





**LIFE SAFETY GENERAL NOTES**

1. ALL ROOMS WITH AN OCCUPANCY OF FIFTY (50) OR GREATER REQUIRE A POSTED SIGN OUTSIDE ALL DOORS OF THE ROOM STATING THE MAXIMUM OCCUPANT LOAD OF THE ROOM.

**EGRESS GENERAL NOTES**

1. SEE ELECTRICAL DRAWINGS FOR ALL EMERGENCY LIGHTING, EXIT SIGNAGE LOCATIONS, AND SIMILAR ACCESSORIES.
2. SEE CODE ANALYSIS FOR MEANS OF EGRESS REQUIREMENTS.
3. DOORS SHALL SWING IN DIRECTION OF EGRESS FOR SPACES OR AREAS WITH MORE THAN 50 OCCUPANTS.

**GENERAL FLOOR PLAN NOTES**

1. REFER TO ACCESSIBLE CLEARANCE INFORMATION FOR DOORS, CASEWORK, SITE WORK AND PLUMBING FIXTURES.
2. SEE PARTITION SCHEDULE FOR WALLS THAT REQUIRE SOUND ATTENUATION BLANKETS AND/OR SPECIFIC SOUND WALL CONSTRUCTIONS.
3. SEE FINISH DRAWINGS AND/OR SCHEDULE FOR SPECIFIC FINISH AND SURFACE PREPARATION REQUIREMENTS.
4. SEE REFLECTED CEILING PLANS FOR SPECIFIC CEILING TYPES, HEIGHTS, DETAILS, LIGHTS, DIFFUSERS, AND SIMILAR CONSTRUCTION.
5. SEE STRUCTURAL DRAWINGS FOR ANY MISCELLANEOUS FRAMING MEMBERS THAT ARE WITH WALL CONSTRUCTION ABOVE FINISH CEILING. INDICATE REPAIR OR STRENGTHENING REQUIREMENTS FOR CONCRETE BLOCK WALLS, AND SIMILAR STRUCTURAL ELEMENTS.
6. REFER TO PLUMBING DRAWINGS FOR FLOOR DRAIN LOCATIONS. ENSURE CONCRETE SLAB AND APPLIED FINISHES ARE SLOPED TO DRAIN AS REQUIRED. ENSURE SMOOTH TRANSITIONS.
7. FIRE EXTINGUISHERS (FE) SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
8. PROVIDE BLOCKING FOR WALL MOUNTED ACCESSORIES AND EQUIPMENT AS REQUIRED.
9. PROVIDE 6" STUDS AT WATER CLOSET WET WALLS UNLESS NOTED OTHERWISE.

**GENERAL REFLECTED CEILING PLAN NOTES**

1. CEILING PLAN LAYOUTS SHALL BE COORDINATED WITH MECHANICAL, ELECTRICAL, SPRINKLER SYSTEM DRAWINGS, AND OWNER'S REQUIREMENTS. IN THE EVENT OF CONFLICT, MECHANICAL, ELECTRICAL, PLUMBING OR FIRE PROTECTION DRAWINGS WILL GOVERN FOR THEIR SPECIFIC COMPONENT.
2. SEE ELECTRICAL DRAWINGS BY OTHERS FOR ALL LIGHTING AND ELECTRICAL LAYOUTS AND FIXTURE SPECIFICATIONS.
3. PROVIDE EXIT SIGNS AND/OR LIGHTS. SEE LIFE SAFETY PLANS AND/OR ELECTRICAL DRAWINGS FOR EMERGENCY EGRESS LIGHTING.
4. CONTRACTOR SHALL COORDINATE WITH MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTOR(S) FOR SCHEDULING AND COORDINATION OF INSTALLATION OF ALL LIGHTING AND ELECTRICAL COMPONENTS.
5. CEILING HEIGHTS SHOWN ARE APPROXIMATE/ NOMINAL DIMENSIONS. CONTRACTOR SHALL VERIFY EXACT HEIGHT IN FIELD.
6. CONTRACTOR SHALL COORDINATE ACCESS PANEL LOCATIONS AND SIZES. REQUIRED IN ANY HARD CEILING BASED ON ANY MECHANICAL OR ELECTRICAL EQUIPMENT LOCATED ABOVE "HARD" CEILINGS.
7. REFER TO GENERAL FINISH NOTES AND FINISH SCHEDULES FOR ADDITIONAL INFORMATION.
8. OWNER PROVIDED SPEAKER SYSTEM NOT SHOWN.
9. OWNER PROVIDED SECURITY SYSTEM NOT SHOWN.
10. UNLESS OTHERWISE NOTED, GWB SHALL BE FASTENED TO THE UNDERSIDE OF THE FLOOR/ROOF STRUCTURE ABOVE AREAS INDICATING A DROP ACT OR GWB CEILING. SEE ARCHITECTURAL SECTIONS AND DETAILS FOR ADDITIONAL INFORMATION.
11. PROVIDE 5/8" GYPSUM BOARD ABOVE ALL DROP CEILING ASSEMBLIES UNLESS OTHERWISE NOTED.
12. SOFFITS SHALL BE 1 INCH BELOW ADJACENT LOWEST CEILING HEIGHT, UNLESS OTHERWISE NOTED ON PLAN.

**GENERAL FINISH NOTES**

1. CONSULT WITH OWNER FOR ALL REQUIRED FINISH COLORS/TEXTURES. OWNER SHALL HAVE CHOICE OF COLOR FROM MANUFACTURER. FULL RANGE OF COLORS FOR ALL FINISHES SPECIFIED.
2. ALL CLOSETS AND AUXILIARY SPACES SHALL HAVE SAME FLOOR AND WALL FINISHES AS ROOMS THEY ARE LOCATED IN, UNLESS NOTED OTHERWISE.
3. IN ROOMS NOTED IN SCHEDULE PROVIDE BASE AROUND ROOM PERIMETER, UNLESS NOTED OTHERWISE.
4. INTERIOR WALLS AND INTERIOR LIGHTS. EXTERIOR WALLS SHALL BE PAINTED, CONSISTING OF (1) COAT OF PRIMER AND (2) COATS OF INTERIOR FINISH LATEX, UNLESS OTHERWISE NOTED.
5. SUBSTITUTIONS FOR SPECIFIED PRODUCTS SHALL BE EQUAL TO THOSE SPECIFIED IN COMPOSITION, PHYSICAL PROPERTIES, COLOR AND TEXTURE AND APPEARANCE, AND ENVIRONMENTAL QUALITIES. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ARCHITECT AND/OR OWNER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

**GENERAL WINDOW NOTES**

1. REFER TO OUTLINE SPECIFICATIONS FOR ADDITIONAL NOTES.
2. COORDINATE LOCATION AND DIMENSIONS WITH INFORMATION FOUND ON FLOOR PLANS AND ELEVATIONS.
3. ALL DIMENSIONS ARE SCHEMATIC NOMINAL SIZES ONLY. CONSULT WITH MANUFACTURER FOR EXACT WINDOW SELECTION AND ROUGH OPENING INFORMATION.
4. TEMPERED UNITS AS REQUIRED FOR HAZARDOUS LOCATIONS.
5. ALL GLAZING IN WINDOW UNITS WITHIN A 24" ARC OF THE SIDES OF EGRESS DOORS AND ALONG SIDEWALKS OR WALKING SURFACES SHALL BE OF AN APPROVED SAFETY TYPE.

**GENERAL ROOF NOTES**

1. ALL ROOFING, UNDERLAYMENT, AND SIMILAR MATERIALS SHALL MEET OR EXCEED CURRENT GOVERNING CODE. MATERIAL INSTALLATIONS SHALL BE PER MANUFACTURER INSTRUCTIONS.
2. PROVIDE "CRICKETS" AROUND ALL MECHANICAL EQUIPMENT, AND SIMILAR CONDITIONS AS REQUIRED TO PREVENT FLOW STOPPAGE OR PONDING. CONTRACTOR SHALL COORDINATE WITH ROOFING MANUFACTURER.
3. ALL DIMENSIONS SHOWN TO ROOF-TOP EQUIPMENT ARE APPROXIMATE. MEASURED TO BACK OF PARAPET. CONTRACTOR SHALL COORDINATE EXACT DIMENSIONS REQUIRED WITH MECHANICAL AND FRAMING CONTRACTORS.
4. PROVIDE AND INSTALL PROTECTION MATS INDICATED AND FROM ALL ACCESS POINTS TO AND AROUND ALL EQUIPMENT REQUIRING SERVICES.
5. ARROWS ON THE ROOF PLAN INDICATE WATER DRAINAGE DIRECTION.

**GENERAL ROOF FLASHING NOTES**

1. ALL METAL FLASHING WORK SHALL CONFORM TO LATEST EDITION OF "SHEET METAL & AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION" (SMACNA) STANDARD DETAILS.
2. INSTALL CONTINUOUS ICE AND WATER SHIELD/DAM: EXTEND FROM EAVE FACE TO AT LEAST 24 INCHES INSIDE EXTERIOR WALL LINE AND AT ALL RIDGES AND VALLEYS 36" WIDE.
3. PROVIDE FLASHING AT ALL VALLEYS AND DRIP EDGE AT ALL EAVES. PROVIDE ALUMINUM DRIP EDGE (2" X 1-1/2" X 0.032") AT ALL ROOF EDGES.
4. ROOFING CONTRACTOR IS TO INSTALL FLASHING AT ALL ROOF PENETRATIONS AS PER MANUFACTURERS STANDARD DETAILS.
5. ALL ROOF FLASHING AND PENETRATIONS ARE TO BE CONSIDERED PARAPET WALLS UNLESS OTHERWISE NOTED.

**GENERAL ROOF PENETRATION NOTES**

1. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ROOF PENETRATIONS WITH ELECTRICAL, MECHANICAL AND PLUMBING DRAWINGS, INCLUDING ROOF-MOUNTED EQUIPMENT, EXHAUST FANS, VENT PIPES, LIGHTNING PROTECTION AND SIMILAR SYSTEMS PRIOR TO CONSTRUCTION. REPORT ANY INCONSISTENCIES IMMEDIATELY TO THE ARCHITECT.
2. PROVIDE INSULATED ROOF BOOTS AND CURBS.
3. ALL PLUMBING VENTS SHALL BE HELD A MINIMUM OF 10'-0" FROM ANY AIR INTAKE.
4. PLUMBING PENETRATIONS NOT SHOWN.
5. ALL NEW ROOF PENETRATIONS SHALL BE PERFORMED BY A QUALIFIED ROOFING CONTRACTOR. ALL WORK SHALL BE IN FULL COMPLIANCE WITH ROOF MANUFACTURERS STANDARD DETAILS, SPECIFICATIONS AND RECOMMENDATIONS, SUCH THAT ALL WARRANTIES REMAIN IN FULL EFFECT.
6. ALL EXPOSED MECHANICAL EQUIPMENT SHALL BE PAINTED TO MATCH THE ARCHITECT'S SELECTION.

**ACCESSIBLE DOOR CLEARANCE NOTES**

1. UNLESS SPECIFICALLY NOTED OR DIMENSIONED OTHERWISE ALL NEW DOORS SHALL BE LOCATED WITH THE DOOR OPENING 4" FROM A PARTITION CORNER (I.E. 2" OF FRAMING AND A 2" DOOR FRAME).
2. ALL NEW AND SPECIFICALLY DESIGNATED DOORS SHALL MAINTAIN CLEAR AREAS BASED ON THE APPROACH DIRECTION AND THEIR OPERATIONAL SIDE. REQUIRED CLEAR AREAS MUST BE FREE OF "PROJECTIONS" AS DESCRIBED BY THE GOVERNING ACCESSIBILITY CODE (THIS INCLUDES WALL MOUNTED ACCESSORIES, PLUMBING FIXTURES, ADJACENT PARTITIONS, CURBS, AND SIMILAR SYSTEMS).
3. DIAGRAMS OF RELEVANT REQUIRED CLEARANCES ARE PROVIDED ON THE ACCESSIBILITY REFERENCE PAGE IN THIS DRAWING SET. THIS SET OF ICC ANSI A117.1-2009 STANDARDS HAS BEEN INDICATED HERE FOR GENERAL REFERENCE PURPOSES ONLY. IN NO WAY DOES THIS SHEET REPRESENT ALL APPLICABLE COMPONENTS OF THE "ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES" NATIONAL STANDARD.

**GENERAL DOOR NOTES**

1. PROVIDE WEATHERSTRIPPING AND DOOR SWEEPS AT ALL EXTERIOR DOORS.
2. FINAL DOOR STYLE SELECTIONS, COLOR, AND HARDWARE ARE TO BE DETERMINED. CONTRACTOR SHALL VERIFY AND COORDINATE IN THE FIELD.
3. PROVIDE DOOR FRAMES WITH 4" HEADS AT ALL DOORS WITHIN MASONRY WALLS AS REQUIRED TO MAINTAIN COURSING.
4. ALL GLAZING IN DOORS AND WITHIN A 24" ARC OF THE SIDES OF EGRESS DOORS SHALL BE OF AN APPROVED SAFETY TYPE (VERIFY IN FIELD).
5. PAINT HOLLOW METAL FRAMES AND DOORS WHERE SCHEDULED WITH 2 FINISH COATS OF HIGH-GLOSS ACRYLIC ENAMEL. REFER TO ELEVATIONS AND FINISH SCHEDULE.
6. ALL THRESHOLDS SHALL BE 1/4" MAXIMUM OFFSET, ACCESSIBLE.
7. DOOR DETAILS DO NOT DEPICT ALL INTERIOR FINISHES. REFER TO INTERIOR ELEVATIONS AND FINISH MATERIAL SCHEDULE FOR REQUIRED FINISHES.

**GENERAL FURNITURE NOTES**

1. FURNITURE ARRANGEMENT IS FOR REFERENCE ONLY AND IS NOT A FORMAL DEPICTION OF FINAL CONDITIONS. VERIFY ARRANGEMENT WITH OWNER.
2. ALL FURNITURE SHALL BE OWNER PROVIDED AND OWNER INSTALLED.
3. CONTRACTOR SHALL COORDINATE STORAGE OF OWNER FURNITURE WITHIN A SECURE SPACE AS PROJECT APPROACHES COMPLETION.

**GENERAL HARDWARE NOTES**

1. ALL HARDWARE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
2. SEE OUTLINE SPECIFICATIONS FOR REQUIRED FINISHES.
3. ALL LOCKS TO BE MASTER KEYS TO SELECTED SYSTEM. COORDINATE WITH OWNER FOR MASTERSUB-MASTER KEYS.
4. ALL DOORS SHALL HAVE ACCESSIBILITY APPROVED TYPE HARDWARE (VERIFY IN FIELD).
5. PROVIDE FRAME SILENCERS AND DOOR STOPS FOR ALL DOORS. STOPS MAY BE FLOOR MOUNTED OR WALL MOUNTED.
6. PROVIDE 1 1/2 PAIR HINGES PER LEAF UP TO 7'-0" TALL DOORS. PROVIDE 2 PAIR HINGES PER LEAF FOR DOORS EXCEEDING 7'-0" TALL, UNLESS NOTED OTHERWISE.
7. EXIT HARDWARE SHALL COMPLY WITH ALL APPLICABLE CODES.
8. THE MAXIMUM DIMENSION FROM THE TOP OF THE THRESHOLD TO THE EXTERIOR LANDING AT EXTERIOR DOORS SHALL NOT EXCEED 1/2". (VERIFY IN FIELD).
9. ADJUST CLOSERS SUCH THAT SWEEP PERIOD FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO AN OPEN POSITION OF 12 DEGREES SHALL BE 5 SECONDS MINIMUM. MAXIMUM OPENING FORCE OF DOORS SHALL BE 5 LBF FOR INTERIOR DOORS, AND 15 LBF FOR EXTERIOR DOORS.
10. HARDWARE PROVIDER TO REVIEW HARDWARE SETS, DOOR LOCKING ARRANGEMENTS, OVERALL FUNCTIONALITY ASPECTS & KEYING WITH OWNER AND CONTRACTOR TO COMPLETE HARDWARE ORDER. PROVIDE SAMPLES AS REQUIRED.

**GENERAL STOREFRONT NOTES**

1. STANDARD PROFILE STOREFRONT SYSTEMS SHALL BE ANODIZED BRONZE FINISH, TYPICAL.
2. REFER TO DOOR SCHEDULE FOR GLAZING TYPES USED IN DOORS.

**INTERIOR SIGNAGE NOTES**

1. PROVIDE ACCESSIBILITY COMPLIANT SIGNAGE TO ALL PUBLICLY ACCESSED AREAS WITHIN THE BUILDING. THIS INCLUDES BUT IS NOT LIMITED TO RESTROOMS, LOBBY AREAS, AND MECHANICAL ROOMS.
2. VERIFY ADDITIONAL SIGNAGE REQUIREMENTS WITH THE OWNER.
3. REFER TO CODE SUMMARY FOR ADDITIONAL NOTES.

**GENERAL EXTERIOR ELEVATION NOTES**

1. COORDINATE ALL EXTERIOR WALL PENETRATIONS WITH OTHER TRADES.
2. GRADING CONDITIONS AT THE BUILDING FACE MAY VARY AS SITE CONDITIONS AND BUILDING TECHNIQUES MAY DICTATE.
3. EXTERIOR WALL PLUMBING AND VENTILATION PENETRATIONS ARE NOT SHOWN. COORDINATE PROPOSED LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
4. ALL EXTERIOR FINISHES/COLORS/TEXTURES AND/OR MANUFACTURERS SHOWN HEREIN SHALL BE VERIFIED WITH OWNER PRIOR TO CONSTRUCTION.

**GENERAL EXTERIOR BUILDING SIGNAGE NOTES**

1. ALL EXTERIOR BUILDING SIGNAGE SHALL BE UNDER A SEPARATE LOCALITY PERMIT. COORDINATE/VERIFY LOCATIONS WITH OWNER SPECIFICATIONS.
2. PROVIDE ELECTRICITY TO ALL EXTERIOR SIGNAGE AS REQUESTED BY OWNER.

**TOILET ACCESSORIES NOTES**

1. CONTRACTOR TO SUPPLY AND INSTALL SCHEDULED TOILET ACCESSORIES IN RESTROOMS. VERIFY IF OWNER OR OWNER'S VENDOR IS SUPPLYING SCHEDULED ACCESSORIES.
2. PROVIDE WOOD BLOCKING AT ALL WALL-HUNG ITEMS IN FRAMED PARTITIONS.
3. ALL ACCESSORIES MUST BE ACCESSIBILITY COMPLIANT. SEE ACCESSIBILITY REFERENCE DETAILS SHEET.
4. VERIFY MOUNTING HEIGHT OF TOILET TISSUE HOLDER PRIOR TO MOUNTING. HEIGHT MAY VARY DEPENDING ON UNIT FURNISHED BY OWNER.
5. CONTRACTOR TO INSTALL BABY CHANGING STATION AND RESTROOM WALL CABINET (FURNISHED BY OWNER).
6. INSULATE ALL EXPOSED HOT WATER SUPPLY AND DRAIN PIPES.
7. TOILET LEVER SHALL BE TO THE WIDE SIDE OF ROOM OR STALL.
8. PROVIDE VENTILATION FAN TO OUTSIDE FOR ALL TOILETS. OPERATION TO ACTIVATE WHEN LIGHT IS SWITCHED.
9. CONTRACTOR SHALL VERIFY FINAL FIXTURE SELECTIONS WITH OWNER PRIOR TO PURCHASING.

**GENERAL PARTITION NOTES**

1. INSTALL CONTINUOUS BLOCKING/FRAMING AT ALL DROP FRAMED CEILING LEVEL(S) AS REQUIRED.
2. INSTALL CONTINUOUS BLOCKING/FRAMING AT MID-HEIGHT OF ALL STUD WALLS GREATER THAN 10'-0" HIGH AS REQUIRED BASED ON MANUFACTURER SPECIFICATIONS.
3. ALL PARTITIONS SHALL BE FINISHED PER FINISH SCHEDULE.
4. ALL STUD WALLS NOT EXTENDED TO UNDERSIDE OF ROOF DECK AND TALLER THAN 6'-0" ABOVE FINISHED FLOOR SHALL BE BRACED AT TOP AT ±6'-0" ON CENTER WITH EITHER STUD "KICKERS" OR STUDS EXTENDED UP TO ROOF STRUCTURE FOR ANY WALL GREATER THAN 10'-0" IN LENGTH.
5. ALL GYPSUM WALL BOARD WALL INTERSECTING EXTERIOR WALLS SHALL BE GLOUED TO END STUDS AND SEALED AT WALL JOINT CONTINUOUS WITH ACOUSTICAL SEALANT.
6. PRESSURE-TREATED BOTTOM PLATE REQUIRED AT ALL WOOD FRAMED WALLS EITHER STUD "KICKERS" OR CONCRETE AND/OR MASONRY THAT IS IN DIRECT CONTACT WITH GROUND.
7. INFORMATION ON THE PARTITION SCHEDULE IS TO BE USED IN CONJUNCTION WITH FLOOR PLANS, REFLECTED CEILING PLANS, INTERIOR ELEVATIONS AND SECTIONS.
8. EXTERIOR ENVELOPE IS NOT SCHEDULED. REFER TO SECTIONS AND DETAILS FOR TYPICAL BUILDING EXTERIOR WALL DESCRIPTION.
9. ALL SINGLE LAYER GYPSUM BOARD WALLS CONTINUOUS AND CONTIGUOUS WITH MULTI-LAYER GYPSUM BOARD WALLS SHALL MAINTAIN ONE CONTIGUOUS OUTER LAYER OF GYPSUM BOARD AT THE SAME FACE OF FINISH. STUDS AND FURRING CHANNELS SHALL BE OFFSET ACCORDINGLY.
10. PARTITION TYPES ARE CONTINUOUS ACROSS DOOR AND WINDOW OPENINGS AND AROUND CORNERS UNLESS OTHERWISE NOTED.

**GENERAL PARTITION DEFLECTION NOTES**

1. ALL STUD WALLS EXTENDED TO UNDERSIDE OF ROOF STRUCTURE (DECK OR JOISTS) SHALL UTILIZE A DEFLECTION-TYPE TOP CONNECTION WHICH ALLOWS ROOF DEFLECTION.
2. LIMITING HEIGHTS OF GYPSUM BOARD PARTITIONS ARE AS PUBLISHED FOR THE U.S. GYPSUM BOARD PRODUCTS FOR MAXIMUM L240 DEFLECTION AT 5 PSF LATERAL LOAD. VERIFY ACTUAL LIMITING HEIGHT FOR APPROVED MANUFACTURER'S PRODUCTS. WHERE SCHEDULED PARTITION EXCEEDS LIMITING HEIGHT, INSTALLERS SHALL ADD BRACING ELEMENTS (ABOVE CEILING) OR DECREASE STUD SPACING, AND/OR GAUGE AS REQUIRED TO MAINTAIN L240 DEFLECTION CRITERIA.
3. INSTALLERS SHALL CONFIRM ALLOWABLE DEFLECTIONS FOR FINISH MATERIALS APPLIED TO STUD PARTITIONS. WHERE ALLOWABLE DEFLECTION OF FINISH MATERIALS IS LESS THAN DEFLECTION OF SCHEDULED PARTITION, STUD SPACING AND/OR GAUGE SHALL BE ADJUSTED TO CONFORM TO FINISH MATERIAL DEFLECTION REQUIREMENTS.
4. ALLOWABLE DEFLECTION FOR ALL PARTITIONS SCHEDULED TO RECEIVE CERAMIC TILE IS L/360 MAXIMUM.

**GENERAL MOISTURE RESISTANT PARTITION NOTES**

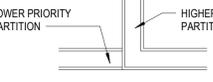
1. PROVIDE MOISTURE RESISTANT GYPSUM BOARD IN ALL WET OR DAMP SPACES.
2. MOISTURE RESISTANT GYPSUM BOARD SHALL BE USED AT ALL GYPSUM WALLBOARD PARTITIONS SCHEDULED TO RECEIVE CERAMIC TILE, PARTITIONS IN KITCHEN AREAS, AND AT ALL TOILET ROOM PARTITIONS.
3. PROVIDE TILE BACKER BOARD IN LIEU OF GYPSUM WALL BOARD BEHIND ALL WALL TILE. SEE INTERIOR DETAILS FOR TILE LOCATIONS.

**GENERAL SOUND TRANSMISSION (STC) NOTES**

1. ALL GYPSUM WALL BOARD CORNER JOINTS SHALL BE SEALED.
2. WHERE SOUND TRANSMISSION CLASS (STC) RATINGS ARE INDICATED, PROVIDE MATERIAL AND INSTALLATION IDENTICAL IN EVERY RESPECT TO MANUFACTURERS TESTED SYSTEM OF INDICATED RATINGS.
3. FOR WALLS EXTENDING TO UNDERSIDE OF STRUCTURE ABOVE, SOUND-RATED INSULATION BLANKETS SHALL BE FULL HEIGHT OF PARTITION. FOR WALLS EXTENDING 6" ABOVE FINISH CEILING, LAY SOUND-RATED BLANKETS 24" FROM EACH SIDE OF PARTITION.
4. ELECTRICAL OUTLET BOXES IN OPPOSITE FACES OF SOUND-RATED WALLS SHALL BE SEPARATED HORIZONTALLY BY A MINIMUM 24". BACKS AND SIDES OF BOXES TO BE SEALED WITH 1/8" RESILIENT SEALANT AND BACKED WITH 2" MINERAL FIBER INSULATION.
5. APPROVED PERMANENT AND RESILIENT ACOUSTICAL SEALANT SHALL BE PROVIDED IN SOUND-RATED PARTITIONS ALONG THE JOINT BETWEEN THE FLOOR AND ALL SEPARATE WALLS.

**WALL PRIORITY LEGEND**

- |                    |                                       |
|--------------------|---------------------------------------|
| (HIGHEST PRIORITY) | 1 - 2 HOUR FIRE AND SMOKE WALL        |
|                    | 2 - 2 HOUR FIRE AND 2 HOUR SHAFT WALL |
|                    | 3 - 1 HOUR FIRE AND SMOKE WALL        |
|                    | 4 - 1 HOUR FIRE WALL                  |
|                    | 5 - NON-RATED (LOWEST PRIORITY)       |



**GENERAL EXTERIOR PAINT NOTES**

1. ALL EXTERIOR FINISHES/COLORS/TEXTURES AND/OR MANUFACTURERS SHOWN HEREIN SHALL BE VERIFIED WITH OWNER PRIOR TO CONSTRUCTION.
2. PAINTING SHALL BE LABELED FOR EXTERIOR APPLICATIONS. USE ONLY PAINT LISTED BY MANUFACTURER FOR INTENDED SUBSTRATES.
3. PAINT ALL EXTERIOR SIDING, TRIM AND SOFFITS. CONSULT OWNER FOR ALL REQUIRED PAINT AND MATERIAL COLORS IF NOT SPECIFICALLY SHOWN HEREIN.
4. MASK ANY EXTERIOR ELEMENTS (LIGHTS, WINDOWS, DOORS, AND SIMILAR OBJECTS) WHICH ARE NOT TO BE PAINTED PRIOR TO PAINTING. REMOVE ANY SPILLS OR EXCESS PAINT BEFORE PAINT DRIES.
5. PAINT ALL EXPOSED UTILITY JUNCTION BOXES/METERS AND ASSOCIATED CONDUIT SHALL BE PAINTED TO MATCH IMMEDIATELY ADJACENT BUILDING COLOR.

**GENERAL ROOFING & GUTTERING NOTES**

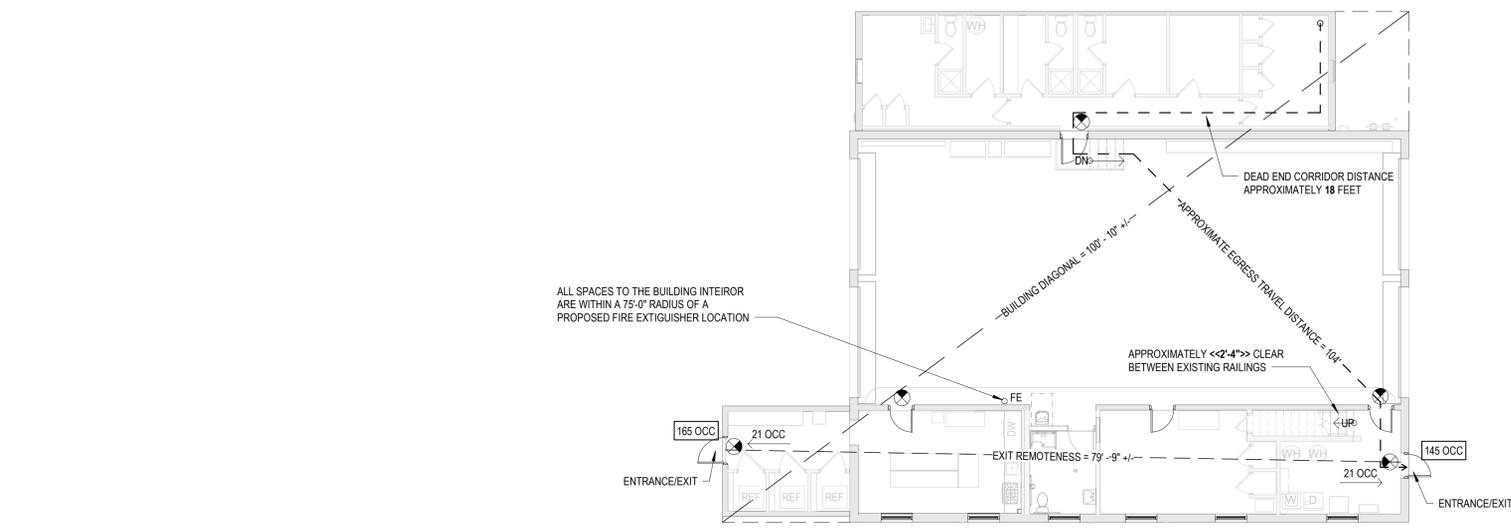
1. ALL EXTERIOR FINISHES/COLORS/TEXTURES AND/OR MANUFACTURERS SHOWN HEREIN SHALL BE VERIFIED WITH OWNER PRIOR TO CONSTRUCTION.
2. CONNECT TO BELOW GRADE PIPING. SEE SCHEMATIC ROOF PLAN FOR DOWNSPOUT LOCATIONS. COLOR TO BE SELECTED BY OWNER, TYPICAL.

**GENERAL BUILDING SECTION NOTES**

1. ALL DATUM ELEVATIONS ARE INDICATED RELATIVE TO HEIGHT ABOVE BUILDING SLAB OR FRAMED FLOOR SYSTEMS. REFER TO CIVIL DRAWINGS FOR TOP OF SLAB ELEVATION.
2. REFER TO STRUCTURAL SHEETS FOR ALL SLAB AND FOUNDATION DESIGN FACTORS, DIMENSIONS, NOTES, REINFORCING, AND DEFLECTION CRITERIA.
3. COORDINATE ALL MATERIALS/SYSTEMS WITH THOSE NOTED ON FLOOR PLANS, EXTERIOR ELEVATIONS, WALL SECTIONS, AND SCHEDULES.
4. COORDINATE ALL EXTERIOR WALL PENETRATIONS WITH OTHER TRADES.
5. GRADING CONDITIONS AT THE BUILDING FACE MAY VARY AS SITE CONDITIONS AND BUILDING TECHNIQUES MAY DICTATE.
6. REFER TO CODE REVIEW DATA FOR REQUIRED INSULATION MINIMUM VALUES (UNDER-SLAB, WALLS, AND ROOF).

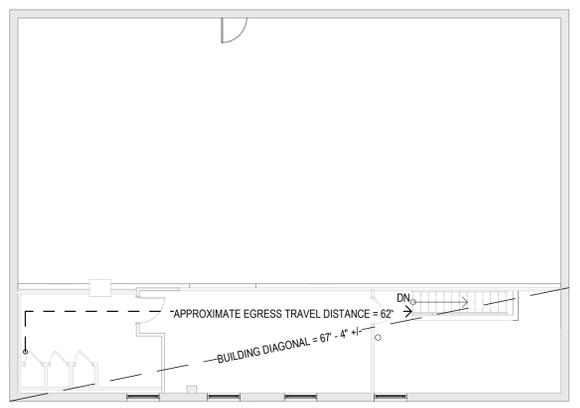
**GENERAL SQUARE FOOTAGE NOTES**

1. "GROSS" SQUARE FOOTAGE FOR WHOLE BUILDING IS MEASURED TO EXTERIOR FACE OF EXTERIOR WALLS.



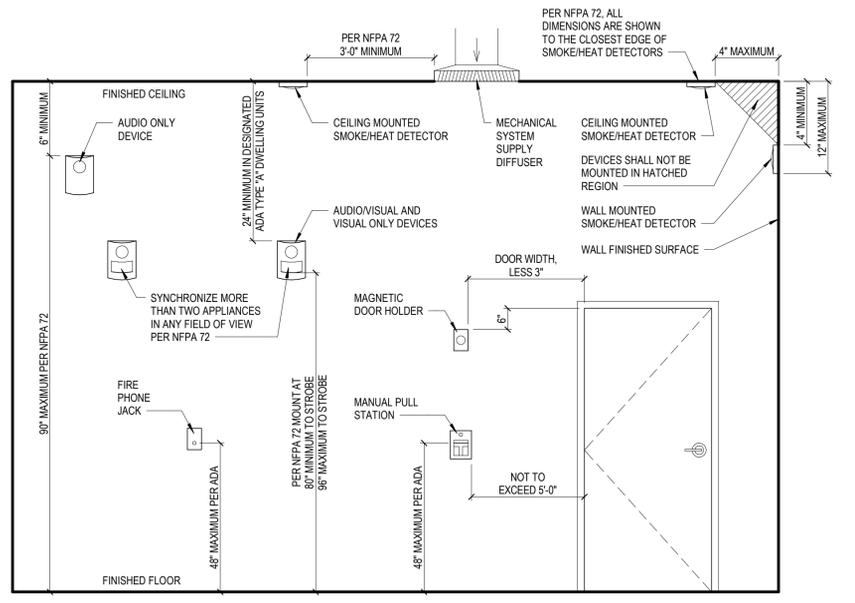
**8 FIRST FLOOR LIFE SAFETY**

TR1.02 NOT TO SCALE



**9 SECOND FLOOR LIFE SAFETY**

TR1.02 NOT TO SCALE



**LIFE SAFETY DEVICE MOUNTING HEIGHTS**

NOT TO SCALE

**FIRE EXTINGUISHER MOUNTING**

NOT TO SCALE



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**SALEM VA**



**SALEM FIRE STATION #2**  
RENOVATION  
GENERAL NOTES & LIFE SAFETY PLANS

DRAWN BY: JR3  
DESIGNED BY: JR3  
CHECKED BY: RWP  
DATE: 2024-08-30  
SCALE: As indicated  
REVISIONS:

PROJECT NO: 03220052.01

**OUTLINE SPECIFICATIONS**

**000000 CITY OF SALEM BIDDING NOTES**

- The outline specifications for product specifications for any product specifically specified are "basis of design" products that establish the level of quality and type of material for those products. Alternate products that meet the same level of quality and same specifications will be considered, to be submitted to architect and owner for review prior to award of contract.
- Construction elements not specifically specified with product selections have been provided with performance specifications. All building products for those items shall meet the performance specifications, to be verified by architect and/or owner during submittal/shop drawing review.
- The following items shall use the following material allowances for bidding in lieu of providing material specifications:
  - carpet: \$40.00 / square yard
  - inVct: \$30.00 / square yard
  - vinyl cove base: \$4.00 / linear foot

For all "allowance" materials the allowance noted shall be utilized for material only. Installation shall be included in the base bid. Please note: if final cost during construction is less than the bid unit price, the cost savings shall be passed on to the owner via change order.

