, SEE ELEC. DWGS.).

601.4.5, ROOF INSULATION REPLACEMENT TO BE CODE COMPLIANT W/ VECC.

601.4.7, DUCTS: N/A (FOR R-5 USES ONLY).

601.5, ACCESSIBILITY: EXISTING BUILDING WILL BE ACCESSIBLE AS REQUIRED PER APPLICABLE SECTIONS OF VCC CHAPTER 11 AND VEBC CHAPTER 4, SEE ABOVE.

602.3, BLDG ELEMENTS: NEW FINISHES OR NEW MATERIALS/METHODS SHALL MEET VCC (AGREED, ALL NEW ELEMENTS WILL MEET VCC AS DESIGNED).

603.2, COMPLIANCE: ALL NEW WORK TO MEET ALTERATION LEVEL 1 REQUIREMENTS.

603.3, COMPLIANCE: ALL NEW CONSTRUCTION SHALL COMPLY WITH VCC (AGREED, ALL NEW WORK TO COMPLY WITH VCC AS DESIGNED). (NOTE: PER SECTION 603.3 REQUIREMENT AND SECTION 601.1, EXISTING/NON-WORK AREAS WITH NO PROPOSED RENOVATION WORK MAY REMAIN "AS IS" WITH NO UPGRADES REQUIRED FOR EGRESS.

603.4, FIRE-RATINGS: NO BLDG ELEMENTS REQUIRED TO BE FIRE-RATED (2B CONSTRUCTION, NO FIRE-RATED CORRIDORS, EXISTING STAIRWAYS ARE "EXIT ACCESS STAIRWAYS" ONLY).

603.5, MECHANICAL: NEW/RECONFIGURED SPACES TO MEET VMC (SEE MECH. DWGS.)

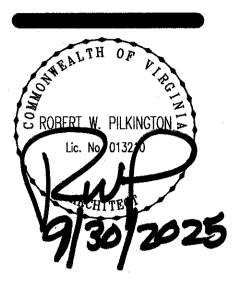
603.6. PLUMBING: BLDG MEETS VPC FOR NUMBER OF PLUMBING FIXTURES REQUIRED, SEE ABOVE. NO NEW FIXTURES REQUIRED.

603.7, STRUCTURAL; NO STRUCTURAL MODIFICATIONS TO EXISTING BUILDING EXCEPT FOR NEW ROOF OPENINGS (IF REQUIRED) FOR REPLACEMENT HVAC, TO BE DESIGNED TO MEET STRUCTURAL/ LOADING REQUIREMENTS OF VCC CHAPTERS 16 AND 17.

Roanoke / Richmond New River Valley Shenandoah Valley

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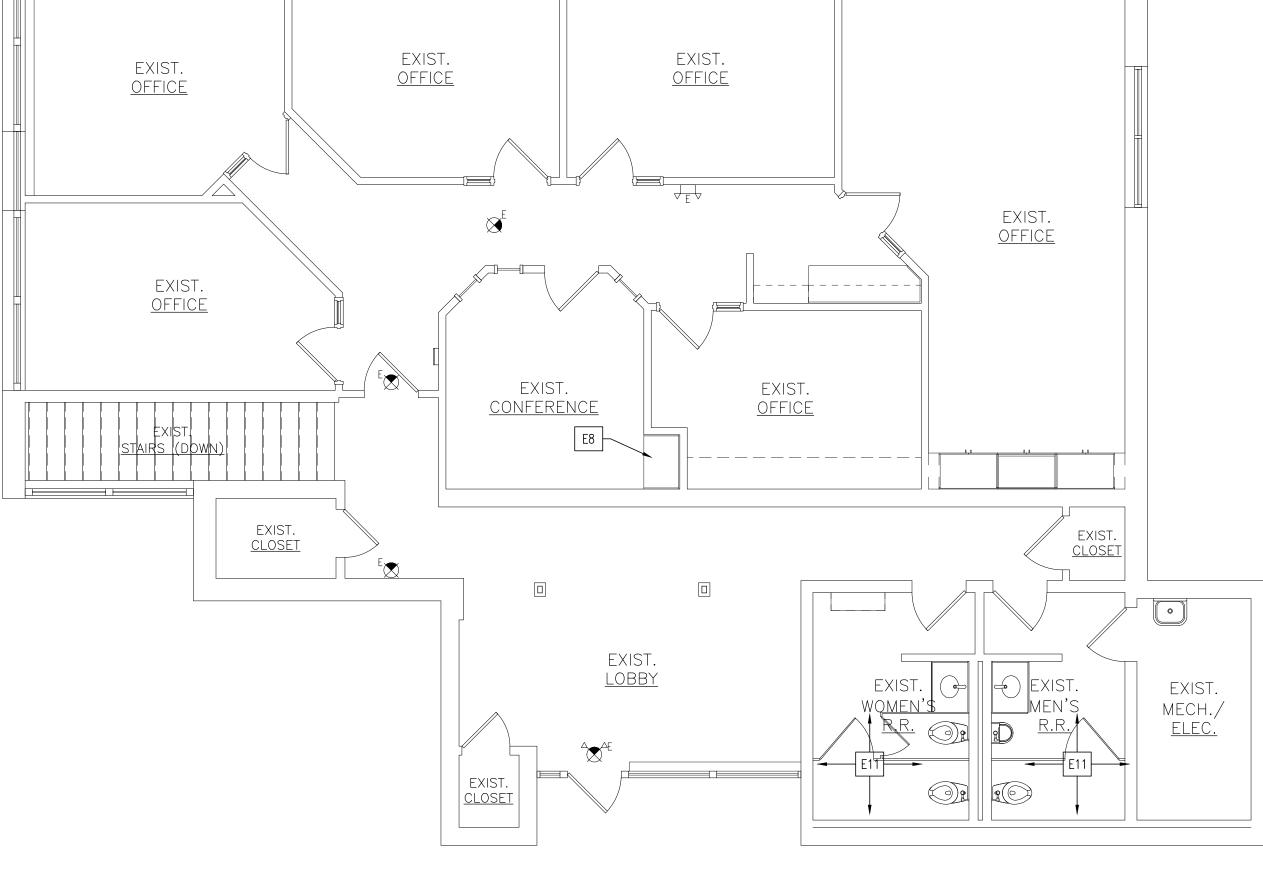
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SCALE

**EXISTING** 

\D1.0 / SCALE: 3/16"= 1'-0"

**BASEMENT FLOOR PLAN** 



### **EXISTING UPPER FLOOR PLAN**

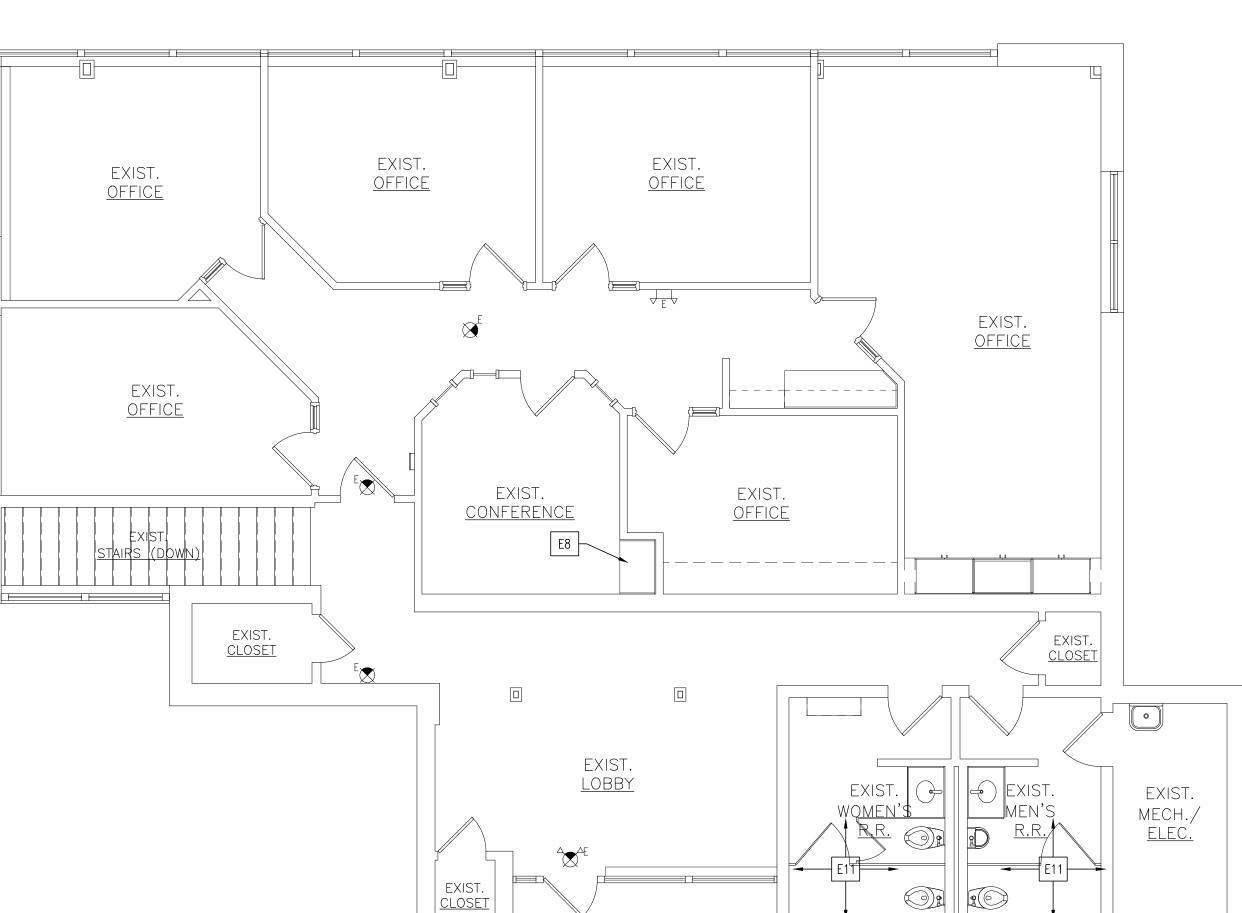
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BASEMENT & UPPER FLOOR NOTE:

ALL ELEMENTS IN BASEMENT AND ON UPPER FLOOR TO REMAIN. NO ALTERATION WORK REQUIRED OR PROPOSED IN BASEMENT OR ON UPPER FLOOR EXCEPT FOR MISCELLANEOUS MINOR WORK THAT MAY BE NECESSARY FOR INSTALLATION OF WIRING, ETC. BASEMENT AND UPPER FLOOR DRAWINGS PROVIDED HERE FOR REFERENCE ONLY.

EXISTING BUILDING WAS CONSTRUCTED PRIOR TO 1985 PER ROANOKE COUNTY GIS. OWNER SHALL PROVIDE TESTING FOR ASBESTOS CONTAINING MATERIALS (ACM's) PER 2021 VCC SECTION 110.3 AND PROVIDE TESTING RESULTS TO ROANOKE BUILDING INSPECTIONS AND TO THE CONTRACTOR. CONTRACTOR SHALL REMOVE ANY ACM'S DISTURBED AS PART OF CONSTRUCTION PROCESSES AND DISPOSE OFFSITE.

- ANY HAZARDOUS MATERIALS REMOVED (ASBESTOS, OIL, GAS, LEAD-BASE PAINT, ETC.) SHALL BE COMPLETELY REMOVED FROM WORK AREAS AND DISPOSED OF OFFSITE. DISPOSAL SHALL BE DONE IN A MANNER COMPLIANT WITH ALL LOCAL, STATE AND FEDERAL LAWS
- 3. ALL ITEMS SHOWN AS TITE TO BE REMOVED. (UNLESS NOTED OTHERWISE)
- 4. THE CONTRACTOR IS REQUIRED TO MAKE FIELD INSPECTIONS TO VERIFY EXISTING CONDITIONS.
- 5. ALL FLOORS AND WALLS OF EXISTING AREAS THAT WILL BE AFFECTED BY CONSTRUCTION PROCEDURES INCLUDING DEBRIS REMOVAL MUST RECEIVE PROTECTION. DUST BARRIERS MUST BE INSTALLED BETWEEN WORK AREAS, UNDISTURBED AREAS AND OCCUPIED SPACES.
- 6. DO NOT CUT AND PATCH WORK IN A MANNER THAT WOULD RESULT IN SUBSTANTIAL VISUAL EVIDENCE OF CUT AND PATCH WORK.
- 7. RESTORE EXPOSED FINISHES OF PATCHED AREAS AND WHERE NECESSARY EXTEND FINISH RESTORATION INTO RETAINED ADJOINING WORK IN A MANNER WHICH WILL ELIMINATE EVIDENCE OF PATCHING AND REFINISHING.
- 8. COORDINATE ALL DEMOLITION AND RESTORATION WORK WITH OWNER. USE MATERIALS FOR CUTTING/PATCHING THAT ARE IDENTICAL TO
- 9. AT ALL AREAS WHERE MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT IS REMOVED, PROPERLY CAP AND TERMINATE ALL UTILITIES
- LIMITED TO: TEMPORARY & PERMANENT BEAMS & LINTELS; SHORING OF EXISTING CONSTRUCTION; AND FOR SAFETY PRECAUTIONS AND PROGRAMS AS THEY RELATE TO THE WORK OF THIS PROJECT.
- 11. ALL DEMOLISHED MATERIAL SHALL BE REMOVED FROM SITE U.N.O.
- 13. DEMOLITION ITEMS SHOWN ARE INTENDED TO BE NON-STRUCTURAL ITEMS ONLY, UNLESS NOTED OTHERWISE. G.C. SHALL INSPECT ALL ITEMS TO BE DEMOLISHED PRIOR TO DEMO TO ENSURE ITEMS ARE NOT STRUCTURAL ELEMENTS. NOTIFY ARCHITECT IMMEDIATELY AND PRIOR TO DEMOLITION FOR ANY ITEMS THAT APPEAR TO BE STRUCTURAL/LOAD-BEARING.
- 14. REMOVE EXIST. CEILINGS IN ALL LOCATIONS WHERE NEW CLGS. ARE SHOWN ON REFLECTED CEILING PLAN. REMOVE EXIST. LIGHTS AS REQ. AND RE-USE LIGHTING CIRCUITS FOR NEW LIGHT LOCATIONS.
- 15. DUCTWORK AND HVAC EQUIPMENT DEMOLITION/MODIFICATIONS NOT SHOWN. G.C. SHALL COORDINATE ANY NECESSARY HVAC DUCTWORK CHANGES W/ MECHANICAL ENGINEER AND HVAC SUB-CONTRACTOR AS REQ.
- 16. FLOORING DEMOLITION NOT SHOWN. REMOVE ALL REQUIRED FLOORING AS NECESSARY TO INSTALL NEW FLOOR FINISHES NOTED ON RENOVATION FLOOR PLAN. G.C. COORDINATE/VERIFY WITH OWNER FOR ANY FLOORING REMOVAL AND REPLACEMENT TO BE PROVIDED BY OWNER'S SEPARATE VENDOR (N.I.C.).
- DRAWINGS FOR UNDER-SLAB PIPING, IF REQUIRED.
- 18. REMOVAL/REPLACEMENT OF EXISTING DOOR HARDWARE NOT SHOWN. G.C. COORDINATE/VERIFY WITH OWNER FOR ANY DOOR HARDWARE
- 19. WALL BASE REMOVAL NOT SPECIFICALLY NOTED. G.C. COORDINATE/VERIFY WITH OWNER FOR ANY WALL BASE REMOVAL AND



**GENERAL DEMOLITION NOTES:** 

- AND ALL GOVERNING BODIES HAVING JURISDICTION.

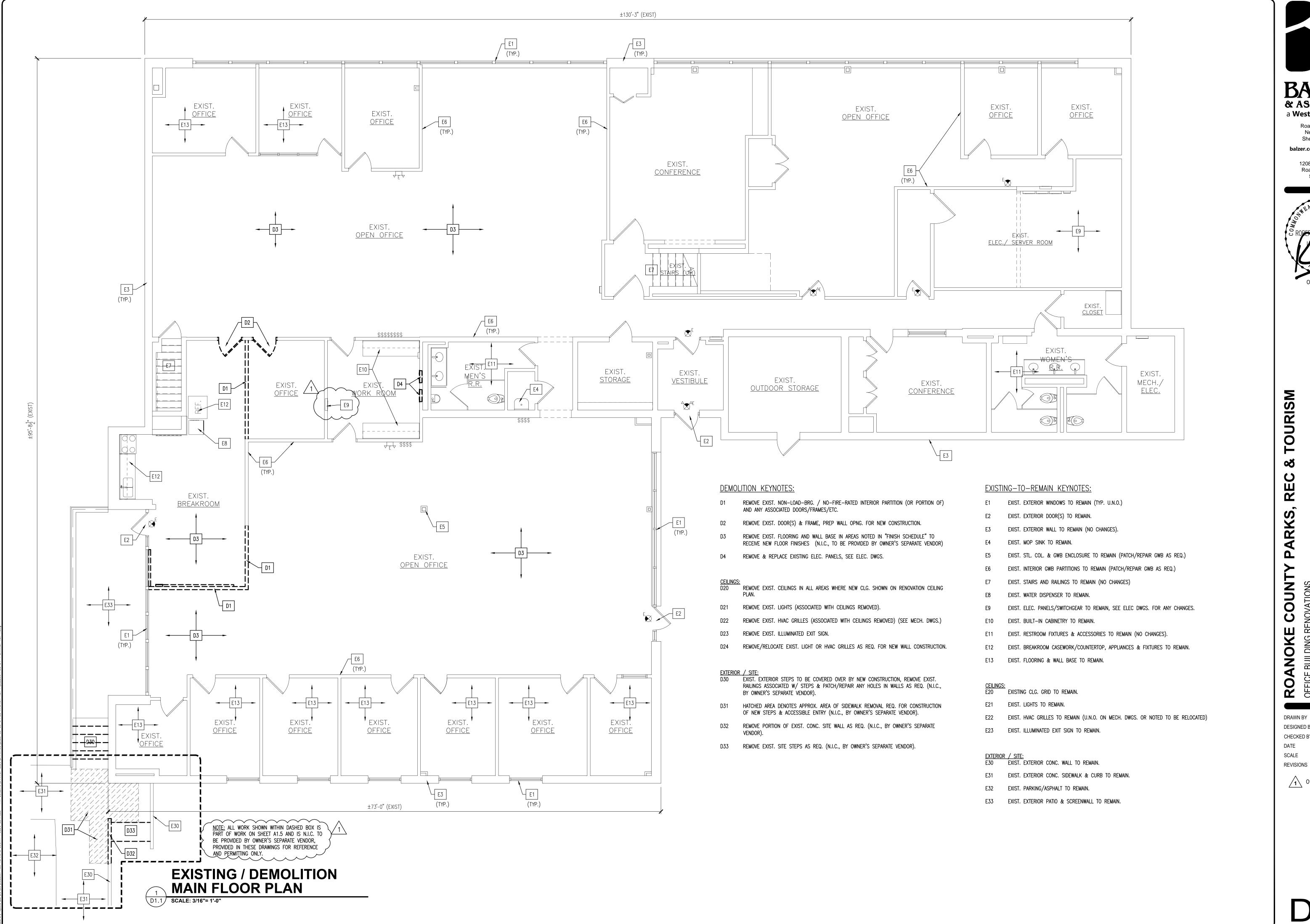
- AS REQUIRED BY ALL PREVAILING NATIONAL AND LOCAL CODES. 10. G.C. SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES; INCLUDING BUT NOT
- 12. GENERAL DEMOLITION ITEMS HAVE BEEN NOTED ON PLAN; IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO DEMOLISH ANY ITEMS NOT NECESSARILY NOTED BUT INTENDED TO BE REMOVED, AND PREPARE EXISTING ITEMS TO REMAIN FOR NEW WORK.
- 17. FLOOR TRENCHING/SLAB REMOVAL NOT SHOWN. G.C. SHALL COORDINATE ANY SLAB REMOVAL/FLOOR TRENCHING REQUIRED WITH M/P/E
- REPLACEMENT REQUIRED BY G.C. AND ANY DOOR HARDWARE REPLACEMENT TO BE PROVIDED BY OWNER'S SEPARATE VENDOR (N.I.C.).
- REPLACEMENT TO BE PROVIDED BY OWNER'S SEPARATE VENDOR (N.I.C.) 20. G.C. SHALL BE RESPONSIBLE FOR REMOVING PORTIONS OF ANY EXISTING CARPET TILES (OR OTHER FLOORING) AS NECESSARY FOR NEW
- WALL BOTTOM TRACKS TO REST ON AND BE SECURED DIRECTLY TO THE CONCRETE FLOOR SLAB. FLOORING REMOVAL SHALL BE DONE IN A MANNER THAT REMOVES ONLY THE STRIP OF FLOORING AS WIDE AS THE METAL STUD TRACK SO THAT ANY GAPS CAN BE COVERED BY THE BOTTOM OF GWB OR NEW WALL BASE.