4. Unit prices for various building/construction elements shall be provided with bids or submitted prior to contract award. Unit prices shall be given for the following items:

- Footing/foundation excavation (\$ / linear foot)
- Concrete slab-on-grade repair (\$ / linear foot)
- Concrete sidewalk and base (\$ / linear foot)
- Rock excavation (\$ / linear foot)
- Wall coping (\$ / linear foot)
- Hauling (\$ / ton / mile)
- Root decking replacement (\$ / square foot)
- Roof replacement (\$ / square foot)

**011000 SUMMARY**

- Contractor shall verify all existing conditions and drawing dimensions prior to commencing any work. Any inconsistencies 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 the inconsistency.
- Under no circumstances shall these drawings be used for shop drawings.
- Work noted as "NOC" is not part of this contract and will be handled by Owner under separate contract.
- Work not indicated on a part of the drawings, but reasonably implied to be similar to that shown at corresponding pieces, shall be repeated.
- In case of conflict between the General Notes, Specifications, and Drawings, the most stringent requirements shall govern unless Architect instructs otherwise.
- Not all details, equipment, systems, or materials sections are included in the documents. The Contractor shall base their bid on the supplied information, and shall also include any additional details, equipment, systems, or material required to deliver a complete and finished product to the Owner that are reasonably and normally included in a completed project of similar scope, in compliance with all laws, codes and ordinances.
- Do not scale the drawings. Rely on written dimensions as given.
- All interior dimensions shown on the plans are from face of stud unless otherwise noted. Exterior wall dimensions are from interior face of stud to exterior face of sheathing. Otherwise, all dimensions are from interior face of exterior wall to face of stud. Dimensions shown on floor plans, sections, elevations, and details are to face of stud, masonry, or concrete gridlines, unless otherwise noted.
- All dimensions shown on the plans to accessible (ICC A117.1-2009) relevant building features/fixtures are from face of finish material (both floors and walls). Make special note of dimensions indicated as "clear" or "above finished floor".
- Contractor shall obtain and maintain access to site to copies of all relevant code resources for reference. Editions shall be per the current version of the Virginia Construction Code (indicated in the code summary) and referenced standards per the Virginia Construction Code.

**012100 ALLOWANCES**

- Lump sum allowances, unit-cost allowances, and quantity allowances shall include cost to Contractor of specific products and materials under allowance and shall include taxes, freight, and delivery to project site, unless otherwise indicated. Contractor's costs for receiving and handling of materials, equipment, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the contract sum and not part of the allowance.
- Contingency allowances are to provide an equitable way to reimburse Contractor for unknown costs associated with unforeseen events or systems during construction. Contractor's overhead, profit, and related costs for products and equipment under the contingency allowance are included in the allowance. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs. At project closeout, credit unused amounts remaining in the contingency allowance to Owner.

**012200 UNIT PRICES**

- Unit price is an amount incorporated into the agreement, applicable during the duration of the work as a price per unit of measurement for materials, equipment, or services, or a portion of the work, added to or deducted from the contract sum by appropriate modification, if the scope of work or estimated quantities of work required by the contract documents are increased or decreased. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- Owner reserves the right to reject Contractor's measurement of work in-place that involves use of established unit prices and to have this work measured by Owner's independent survey acceptable to contractor.
- Agreements between Contractor and Owner shall include an agreed unit price for removal of unsatisfactory soil and replacement with satisfactory soil material. Unsatisfactory soil excavation and disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required.
- Agreements between Contractor and Owner shall include an agreed unit price for removal of unsatisfactory mass rock and replacement with satisfactory soil material. Mass rock excavation and disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required.

**012300 ALTERNATES**

- The following bid alternates are included in these drawings and shall be bid as alternate prices and either an "add" or "deduct" on the bid form. Any element not listed as part of an alternate shall be part of the base bid.
  - A. Replace existing vehicle exhaust systems in the existing apparatus bays.
  - B. Replace the existing sanitary line to Electric Road.
  - C. Upgrade the existing apparatus bay slab to provide additional thickness.
  - D. Remove and abate existing floor finishes on the upper level. Replace with new epoxy finish floor.

**012500 SUBSTITUTIONS**

- Proposed substitutions must be clarified and explained to the Owner and/or Architect whether they be for cause or convenience. Substitutions for cause are changes proposed by Contractor that are required due to changed project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms. Substitutions for convenience are changes proposed by Contractor or Owner that are not required in order to meet other project requirements but may offer advantage to Contractor or Owner.
- Substitutions for specified materials shall include composition, physical properties, color and texture and appearance, and environmental qualities. All substitutions shall be submitted to the Architect and/or Owner for review and approval prior to construction.
- Substitutions for specified materials and products shall be made only with prior approval from the Owner and/or Architect.
- Substitution requests shall be made in writing a minimum of 30 days before material is to be installed. Request will provide documentation that substituted product complies with all specified properties and performance of original component or material.
- Any cost savings will be returned to the Owner.
- No increase to cost will be allowed except with prior approval from the Owner and/or Architect.

**012600 PAYMENT PROCEDURES**

- Coordinate preparation of the Schedule of Values with preparation of Contractor's construction schedule. Arrange Schedule of Values consistent with format of AIA document G703.
- Revise the Schedule of Values when change orders or construction change directives result in a change in the contract sum. Include at least one separate line item for each change order and construction change directive.
- Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and Construction Manager and paid for by Owner. The date for each progress payment is indicated in the agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

**013000 ADMINISTRATIVE REQUIREMENTS (MEANS AND METHODS)**

- Balzer & Associates and their professional consultants will not have control of and will not be responsible for construction means, methods, sequences, or for safety precautions in connection with the work on this project or for the acts or omissions of the Contractor, Subcontractor, or any other persons performing any of the work on this site.
- Contractor shall be responsible for all construction means, methods, techniques, sequences, and procedures and for safety precautions and programs as they relate to the work of this project.

**013300 SHOP DRAWINGS AND SUBMITTALS**

- Shop drawings for materials shall be submitted to the Engineer/Architect and/or Owner for review prior to the start of fabrication or commencement of work.
- A list of proposed shop drawing submittals with a schedule of required approval dates shall be submitted to the Architect within ten (10) days of issuance of contract. Balzer & Associates shall have a minimum of ten (10) working days to review all shop drawings and resubmittals.
- Contractor shall provide three (3) printed copies of submittals and shop drawings or a digital copy. Digital copies are preferred.
- No portion of the contract drawings may be reproduced for submittal as shop drawings unless authorized by Balzer & Associates, in writing.
- Shop drawings shall bear the Contractor's stamp of approval, which shall constitute certification that they have verified all field measurements, construction criteria, materials, and similar data and have checked each drawing for completeness, coordination, and compliance with the contract documents. Unstamped submittals will be rejected without review.
- Changes to shop drawings that are re-submitted must be clouded or otherwise clearly indicate the changes that have been made to a previously issued and reviewed drawing.
- Where shop drawings are required, Architect/Engineer shall not be liable for work performed without shop drawings approved by their office.
- On each submittal, clearly indicate deviations from requirements in the contract documents, including minor variations and limitations.

**014000 QUALITY REQUIREMENTS**

- All materials shall be free from defects impairing strength, durability, or appearance.
- All work shall be coordinated with other trades in order to avoid interference and preserve maximum headroom and avoid omissions.
- Subcontractors, before starting their work shall check and verify their particular related requirements for compliance along with measurements, surface levels, and surface conditions near and about their work. It will be concluded that each Subcontractor understands and knows exactly what will be required. Commencement of work signifies acceptance of existing conditions as satisfactory.
- Layout all partitions before beginning construction to prevent errors by discrepancy, all partitions will be installed as noted on the drawings. Do not scale the drawings.
- Each Contractor is responsible for first class workmanship and will assume all responsibility for the care and protection of their own work and materials from damage. They will make good any damage to their own or other work caused by themselves or workmen employed by them.

**014100 REGULATORY REQUIREMENTS & APPLICABLE CODES**

- All construction must comply with all governing codes.
- Contractor will abide by local area standards and related Occupational Safety and Health Administration (OSHA) standards for the safety of their employees on a site. Balzer & Associates and their professional consultants will be held harmless by the Owner, Contractor and related awarded trades, on this project for accidents or injuries caused or accrued on this property during the construction of this project.
- All designs, construction, materials, and workmanship shall comply with the governing building code(s), as a minimum level of construction detail and quality. All work included in the construction of this project shall comply with all applicable provisions of the code(s). By commencing construction, contractor acknowledges understanding of the code(s) and agrees to incorporate all required elements, whether indicated within the documents or not.
- All areas shall be accessible in accordance with governing codes and amendments and applicable "Accessible and Usable Buildings and Facilities" (ICC A117.1-2009) accessibility guidelines.

**015000 TEMPORARY WORK**

- 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, and similar temporary work, required to ensure the structural integrity/stability of the existing building, sidewalks, utilities, and similar building elements during construction shall be designed by a professional Engineer licensed in the Commonwealth of Virginia.
- Contractor shall be responsible 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 limits of construction. Work required to maintain temporary egress patterns shall comply with applicable governing building code(s) and "Accessible and Usable Buildings and Facilities" (ICC A117.1-2009) guidelines, unless specifically approved by the local authority having jurisdiction.
- Provide a secure staging and material storage area adjacent to the area of construction. Location shall be coordinated with the Owner's requirements.
- Provide temporary barricades to separate construction areas for public safety around entire perimeter of construction area.
- Provide periodic inspection of temporary barriers, barricades, enclosures, and temporary fencing to ensure their continuity and integrity.

**015200 CONSTRUCTION FACILITIES**

- The Contractor shall protect all existing or newly installed finish work and surfaces from damage during construction and shall replace and/or repair all damaged surfaces caused by contractor or subcontractor personnel to the satisfaction of the Owner.
- All Contractor and Sub-Contractors performing work on the premises shall be responsible for installing, maintaining, and supervising a reasonable and prudent safety program including but not limited to the isolation of work areas and the prompt removal of any debris or tools which might endanger site visitors and staff of the owner.

**017700 EXECUTION AND CLOSURE REQUIREMENTS (SUBSTANTIAL COMPLETION AND FINAL COMPLETION)**

- For final clean up and disposal, remove debris, rubbish, and waste material from the property to a lawful disposal area and pay all hauling and dumping costs. Conform to all pertaining federal, state, and local laws, regulations and orders upon completion of work. All construction areas shall be left vacuum-clean and free from debris. Clean all dust, dirt, stain, hand marks, paint spots, droppings, and other blemishes. After all other work is completed and just prior to turning the space over to the Owner, the Construction Manager will employ the services of a professional cleaning services to clean and wash down all installed equipment, service areas, along with the cleaning of all glass window/door surfaces prior to occupancy.
  - a. Clean project site of rubbish, waste material, litter, and other foreign substances.
  - b. Clean exposed exterior and interior hard-surface finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - c. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - d. Clean floor, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
  - e. Vacuum and mop concrete.
  - f. Vacuum carpet and similar soft surfaces, removing debris and excess nap, clean according to manufacturer's recommendations for visible soil, lint, and stain removal.
  - g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - h. Remove labels that are not permanent.
    - i. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment.
    - j. Lubrication, paint and motor droppings, and other foreign substances.
  - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- Replace all mechanical system filters with new filters (but before final air balance testing).
- Contractor's list of incomplete items: prepare and submit list of items to be completed and corrected (Contractor's "Punch List"), indicating the value of each item on the list and reasons why the work is incomplete.
- Advise Owner of pending insurance changeover requirements.
- Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
- Complete startup and testing of systems and equipment.
- Perform preventive maintenance on equipment used prior to substantial completion.
- Advise Owner of changeover in utility services.
- Participate with Owner in conducting inspection and walkthrough with local emergency responders.
- Terminate and remove temporary facilities from project site, along with mockups, construction tools, and similar elements.
- Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

**017823 OPERATION AND MAINTENANCE DATA**

- Organize warranty documents into an orderly sequence based on the sequence of the outline specifications or table of contents of project manual.
- Provide a warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- Warranties in paper form: bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 9-1/2-by-11-inch paper.

**017839 PROJECT RECORD DOCUMENTS**

- At project completion Contractor shall provide one (1) complete set of as-built drawings indicating all discrepancies, changes, variance and/or deviation from the construction documents, and actual locations of concealed work, and full collection of warranties and operations instructions prior to final payment.
- Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record, whether individual or entity is installer, subcontractor, or similar entity, to provide information for preparation of corresponding markup record prints. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
- Accurately record information in an acceptable drawing technique.
- Record data as soon as possible after obtaining it.
- Record and check the markup before enclosing concealed installations.
- Cross-reference record prints to corresponding photographic documentation.
- Types of items requiring marking include, but are not limited to, the following:
  - a. Dimensional changes to drawings.
  - b. Revisions to details shown on drawings.
  - c. Depths of foundations.
  - d. Locations and depths of underground utilities.
  - e. Revisions to routing of piping and conduits.
  - f. Revisions to electrical circuitry.
  - g. Actual equipment locations.
  - h. Duct size and routing.
  - i. Locations of concealed internal utilities.
  - j. Changes made by change order or change directive.
  - k. Changes made following architect's written orders.
  - l. Details not on the original contract drawings.
  - m. Field records for variable and concealed conditions.
  - n. Record information on the work that is shown only schematically.
  - o. Mark important additional information that was either shown schematically or omitted from original drawings.

**017900 DEMONSTRATION AND TRAINING**

- Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for training sessions.
- Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar training at start of each season.
- Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct instruction using final operation and maintenance data submittals.

**024000 DEMOLITION**

- Refer to the demolition plans and general notes for additional notes.

**033000 CAST-IN-PLACE CONCRETE (REFER STRUCTURAL NOTES FOR ADDITIONAL INFORMATION)**

- Interior slabs shall have vapor barrier to be ASTM E 1745, class A, not less than 15 mils thick. Vapor barrier shall be continuous from outside face of exterior walls. All penetrators and seams shall be sealed with membrane manufacturer approved tape and/or sealant. Contractor shall inspect with special inspector (as required) immediately before concrete placement to ensure integrity of membrane.
- Floor slabs to be depressed when necessary to accommodate finished floor system with no change in finished floor elevation to adjacent floor systems. Floor materials may include recessed floor mats, tile, carpet, or similar finishes.

**040200 UNIT MASONRY (REFER STRUCTURAL NOTES FOR ADDITIONAL INFORMATION)**

- None.

**052000 METAL RAILINGS (REFER STRUCTURAL NOTES FOR ADDITIONAL INFORMATION)**

- All metal railings shall be free from defects impairing strength, durability, or appearance. Materials shall be made with structural properties to sustain safety or withstand strain and stresses to which normally subjected. All exposed fastenings to be of same materials, color, and finish as metal to which applied unless otherwise noted. As far as possible, all wall work shall be fitted, and shop assembled ready for erection.
- Steel and iron shall be primed with universal shop primer. Railings and guardrails for exterior use shall be non-corrosive metals, or with exterior grade coatings.
- Provide shop drawings for review. Engineering design of railings by Contractor.

**065000 COMMON WORK RESULTS FOR WOODS, PLASTICS, AND COMPOSITES**

- Flush metal access panels shall be provided and installed wherever required by code or for the proper operation or maintenance of plumbing, mechanical or electrical equipment, whether or not indicated on the drawings. Coordinate size, location, tire rating, and type of access panel with other work.
- Contractor shall provide and install all stiffeners, bracing, back-up plates, blocking, and supporting brackets required for the installation of all casework, toilet accessories and of all floor-mounted or suspended mechanical and electrical equipment.
- All pipes, ducts, and bus ducts, which penetrate walls, ceilings, or floor construction, shall be installed to maintain the fire resistive rating and structural integrity of the assembly.
- All walls shall be adequately braced to resist all horizontal loads from wind, earth, and construction loads during installation and until such time as permanent anchorage is in place. Heavy compaction equipment will not be allowed within a distance subtended by a 45-degree angle between the surface of the ground and any footing.

**061000 ROUGH WOOD FRAMING (REFER TO STRUCTURAL NOTES FOR ADDITIONAL INFORMATION)**

- 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).
- Contractor to provide wall blocking for all shevings, equipment, grab bars, mop holders, futures, and similar accessories for firm support. Coordinate with all Contractor, Owner and equipment supplier requirements prior to enclosing framing.
- Wood treatment: pressure treat all sill and plates and any other wood in contact with masonry, concrete or ground, and as shown elsewhere on drawings. Pressure treatment shall comply with AWWP standards C2 and LP-22.
- Fasteners for preservative treated wood shall be hot-dipped zinc coated galvanized steel, stainless steel, silicon bronze, or copper.

**061130 METAL DOORS**

- Doors to be minimum 3'-0" wide x 7'-0" tall unless otherwise noted.
- Exterior steel doors shall be ANSI/SO-100, grade III, extra heavy duty, minimum 16-gauge galvanized steel faces, seams welded and ground smooth. Label where indicated on schedule. Insulated core, R-5 minimum.
- Do not paint or conceal labels of fire rated elements.
- Insulated glazing shall be (2) 1/4" thick float glass separated by a 1/2" dehydrated air space complying with ASTM E774. Temper units as required for non-insulated tempered glass.
- Tempered glazing shall be 1/4" thick, ASTM 1048, type 1, quality Q5, fully tempered.

**061200 METAL FRAMES**

- Exterior frames shall be fabricated from 16-gauge galvanized steel. Frames with welded corners for exterior doors, unless instructed by owner otherwise. Provide weatherstripping for exterior doors. All frames to receive minimum 26-gauge mortar boxes in mortared in frames. Provide all anchorage devices as required for wall type. Anchors to be concealed type. Factory cut doors and frames for hardware installation.
- Interior frames shall be fabricated from 18-gauge. Knock-down type, unless instructed by owner otherwise. Provide silencers on interior frames. All frames to receive minimum 26-gauge mortar boxes in mortared in frames. Provide all anchorage devices as required for wall type. Anchors to be concealed type. Factory cut doors and frames for hardware installation.
- Do not paint or conceal labels of fire rated elements.

**061400 WOOD DOORS**

- Interior non-rated wood doors shall be 1-3/4" thick, 7-ply, crossbanded construction, particle board core, premium grade wood face. Factory stain finish with satin polyurethane (matching edge) plain sliced white birch book match.

**064113 ALUMINUM FRAMED ENTRANCES AND STOREFRONTS**

- Standard profile storefront systems shall be anodized bronze finish, typical.
- Storefronts installed in exterior wall construction shall be thermally broken.
- Provide internal structural stiffeners, extruded sills and install per manufacturer standard details.
- Submit complete 1/4" scale minimum elevations and enlarged details and sample of finish for approval.
- Provide storefront system, include anchorage, capable of withstanding wind load design pressures for component and cladding from the general structural notes.
- All openings to receive storefront systems shall be field verified prior to fabrication.
- All storefront glazing and commercial-glazed swinging entrance doors shall be tested for air leakage of 1.57 psf in accordance with ASTM E283 per Virginia Energy Conservation Code. For storefront glazing, maximum air leakage rate shall be 0.3 cubic feet per minute per square foot of fenestration area. For commercial-glazed swinging entrance doors, maximum air leakage rate shall be 1.00 cubic feet per minute per square foot of door area.
- Provide .090 aluminum brake metal framing, trim and subulls with finishes to match associated systems where indicated on drawings. Integrate with storefront systems per manufacturer's recommendations to construct a leak-free assembly.
- Tinted glass panels shall be aluminum metallized dual reflective polyester film with visible light transmission of 30%.
- Provide a five-year system warranty for materials and workmanship. And a 10 year warranty for material finishes.

**065113 VINYL WINDOWS**

- Provide a ten (10) year manufacturer's warranty for defects and a two (2) year installation warranty for workmanship against air and water leaks, warping, and seal breakage.
- See plans, schedules and exterior elevations for operation, style, and configuration.
- Exterior and interior finish shall be integral white.
- Refer to building code, and energy efficiency summaries for thermal transmittance, solar heat-gain coefficient, and sound transmission class requirements. Provide clear, insulating, argon filled glass with low-e coating.
- Windows shall comply with AAMA/WDMA/CSA10111.S.2/A440, class LC-PG 40 for double-hung; class CW-PG40 for casement; class CW-PG55 for fixed.
- Provide fiberglass screens for each operable sash with aluminum frames and without wickets.
- Provide jamb extensors, dividers or false muntins (if shown), and interior and exterior trim for complete installation.
- Consult architect and/or owner for additional options and finish selections.

**067100 DOOR HARDWARE**

- Provide a three (3) year warranty for materials and workmanship.
- Provide "lever style" handles. Hardware shall be heavy duty commercial custom grade. All handles to be permanently mounted to minimum height of 38" above finished floor thresholds to comply with governing accessibility code.
- Unless otherwise noted, all hinges shall be 5-knuckle. Hinge pins in exterior doors shall be non-removable.
- Provide door stops for all openings unless otherwise noted. Wall mounted door stops shall be provided with blocking and their location confirmed based on proposed door hardware. Floor mounted door stops shall be equipped with risers as necessary based on proposed floor finishes and shall be located to ensure adequate clearance between door hardware and face of partition or other obstruction.
- Interior doors shall be equipped with silencers unless otherwise noted.
- Hardware finish shall be identified among manufacturer's standard finishes and selected by Owner and/or Architect. Finishes shall be brushed nickel unless otherwise noted.
- All locks to be master key to selected system. Coordinate with Owner for master/sub-master keying.

**068300 MIRRORS**

- Provide a five (5) year warranty for materials and workmanship.
- Comply with ASTM C1503, manufactured using a copper-free low-lead mirror coating process.
- Provide flat polished mirror edges with aluminum j-channel hardware.
- Provide concealed mounting hardware system adequate to carry weight of mirror bearing on supporting framing.

**092000 GYPSUM BOARD (WALLS AND CEILING)**

- Gypsum board and wood 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, ic bead, screw heads, and irregularities. Sand smooth. Provide moisture resistant board in exterior closets, bathrooms, around open tubs, and in laundry and janitor rooms. Provide cementitious board in all wet areas. Provide metal control joints so that linear dimensions between control joints do not exceed 30 feet and total area between control joints does not exceed 900 square feet. Bulnose all outside corners and all interior gypsum wall board returns at doors and windows.
- All exposed gypsum board installations shall have a level 4 finish.
- All exposed gypsum board installations scheduled to receive high gloss paint finishes shall have a level 5 finish.
- All concealed gypsum board installations shall have a finish level consistent with required fire rating (if any), or finish level 1. If no level of finish is otherwise specified.

**093000 CERAMIC TILE**

- Floor and wall tile shall be glazed vitreous or impervious natural clay or porcelain tile, 4"x4"x1/4" (nominal) unless otherwise noted.
- Floor tile and transitions shall be accessibility compliant for slip resistance, with base and cap sizes as noted in drawings.
- Trim shapes shall include all elements necessary to install a complete system and shall include base cove, bead (bulnose) base cap, surface bullnose base cap, bead (bulnose) wainscot cap, surface bullnose wainscot cap, bead (bulnose) external corner, surface bullnose external corner, coved interior corner, and tapered transitions.
- Thresholds may be granite or marble.
- Provide and install metal edge strips at open ends of wall tile installations.
- Color selections to be chosen by Architect and/or Owner from manufacturer's full range.
- Installation in wet areas (shower and toilet rooms) will be a fabric-reinforced, liquid applied, or sheet waterproof membrane over cementitious backer units or fiber-cement underlayment.
- Submit Tile Manual of North America (TCNA) installation specifications for each installation situation for approval. Installation methods shall be identified based on substrate construction and conditions.
- Provide extra stock of 2% in each color, type, and/or size, clearly marked to indicate contents and location used.
- Beginning of finish installation signifies installer's and manufacturer's acceptance of substrate conditions as required to maintain finish material warranties.

**095100 ACOUSTIC CEILING TILE**

- Acoustic ceiling tile basis-of-design shall be 24"x24"x3/4", beveled tegular edge, white color, type III with painted finish, NRC = 0.75, AC = 0.70, CA-C = 55, light reflectance = 89%, installed in exposed tile, light color or equal, 15/16" wide, flat/flush face design, pre-finished white color.
- Suspension system to be intermediate or heavy-duty type as required by ceiling loads due to fixtures and air diffusers. Hang independently of walls, columns, ducts, pipes, and conduit. Non-perforated lay-in panels in high humidity areas.
- Lay-in suspended ceiling systems shall comply with requirements of listed applicable codes.
- No tile shall be less than six (6) inches in any direction. Rabbit cut tegular edge style tiles to match factory rabbit.
- Grid face design, pre-finished white color.
- Hanger wires shall be provided for all main runners and cross runners within 8" of ceiling perimeter.
- Hangers' wires that are more than 1 in 6 out of plumb shall have counterbraced wires.
- Ceiling grid may be attached to 2 adjacent walls; ceiling must be at least 1/2 inch free of other walls. If walls run diagonally to ceiling grid system runners, one end of main and cross runners shall be free and a minimum of 1/2 inch clear.
- A set of four, 12-gauge sply wires shall be provided at a spacing not more than 12 feet by 12 feet on center. First set of sply wires shall be located not more than one half the above distances from the perimeter walls. Wires shall be taut without ceiling lift. The slope of these wires should not exceed 45 degrees from the plane of the ceiling. Splice wires will not be permitted unless previously approved.
- All ceiling wires and unbraced ducts, pipes, and similar infrastructure must be separated.
- All light fixtures shall be positively attached to the grid to resist a horizontal force equal to the weight of the fixtures.
- Flush or recessed light fixtures and air terminals or services weighing less than 56 pounds may be supported on heavy duty grid but must have a #12-gauge stack safety wires from diagonal corners to the structure above.
- Flush or recessed light fixtures and air terminals or services weighing more than 56 pounds must be independently supported by not less than 4 #4 in #12-gauge wires capable of supporting 4 times the load.
- Cross runners and all main runners not connected to walls must be interconnected near the free end with a metal strut securely attached to prevent spreading.

- Hang hanger wires shall be provided for all main runners and cross runners within 8" of ceiling perimeter.
- Hangers' wires that are more than 1 in 6 out of plumb shall have counterbraced wires.
- Ceiling grid may be attached to 2 adjacent walls; ceiling must be at least 1/2 inch free of other walls. If walls run diagonally to ceiling grid system runners, one end of main and cross runners shall be free and a minimum of 1/2 inch clear.
- A set of four, 12-gauge sply wires shall be provided at a spacing not more than 12 feet by 12 feet on center. First set of sply wires shall be located not more than one half the above distances from the perimeter walls. Wires shall be taut without ceiling lift. The slope of these wires should not exceed 45 degrees from the plane of the ceiling. Splice wires will not be permitted unless previously approved.
- All ceiling wires and unbraced ducts, pipes, and similar infrastructure must be separated.
- All light fixtures shall be positively attached to the grid to resist a horizontal force equal to the weight of the fixtures.
- Flush or recessed light fixtures and air terminals or services weighing less than 56 pounds may be supported on heavy duty grid but must have a #12-gauge stack safety wires from diagonal corners to the structure above.
- Flush or recessed light fixtures and air terminals or services weighing more than 56 pounds must be independently supported by not less than 4 #4 in #12-gauge wires capable of supporting 4 times the load.
- Cross runners and all main runners not connected to walls must be interconnected near the free end with a metal strut securely attached to prevent spreading.
- Surface mounted light fixtures shall be supported by at least two positive devices which surround the ceiling runner and are supported to the structure above with a #12-gauge wire. Rotational spring clips are not acceptable.
- Pendant mounted light fixtures shall be supported directly to the structure above with hanger wires through each pendant.
- Provide flush access panels in gypsum board ceilings as required. Paint to match ceiling. Coordinate locations & sizes with mechanical, plumbing, and electrical requirements.
- Provide extra stock of 5% of each acoustical material installed, clearly marked to indicate contents and location used.

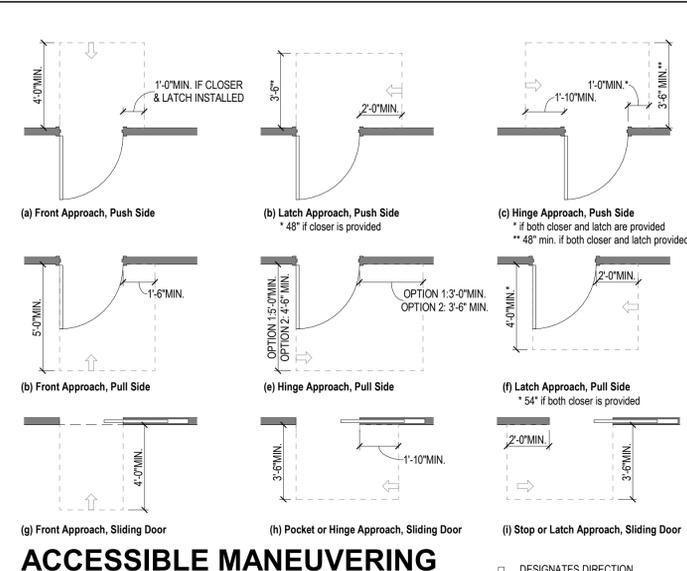
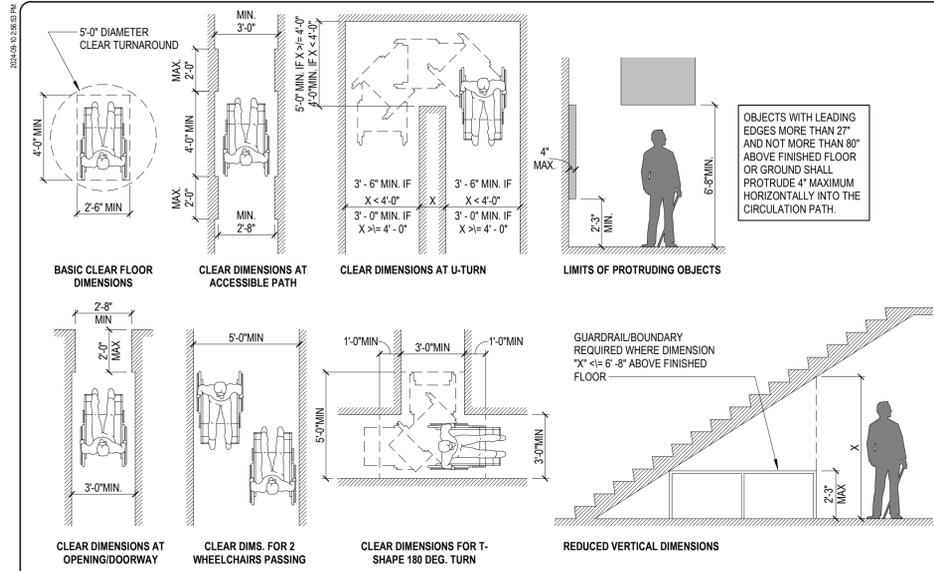
**096513 RESILIENT BASE AND ACCESSORIES**

- Provide and install vinyl thermoplastic wall base minimum thickness 1/8" with job-formed inside and outside corners. Base shall be 4" high minimum.
- Accessories to wall base and/or flooring shall include caps, covers, carpet bars, carpet edges, nosing for carpet, nosing for resilient floors, reducer strips, joiners for tile and carpet, and transition strips.
- Provide and install all required leveling, patching compounds, adhesives, fillers, or strips to provide a complete system.
- Color selections shall be chosen by Owner from manufacturer's full range.
- Product shall offer a limited 5-year commercial warranty against manufacturing defects.
- Provide extra stock of 2% in each color, clearly marked to indicate contents and location used.

**099000 PAINTS AND COATINGS**

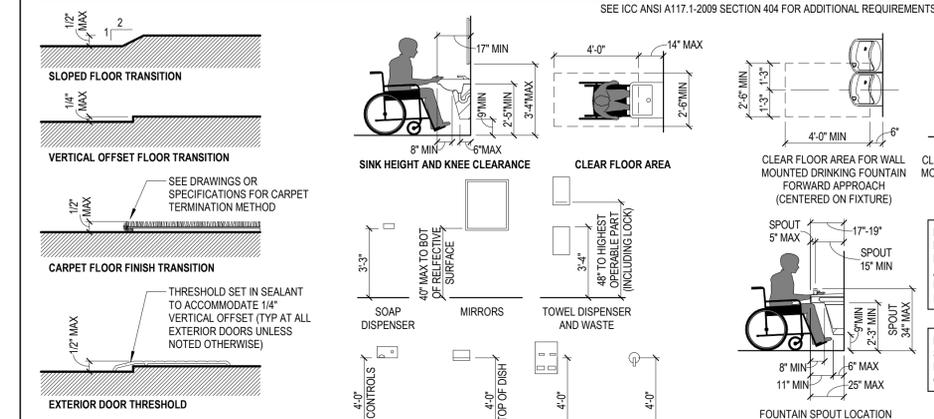
- Interior walls and interior face of exterior walls shall be painted, consisting of (1) coat of primer and (2) coats of interior finish latex, unless otherwise noted.
- Paints utilized shall meet the following specifications:
  - A. Exterior paint: utilizes alkyd enamel semi-gloss finish paint. Provide one coat primer and two coats finish.
  - B. Interior paint: utilize paint materials containing 0% VOC's (volatile organic compounds), consisting of (1) coat interior latex primer and (2) coats of latex finish.
- Doors and frames: exterior paint for doors and frames; provide 1 coat of surface enamel latex primer and 2 coats all surface latex enamel high gloss. Color per elevations.
- Provide extra stock of 2% in each color and type, clearly marked to indicate contents and location used.

**101423 PANEL SIGNAGE**

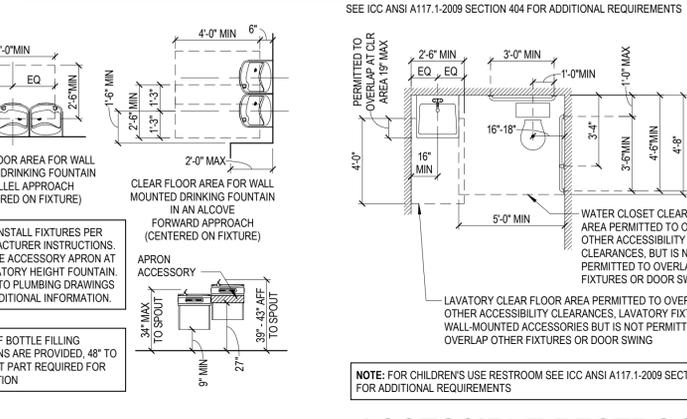


### ACCESSIBLE MANEUVERING CLEARANCES

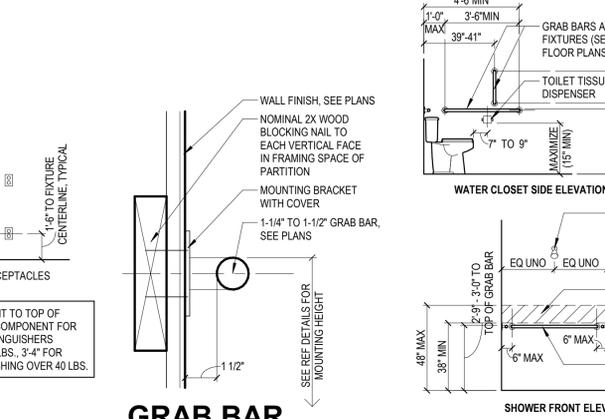
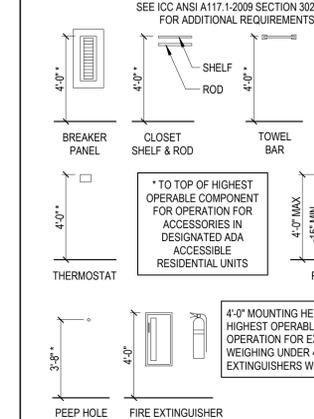
### ACCESSIBLE CLEARANCES



### ACCESSIBLE FLOOR TRANSITIONS

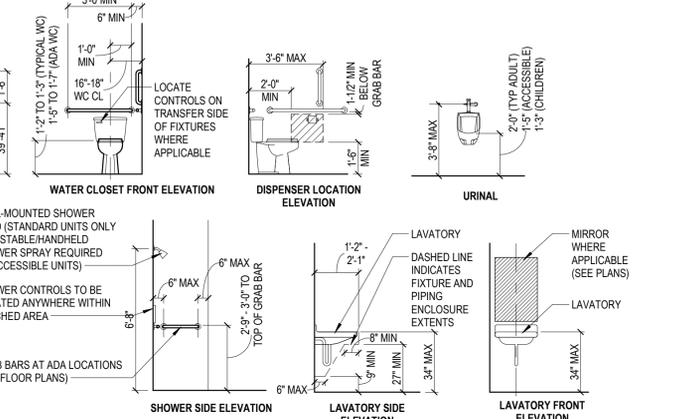


### ACCESSIBLE RESTROOM STANDARDS

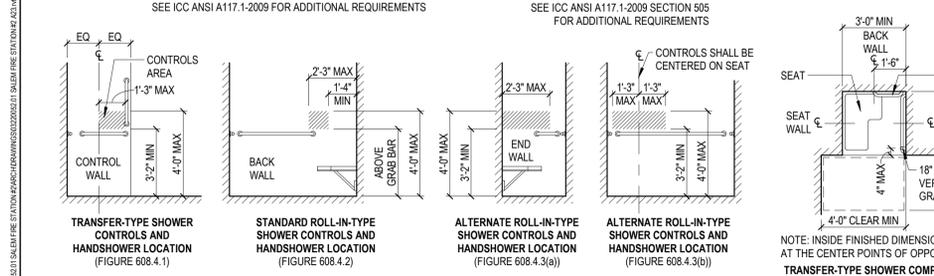


### ADDITIONAL STANDARDS

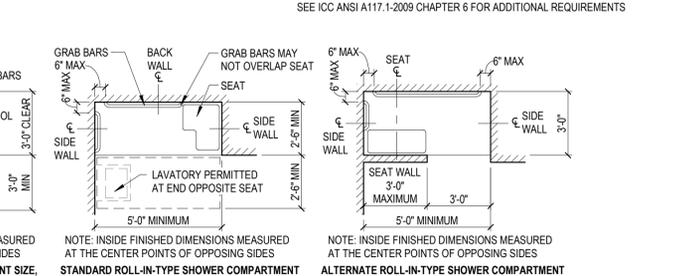
### GRAB BAR DETAIL



### ACCESSIBLE PLUMBING FIXTURES



### SHOWER CLEARANCES



### SHOWER CLEARANCES

### Accessibility Diagrams Disclaimer

This set of ICC/ANSI A117.1-2009 standards has been indicated here for general reference purposes only. In no way does this sheet represent all applicable components of the "Accessible and Usable Buildings and Facilities" National Standard. For clarifications, accompanying texts, descriptions, or interpretations refer to the national standard code. The excerpts from the national standard indicated here have been included for their relevance to this project and are not to be construed as a complete and exhaustive list. For any dimensional discrepancies, please consult the Architect.

### GENERAL ACCESSIBILITY NOTES

- Reference 2018 Virginia Construction Code (VCC) and International Code Council (ICC) A117.1-2009 edition for section numbers and as the base for notes and diagrams.
- General contractor shall provide accessibility code compliant men's and women's room signage. Signs shall be mounted on exterior side (if shown on interior elevations) and shall include the international symbol of accessibility.
- Grab bars shall not rotate within their fittings and shall be installed to withstand a load of 250 lbs. or greater.
- Primary entrances and required exit access and exits to or from buildings and facilities shall be made accessible to the public way.
- Every required entrance or passage doorway shall be of a size as to permit the installation of a door not less than 3 feet in width and not less than 6 feet 8 inches in height. Doors shall be capable of opening at least 90 degrees and shall be so mounted that the clear width of the doorway is not less than 32 inches.
- Latching and locking doors that are hand activated and which are in a path of travel, shall be operable with a single effort by lever type hardware, panic bars, push-pull activating bars, or other hardware. This hardware should be designed to provide passage without requiring the ability to tightly grasp, pinch, or require twisting of the wrist to operate the hardware.
- Hand activated door opening hardware shall be centered between 34 inches and 48 inches above the floor.
- The floor or landing on each side of an entrance or passage door shall be level (less than 2 percent slope) and clear. The level and clear area shall have a length in the direction of door swing of at least 60 inches and the length opposite the direction of door swing of 48 inches as measured at right angles to the plane of the door in its closed position.
- The width of the level (less than 2 percent slope) and clear area on the side to which the door swings shall extend 24 inches past the strike edge of the door for a latch approach, 42 inches for a three approach and 18" for a front approach. Provide 12 inches of additional space if door is equipped with both a latch and a closer.
- The floor or landing shall be no more than 1/2 inch lower than the threshold of the doorway change in level between 1/4 inch and 1/2 inch shall be beveled with a slope no greater than 1:2.
- Floor surfaces shall be constructed of slip-resistant materials to meet local code.
- Grab bars shall be:
  - Non-rusting having 1/8 inch minimum edge radius.
  - Not projecting more than 3 inches into required clear floor space.
  - Shall be non-rusting non-slip with 1-1/4 inches to 2 inches outside diameter with 1-1/2 inches clearance from wall mounted.
- Wall reinforcement for grab bars shall be installed in compliance with all applicable codes, including ICC/ANSI A117.1-2009.
- The top of fire alarm initiating devices (boxes) shall be located 48 inches above the level of the floor working platform, ground surface or sidewalk.
- Tops of light switches, environmental controls, locks, and electrical outlets shall be mounted no higher than 48 inches above finished floor and no lower than 18 inches (to top) above finished floor.
- All controls in accessible spaces must meet clear floor requirements.



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SALEM VA ARCHITECT



**SALEM FIRE STATION #2 RENOVATION ADA REFERENCE DETAILS**

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24148

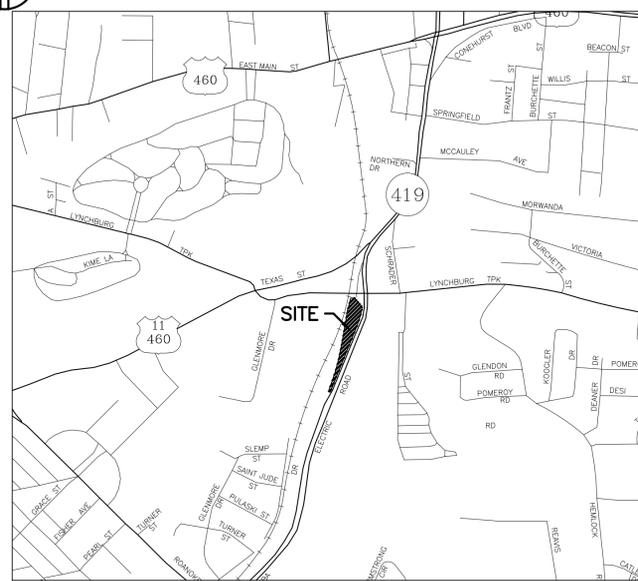
**SALEM FIRE STATION #2 RENOVATION ADA REFERENCE DETAILS**

DRAWN BY: JR3  
DESIGNED BY: JR3  
CHECKED BY: RWP  
DATE: 2024-08-30  
SCALE: As indicated  
REVISIONS:



VICINITY MAP

1" = 1000'



LEGEND

Legend table with two columns of symbols and descriptions. Includes symbols for contours, water lines, sanitary sewers, storm pipes, pavements, manholes, valves, and property lines.

ABBREVIATIONS

Table of abbreviations with four columns. Includes terms like AHFH (Arrow Head Top of Fire Hydrant), ASPH (Asphalt), BC (Back of Curb), and many others.

# SALEM FIRE STATION NO. 2

## 415 ELECTRIC ROAD CITY OF SALEM VIRGINIA

### SHEET INDEX

Sheet Index table listing sheets C1 through C10 and their titles: COVER, NOTES, EXISTING CONDITIONS AND DEMOLITION PLAN, LAYOUT AND UTILITY PLAN, GRADING PLAN, E.S.C. PLAN, E.S.C. NOTES, E.S.C. AND SITE DETAILS, WESTERN VIRGINIA REGIONAL DETAILS, LANDSCAPE PLAN.

### GENERAL NOTES

ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE CITY OF SALEM AND/OR THE VIRGINIA DEPARTMENT OF TRANSPORTATION. THE CONTRACTOR OR DEVELOPER IS REQUIRED TO NOTIFY THE CITY OF SALEM ENGINEERING DEPARTMENT AT LEAST THREE (3) DAYS PRIOR TO ANY CONSTRUCTION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: A. INSTALLATION OF APPROVED EROSION CONTROL DEVICES. B. DEMOLITION OF EXISTING STRUCTURES. C. SUBGRADE EXCAVATION. D. INSTALLING STORM SEWERS OR CULVERTS. E. PLACING GRAVEL BASE. F. PLACING ANY ROADWAY SURFACE/CURBING.

### SITE & ZONING SUMMARY:

Table with 2 columns: Field and Value. Includes SITE ADDRESS (415 ELECTRIC ROAD SALEM, VA 24153), OWNER (CITY OF SALEM), OWNER ADDRESS (P.O. BOX 869 SALEM, VIRGINIA 24153), TAX MAP NUMBER (150-2-4), EXISTING LOT SIZE (2.20 AC), and EXISTING ZONING (HM - HEAVY MANUFACTURING DISTRICT).

### ZONING REQUIREMENTS (HM):

Table with 2 columns: Field and Value. Includes EXISTING/PROPOSED USE (NONE), MIN. LOT AREA (NONE), FRONTAGE (NONE), SETBACKS (FRONT (ELECTRIC ROAD) 55' FROM CENTERLINE OF ROAD), SIDE (NONE), REAR (NONE), MAX. BUILDING HEIGHT (75'), MIN. TREE CANOPY (NONE), and MAX. LOT COVERAGE (NONE).



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Roanoke, VA 24018  
540.772.9580



SALEM FIRE STATION NO. 2

COVER

415 ELECTRIC ROAD  
CITY OF SALEM, VIRGINIA

Table with 2 columns: Field and Value. Includes DRAWN BY (HCG), DESIGNED BY (HCG), CHECKED BY (CPB), DATE (08/14/2024), SCALE (N/A), REVISIONS, and F.R. #1 (08/30/2024).

### ENGINEERS NOTES

BALZER AND ASSOCIATES, INC. ASSUMES NO RESPONSIBILITY FOR ADEQUACY OF PLANS OR FOR INFORMATION ON PLANS UNTIL SUCH PLANS HAVE BEEN APPROVED BY THE REQUIRED PUBLIC AGENCIES. ANY WORK COMMENCED ON A PROJECT PRIOR TO PLAN APPROVAL IS AT SOLE RISK OF THE DEVELOPER. BALZER AND ASSOCIATES, INC. WILL NOT BE RESPONSIBLE FOR THE CONTRACTORS FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE PLANS OR WILL NOT BE RESPONSIBLE FOR ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR THEIR AGENTS OR EMPLOYEES, OR OF ANY OTHER PERSONS PERFORMING PORTIONS OF THE WORK. SOURCE OF TOPOGRAPHIC MAPPING IS FIELD SURVEY PERFORMED BY BALZER AND ASSOCIATES, INC., DATED DECEMBER 2023.



I, \_\_\_\_\_, HAVE BEEN INFORMED BY THE CITY OF SALEM ENGINEERING DEPARTMENT THAT I WILL BE RESPONSIBLE FOR OBTAINING THE PROPER PERMITS FOR THIS PROJECT FROM THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY.

\_\_\_\_\_  
SIGNATURE DATE

**SITE CONSTRUCTION PLAN GENERAL NOTES:**

ALL MATERIALS AND CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH CURRENT CITY OF SALEM AND VDOT STANDARDS AND SPECIFICATIONS.

THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL POINTS OF CONNECTION OR PROPOSED WORK TO EXISTING CURBS, SANITARY LINES, WATER LINES, ETC., PRIOR TO CONSTRUCTION. CONTACT THE CONSULTING ENGINEER IF ANY DISCREPANCIES ARE FOUND.

UPON THE DISCOVERY OF SOILS THAT ARE UNSUITABLE FOR FOUNDATIONS, SUBGRADES, OR OTHER ROADWAY CONSTRUCTION PURPOSES, THE CONTRACTOR SHALL IMMEDIATELY CONTACT A GEOTECHNICAL ENGINEER AND/OR CITY OF SALEM. THESE AREAS SHALL BE EXCAVATED BELOW PLAN GRADE AS DIRECTED BY THE GEOTECHNICAL ENGINEER, BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED IN ACCORDANCE WITH CURRENT VDOT SPECIFICATIONS.

ALL STORM SEWER DESIGN AND CONSTRUCTION TO BE IN ACCORDANCE WITH VDOT STANDARDS AND SPECIFICATIONS.

ALL ENTRANCES ARE TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH CURRENT VDOT STANDARDS.

CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN. IF THERE APPEARS TO BE A CONFLICT, AND/OR UPON DISCOVERY OF ANY UTILITY SHOWN ON THIS PLAN, CALL MISS UTILITY OF CENTRAL VIRGINIA AT 1-800-552-7001. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN EXISTING AND/OR PROPOSED RIGHT-OF-WAY REQUIRED BY THE DEVELOPMENT.

CASING SLEEVES SHALL BE PLACED AT ALL PAVEMENT CROSSINGS FOR GAS, POWER, TELEPHONE, CABLE TV AND IRRIGATION SERVICE LINES.

THE INSTALLATION OF SEWER, WATER, AND GAS MAINS (INCLUDING SERVICE LATERALS AND/OR SLEEVES) SHALL BE COMPLETED PRIOR TO PLACEMENT OF AGGREGATE BASE COURSE.

A PRIME COAT SEAL BETWEEN THE AGGREGATE BASE AND BITUMINOUS CONCRETE WILL BE REQUIRED AT A RATE OF 0.30 GALLONS PER SQUARE YARD (REC-250 PRIME COAT) PER VDOT STANDARDS AND SPECIFICATIONS.

THE SCHEDULING OF AGGREGATE BASE INSTALLATION AND SUBSEQUENT PAVING ACTIVITIES SHALL ACCOMMODATE FORECAST WEATHER CONDITIONS PER SECTION 315 OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS (LATEST EDITION).

ALL VEGETATION AND ORGANIC MATERIAL IS TO BE REMOVED FROM THE RIGHT-OF-WAY LIMITS PRIOR TO CONDITIONING OF THE SUBGRADE.

G.C. SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY OF SALEM PRIOR TO ANY CONSTRUCTION WITHIN THE RIGHT-OF-WAY.

**GENERAL UTILITY NOTES:**

1. SUPPLY AND INSTALL ALL MATERIALS AND METHODS FOR WATERLINES, SANITARY SEWERS AND STORM DRAINAGE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF THE CITY OF SALEM, WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS, LATEST EDITION AND/OR THE VIRGINIA DEPARTMENT OF TRANSPORTATION "ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS", LATEST EDITION.

2. OBTAIN ALL REQUIRED PERMITS AND NOTIFY APPROPRIATE OFFICIALS 48 HOURS PRIOR TO COMMENCEMENT OF WORK. OBTAIN INFORMATION FROM THE CITY OF SALEM CONCERNING PERMITS AND CONNECTIONS TO EXISTING LINES.

3. ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE CITY OF SALEM. NOTIFY APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF WORK.

4. SITE SHALL BE TO SUBGRADE PRIOR TO INSTALLATION OF UTILITIES. ALL UTILITIES SHALL BE IN PLACE PRIOR TO PLACEMENT OF PAVEMENT BASE MATERIAL.

5. MINIMIZE ANY DISTURBANCE TO EXISTING WATER SERVICE, SEWER LINES OR ANY OTHER UTILITY DURING CONSTRUCTION AND PROVIDE QUALITY WORKMANSHIP.

6. MAKE ALL PIPE JOINTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND/OR REGIONAL DESIGN AND CONSTRUCTION STANDARDS. MAKE JOINTS BETWEEN DIFFERENT PIPE MATERIALS WITH STANDARD FITTINGS MANUFACTURED FOR THE PURPOSE.

7. MAINTAIN ALL WATER LINES AT TEN (10) FEET HORIZONTAL SEPARATION FROM SEWER LINES AND MANHOLES; MEASURE THE DISTANCE EDGE-TO-EDGE. WHEN LOCAL CONDITIONS PREVENT THE DESIRED HORIZONTAL SEPARATION, THE WATERLINE MAY BE LAID CLOSER TO THE SEWER OR MANHOLE PROVIDED THAT THE BOTTOM OF THE WATERLINE SHALL BE AT LEAST EIGHTEEN (18) INCHES ABOVE THE TOP OF THE SEWER. WHERE THIS VERTICAL SEPARATION CANNOT BE OBTAINED, CONSTRUCT THE SEWER OF AWWA APPROVED WATER PIPE AND PRESSURE TREAT IN PLACE PRIOR TO BACKFILLING. THE SEWER MANHOLE SHALL BE OF WATERTIGHT CONSTRUCTION TESTED IN PLACE.

8. PRIVATE SEWER AND WATER CONNECTIONS TO THE BUILDING SHALL BE PERFORMED BY THE CONTRACTOR. CITY OF SALEM SHALL PROVIDE THE WATER WET TAP, SERVICE LINE, AND METER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMMERCIAL VAULT AND ALL WATERLINES PAST THE VAULT ON THE PRIVATE SIDE OF THE METER.

9. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS WHERE UTILITIES ENTER THE BUILDING.

10. PRIOR TO COMMENCING WITH ANY UNDERGROUND PIPE CONSTRUCTION OR GRADING (EXCAVATION), THE GENERAL CONTRACTOR SHALL CALL MISS UTILITY OF VIRGINIA (TOLL FREE 1-800-552-7001) AT LEAST 48 HOURS PRIOR TO COMMENCING. THE G.C. IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO ANY UTILITY, PUBLIC OR PRIVATE, AS A RESULT OF NOT CONTACTING MISS UTILITY AND SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER/DEVELOPER.

11. EXISTING UTILITY LOCATIONS SHOWN ARE A RESULT OF FIELD SURVEYS, AND AVAILABLE RECORDS AND PREVIOUSLY APPROVED PLANS. LOCATIONS ARE APPROXIMATE. GENERAL CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE ENGINEER IMMEDIATELY IF: 1) ANY LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS. 2) IF THERE APPEARS TO BE ANY CONFLICT. UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS, G.C. SHALL CALL "MISS UTILITY" OF VIRGINIA AND/OR CITY OF SALEM.

12. PROVIDE A CONTINUOUS AND UNIFORM BEDDING IN THE TRENCH FOR ALL PIPE. REMOVE STONES AND ROCKS FOUND IN THE TRENCH FOR A DEPTH OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE AND TAMP SELECT FILL BEDDING PROVIDED. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, BACKFILL THE TRENCH WITH SELECT MATERIAL, THOROUGHLY COMPACT TO 90% (98% UNDER PAVEMENT OR CONCRETE SLAB) OF THE STANDARD PROCTOR (ASTM D-698) USING CARE NOT TO DAMAGE THE PIPE. USE VDOT STANDARD PB-1 TRENCH FOR STORM SEWER AND UB-1 FOR SANITARY SEWER AND WATER.

13. PLACE BACKFILL FOR ALL WATER AND SEWER UTILITIES IN ACCORDANCE WITH WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS, AND THE FOLLOWING CRITERIA: 1) BACKFILL NO TRENCH UNTIL INSPECTED BY CITY OF SALEM. MATERIALS USED FOR BACKFILL FROM THE BOTTOM OF THE TRENCH TO TOP OF THE PIPE SHALL BE CRUSHER RUN, OR APPROVED EQUAL MATERIAL. THOROUGHLY AND CAREFULLY COMPACT THE BACKFILL MATERIAL. 2) COMPACT BACKFILL BY MECHANICAL TAMPING THROUGHOUT THE DEPTH OF THE TRENCH TO ENSURE A SUITABLE SUBBASE ACCEPTABLE TO THE ROAD ENGINEER. IF THE MATERIAL TAKEN FROM THE DITCH IS NOT SUITABLE FOR BACKFILLING, REMOVE IT AND USE AN ACCEPTABLE MATERIAL FOR BACKFILLING THE TRENCH.

14. IN AREAS OF WATER LINE CONSTRUCTION, GRADES SHALL BE WITHIN SIX (6) INCHES OF FINAL GRADE PRIOR TO BEGINNING CONSTRUCTION.

15. OWNER/DEVELOPER IS RESPONSIBLE FOR ALL REQUIRED FEES PRIOR TO UTILITY SERVICE BEING INSTALLED.

**WATER NOTES:**

A MINIMUM COVER OF THREE (3) FEET IS REQUIRED OVER PROPOSED LINES.

CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING VALVE VAULTS AFTER PAVING AND ADJUSTMENT TO FINAL GRADE IF NECESSARY.

ALL EXISTING UTILITIES MAY NOT BE SHOWN, OR MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH STATE WATER WORKS REGULATIONS, SECTION 12VAC5-590-1150, WHERE LINES CROSS.

ALL TRENCHES IN EXISTING OR FUTURE HIGHWAY RIGHTS OF WAY SHALL BE COMPACTED ACCORDING TO THE LATEST WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS.

LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.

**SANITARY SEWER NOTES:**

A MINIMUM COVER OF THREE (3) FEET IS REQUIRED OVER PROPOSED LINES.

CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING ANY S.S. CLEANOUTS AND ADJUST TO FINAL GRADE AS REQUIRED. TRAFFIC BEARING TOPS SHALL BE PROVIDED IF THE CLEANOUT IS TO BE LOCATED WITHIN AN AREA EXPOSED TO TRAFFIC.

ALL PROPOSED UTILITY LINES SHALL BE INSTALLED PER THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS.

ALL TRENCHES IN EXISTING OR FUTURE HIGHWAY RIGHTS OF WAY SHALL BE COMPACTED ACCORDING TO THE LATEST WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS.

LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.

CONNECT PIPE TO MANHOLES THROUGH PRE CAST OPENINGS AND JOIN WITH EITHER A FLEXIBLE BOOT ADAPTER OR A PIPE SEAL GASKET.

**CONSTRUCTION SITE PLAN GENERAL NOTES CONSTRUCTION METHODS:**

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS, AND LOCAL JURISDICTIONAL STANDARDS AND SPECIFICATIONS, WHERE APPLICABLE.

2. THE LOCATION OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION WORK AND NOTIFY ENGINEER IMMEDIATELY IF LOCATIONS DIFFER FROM PLANS.

3. THE CONTRACTOR SHALL NOTIFY 'MISS UTILITY' AT 1-800-552-7001 OR 811 PRIOR TO ANY CONSTRUCTION WORK IN THIS AREA.

**HANDICAPPED ACCESSIBILITY / ADA COMPLIANCE**

1. THE MAXIMUM ALLOWABLE CROSS SLOPE ACROSS ACCESSIBLE PARKING SPACES AND ACCESSIBLE AISLES IS 2%. NO SLOPE IN ANY DIRECTION SHALL EXCEED 2% WITHIN ADA PARKING SPACES OR AISLES.

2. THE MAXIMUM ALLOWABLE LONGITUDINAL SLOPE ALONG ACCESSIBLE AISLES IS 5%.

3. THE CONTRACTOR SHALL VERIFY SLOPES AND GRADES FOR ALL ACCESSIBLE PARKING SPACES AND ACCESSIBLE AISLES AFTER STAKING IS COMPLETE AND BOTH BEFORE AND AFTER INSTALLATION.

4. ANY SLOPE DISCREPANCIES DETECTED BY THE SURVEYOR AND/OR CONTRACTOR SHALL BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.

5. UNLESS SPECIFICALLY NOTED ON THE SITE PLAN, DETECTABLE WARNING STRIPS ARE REQUIRED AT ALL CURB RAMPS AND FLUSH CURB TRANSITIONS TO PARKING LOTS.

6. HAND RAILS ARE REQUIRED FOR ANY ACCESSIBLE SITE PEDESTRIAN RAMPS WITH LONGITUDINAL SLOPES THAT EXCEED 5% AND / OR 6-INCHES IN RISE.

7. SITE HAND RAILS SHALL BE PER VDOT / ADA / ANSI STANDARDS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.

8. SITE HAND RAILS SHALL BE INSTALLED ON BOTH SIDES OF THE SITE SIDEWALKS WHERE HAND RAILS ARE REQUIRED.

9. PER VDOT STANDARDS, THE MAXIMUM PERMISSIBLE CURB RAMP SLOPE IS 12:1.

10. GUTTER PAN INSTALLED IN ACCESSIBLE PARKING SPACES SHALL NOT EXCEED 2% SLOPE.

11. NO VERTICAL TRANSITIONS IN ADA ACCESSIBLE ROUTES SHALL EXCEED 1/4".

**CURB AND GUTTER**

1. THE CONTRACTOR SHALL USE A MINIMUM OF THREE (3) RUNNING CONSTRUCTION STAKES TO AVOID HARD BREAK LINES IN THE CURB - UNLESS SPECIFICALLY CALLED FOR ON THE PLANS.

2. THE MINIMUM LONGITUDINAL SLOPE FOR GUTTER PAN IS 0.5%, UNLESS OTHERWISE NOTED ON PLANS.

3. A MINIMUM 20-FOOT TRANSITION FROM CG-6 TO CG-7 IS REQUIRED, UNLESS OTHERWISE NOTED ON THE PLANS.

4. ALL CURB AND GUTTER SHOWN ON THE PLANS SHALL BE VDOT CG-6, CG-2, OR CG-7, UNLESS SPECIFICALLY NOTED OTHERWISE.

**UNDERGROUND UTILITIES**

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LINE AND GRADE FOR ALL DRY UTILITIES PRIOR TO THE START OF CONSTRUCTION.

2. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING DRY UTILITY LINES AND GRADES AGAINST ALL PROPOSED UTILITIES SHOWN ON THE PLANS. POTENTIAL CONFLICTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS POSSIBLE.

3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING TELEPHONE, CABLE, FIBER OPTIC, AND ELECTRICAL SERVICES TO THE PROJECT. CONTACT UTILITY PROVIDERS AS SOON AS POSSIBLE TO BEGIN COORDINATION.

4. THE CONTRACTOR SHALL REVIEW SITE AND BUILDING DRAWINGS TO VERIFY COORDINATION OF UTILITY INVERTS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.

**SIDEWALKS AND SITE STAIRS**

1. ALL SITE STAIRS SHALL BE FURNISHED WITH VDOT HR-1 ON BOTH SIDES OF THE STAIRS.

2. ALL SITE STAIRS SHALL BE CONSTRUCTED IN ACCORDANCE WITH VDOT / ADA / ANSI STANDARDS AND SPECIFICATIONS, UNLESS SPECIFICALLY NOTED OTHERWISE.

3. SIDEWALKS SHALL BE INSTALLED WITH A MAXIMUM 2% CROSS-SLOPE

4. SIDEWALKS SHALL BE BROOM FINISHED, UNLESS NOTED OTHERWISE ON THE PLANS.

5. SIDEWALKS SHALL BE 5- FEET IN WIDTH, UNLESS NOTED OTHERWISE ON THE PLANS.

**ROOF DRAINS AND DOWN SPOUTS**

1. ALL DOWNSPOUTS NOT CONNECTED TO STORM SEWER SHALL BE FURNISHED WITH SPLASH BLOCKS.

2. ALL DOWN SPOUTS SHALL BE FURNISHED WITH A DOWNSPOUT/ROOF DRAIN TRANSITION BOOT. STUBBING OF DOWNSPOUT INTO ROOF DRAIN LATERAL WITHOUT A SUITABLE BOOT TRANSITION IS NOT PERMITTED.

3. ALL ROOF DRAIN LATERALS SHALL BE INSTALLED IN ACCORDANCE WITH THE PREVAILING LOCAL JURISDICTIONAL PLUMBING CODE OR THE INTERNATIONAL PLUMBING CODE, WHICHEVER IS MORE STRINGENT.

4. MINIMUM ALLOWABLE SLOPE FOR 4-INCH ROOF DRAIN LATERAL IS 2.08%.

5. MINIMUM ALLOWABLE SLOPE FOR 6-INCH ROOF DRAIN LATERAL IS 1.04%.

6. ROOF DRAIN LATERALS SHALL BE 6-INCH DIAMETER (SMOOTH-WALLED), UNLESS NOTED OTHERWISE ON THE PLANS.

**BUILDING DOORS AND GRADES:**

1. A MINIMUM 5'X5' PAD SHALL BE INSTALLED AT ALL BUILDING DOOR LOCATIONS (MAXIMUM 2% SLOPE IN ANY DIRECTION). COMPLY WITH ADA DOOR CLEARANCE REQUIREMENTS FOR PAD POSITIONING OUTSIDE OF THE DOOR.

2. FINISHED GRADE SHALL BE 6-INCHES BELOW FINISHED FLOOR ELEVATION ALONG ALL BUILDING WALLS, IN AREAS WHERE PERVIOUS SURFACES ARE PROVIDED, UNLESS OTHERWISE NOTED. FINISHED GRADE FOR AREAS TO BE MULCHED SHALL BE AT TOP OF MULCH. FINISHED GRADE FOR AREAS TO RECEIVE SOD SHALL BE TO TOP OF SOD.

3. ALL PERVIOUS SURFACES SHALL BE INSTALLED WITH A MINIMUM OF 2% SLOPE AWAY FROM THE BUILDING (FOR A MINIMUM OF 10- FEET), TO PROVIDE FOR POSITIVE DRAINAGE.

4. CONTRACTOR SHALL COORDINATE LOCATION OF WEEP HOLES ALONG ALL BUILDING WALLS AND VERIFY REQUIRED SEPARATION BETWEEN WEEP HOLES AND FINISHED GRADES.

5. CONTRACTOR SHALL REVIEW GRADING ALONG BUILDINGS WITH STOREFRONTS TO VERIFY REQUIRED SEPARATION IS PROVIDED.

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**SALEM FIRE STATION NO. 2**

**NOTES**

415 ELECTRIC ROAD  
CITY OF SALEM, VIRGINIA

DRAWN BY	HCG
DESIGNED BY	HCG
CHECKED BY	CPB
DATE	08/14/2024
SCALE	N/A
REVISIONS	
F.R. #1	08/30/2024

**DEMOLITION NOTES:**

DEMOLITION SHALL INCLUDE, UNLESS OTHERWISE NOTED ON THE DRAWINGS, REMOVAL OF EXISTING OBJECTS OR IMPROVEMENTS, WHETHER INDICATED ON THE DRAWINGS OR NOT, THAT WOULD IN THE OPINION OF THE OWNER, PREVENT OR INTERFERE WITH THE PROCESS OR COMPLETION OF THE PROPOSED WORK.

PERMITS, FEES AND LICENSES SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR, INCLUDING DISPOSAL CHARGES AS REQUIRED.

WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE GOVERNING AUTHORITIES IN DEMOLITION OF EXISTING PAVEMENT, CURBS AND GUTTERS, DRAINAGE STRUCTURES AND UTILITIES AS MAY BE REQUIRED.

ALL EXISTING UTILITIES TO ANY BUILDINGS SHOWN TO BE RAZED SHALL BE DISCONNECTED AND PLUGGED OR CAPPED AS REQUIRED BY THE CITY OF SALEM.

CONTRACTOR SHALL SAW-CUT ALL JOINTS WHERE EXISTING CURBING, PAVEMENT AND SIDEWALK IS TO BE DEMOLISHED AND NEW CONSTRUCTION JOINS THE EXISTING.

CONTRACTOR SHALL COMPLETELY FILL BELOW GRADE AREAS AND VOIDS FROM DEMOLITION USING APPROVED SELECT FILL MATERIAL.

ALL EXISTING CURBING, CONCRETE, SIDEWALK, ENTRANCES, ASPHALT, BRICK, AND ANY STRUCTURES THAT ARE DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR, ALL DEBRIS, ETC. SHALL NOT BE USED AS FILL MATERIAL ON THE SITE.

CONTRACTOR SHALL PROVIDE THE FOLLOWING PROTECTIONS AT THE JOB SITE:

MAKE ARRANGEMENTS, BEFORE INITIATING DEMOLITION, FOR RELOCATING, DISCONNECTING, REROUTING, ABANDONING, OR SIMILAR ACTION AS MAY BE REQUIRED RELATIVE TO THE UTILITIES AND OTHER UNDERGROUND PIPING, TO PERMIT WORK TO PROCEED WITHOUT ANY DELAY. ARRANGEMENTS SHALL BE MADE IN ACCORDANCE WITH REGULATIONS OF AUTHORITIES OF UTILITIES MENTIONED, SUCH AS OVERHEAD AND UNDERGROUND POWER AND TELEPHONE LINES AND EQUIPMENT, GAS PIPING, STORM SEWERS, SANITARY SEWERS, OR WATER PIPING. CONTRACTOR SHALL NOT USE WATER WHEN IT MAY CREATE HAZARDOUS OR OBJECTIONABLE CONDITIONS, SUCH AS ICE, FLOODING AND/OR POLLUTION.