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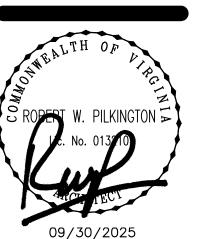
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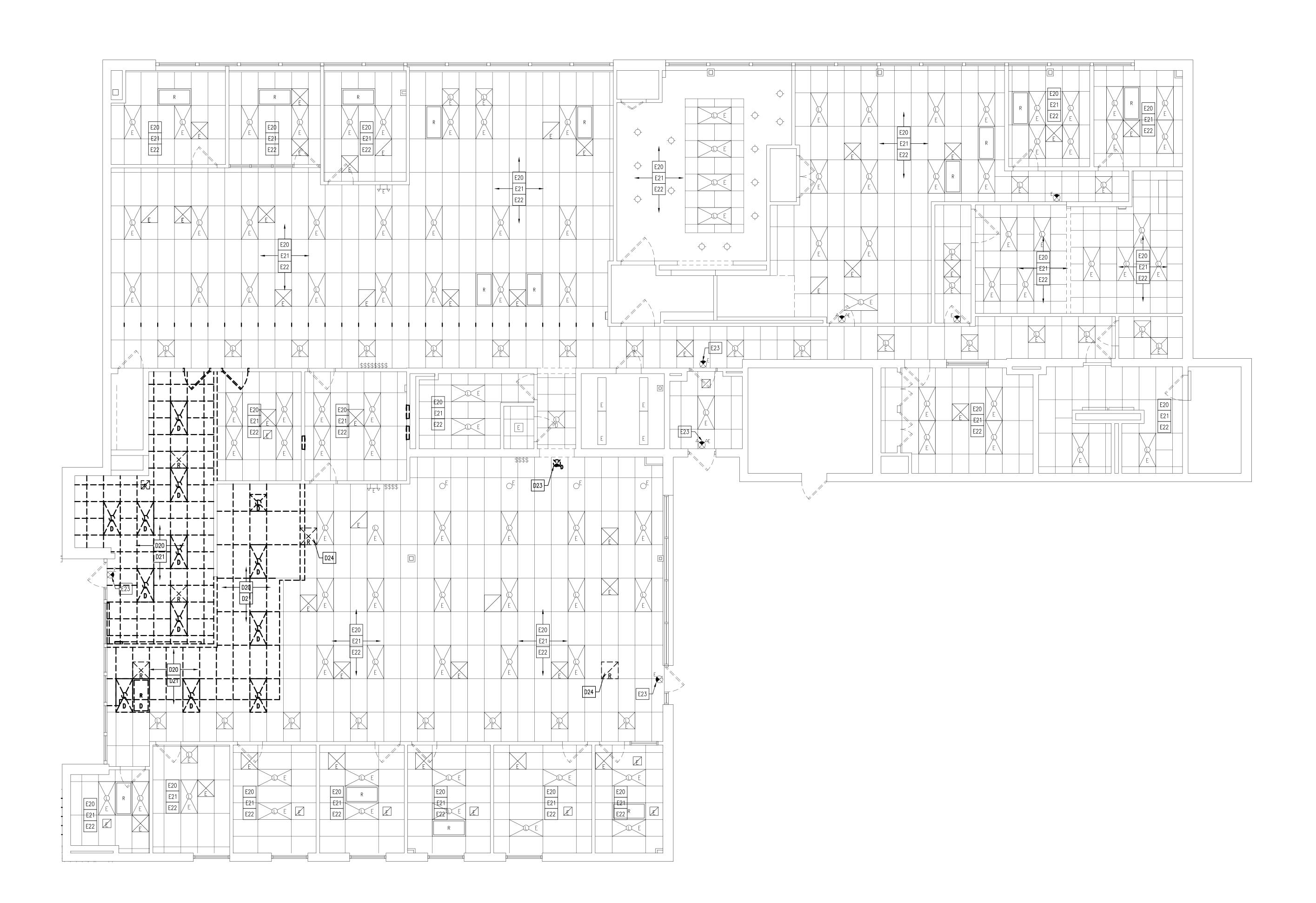
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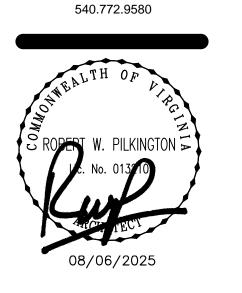
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EXISTING / DEMOLITION MAIN FLOOR CEILING PLAN D1.2 SCALE: 3/16"= 1'-0"

SEE SHEET A1.2 (RENOVATION CEILING PLAN) FOR CEILING SYMBOL LEGEND.

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TOURISM 8

ROANOKE COUNTY FOR STILL BUILDING RENOVATIONS EXISTING / DEMOLITION MAIN

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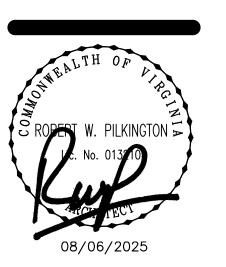
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AS INDICATED

NOTE: NO PROPOSED ALTERATIONS TO UPPER FLOOR AND NO CHANGES PROPOSED CHANGES TO EGRESS FROM UPPER FLOOR. UPPER FLOOR LIFE

SAFETY PLAN PROVIDED HERE FOR REFERENCE ONLY.

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TOURISM 8 PARKS, COUNTY ROANOKE

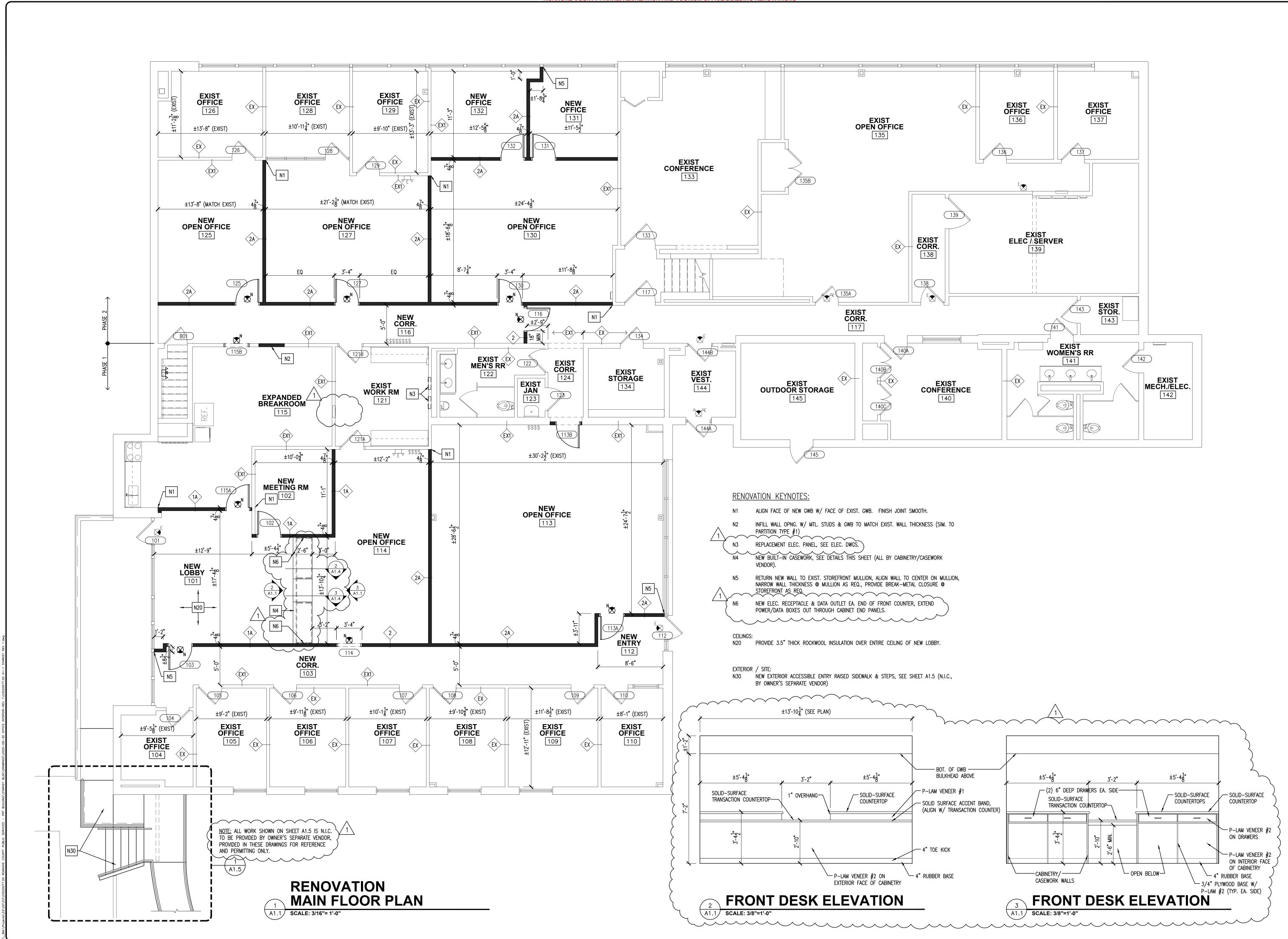
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TOURISM 8

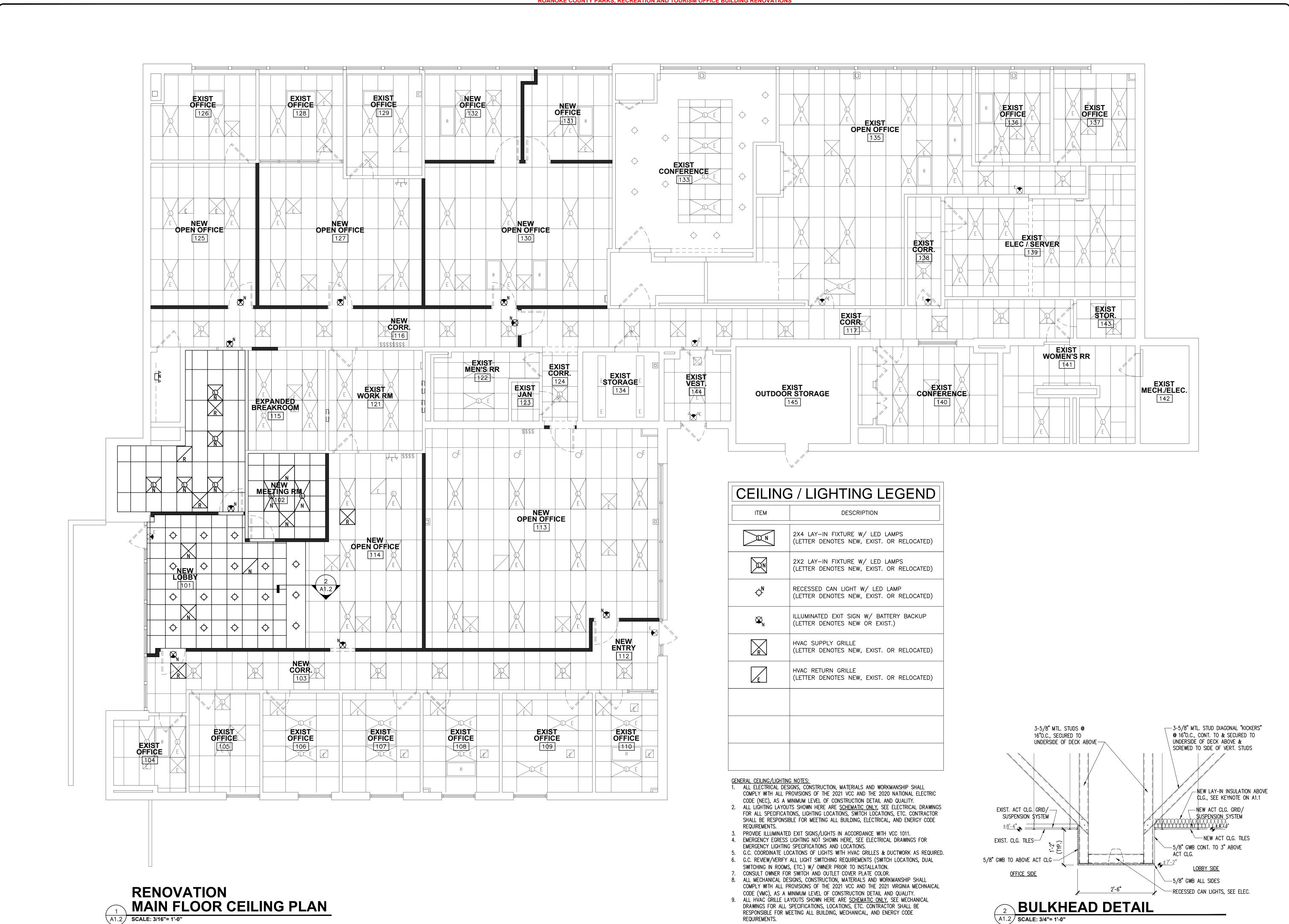
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Δ. COUNTY ROANOKE RENOVATION

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### GENERAL DOOR NOTES:

- ANY NEW EXTERIOR DOOR THRESHOLDS SHALL BE 1/4" OFFSET, ADA ACCESSIBLE. 2. PROVIDE WEATHERSTRIPPING FOR ALL EXTERIOR DOORS (EXISTING OR NEW).
- 3. "SCW" DENOTES SOLID CORE WOOD DOORS, TO BE CROSSBANDED CONSTRUCTION, PARTICLE BOARD CORE, PREMIUM/STAIN GRADE WOOD FACE, STAINED TO MATCH EXISTING DOORS.
- 4. "HM" DENOTES HOLLOW METAL DOOR FRAMES, TO BE 18 GAGE KNOCK-DOWN HOLLOW METAL FRAMES IN FRAMED WALLS, AND 16 GAGE WELDED HOLLOW METAL FRAMES IN MASONRY WALLS, W/ 2" WIDE HEAD AND JAMBS, AND SHALL BE FACTORY PRIMED AND FIELD-PAINTED, CONSULT TENANT FOR COLORS. SILENCERS SHALL BE PROVIDED ON ALL NEW DOOR FRAMES. 5. ALL GLAZING IN FIRE-RATED ASSEMBLIES SHALL BE 1/4" GLAZING, TO BE EITHER WIRED GLAZING PER VCC/IBC 715.4.3, OR
- FIRE-RATED PER VCC/IBC 715.4.4, AND SHALL BE TEMPERED PER VCC/IBC CHAPTER 24.
- 6. ALL OTHER GLAZING USED IN DOOR ASSEMBLIES SHALL BE 1/4" THICK TEMPERED PER VCC/IBC CHAPTER 24. 7. DOOR FRAMES SHALL BE FIRE-RATED TO MATCH DOOR FIRE-RATING IF REQUIRED PER SCHEDULE.
- 8. HARDWARE SETS BASED ON CORBIN RUSSWIN SERIES CL3500/CL3300 CYLINDRICAL LEVER LOCKSETS. 9. WOOD DOORS WITH LITES SHALL BE PROVIDED WITH WOOD TRIM STOPS TO MATCH DOOR WOOD SPECIES AND COLOR.
- 10. DOOR TYPES MARKED WITH "A" IN SCHEDULE (I.E. "1A", "5A", ETC.) ARE DOUBLE DOORS.
- 11. SEE FLOOR PLAN FOR DOOR SWING. 12. ANY EXISTING DOOR HARDWARE NOTED IN SCHEDULE AS "EXIST" IS EXISTING TO REMAIN WITH NO CHANGES.
- 13. MEN'S AND WOMEN'S RESTROOM DOORS HAVE BEEN EQUIPPED W/ HANDICAP ACCESSIBLE ACTUATOR, PREVIOUSLY INSTALLED BY OWNER'S SEPARATE VENDOR (NIC). 14. ANY SECURITY LOCKING TO BE PROVIDED BY OWNER'S SEPARATE VENDOR AND IS NOT IN CONTRACT (NIC), GC COORDINATE W/
- OWNER FOR ANY SPECIFIC HARDWARE LATCH TYPE(S) AND ANY SPECIFIC INSTALLATION REQUIREMENTS TO ACCOMMODATE SECURITY WIRING, ETC. 15. DOOR HARDWARE MARKED WITH ASTERISK (\*) TO HAVE ELECTRIC STRIKE HARDWARE, STRIKE TO BE SUPPLIED BY G.C. AS PART OF
- VENDOR (N.I.C.). G.C. SHALL COORDINATE W/ OWNER'S SECURITY VENDOR FOR ALL INSTALLATION REQUIREMENTS AND SPECIFIC STRIKE TYPE REQUIRED. 16. ALL DOORS SHOWN ON FLOOR PLAN THAT SWING AGAINST A WALL SHALL BE PROVIDED WITH WALL-MOUNTED ROUND DOOR STOPS.

DOOR HARDWARE PACKAGE. SECURITY AND ELEC. DOOR/CARD READER ACCESS SYSTEM TO BE PROVIDED BY OWNER'S SEPARATE

	INTEIROR PARTITION	ON S	CHEDU	LE	
TYPE	DESCRIPTION	RATING (HOURS)	UL DESIGN NO.	HEIGHT	STC RATING
EX	EXISTING NON-FIRE-RATED INTERIOR PARTITION (NO WORK)	N/A	N/A	EXISTING	N/A
EXI	EXISTING NON-FIRE-RATED INTERIOR PARTITION  (PATCH/REPAIR GWB AS REQ., RE-PAINT PER FINISH  SCHEDULE)	N/A	N/A	EXISTING	N/A
EX2>	EXISTING FIRE—RATED INTERIOR PARTITION  (PATCH/REPAIR GWB AS REQ., RE—PAINT PER FINISH  SCHEDULE)	1 HOUR (EXIST.)	N/A	EXISTING	N/A
1	NEW NON-FIRE-RATED INTERIOR PARTITIONS: 3-5/8"  20 GAGE MTL. STUDS @ 16"o.c. W/ MTL. BOT. TRACK & MTL. TOP TRACK. SECURE TRACK TO FLOOR SLAB W/ POWDER ACTUATED FASTENERS @ 24" O.C. 5/8" STANDARD GWB EA. SIDE, SECURE TO STUDS W/ NO. 6 SCREWS @ 12"o.c. MAX. TAPE & FINISH ALL JOINTS. FINISH PER SCHEDULE.	O HOUR	N/A	EXTEND ABOVE FINISH CEILING. (G.C. COORDINATE IN FIELD AS REQ.)	N/A
1A>	NEW NON-FIRE-RATED INTERIOR PARTITIONS (INSULATED): SAME AS TYPE 1, INSTALL 3.5" SOUND BATT INSULATION.	0 HOUR	N/A	SAME AS TYPE 1	N/A
2	NEW NON-FIRE-RATED INTERIOR PARTITIONS: SAME AS TYPE 1, HELD TO & SECURED TO UNDERSIDE OF CEILING TRACK W #10 SCREWS @ 24"O.C.	0 HOUR	N/A	EXTEND TO UNDERSIDE OF FINISH CEILING.	N/A
2A>	NEW NON-FIRE-RATED INTERIOR PARTITIONS: SAME AS TYPE 1, HELD TO & SECURED TO UNDERSIDE OF CEILING TRACK W #10 SCREWS @ 24"O.C. INSTALL 3.5" SOUND BATT INSULATION.	0 HOUR	N/A	EXTEND TO UNDERSIDE OF FINISH CEILING.	N/A

- . INSTALL SOLID BLOCKING IN WALLS WHERE REQUIRED FOR MOUNTING CABINETS, FIXTURES, ETC. G.C. COORDINATE REQUIRED BLOCKING LOCATIONS W/ OWNER, OWNER'S INTERIOR DESIGNER AND OWNER'S LAB EQUIPMENT SUPPLIER.
- 2. PROVIDE MOISTURE RESISTANT GYPSUM BOARD IN ALL WET OR DAMP ENVIRONMENTS. ALL MOISTURE-RESISTANT
- GWB TO BE USG "AQUA-TOUGH" OR SIMILAR. . PROVIDE TILE BACKER BOARD IN LIEU OF GWB BEHIND ANY WALL TILE.
- 4. ALL STUD WALLS EXTENDED TO UNDERSIDE OF STRUCTURE ABOVE (DECK OR JOISTS) SHALL UTILIZE A DEFLECTION-TYPE TOP CONNECTION WHICH ALLOWS DEFLECTION.
- 5. ALL STUD WALLS <u>NOT</u> EXTENDED TO UNDERSIDE OF ROOF DECK AND TALLER THAN 8'-0" A.F.F. SHALL BE BRACED AT TOP AT ±6'-0"o.c. WITH EITHER STUD "KICKERS" OR STUDS EXTENDED UP TO STRUCTURE ABOVE FOR ANY WALL GREATER THAN 10'-0" IN LENGTH.

### DOOR LATCH TYPES:

Outside	Inside	Series/ Function	Туре	ANSI No. Series 4000	Function Description
		CL3510	Passage or Closet	F75	- Latchbolt by lever either side - Both levers always free
		CL3520	Privacy Bedroom or Bathroom	F76	Throw-off latchbolt by lever either side. Outside lever locked by push button. Outside lever unlocked by emergency release tool outside, by rotating lever or by closing door. Inside lever always free.
		CL3557	Storeroom or Closet	F86	Deadlocking latchbolt by key in outside lever or by rotating inside lever.     Outside lever always rigid.     Inside lever always free.
		CL3561	Entrance or Office	F82	Deadlocking latchbolt by lever either side, except when push button locks outside lever.  Push button released by turning inside lever or by key in outside lever.  Closing door does not release push button.  Inside lever always free.