ENSURE SAFE PASSAGE OF PERSONS AROUND ALL AREAS OF DEMOLITION.

CONDUCT OPERATIONS TO PREVENT DAMAGE TO ADJUT BUILDINGS, STRUCTURES, OTHER FACILITIES, OR INJURY TO PERSONS.

PROMPTLY REPAIR DAMAGES CAUSED TO ADJACENT FACILITIES BY DEMOLITION OPERATIONS AT NO COST TO THE OWNER.

MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN, KEEP IN SERVICE, AND PROTECT AGAINST DAMAGE DURING DEMOLITION OPERATIONS. PREVENT INTERRUPTION OF EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. PROVIDE TEMPORARY SERVICED DURING INTERRUPTIONS TO EXISTING UTILITIES AS ACCEPTABLE TO GOVERNING AUTHORITIES.

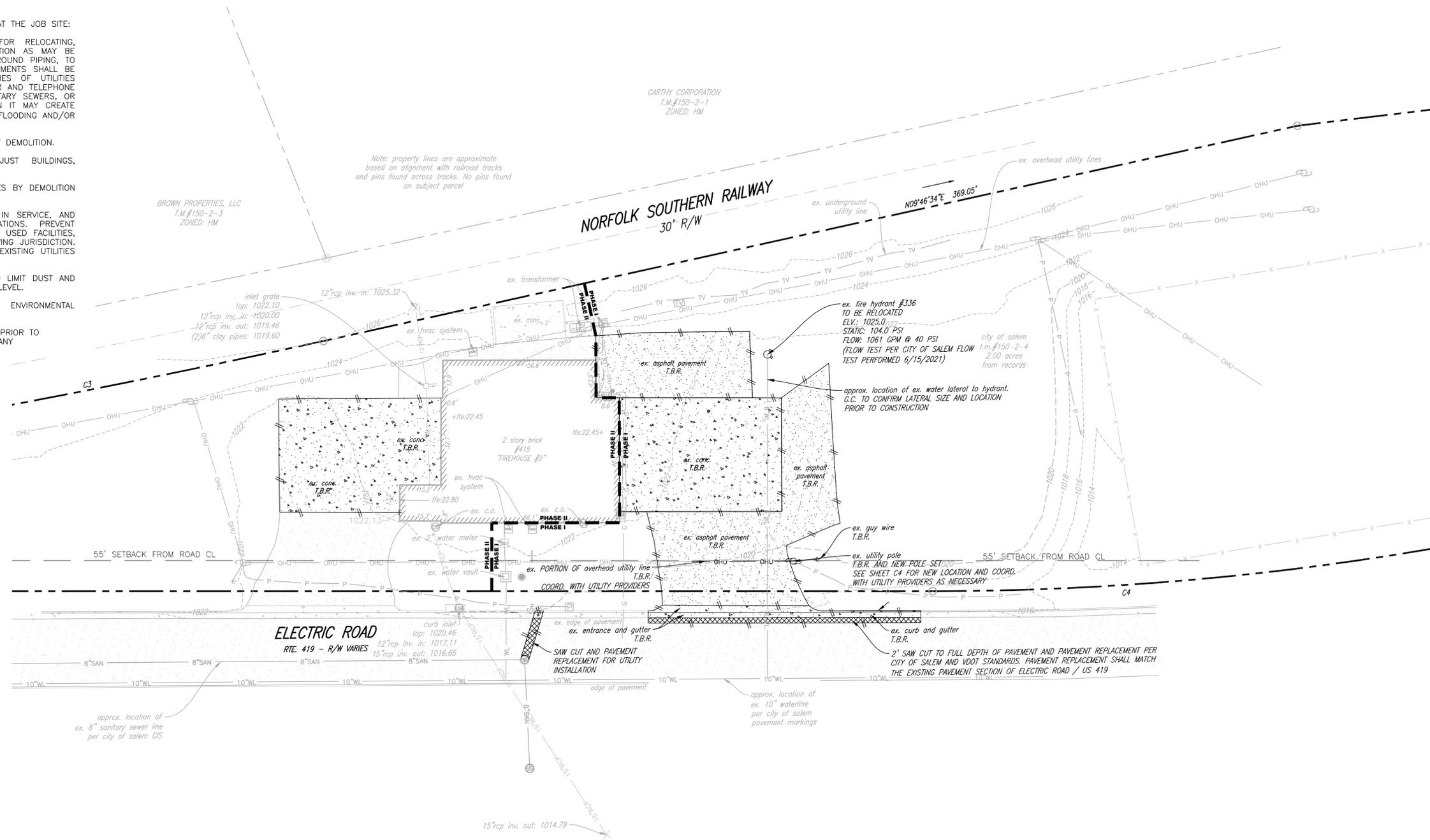
USE WATER SPRINKLING AND OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING IN AIR TO LOWEST PRACTICAL LEVEL.

COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.

CONSTRUCTION ACTIVITIES TO BE COORDINATED WITH OWNER PRIOR TO CONSTRUCTION AND THROUGHOUT THE PROJECT, INCLUDING ANY INTERRUPTIONS TO ACCESS OR UTILITIES

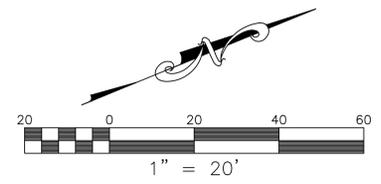
**KEY:**

- EXISTING ASPHALT PAVEMENT TO BE REMOVED
- EXISTING CONCRETE TO BE REMOVED



**CURVE TABLE**

CURVE	RADIUS	LENGTH	CHD BEARING	CHD LENGTH	DELTA
C1	4926.16'	252.00'	N18°54'25"E	251.97'	2°55'52"
C2	1925.08'	151.18'	N15°11'30"E	151.14'	4°29'58"
C3	3834.83'	211.90'	N11°21'32"E	211.87'	3°09'58"
C4	1095.92'	230.00'	S16°10'24"W	229.58'	12°01'29"



J:\2000\0810\2002\01 SALEM FIRE STATION\42\CD\ALW\02200202.DWG PLOTTED: 08/14/2024 8:09:00 AM

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**SALEM FIRE STATION NO. 2**  
 EXISTING CONDITIONS AND DEMOLITION PLAN

415 ELECTRIC ROAD  
 CITY OF SALEM, VIRGINIA

DRAWN BY: HCG  
 DESIGNED BY: HCG  
 CHECKED BY: CPB  
 DATE: 08/14/2024  
 SCALE: 1" = 20'  
 REVISIONS:  
 F.R. #1 08/30/2024

PROJECT NO. 03220062.01

**GENERAL SITE NOTES:**

- G.C. TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION OF PROPOSED IMPROVEMENTS.
- NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE CONSULTING ENGINEER AND CITY OF SALEM.
- GENERAL CONTRACTOR TO FIELD VERIFY PAVEMENT TIE IN LOCATIONS/ELEVATIONS AND ENSURE THAT POSITIVE DRAINAGE AWAY FROM THE PROPOSED BUILDING IS MAINTAINED THROUGHOUT THE SITE.
- ANY PAVEMENT TO REMAIN THAT IS DISTURBED OR DESTROYED DURING THE CONSTRUCTION PROCESS SHALL BE REPAIRED/REPLACED AS NECESSARY TO PRE-CONSTRUCTION CONDITIONS AT NO COST TO THE OWNER.
- ALL BUILDING DIMENSIONS AND UTILITY CONNECTIONS SHALL BE COORDINATED WITH THE ARCHITECTURAL PLANS.
- G.C. TO PROVIDE ALL REQUIRED CONDUIT FOR EXTERIOR LIGHTING, ELECTRICAL, TELEPHONE, AND COMMUNICATIONS. ALL UTILITIES TO BE INSTALLED UNDERGROUND.
- G.C. SHALL COORDINATE CONCRETE FINISHING AROUND THE PROPOSED DOOR LOCATIONS WITH THE ARCHITECTURAL PLANS.
- THE SITE CONTRACTOR MUST COORDINATE THE TIMING AND INSTALLATION OF ALL UTILITIES AND MAKE ALL NECESSARY SCHEDULE ARRANGEMENTS FOR TEMPORARY OR PERMANENT UTILITIES PER THE PROJECT SCHEDULE.

**CITY OF SALEM ELECTRIC DEPARTMENT NOTES:**

- ON THE PRIMARY SIDE, THE CITY WILL BE RESPONSIBLE FOR ALL WIRE, CONDUIT, AND TRANSFORMER. ALL DITCH WORK, BACKFILL, AND CONCRETE PAD FOR TRANSFORMER WILL BE THE RESPONSIBILITY OF THE DEVELOPER (WITH COORDINATION FROM THE ELECTRIC DEPARTMENT).
- ON THE SECONDARY SIDE (AFTER THE TRANSFORMER), THE DEVELOPER WILL BE RESPONSIBLE FOR ALL DITCH WORK, BACKFILL, WIRE, AND CONDUIT.
- ALL DITCH WORK FOR CITY OF SALEM ELECTRIC FACILITIES MUST BE 36 INCHES DEEP FROM FINAL GRADE AND WILL NEED TO BE INSPECTED BY ELECTRIC DEPARTMENT PERSONNEL PRIOR TO BACKFILLING.

**KEY:**

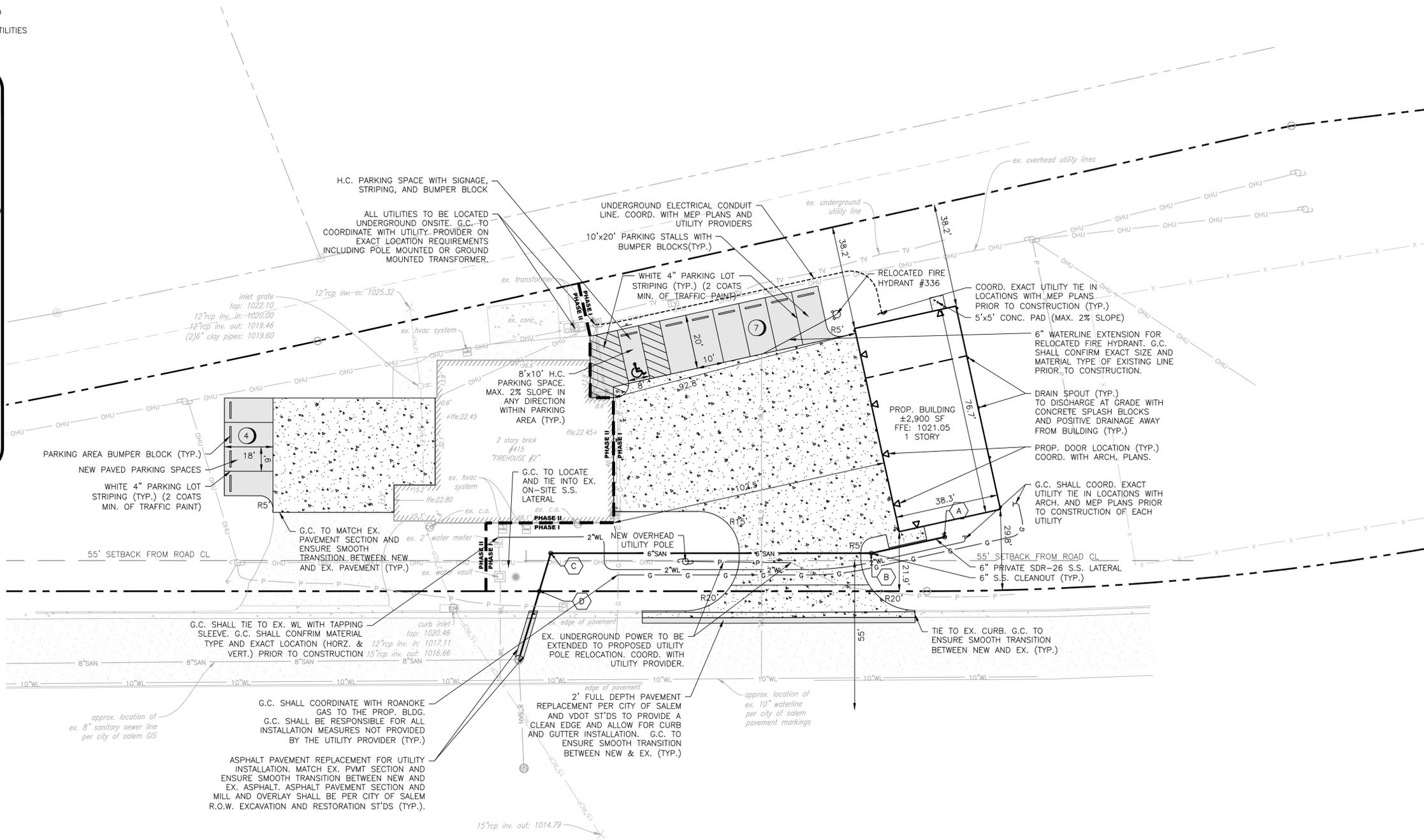
- EXISTING ASPHALT PAVEMENT
- PROPOSED ASPHALT PAVEMENT
- EXISTING CONCRETE PAVEMENT
- PROPOSED CONCRETE PAVEMENT

**SANITARY SEWER SCHEDULE:**

(BLDG)	(A)	5 LF 6" SDR-26 PVC AT 11.0% (PRIVATE)
(A)		PRIVATE 6" S.S. C.O. TOP = 1020.55 INV. = 1017.05
(A)	(B)	28 LF 6" SDR-26 PVC AT 3.75% (PRIVATE)
(B)		PRIVATE 6" S.S. C.O. TOP = 1019.85 INV. OUT = 1016.00
(B)	(C)	119 LF 6" SDR-26 PVC AT 1.50% (PRIVATE)
(C)		PRIVATE 6" S.S. C.O. TOP = 1021.95 INV. = 1014.20
(C)	(D)	15 LF 6" SDR-26 PVC AT 2.00% (PRIVATE)
(D)		PUBLIC 6" S.S. C.O. TOP = 1020.40 INV. = 1013.90
(D)	(EX)	27 LF 6" SDR-26 PVC AT 1.48% (PUBLIC) * INV. = ± 1013.50

**NOTES:**

- G.C. TO CONFIRM TIE-IN ELEVATION AT EXISTING MAIN PRIOR TO ANY CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES IMMEDIATELY\*



**SALEM FIRE STATION NO. 2**

**LAYOUT AND UTILITY PLAN**

DRAWN BY HCG  
 DESIGNED BY HCG  
 CHECKED BY CPB  
 DATE 08/14/2024  
 SCALE 1" = 20'  
 REVISIONS  
 F.R. #1 08/30/2024

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**GRADING NOTES:**

- G.C. SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS.
- REFER TO BUILDING PLANS FOR SUBGRADE AND UTILITY TRENCHES WITHIN 5' OF THE BUILDING ENVELOPE.
- REMOVE TREES, SHRUBS, GRASS, AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDING. CUT OFF TREES AND STUMPS IN AREAS TO RECEIVE FILL MORE THAN THREE FEET IN DEPTH TO WITHIN EIGHT INCHES OF THE ORIGINAL GROUND SURFACE.
- BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.
- EXCAVATION FOR STRUCTURES:
  - CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF 0.1'
  - PROVIDE TRUE AND STRAIGHT FOOTING EXCAVATIONS WITH UNIFORM AND LEVEL BOTTOMS OF THE WIDTH INDICATED TO ENSURE PROPER PLACEMENT AND COVER OF ALL REINFORCEMENT.
  - REMOVE LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.
  - FOOTINGS WHICH SUPPORT CONCRETE MASONRY UNITS MAY BE STEPPED PROVIDED THE VERTICAL STEP DOES NOT EXCEED ONE HALF OF THE HORIZONTAL DISTANCE BETWEEN STEPS AND HORIZONTAL DISTANCE BETWEEN STEPS IS NOT LESS THAN TWO FEET.
  - IF ROCK IS ENCOUNTERED IN A FOOTING EXCAVATION, CONTACT GEOTECHNICAL TESTING FIRM FOR SPECIFIC INSTRUCTIONS.

- CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED.
- EXCAVATE TRENCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB-1 FOR STORM DRAINAGE PIPING.
- PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF FOUNDATION BOTTOMS, UNDERCUTTING FOOTINGS, AND SOIL CHANGES DETRIMENTAL TO STABILITY OF SUBGRADES AND FOUNDATIONS.
- PROTECT EXCAVATED BOTTOMS OF ALL FOOTINGS AND TRENCHES AGAINST FREEZING WHEN ATMOSPHERIC TEMPERATURE IS LESS THEN 35°F (1°).
- PLACE ALL FILL AND BACKFILL AS CONTROLLED FILL AS FOLLOWS:
  - ESTABLISH SUITABLE SUBGRADE CONDITIONS PRIOR TO PLACING FILL BY PROOFROLLING, UNDERCUTTING, AND COMPACTING AS NECESSARY.
  - PLACE FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" FOR AND TAMPERS/
  - PRIOR TO COMPACTION, PROVIDE MOISTURE CONTENT TO WITHIN 3% OF OPTIMUM BY MOISTENING OR AERATING EACH LAYER. DO NOT PLACE FILL MATERIAL ON SURFACES WHICH ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.
  - COMPACT SOIL TO NOT LESS THAN 95% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 (STANDARD PROCTOR).

- FINISH LAWN AREAS TO WITHIN ONE INCH ABOVE OR BELOW REQUIRED SUBGRADE ELEVATIONS. SHAPE SURFACE UNDER WALKS AND PAVEMENTS TO LINE, GRADE, AND CROSS SECTION, WITH NOT MORE THAN 1/2" ABOVE OR BELOW REQUIRED SUBGRADE ELEVATION.
- GRADE SURFACE UNDER BUILDING SLABS SMOOTH AND EVEN, FREE OF VOIDS.
- PROTECT GRADED AREAS FROM TRAFFIC AND EROSION. REPAIR AREAS WHICH HAVE SETTLED, ERODED, OR BECOME DAMAGED DUE TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO OWNER.
- PREPARE AREA FOR SOD INSTALLATION BY SPREADING TOPSOIL TO A DEPTH OF 4" OVER ALL DISTURBED AREAS NOT RECEIVING WALKS, PAVEMENT, WALLS OR BUILDING, INCLUDING TRENCHES. IMMEDIATELY FOLLOWING PLACEMENT OF TOPSOIL, DISK THE ENTIRE TOPSOILED AREA AND RAKE FREE OF STONES AND DEBRIS OVER 1/2" IN ANY DIMENSION. PROVIDE A FINISHED SURFACE FREE OF DEPRESSIONS OR HIGH SPOTS. PREPARE FOR SOD IMMEDIATELY.
- OWNER (CONTRACTOR) SHALL EMPLOY QUALIFIED SOILS TESTING LABORATORY TO INSPECT EARTHWORK OPERATIONS. NOTIFY LABORATORY PRIOR TO PERFORMING EARTHWORK OPERATIONS.
- OWNER (CONTRACTOR) SHALL UTILIZE REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION PERFORMED BY ECS, DATED OCTOBER 2021, TO CLARIFY ONSITE CONDITIONS. OWNER (CONTRACTOR) TO NOTIFY LABORATORY PRIOR TO PERFORMING ANY EARTHWORK OPERATIONS ON-SITE.

**KEY:**

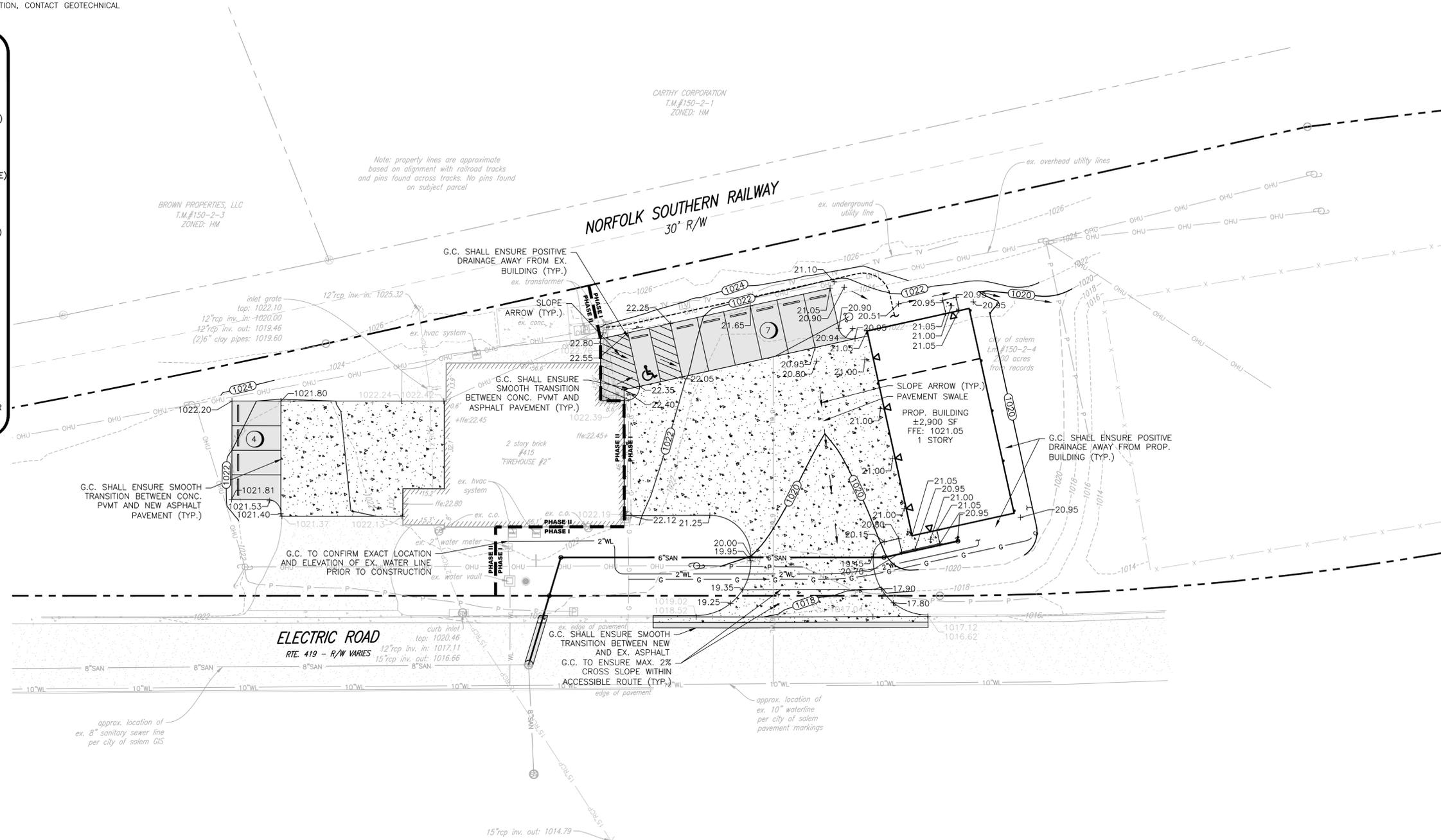
- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE

**SANITARY SEWER SCHEDULE:**

- (BLDG) (A) 5 LF 6" SDR-26 PVC AT 11.0% (PRIVATE)
- (A) PRIVATE 6" S.S. C.O.  
TOP = 1020.55  
INV. = 1017.05
- (A) (B) 28 LF 6" SDR-26 PVC AT 3.75% (PRIVATE)
- (B) PRIVATE 6" S.S. C.O.  
TOP = 1019.85  
INV. OUT = 1016.00
- (B) (C) 119 LF 6" SDR-26 PVC AT 1.50% (PRIVATE)
- (C) PRIVATE 6" S.S. C.O.  
TOP = 1021.95  
INV. = 1014.20
- (C) (D) 15 LF 6" SDR-26 PVC AT 2.00% (PRIVATE)
- (D) PUBLIC 6" S.S. C.O.  
TOP = 1020.40  
INV. = 1013.90
- (D) (EX) 27 LF 6" SDR-26 PVC AT 1.48% (PUBLIC)  
\* INV. = ± 1013.50

\*G.C. TO CONFIRM TIE-IN ELEVATION AT EXISTING MAIN PRIOR TO ANY CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES IMMEDIATELY\*

**NOTES:**  
 1. G.C. TO CONFIRM & COORDINATE ALL BUILDING TIE-IN LOCATIONS WITH M.E.P. AND ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION OF LATERALS.  
 2. G.C. TO CONFIRM ALL TIE-IN LOCATIONS TO EXISTING LINES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.



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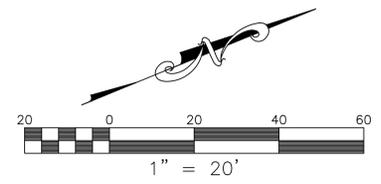
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**SALEM FIRE STATION NO. 2**

**GRADING PLAN**

DRAWN BY: HCG  
 DESIGNED BY: HCG  
 CHECKED BY: CPB  
 DATE: 08/14/2024  
 SCALE: 1" = 20'  
 REVISIONS:  
 F.R. #1 08/30/2024



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**E.S.C. CONSTRUCTION SEQUENCE:**

1. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PROVIDED ON-SITE AND ALL REGULATIONS, INSPECTIONS, AND PROCEDURES FOLLOWED FOR THE ENTIRE DURATION OF THE PROJECT. SEE SWPPP DOCUMENT FOR SITE SPECIFIC REQUIREMENTS AND INSPECTIONS.
2. THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS FIRST STEP. THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. G.C. SHALL PAY SPECIAL ATTENTION TO ENSURE SEDIMENT LADEN RUNOFF IS NOT DIRECTED TOWARDS THE ADJACENT PUBLIC RIGHT OF WAY AND THERE SHALL BE NO MUD 'TRACKING' FROM THE SITE.
3. SILT FENCE AND CHECK DAM TO BE INSTALLED AS SHOWN PRIOR TO ANY LAND DISTURBANCE. THE SILT FENCE AND CHECK DAM SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND SHALL BE CHECKED AFTER EACH MEASURABLE RAIN EVENT AS REQUIRED BY THE EROSION AND SEDIMENT CONTROL HANDBOOK. SILT FENCE TO BE ADJUSTED AS NECESSARY TO ACCOMMODATE THE DIFFERENT PHASES OF THE PROJECT.  
  
THE R.L.D. ASSIGNED TO THE PROJECT SHALL ENSURE ALL REGULATIONS ARE FOLLOWED AND DOCUMENTED THROUGHOUT THE ENTIRE PROJECT TO PREVENT THE EXCESSIVE BUILD-UP OF SEDIMENT. ALL BUILT UP SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF.
4. ONCE THE SILT FENCE AND CHECK DAM ARE INSTALLED MAJOR GRADING OPERATIONS MAY COMMENCE. THIS INCLUDES THE GRADING OF THE PARKING LOT, BUILDING PAD, AND ALL OTHER ASSOCIATED GRADING OPERATIONS ON-SITE.
5. BUILDING CONSTRUCTION MAY BEGIN ONCE THE BUILDING PAD HAS REACHED SUBGRADE ELEVATION AND PERMITS HAVE BEEN OBTAINED.
6. ALL REMAINING UTILITIES FOR THE SITE MAY BE INSTALLED AT THIS TIME AND AREAS TEMPORARILY OR PERMANENTLY SEEDED AFTER COMPLETION OF INSTALLATION.
7. NEW ENTRANCE, PAVEMENT, AND LANDSCAPING, ETC. SHALL BE INSTALLED AT THIS TIME.
8. PERMANENT SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS AT FINAL GRADE.
9. G.C. SHALL ENSURE THAT THE LIMITS OF DISTURBANCE ARE STRICTLY ADHERED TO DURING THE PROJECT.
10. NO DEVIATIONS TO THE PLANS SHALL TAKE PLACE UNLESS PRIOR APPROVAL FROM THE OWNER, PROJECT ENGINEER, AND THE APPROPRIATE REVIEW AGENCIES.

**KEY:**

- EXISTING ASPHALT PAVEMENT
- EXISTING ASPHALT PAVEMENT TO BE REMOVED
- EXISTING CONCRETE
- EXISTING CONCRETE TO BE REMOVED



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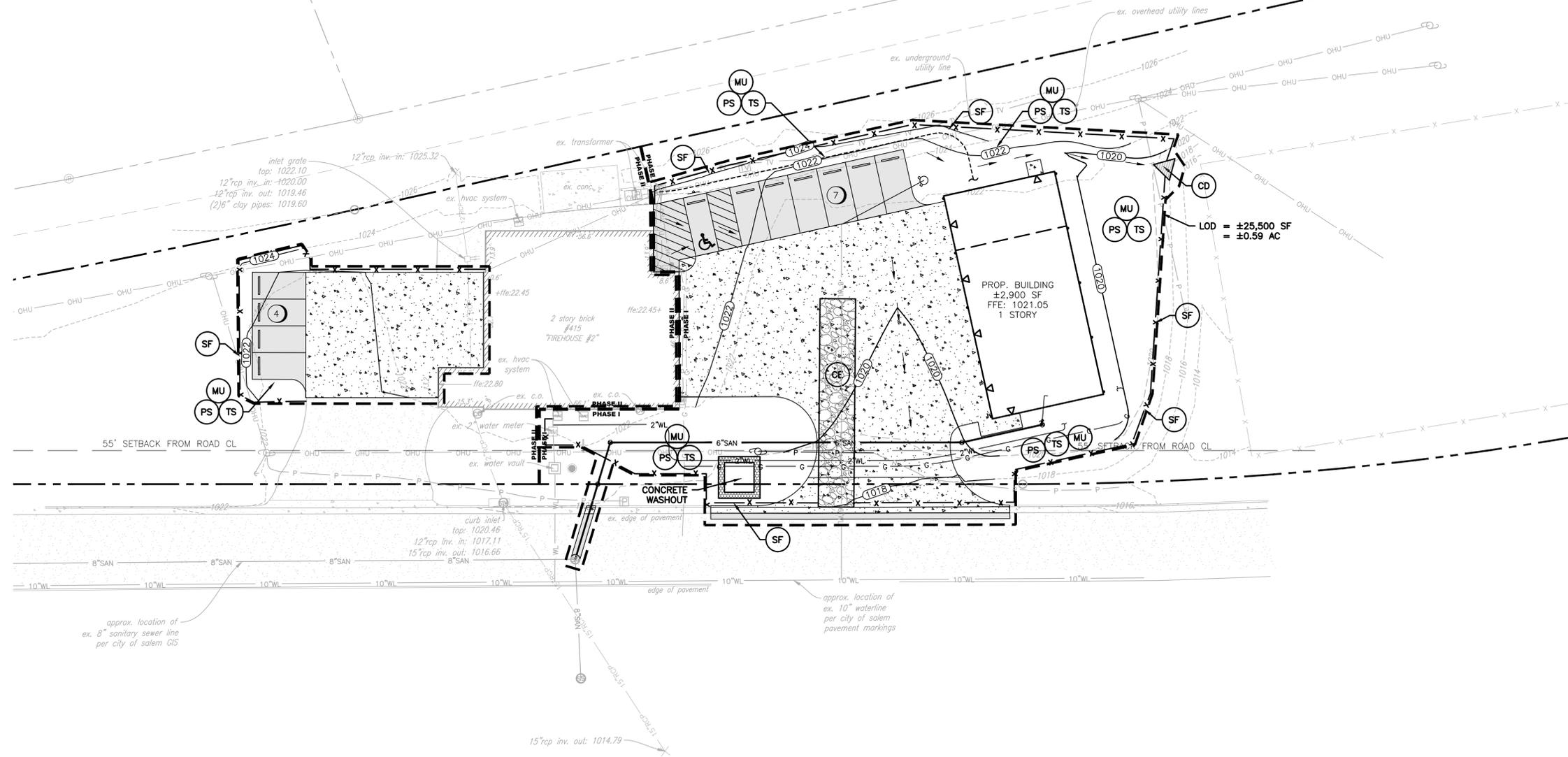
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Roanoke, VA 24018  
540.772.9580



**E&SC MEASURES**

3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE
3.05	SILT FENCE	SF
3.20	ROCK CHECK DAM	CD
3.31	TEMPORARY SEEDING	TS
3.32	PERMANENT SEEDING	PS
3.35	MULCHING	MU

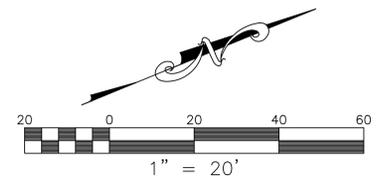


**SALEM FIRE STATION NO. 2**

**E.S.C. PLAN**

415 ELECTRIC ROAD  
CITY OF SALEM, VIRGINIA

DRAWN BY HCG  
DESIGNED BY HCG  
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DATE 08/14/2024  
SCALE 1" = 20'  
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F.R. #1 08/30/2024



**C6**  
PROJECT NO. 03220062.01

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**GENERAL EROSION AND SEDIMENT CONTROL NOTES**

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO ISSUANCE OF A LAND DISTURBANCE PERMIT BY THE CITY OF SALEM, THE OWNER SHALL PROVIDE DOCUMENTATION OF AN EXISTING LAND DISTURBING PERMIT(S) THAT WOULD BE ASSOCIATED OR REQUIRED FOR ANY OFF-SITE BORROW OR WASTE AREAS; WHETHER LOCATED WITHIN THE CITY LIMITS OR NOT.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

BAL-1: ALL ASPHALT AREAS WILL BE STABILIZED WITH BASE STONE WITHIN 30 DAYS OF FINAL GRADING.

BAL-2: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

BAL-3: THE LOCAL APPROVING AUTHORITY AND OTHER INTERESTED AGENCIES SHALL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHODS USED FOR THE OVERALL EFFECTIVENESS OF THE EROSION CONTROL PROGRAM. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN MAY BE AMENDED BY THE APPROVING AUTHORITY OF ON SITE INSPECTION INDICATED THAT THE APPROVED CONTROL MEASURES ARE NOT EFFECTIVE IN CONTROLLING EROSION AND SEDIMENTATION OR IF BECAUSE OF CHANGED CIRCUMSTANCES, THE APPROVED PLAN CANNOT BE CARRIED OUT.

BAL-4: ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARDS, SPECIFICATIONS AND DETAILS OF THE LATEST EDITION OF THE VIRGINIA EROSION CONTROL HANDBOOK (THE HANDBOOK) BY THE VIRGINIA SOIL AND WATER CONSERVATION COMMISSION. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MAINTAINED SO THAT SEDIMENT CARRYING RUNOFF FROM THE SITE WILL NOT ENTER STORM DRAINAGE FACILITIES OR ADJOINING PROPERTIES AND RIGHTS-OF-WAY.

BAL-5: ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE SITE VIA THE CONSTRUCTION ENTRANCES.

**EROSION AND SEDIMENT CONTROL NARRATIVE**

PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS THE CONSTRUCTION OF A PROPOSED GARAGE BUILDING AND ASSOCIATED IMPROVEMENTS FOR THE EXISTING SALEM FIRE STATION SITE. THE SITE IS LOCATED ALONG ELECTRIC ROAD, US 460, IN THE CITY OF SALEM, VIRGINIA. THE PROPERTY IS CURRENTLY OWNED BY CITY OF SALEM. DISTURBED AREA IS 0.59 ACRES.

EXISTING SITE CONDITIONS: THE SITE IS CURRENTLY DEVELOPED WITH A FIRE STATION, AND ASSOCIATED IMPROVEMENTS.

ADJACENT PROPERTY: THE LIMITS OF CONSTRUCTION ARE BOUNDED ON THE SOUTH AND EAST BY PUBLIC RIGHT-OF-WAY OF ELECTRIC ROAD, US 460, TO THE NORTH BY THE PUBLIC RIGHT-OF-WAY INTERSECTION OF ELECTRIC ROAD AND LYNCHBURG TURNPIKE, AND TO THE WEST BY NORFOLK SOUTHERN RAILROAD TRACKS

OFF-SITE AREAS: G.C. SHALL NOTIFY CITY OF SALEM OF THE LOCATION OF ANY OFF-SITE FILL OR BORROW AREAS PRIOR TO ANY MATERIAL BEING TRANSPORTED TO OR FROM THE SITE. ANY OFF-SITE MATERIAL SHALL COME FROM A PERMITTED SITE.

SOILS: A SUBSURFACE INVESTIGATION HAS NOT BEEN PROVIDED. SOIL INFORMATION IS AVAILABLE ON THE RESIDUAL SOILS THAT IS SUGGESTED IN THE "SOIL SURVEY OF ROANOKE COUNTY AND THE CITIES OF ROANOKE AND SALEM, VIRGINIA" AS PREPARED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE. THIS SURVEY IDENTIFIES THE ORIGINAL SOIL MATERIAL AS S3 URBAN LAND HYDROLOGIC SOIL GROUP D, AND 57A WHEELING-URBAN LAND COMPLEX, 0% TO 2% SLOPES RARELY FLOODED AS THE ON-SITE SOILS, DETERMINED AS HYDROLOGIC SOIL GROUP B.

CRITICAL EROSION AREAS: CRITICAL AREAS ARE ALL AREAS THAT ARE ADJACENT TO ELECTRIC ROAD, THESE AREAS SHALL RECEIVE SEEDING AND STABILIZED IMMEDIATELY. EROSION CONTROL MEASURES SHALL BE INSPECTED REGULARLY AND MAINTAINED AS NECESSARY TO ENSURE THAT SEDIMENT IS NOT TRANSFORMED INTO THE ROADWAY.

**EROSION AND SEDIMENT CONTROL MEASURES:**

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION" (VESCH), THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE DIRECTED BY THE LOCAL PROGRAM ADMINISTRATOR.

**STRUCTURAL** –  
TEMPORARY STONE CONSTRUCTION ENTRANCE–STD. 3.02....A STONE PAD, LOCATED AT POINT OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE, TO REDUCE THE SOIL TRANSPORTED ONTO PUBLIC ROADS AND OTHER PAVED AREAS.

SILT FENCE–STD. 3.05....A TEMPORARY SEDIMENT BARRIER CONSTRUCTED OF POSTS, FILTER FABRIC AND, IN SOME CASES, A WIRE SUPPORT FENCE, PLACED ACROSS OR AT THE TOE OF A SLOPE OR IN A MINOR DRAINAGE WAY TO INTERCEPT AND DETAIN SEDIMENT AND DECREASE FLOW VELOCITIES FROM DRAINAGE AREAS OF LIMITED SIZE.

ROCK CHECK DAMS–STD. 3.20....SMALL, TEMPORARY STONE DAMS CONSTRUCTED ACROSS A DRAINAGE DITCH TO REDUCE THE VELOCITY OF CONCENTRATED FLOWS, REDUCING EROSION OF THE DITCH

**VEGETATIVE** –  
TEMPORARY SEEDING–STD. 3.31....ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR PERIODS OF 7 DAYS TO 1-YEAR BY SEEDING WITH AN APPROPRIATE RAPIDLY GROWING SEED MIXTURE.

PERMANENT SEEDING–STD. 3.32....ESTABLISHMENT OF A VEGETATIVE COVER BY PLANTING SEED ON ALL FINAL GRADED AREAS THAT WILL NOT RECEIVE AN IMPERVIOUS COVER OR RECEIVE TOPSOIL MATERIAL TO PROVIDE A STABILIZED SITE AFTER THE PROJECT IS COMPLETE.

MULCHING–3.35....MULCH SHALL BE APPLIED TO ALL TEMPORARY AND PERMANENT SEEDING OPERATIONS TO PROMOTE THE GROWTH OF VEGETATION AND TO PROTECT THE SOIL SURFACE FROM RAINDROP IMPACTS.

**MANAGEMENT STRATEGIES:**

- A) CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- B) SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING.
- C) THE LOCAL PROGRAM ADMINISTRATOR RESERVES THE RIGHT TO ADD TO, DELETE OR OTHERWISE CHANGE THE EROSION CONTROL MEASURES AS DEEMED NECESSARY DUE TO ACTUAL FIELD CONDITIONS BY WRITTEN NOTIFICATION TO THE CONTRACTOR.
- D) ALL FILL AND CUT SLOPES SHALL BE SEEDED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE.
- E) ONLY AFTER INSPECTION AND APPROVAL FROM THE LOCAL PROGRAM ADMINISTRATOR MAY ITEMS BE REMOVED FOLLOWING THE STABILIZATION OF THE CONTRIBUTING AREAS.

**INSPECTIONS:**

THE GENERAL CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND THE AREA OF CONSTRUCTION VEHICLE ACCESS AT LEAST EVERY FOURTEEN (14) CALENDAR DAYS, AND WITHIN 48 HOURS OF THE END OF A STORM EVENT PRODUCING 1/2" OR GREATER OF PRECIPITATION WHERE AREAS HAVE BEEN FINALLY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS (SITE IS COVERED WITH SNOW, ICE, OR FROZEN GROUND EXISTS) SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.

A) INSPECT DISTURBED AREAS AND AREAS OF MATERIALS STORAGE THAT ARE EXPOSED TO PRECIPITATION FOR EVIDENCE OF, OR THE POTENTIAL FOR SEDIMENT ENTERING THE STORM DRAIN SYSTEM. INSPECT E&S CONTROLS IN ACCORDANCE WITH REQUIREMENTS STATED HEREIN, AND INSPECT POINTS OF STORM DRAIN DISCHARGE FOR EXCESSIVE SEDIMENTATION. CORRECT SITE CONTROLS AS REQUIRED TO REDUCE SEDIMENTATION OF STORM DRAINS, CULVERTS, AND RECEIVING CHANNELS.

B) IF CONTROLS OR SEDIMENT PREVENTION AREAS ARE FOUND TO BE IN NEED OF REPAIR OR MODIFICATION, THE GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES AS REQUIRED. ANY ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES SHALL BE RECORDED AS FIELD REVISIONS TO THESE PLANS. IN THE EVENT THAT ADDITIONAL CONTROLS ARE FOUND TO BE REQUIRED, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE CONTROLS BEFORE THE NEXT ANTICIPATED STORM EVENT. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICAL, THEY SHALL BE IMPLEMENTED AS SOON AS PRACTICAL.

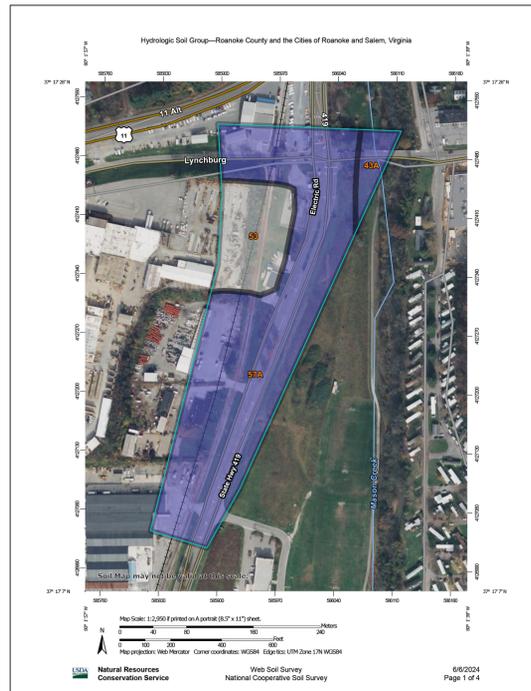
C) A REPORT SUMMARIZING THE SCOPE OF INSPECTIONS, NAME OF INSPECTOR, INSPECTOR'S QUALIFICATIONS, DATES OF INSPECTIONS, MAJOR OBSERVATIONS PERTAINING TO THE IMPLEMENTATION OF THESE EROSION CONTROL PLANS, AND ACTIONS TAKEN SHALL BE MADE AND RETAINED AS A PART OF THESE PLANS. MAJOR OBSERVATIONS OF THESE REPORTS SHALL INCLUDE: THE LOCATIONS OF EXCESSIVE SEDIMENTATION FROM THE SITE; LOCATIONS OF CONTROLS IN NEED OF REPAIR; LOCATIONS OF FAILED OR INADEQUATE CONTROLS; AND LOCATIONS WHERE ADDITIONAL CONTROLS ARE NEEDED.

**STORMWATER MANAGEMENT:**

STORMWATER RUNOFF FROM THE EXISTING SITE GENERALLY DRAIN IN BOTH SHEET FLOW AND CONCENTRATED FLOW TO THE RIGHT-OF-WAY OF ELECTRIC ROAD, ROUTE 419. DRAINAGE IS CAPTURED IN EXISTING STORM SEWER INLETS CONVEYED INTO THE FLOODPLAIN OF MASON CREEK, ULTIMATELY LEADING TO THE ROANOKE RIVER. THE POST-DEVELOPMENT RUNOFF CONDITIONS OF THE SITE RESULT IN SIMILAR PATTERNS OF SHEET FLOW AND CONCENTRATED FLOW FROM THE SITE, MAINTAINING THE GENERAL PRE-DEVELOPMENT DRAINAGE PATTERNS. ALL FLOW DRAINING FROM THE SITE WILL BE CONVEYED INTO THE EXISTING CURB AND GUTTER SYSTEM ALONG ELECTRIC ROAD AND INTO THE EXISTING STORM SEWER SYSTEM. SINCE THE POST-DEVELOPMENT CONDITIONS OF THE SITE MAINTAIN SHEET FLOW AND SIMILAR DRAINAGE PATTERNS IN CONCENTRATED FLOW WITH AN INSIGNIFICANT INCREASE, CHANNEL PROTECTION AND FLOOD PROTECTION REQUIREMENTS FOR THE SITE HAVE BEEN MET. NO CONTRIBUTION TO DOWNSTREAM EROSION, SEDIMENTATION, OR FLOODING IS EXPECTED TO OCCUR.

**STORMWATER QUALITY:**

STORMWATER QUALITY REQUIREMENTS DO NOT APPLY TO THIS PROJECT AS THE OVERALL AREA OF DISTURBANCE IS LESS THAN ONE (1) ACRE.



Hydrologic Soil Group—Roanoke County and the Cities of Roanoke and Salem, Virginia

**Hydrologic Soil Group**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
43A	Speecheed loam, 0 to 2 percent slopes, occasionally flooded	B	0.8	4.8%
53	Urban land		2.7	16.1%
57A	Wheeling Urban land complex, 0 to 2 percent slopes, rarely flooded	B	13.2	79.1%
<b>Totals for Area of Interest</b>			<b>16.6</b>	<b>100.0%</b>

**Description**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

- Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
- Group C: Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

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No.	CRITERIA, TECHNIQUE OR METHOD	PRACTICES PROVIDED
1	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.	 FOR ALL DENUDED AREAS
2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	
3	A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	 FOR ALL DENUDED AREAS
4	SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.	
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	NOT APPLICABLE
6	SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.	NOT APPLICABLE
7	CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.	 FOR ALL ERODING SLOPES
8	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.	NOT APPLICABLE
9	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	NOT APPLICABLE
10	ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	NOT APPLICABLE
11	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.	NOT APPLICABLE
12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	NOT APPLICABLE
13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL.	NOT APPLICABLE
14	ALL APPLICABLE FEDERAL, STATE AND LOCAL CHAPTERS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. THE BEDS AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE
15	THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE
16	UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: 1)NO MORE THAN 500 LINEAR FEET OF ANY TRENCH MAY BE OPENED AT ONE TIME. 2)EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3)EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY. 4)MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 5)RESTALLIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE CHAPTERS. 6)APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.	UTILIZE FOR SANITARY AND WATERLINE INSTALLATION
17	WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.	 FOR ALL POINTS OF INGRESS/EGRESS
18	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	
19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS & CRITERIA A: CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED. B: ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER: 1. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION OR 2. (a) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF THE TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS; AND (b) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF THE 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A 2-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND (c) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THE STORMWATER WILL BE CONTAINED WITHIN THE PIPE SYSTEM C: IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL: 1. IMPROVE THE CHANNEL TO A CONDITION WHERE A 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A 2-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR 2. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTANCES; OR 3. DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR 4. PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE PLAN APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION. D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT. F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE. G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL. H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE. I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY. J. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPERATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS. K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL, AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE. L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014 THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO: i. DETAIN THE WATER QUANTITY VOLUME AND TO RELEASE IT OVER 48 HOURS; ii. DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND iii. REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO 10.1-562 OR 10.1-570 OF THE ACT. M. FOR PLANS APPROVED ON OR AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF 10.1-561 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC60-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSPM) PERMIT REGULATIONS. N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC60-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSPM) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.	POST-DEVELOPMENT RUNOFF WILL DISCHARGE PARTIALLY IN A SHEETFLOW CONDITION AND PARTIALLY IN CHANNELIZED FLOW FOLLOWING THE PRE-DEVELOPMENT DRAINAGE CONDITIONS.



**BALZER & ASSOCIATES**  
PLANNERS / ARCHITECTS  
ENGINEERS / SURVEYORS

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New River Valley  
Shenandoah Valley  
**www.balzer.cc**  
1208 Corporate Circle  
Roanoke, VA 24018  
540.772.9580



**SALEM FIRE STATION NO. 2**

**E.S.C. NOTES**

DRAWN BY HCG  
DESIGNED BY HCG  
CHECKED BY CPB  
DATE 08/14/2024  
SCALE N/A  
REVISIONS  
F.R. 01/08/2024

**C7**  
PROJECT NO. 03200261



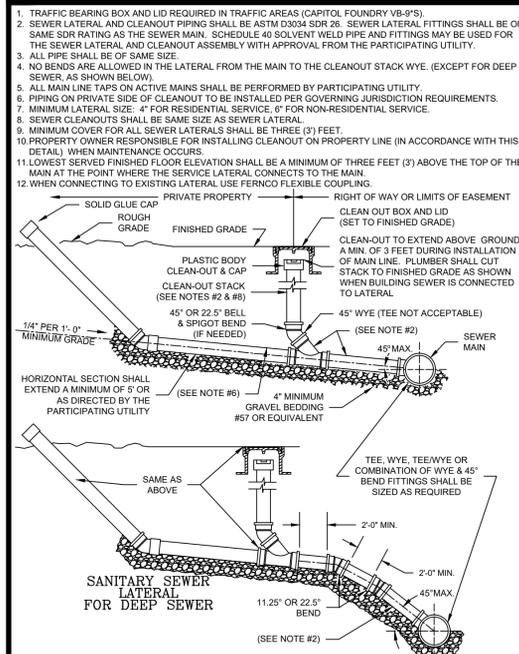


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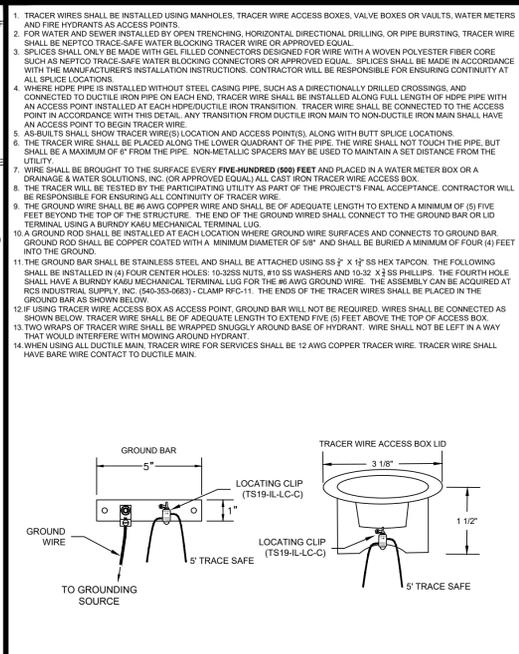
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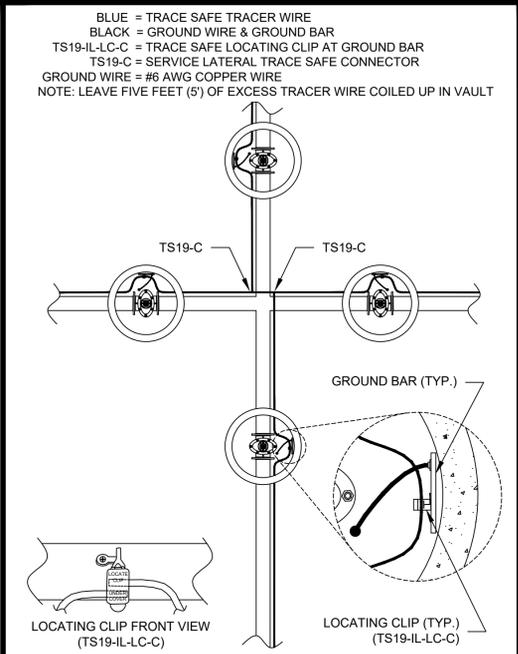
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Roanoke, VA 24018  
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WESTERN VIRGINIA REGIONAL -- CONSTRUCTION DETAIL  
**SANITARY SEWER LATERAL** S-6  
01/01/14



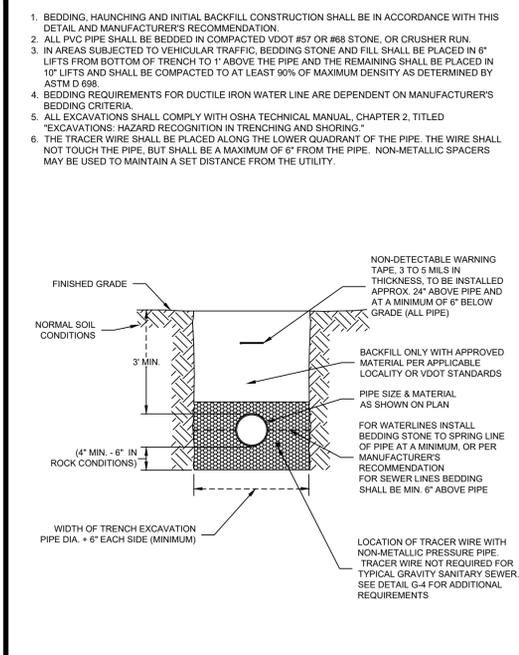
WESTERN VIRGINIA REGIONAL -- CONSTRUCTION DETAIL  
**TRACER WIRE FOR NON-METALLIC PRESSURE PIPE** G-4  
08/06/16



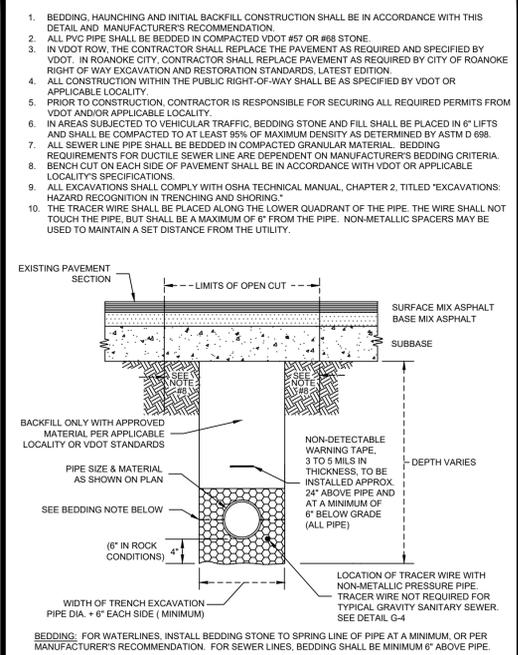
WESTERN VIRGINIA REGIONAL -- CONSTRUCTION DETAIL  
**TRACER WIRE SAMPLE TEE/CROSS INTERSECTION** G-4A  
08/06/16



WESTERN VIRGINIA REGIONAL -- CONSTRUCTION DETAIL  
**BEDDING AND BACKFILL OUTSIDE OF PAVED AREAS** G-11  
08/01/15



WESTERN VIRGINIA REGIONAL -- CONSTRUCTION DETAIL  
**BEDDING AND BACKFILL UNDER PAVEMENT AND IN RIGHT-OF-WAY** G-12  
08/01/15



WESTERN VIRGINIA REGIONAL -- CONSTRUCTION DETAIL  
**BEDDING AND BACKFILL UNDER PAVEMENT AND IN RIGHT-OF-WAY** G-12  
08/01/15

**SALEM FIRE STATION NO. 2**

WESTERN VIRGINIA REGIONAL DETAILS

415 ELECTRIC ROAD  
CITY OF SALEM, VIRGINIA

DRAWN BY HCG  
DESIGNED BY HCG  
CHECKED BY CPB  
DATE 08/14/2024  
SCALE N/A  
REVISIONS  
F.R. #1 08/30/2024



J:\220062\03220062.01 SALEM FIRE STATION 402\CAD\DWG\03220062.01 BASE 2024-08-30.dwg PLOTTED: 8/30/2024 8:10:03 AM



**HAZARDOUS MATERIALS NOTES**

1. ANY HAZARDOUS MATERIALS REMOVED (ASBESTOS, OIL, GAS, LEAD-BASE PAINT, OR SIMILAR HAZARDS) SHALL BE COMPLETELY REMOVED FROM WORK AREAS AND DISPOSED OF OFF-SITE. DISPOSAL SHALL BE DONE IN A MANNER COMPLIANT WITH ALL LOCAL, STATE AND FEDERAL LAWS AND ALL GOVERNING BODIES HAVING JURISDICTION.
2. AN ASBESTOS INSPECTION WAS PERFORMED (DATED JUNE 5, 2024 BY RUBY ENVIRONMENTAL INC.) AND ASBESTOS-CONTAINING MATERIALS (ACMS) WERE FOUND. THE ASBESTOS SURVEY/INSPECTION REPORT IS AVAILABLE FOR GENERAL INFORMATION. THE ACMS SHALL BE REMOVED PRIOR TO ANY OTHER WORK BEING PERFORMED IN THE INDICATED AREAS. THE ABATEMENT CONTRACTOR SHALL MARK UP THE ASBESTOS MANAGEMENT PLAN TO SHOW THE "AS-BUILT" CONDITIONS RESULTING FROM ITS WORK TO INCLUDE AREAS WHERE ASBESTOS WAS ABATED, AREAS WHERE ASBESTOS WAS ENCAPSULATED, AND AREAS WHERE ASBESTOS CONTAINING MATERIALS EXIST BUT WERE LEFT IN PLACE.
3. SEE SURVEY FOR ASBESTOS-CONTAINING MATERIALS FOR LOCATIONS OF ANY MATERIALS THAT WILL BE DISTURBED AS PART OF DEMOLITION WORK. ANY MATERIALS THAT ARE DISTURBED OR REMOVED DURING DEMOLITION PROCESSES SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A MANNER THAT MEETS ALL FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

**GENERAL REPAIR NOTES**

1. REPAIR DAMAGES CAUSED TO ADJACENT FACILITIES BY DEMOLITION WORK.
2. REPAIR DRYWALL WHERE CASEWORK AND TRIM ARE REMOVED.
3. MAINTAIN CONTINUITY OF FINISHED SURFACE WITH LIKE QUALITIES AND CONSTRUCTION AND WITH LIKE FINISHES.
4. 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.
5. DO NOT CUT AND PATCH WORK IN A MANNER THAT WOULD RESULT IN SUBSTANTIAL VISUAL EVIDENCE OF CUT AND PATCH WORK.
6. USE MATERIALS FOR CUTTING AND PATCHING THAT ARE IDENTICAL TO EXISTING MATERIALS.
7. COORDINATE ALL DEMOLITION AND RESTORATION WORK WITH OWNERS. USE MATERIALS FOR PATCHING THAT ARE IDENTICAL TO EXISTING MATERIALS.
8. 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.

**GENERAL DEMOLITION FINISH NOTES**

1. PATCH AND REPAIR TO MATCH EXISTING CEILING, FLOORS, OR WALL FINISHES AFFECTED BY DEMOLITION WORK UNLESS OTHERWISE NOTED ON THE PLANS. NEW WORK TO HAVE SMOOTH AND LEVEL TRANSITION WITH THE EXISTING CONSTRUCTION.
2. ALL ABANDONED FLOOR PENETRATIONS SHALL BE PATCHED WITH LIKE MATERIALS AND REPAIRED TO MATCH EXISTING CONSTRUCTION AND TO MAINTAIN FLOOR INTEGRITY.
3. ANY ITEMS REMOVED BY CONTRACTOR FROM WALLS TO HAVE THE REMAINING HOLE PATCHED TO MATCH THE EXISTING CONSTRUCTION.
4. PROVIDE A SKIM COAT OF GYPSUM PLASTER TO SMOOTH OUT WALL BEFORE INSTALLING NEW WALL BASE OR PAINTING AN EXISTING WALL.
5. REPLACE DAMAGED CEILING TILE AND CEILING GRIDS WITH NEW TILE AND GRID TO MATCH EXISTING. PATCH AND REPAIR GYP. BD. CEILINGS AS REQUIRED FOR NEW WORK.

**GENERAL SALVAGE NOTES**

1. SALVAGE AND REUSE AND/OR RECYCLE MATERIALS AS NOTED IN CONSTRUCTION DRAWINGS AND CONTRACTS.
2. COORDINATE WITH THE OWNER'S REPRESENTATIVE THE SALVAGE OF LIGHT FIXTURES, FURNISHINGS, DOORS, AND MISCELLANEOUS EQUIPMENT.
3. CARE SHALL BE TAKEN IN REMOVAL OF REUSED ITEMS THAT CAN BE RELOCATED. RETURN TO OWNER ALL OTHER ITEMS.
4. ALL ITEMS WHICH ARE HUNG ON WALLS TO BE DEMOLISHED (BULLETIN BOARDS, ILLUMINATORS, FIRE EXTINGUISHERS, ETC.) SHALL BE OFFERED TO THE OWNER. ITEMS NOT DESIRED BY THE OWNER SHALL BE REMOVED BY THE GENERAL CONTRACTOR.
5. GENERAL CONTRACTOR SHALL COORDINATE WITH OWNER FOR ANY MATERIAL BEING REMOVED THAT ARE TO BE STORED FOR REUSE IN CONSTRUCTION OR FUTURE USE BY OWNER.

**GENERAL TEMPORARY WORK NOTES**

1. LOCATE TEMPORARY WALLS WITH EXIT SIGNS WHERE REQUIRED. DO NOT BLOCK EXISTING FIRE EXITS. THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE BEFORE OF OFFSITE. DISPOSAL SHALL BE DONE IN A MANNER COMPLIANT WITH ALL LOCAL, STATE AND FEDERAL LAWS AND ALL GOVERNING BODIES HAVING JURISDICTION.

**GENERAL CONTINUOUS OPERATION NOTES**

1. ENSURE THAT DEMOLITION WORK DOES NOT INTERFERE WITH OR PROHIBIT THE CONTINUING OCCUPATION OF ADJACENT OPERATIONS WITHIN THE STRUCTURE. THIS INCLUDES BUT IS NOT LIMITED TO THE SELECTIVE DEMOLITION OF PARTITIONS, ELECTRICAL AND MECHANICAL SYSTEMS. INFORM THE OWNER A MINIMUM OF 72 HOURS OF DEMOLITION ACTIVITIES THAT WILL AFFECT NORMAL OPERATION OF THE BUILDING.
2. ALL WORK SHALL BE SCHEDULED IN A MANNER TO MAINTAIN THE OWNERS CONTINUOUS USE OF THE BUILDING.

**GENERAL STRUCTURAL DEMOLITION NOTES**

1. THESE DEMOLITION PLAN DRAWINGS ARE INTENDED TO SHOW THE GENERAL CONDITIONS WHICH ARE EXPECTED TO OCCUR. VERIFY ALL CONDITIONS BEFORE PROCEEDING WITH THE DEMOLITION WORK. WHERE DISCREPANCIES INVOLVE STRUCTURAL ITEMS, REPORT SUCH DIFFERENCES AND SECURE INSTRUCTIONS BEFORE PROCEEDING IN THE AFFECTED AREA.
2. DEMOLITION ITEMS SHOWN ARE INTENDED TO BE NON-STRUCTURAL ITEMS ONLY. THE GENERAL CONTRACTOR SHALL INSPECT ALL ITEMS TO BE DEMOLISHED PRIOR TO DEMO TO ENSURE ITEMS ARE NOT STRUCTURAL ELEMENTS. NOTIFY ARCHITECT/ENGINEER IMMEDIATELY AND PRIOR TO DEMOLITION FOR ANY ITEMS THAT APPEAR TO BE STRUCTURAL/LOAD-BEARING.
3. A PROFESSIONAL ENGINEER SHALL BE CONSULTED IN ALL CASES WHERE CUTTING INTO AN EXISTING STRUCTURAL PORTION OF ANY BUILDING IS EITHER EXPEDITED OR NECESSARY. PRIOR TO PROCEEDING WITH WORK, PRIOR TO CUTTING INTO STRUCTURAL PORTIONS OF ANY BUILDING SHALL PROVIDE REINFORCEMENT AND/OR SUPPORT SATISFACTORY TO THE PROFESSIONAL ENGINEER.

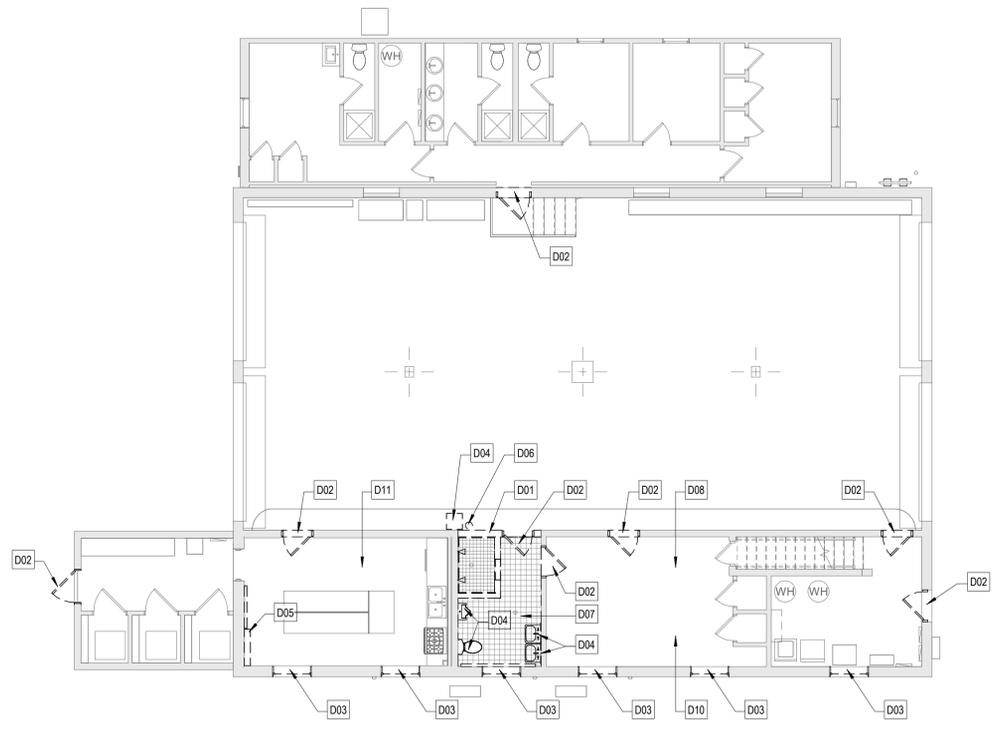
**GENERAL MECHANICAL, ELECTRICAL AND PLUMBING DEMOLITION NOTES**

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ARCHITECT AND COORDINATE INSPECTIONS (IF REQUIRED) BY STATE AGENCIES AND MEET ANY APPLICABLE CODE FOR REUSE OF EXISTING PLUMBING FIXTURES, DIFFUSERS AND DUCTWORK.
2. REMOVE ALL EXISTING NON-COMPLIANT GROUND-FAULT INTERRUPTED OUTLETS.
3. REMOVE ALL EXISTING BROKEN OR PAINTED OUTLET COVER PLATES.
4. AFTER REMOVAL OF PLUMBING FIXTURES, CAP WASTE LINES BELOW FLOOR SLAB AND SUPPLY LINES ABOVE CEILING.
5. AT ALL AREAS WHERE MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT IS REMOVED, PROPERLY CAP AND TERMINATE ALL UTILITIES AS REQUIRED BY ALL PREVAILING NATIONAL AND LOCAL CODES.