DO	DOOR GLAZING SCHEDULE											
NO.	DESCRIPTION											
GL1	1/4" TEMPERED GLAZING, CLEAR											

### **DOOR HARDWARE SETS:**

- (1-1/2) PAIR HINGES (1) LOCK SET: ANSI F82 (LEVER HANDLE OFFICE)
- (1-1/2) PAIR HINGES (1) LOCK SET: ANSI F82 (LEVER HANDLE OFFICE) (1) CLOSER
- (1-1/2) PAIR HINGES (1) LATCH SET: ANSI F76 (LEVER HANDLE PRIVACY)
- (1-1/2) PAIR HINGES (1) LATCH SET: ANSI F75 (LEVER HANDLE PASSAGE) (1) CLOSER

SPACE	ROOM	FLOOR	BASE	TRIM	WAL			CEILING		REMARKS
NO.	KOOM	LOOK	DASE	ı IXIM	MTL.	FINISH	MTL.	FINISH	HEIGHT	CANAMAN
	MAIN FLOOR									
101	NEW LOBBY	LVP (NIC)	VCB (NIC)		GWB	PT	ACT1		±8'-4"	
102	NEW MEETING ROOM	CPT (NIC)	VCB (NIC)		EXIST/GWB	PT	ACT1		±8'-4"	
103	NEW CORRIDOR	CPT (NIC)			EXIST/GWB	PT	EXIST		EXIST	
104	EXIST OFFICE	CPT (NIC)			EXIST	EXIST	EXIST		EXIST	
105	EXIST OFFICE	CPT (NIC)			EXIST	EXIST	EXIST		EXIST	
106	EXIST OFFICE	CPT (NIC)			EXIST	EXIST	EXIST		EXIST	
107	EXIST OFFICE	CPT (NIC)			EXIST	EXIST	EXIST		EXIST	
108	EXIST OFFICE		VCB (NIC)		EXIST	EXIST	EXIST		EXIST	
109	EXIST OFFICE		VCB (NIC)		EXIST	EXIST	EXIST		EXIST	
110	EXIST OFFICE	CPT (NIC)	VCB (NIC)		EXIST	EXIST	EXIST		EXIST	
111	(NOT USED)									
112	NEW ENTRY		VCB (NIC)		EXIST/GWB	PT	EXIST		EXIST	
113	NEW OPEN OFFICE	CPT (NIC)			EXIST/GWB		EXIST		EXIST	
114	NEW OPEN OFFICE		VCB (NIC)		EXIST/GWB		EXIST		EXIST	
115	EXPANDED BREAKROOM		VCB (NIC)		EXIST/GWB	PT	ACT2		±8'-4"	
116	NEW CORRIDOR	<u> </u>	VCB (NIC)		EXIST/GWB	PT	EXIST		EXIST	
117	EXIST CORRIDOR	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
118	(NOT USED)									
119	(NOT USED)									
120	(NOT USED)									
121	EXIST WORK ROOM		VCB (NIC)		EXIST	PT	EXIST		EXIST	
122	EXIST MEN'S R.R.	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
123	EXIST JANITOR	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
124	EXIST CORRIDOR		VCB (NIC)		EXIST	PT	EXIST		EXIST	
125	NEW OPEN OFFICE	CPT (NIC)			EXIST/GWB		EXIST		EXIST	
126	EXIST OFFICE	CPT (NIC)			EXIST	EXIST	EXIST		EXIST	
127	NEW OPEN OFFICE	CPT (NIC)	` '		EXIST/GWB	PT	EXIST		EXIST	
128	EXIST OFFICE	CPT (NIC)			EXIST	EXIST	EXIST		EXIST	
129	EXIST OFFICE		VCB (NIC)		EXIST (OWE	EXIST	EXIST		EXIST	
130	NEW OPEN OFFICE		VCB (NIC)		EXIST/GWB		EXIST		EXIST	
131	NEW OFFICE		VCB (NIC)		EXIST/GWB		EXIST		EXIST	
132	NEW OFFICE		VCB (NIC)		EXIST/GWB		EXIST		EXIST	
133	EXIST CONFERENCE	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
134	EXIST STORAGE	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
135	EXIST OPEN OFFICE	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
136	EXIST OFFICE	EXIST EXIST	EXIST EXIST		EXIST EXIST	EXIST EXIST	EXIST EXIST		EXIST EXIST	
137	EXIST OFFICE EXIST CORRIDOR	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
138 139	EXIST ELEC/SERVER	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
140	EXIST CONFERENCE	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
141		EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
141	EXIST WOMEN'S R.R. EXIST MECH/ELEC	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
142	EXIST STORAGE	EXIST	EXIST		EXIST	EXIST	EXIST		EXIST	
144	EXIST VESTIBULE		VCB (NIC)		EXIST	PAINT	EXIST		EXIST	
144	EXIST VESTIBULE  EXIST OUTDOOR STOP		EXIST		EXIST	EXIST	EXIST		EXIST	
140	LVISI ONIDOR SINE	LVIDI	LVIOI		LVIOI	LVIOI	LVI) I		LVIOI	
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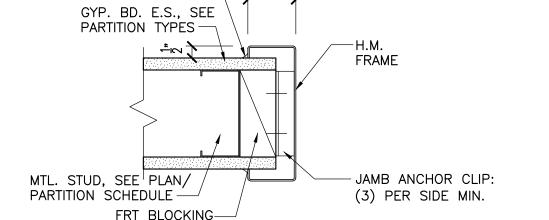
- ALL INTERIOR FINISHES SHALL MEET THE MINIMUM REQUIREMENTS SET FORTH IN 2021 VCC CHAPTER 8. 2. ALL WALL AND CEILING FINISHES SHALL BE PER VCC TABLE 803.11, TO BE THE FOLLOWING MINIMUMS:
- CLASS C (FLAME SPREAD 76-200, SMOKE DEVELOPMENT 0-450) IN ENCLOSED ROOMS.
- CLASS B (FLAME SPREAD 26-75, SMOKE DEVELOPMENT 0-450) IN CORRIDORS AND STAIRWAYS. FINISHES SHOWN HEREIN ARE SCHEMATIC, CONSULT OWNER FOR FINAL FINISH SELECTIONS.
- ALL CLOSETS & AUXILIARY SPACES SHALL HAVE SAME FLOOR AND WALL FINISHES AS ROOMS THEY ARE LOCATED IN, U.N.O. PROVIDE MOISTURE-RESISTANT GWB IN ALL LOCATIONS SUBJECT TO MOISTURE
- ANY INSULATION INSTALLED ABOVE ALL CLGS. SHALL BE 3.5" ROCKWOOL BATTS, W/ MAX. FLAME SPREAD OF 25 OR LESS. ALL TRANSITIONS BETWEEN DIFFERENT TYPES OF FLOORING SHALL BE ADA COMPLIANT. PROVIDE VINYL TRANSITION STRIP AT ALL DOORWAYS/OPENINGS BETWEEN ROOMS WITH CARPET AND ROOMS WITH VCT. PROVIDE TILE OR MARBLE TRANSITION/THRESHOLD AT ALL DOORSWAYS/OPENINGS BETWEEN ROOMS WITH TILE AND CARPET OR VCT.
- 9. REPAIR ANY DAMAGED CONCRETE FLOOR SLABS. REFINISH FLOOR SLABS TO PROVIDE SMOOTH AND UNIFORM FINISH WHERE CERAMIC
- TILE, VCT, HW OR CARPET IS TO BE INSTALLED. 10. ALL INTERIOR FLOORING MATERIALS SHALL MEET THE REQUIREMENTS OF VCC SECTIONS 804 AND 805.
- 11. CEILING HEIGHTS IN ALL OFFICE SPACES AND OTHER ROOMS WITH ACT CLGS. SHALL BE HAVE CEILINGS MOUNTED AT HIGHEST POSSIBLE HEIGHT U.N.O., G.C. COORDINATE IN FIELD WITH DUCTWORK AND OTHER PIPING.
- 12. ALL ROOMS IN SCHEDULE WITH WALLS NOTED AS "EXIST" HAVE EXISTING GWB WALLS TO REMAIN WITH ONLY MINOR PATCHING, TO BE
- 13. ALL ROOMS IN SCHEDULE WITH WALLS NOTED AS "EXIST/GWB" HAVE EXISTING GWB WALLS AND NEW GWB WALLS (OR NEW GWB
- INFILL), TO BE FINISHED PER SCHEDULE. 13. ALL ROOMS IN SCHEDULE WITH CEILINGS NOTED AS "EXIST" ARE EXISTING ACT CEILINGS TO REMAIN, TO BE PATCH/REPAIRED IF REQUIRED AND ANY DAMAGED TILES TO BE REPLACED. ANY EXISTING ACT CEILINGS WITH NEW OR RELOCATED LIGHTS OR HVAC GRILLES SHALL HAVE NEW TILES INSTALLED WHERE LIGHTS/GRILLES WERE ORIGINALLY LOCATED.
- 14. ANY CEILINGS NOTED AS "OPEN" ARE OPEN TO EXISTING STRUCTURE ABOVE 15. ACT1= USG 8678H HRC, WHITE, MARS ACOUSTIC PANELS, SHADOWLINE TAPERED EDGE W/ DX 15/16" GRID SYSTEM, WHITE.

W/ OWNER'S SEPARATE VENDOR FOR SCHEDULING WHEN TO INSTALL.

- ACT2= ARMSTRONG "FINE FISSURED" OR SIMILAR, 24"x48", SQUARE EDGE, WHITE 15/16" GRID. (MATCH EXISTING.) 16. DESIRED CEILING HEIGHTS THROUGHOUT ARE TO MATCH EXISTING/PREVIOUS CEILING HEIGHTS. EXACT FINAL CEILING HEIGHT TO BE
- DETERMINED BASED ON FINAL HVAC/DUCTWORK DWGS. 17. ALL NEW FLOORING AND BASE TO BE INSTALLED BY OWNER' SEAPRATE VENDOR AND IS NOT IN CONTRACT (NIC). GC COORDINATE
- 18. ABBREVIATIONS: POLISHED CONCRETE PC= CERAMIC OR PORCELAIN TILE CPT= CARPET (TILES) VCT= VINYL COMPOSITION TILE LVP=
- LUXURY VINYL PLANK VCB= VINYL COVE BASE GWB= GYPSUM WALLBOARD WC =WALL COVERING

PAINT

PT=

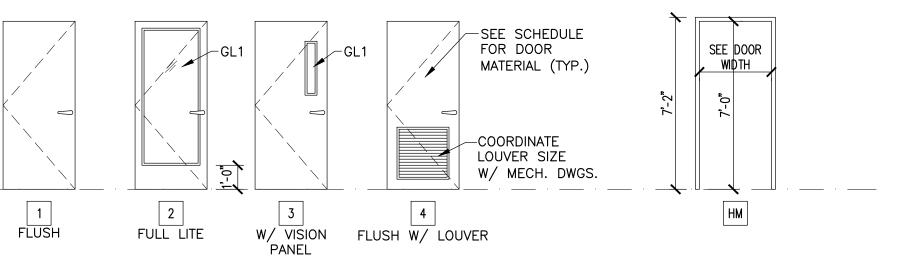


## INTERIOR HOLLOW **METAL CASED OPNG JAMB**

A1.3 SCALE: 3"=1'-0"

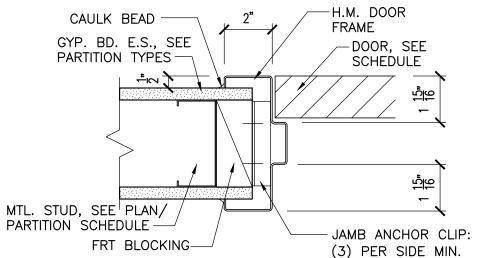
CAULK BEAD

1. HEAD SIMILAR, U.N.O. 2. ADJUST FRAME WIDTH AS REQ. FOR METAL STUDS.



**DOOR TYPES** 、A1.3**/ SCALE: 1/4"=1'-0**"

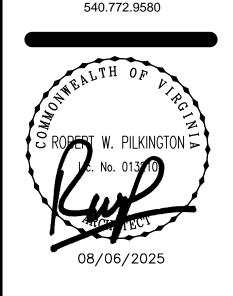




INTERIOR HOLLOW **METAL DOOR JAMB** \ A1.3 **/ SCALE: 3"=1'-0"** 

> HEAD SIMILAR, U.N.O. 2. ADJUST FRAME WIDTH AS REQ. FOR METAL STUDS.

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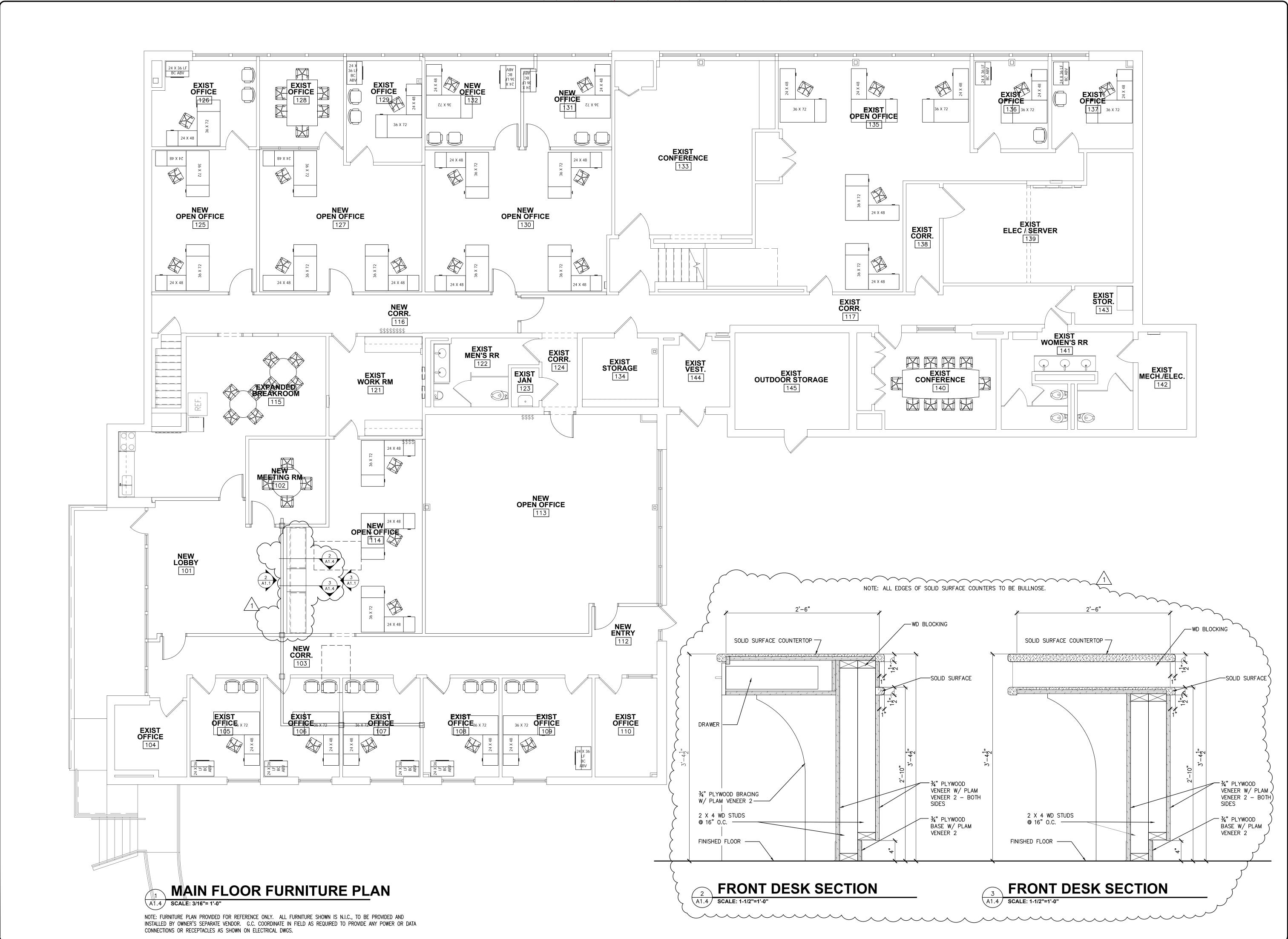
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ROANOKE COUNTY PARKS, REC & TOURISM OFFICE BUILDING RENOVATIONS

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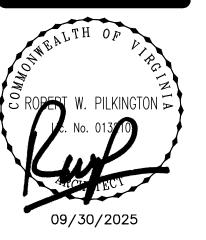
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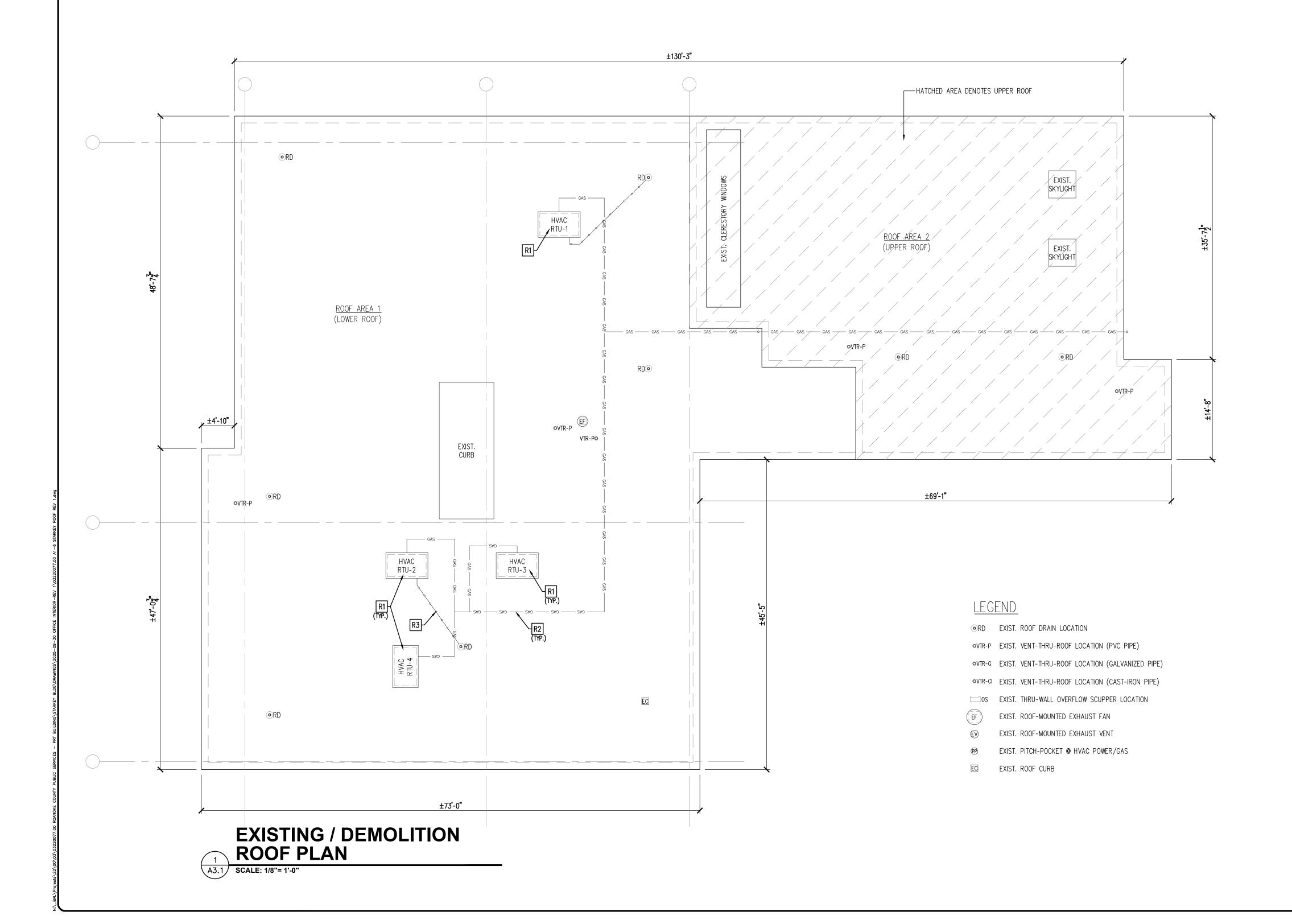
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### ROOF GENERAL NOTES:

- 1. PLEASE SEE SURVEY REPORT FOR ASBESTOS CONTAINING MATERIAL (ACM'S) DATED 08/25/2025 AND PREPARED BY A&L ENVIRONMENTAL, INC. (PROVIDED IN PROJECT MANUAL). SURVEY INDICATES THERE ARE NO ACM'S IN THE EXISTING ROOFING OF THE LOWER LEVEL ROOF. SUCH, NO DISTURBANCE OF ANY ACM'S IS ANTICIPATED AS PART OF ROOF SCREENING INSTALLATION.
- 2. RESTORE EXPOSED FINISHES OF PATCHED AREAS AND WHERE NECESSARY EXTEND FINISH RESTORATION INTO RETAINED ADJOINING WORK IN A MANNER WHICH WILL ELIMINATE EVIDENCE OF PATCHING AND REFINISHING.
- 3. ANY ITEMS SHOWN AS  $\square$   $\square$  ARE TO BE REMOVED (EXCEPT AS NOTED.)
- 4. THE CONTRACTOR IS REQUIRED TO MAKE FIELD INSPECTIONS TO VERIFY EXISTING CONDITIONS.
- 5. ALL DIMENSION NOTES ON THIS PLAN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS PRIOR TO NEW WORK. IF THE CONTRACTOR FINDS ANY DISCREPANCY BETWEEN EXISTING CONDITION AND DRAWING, CONTRACTOR MUST NOTIFY THE ARCHITECT IMMEDIATELY AND REQUEST CLARIFICATION.
- 6. CONTRACTOR MUST REMOVE EXISTING FINISHES AS NECESSARY PRIOR TO INSTALLATION OF NEW FINISHES.
- 7. DO NOT CUT AND PATCH WORK IN A MANNER THAT WOULD RESULT IN SUBSTANTIAL VISUAL EVIDENCE OF CUT AND PATCH WORK.
- 8. USE MATERIALS FOR CUTTING AND PATCHING THAT ARE IDENTICAL TO EXISTING MATERIALS.
- 9. ANY DEMOLISHED MATERIAL SHALL BE REMOVED FROM SITE U.N.O.
- 10. QUANTITIES: CONTRACTOR RESPONSIBLE FOR VERIFYING QUANTITIES OF ALL MATERIALS TO BE DEMOLISHED AND REMOVED FROM SITE OR NEW MATERIALS REQUIRED.
- 11. SEE MECHANICAL DRAWINGS FOR DETAILS FOR ANY NEW/REPLACEMENT HVAC EQUIPMENT.
- 12. SCOPE OF ROOF ARCHITECTURAL WORK UNDER THIS PERMIT/BID INCLUDES INSTALLATION OF NEW SCREENING OF ROOF-MOUNTED EQUIPMENT IN LOCATIONS SHOWN. G.C. SHALL BE RESPONSIBLE FOR ANY REQUIRED PATCHING OF ROOF AFTER INSTALLATION OF SCREENING, IF REQUIRED. ROOF PATCHING SHALL BE PROVIDE UTILIZING EPDM ROOF MEMBRANE TO MATCH EXISTING ROOF, INSTALLED PER MEMBRANE MANUFACTURER'S INSTRUCTIONS.



### **ROOF KEY NOTES:**

- NEW ROOF-MOUNTED HVAC UNIT, SEE SHEET M4.3 FOR ALL DETAILS. (NOTE: RTU'S 2, 3 & 4 ARE APPROXIMATELY 4'-5" HIGH ABOVE ROOF SURFACE, INCLUDING CURBS.)
- R2 EXIST. GAS-PIPING TO ROOF-MOUNTED HVAC.
- R3 NEW PVC CONDENSATE DRAIN LINES TO ROOF-MOUNTED HVAC UNITS, SEE SHEET M4.3 FOR ALL DETAILS.