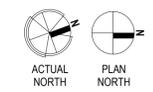
**GENERAL DEMOLITION NOTES**

1. DRAWINGS OF EXISTING CONDITIONS HAVE BEEN COMPILED FROM EXISTING DATA SUPPLIED BY THE OWNER AND BASED ON FIELD INVESTIGATIONS. THE ARCHITECT MAKES NO WARRANTY EITHER EXPRESSED OR IMPLIED, FOR THE ACCURACY OR COMPLETENESS OF THE EXISTING INFORMATION RECORDED. VERIFY ALL EXISTING CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK.
2. MOST DEMO 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. PROVIDE ALL NECESSARY BARRICADES AND OTHER FORMS OF PROTECTION AS REQUIRED TO PROTECT THE GENERAL PUBLIC FROM INJURY DUE TO DEMO WORK.
3. WHERE ITEMS ARE TO BE REMOVED THE CONTRACTOR SHALL BE CAUTIONED NOT TO DAMAGE ITEMS THAT ARE TO BE RETAINED BY OWNER OR RELOCATED. ALL EXPOSED OR DAMAGED AREAS, AFTER REMOVAL OF ITEMS, SHALL BE REPAIRED.
4. DEMOLITION WORK WILL BE GOVERNED BY THE EXTENT OF NEW CONSTRUCTION INVOLVED. CONTRACTOR WILL VERIFY AND COORDINATE DEMOLITION WORK WITH RESPECT TO THE NEW CONSTRUCTION. CONTRACTOR TO VERIFY EXISTING CONDITIONS BEFORE START OF WORK.
5. REMOVAL OF EXISTING EQUIPMENT, PIPING, DUCTS, AND SIMILAR UTILITIES SHALL INCLUDE ALL ANCHORS, HANGERS, AND OTHER ACCESSORIES. AFTER REMOVAL, FLOORS, WALLS AND CEILINGS SHALL BE FINISHED TO MATCH ADJOINING SURFACES OR SHALL BE PREPARED TO RECEIVE NEW FINISHES AS INDICATED IN THE NEW FINISH SCHEDULE. MAINTAIN EXISTING FINISHES AS NOTED ON THE NEW FINISH SCHEDULE.
6. MATCH THICKNESS OF EXISTING WALL AND CEILING FINISH MATERIAL WHERE PATCHING AND REPAIRING IS REQUIRED.
7. COORDINATE DEMOLITION PLANS WITH PLANS FOR NEW CONSTRUCTION FOR EXTENT OF REMOVAL. REMOVE ONLY THOSE PORTIONS OF WALLS AND FLOORS NECESSARY TO ACCOMMODATE NEW CONSTRUCTION. TAKE REASONABLE CARE IN REMOVAL OF ITEMS TO BE RELOCATED AND REUSED.
8. CONTRACTOR SHALL CHECK ALL EXISTING CORRIDOR WALLS IN THOSE AREAS OF RENOVATION FOR OPENINGS. ANY OPENINGS SHALL BE CLOSED TIGHT AS REQUIRED. TO MATCH EXISTING CONSTRUCTION AND TO MAINTAIN NEW OR EXISTING WALL RATING. THIS IS TYPICAL FOR ALL WORK DONE IN AREAS WHERE RENOVATION IS BEING DONE.
9. ALL WALLS SHOWN BY DASHED LINES ARE TO BE REMOVED COMPLETELY, ALONG WITH DOORS AND FRAMES. ELECTRICAL ITEMS, PLUMBING FIXTURES, CASEWORK, AND SIMILAR INFRASTRUCTURE.
10. CONCRETE FLOORS SHALL BE REMOVED FOR INSTALLATION AND CONNECTION OF NEW PLUMBING. PATCH WITH 3,000 PSI CONCRETE.
11. SEE LIMITS OF CONSTRUCTION ON NEW FLOOR PLANS. GENERALLY, ROOMS OUTSIDE OF LIMITS OF CONSTRUCTION ARE NOT TO HAVE ANY WORK DONE IN THEM WITH THE EXCEPTION OF FLOOR OR CEILING TO BE PATCHED OR REPAIRED FOR INSTALLATION OF NEW WORK. CONTRACTOR SHALL USE EXISTING FLOOR OR CEILING MATERIAL FOR REPAIR. SALVAGED FROM AREAS WHERE EXISTING MATERIALS ARE REMOVED OR ALL NEW MATERIAL IN A ROOM IF NECESSARY THAT MATCH EXISTING FINISHES.
12. ALL EXISTING 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.
13. CONTRACTOR MUST REMOVE EXISTING FINISHES AS NECESSARY PRIOR TO INSTALLATION OF NEW FINISHES.
14. 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.
15. PROVIDE TEMPORARY SHORING OF EXISTING STRUCTURE ABOVE AS REQUIRED WHERE ANY EXISTING LOAD BEARING ELEMENTS (OR PORTION OF) ARE TO BE REMOVED AS REQUIRED BY FLOOR PLAN; PROVIDE NEW HEADER/STRUCTURE/INFILL PER NEW FLOOR PLAN; REPAIR/PATCH WALLS/FLOOR/CEILING AS REQUIRED.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, INCLUDING BUT NOT LIMITED TO: TEMPORARY/PERMANENT BEAMS AND LINTELS; SHORING OF EXISTING CONSTRUCTION; AND FOR SAFETY PRECAUTIONS AND PROGRAMS AS THEY RELATE TO THE WORK OF THIS PROJECT.
17. ALL DEMOLISHED MATERIAL SHALL BE REMOVED FROM SITE UNLESS NOTED OTHERWISE.

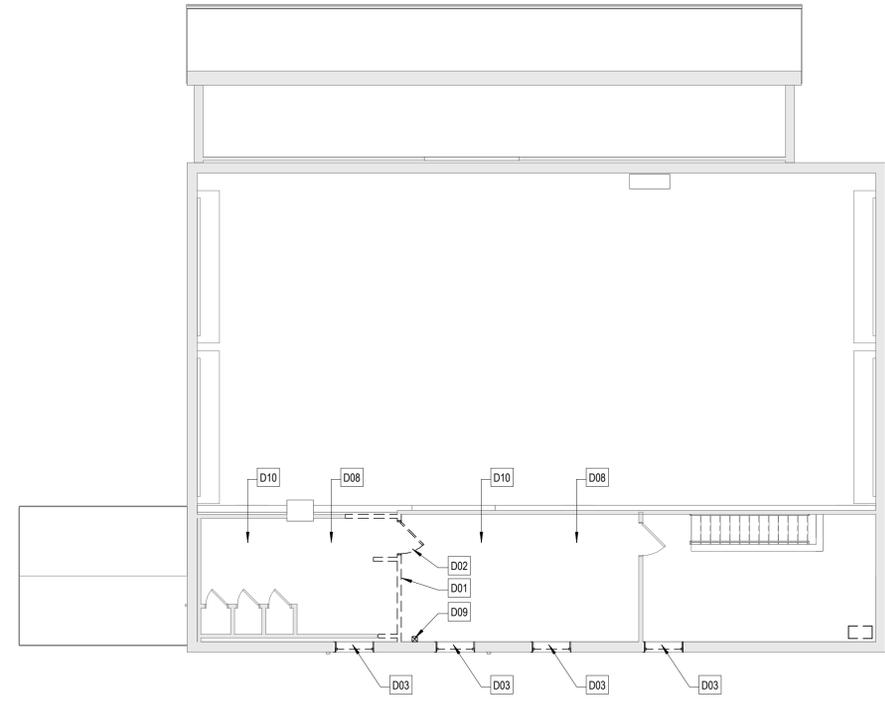
DEMOLITION NOTES	
D01	REMOVE PORTION OF WALL
D02	REMOVE DOOR
D03	REMOVE WINDOW
D04	REMOVE PLUMBING FIXTURE AND ACCESSORIES
D05	REMOVE MECHANICAL COMPONENTS
D06	RELOCATE EXISTING FIRE EXTINGUISHER
D07	REMOVE EXISTING FLOOR AND WALL TILE
D08	REMOVE EXISTING CEILING
D09	PREPARE OPENING FOR NEW DUCTWORK PENETRATION. COORDINATE LOCATION WITH EXISTING WALLS AND MECHANICAL PLANS
D10	REMOVE EXISTING VINYL FLOOR TILE. COORDINATE REMOVAL WITH HAZARDOUS MATERIALS REPORT
D11	REMOVE EXISTING EPOXY FLOORING.



**1 FIRST FLOOR DEMOLITION PLAN**  
 DR1.01 1/8" = 1'-0"



**2 SECOND FLOOR DEMOLITION PLAN**  
 DR1.01 1/8" = 1'-0"



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**SALEM VA**



**SALEM FIRE STATION #2**  
 RENOVATION  
**FIRST FLOOR DEMOLITION PLAN & NOTES**  
 415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24145

DRAWN BY JR3  
 DESIGNED BY JR3  
 CHECKED BY RWP  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

2024-08-30 12:28:38 PM

J:\2024\08\30\202411\SALEM FIRE STATION RENOVATION\20240830\11 SALEM FIRE STATION#2.RVT



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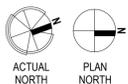
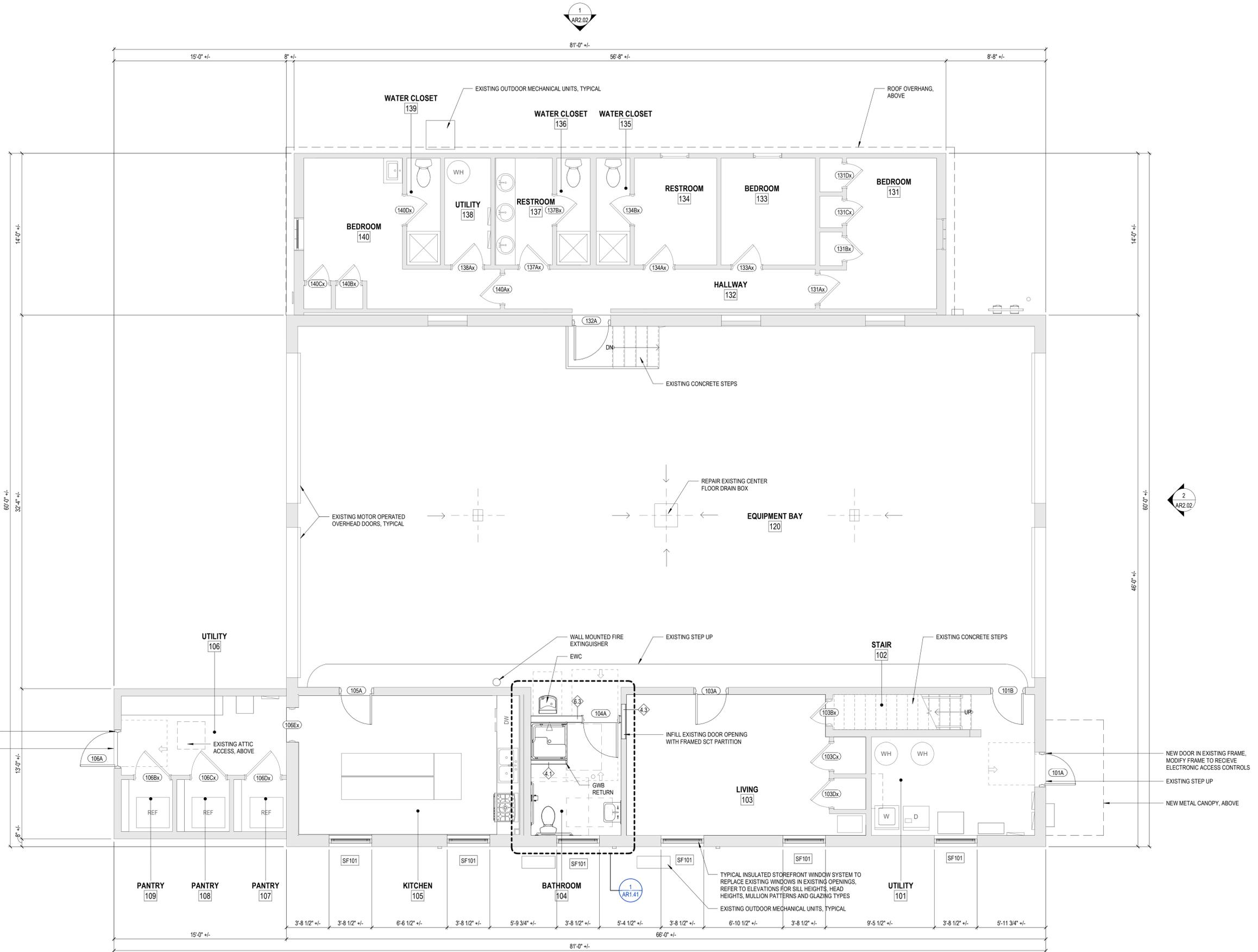
SALEM VA



**SALEM FIRE STATION #2**  
RENOVATION  
MAIN FLOOR PLAN

DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE 1/4" = 1'-0"  
REVISIONS

**AR1.01**  
PROJECT NO 03220052.01

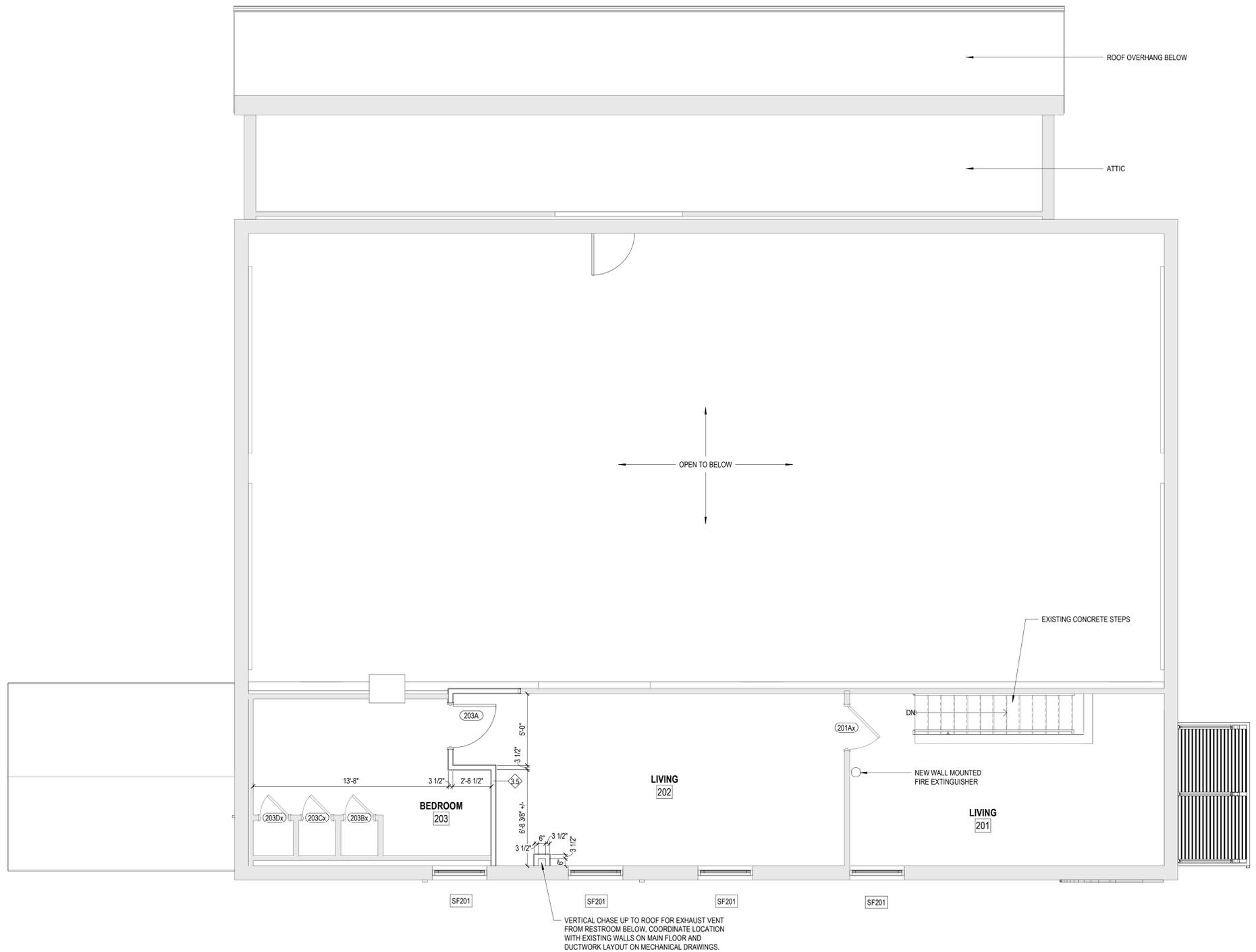


**FIRST FLOOR PLAN**

1 AR1.01  
1/4" = 1'-0"



1 AR2.01



**UPPER FLOOR PLAN**  
 1 AR1.02  
 1/4" = 1'-0"

ACTUAL NORTH  
 PLAN NORTH



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**SALEM FIRE STATION #2**  
 RENOVATION  
 UPPER FLOOR PLAN

DRAWN BY JR3  
 DESIGNED BY JR3  
 CHECKED BY RWP  
 DATE 2024-08-30  
 SCALE 1/4" = 1'-0"  
 REVISIONS

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24143

**AR1.02**  
 PROJECT NO 03220052.01

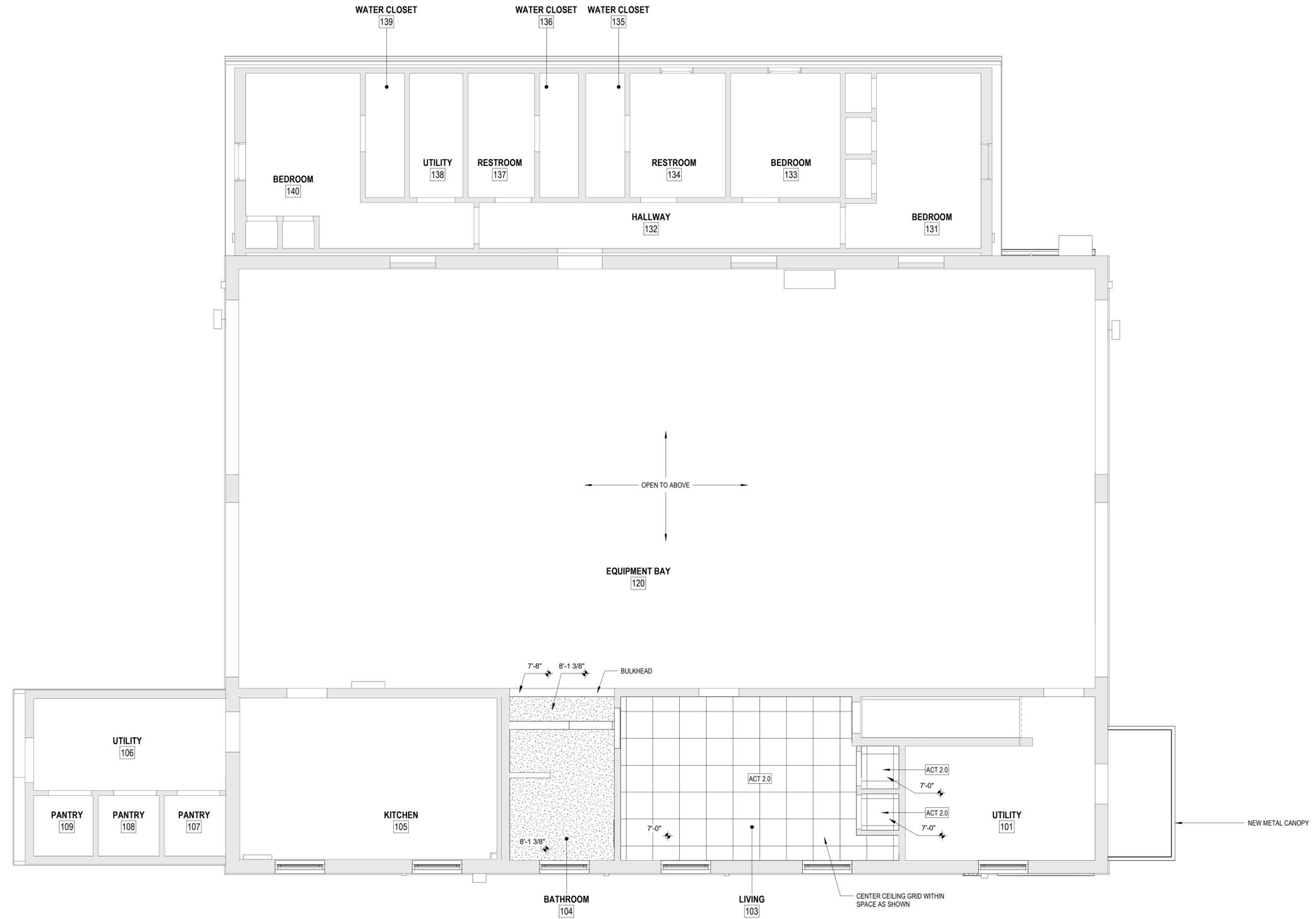
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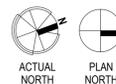
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### CEILING TYPES

MARK	DESCRIPTION
<varies>	
ACT 2.0	2x2' ACOUSTIC CEILING GRID
GYP 1.0	5/8" GYP ON WOOD FRAMING
GYP 2.0	5/8" GYP ON MTL FRAMING



## FIRST FLOOR REFLECTED CEILING PLAN



1  
AR1.21  
1/4" = 1'-0"



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SALEM FIRE STATION #2  
RENOVATION  
MAIN FLOOR REFLECTED CEILING PLAN

DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE 1/4" = 1'-0"  
REVISIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24143

AR1.21

PROJECT NO 03220052.01

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### CEILING TYPES

MARK	DESCRIPTION
<varies>	
ACT 2.0	2x2' ACOUSTIC CEILING GRID
GYP 1.0	5/8" GYP ON WOOD FRAMING
GYP 2.0	5/8" GYP ON MTL FRAMING



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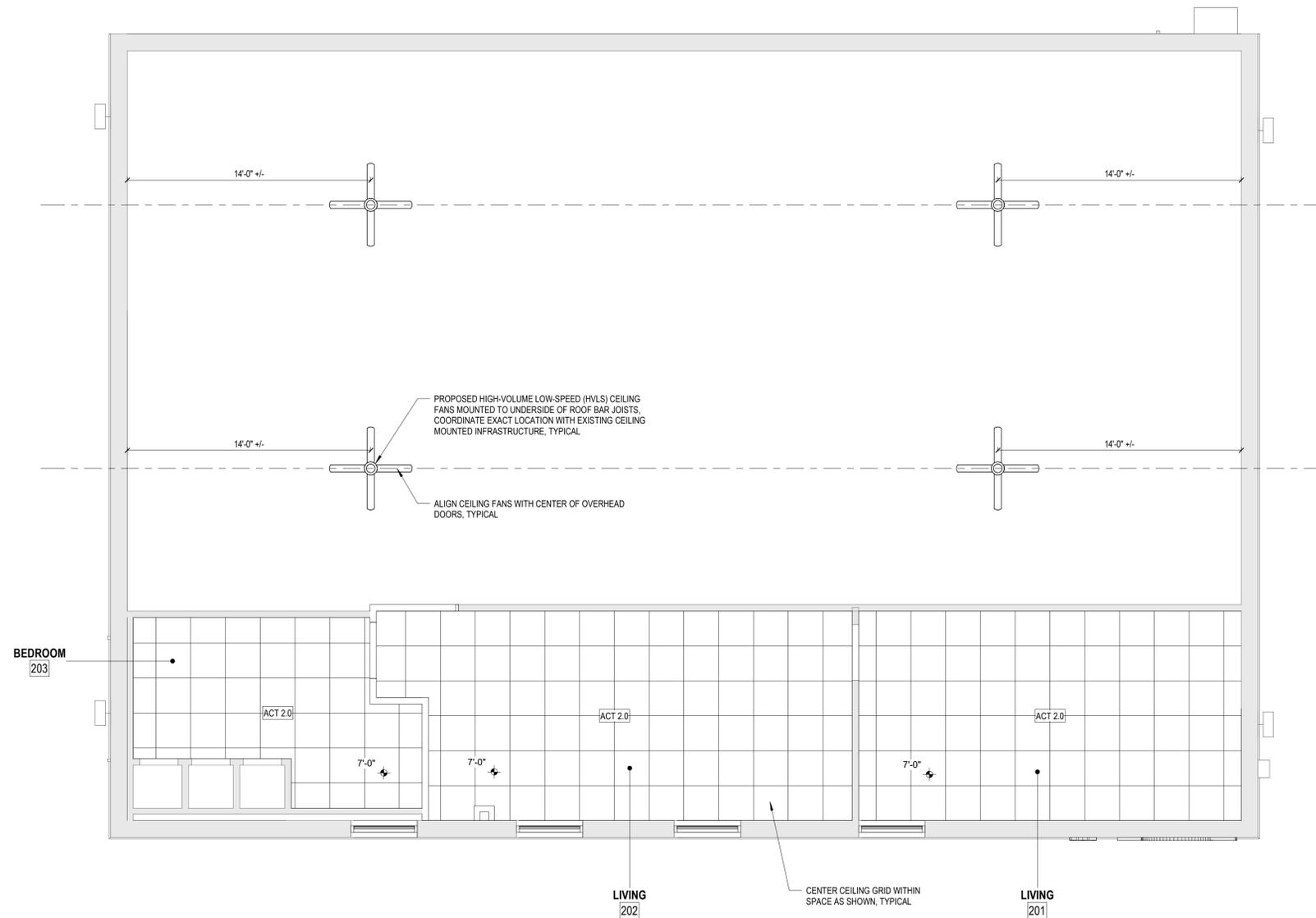
1208 Corporate Circle

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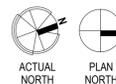
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### UPPER FLOOR REFLECTED CEILING PLAN



1  
AR1.22  
1/4" = 1'-0"

### SALEM FIRE STATION #2 RENOVATION UPPER FLOOR REFLECTED CEILING PLAN

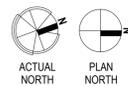
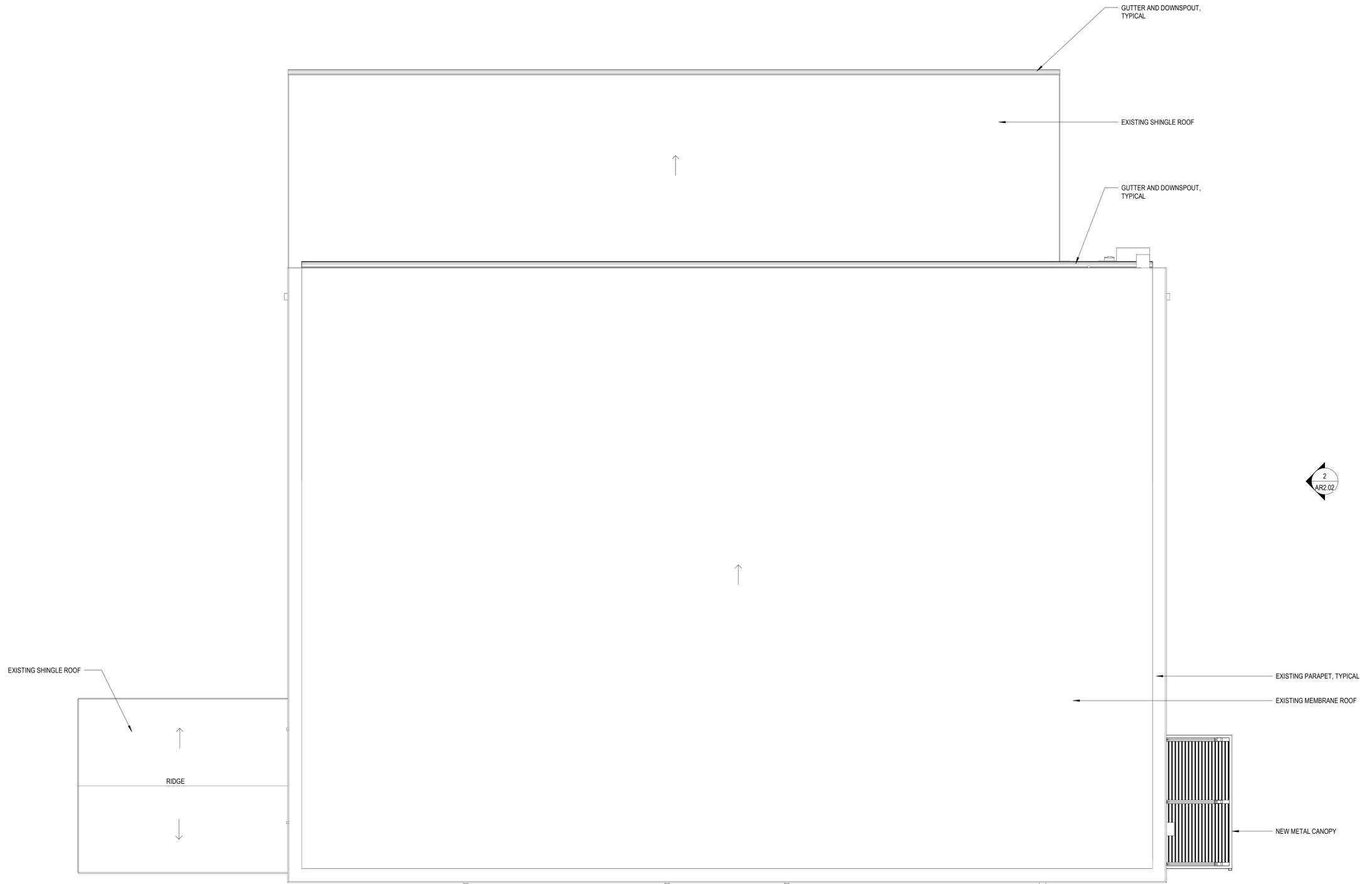
DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE 1/4" = 1'-0"  
REVISIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24143

AR1.22  
PROJECT NO 03220052.01

J:\2024\08\20240821\Salem Fire Station\ARCH\DRAWINGS\02200521\Salem Fire Station\AR1.31

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# ROOF PLAN

1/4" = 1'-0"



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## SALEM FIRE STATION #2

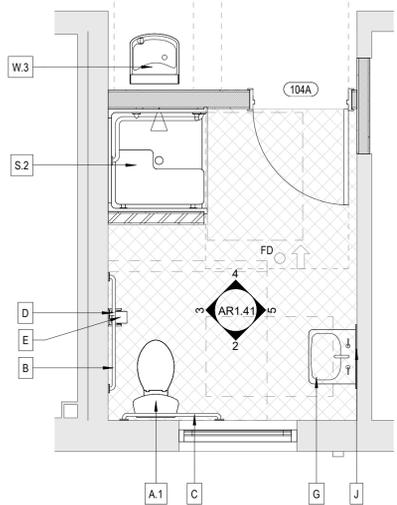
### RENOVATION ROOF PLAN

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24145

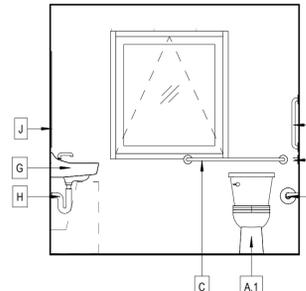
DRAWN BY	JR3
DESIGNED BY	JR3
CHECKED BY	RWP
DATE	2024-08-30
SCALE	1/4" = 1'-0"
REVISIONS	

# AR1.31

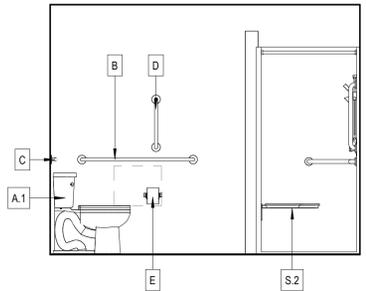
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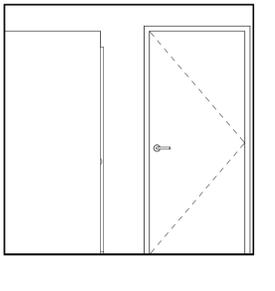
**1 ENLARGED PLAN**  
AR1.41 3/8" = 1'-0"



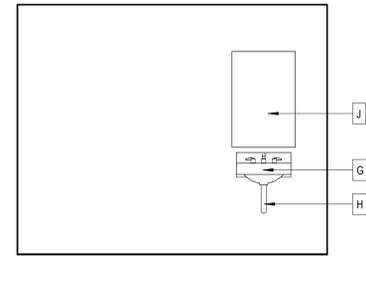
**2 INT ELEV**  
AR1.41 3/8" = 1'-0"



**3 INT ELEV**  
AR1.41 3/8" = 1'-0"



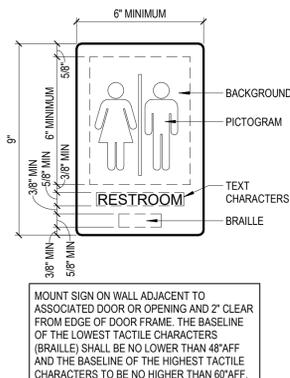
**4 INT ELEV**  
AR1.41 3/8" = 1'-0"



**5 INT ELEV**  
AR1.41 3/8" = 1'-0"

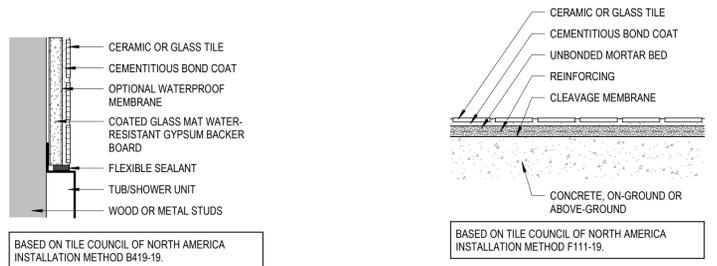
MARK	DESCRIPTION	BASIS-OF-DESIGN	MODEL	DESCRIPTION	MOUNTING HEIGHT	COMMENTS
A.1	TANK WATER CLOSET (ADA)	AMERICAN STANDARD	3378.128	CADET 3 ELONGATED 16-1/2" RIGHT HEIGHT LOW CONSUMPTION TANK TOILET, FLOOR MOUNTED, VITREOUS CHINA	SEAT 17"-19" ABOVE FINISHED FLOOR	
B	SIDE WALL GRAB BAR	BOBRICK	B-6806.99x42	STRAIGHT PEENED GRAB BAR	33"-36" ABOVE FINISHED FLOOR TO TOP OF BAR	REINFORCED WALL
C	REAR WALL GRAB BAR	BOBRICK	B-5806.99x36	STRAIGHT PEENED GRAB BAR	33"-36" ABOVE FINISHED FLOOR TO TOP OF BAR	REINFORCED WALL
D	VERTICAL GRAB BAR	BOBRICK	B-5806.99x18	STRAIGHT PEENED GRAB BAR	33"-36" ABOVE FINISHED FLOOR TO BOTTOM OF BAR	REINFORCED WALL
E	TOILET PAPER DISPENSER	BOBRICK	B-2730	SINGLE-ROLL TOILET TISSUE DISPENSER	24" ABOVE FINISHED FLOOR TO TOP	
G	WALL MOUNTED LAVATORY	AMERICAN STANDARD	LUCERNE 0355.012	WHITE WITH ADA FAUCET	34" ABOVE FINISHED FLOOR TO TOP OF SINK RIM	
H	DRAIN INSULATION	TRUBRO	102 E-Z	MOUNTED TO SINK DRAIN LINE	SEE ADA REFERENCE DETAILS	
J	2'-0" WIDE X 3'-0" TALL MIRROR	BOBRICK	B-165-2436	STAINLESS STEEL FRAME	40" ABOVE FINISHED FLOOR TO BOTTOM OF REFLECTIVE SURFACE	
S.2	PREFABRICATED SHOWER UNIT	-	-	SHOWER UNIT FOR OPTIONAL FUTURE GRAB BARS, SEAT, AND ACCESSIBLE SHOWER HEAD	-	BUILT-IN REINFORCING FOR FUTURE FOLD-DOWN SEAT
W.3	LOW (ONLY) WATER FOUNTAIN WITH BOTTLE FILLER	ELKAY	EZ420	SINGLE LEVEL ADA COOLER, NON-FILTERED, WITH BOTTLE FILLING STATION	34" ABOVE FINISHED FLOOR TO ACCESSIBLE SPOUT	

**RESTROOM ACCESSORY SCHEDULE**



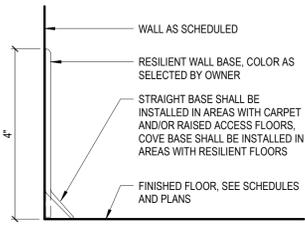
**6 REGULATORY SIGNS**  
AR1.41 NOT TO SCALE

**GENERAL SIGN NOTES**  
 1. SIGN SHALL BE FREE FROM SHARP EDGES  
 2. RAISED PICTOGRAM SHALL BE FROM CONTRASTING COLORS AND WITH A NON-GLARE FINISH.  
 3. TEXT CHARACTERS SHALL BE RAISED SANS-SERIF UPPERCASE TEXT CHARACTERS INDICATING ROOM TYPE. CHARACTERS SHALL NOT BE ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF ANY OTHER UNUSUAL FORMS.  
 4. BRAILLE SHALL BE DOMED OR ROUNDED CONTRACTED DOTS.



**7 INTERIOR TILE AT TUB/SHOWER UNIT**  
AR1.41 NOT TO SCALE

**8 INTERIOR TILE ON CONCRETE FLOOR**  
AR1.41 NOT TO SCALE

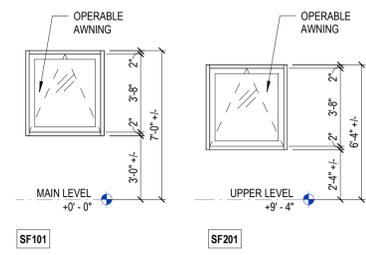


**9 WALL BASE**  
AR1.41 NOT TO SCALE

MARK	WIDTH	HEIGHT	HEAD HEIGHT	TYPE	ENERGY STAR	REMARKS
------	-------	--------	-------------	------	-------------	---------

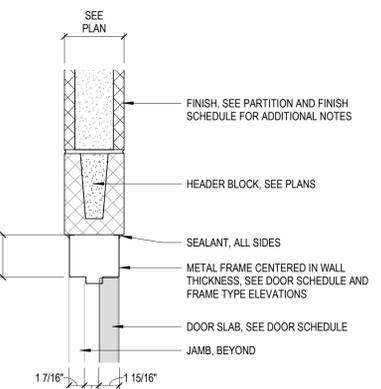
**WINDOW SCHEDULE**

**NOTE:** ALL EGRESS (BEDROOM) WINDOWS SHALL HAVE A NET CLEAR OPENING WIDTH OF 20" AND A MINIMUM NET CLEAR OPENING HEIGHT OF 24" WITH A SILL HEIGHT OF NOT MORE THAN 44" ABOVE FINISHED FLOOR WITH A TOTAL CLEAR OPENING AREA OF 5.7 SQUARE FEET PER SECTIONS R310.2.1 AND R310.2.2.

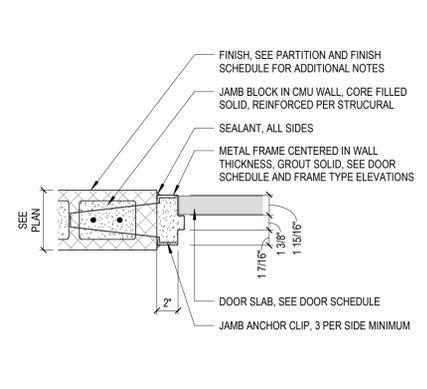


SF101

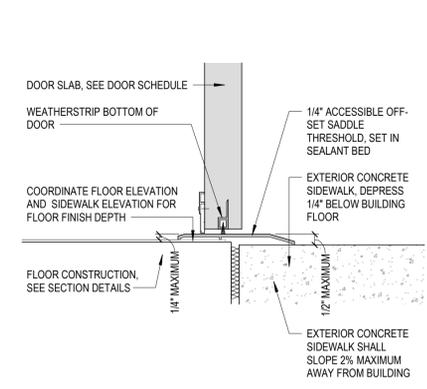
SF201



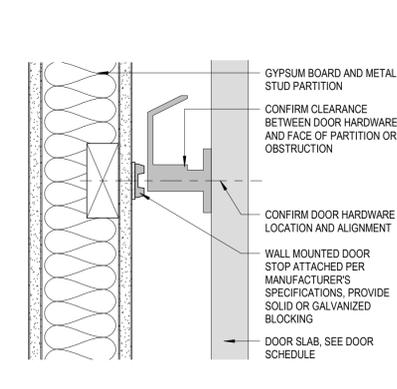
**10 HEAD DETAIL**  
AR1.41 NOT TO SCALE



**11 JAMB DETAIL**  
AR1.41 NOT TO SCALE



**12 EXTERIOR THRESHOLD**  
AR1.41 NOT TO SCALE



**13 DOOR STOP**  
AR1.41 NOT TO SCALE

NO.	ROOM NAME	FLOOR	BASE	WALL		CEILING		REMARKS
				MTL	FINISH	MTL	FINISH	
<b>MAIN LEVEL</b>								
101	UTILITY	EXISTING	EXISTING	EXISTING	NEW PNT	EXISTING	UNFINISHED	
102	STAIR	EXISTING	EXISTING	EXISTING	NEW PNT	-	-	
103	LIVING	NEW CT	EXISTING	EXISTING	NEW PNT	NEW ACT	-	
104	BATHROOM	NEW CT	EXISTING	EXISTING	NEW CT	GYP	PNT	
105	KITCHEN	NEW CT	EXISTING	EXISTING	NEW PNT	EXISTING	EXISTING	
106	UTILITY	EXISTING	EXISTING	EXISTING	NEW PNT	EXISTING	EXISTING	
107	PANTRY	EXISTING	EXISTING	EXISTING	NEW PNT	EXISTING	EXISTING	
108	PANTRY	EXISTING	EXISTING	EXISTING	NEW PNT	EXISTING	EXISTING	
109	PANTRY	EXISTING	EXISTING	EXISTING	NEW CT	EXISTING	EXISTING	
120	EQUIPMENT BAY	EXISTING	-	EXISTING	NEW PNT	EXISTING	UNFINISHED	
<b>DORM LEVEL</b>								
131	BEDROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
132	HALLWAY	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
133	BEDROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
134	RESTROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
135	WATER CLOSET	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
136	WATER CLOSET	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
137	RESTROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
138	UTILITY	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
139	WATER CLOSET	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
140	BEDROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
<b>UPPER LEVEL</b>								
201	LIVING	EXISTING	EXISTING	EXISTING	NEW PNT	EXISTING	NEW PNT	ALTERNATE FLOOR FINISH
202	LIVING	NEW EPOXY	EXISTING	EXISTING	NEW PNT	EXISTING	NEW PNT	ALTERNATE FLOOR FINISH
203	BEDROOM	NEW EPOXY	EXISTING	EXISTING	NEW PNT	EXISTING	NEW PNT	ALTERNATE FLOOR FINISH

TYPE	DESCRIPTION	RATING (HOURS)	UL DESIGN NO.
3.5	2X4 WOOD STUDS @ 16" O.C. W/ 2X4 BOTTOM PLATE (PRESSURE TREATED WHERE IN CONTACT WITH CONCRETE) & (2)2X4 TOP PLATE. SECURE BOTTOM PLATE TO FLOOR SLAB W/ POWDER-ACTUATED FASTENERS @ 24" O.C. 1/2" GWB EA. SIDE. SECURE TO STUDS W/ NO. 6 SCREWS @ 12" O.C. MAX. TAPE & FINISH ALL JOINTS. FINISH PER SCHEDULE.	-	-
3.6	2X4 WOOD STUDS @ 16" O.C. W/ 2X4 BOTTOM PLATE (PRESSURE TREATED WHERE IN CONTACT WITH CONCRETE) & (2)2X4 TOP PLATE. SECURE BOTTOM PLATE TO FLOOR SLAB W/ POWDER-ACTUATED FASTENERS @ 24" O.C. 1/2" GWB ON ONE (1) SIDE ONLY. SECURE TO STUDS W/ NO. 6 SCREWS @ 12" O.C. MAX. TAPE & FINISH ALL JOINTS. FINISH PER SCHEDULE.	-	-
4.1	3-5/8" 20 GAUGE GALVANIZED STEEL STUDS AT 16" ON CENTER WITH 20 GAUGE GALVANIZED STEEL TOP AND BOTTOM TRACKS. SECURE BOTTOM TRACK TO FLOOR SLAB WITH RAMSET FASTENERS AT 24" ON CENTER 5/8" GWB EACH SIDE. SECURE TO STUDS WITH NO. 6 SCREWS AT 12" ON CENTER MAX. TAPE AND FINISH ALL JOINTS. PROVIDE INTERMEDIATE WALL BLOCKING FOR PARTITIONS RECEIVING MOUNTED ACCESSORIES (CASEWORK, GRAB BARS, ETC.).	-	-
4.3	3-5/8" 20 GAUGE GALVANIZED STEEL STUDS AT 16" ON CENTER WITH 20 GAUGE GALVANIZED STEEL TOP AND BOTTOM TRACKS. SECURE BOTTOM TRACK TO FLOOR SLAB WITH RAMSET FASTENERS AT 24" ON CENTER 3-1/2" (MIN) SOUND BATT INSULATION, CONTINUOUS AND FROM FLOOR TO CEILING. 5/8" GWB EACH SIDE. SECURE TO STUDS WITH NO. 6 SCREWS AT 12" ON CENTER MAX. TAPE AND FINISH ALL JOINTS. PROVIDE INTERMEDIATE WALL BLOCKING FOR PARTITIONS RECEIVING MOUNTED ACCESSORIES (CASEWORK, GRAB BARS, ETC.).	-	-
6.3	6" 20 GAUGE GALVANIZED STEEL STUDS AT 16" ON CENTER WITH 20 GAUGE GALVANIZED STEEL TOP AND BOTTOM TRACKS. SECURE BOTTOM TRACK TO FLOOR SLAB WITH RAMSET FASTENERS AT 24" ON CENTER 3-1/2" (MIN) SOUND BATT INSULATION, CONTINUOUS AND FROM FLOOR TO CEILING. 5/8" GWB EACH SIDE. SECURE TO STUDS WITH NO. 6 SCREWS AT 12" ON CENTER MAX. TAPE AND FINISH ALL JOINTS. PROVIDE INTERMEDIATE WALL BLOCKING FOR PARTITIONS RECEIVING MOUNTED ACCESSORIES (CASEWORK, GRAB BARS, ETC.).	-	-

DOOR NO.	WIDTH	HEIGHT	THICKNESS	MATERIAL	LABEL (MIN)	TRHD	DOOR TYPE	FRAME TYPE	HWDR SET #	ENERGY STAR	REMARKS
101A	2'-8"	7'-0"	0-1 3/4"	MTL	-	-	B	-	2	Yes	
101B	2'-8"	7'-0"	0-1 3/4"	MTL	-	-	A	-	4	-	
103A	2'-8"	7'-0"	0-1 3/4"	MTL	-	-	A	-	4	-	
103Bx	2'-0"	7'-0"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
103Cx	2'-4"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
103Dx	2'-4"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
104A	3'-0"	7'-0"	0-1 3/4"	WD	-	-	A	-	1	1	
105A	2'-8"	7'-0"	0-1 3/4"	MTL	-	-	A	-	1	4	
106A	3'-0"	7'-0"	0-1 3/4"	MTL	-	-	A	-	2	-	
106Bx	3'-0"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
106Cx	3'-0"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
106Dx	3'-0"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
106Ex	2'-9"	7'-0"	0-0"	EXISTING	-	-	EXISTING	EXISTING	-	-	
131Ax	2'-6"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
131Bx	2'-0"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
131Cx	2'-0"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
131Dx	2'-0"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
132A	3'-0"	7'-0"	0-1 3/4"	MTL	-	-	B	-	1	4	
133Ax	2'-6"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
134Ax	2'-6"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
134Bx	2'-6"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
137Ax	2'-6"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
137Bx	2'-6"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
138Ax	2'-8"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
140Ax	2'-6"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
140Bx	2'-0"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
140Cx	2'-0"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
140Dx	2'-6"	6'-8"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
201Ax	3'-0"	7'-0"	0-1 3/4"	EXISTING	-	-	A	EXISTING	-	-	
203A	3'-0"	6'-8"	0-1 3/4"	WD	-	-	A	-	3	-	
203Bx	2'-0"	7'-0"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
203Cx	2'-0"	7'-0"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	
203Dx	2'-0"	7'-0"	0-1 3/4"	EXISTING	-	-	EXISTING	EXISTING	-	-	

**HARDWARE SETS**  
 REFER TO DOOR SCHEDULE FOR SIGNAGE REQUIREMENTS

1. RESTROOM  
 A. (1-1/2) PAIR HINGES  
 B. LEVER HANDLE PRIVACY SET (ANSI F76)  
 C. (1) CLOSER

2. EXTERIOR EGRESS  
 A. (1-1/2) PAIR HINGES  
 B. LEVER HANDLE EXIT LOCK SET (ANSI F89), PREPARE FOR ELECTRONIC SECURE DOOR CONTROLS  
 C. (1) ADA ACCESSIBLE THRESHOLD  
 D. (1) CLOSER  
 E. (1) WEATHERSTRIPPING  
 F. (1) KICKPLATE (INTERIOR)

3. BEDROOM  
 A. (1-1/2) PAIR HINGES  
 B. LEVER HANDLE PRIVACY SET (ANSI F76)

4. PASSAGE  
 A. (1-1/2) PAIR HINGES  
 B. LEVER HANDLE PASSAGE SET (ANSI F75)

**NOTE:**  
 DOOR DETAILS ONLY DEPICT THE GENERAL CONDITIONS FOR TYPICAL HOLLOW METAL FRAMED DOORS AND OPENINGS. FOR DOORS IN FIRE-RATED ASSEMBLIES COORDINATE THE PARTITION DESCRIPTION AND OVERALL PARTITION/WALL THICKNESS TO THE DOOR FRAME WITH APPROPRIATE OVERALL THICKNESS AND NECESSARY THROAT DIMENSION, TYPICAL.

COORDINATE GENERAL DETAILS WITH PROPOSED DOOR TYPE, DOOR HARDWARE SET, ACCESSIBLE DOOR CLEARANCES, AND ADJACENT FINISHES.

REFER TO GENERAL PROJECT NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.



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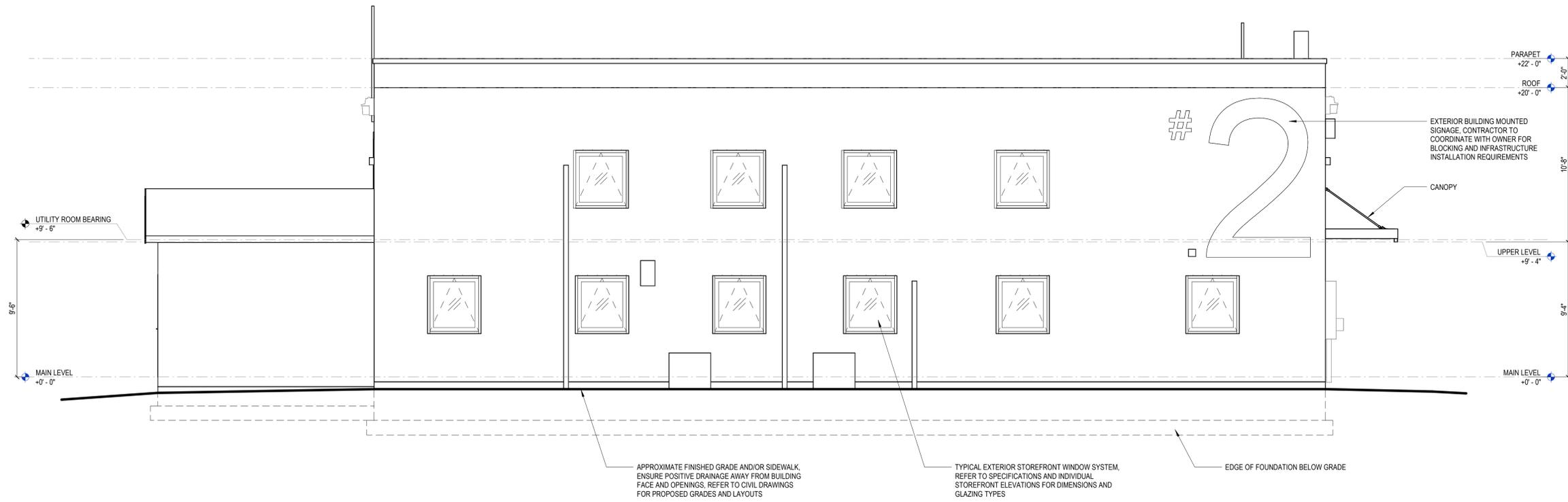


SALEM VA

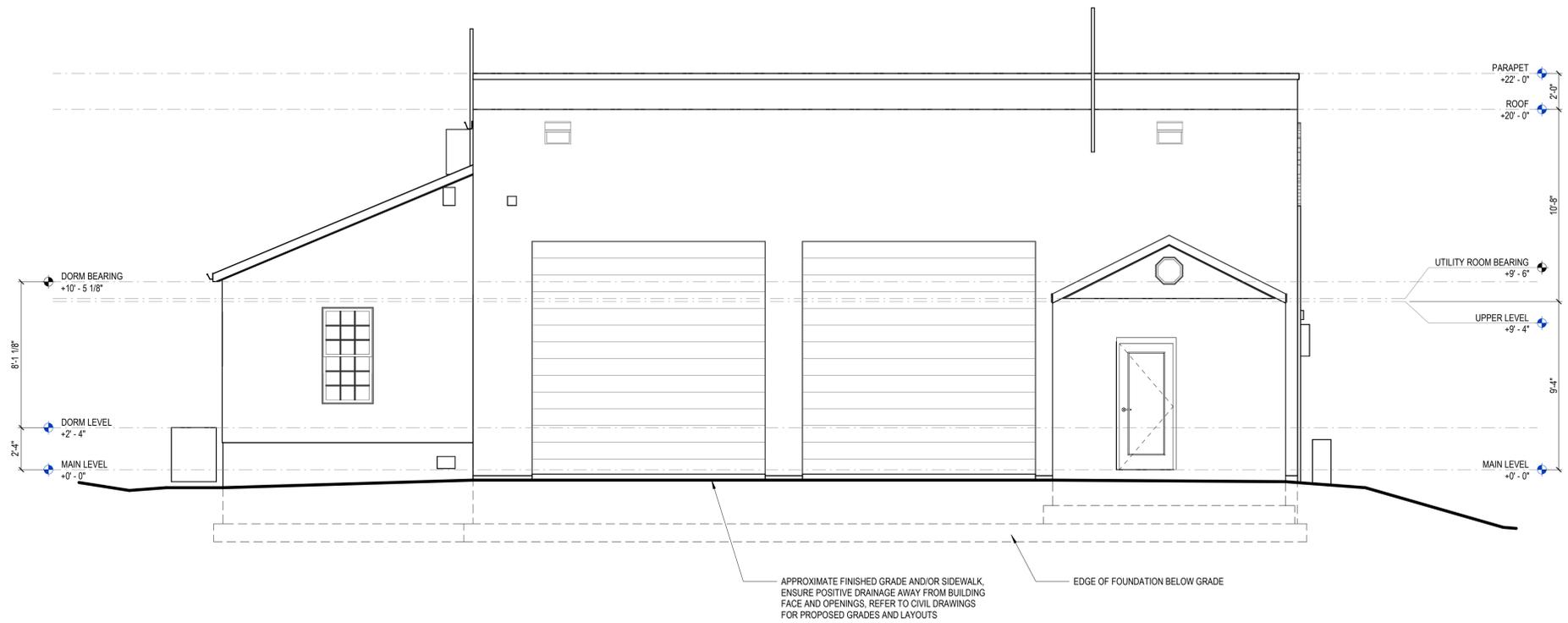


**SALEM FIRE STATION #2**  
 RENOVATION  
 SCHEDULES & DETAILS  
 415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24148

DRAWN BY: JR3  
 DESIGNED BY: JR3  
 CHECKED BY: RWP  
 DATE: 2024-08-30  
 SCALE: As indicated  
 REVISIONS:



1 EXTERIOR ELEVATION  
AR2.01 1/4" = 1'-0"



2 EXTERIOR ELEVATION  
AR2.01 1/4" = 1'-0"



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SALEM FIRE STATION #2

RENOVATION  
EXTERIOR ELEVATIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24145

DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE 1/4" = 1'-0"  
REVISIONS

**AR2.01**  
PROJECT NO 03220052.01



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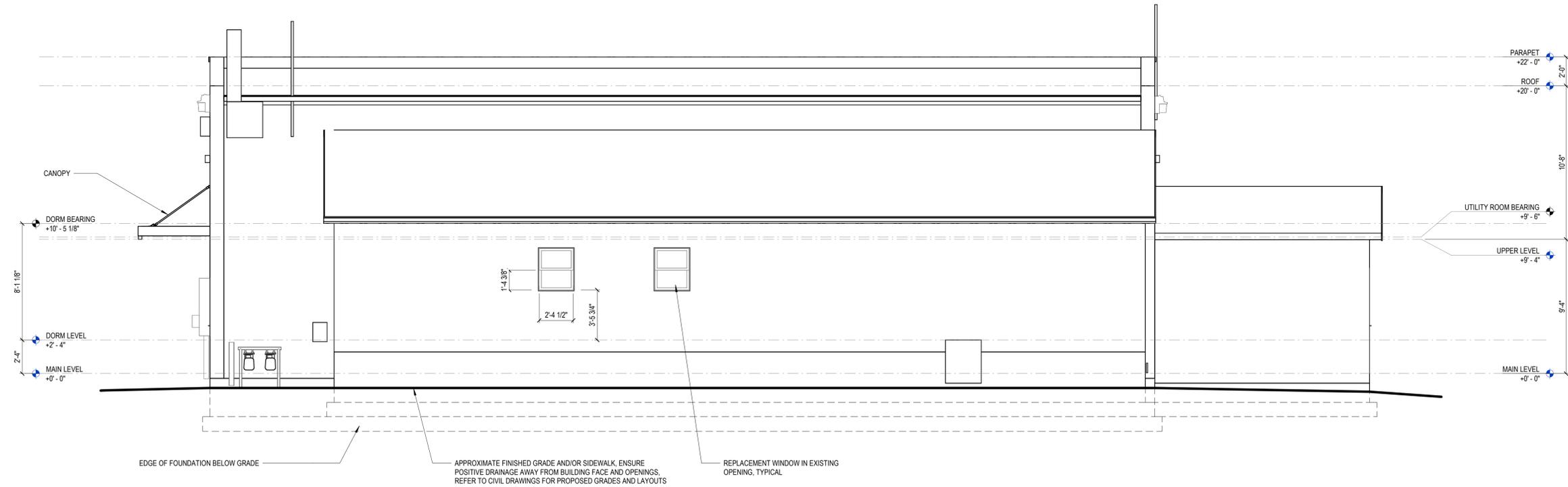
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Roanoke, VA 24018

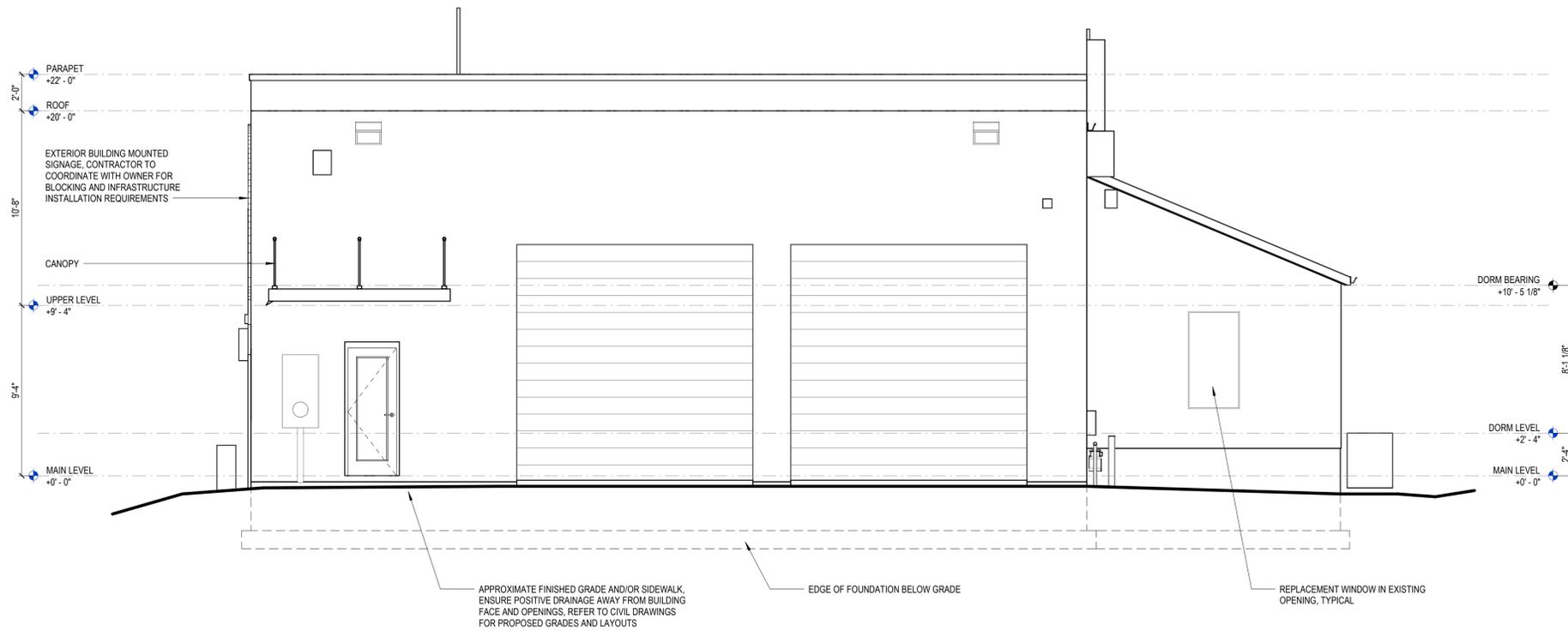
540.772.9580



SALEM VA



1 EXTERIOR ELEVATION  
AR2.02 1/4" = 1'-0"



2 EXTERIOR ELEVATION  
AR2.02 1/4" = 1'-0"

SALEM FIRE STATION #2  
RENOVATION  
EXTERIOR ELEVATIONS

DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE 1/4" = 1'-0"  
REVISIONS

415 ELECTRIC ROAD  
SHEIK, VIRGINIA 24165

AR2.02  
PROJECT NO 03220052.01



- GENERAL FURNITURE NOTES**
1. FURNITURE ARRANGEMENT IS FOR REFERENCE ONLY AND IS NOT A DEPICTION OF FINAL CONDITIONS. VERIFY ARRANGEMENT WITH OWNER.
  2. ALL FURNITURE SHALL BE OWNER PROVIDED AND OWNER INSTALLED.
  3. CONTRACTOR SHALL COORDINATE AND STORAGE OF OWNER FURNITURE WITHIN A SECURE SPACE NEAR THE TIME OF PROJECT COMPLETION.

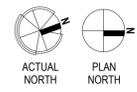
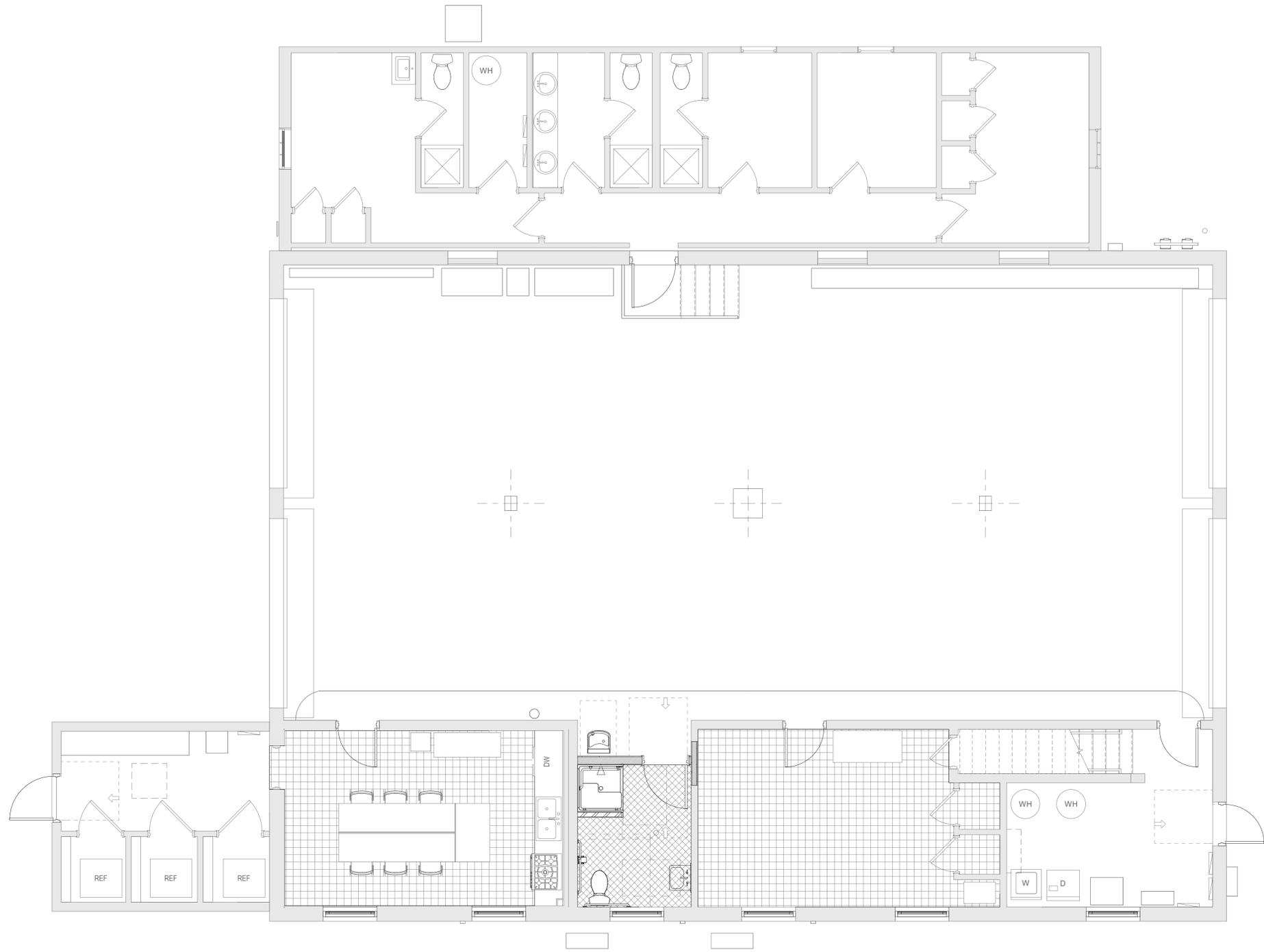


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**SALEM VA**



**FIRST FLOOR PLAN**  
 1  
 AR6.01  
 1/4" = 1'-0"

**SALEM FIRE STATION #2**

RENOVATION  
**FURNITURE PLAN**

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24143

DRAWN BY JR3  
 DESIGNED BY JR3  
 CHECKED BY RWP  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

GENERAL FURNITURE NOTES

- 1. FURNITURE ARRANGEMENT IS FOR REFERENCE ONLY AND IS NOT A DEPICTION OF FINAL CONDITIONS. VERIFY ARRANGEMENT WITH OWNER.
- 2. ALL FURNITURE SHALL BE OWNER PROVIDED AND OWNER INSTALLED.
- 3. CONTRACTOR SHALL COORDINATE AND STORAGE OF OWNER FURNITURE WITHIN A SECURE SPACE NEAR THE TIME OF PROJECT COMPLETION.