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- INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE 2021 VIRGINIA UNIFORM STATEWIDE BUILDING CODE INCLUDING REFERENCED CODES AND STANDARDS AND IN ACCORDANCE WITH MANDATES OF THE LOCAL BUILDING OFFICIALS.
- B. THE GENERAL ARRANGEMENT AND LOCATIONS OF DUCTWORK, PIPING, FIXTURES, ETC. ARE INDICATED BY THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE THEREWITH: WITH THE EXCEPTION OF SUCH CHANGES AS MAY BE REQUIRED ON ACCOUNT OF OTHER TRADES. CONTRACTOR SHALL COORDINATE WORK WITH INSTALLA-TION OF OTHER SUBCONTRACTORS.
- C. MECHANICAL WORK SHALL BE COORDINATED WITH THE CONTRACTOR AS TO SCHEDULING, DIMENSIONING AND LOCATION OF EQUIPMENT.
- D. MAJOR ITEMS ARE SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
- E. ROOFTOP UNITS, AIR CONDITIONERS, CONDENSING UNITS AND AIR HANDLERS SHALL BE TRANE OR EQUIVALENT FACTORY FABRICATED UNITS MANUFACTURED BY YORK OR CARRIER ONLY. THE DUCTLESS SPLIT SYSTEM SHALL BE TRANE MITSUBISHI OR EQUIVALENT UNITS MANUFACTURED BY CARRIER OR SANYO NO OTHER EQUIPMENT MANUFACTURERS WILL BE CONSIDERED. YORK, CARRIER, OR SANYO MATERIALS PROPOSED AS EQUAL TO MATERIALS SPECIFIED SHALL BE SUBMITTED IN WRITING TO THE OWNER BY THE BIDDER WITH FULL SUBSTANTIATING DATA FOR EVALUATION NO LATER THAN FIFTEEN (15) DAYS PRIOR TO BID OPENING. PROPOSED AS EQUAL YORK, CARRIER, OR SANYO MATERIALS WHICH EQUALS OR EXCEEDS THE PERFORMANCE STANDARD OF THE SPECIFIED MATERIALS IN THE SOLE JUDGMENT OF THE OWNER WILL BE INCLUDED IN AN ADDENDUM ISSUED PRIOR TO THE BID OPENING DATE. CONTRACTOR SHALL PROVIDE THE OWNER AND ARCHITECT WITH A DIGITAL FILE OF PROPOSED SUBMITTAL DATA PREPARED BY THE UNIT MANUFACTURER FOR APPROVAL. THE UNITS SHALL HAVE THE CAPACITIES AND CHARACTERISTICS AS SHOWN ON THE DRAWINGS. DRAWINGS SHOWING CHANGES OR REVISIONS REQUIRED BY AN APPROVED YORK, CARRIER, OR SANYO MATERIALS EQUAL SHALL BE SUBMITTED WITH THE SHOP DRAWING DATA, AND THE COST OF ALL SUCH CHANGES SHALL BE BORNE BY THE CONTRACTOR.
- F. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
- G. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE CONTRACTOR.
- H. ALL PIPING SHALL BE ABOVE CEILING UNLESS INDICATED OTHERWISE.
- I. DO NOT INSTALL PVC PIPING OR ANY COMBUSTIBLE MATERIAL IN ANY AIR PLENUM.
- J. ALL EQUIPMENT SHALL BE WIPED CLEAN, REMOVING ALL TRACES OF OIL, DIRT, OR PAINT SPOTS.
- K. PROVIDE SUPPORTS TO RIGIDLY ATTACH ALL EQUIPMENT, APPURTENANCES AND PIPE AS REQUIRED FOR SUPPORT. PRIOR TO INSTALLATION OF HANGERS AND INSERTS, THE CONTRACTOR SHALL COORDINATE LOCATIONS AND REQUIREMENTS TO MINIMIZE CONFLICTS WITH OTHER BUILDING SYSTEMS. INSTALLATION OF PIPE HANGERS AND SUPPORTS SHALL BE IN STRICT ACCORDANCE
- CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.
- M. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECT WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.
- SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND PROJECT
- INFORMATION A. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
- (1) MECHANICAL SLEEVE SEALS FIRE BARRIER PENETRATION SEALS

WITH MSS SP-58, 69 AND 89.

- (3) INSULATION
- ALL MECHANICAL EQUIPMENT B. IDENTIFY ALL MECHANICAL SHOP DRAWINGS, PRODUCT DATA AND
- SAMPLES WITH THE NAME OF THE PROJECT. CLEARLY MARK THE SPECIFIC ITEMS INTENDED FOR USE. SUBMIT ALL RELATED ITEMS AT ONE TIME.
- C. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, SUBMIT THE FOLLOWING INFORMATION FOR REVIEW AND APPROVAL.
- OPERATING AND MAINTENANCE INSTRUCTIONS. "AS BUILT" DRAWINGS.
- GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTS WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE
- 4. "AS BUILT" DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF THE LOCATION OF ALL CONCEALED DUCTWORK, PIPING, VALVES, CONTROLS, ETC., BOTH INTERIOR AND EXTERIOR. ON COMPLETION OF THE WORK, ONE PRINT EACH OF THE CONTRACT DRAWINGS WHICH ARE APPLICABLE SHALL BE NEATLY AND CLEARLY MARKED IN COLOR TO SHOW ALL VARIATIONS BETWEEN THE WORK ACTUALLY PROVIDED AND THAT INDICATED ON THE CONTRACT DRAWINGS.

### 5. OPERATING AND MAINTENANCE MANUALS

- A. GENERAL: PRIOR TO COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE TWO HARDBACKED LOOSELEAF RING TYPE BINDERS, IDENTIFIED WITH THE NAME OF THE PROJECT. CONTRACTOR SHALL DELIVER THESE BINDERS TO THE ENGINEER FOR REVIEW AND TRANSMITTAL TO THE OWNER.
- B. THE FOLLOWING ITEMS AND OTHER ADDITIONAL PERTINENT DATA FOR EACH ITEM OF EQUIPMENT SHALL BE INCLUDED:
  - (1) NAME OF MANUFACTURER. NAME, ADDRESS AND TELEPHONE NUMBER OF NEAREST
  - MANUFACTURER'S REPRESENTATIVE. COPY OF LATEST APPROVED SHOP DRAWING.
- MANUFACTURER'S OPERATING AND MAINTENANCE MANUAL INCLUDING LUBRICATION DATA. PARTS NUMBERS FOR ALL REPLACEABLE ITEMS. SERIAL NUMBERS OF ALL PRINCIPAL ITEMS OF EQUIPMENT.

CONTROL DIAGRAMS AND SEQUENCE OF OPERATION.

MANUFACTURER'S WRITTEN GUARANTEES THAT EXTEND

BEYOND THE CONTRACTOR'S ONE YEAR GUARANTEE.

- C. THE OPERATING AND MAINTENANCE MANUALS SHALL BE CONSIDERED A PART OF THE FINAL INSPECTION AND THEY SHALL BE SUBMITTED FOR APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO REQUEST FOR FINAL INSPECTION.
- ACCESS DOORS: ACCESS DOORS SHALL BE PROVIDED FOR ALL CONCEALED VALVES, CONTROLS, AND ANY OTHER EQUIPMENT OR MATERIALS REQUIRING INSPECTION OR MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED FOR FLOORS, WALLS AND CEILINGS, OF ADEQUATE SIZE SO THAT CONCEALED ITEMS WILL BE READILY ACCESSIBLE FOR SERVICING OR FOR REMOVAL AND REPLACEMENT IF NECESSARY.

- A. SCOPE OF WORK: MECHANICAL EQUIPMENT, MATERIALS, AND RELATED PIPING DO NOT REQUIRE PAINTING EXCEPT AS INDICATED BELOW.
- B. EQUIPMENT WITH A FACTORY APPLIED FINISH WILL NOT REQUIRE ADDITIONAL PAINTING EXCEPT TOUCH-UP WITH MATCHING FINISH WHERE IT IS DAMAGED.
- C. PIPING, FABRICATED SUPPORTS, OR OTHER UNFINISHED AND UNPROTECTED MATERIALS LOCATED OUTDOORS SHALL BE PAINTED WITH A SUITABLE PRIMER AND COMPATIBLE FINISH PAINT. COLOR SHALL BE AS DIRECTED BY ENGINEER.
- D. PAINT INSIDE OF DUCTWORK WITH MATTE BLACK PAINT WHERE VISIBLE BEHIND AIR INLETS AND OUTLETS.
- PROTECTION OF WORK: PAINTING SHALL BE DONE WITH ALL POSSIBLE CARE TO PROTECT THIS WORK AND WORK OF OTHER TRADES. ALL DAMAGE TO THIS AND OTHER WORK CAUSED BY THE PAINTING OPERATIONS SHALL BE CORRECTED, CLEANED OR REPAIRED AS REQUIRED. HARDWARE. SPECIAL CONTROL ITEMS. GAUGES, THERMOMETERS, NAMEPLATES, INSTRUMENT GLASS AND OTHER SIMILAR ITEMS SHALL BE REMOVED OR PROPERLY PROTECTED DURING THE PAINTING OPERATIONS TO INSURE THAT THESE ITEMS ARE NOT COVERED OR SPLATTERED WITH PAINT.

### 8. IDENTIFICATION

- - (1) SUBMIT LIST OF WORDING, SYMBOLS, LETTER SIZE, AND COLOR CODING FOR MECHANICAL IDENTIFICATION. (2) SUBMIT VALVE CHART AND SCHEDULE, INCLUDING VALVE

TAG NUMBER, LOCATION, FUNCTION, AND VALVE

MANUFACTURER'S NAME AND MODEL NUMBER. (3) PRODUCT DATA: PROVIDE MANUFACTURERS CATALOG LITERATURE FOR EACH PRODUCT REQUIRED.

### B. NAMEPLATES

- (1) DESCRIPTION: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED LETTERS ON LIGHT CONTRASTING BACKGROUND
- (1) METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE
- MINIMUM 1-1/2 INCHES (40 MM) DIAMETER. (2) CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.

### D. STENCILS

- (1) STENCILS: WITH CLEAN CUT SYMBOLS AND LETTERS OF FOLLOWING SIZE: (A) 3/4 TO 1-1/4 INCHES (20-30 MM) OUTSIDE
  - DIAMETER OF INSULATION OR PIPE: 8 INCHES (200 MM) LONG COLOR FIELD, 1/2 INCHES (15 MM) HIGH LETTERS.
  - (B) 1-1/2 TO 2 INCHES (40-50 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCHES (200 MM) LONG COLOR FIELD, 3/4 INCH (20 MM) HIGH LETTERS.
  - (C) 2-1/2 TO 6 INCHES (65-150 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 12 INCHES (300 MM) LONG COLOR FIELD, 1-1/4 INCHES (30 MM) HIGH
  - (D) 8 TO 10 INCHES (200-250 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 24 INCHES (600 MM) LONG COLOR FIELD, 2-1/2 INCHES (65 MM) HIGH

### (E) OVER 10 INCHES (250 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 32 INCHES (800 MM) LONG COLOR FIELD, 3-1/2 INCHES (90 MM) HIGH

- (F) DUCTWORK AND EQUIPMENT: 2-1/2 INCHES (65 MM) HIGH LETTERS.
- (2) STENCIL PAINT: AS SPECIFIED IN SECTION 09900, SEMI-GLOSS ENAMEL, COLORS CONFORMING TO ASME A13.1.

- COLOR: CONFORM TO ASME A13.1. PLASTIC PIPE MARKERS: FACTORY FABRICATED, FLEXIBLE, SEMI- RIGID PLASTIC, PREFORMED TO FIT AROUND PIPE OR PIPE COVERING; MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.
- CEILING TACKS (1) DESCRIPTION: STEEL WITH 3/4 INCH (20 MM) DIAMETER
  - COLOR CODED HEAD. (2) COLOR CODE AS FOLLOWS:
    - YELLOW HVAC EQUIPMENT RED - FIRE DAMPERS/SMOKE DAMPERS GREEN - PLUMBING VALVES

(D) BLUE - HEATING/COOLING VALVES

### G. INSTALLATION

- (1) DEGREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR **IDENTIFICATION MATERIALS.** (2) INSTALL PLASTIC NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS, OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION
- AND SEAL WITH CLEAR LACQUER. INSTALL TAGS WITH CORROSION RESISTANT CHAIN. INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH
- MANUFACTURER'S INSTRUCTIONS. IDENTIFY AIR CONDITIONING UNITS AND FANS WITH PLASTIC
- NAMEPLATES OR STENCIL PAINTING. IDENTIFY CONTROL PANELS AND MAJOR CONTROL
- COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES. (7) IDENTIFY DUCTWORK WITH PLASTIC NAMEPLATES OR STENCILLED PAINTING. IDENTIFY WITH AIR HANDLING UNIT OR FAN AND AREA BEING SERVED.
- (8) TAG AUTOMATIC CONTROLS, INSTRUMENTS, AND RELAYS.
- KEY TO CONTROL SCHEMATIC. (9) IDENTIFY PIPING, CONCEALED OR EXPOSED, WITH PLASTIC PIPE MARKERS OR STENCILLED PAINTING. IDENTIFY SERVICE, FLOW DIRECTION, AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET (6 M) ON STRAIGHT RUNS INCLUDING RISERS AND DROPS. ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION
- OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION. (10) PROVIDE CEILING TACKS TO LOCATE VALVES ABOVE T-BAR TYPE PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.

### INSULATION

- A. FLAME/SMOKE RATINGS: PROVIDE COMPOSITE PLUMBING INSULATION (INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES) WITH FLAME-SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ANSI/ASTM E84 (NFPA 255) METHOD. INSULATION SHALL BE LABELED BY THE MANUFACTURER. THE LABEL SHALL INDICATE THE INSULATING VALUE, FLAME SPREAD AND SMOKE-DEVELOPED
- SUBMITTALS: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF PLUMBING INSULATION. SUBMIT SCHEDULE SHOWING MANUFACTURER'S PRODUCT NUMBER, THICKNESS, AND FURNISHED ACCESSORIES FOR EACH PLUMBING SYSTEM REQUIRING INSULATION.
- C. INSTALLATION: INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING ONLY ADHESIVES. MASTICS AND PLUMBING FASTENERS APPROVED BY THE INSULATION MANUFACTURER. INSULATION SHALL NOT BE APPLIED UNTIL AFTER THE EQUIPMENT HAS BEEN TESTED WITH RESULTS ACCEPTABLE TO THE ARCHITECT/ENGINEER. INSULATION WITH A VAPOR BARRIER JACKET SHALL BE APPLIED WITH A CONTINUOUS. UNBROKEN VAPOR SEAL AND ALL JOINTS SHALL BE SEALED WITH A VAPOR BARRIER ADHESIVE UNLESS OTHERWISE INDICATED. STAPLES, STICK CLIPS AND HANGERS SHALL BE VAPOR SEALED WHERE THEY PUNCTURE VAPOR BARRIER JACKETS.

### D. MATERIALS:

- (1) FLEXIBLE DUCT INSULATION: ASTM C1290, MINERAL FIBER BLANKET, WITH OPERATING TEMPERATURE OF 250°F THERMAL CONDUCTIVITY "K"=0.30 AT 75°F, DENSITY=0.75 LB/CU. FT. F AT 75 DEGREES F. FACTORY APPLIED JACKET (ASJ) SHALL CONSIST OF WHITE KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBER YARN. EQUAL TO OWENS-CORNING ASJ.
- (2) ELASTOMERIC CELLULAR FOAM PIPE INSULATION: ASTM C534, TYPE 1 TUBULAR FORM, UNSLIT TUBING OR PRE-SLIT TUBULAR WITH FACTORY APPLIED PRESSURE SENSITIVE ADHESIVE. "K"=0.27 AT 75 DEGREES F. SERVICE TEMPERATURE 0°F TO 200°F. NO JACKET REQUIRED.

### E. DUCT INSULATION

- (1) DUCT INSULATION: INSULATE ALL CONCEALED SUPPLY AIR, OUTDOOR AIR DUCTS AND RETURN.
- (2) PROVIDE INSULATION WITH VAPOR RETARDER JACKETS. PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING
- (3) EXTEND DUCT INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.
- (4) INSTALL PROTECTIVE METAL SHIELDS AND INSULATED INSERTS WHEREVER NEEDED TO PREVENT COMPRESSION OF
- (5) SUPPLY, RETURN AND OUTSIDE AIR DUCTS: INSULATE WITH 2" THICK FLEXIBLE DUCTWORK INSULATION.

### F. PIPE INSULATION

(1) REFRIGERANT SUCTION AND HOT GAS PIPING: INSULATE 1-1/2\* AND SMALLER PIPES WITH 1-1/2" THICK ELASTOMERIC CELLULAR FOAM INSULATION. INSULATE LARGER THAN 1-1/2" PIPES WITH 2" THICK ELASTOMERIC CELLULAR FOAM.

### 10. DUCTWORK

- GALVANIZED STEEL DUCTS: ASTM A653/A653M GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY, HAVING G60 ZINC COATING IN CONFORMANCE WITH ASTM A90/90M. EXPOSED DUCTWORK TO BE SUITABLE FOR PAINTING. COLOR TO BE SELECTED BY ARCHITECT.
- FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
- C. WHERE RECTANGULAR ELBOWS ARE USED, FURNISH TURNING VANES.
- INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15° DIVERGENCE WHEREVER POSSIBLE; Maximum 30° divergence upstream of equipment and 45° ceonvergence downstream.
- E. FLEXIBLE DUCT CONNECTIONS SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
- VOLUME CONTROL DAMPERS SHALL BE RUSKIN MODEL MD-35 AND SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS — METAL AND FLEXIBLE.

### 11. NATURAL GAS SYSTEMS

### A. GAS SERVICE PIPING:

- (1) ALL SIZES: SCHEDULE 40 BLACK STEEL PIPE, ASTM A120/A53-CW OR ASTM/A53 GRADE B (WELDED OR SEAMLESS): WROUGHT STEEL BUTTWELDING FITTINGS
- (2) WRAPPING FOR EXPOSED PIPING: MACHINE WRAP PIPE USING 50% OVERLAP WRAP, WITH POLYVINYL CHLORIDE TAPE. HAND WRAP FITTINGS USING 100% OVERLAP WRAP EXTENDING 6 INCHES BEYOND FITTING ONTO WRAPPED PIPE. COMPLY WITH TAPE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

### B. BUILDING DISTRIBUTION PIPING AND VENT PIPING:

(1) ALL SIZES: SCHEDULE 40 BLACK STEEL PIPE. ASTM A120/A53-CW OR ASTM/A53 GRADE B (WELDED OR SEAMLESS); MALLEABLE IRON THREADED FITTINGS (EXPOSED PIPING ONLY); WROUGHT STEEL BUTTWELDING FITTINGS (CONCEALED AND EXPOSED PIPING).

### C. GAS COCKS:

- (1) GAS COCKS 2 INCHES AND SMALLER: 150 PSI NON-SHOCK WOG, BRONZE STRAIGHTWAY COCK, FLAT OR SQUARE HEAD, THREADED ENDS.
- (2) GAS COCKS 2-1/2 INCHES AND LARGER: 125 PSI NON-SHOCK WOG, IRON BODY BRONZE MOUNTED, STRAIGHTWAY COCK, SQUARE HEAD, FLANGED ENDS.
- ALL GAS PIPING EQUIPMENT CONNECTIONS SHALL BE PROVIDED WITH A 6 INCHES DIRT TRAP, UNION AND GAS COCK SHUT OFF.
- E. ALL JOINTS SHALL BE SEALED WITH CHEMICALLY RESISTANT SEALER APPLIED TO MALE THREADS OF PIPE CONNECTION.
- F. GAS PIPING SHALL BE INSTALLED WITH A 1/64 INCH PER FOOT DOWNWARD SLOPE IN DIRECTION OF FLOW.

### 12. DIFFUSERS, REGISTERS AND GRILLES

- A. DIFFUSERS, REGISTERS AND GRILLES SHALL BE THE TYPE, MATERIAL, AIR PATTERN AND FINISH INDICATED ON THE DRAWINGS.
- B. INSTALL AIR OUTLETS AND INLETS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL DIFFUSERS, REGISTERS AND GRILLES TO DUCTWORK WITH AIRTIGHT CONNECTION.

### 13. CLEANING AND TESTING

- A. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION WITH CLEANING MATERIALS APPROPRIATE TO THE SURFACE AND MATERIAL BEING CLEANED. CLEAN DUCT SYSTEMS AND FORCE AIR AT HIGH VELOCITY THROUGH DUCT TO REMOVE ACCUMULATED DUST.
- B. REPLACE FILTERS OF OPERATING EQUIPMENT.
- C. HEATING AND COOLING SYSTEMS AND EXHAUST SYSTEMS SHALL BE TESTED, ADJUSTED AND BALANCED (TAB). AIR HANDLING SYSTEMS SHALL BE ADJUSTED TO WITHIN +/- 10% OF DESIGN. THE TOTAL OF AIR OUTLETS AND INLETS SHALL BE ADJUSTED TO WITHIN PLUS 10% AND MINUS 5% OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN +/- 10% OF DESIGN.
- D. THE TAB CONTRACTOR SHALL NOT BE AFFILIATED IN ANY WAY BE WITH THE INSTALLING CONTRACTOR OR EQUIPMENT SUPPLIERS.



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Roanoke, VA 24018

Roanoke / Richmond





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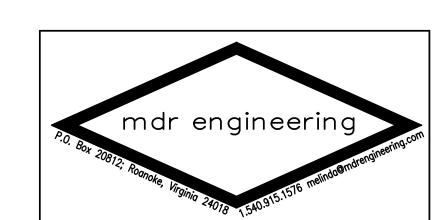
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		SUPPLY FAN	<u> </u>		AIR	HANDLER ELECTE	RICAL		COO	LING	HF	P ELEC.		SELECTION BASED ON	WEIGHT
UNIT	SUPPLY CFM	OUTSIDE AIR (CFM)	ESP (IN. WATER)	VOLTAGE	PHASE	ELEC HEAT (KW AT 208V)	CIRCUITS	MCA/MOP	TOTAL (MBH)	SENSIBLE (MBH)	VOLTAGE	PHASE	MCA/MOP	TDANE	(LBS.) AH/HP
AH/HP-1	800	100	0.75	208	1	10.8	2	1 <b>@</b> 47/50 1 <b>@</b> 22/25	22.2	16.9	208	1	13/20	AIR HANDLER TEM6A0B24H21S, HEATPUMP 4TWR4024N1	120/175

- SCHEDULE NOTES:

  1. AIR HANDLER- DIRECT DRIVE, VARIABLE SPEED MOTOR, COPPER TUBES, ALUMINUM FINS. REFRIGERANT METERING DEVICE, SLOPED CONDENSATE PAN. HEAT PUMP
- MATCHED WITH INDOOR COIL, R-454B REFRIGERANT, MINIMUM 15.0 SEER. 2. CONNECT TO EXISTING CONDENSATE DRAIN.
- 3. UL LISTED ELECTRIC HEATER, HIGH LIMIT CONTROLS.
- 4. TRANE SYMBIO CONTROLS WITH WALL MOUNTED THERMOSTAT CONNECTED TO TRANE SC+ BUILDING CONTROLLER.

					AIR (	CON	DITIONE	R SC	HEDU	LE						
		SUPPLY FAN			AIR	CONDITIONE	R ELECTRICAL	COOL	ING	HEA	TING	cu	ELEC.		SELECTION BASED ON	WEIGHT
UNIT	SUPPLY CFM	OUTSIDE AIR (CFM)	ESP (IN. WATER)	MOTOR HP	VOLTAGE	PHASE	MCA/MOP	TOTAL (MBH)	SENSIBLE (MBH)	TOTAL (MBH)	GPM	VOLTAGE	PHASE	MCA/MOP	TRANE	WEIGHT (LBS.) AH/HP
AC-1/CU-1	2300	250	0.75	3.0	208	3	13/20	90	63	68.6	6.8	208	3	38/60	AIR CONDITIONER TWE090K3, CONDENSING UNIT TTA090K3	430/300
AC-2/CU-2	3100	250	0.75	0.75	208	3	13/20	120	95	85.9	8.6	208	3	43/50	AIR CONDITIONER TWE120K3, CONDENSING UNIT TTA120K3	500/380

- SCHEDULE NOTES:

  1. AIR CONDITIONER— DIRECT DRIVE, SINGLE ZONE VAV, COPPER TUBES, ALUMINUM FINS. REFRIGERANT METERING DEVICE, SLOPED CONDENSATE PAN. CONDENSING
- UNIT MATCHED WITH INDOOR COIL, R-454B REFRIGERANT, MINIMUM 15.0 SEER.
- 2. CONNECT TO EXISTING CONDENSATE DRAIN.
- 3. HEATING WATER COIL. 4. TRANE SYMBIO CONTROLS WITH WALL MOUNTED THERMOSTAT CONNECTED TO TRANE SC+ BUILDING CONTROLLER.

ROOFT	OP UNIT SCHE	DULE	•											
MARK	MANUFACTURER &	SA	OA OTA	EVAP. FAN	VOLTS	S.P. In Wg	С	OOLING SECTION		HEATII	NG SECTION		11000	WEIGHT (LDC)
	MODEL NO.	CFM	CFM	HP	ø	EXT.	TOTAL CAP, MBH	SENS CAP, MBH	EAT	INPUT, MBH	OUTPUT, MBH	MCA	MOCP	WEIGHT (LBS)
RTU-1	TRANE YSK102A3	3400	330	3.1	208/3	1.0	102.0	95.8	81.0/67.6	150	121.5	53	70	1200
RTU-2	TRANE YSK048A3	1600	150	1.0	208/3	1.0	48.0	33.2	81.7/66.4	100	81	27	40	800
RTU-3	TRANE YSK048A3	1600	150	1.0	208/3	1.0	48.0	33.2	79.1/65.9	100	81	27	40	800
RTU-4	TRANE YSK048A3	1600	150	1.5	208/3	1.0	48.0	33.2	79.1/65.9	100	81	29	40	800

- . UNITS TO HAVE ONE YEAR MANUFACTURER'S WARRANTY INCLUDING PARTS, LABOR AND REFRIGERANT, FIVE YEAR MANUFACTURER'S WARRANTY FOR COMPRESSORS.
- 2. UNIT TO HAVE HINGED ACCESS DOORS, NON-FUSED DISCONNECT SWITCH, CONDENSER COIL GUARDS, LOW AMBIENT CONTROL, LOW LEAKAGE OUTDOOR AIR DAMPERS, ECONOMIZER
- WITH DIFFERENTIAL ENTHALPY AND BAROMETRIC RELIEF, MERV 8 FILTERS. THROUGH THE BASE ELECTRICAL, ADAPT-A-CURB. 3. TRANE SYMBIO ADVANCED CONTROLS INCLUDING WALL MOUNTED THERMOSTAT CONNECTED TO TRANE SC+ BUILDING CONTROLLER.

DUCTI FSS	SPLIT	AIR	CONDITIONING	SYSTEM

<u>DSS-1:</u> INDOOR WALL MOUNTED UNIT - TRANE MITSUBISHI TRUYA0361KA70NA, OUTDOOR CONDENSING UNIT - TRANE MITSUBISHI TPKA0A0361KA80A

- A. 36,000 BTU/HR COOLING, 920 CFM, 19.4 SEER, R-410A. 208 VOLTS, SINGLE PHASE, 31A MOCP, FEED TO OUTDOOR UNIT.
- DC INVERTER COMPRESSOR.
- WALL MOUNTED, HARD WIRED CONTROLLER.
- PROVIDE LOW AMBIENT CONTROL TO 0 DEGREES F. PROVIDE CONDENSATE PUMP AS REQUIRED.
- G. AUTO RESTART ON POWER FAILURE.
- COORDINATE INDOOR UNIT LOCATION WITH EQUIPMENT. I. MOUNT TRANE THERMOSTAT IN ROOM TO ALARM AND MONITOR SPACE TEMPERATURE.

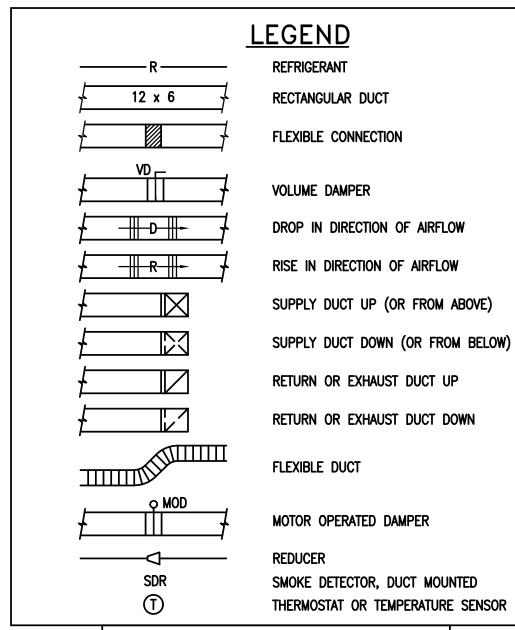
### BOILERS

BOILER 1 AND BOILER 2: NAVIEN NFB-175H HIGH EFFICIENCY CONDENSING BOILER. 175 MBH INPUT, 120V/1ø.

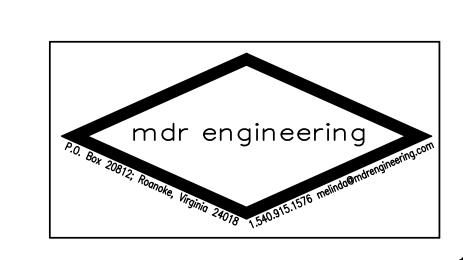
					T SC					
	COOL	JNG	INLET	MIN Sp.		HE/	ATING C	OIL		
MARK	MAX CFM	MIN CFM	SIZE, In.	; ≥¥	CFM	MBH	KW	STAGES	VOLT/ PHASE	MODE
VAV-1	700	400	08	0.1	400	8.5	2.5	SCR	208/1	VCEF
VAV-2	380	250	08	0.1	250	5.1	1.5	SCR	208/1	VCEF
VAV-3	360	240	06	0.1	240	5.1	1.5	SCR	208/1	VCEF
VAV-4	300	200	05	0.1	200	5.1	1.5	SCR	208/1	VCEF
VAV-5	1300	850	10	0.1	850	15.4	4.5	SCR	208/1	VCEF
VAV-6	800	550	08	0.1	550	10.2	3.0	SCR	208/1	VCEF

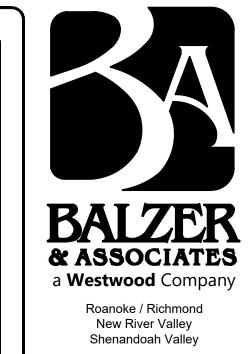
1. PROVIDE FACTORY MOUNTED TRANE SYMBIO DIGITAL CONTROLLER, CONTROL TRANSFORMER, & WALL MOUNT TEMPERATURE SENSOR FOR EACH UNIT. EACH TEMPERATURE SENSOR SHALL HAVE SETPOINT ADJUSTMENT AND OVERRIDE PUSHBUTTON.

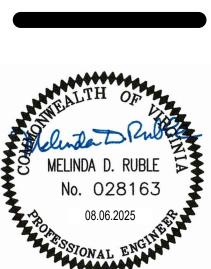
GR	ILLES, REGISTERS	AND DIFFUSERS SCHEDULE							
MARK	MANUFACTURER & MODEL NO.	DESCRIPTION	MATERIAL	FINISH	ACCESSORIES & FEATURES				
SUPPLY I	DIFFUSERS		-						
CD-1	METALAIRE 5800-6	24"x24" DIRECTIONAL DIFFUSER WITH 8"Ø NECK FOR LAY-IN CEILING	STEEL	WHITE	MODEL BDS DAMPER				
CD-2	METALAIRE 5800-6	24"x24" DIRECTIONAL DIFFUSER WITH 10"Ø NECK FOR LAY—IN CEILING	STEEL	WHITE	MODEL BDS DAMPER				
GRILLES	GRILLES & REGISTERS								
CG-1	METALAIRE 7500R-6	24"x24" PERFORATED GRILLE WITH 12"Ø NECK FOR LAY-IN CEILING	STEEL	WHITE					



**ABBREVIATIONS** BRITISH THERMAL UNIT CEILING DIFFUSER CEILING FIRE DAMPER CUBIC FEET PER MINUTE CEILING GRILLE COEFFICIENT OF PERFORMANCE CEILING REGISTER DRY BULB TEMPERATURE ENTERING AIR TEMPERATURE ENERGY EFFICIENCY RATIO EFFICIENCY EXT EXTERNAL DEGREES FAHRENHEIT FEET PER MINUTE HORSEPOWER INCH, INCHES LEAVING AIR TEMPERATURE MAXIMUM THOUSAND BTU PER HOUR **VOLUME DAMPER** MOUNTING HEIGHT MINIMUM MOTOR OPERATED DAMPER NORMALLY CLOSED NOT IN CONTRACT NORMALLY OPEN OUTSIDE AIR PRESSURE DROP PRESSURE SENSOR POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH GAGE return air STATIC PRESSURE TEMPERATURE TOP GRILLE TOP REGISTER WET BULB TEMPERATURE WC, WG WATER COLUMN ABOVE FINISHED FLOOR ACCESS DOOR BETWEEN CEILING CONNECT, CONNECTION CONT CONTINUED EA **FLOOR** FLEXIBLE FROM GALVANIZED REQD REQUIRED SDR FDPR DUCT MOUNTED SMOKE DETECTOR FIRE DAMPER







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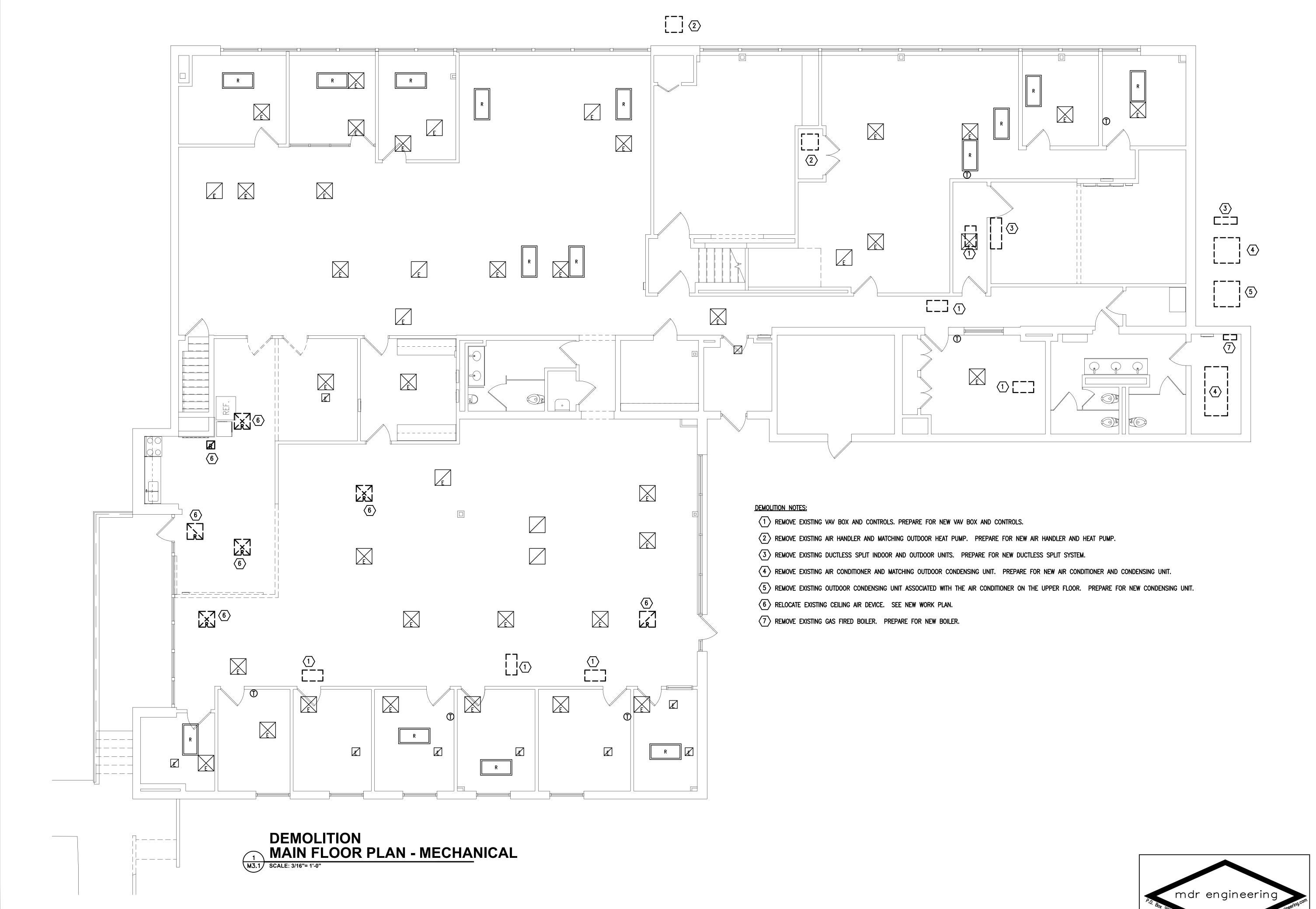
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TOURISM R ARK COUNTY

ROANOKE

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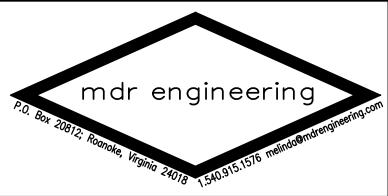
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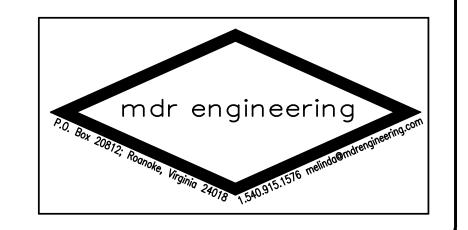
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# DEMOLITION UPPER FLOOR PLAN - MECHANICAL SCALE: 3/16"= 1'-0"

### **DEMOLITION NOTES:**

- (1) REMOVE EXISTING AIR CONDITIONER ASSOCIATED WITH THE CONDENSING UNIT ON THE LOWER FLOOR. PREPARE FOR NEW AIR CONDITIONER.
- 2 REMOVE EXISTING GAS FIRED BOILER. PREPARE FOR NEW BOILER.



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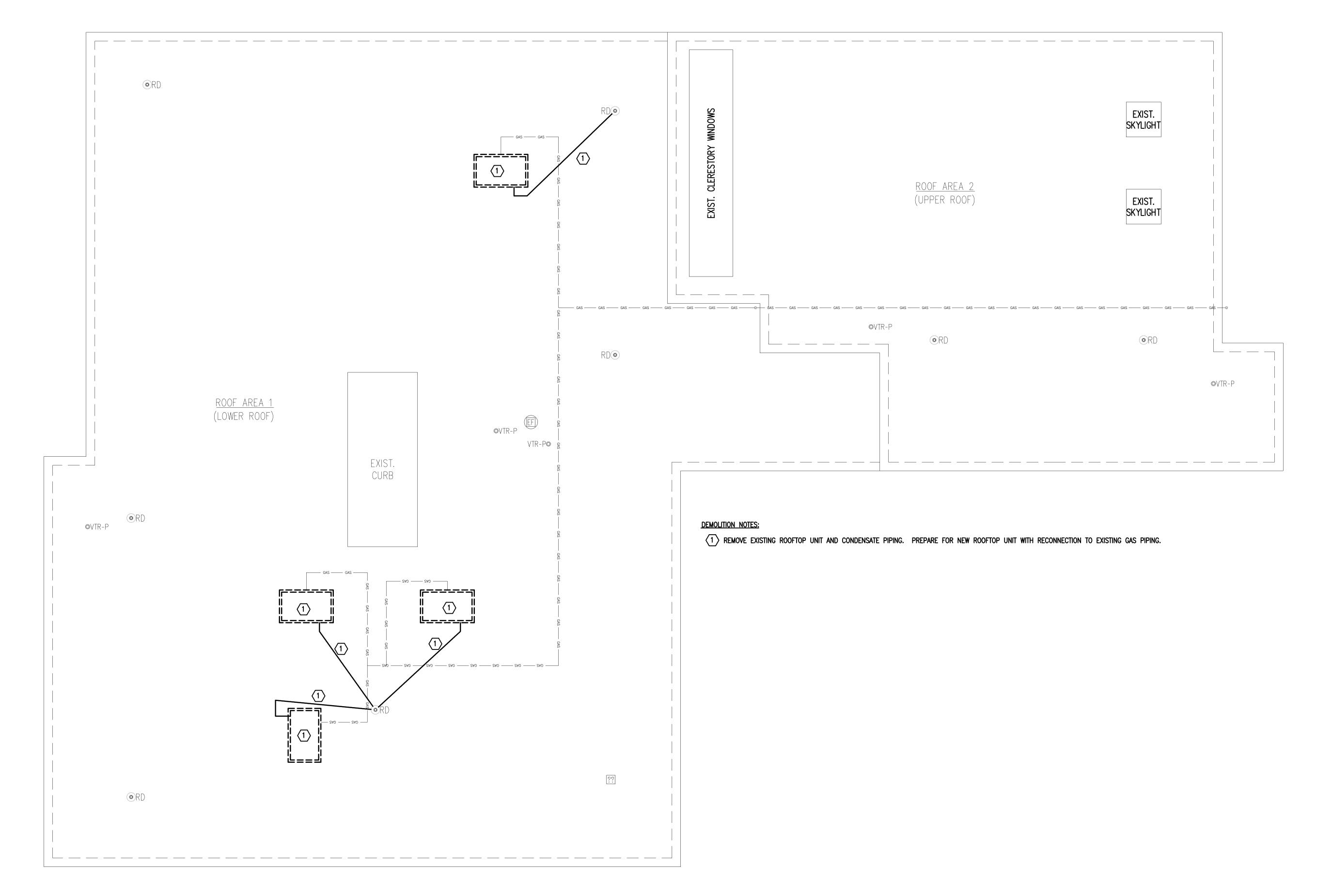


ROANOKE COUNTY PARKS, REC & TOURISM OFFICE BUILDING RENOVATIONS

OFFICE BUILDING REN

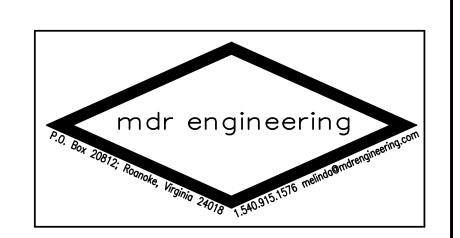
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M3.2



DEMOLITION
ROOF PLAN - MECHANICAL

M3.3 SCALE: 3/16"= 1'-0"



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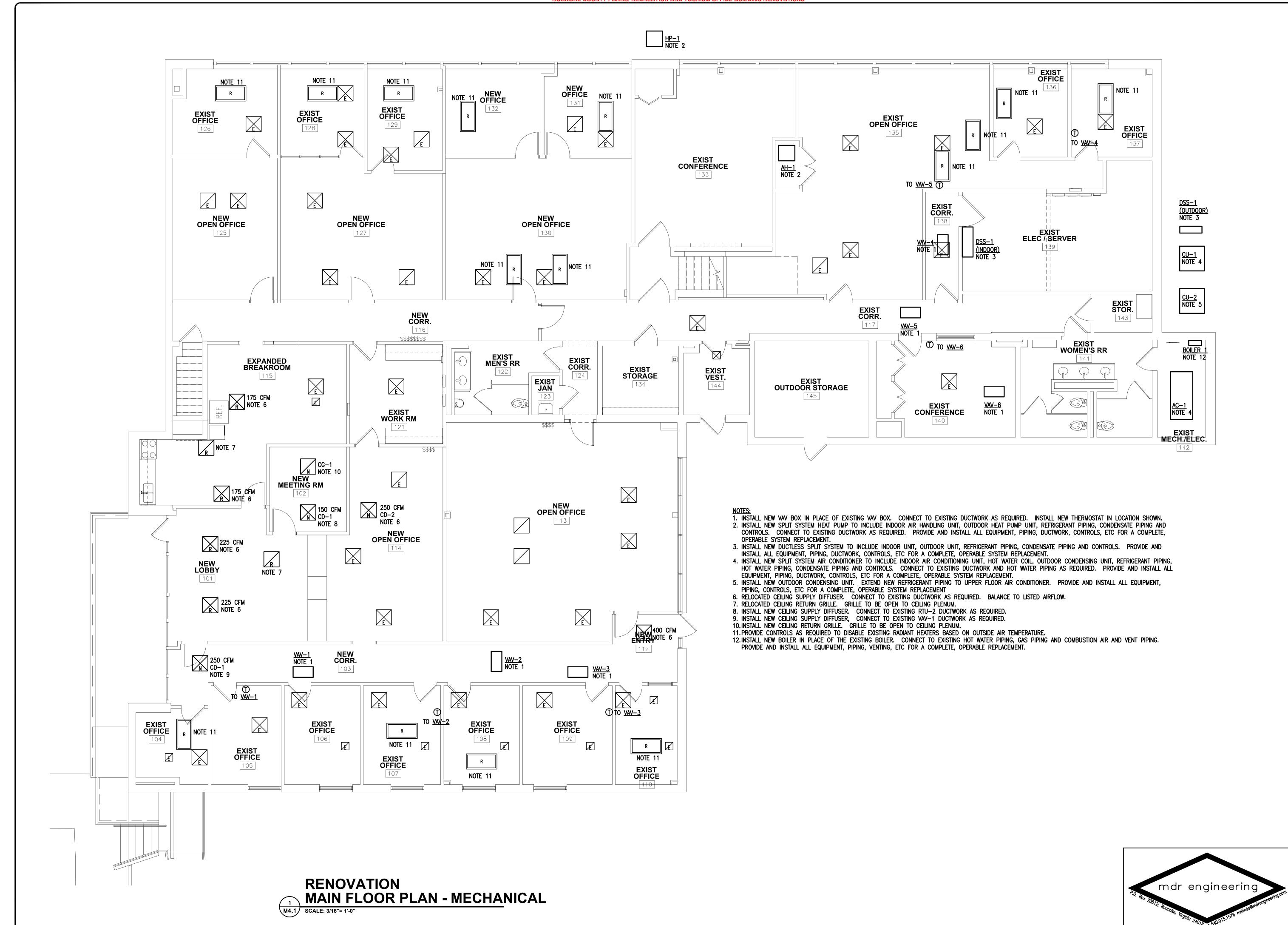


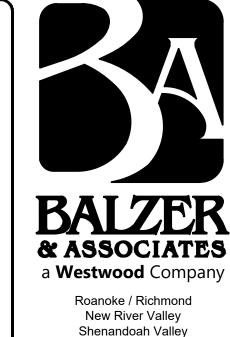


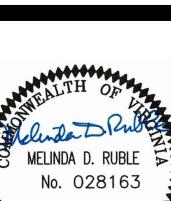
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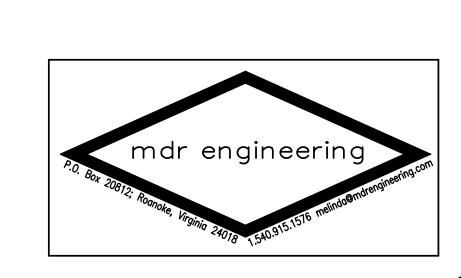
RENOVATION
UPPER FLOOR PLAN - MECHANICAL

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

NOTES:

1. INSTALL NEW SPLIT SYSTEM AIR CONDITIONER TO INCLUDE INDOOR AIR CONDITIONING UNIT, HOT WATER COIL, OUTDOOR CONDENSING UNIT, REFRIGERANT PIPING, HOT WATER PIPING, CONDENSATE PIPING AND CONTROLS. CONNECT TO EXISTING DUCTWORK AND HOT WATER PIPING AS REQUIRED. PROVIDE AND INSTALL ALL EQUIPMENT, PIPING, DUCTWORK, CONTROLS, ETC FOR A COMPLETE, OPERABLE SYSTEM REPLACEMENT.

2. INSTALL NEW BOILER IN PLACE OF THE EXISTING BOILER. CONNECT TO EXISTING HOT WATER PIPING, GAS PIPING AND COMBUSTION AIR AND VENT PIPING. PROVIDE AND INSTALL ALL EQUIPMENT, PIPING, VENTING, ETC FOR A COMPLETE, OPERABLE REPLACEMENT.

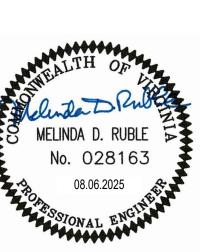


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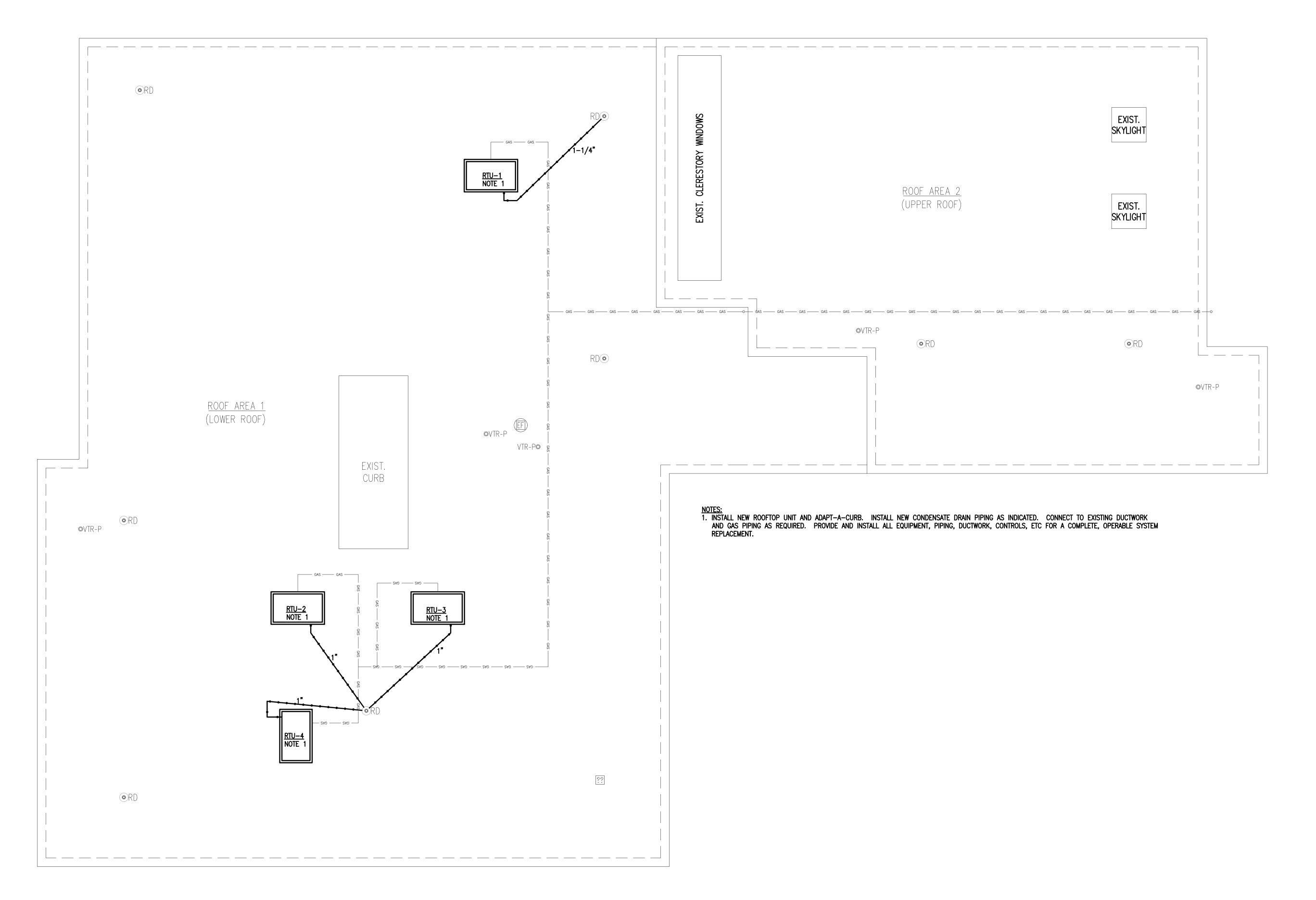


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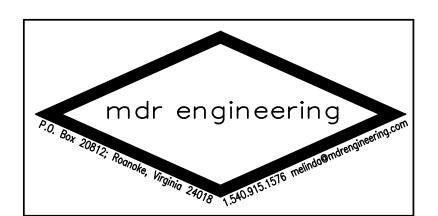
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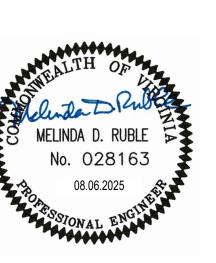


**RENOVATION** ROOF PLAN - MECHANICAL

M4.3 SCALE: 3/16"= 1'-0"



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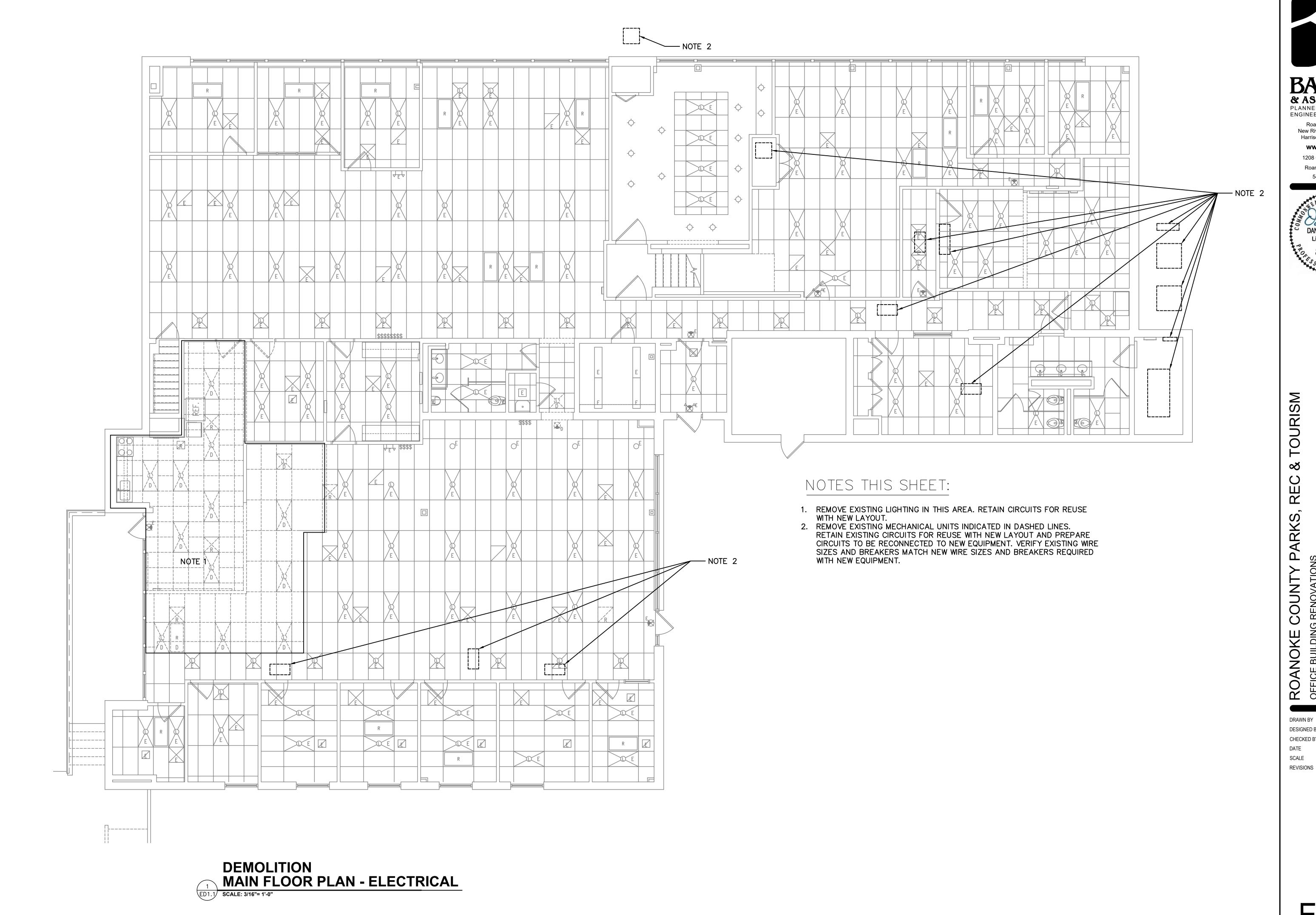


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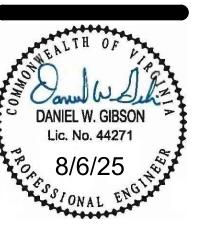
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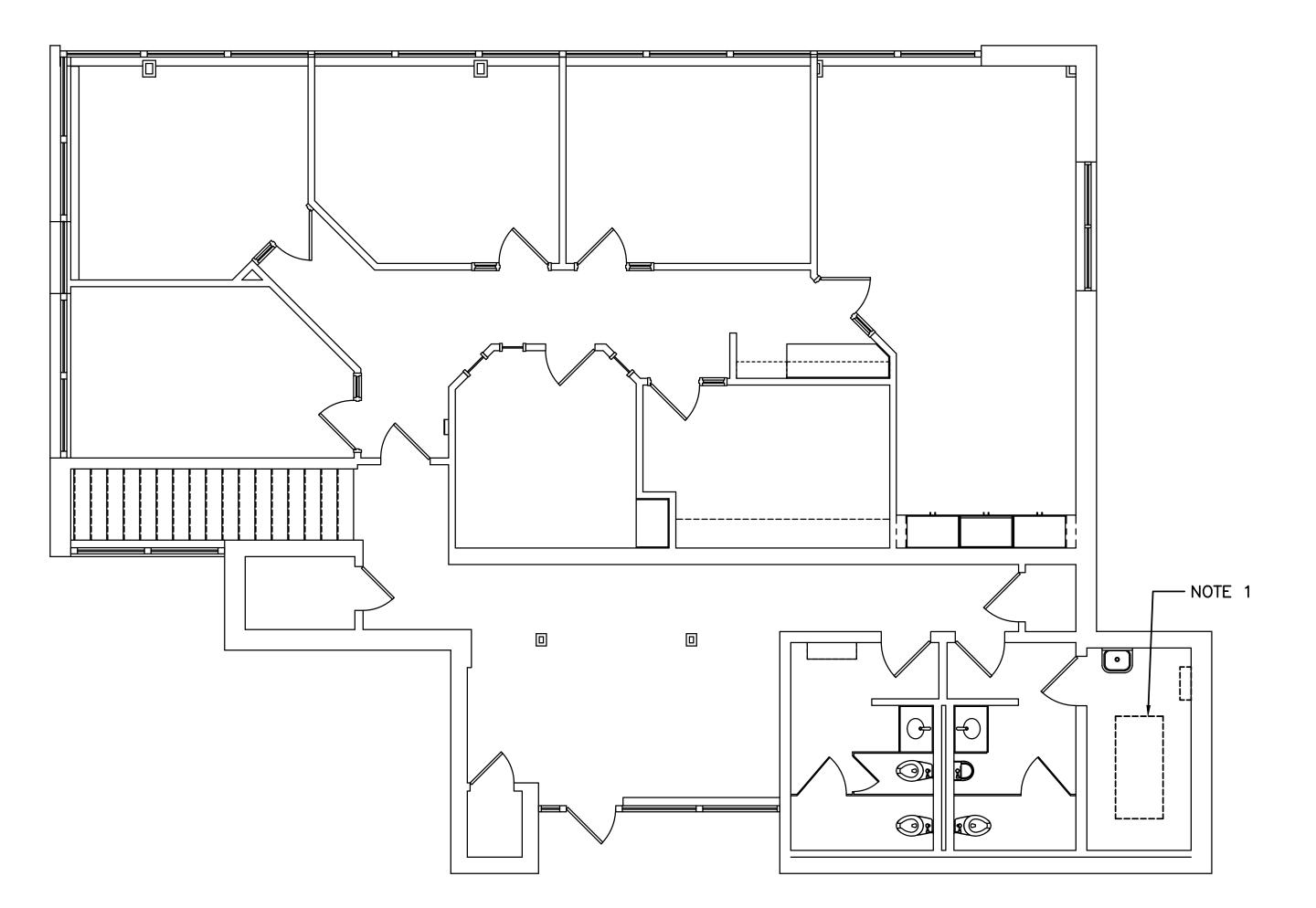
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DEMOLITION MAIN FLOOR

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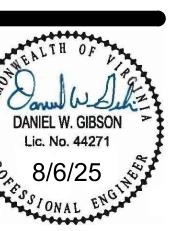


# NOTES THIS SHEET:

REMOVE EXISTING MECHANICAL UNITS INDICATED IN DASHED LINES.
RETAIN EXISTING CIRCUITS FOR REUSE WITH NEW LAYOUT AND PREPARE
CIRCUITS TO BE RECONNECTED TO NEW EQUIPMENT. VERIFY EXISTING WIRE
SIZES AND BREAKERS MATCH NEW WIRE SIZES AND BREAKERS REQUIRED
WITH NEW EQUIPMENT.

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DEMOLITION UPPER FLOOR PLAN - ELECTRICAL ED1.2 SCALE: 3/16"= 1'-0"

# GENERAL NOTES MECHANICAL EQUIPMENT IS SHOWN IN APPROXIMATE LOCATIONS. FOR EXACT LOCATIONS OF MECHANICAL EQUIPMENT AND PIPING, SEE MECHANICAL DRAWINGS. SOME MECHANICAL EQUIPMENT IS LOCATED ON THE ROOF. VERIFY LOCATION WITH MECHANICAL AND PROVIDE ALL CONDUIT AND WIRING TO OUTDOOR EQUIPMENT. WHERE LIGHT SWITCHES ARE INDICATED TO BE MOUNTED BEHIND DOOR, MOUNT SUCH SWITCHES A MINIMUM OF 3'-9" FROM HINGED SIDE. REVISE PANELBOARD SCHEDULES ON PANEL DIRECTORIES TO REFLECT FINAL INSTALLATION CONDITIONS.

- 4. LOCATE ALL RACEWAYS TO AVOID INTERFERENCE WITH DUCTS, PIPES, MECHANICAL EQUIPMENT, WITH REMOVAL OF CEILING TILES, OR WITH ACCESS TO EQUIPMENT WHICH REQUIRES PERIODIC ADJUSTMENT OR MAINTENANCE.
- 5. PROVIDE NAMEPLATES ON THE EXTERIOR OF ALL ELECTRICAL PANELS AND ENCLOSURES WITH THE DEVICE ID, RATING, POWER SOURCE AND INSTALLATION DATE AND BY WHICH SWITCH OR STARTER.
- 6. COUNTER AND TOILET RECEPTACLES TO BE GFI AND COUNTER HEIGHT EXCEPT WHERE NOTED. REFRIGERATOR RECEPTACLE TO BE 36" AFF.
- 7. LIGHT FIXTURE TYPE IS SHOWN ONLY ONCE AS TYPICAL FOR THE ENTIRE ROOM UNLESS SPECIFICALLY INDICATED OTHERWISE.
- 8. UNLESS INDICATED OTHERWISE, SIZE CONDUITS IN ACCORDANCE WITH NFPA 70.
- 9. COORDINATE WITH THE MECHANICAL CONTRACTOR TO ENSURE ALL WORKING CLEARANCE AND DEDICATED WORKING SPACE OF PANELBOARDS.
- 10. COORDINATE ELECTRICAL INSTALLATION WITH ALL CASEWORK TO BE INSTALLED. PROVIDE THE NECESSARY JUNCTION BOXES FOR ALL POWER AND DATA CONNECTIONS INDICATED.
- 11. GROUNDING CONDUCTORS ARE NOT INDICATED IN BRANCH CIRCUIT RACEWAYS. PROVIDE GROUND CONDUCTORS AS REQUIRED BY NEC.
- 12. OCCUPANCY SENSORS SHOULD CONTROL ALL LIGHTING IN ROOMS, BOTH INBOARD AND OUTBOARD SWITCHING WHERE APPLICABLE, UNLESS INDICATED OTHERWISE.
- 13. PROVIDE PLASTIC BUSHING ON THE END OF ALL CONDUIT.
- 14. PROVIDE LABELS ON ALL RECEPTACLE INDICATING PANEL AND CIRCUIT FEEDING EACH DEVICE.
- 15. COORDINATE WITH OWNER TO PROVIDE DATA DROPS AS REQUIRED AND TO LOCATION EXACT LOCATION OF DESIRED DROPS. PROVIDE PULL CORDS WITH ALL DATA BOXES. ALL WORK STATIONS REQUIRE DATA DROP.

### ELECTRICAL LEGEND

<ul><li>○</li><li>○</li><li>●</li></ul>	LED LIGHTING FIXTURE, RECESSED, SURFACE OR PENDANT CEILING MOUNTED, ALL LIGHTING INDICATED ARE CONNECTED TO EMERGENCY GENERATOR CIRCUIT. N INDICATES NIGHT LIGHT (TYP). COORDINATE WITH OWNER FOR DESIRED NIGHT LIGHT LOCATIONS.  EXIT LIGHTING FIXTURE, SURFACE CEILING MOUNTED, DIRECTIONAL ARROWS AS INDICATED. VR SUBSCRIPT INDICATES VANDAL RESISTANT.		CONDUCTORS IN CONDUIT CONCEALED IN CEILING OR WALL.  BRANCH CIRCUIT HOME RUN TO PANELBOARD. NOTATION INDICATES PANELBOARD & BRANCH CIRCUIT CONNECTION.  CONDUCTORS IN CONDUIT CONCEALED IN SLAB OR BELOW GRADE.  CONDUCTORS IN CONDUIT TURNED UP.
H <b>X</b> )	EXIT LIGHTING FIXTURE, SURFACE WALL MOUNTED, DIRECTIONAL ARROWS AS INDICATED.	• a,b	CONDUCTORS IN CONDUIT TURNED DOWN.  SINGLE-POLE SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP. LOWER CASE SUBSCRIPT WHEN USED, INDICATES FIXTURES CONTROLLED (TYP).
J	FURNITURE WHIPS UNLESS INDICATED OTHERWISE, FOR FURNITURE WHIPS PROVIDE DATA AND POWER	<b>S</b> 3	THREE-WAY SWITCH, MOUNTING HEIGHT = $4'-0"$ TO TOP.
#	QUAD-PLEX WALL RECEPTACLE	Sos	INTEGRAL OCCUPANCY SENSOR SWITCH, MOUNTING HEIGHT = $4'-0"$ TO TOP.
$\Rightarrow$	DUPLEX WALL RECEPTACLE, MOUNTING HEIGHT = 1'-6", EXCEPT 'C' SUBSCRIPT INDICATES MOUNTING IN CASEWORK(TYP). 'GF' SUBSCRIPT INDICATES GROUND FAULT, 'WP' SUBSCRIPT INDICATES WEATHERPROOF, 'EWC' SUBSCRIPT INDICATES GROUND FAULT BEHIND ELECTRIC WATER COOLER. '*' INDICATES MOUNTED HEIGHT = 8" ABOVE COUNTER(TYP). 'TV' INDICATES COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL PLANS FOR TV LOCATIONS.	SP	COMBINATION PHONE OUTLET AND DATA OUTLET.  DATA SYSTEM OUTLET, MOUNTING HEIGHT = 1'-6" UNLESS INDICATED OTHERWISE.  PROVIDE 1' CONDUIT FROM BOX TO ABOVE ACCESSIBLE CEILING.  WHERE MOUNTED BESIDE COUNTER RECEPTACLE: MOUNT SAME HEIGHT  AS RECEPTACLE, PROVIDE 2 CAT 6 CABLES BACK TO SERVER AREA IN ROOM M101
(OS)	OCCUPANCY SENSOR, DUAL TECHNOLOGY	Sp	DIMMER SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP, SUBSCRIPT INDICATES FIXTURES CONTROLLED WITH THIS SWITCH
	EMERGENCY BATTERY UNIT	•	COAX CABLE
	OUTLET BOX LOCATION FOR OWNER-PROVIDED CARD READERS 2		<u>LEGEND NOTES:</u> 1. ALL MOUNTING HEIGHTS ARE TO TOP OF DEVICE UNLESS INDICATED OTHERWISE.

		LIGHTING FIXTURE SCHEDULE			
MARK	MANUFACTURER	MODEL NUMBER	TOTAL WATTS	MNTG.	REMARKS
A	LITHONIA	CPX 2X4 4000L SWL	36	REC	2'X4' LED PANEL
C	LITHONIA	LDN4 27/10 L04 BR	10.6	REC	4" DOWN LIGHT
	LITHONIA	EU2C		SURF	EMERGENCY LIGHT WITH REMOTE HEADS
<b>(S)</b>	LITHONIA	EXR		SURF	EMERGENCY EXIT SIGN



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THO F

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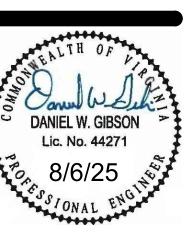


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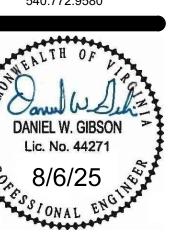
### NOTES THIS SHEET:

VERIFY EXISTING BREAKER AND WIRE SIZE FROM DEMOLITION OF EXISTING UNIT. FOR AC-2, PROVIDE A 3 POLE, 20 AMP BREAKER WITH #12 WIRE AND #12 GROUND TO CONNECT CIRCUIT.
 RECONNECT EXISTING BOILER TO EXISTING CIRCUIT. PROVIDE A SINGLE POLE, 20 AMP BREAKER WITH #12 WIRE AND #12 GROUND.

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RENOVATION **UPPER FLOOR PLAN - ELECTRICAL** 

E2.2 SCALE: 3/16"= 1'-0"

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08-06-2025

						EXIS	STIN	IG P	ANE	ELA											
VOL	TAGE:		208Y	/120		PHASE: 3				BU	S AMPS:	150A				X	SURFACE MOUNTED		kAIC R	ATING	:
						WIRE: 4			MAIN B	REAKE	R AMPS:	MLO					FLUSH MOUNTED		22,000		
СКТ	BRKR		WIR	E		CIRCUIT	LC	DAD - K	- KVA		СКТ	BRKI	R	WI	RE		CIRCUIT	LC	AD - K	VA	
NO.	Р	AMPS	NO	SZ	*	DESCRIPTION	PHA	PHB	PHC	3 PH	NO.	Р	AMPS	NO	SZ	*	DESCRIPTION	PHA	PHB	PHC	3 PH
1	1	20				EM LTS 1ST FL					2	1	20				1ST FL				
3	1	20				LTS OPEN OFF.					4	1	20				LTS OPEN OFF.				
5	1	20				LTS OPEN OFF.					6	1	20				LTS OPEN OFF.				
7	1	20				CCP RTU-4					8	1	20				SPARE				
9	1	20				ROOFTOP RCPT					10	1	20				COPYRCPT				
11	1	20				SPARE					12	1	20				SPARE				
13	1	20				LTS OPEN OFF.					14	1	20				LTS OPEN OFF.				
15	1	20				LTS OPEN OFF.					16	1	20				LTS OPEN OFF.				
17	1	20				SPARE					18	1	20				VENDING MACH.				
19	1	20				SPARE					20	1	20				CRINK MACH.				
21	1	20				SPARE					22	1	20				REFRIGERATOR				
23	1	20				SPARE					24	1	20				COFFEE MACH.				
25	1	20				CEIL HEAT OPEN OFF.					26	1	20				MICROWAVE RCPT				
27	2	20				CEIL HEAT OPEN OFF.					28	1	20				MICROWAVE RCPT				
29						SPARE					30	1	20				GARAGE DISPOSAL				
31	1	20				SPARE					32	1	20				COUNTERTOP RCPT				
33	2	20				CEIL HEAT OPEN OFF.					34	1	20				COUNTERTOP RCPT				
35						CEIL HEAT OPEN OFF.					36	1	20				RANGE HOOD				
						TOTAL LEFT SIDE	0.0	0.0	0.0	0.0							TOTAL RIGHT SIDE	0.0	0.0	0.0	0.0
						TOTAL RIGHT SIDE	0.0	0.0	0.0	0.0											
						TOTAL	0.0	0.0	0.0	0.0							TOTAL CONNECTED LO	DAD			0.0
* NC	TES																				

1. REPLACE EXISTING PANEL IN KIND. PROVIDE NEW 42 CIRCUIT PANEL WITH SPACES AVAILABLE. MATCH EXISTING AMPERAGE AND BREAKERS.

 TOTAL LEFT SIDE
 0.0
 0.0
 0.0
 0.0

 TOTAL RIGHT SIDE
 0.0
 0.0
 0.0
 0.0

 TOTAL
 0.0
 0.0
 0.0
 0.0

1. VERIFY EXIST ING WIRE SIZES, PREPARE FOR REUSE IF WIRE SIZE MATCHES NEW WORK.

2. RECONNECT EXISTING BRANCH CIRCUITS TO NEW BREAKERS.

VOL	TAGE:		208Y	//120	EXIS PHASE: 3 WIRE: 4	, i ii v			BU	S AMPS: R AMPS:				X SURFACE MOUNTED KAIC RATING: FLUSH MOUNTED 22,000	
CKT	BRKR	1	WIR	E	CIRCUIT	LC	AD - K	VA		СКТ	BRKF	र	WIF	RE	CIRCUIT LOAD - KVA
NO.	Р	AMPS	NO	SZ	* DESCRIPTION	PHA	PHB	PHC	3 PH	NO.	Р	AMPS	NO	SZ	* DESCRIPTION PHA PHB PHC 3 PH
1	1	20			LTS MENS BATH					2	1	20			RCPT OPEN OFF.
3	1	20			LTS OFFICE					4	1	20			RCPT OPEN OFF.
5	1	20			LTS BASEMENT STAIRS					6	1	20			RCPT COUNTERTOP BOARD RM
7	1	20			COPIER					8	1	20			SPARE RCPT#4 CUBE COMP ROOM
9	1	20			SPARE					10	1	20			SPARE RCPT#4 CUBE COMP ROOM
11	1	20			SPARE					12	1	20			LTS OFFICE
13	1	20			LTSKITCHEN					14	1	20			UNKNOWN
15	1	20			POWER POLE OPEN OF	Ξ.				16	1	20			RCPT OPEN OFF.
17	1	20			POWER POLE OPEN OFF	=.				18	1	20			RCPT OPEN OFF. CUBE IN COMP ROOM
19	1	20			RCPT REAR ENTRY&STO	ORAGE	<u>!</u> -			20	1	20			POWER POLE OPEN OFFICE#CENTER RM
21	1	20			POWER POLE OPEN OFF	Ξ.				22	1	20			POWER POLE OPEN OFFICE
23	1	20			POWER POLE OPEN OFF	<b>=</b> .				24	1	20			POWER POLE OPEN OFFICE
25	1	20			POWER POLE OPEN OFF	Ξ.				26	1	20			POWER POLE OPEN OFFICE
27	1	20			POWER POLE OPEN OFF	=_				28	1	20			RCPT OFFICE
29	1 1	20			POWER POLE OPEN OFF	=.				30	1	20			WATER COOLER
31	1 1	20			POWER POLE OPEN OFF	Ξ.				32	1	20			EX FANS IN CONF. RM&KITCHEN
33	1	20			SPARE					34	1	20			SPARE
35	1	20			COPIER					36	1	20			DWNSTAIRS SECURITY CNTRL
					TOTAL LEFT SIDE	0.0	0.0	0.0	0.0						TOTAL RIGHT SIDE 0.0 0.0 0.0 0.0
					TOTAL RIGHT SIDE	0.0	0.0	0.0	0.0						
					TOTAL	0.0	0.0	0.0	0.0						TOTAL CONNECTED LOAD 0.0

	ACE EX			N KIND	TOT/ TOT/	AL RIGHT SIDE 0.0 AL 0.0 DVIDE NEW 42 CIRCUIT PAN	0.0 0.0 0.0 IEL WIT	0.0	0.0 0.0 0.0 ES AVAIL	ABLE. MAT(	CH EXIST	ing ami	Т	OTAL		ЕСТІ		0.0		39 41	1 1
KEC	ONNEC	I EXISTIN	IG BR/	NCH C	BIRCU	IITS TO NEW BREAKERS.														1. NE	OTES EWPANI ECONNE
VOL1	AGE:		208	//120		EXIST PHASE:		P/	MEL		<b>\C</b> Samps	: 200A				Х	SURFACE MOUNTED		kAIC F	RATING	<b>)</b> :
						WIRE: 4	4		MAIN	BREAKE							FLUSH MOUNTED		22,000	1	_
СКТ	BRKR	2	WIR	E		CIRCUIT		OAD ·	KVA		СКТ	BRK	R	WI	RE		CIRCUIT	LC	DAD - K	VA	
NO.	Р	AMPS	NO	SZ	*	DESCRIPTION	PHA	PH	3 PHC	3 PH	NO.	Р	AMPS	NO	SZ	*	DESCRIPTION	PHA	PHB	PHC	3 PH
3	3	35				RTU#4					2 4	3	35				RTU#3				
5 7						DT.11/4					6 8		0.5								
9 11	3	60				RTU#1					10 12	3	35				RTU#2				
13 15	2	20				CEILING PANEL HEATE	 RS				14 16	2	20				KIT CHEN BSMNT HEAT	ÉRS 			
17		20									18	2	20				OFFICE CEILING HEATE	RS			

TOTAL RIGHT SIDE 0.0 0.0 0.0 0.0

TOTAL CONNECTED LOAD

VOL.	TAGE:		208\	Y/120		ASE: 3 IRE: 4		ı	MAIN B	BUS REAKER	AMPS: AMPS:					X SURFACE MOUNTED FLUSH MOUNTED		kAIC R 22,000		<b>)</b> :
CKT	BRKR		WIR	RE	CIRCUIT		LC	AD - K	VA		СКТ	BRK	₹	WIF	RE	CIRCUIT	LC	DAD - K	VA	_
NO.	Р	AMPS	NO	SZ	* DESCRIPTIO	N	PHA	PHB	PHC	3 PH	NO.	Р	AMPS	NO	SZ	* DESCRIPTION	PHA	PHB	PHC	3 PH
1	1	20			EM LTS 1ST FL						2	1	20			1ST FL				
3	1 1	20			LTS OPEN OFF.						4	1	20			LTS OPEN OFF.				
5	1	20			LTS OPEN OFF.						6	1	20			LTS OPEN OFF.				
7	1	20			CCP RTU-4						8	1	20			SPARE				
9	1	20			ROOFT OP RCPT						10	1	20			COPYRCPT				
11	1	20			SPARE						12	1	20			SPARE				
13	1	20			LTS OPEN OFF.						14	1	20			LTS OPEN OFF.				
15	1 1	20			LTS OPEN OFF.						16	1	20			LTS OPEN OFF.				
17	1 1	20			SPARE						18	1	20			VENDING MACH.				
19	1 1	20			SPARE						20	1	20			CRINK MACH.				
21	1 1	20			SPARE						22	1	20			REFRIGERATOR				
23		20			SPARE						24	1	20			COFFEE MACH.				
25		20			CEIL HEAT OPEN	OFF					26	1	20			MICROWAVE RCPT				
27	2	20			CEIL HEAT OPEN						28	1	20			MICROWAVE RCPT				
29					SPARE	•					30	1	20			GARAGE DISPOSAL				
31	1	20			SPARE						32	1	20			COUNTERTOPROPT				
33	2	20			CEIL HEAT OPEN	OFF					34	1	20			COUNTERTOPROPT				
35	_				CEIL HEAT OPEN						36	1	20			RANGE HOOD				
37	1	20			SPARE	ŭ					38	1	20			SPARE				
39		20			SPARE						40	1	20			SPARE				
41	1 1	20			SPARE						42	1	20			SPARE				
					TOTAL LEFT SIDE		0.0	0.0	0.0	0.0						TOTAL RIGHT SIDE	0.0	0.0	0.0	0.0
					TOTAL RIGHT SID	DΕ	0.0	0.0	0.0	0.0										
					TOTAL		0.0	0.0	0.0	0.0						TOTAL CONNECTED L	OAD			0.0

VOL1	ΓAGE:		208Y/120		PHASE: 3 WIRE: 4		BUS AMPS: 150A MAIN BREAKER AMPS: MLO								X SURFACE MOUNTED FLUSH MOUNTED		kAIC R 22,000		i: -
СКТ	BRKR		WIRE		CIRCUIT	LC	AD - K	VA		СКТ	BRKI	₹	WIF	RE	CIRCUIT	LC	AD - K	VA	
NO.	Р	AMPS	NO SZ	*	DESCRIPTION	PHA	PHB	PHC	3 PH	NO.	Р	AMPS	NO	SZ	* DESCRIPTION	PHA	PHB	PHC	3 PH
1	1	20			LTS MENS BATH					2	1	20			RCPT OPEN OFF.				
3	1	20			LTS OFFICE					4	1	20			RCPT OPEN OFF.				
5	1	20			LTS BASEMENT STAIRS					6	1	20			RCPT COUNTERTOP BO	)ARD R	M		
7	1	20			COPIER					8	1	20			SPARE RCPT#4 CUBE CO	OMP R	MOC		
9	1	20			SPARE					10	1	20			SPARE RCPT#4 CUBE CO	OMP R	MOC		
11	1	20			SPARE					12	1	20			LTS OFFICE				
13	1	20			LTSKITCHEN					14	1	20			UNKNOWN				
15	1	20			POWER POLE OPEN OF	=.				16	1	20			RCPT OPEN OFF.				
17	1	20			POWER POLE OPEN OF	₹.				18	1	20			RCPT OPEN OFF. CUBE	IN CON	IP ROC	МÓ	
19	1	20			RCPT REAR ENTRY&ST	ORAGE				20	1	20			POWER POLE OPEN OF	FICE#C	ENTER	RM	
21	1	20			POWER POLE OPEN OF	₹.				22	1	20			POWER POLE OPEN OF	FICE			
23	1	20			POWER POLE OPEN OF	Ξ.				24	1	20			POWER POLE OPEN OF	FICE			
25	1	20			POWER POLE OPEN OF	₹.				26	1	20			POWER POLE OPEN OF	FICE			
27	1	20			POWER POLE OPEN OF	₹.				28	1	20			RCPT OFFICE				
29	1	20			POWER POLE OPEN OF	₹.				30	1	20			WATER COOLER				
31	1	20			POWER POLE OPEN OF	Ξ.				32	1	20			EX FANS IN CONF. RM&R	(IT CHE	N		
33	1	20			SPARE					34	1	20			SPARE				
35	1	20			COPIER					36	1	20			DWNSTAIRS SEC CNTRI				
37	1	20			SPARE					38	1	20			SPARE				
39	1	20			SPARE					40	1	20			SPARE				
41	1	20			SPARE					42	1	20			SPARE				
					TOTAL LEFT SIDE	0.0	0.0	0.0	0.0						TOTAL RIGHT SIDE	0.0	0.0	0.0	0.0
					TOTAL RIGHT SIDE	0.0	0.0	0.0	0.0										
					TOTAL	0.0	0.0	0.0	0.0						TOTAL CONNECTED LO	AD			0.0
* NO	TES																		

VOL <sup>*</sup>	ΓAGE:		208Y	//120		PHASE: 3 WIRE: 4	<u> </u>										X	SURFACE MOUNTED FLUSH MOUNTED	kAIC RATING: 22,000			
KT	BRKR	<u> </u>	WIR	E		CIRCUIT	LC	AD - K	VA			СКТ	BRKE	₹	WI	RE		CIRCUIT	LC	AD - K	VA	
NO.	Р	AMPS	NO	SZ	*	DESCRIPTION	PHA	PHB	PHC	3 PH		NO.	Р	AMPS	NO	SZ	*	DESCRIPTION	PHA	PHB	PHC	3 PH
1 3 5	3	40	4	8	1	RTU#4				8.2		2 <b>4</b> 6	3	40	4	8	1	RTU#3				7.6
7 <b>9</b> 11	3	70	4	4	1	RTU#1				15.0		8 <b>10</b> 12	3	40	4	8	1	RTU#2				0.1
13 15 17 19	2	20 20				CEILING PANEL HEATER  CEILING HEATER	S					14 16 18 20	2	20 20				OFFICE CEILING HEATE				
19	ı	20				TOTAL LEFT SIDE TOTAL RIGHT SIDE TOTAL	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	23.2 7.7 30.9		20						TOTAL RIGHT SIDE	0.0 AD	0.0	0.0	7.7 30.9

DESIGNED BY

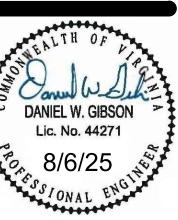
CHECKED BY

SCALE REVISIONS DWG

08-06-2025

MAIN FLOOR PLAN - ELECTRICAL

E2.1 SCALE: 3/16"= 1'-0"



TOURISM **ං**ර A H PARKS, COUNTY ROANOKE

DRAWN BY DESIGNED BY DWG 08-06-2025

CHECKED BY DATE

SCALE REVISIONS

 $\sqrt{2}$ 

9-30-25

### ATTACHMENT G: PROJECT PLANS AND SPECIFICATIONS ROANOKE COUNTY PARKS. RECREATION AND TOURISM OFFICE BUILDING RENOVATIONS

### **ELECTRICAL SPECIFICATIONS**

### PART 1 - GENERAL

### 1.1 DESCRIPTION OF WORK

Provide new lighting, power, data and low voltage systems as indicated on the plans.

### 1.2 QUALITY ASSURANCE

A. General

- a. Comply with IEEE C2, "National Electrical Safety Code"
- b. IEEE Compliance: Comply with applicable Institute of Electrical and Electronics Engineers, Inc. standards pertaining to generator construction.
- c. NEC Compliance: Comply with NFPA 70, "National Electrical Code" as applicable to construction and installation of products required in this specification.
- d. UL and NEMA Compliance and Labeling: Provide products which have been labeled by Underwriters Laboratories and have been certified to comply with
- e. IEEE Compliance: Comply with STD 241, "IEEE Recommended Practice for Electrical Power Systems in Commercial Buildings" pertaining to communication systems.
- B. MOTOR CONTROLLERS
  - a. UL and NEMA Compliance and Labeling: Provide products which have been labeled by Underwriters' Laboratories and have been certified to comply with UL and NEMA.

### C. LIGHTING

- a. NEMA Compliance: Comply with applicable requirements of NEMA Stds. Pub/No.'s LE 1 and LE 2 pertaining to lighting equipment.
- b. UL Compliance: Comply with UL standards, including UL 486A and B, pertaining to lighting fixtures. Provide lighting fixtures and components which are UL listed and labeled. Provide exterior fixtures with "Suitable for Wet Location" label.
- c. CBM Labels: Provide fluorescent lamp ballasts which comply with Certified Ballast Manufacturers Association standards and carry the CBM label.
- 1.3 COORDINATION OF ELECTRICAL WORK
- A. General: Refer to the division sections for general coordination requirements applicable to the entire work. It is recognized that the contract documents are diagrammatic in showing certain physical relationships which must be established within the electrical work and in its interface with other work including utilities and mechanical work and that such establishment is the exclusive responsibility of the Contractor.
  - a. Arrange electrical work in a neat, well organized manner with conduit and similar services running parallel with primary lines of the building construction and with the maximum headroom possible, but a minimum 7' 0" overhead clearance.
  - b. Locate operating and control equipment properly to provide easy access and arrange entire electrical work with adequate access for operation and
- c. Advise other trades of openings required in their work for the subsequent move\_in of large units of electrical equipment.
- d. Coordinate all work, including power outages, with Owner's Schedule of Operation.
- B. Product Handling: Space at the project for storage of materials and products is limited. Coordinate the deliveries of electrical materials and products with the scheduling and sequencing of the work so that storage requirements at the project are minimized. In general, do not deliver individual items of electrical equipment to the project substantially ahead of the time of installation.

### 1.3 ELECTRICAL SYSTEM IDENTIFICATION

- A. Conduit Systems: Provide adequate marking of primary conduits which are exposed or concealed in accessible spaces, to distinguish each run as either a power or signal/communication conduit. Except as otherwise indicated, use orange banding with black lettering. Provide self adhesive or snap on type plastic markers. Indicate voltage ratings of conductors where above 240 V. Locate markers at ends of conduit runs, near switches and other control devices and near items of equipment served by the conductors. Switch leg conduit and short branches for power connections need not be marked, except where conduit is larger than 1 inch. Label all junction boxes with branch circuit numbers terminated within.
- B. Identification Labels and Warning Signs: Provide engraved plastic laminate or baked enamel labels on major units of electrical equipment including switchboards, panelboards, motor controllers, disconnect switches, signal and similar systems. Label shall include equipment identification mark and voltage characteristics and shall be melamine plastic, 0.125 inch thick, white with black center core. Provide warning signs where there is hazardous exposure or danger associated with access to or operation of electrical facilities. Provide text of sufficient clarity and lettering of sufficient size, minimum 0.25 inch nominal block style, to convey adequate information at each location; mount permanently in an appropriate and effective location.

### 1.4 PAINTING ELECTRICAL WORK

- A. General: Except as otherwise indicated, comply with the applicable provisions of Division 9 for electrical work painting. Electrical equipment shall have factory\_applied painting systems which shall meet the requirements of NEMA ICS6. The work of this article shall include general field painting of electrical work. a. Coordinate the painting with the painting of other work of a similar nature and comply with indicated color and color matching requirements. Except as otherwise indicated, paint surfaces of electrical work which would normally be painted in the application and exposure indicated.
- B. Do not paint over nameplates on equipment, sliding/rotating shaft surfaces, non\_ferrous hardware/accessories/trim and similar items where painting would

### 1.5 ELECTRICAL SYSTEM PERFORMANCE

- A. General: The overall system performances of electrical work are of even greater importance than the specified individual unit\_of\_work performances. Each unit of electrical work has been designed and specified to perform at minimum levels of output and efficiency and is intended to contribute to and be compatible with the entire system. Compatibility of actual performances by electrical system performances is the Contractor's responsibility.
- B. Adjustments: Where it has been determined that electrical systems do not or will not perform in compliance with the specified performances, adjustments or corrections shall be made to the work as necessary to achieve required performances.

### 1.6 ELECTRICAL WORK CLOSEOUT

- A. Additional Service: Perform services within the above 12-month period not classified as routine maintenance or as warranty work as described in Division 1 Section "Warranties and Bonds" when authorized in writing. Compensation for additional services must be agreed upon in writing prior to performing services.
- B. Closeout Coordination: Coordinate closeout operations with closeout of mechanical systems and other power consuming equipment.
- C. Record Drawings: Maintain a blue\_line set of electrical contract drawings and/or shop drawings in clean, undamaged condition, for indication of major electrical equipment or concealed lines located in position other than that shown on the contract drawings. Mark\_up whatever drawings are most capable of showing installed conditions accurately. In general, record every substantive installation of electrical work which previously is either not shown or shown inaccurately, specifically record the following:
  - a. Work concealed behind or within other work, in a nonaccessible location.
  - b. Main feeders with switchgear, panelboards, and control devices located, identified and numbered. This information shall be displayed in a glazed, hardwood frame, minimum two (2) feet square, near the main service disconnect.
  - c. Maintenance procedures and schedules
  - d. Testing procedures and acceptable parameters.
- G. Cleaning and Lubrication: After final testing of each electrical system, clean system both externally and internally. Comply with manufacturer's instructions for lubrication of both power and hand operated equipment. Touch up minor damage to factory painted finishes and provide one pint of touch-up paint for each color of major equipment installed.

### 1.10 SUBMITTALS

- A. LIGHTING
- Product Data: Submit manufacturer's product data and installation instructions on each type building lighting fixture photocell, contactor and component.
- 2. Shop Drawings: Submit fixture shop drawings where specifically indicated in booklet form with separate sheet for each fixture, assembled in "luminare type" alphabetical or numerical order, with proposed fixture and accessories clearly indicated on each sheet.
- Maintenance Data: Submit maintenance data and parts list for each lighting fixture and accessory; including "trouble shooting" maintenance quide. Include that data, product data, and shop drawings in a maintenance manual.

### PART 2 - PRODUCTS

### 2.1 CABLE AND WIRE

- A. Provide factory-fabricated wire or cable of the size, rating, material and type as indicated for each service in compliance with NECA -Standard of Installation. Where not indicated, provide proper selection as determined by the work requiring the installation to comply with NEC standards. Conductors shall be rated 600 volt of insulation type THW, THWN, THHN, or USE installed in compliance with National Electrical Code requirements.
- B. Provide bonding conductors for sizes No. 8 AWG and smaller of solid bare copper per ASTM B 1, and for sizes No. 6 AWG and larger stranded bare copper per ASTM B 8.
- C. No. 10 AWG and smaller diameter shall be solid copper; No. 8 AWG and larger diameter shall be stranded copper.
- D. Provide color coding for service, feeder, branch, control, and signaling circuit conductors. Color shall be green for grounding conductors and white for neutrals; except where neutrals of more than one system are installed in same raceway or box, other neutral shall be white with colored (not green) stripe. Color of ungrounded conductors in different voltage systems shall be as
- a. 120/208 volt, 3-phase:
- i. Phase A black. ii. Phase B - red.
- iii. Phase C blue.
- E. Provide the following types of cables in NEC approved locations and applications where indicated. Provide cable UL listed for its intended use.
- a. Metal clad cable: Type MC.
- F. Provide UL 486A, factory-fabricated, solderless, metal connectors of the size, ampacity, rating, material, type and class as indicated for each service. Where not indicated, provide proper selection as determined by the work requiring the installation to comply with NEC standards. Provide insulating tape in compliance with UL 510.

### 2.2 ELECTRICAL RACEWAYS

- A. Metal Conduit, Tubing and Fittings: Provide metal conduit, tubing and fittings of type, grade, size and weight indicated for each service. Where type and grade are not indicated, provide proper selection as determined by the work requiring the installation to comply with NEC standards for wiring requirements.
- a. Rigid Steel Conduit: ANSI C80.1, UL 6.
- b. Intermediate Steel Conduit (Zinc Coated Steel): UL 1242.
- c. Rigid Metal Conduit Fittings: UL 514B, cadmium- or zinc- coated threaded type.
- d. Electrical Metal Tubing (EMT): ANSI C80.3, UL 797.
- e. EMT Fittings: UL 514B, compression or set-screw type f. Flexible Metal Conduit: Cadmium- or zinc-coated steel.
- g. Flexible Metal Conduit Fittings: UL 514B, cadmium- or zinc-coated.
- h. Liquid-Tight Flexible Metal Conduit: UL 360, provide liquid-tight flexible metal conduit comprised of single strip, continuous, flexible, interlocked, double-wrapped steel, galvanized inside and outside; forming smooth internal wiring channel; with liquid-tight jacket of flexible polyvinyl chloride.
- i. Liquid-Tight Flexible Metal Conduit Fittings: FS W-F-406.
- B. Wireways: Electrical wireways shall be of types, sizes, and number of channels as indicated. Fittings and accessories including but not limited to couplings, offsets, elbows, expansion joints, adapters, hold-down straps, and end caps shall match and mate with wireway as required for complete system. Where features are not indicated, select to fulfill wiring requirements and comply with applicable provisions of NEC. Wireway covers shall be hinged type.
- C. Surface Metal Raceways and Fittings: UL 5, two-piece steel, totally enclosed. Snap cover type with wiring devices, sizes and channels as indicated. Wiremold, or approved equal.
- a. Type a: Two section, steel, approximately 7/8 inch x 1 1/4 inch wide, with 20 amp, 125V, specification grade grounding surge protection receptacles 2'-6" on centers, alternating circuits. Provide with ivory paintable finish.

### 2.3 ELECTRICAL OUTLET BOXES AND FITTINGS

- A. Interior Outlet Boxes: UL 514A, provide galvanized flat rolled sheet steel interior outlet wiring boxes, flush mounted of type, shapes and sizes, including box depths, to suit each respective location and installation; construct with stamped knockouts in back and sides, and with threaded screw holes with corrosion-resistant screws for securing box covers and wiring devices. Provide feralog cast outlet boxes where surface mounted with threaded conduit hubs to suit each respective location and installation.
- B. Weatherproof Outlet Boxes: Provide corrosion-resistant cast metal weatherproof outlet wiring boxes, of types, shapes and sizes, with threaded conduit ends, cast metal face plates with spring-hinged waterproof caps suitably configured for each application, including faceplate gaskets and corrosion-resistant fasteners. Weatherproof while in operation.
- C. Cast-Iron Floor Boxes: Fully adjustable, waterproof, with threaded raceway entrances, adjusting rings, gaskets, and brass floor plates. Provide multi-section boxes with individual screw type brass section covers, barrier between compartments and provide for a duplex receptacle under one or more of the covers. Telephone outlets shall have provisions to accommodate 10-wire telephone terminal block. Provide gaskets where required to ensure watertight installation. Provide trim suitable for floor conditions.

### 2.4 WIRING DEVICES

A. General: Provide factory-fabricated wiring devices, in types, colors and electrical ratings for applications indicated and complying with NEMA Standards Publication No. WD 1. Where types and grades are not indicated, provide proper selection as determined by installer to fulfill wiring requirements, and comply with NEC and NEMA standards for wiring devices. Provide receptacles with isolated ground and/or surge protection where indicated.

- a. Hospital Grade Duplex: UL 498, provide duplex heavy duty type receptacles, 2-pole, 3-wire grounding, with green hexagonal equipment ground screw, ground terminals and poles internally connected to mounting yoke, 20-amperes, 125 volt, ivory nylon
- face with metal plaster ears, side wiring, NEMA Configuration 5-20R, unless otherwise indicated. b. Hospital Grade Ground Fault Receptacle: Provide ground fault protected duplex receptacle
- i. Provide with cast aluminum weatherproof cover where indicated to be WP while in operation.

### C Switches:

- a Snap: UL 20, provide general duty flush single-pole toggle switches, 20-amperes, 120-277 volts AC only, with mounting yoke insulated from mechanism, equip with plaster ears, ivory switch handle and side wired screw terminals. Single pole, Three-way and Four-way as indicated on drawings.
- b. Motion Sensing, Ceiling Mounted: Provide dual technology ultrasonic and passive infrared or microphonic and passive infrared motion detector, manual off switch, 0 to 4800 watt fluorescent switching capacity, 277 volts AC, 360 sensing coverage, six to 15 minute off time delay, LED walk test indicator, bypass switch, listed, Universal Energy Control suitable for use in classrooms, 5\_year warranty, UL (UNENCO) Switchomatic Coordinate with connected wattage and type of room light fixtures.

### D. Wiring Device Accessories:

- a. Wall Plates: Provide UL listed, one-piece device plates for outlets and fittings to fit the device installed. For flush-mounted outlets on finished walls, provide white switch and outlet plates of types, sizes and with ganging and cutouts as indicated. Install with metal screws for securing plates to devices; screw heads colored to
- b. For surface mounted boxes, provide feraloy cast outlet plates on all outlet boxes, type suitable for wiring device installed in box.
- c. Provide plate with engraved legend where indicated.

### 2.5 SAFETY AND DISCONNECT SWITCHES

- A. General: UL 98, NEMA KS1, provide surface-mounted, sheet-steel enclosed switches, of types, sizes and electrical characteristics indicated; 3-blades, 4-wire with amperage rating as required, 60 hertz and visible blades with door in open position. Provide with safety handle which is easily recognizable and is capable of being padlocked in the open position and operating mechanism for quick-make and quick-break. Current carrying parts of high-conductivity copper, with silver-tungsten type switch contacts. Provide NEMA 1 type enclosures indoors and NEMA 3R type enclosures with raintight hubs outdoors.
- B. Provide General Duty Type: 240 volts AC, Type GD. Heavy Duty Type: 600 volts AC.
- C. Switches used as motor disconnect means shall be horsepower rated. Fused switches shall utilize Class R fuseholder and fuses unless indicated otherwise or recommended by equipment manufacturer.

### 2.6 ELECTRICAL GROUNDING AND BONDING EQUIPMENT

- A. General: UL 467. Provide grounding products of types indicated and of sizes and ratings as required by NEC. Provide all material required including but not necessarily limited to, cable/wire, connectors, terminals (solderless lugs), grounding rods/electrodes, bonding jumper braid and other items and accessories needed for a complete installation. Where more than one type meets indicated requirements, selection is installer's option. Where materials or components are not otherwise indicated, provide products complying with NEC, and established industry standards.
- B. Electrical Grounding Conductors: Unless otherwise indicated, provide electrical grounding conductors for grounding connections matching power supply wiring materials except bare or green insulation and sized according to NEC. Equipment grounding conductors shall have green insulation. Solid conductors shall comply with ASTM B-3, stranded conductors with ASTM B-8.
- C. Grounding Connectors: Provide listed and labeled grounding connectors for the required materials. Provide high-conductivity plated pressure connector units or exothermic welded connections.

### 2.7 COMBINATION MOTOR CONTROLLERS

A. General: Motor circuit protector; molded-case circuit-type breaker type with magnetic-only trip element calibrated to coordinate with the actual locked-rotor current of the connected motor and the controller overload relays. Provide breakers that are factory assembled with the controller, interlocked with unit cover or door, and arranged to disconnect the controller. Provide motor circuit-protectors with field-adjustable trip elements.

### 2.8 LIGHTING FIXTURES

- A. Provide lighting fixtures of sizes, types, and ratings indicated in lighting fixture schedule
- B. Wiring: Provide electrical wiring within fixture suitable for connecting to branch circuit. a. NEC Type AF for 120 volt, minimum No. 18 AWG. b. NEC Type SF 2 for 277 volt, minimum No. 18 AWG.

### 2.9 TIME CONTROLLED SWITCHES

D. Provide electrically operated time controlled maintained contact switches with 24 hour dials capable of periodically and automatically switching mechanically held or electrically held contactors ON and OFF. Select switches which permit selection of from 1 to 7 ON\_OFF operations each day; with coil ratings of 120 volts, 60 Hz, and with DPDT switch. Provide flush mount enclosure, NEMA Type 1, with side hinged door and lock, mounting holes and knockouts. Provide timing switch with manual circuit by pass switch, 10 hour reserve power, and separate grounding terminal. Finish enclosure with manufacturer's standard gray finish.

### 2.10 MOTION DETECTORS

A. Indoor Motion Detectors: Provide dual technology, microwave, passive infrared motion sensor to operate new lights and wherever else noted on detection of occupancy, 120/277 volts, field adjustable.

New River Valley / Staunton Harrisonburg / Lynchburg www.balzer.cc 1208 Corporate Circle

Roanoke, VA 24018

540.772.9580

**ENGINEERS / SURVEYORS** 

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08-06-2025

INSTALLATION PART 3 - INSTALLATION

### 3.1 General

- A. Verify final locations for rough\_in with field measurements and with the requirements of the actual equipment to be connected.
- B. Rough in for owner furnished equipment to make equipment operate as intended, including providing miscellaneous wiring items.
- C. Adjust operating mechanisms for free mechanical movement. Clean interior and exterior using manufacturer's approved methods and materials.
- D. Touch-up scratched or marred surfaces to match original finish.
- E. In general, perform cutting and patching as necessary. Exercise care where cutting, channeling, chasing or drilling floors, walls, partitions, ceilings or other surfaces for installation of electrical work.
- F. Patch finished surfaces and building components using new materials specified for the original installation and experienced installers. Installers' qualifications refer to the materials and methods required for the surface and building components being patched.
- 3.2 CABLE, WIRE AND CONNECTORS
  - A. Provide insulated conductors installed in conduit, except where specifically indicated or specified otherwise or required by NEC to be installed otherwise. Provide insulated equipment grounding conductor in feeder and branch circuits, including lighting circuits. Grounding conductor shall be separate from electrical system neutral conductor.
  - B. Coordinate cable and wire installation with electrical raceway and equipment installation. Conductor sizes indicated are copper. Pull conductors together where more than one is being installed. Use pulling means and lubricant that will not damage conductor or raceway. Use splice and tap connectors which are compatible with conductor material, and only in accessible junction, pull or outlet boxes.
  - C. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A.
- 3.2 ELECTRICAL RACEWAYS
  - A. Provide with complete electrical raceway system before installing conductors within raceways. Provide support as required by NEC but within 1 foot of a change in direction or connection to an enclosure, cover ends of empty conduit to prevent entry of debris during rough-in, provide bonding type locknuts at boxes. Conceal conduit, unless indicated otherwise within finished walls, ceilings and floors. Run exposed conduits parallel or perpendicular to the building structure, close to the ceiling or beams. Keep raceways at least 6 inches away from parallel runs of flues, steam, and hot water pipes.
  - B. Use the following wiring methods:
  - a. Outdoors:
  - Intermediate metal conduit
  - ii. Rigid metal conduit
  - iii. Liquid-tight flexible metal conduit b. Indoors:
  - i. Electrical metallic tubing
  - ii. Flexible metal conduit iii. Rigid metal conduit (where exposed and subject to damage)
  - C. Use raceway fittings that are of types compatible with the associated raceway and suitable for the use and
  - location. For intermediate steel conduit, use threaded rigid steel conduit fittings except as otherwise indicated. D. Run exposed, parallel, or banked raceways together. Make bends in parallel or banked runs from the same center line so that the bends are parallel. Factory elbows may be used in banked runs only where they can be
  - installed parallel. This requires that there be a change in the plane of the run such as from wall to ceiling and that the raceways be of the same size. In other cases provide field bends for parallel raceways. E. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line having not

less than 200-lb. tensile strength. Leave not less than 12 inches of slack at each end of the pull wire.

- F. Flexible Connections: Use short length (maximum of 6 ft.) of flexible conduit for recessed and semirecessed lighting fixtures, for equipment subject to vibration, noise transmission, or movement; and for all motors. Use liquid-tight flexible conduit in wet locations. Install separate ground conductor across flexible connections.
- G. Surface Metal Raceway: Install to walls, cabinets, and ceilings as recommended by equipment manufacturer with fasteners suitable for the material to which the surface metal raceway is being attached. Install a separate green ground conductor in raceway from the junction box supplying the raceway to receptacle or fixture ground terminals. Provide as an integral part or install wiring devices as indicated. Make cuts and other modifications with factory cuts and other modifications with factory furnished tools specifically designed for the purpose.
- 3.3 ELECTRICAL BOXES AND FITTINGS
  - A. Provide weatherproof outlet boxes for interior and exterior locations exposed to moisture, flush mounted boxes for connection to concealed conduit and pull boxes as required for installation of conductors. Sizes shall be adequate to meet NEC volume requirements, but not smaller than sizes indicated. Remove knockouts only as required and plug unused openings.
  - B. Fasten boxes rigidly to substrate or structural surfaces to which they are to be mounted, or solidly embed electrical boxes in concrete or masonry.
- 3.4 WIRING DEVICES
  - A. Install wiring devices in clean outlets after wiring has been installed. Do not install plates and cover installed wiring devices until painting is complete.
  - B. Ground all wiring devices unless indicated otherwise. Test wiring devices for correct polarity, proper ground and electrical continuity.
  - C. Install covers and device plates with edges in continuous contact with finished wall surfaces without use of mats or similar devices. Plaster or caulking used as a filling to repair openings around outlets shall not be applied without removing the cover or device plate. Plates installed in wet areas shall be gasketed.
- 3.5 SAFETY AND DISCONNECT SWITCHES
  - A. Install disconnect switches used for motor-driven equipment within sight of the controller and motor and not more than 50 feet from the controller and motor unless indicated otherwise.
  - B. Provide an electrical ground for all disconnect switches.
  - C. Test all switches for proper operation by operating them energized, but without load for six opening/closing cycles. Inspect switch and correct deficiencies, then retest to demonstrate compliance.

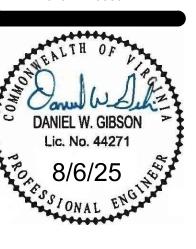
### 3.6 ELECTRICAL GROUNDING EQUIPMENT

- A. Install electrical grounding systems where shown, in accordance with applicable portions of National Electrical Code, NECA 331-2014 "Standard for Building and Service Entrance Grounding and Bonding," and in accordance with recognized industry practices to ensure that products comply with requirements and serve intended functions.
- B. Provide separate grounding conductor with wiring in all raceways.
- C. Provide grounding electrode conductor and connect to reinforcing steel in foundation footing where indicated.
- D. Install clamp-on connectors only on thoroughly cleaned metal contact surfaces, to ensure electrical conductivity and circuit integrity.
- 3.7 LIGHTING FIXTURES
  - A. General: Install lighting fixtures of types indicated, where shown and at indicated heights, in accordance with lighting fixture manufacturer's written instructions and with recognized industry practices. Comply with NEMA standards and requirements of National Electrical Code pertaining to installation of lighting fixtures and with applicable portions of NECA's "Standards of Installation".
  - B. Fasten surfaced fluorescent fixtures to suspended ceiling system near corner of each unit. Bolt fixture to main ceiling supports with stud clips minimum 1/2 20. Support fixtures weighing in excess of 56 pounds directly from the building structure. Recessed and semi recessed fixtures may be supported from suspended ceiling support system ceiling tees if the ceiling system support wires are provided at a minimum of four wires per fixture and located not more than 6 inches from each corner of each fixture. In addition, provide support clips securely fastened to ceiling grid members at or near corner of each recessed fixture.
  - C. Secure pendant mounted fluorescent fixtures via outlet box directly to building structure with approved bolting and clamps. Provide each stem or hanger with an approved swivel joint to ensure a continued plumb
  - D. Mounting heights indicated are to bottom of ceiling mounted fixtures and to center of wall mounted fixtures.
  - E. Install all exit lights lighting units plumb, square and level with walls and ceilings and secure in accordance with manufacturer's written instructions Mounting heights shall be to bottom of unit.
  - F. Clean lighting fixtures of dirt and debris upon completion of installation. Protect installed fixtures from damage during remainder of construction period.
  - G. Do not install interior fixture lens until construction is complete or protect lens from accumulation of dust and
  - H. Adjust all fixtures with adjustable aiming to meet the Architect/Engineer's approval.
  - I. Test all lighting fixtures for compliance with intended purpose. Correct malfunctioning or noisy units, then retest to demonstrate compliance.
- J. At date of substantial completion, replace all lamps which are observed to be noticeably dimmed as judged by the Architect/Engineer.
- K. Provide tight equipment grounding connections to comply with tightening torques specified in UL 486A for each lighting fixture.



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1208 Corporate Circle Roanoke, VA 24018 540.772.9580



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