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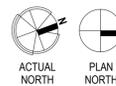
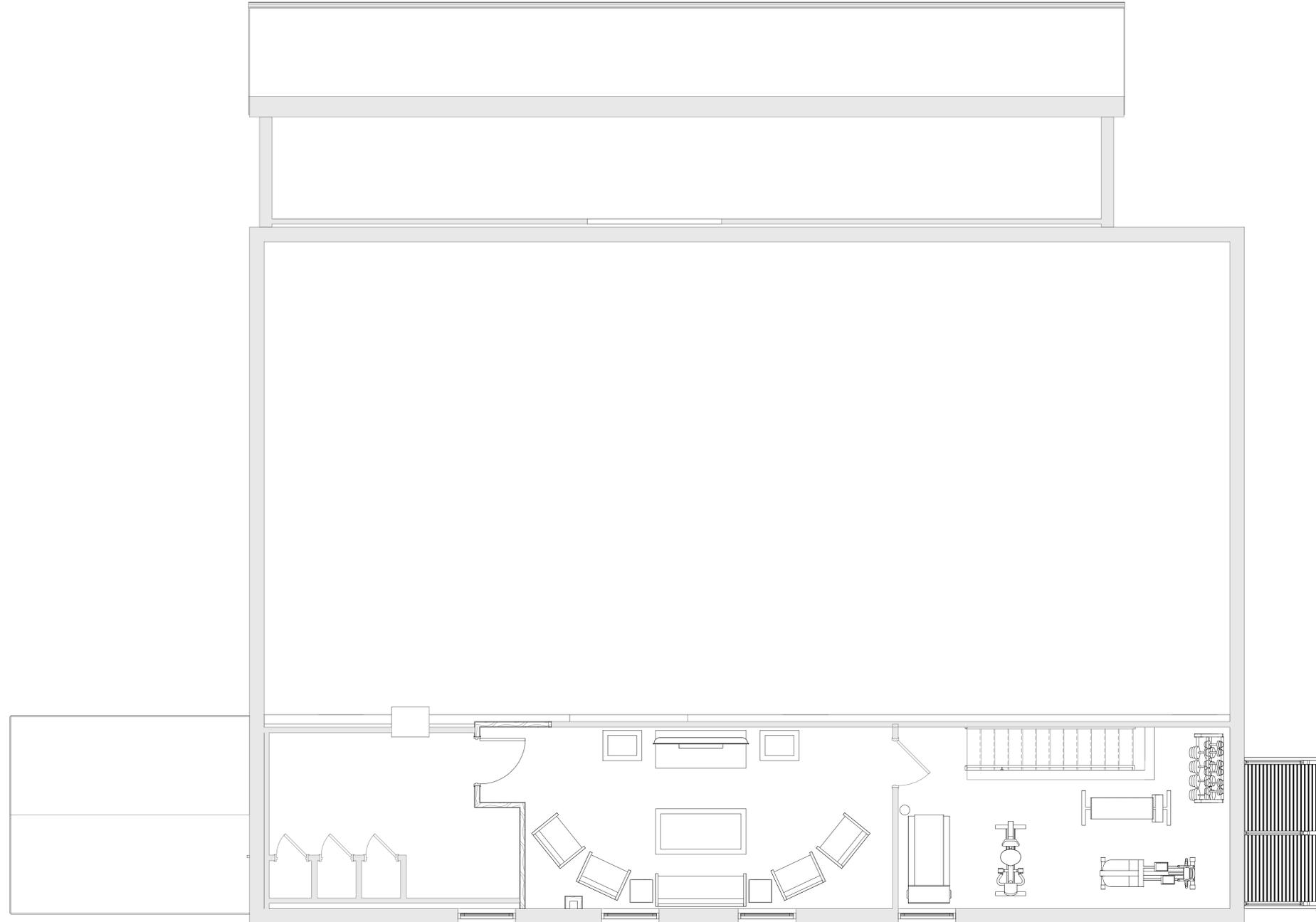
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Roanoke, VA 24018

540.772.9580



SALEM VA



**SECOND FLOOR PLAN**

1  
AR6.02  
1/4" = 1'-0"

**SALEM FIRE STATION #2**

**RENOVATION  
FURNITURE PLAN**

DRAWN BY JR3  
 DESIGNED BY JR3  
 CHECKED BY RWP  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

**AR6.02**

PROJECT NO 03220052.01



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540.772.9580



SALEM, VA



SALEM FIRE STATION #2  
RENOVATION  
MECHANICAL LEGEND AND SCHEDULES  
415 ELECTRIC ROAD  
SALEM, VIRGINIA 24163

DRAWN BY JNB  
DESIGNED BY JNB  
CHECKED BY JNB  
DATE 2024-08-30  
SCALE As indicated  
REVISIONS

**MR1.01**  
PROJECT NO 03220052.01

CIRCULATION FAN SCHEDULE						
MARK	AIRFOIL DIAMETER (FEET)	WEIGHT (LBS)	NOM HP/ AMPS	# OF AIRFOILS	V/FREQ./PH	BASIS OF DESIGN
HVLS-1	7	108	1.0/ 8.3	4	110V/60/1	HUNTER FANS, MODEL XP7
HVLS-2	7	108	1.0/ 8.3	4	110V/60/1	HUNTER FANS, MODEL XP7
HVLS-3	7	108	1.0/ 8.3	4	110V/60/1	HUNTER FANS, MODEL XP7
HVLS-4	7	108	1.0/ 8.3	4	110V/60/1	HUNTER FANS, MODEL XP7

- NOTES:  
 1. PROVIDE EACH FAN WITH INDIVIDUAL WALL MOUNTED SPEED CONTROLLER.  
 2. PROVIDE EACH FAN WITH 2FT DOWN-ROD AND SUSPEND FROM BOTTOM OF ROOF JOISTS WITH UNI-STRUT AS RECOMMENDED BY MANUFACTURER.  
 3. INSTALLING CONTRACTOR SHALL WORK WITH OWNER TO COORDINATE RELOCATING ANY EXISTING UTILITIES SUCH AS LIGHTS, PIPING & CONDUITS WHICH MAY NEED TO BE RELOCATED.

FAN SCHEDULE								
MARK	QTY	AIR FLOW (CFM)	ESP (INWG)	WATTS	DRIVE TYPE	V/FREQ./PH	WEIGHT (LBS)	BASIS OF DESIGN (MANUFACTURER,MODEL#)
EF-1	1	60	0.25	24.7	DIRECT	115/60/1	10	BROAN, AE80B

- NOTES:  
 1. MANUFACTURER TO PROVIDE GRAVITY BACKDRAFT DAMPER.  
 2. PROVIDE DEDICATED ON/OFF SWITCH AT TOILET ROOM ENTRANCE.

DUCTLESS MINI SPLIT OUTDOOR HEAT PUMP SCHEDULE (MULTI-ZONE)							
MARK	COOLING CAPACITY @95°F (MBH)	HEATING CAPACITY @14°F (MBH)	ELECTRICAL			WEIGHT (LBS)	BASIS OF DESIGN
			V / PH	MCA	MOCP		
HP-1	32.5	32.8	208 / 1	33.0	40.0	181	HAIER, 5U42MS2HDA
HP-2	32.5	32.8	208 / 1	33.0	40.0	181	HAIER, 5U42MS2HDA
HP-3	32.5	32.8	208 / 1	33.0	40.0	181	HAIER, 5U42MS2HDA

- NOTES:  
 1. PROVIDE 4" CONCRETE PAD BELOW UNIT AND SECURE UNIT TO PAD.

DUCTLESS INDOOR UNIT SCHEDULE					
MARK	UNIT TYPE	COOLING PERFORMANCE		HEATING PERFORMANCE	
		UNIT TOTAL COOLING (MBH)	HEATING OUTPUT (MBH)	WEIGHT (LBS.)	BASIS OF DESIGN (MANUFACTURER,MODEL#)
IU-1	WALL MOUNT	18.0	19.0	30	HAIER, AW18LC2VHB
IU-2	WALL MOUNT	18.0	19.0	30	HAIER, AW18LC2VHB
IU-3	WALL MOUNT	18.0	19.0	30	HAIER, AW18LC2VHB
IU-4	WALL MOUNT	18.0	19.0	30	HAIER, AW18LC2VHB
IU-5	WALL MOUNT	18.0	19.0	30	HAIER, AW18LC2VHB
IU-6	WALL MOUNT	7.0	8.0	22	HAIER, AW07LC2VHB
IU-7	WALL MOUNT	18.0	19.0	30	HAIER, AW18LC2VHB

- NOTES:  
 1. PROVIDE EACH INDOOR UNIT WITH WALL MOUNTED WIRELESS THERMOSTAT/CONTROLLER.  
 2. PROVIDE EACH WALL MOUNT INDOOR UNIT WITH CONDENSATE REMOVAL PUMP, EQUIVALENT TO ASPEN PUMPS, MINI WHITE UNIVOLT WITH ABILITY TO PUMP 3.2 GAL/HR AT 33FT HEAD. PROVIDE 120V POWER SUPPLY.  
 3. INDOOR UNITS ARE POWERED FROM OUTDOOR HEAT PUMP UNIT. PROVIDE WIRING FROM OUTDOOR UNIT TO EACH INDOOR UNIT AS RECOMMENDED BY THE MANUFACTURER AND CONCEAL WIRING WITHIN PIPING INCLOSURE.

HVAC LEGEND	
DUCTWORK	
	SUPPLY AIR DUCT, (RECTANGULAR)
	RETURN AIR DUCT, (RECTANGULAR)
	TEMPERATURE SENSOR
	RECTANGULAR DUCTWORK (1ST FIG. SIDE SHOWN, 2ND SIDE NOT SHOWN)
	ROUND DUCTWORK
	FLEXIBLE DUCT, (ROUND)
	SUPPLY DIFFUSER
	EXHAUST GRILLE
	RETURN GRILLE
	AIR DEVICE TAG 100 → AIRFLOW (CFM) 12 - A - 3 → INLET SIZE - TAG - # OF THROW DIRECTIONS
	DUCT TRANSITION, RECTANGULAR OR ROUND
	EQUIPMENT TAG AHU → EQUIPMENT TYPE ABBREVIATION 1 → UNIT MARK #
	MVD, MANUAL VOLUME DAMPER
	MOTORIZED CONTROL DAMPER
	CONNECT TO EXISTING
	LIMITS OF DEMOLITION
	EXISTING (EQUIPMENT OR DUCTWORK/PIPING)
	DEMOLITION (EQUIPMENT, PIPING, DUCTWORK, ETC.)
	DIRECTION OF AIRFLOW
	HEATING HOT WATER SUPPLY
	HEATING HOT WATER RETURN

GENERAL MECHANICAL SPECIFICATIONS

1. SCOPE:  
 PROVIDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR OWNER'S USE COMPLETE SYSTEMS OF HEATING, VENTILATION, AIR CONDITIONING (HVAC), PLUMBING, FOR THE PROPOSED WORK AND BUILDING RENOVATIONS AS SHOWN ON THE DRAWINGS AND CALLED FOR IN THESE SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION WITH OTHER DIVISIONS OF WORK FOR THE FULL EXTENT OF THE SCOPE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL ASPECTS, COMPONENTS, SYSTEMS, ETC. AND ACCOMMODATE THE PERFORMANCE INTENT OF THE CONSTRUCTION DOCUMENTS THROUGHOUT THE PROJECT SCOPE.

2. BIDDERS RESPONSIBILITY:  
 EXAMINE THE DRAWINGS AND SPECIFICATIONS AND VISIT THE WORK SITE. BECOME FAMILIAR WITH THE CHARACTER OF THE WORK, THE COORDINATION WITH OTHER TRADES REQUIRED, AND ANY OTHER CONDITIONS THAT AFFECT THE COMPLETION OF THIS WORK. GENERAL CONTRACTOR SHALL BE REQUIRED TO COORDINATE WORK WITH TENANT FINISH CONTRACTOR IN A SIDE BY SIDE SCENARIO.

3. PERMITS, CODES AND LAWS:  
 APPLY FOR ALL PERMITS AND PAY ALL FEES.  
 ALL WORK SHALL BE IN ACCORDANCE WITH LATEST EDITIONS OF THE FOLLOWING RULES AND REGULATIONS, HEREIN REFERRED TO AS "CODES":  
 THE LATEST OR ADOPTED EDITION OF THE APPLICABLE LOCAL, STATE, AND FEDERAL BUILDING, MECHANICAL, SANITATION, PLUMBING, ETC. CODES.  
 UNDERWRITER'S LABORATORIES, INC. (U.I.) NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.) OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A)  
 WHERE ANY OF THESE CODES ARE AT VARIANCE WITH THE DRAWINGS AND SPECIFICATIONS, THEIR REQUIREMENTS SHALL TAKE PRECEDENCE, UNLESS THE DRAWINGS AND SPECIFICATIONS REQUIREMENTS EXCEED THESE CODES. INCLUDE ANY COST NECESSARY TO MEET THESE CODES IN THE BID PRICE.

4. MECHANICAL PLANS:  
 THE MECHANICAL PLANS ARE DIAGRAMMATIC AND BASED ON ONE MANUFACTURER'S EQUIPMENT.  
 THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE USED. INSTALLATION SHALL BE WITHIN THE LIMITATIONS IMPOSED BY THE ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, AND PLUMBING REQUIREMENTS WITH ADEQUATE SPACE FOR MAINTENANCE.

5. QUESTIONS AND CLARIFICATIONS OF BID DOCUMENTS:  
 BIDDERS SHALL NOT RELY ON ANY ORAL CLARIFICATION OF THE DRAWINGS OR SPECIFICATIONS. ANY QUESTIONS OR CLARIFICATIONS SHALL BE REFERRED IN WRITING TO THE ARCHITECT.

6. GUARANTEES:  
 ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. WARRANTIES SHALL BE IN WRITING AND SHALL INCLUDE FACTORY WARRANTIES FOR EACH PIECE OF EQUIPMENT. PROVIDE A CERTIFICATE FOR EACH PIECE OF EQUIPMENT. CLEARLY INDICATE ON EACH WARRANTY CERTIFICATE THE MODEL NO., SERIAL NO., LOCATION, AND OWNER'S NAME.

7. COMPLETE SYSTEM:  
 ALL PRODUCTS, MATERIALS AND ACCESSORIES SHALL BE FURNISHED AND INSTALLED AS REQUIRED FOR A COMPLETE SYSTEM READY FOR OWNER'S BENEFICIAL USE.

8. WORKMANSHIP:  
 ALL WORK SHALL BE PERFORMED BY COMPETENT MECHANICS USING PROPER TOOLS AND EQUIPMENT TO PRODUCE FIRST QUALITY WORK. ALL WORK SHALL BE NEATLY INSTALLED, ACCESSIBLE FOR MAINTENANCE, AND COMPLETE WITH ALL ACCESSORIES REQUIRED.

9. ACCESSIBILITY:  
 INSTALL ALL EQUIPMENT AND THEIR APPURTENANCES SUCH AS, BUT NOT LIMITED TO, VALVES, COILS, DRAIN PANS, DRAINS, DAMPERS, CONTROLS, MOTORS, CONTROLLERS, ETC., SO THAT THEY CAN BE SERVICED, RESET, REPLACED OR RECALIBRATED, ETC. INSTALL ALL NECESSARY ACCESS PANELS AND BUILDING ACCESS DOORS, AS BELOW, WHERE REQUIRED TO ACCOMPLISH THIS. IF ANY EQUIPMENT OR COMPONENTS DO NOT FIT WHERE INTENDED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING, REQUESTING FURTHER GUIDANCE.  
 PROVIDE BUILDING ACCESS DOORS FOR ALL MECHANICAL EQUIPMENT REQUIRING SERVICE, INCLUDING BUT NOT LIMITED TO, AHU'S, FANS, DAMPERS, DUCT ACCESS PANELS, CONTROLS, PIPING, VALVES, REGULATORS, TRAPS, ETC., INSTALLED ABOVE HARD CEILINGS, BEHIND WALLS, AND BELOW FLOORS, FOR INSTALLATION BY OTHER DIVISIONS OF THE WORK. BUILDING ACCESS DOORS ARE NOT REQUIRED WHERE THE MECHANICAL EQUIPMENT IS INSTALLED ABOVE LAY-IN AND ACCESSIBLE SPLINE CEILINGS. OTHER TYPES OF SPLINE CEILINGS REQUIRE BUILDING ACCESS DOORS. SIZE THE BUILDING ACCESS DOORS FOR THE USE INTENDED, BUT NOT LESS THAN 12 INCHES BY 12 INCHES. WHERE HUMAN ACCESS IS REQUIRED, PROVIDE 24 INCHES BY 24 INCHES, OR LARGER. WHERE BUILDING ACCESS DOORS CANNOT BE INSTALLED FOR STRUCTURAL OR ARCHITECTURAL REASONS, NOTIFY THE ARCHITECT. PRIME COAT BUILDING ACCESS DOORS IN PAINTED AREAS WITH FINISH PAINTING AS SPECIFIED IN OTHER DIVISIONS. IN WET AREAS, TOILET ROOMS, OR AREAS WITH CERAMIC TILE FLOORS OR WALLS, PROVIDE STAINLESS STEEL BUILDING ACCESS DOORS. PROVIDE BUILDING ACCESS DOORS WITH A CONCEALED KEY OPERATED LOCK AND CONCEALED HINGES. ALL LOCKS SHALL BE KEYED ALIKE. PROVIDE BUILDING ACCESS DOORS AS SPECIFIED IN OTHER DIVISIONS OF THE WORK OR PROVIDE MILCOR DOORS, OR EQUIVALENT, SUITABLE FOR THE INSTALLATION INTENDED. PROVIDE FIRE RATED DOORS FOR ALL FIRE RATED WALLS, PARTITIONS, AND CEILINGS.

10. WORK BY OTHER TRADES:  
 FURNISH ALL SLEEVE FRAMES, BUILDING ACCESS DOORS, PREFABRICATED EQUIPMENT CURBS, ROOF CURBS, ETC. FOR INSTALLATION BY OTHER TRADES.  
 INSTALL ALL MOTORS AND FURNISH THE STARTING EQUIPMENT AND DISCONNECTS TO THE DIVISION 26000 SUBCONTRACTOR FOR INSTALLATION. CONTROL WIRING, INCLUDING SWITCHES, THERMOSTATS, INTERLOCKS, ETC. SHALL BE FURNISHED BY DIVISION 23000. ENSURE THAT THE ELECTRICAL EQUIPMENT MOUNTED NEAR THE MECHANICAL EQUIPMENT DOES NOT BLOCK ACCESS TO SERVICE AREAS OF THE MECHANICAL EQUIPMENT. DO NOT ALLOW ANY EQUIPMENT TO BE INSTALLED ON THE HVAC EQUIPMENT ENCLOSURES.

11. FIRE STOPPING:  
 ALL PENETRATIONS OF FLOORS AND OTHER FIRE-RATED ASSEMBLIES SHALL BE FIRE AND SMOKE-STOPPED IN STRICT ACCORDANCE WITH THE APPLICABLE CODES.

12. FOUNDATIONS AND SPECIAL SUPPORTS:  
 FURNISH AND INSTALL ALL SPECIAL FOUNDATIONS AND SUPPORTS REQUIRED FOR EQUIPMENT INSTALLED UNDER THIS SECTION, UNLESS THEY ARE A PART OF THE BUILDING STRUCTURE AND ARE SHOWN IN OTHER SECTIONS.

13. CLEANING AND PAINTING:  
 THOROUGHLY CLEAN ALL EQUIPMENT AND REMOVE ALL TRASH, CARTONS, ETC. MAKE ANY NECESSARY CORRECTIONS OR REPAIR/REPLACE ANY DAMAGED MATERIALS OR EQUIPMENT. LEAVE THE ENTIRE SYSTEM IN A THOROUGHLY CLEAN AND ORDERLY MANNER.  
 ANY FINISHED SURFACES THAT HAVE BEEN SCRATCHED OR DISCOLORED SHALL BE TOUCHED-UP OR REPAINTED BREAK TO BREAK WITH PAINT TO MATCH THE ORIGINAL COLOR. TOUCH UP PAINTED SURFACES OR REPAINT THE ENTIRE PAINTED SURFACE IF TOUCH UP IS UNACCEPTABLE. SEE ARCHITECTURAL PAINTING SPECIFICATIONS.  
 ALL METAL ITEMS SUBJECT TO RUSTING, INSIDE OR EXPOSED TO WEATHER SHALL BE GIVEN ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER AS SOON AS INSTALLED. APPLY TWO FINISH COATS WITH COLOR TO BE SELECTED BY THE ARCHITECT.  
 FOR ALL INTERIOR OR EXTERIOR STRUCTURAL GALVANIZED STEEL, COLD GALVANIZE ALL EXPOSED METAL CUT ENDS, HOLES, WELDS, SCRATCHES, ETC., OR HOT DIP GALVANIZE THE ENTIRE STRUCTURE OR FRAME AFTER FABRICATION AND MOUNTING HOLES ARE CUT.  
 UPON COMPLETION OF THE INSTALLATION, BUT NOT BEFORE, AND BEFORE ACCEPTANCE, THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, PIPING, DUCTWORK, INSULATION JACKETS, ETC.,

REMOVING ALL STICKERS, LABELS, MARKING, WRITING, FABRICATION MARKINGS, IDENTIFICATION, ADHESIVE, SEALER, GLUE, RUST, CORROSION, ETC., FROM THEIR EXTERIOR SURFACES.  
 THE CLEANLINESS AND PAINTING ACCEPTABILITY IS AT THE SOLE DISCRETION OF THE ARCHITECT AND MAY REQUIRE ADDITIONAL CLEANING AND COATS OF PAINT BEFORE ANY SURFACE IS ACCEPTED.

14. SUBMITTAL AND SHOP DRAWINGS:  
 SUBMIT MANUFACTURER'S CERTIFIED DATA RELATIVE TO ALL EQUIPMENT, PIPING, CONTROLS, ETC. REQUIRED FOR THE INSTALLATION OF THE HVAC, PLUMBING AND FIRE PROTECTION SYSTEMS. SUBMIT FOR REVIEW ALL NECESSARY ENGINEERING, PRODUCT AND INSTALLATION DATA, SHOP DRAWINGS, SAMPLES ETC. FOR ALL EQUIPMENT, MATERIAL, AND SYSTEMS TO ASCERTAIN COMPLIANCE WITH THE TECHNICAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. SUBMIT SIX (6) COPIES OF ALL NECESSARY DATA, CUTS, MANUFACTURER'S SELECTIONS, CATALOGS, BULLETINS, INSTALLATION INSTRUCTIONS, DRAWINGS, DIAGRAMS, CURVES, ETC. CLEARLY INDICATE ON THE SUBMITTED DATA, THE MANUFACTURER'S NAME, PRODUCT NUMBER(S), OPTIONS, EQUIPMENT CAPACITY, DIMENSIONAL DATA, WEIGHTS, AND OTHER APPLICABLE TECHNICAL DATA FOR THE PROJECT.  
 TRADE NAMES, MANUFACTURERS, AND CATALOGUE NUMBERS ARE MENTIONED HEREIN AND ON THE DRAWINGS SOLELY IN ORDER TO ESTABLISH A STANDARD FOR THE TYPE, GENERAL DESIGN, AND QUALITY OF PRODUCT REQUIRED. OTHER PRODUCTS SIMILAR IN DESIGN OF EQUIVALENT QUALITY CAPABLE OF FITTING WITHIN THE SPACES ALLOCATED AND COMPLYING WITH THE DRAWINGS AND SPECIFICATIONS WILL BE CONSIDERED AFTER THE CONTRACT IS LET UNLESS "PRIOR APPROVAL" REQUIREMENTS ARE SET FORTH IN THESE DOCUMENTS.  
 WHERE TWO OR MORE MANUFACTURERS OR MATERIALS ARE NAMED, THE CONTRACTOR MAY SUBMIT ANY OF THOSE NAMES, PROVIDED THEY CONFORM TO THE SPECIFICATIONS AND DESIGN INTENT. CONTRACTOR SHALL INCLUDE WITH THE SUBMITTAL A LIST OF ALL COMPARATIVE FEATURES INDICATING COMPLIANCE WITH THE SPECIFICATIONS.  
 THE ARCHITECT AND/OR ENGINEER MAY REQUIRE THE SUBMISSION OF SAMPLES, PARTICULARLY WHEREVER EQUIPMENT OR APPLIANCES ARE VISIBLE IN FINISHED AREAS, SUCH AS CEILINGS, INTERIOR AND EXTERIOR WALLS. THE CONTRACTOR AND SUPPLIER SHALL ARRANGE FOR DEMONSTRATIONS OF THE INSTALLATION OF ANY OF THESE PRODUCTS AND THEIR ABILITY TO PERFORM AS SPECIFIED, IF REQUIRED.  
 REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FITTING THE EQUIPMENT IN THE SPACE ALLOTTED WITH SPACE FOR ALL CONNECTIONS AND SERVICING AND FOR THE COORDINATION OF THE WORK WITH WORK OF OTHER TRADES.

THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS AND SHOP DRAWINGS AND INDICATE BY STAMP OR LETTER THAT HE HAS REVIEWED THEM, BEFORE FORWARDING THEM TO THE ARCHITECT AND/OR ENGINEER. SUBMITTALS AND DRAWINGS WILL BE RETURNED AFTER REVIEW INDICATING WHETHER EXCEPTIONS ARE TAKEN, THE SUBMITTAL RETURNED WITH CORRECTIONS, OR IS COMPLETELY REJECTED. RESUBMISSION OF REVISED SUBMITTALS AND SHOP DRAWINGS, IF REQUIRED, SHALL BE DONE BEFORE INSTALLATION AND CONSTRUCTION IS BEGUN.  
 CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS AND DRAWINGS DURING THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES, TECHNIQUES OF CONSTRUCTION, COORDINATING THE WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER. REVIEW OF THE SUBMITTALS SHALL NOT PERMIT ANY DEVIATION FROM PLANS AND SPECIFICATIONS.  
 SUBMITTALS FOR A SPECIFIC CLASS OF PRODUCTS, SYSTEMS, INSTALLATION PROCEDURES, SHOP DRAWINGS, ETC. WILL BE REVIEWED BY THE ENGINEER ONE TIME AND ITS RESUBMITTAL ONE TIME, IF NECESSARY, AS ABOVE, AT NO COST TO THE CONTRACTOR. THE CONTRACTOR WILL BEAR THE FULL COST FOR ALL SUBSEQUENT RESUBMITTAL REVIEWS AT THE ENGINEER'S STANDARD HOURLY RATES. PAYMENT WILL BE REQUIRED AT COMPLETION OF RESPECTIVE REVIEW.  
 REQUIRED SHOP DRAWINGS:  
 SUBMIT THE FOLLOWING SHOP DRAWINGS BEFORE ANY MECHANICAL DUCTWORK, PIPING, EQUIPMENT, ETC. IS FABRICATED AND INSTALLED. SUBMIT THESE SHOP DRAWINGS IN ¼ INCH PER FOOT MINIMUM SCALE WITH NECESSARY PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ISOMETRICS. SUBMIT SIX (6) PAPER COPIES AND ONE (1) CD-ROM WITH ALL THESE DRAWINGS IN AUTOCAD DRAWING DWG FILES, LATEST AUTOCAD FORMAT.  
 SOON AFTER AWARD OF THE CONTRACT, DETERMINE WHERE THERE MAY BE INSTALLATION, SPACE CONCERNS, AND/OR WHERE OTHER CONFLICTS MAY OCCUR. SUBMIT COORDINATION DRAWINGS, RELATING TO THESE CONFLICTS WITH THE MECHANICAL EQUIPMENT, DUCT, PIPING, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL SYSTEMS ETC., SHOWING CLEARANCES AND RELATIONSHIP TO STRUCTURAL MEMBERS, PIPING, LIGHTS, CONDUITS, ELECTRICAL EQUIPMENT, AND BUILDING COMPONENTS. IN PREPARING THESE SHOP DRAWINGS, ESTABLISH LINES AND LEVELS FOR ALL DIVISIONS OF THE WORK IN THE AFFECTED AREA. IMMEDIATELY CALL TO THE ATTENTION OF THE ARCHITECT ANY INTERFERENCE OR CONFLICT FOR CLARIFICATION IN WRITING.  
 SUBMIT SHOP DRAWINGS FOR ALL DUCTWORK. SUBMIT LAYOUT DRAWINGS OF EACH MECHANICAL SYSTEM SHOWING THE LOCATION, ARRANGEMENT, ETC. OF ALL EQUIPMENT, ALL TRADES, ETC. TO BE INSTALLED RELATED TO THE RESPECTIVE SYSTEM.

15. AS-BUILT DRAWINGS:  
 MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT THREE COPIES, ONE REPRODUCIBLE.

16. OPERATION AND MAINTENANCE MANUALS:  
 UPON COMPLETION OF THE PROJECT, SUBMIT THREE COPIES OF ALL OPERATION AND MAINTENANCE MANUALS, WARRANTIES, SPARE PARTS LIST, AS-BUILT DRAWINGS, TEST AND BALANCE REPORTS, AND LETTER OF GUARANTEE ALL BOUND IN THREE RING BINDERS, CLEARLY SHOWING WHICH EQUIPMENT WAS SUPPLIED TO THE JOB.

17. PROJECT COMPLETION:  
 BEFORE STARTING AND TESTING ANY SYSTEM, HVAC, OR PLUMBING, TO PREVENT INADVERTENT OPERATION OF THE MECHANICAL EQUIPMENT BEFORE THE MANUFACTURER'S INSPECTION AND TESTING, THE CONTRACTOR SHALL:  
 VERIFY THAT ALL ELECTRICAL POWER IS OFF TO ALL MECHANICAL EQUIPMENT, INCLUDING THE AHU'S, ACCU'S, BOOSTER PUMPS, FIRE PUMPS, ETC.  
 LOCK OUT EACH SYSTEM USING SETON MODEL NUMBER 70329; "DO NOT OPERATE" LOCK ON LOCKOUT TAGS, OR EQUIVALENT. INSTALL LOCKOUT TAGS AT EACH PIECE OF EQUIPMENT, ELECTRICAL DISCONNECTS, STARTERS, SWITCHES, ETC.  
 REMOVE THESE TAGS ONLY WHEN THE MANUFACTURER APPROVES OF THE EQUIPMENT INSTALLATION IN WRITING. EACH MANUFACTURER OR THEIR REPRESENTATIVE SHALL INSPECT THEIR EQUIPMENT FOR COMPLIANCE TO THEIR INSTALLATION REQUIREMENTS AND RECOMMENDATIONS. IN ADDITION, THE COMPRESSOR MANUFACTURER SHALL INSPECT EACH REFRIGERANT PIPING INSTALLATION FOR ADHERENCE TO THE APPROVED REFRIGERANT PIPING DIAGRAMS, ROUTING. EACH MANUFACTURER SHALL PREPARE A PUNCH LIST OF ALL DEFICIENCIES, IN WRITING WITH COPIES TO THE ARCHITECT AND CONTRACTOR.  
 EACH MANUFACTURER SHALL REINSPECT THE EQUIPMENT AFTER THE CONTRACTOR HAS CORRECTED ALL DEFICIENCIES. WHEN THE MANUFACTURER HAS GIVEN THEIR WRITTEN APPROVAL WITH COPIES TO THE ARCHITECT AND CONTRACTOR, THE CONTRACTOR MAY REMOVE THE LOCKOUT TAGS, SAFELY START, AND TEST THE EQUIPMENT, AS REQUIRED HEREIN.  
 CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY DRILLING OF WALL STUDS, CEILING JOISTS, PLATES, FINISHES, ETC. TO ACCOMMODATE ROUTING AND INSTALLATION OF ALL PIPING, DUCT,

ETC.  
 HVAC EQUIPMENT, METHODS AND MATERIALS

18. DUCTWORK GENERAL:  
 DUCT SIZES SHOWN ON THE DRAWINGS ARE INSIDE DIMENSIONS AND DO NOT TAKE INTO ACCOUNT LINING THICKNESS. DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH GAUGES, CONSTRUCTION DETAILS AND INSTALLATION ACCORDING TO N.F.P.A. STANDARD 90A, ASHRAE, AND SMACNA DUCT CONSTRUCTION MANUALS AND REQUIREMENTS. PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS AND FANS.

19. FABRICATION, ERECTION, AND SUPPORT:  
 ALL DUCTWORK SHALL BE FABRICATED, ERECTED, BRACED, AND SUPPORTED IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA AND ASHRAE REQUIREMENTS.

20. JOINT SEALING:  
 SEAL ALL DUCT JOINTS AND SEAMS (LONGITUDINAL AND TRANSVERSE) WITH HIGH PRESSURE DUCT SEALER, HARDCAST "IRON-GRIP 601" OR APPROVED EQUIVALENT. REINFORCED FOIL BACKED TAPES, CLOTH OR PLASTIC BACKED TAPES (DUCT TAPE) ARE NOT ACCEPTABLE.

21. FLEXIBLE AIR DUCT:  
 DUCT SHALL BE UL LISTED UL-181, CLASS I AIR DUCT MATERIAL AND SHALL COMPLY WITH N.F.P.A 90A AND 90B AND ALL LOCAL REQUIREMENTS. DUCT SHALL HAVE AN OPERATING AIR PRESSURE OF 6 INCHES WG POSITIVE AND 4 INCHES WG NEGATIVE, ACOUSTICAL DOUBLE LAMINATED INNER FABRIC BONDED TO A STEEL HELIX WIRE. OUTER JACKET FIRE RETARDANT REINFORCED ALUMINUM MYLAR WITH FIBERGLASS INSULATION. FLEXMASTER TYPE "8M" ACOUSTICAL INSULATED OR EQUIVALENT.  
 MAKE ALL FLEXIBLE DUCT CONNECTIONS TO HARD DUCT USING STAINLESS STEEL SCREW CLAMPING BANDS AND SEALED AIR TIGHT WITH HIGH PRESSURE DUCT SEALER. PLASTIC BANDS ARE NOT ACCEPTABLE.  
 SEAL FLEXIBLE DUCT VAPOR BARRIER TO HARD DUCT AND/OR ADJACENT INSULATION. NO EXPOSED FIBERGLASS SHALL BE VISIBLE.

22. REFRIGERANT PIPING:  
 REFRIGERANT PIPING SHALL CONFORM TO THE REQUIREMENTS OF THE SAFETY CODES FOR MECHANICAL REFRIGERATION AND REFRIGERANT PIPING AND THE MANUFACTURER REQUIREMENTS.  
 RUN ALL PIPING SQUARE TO BUILDING LINES WHEREVER POSSIBLE. FIELD ROUTE PIPING IN ORDER TO PROVIDE FOR EASE OF ACCESS TO VALVES AND OTHER APPURTENANCES.  
 SUPPORT PIPING FROM THE BUILDING STRUCTURE USING COPPER OR PVC COATED HANGERS. SUPPORT REFRIGERANT PIPING 4 FOOT ON CENTER AND AT EACH CHANGE OF DIRECTION. SUBMIT REFRIGERANT PIPING LAYOUT SHOP DRAWINGS FOR EACH UNIQUE SYSTEM, REVIEWED AND APPROVED BY THE MANUFACTURER, IN WRITING. SHOW ALL FILTERS, DRIERS, SIGHT-GLASSES, VALVES, ETC. AS REQUIRED BY THE MANUFACTURER.  
 USE REFRIGERANT GRADE, CONTINUOUS FLEXIBLE COPPER TUBING WITH 1" INSULATION AND FLARE CONNECTIONS.  
 ALL PIPING SHALL BE TESTED FOR 24 HOURS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE AND PROVEN TIGHT:  
 DISCHARGE AND LIQUID REFRIGERANT PIPING--300 PSIG, NITROGEN.  
 SUCTION REFRIGERANT PIPING--150 PSIG NITROGEN.  
 REFRIGERANT PIPING, AFTER PROVEN TIGHT, SHALL BE EVACUATED BY MEANS OF AN APPROVED VACUUM PUMP TO A VACUUM OF 2.5 MM HG ABSOLUTE. SYSTEMS SHALL STAND UNDER VACUUM WITH VACUUM PUMP OFF FOR A MINIMUM OF 12 HOURS. SYSTEMS MAY BE CHARGED WITH PROPER REFRIGERANT AFTER ARCHITECT'S APPROVAL OF VACUUM TEST. A DEHYDRATOR SHALL BE USED IN CHARGING HOSE DURING CHARGING OF SYSTEMS WITH REFRIGERANT.

23. GENERAL  
 THIS SECTION APPLIES TO ALL MECHANICAL WORK.  
 ALL INSULATION SHALL BE IN STRICT ACCORDANCE WITH ASHRAE STANDARDS AND ALL LOCAL AND STATE ENERGY CODES.  
 THE INSULATION WORK SHALL BE PERFORMED BY A FIRM REGULARLY ENGAGED IN THIS TYPE WORK USING MECHANICS SKILLED IN THE TRADE.  
 INSTALL ALL MATERIALS AS RECOMMENDED BY THE MANUFACTURER FOR THE SERVICE INTENDED. ALL INSULATION MATERIAL, INCLUDING SEALER MATERIAL, ADHESIVES, COVERING MATERIAL, FINISH, ETC. SHALL HAVE A U.L. LISTED FLAME SPREAD RATING NOT OVER 24 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. ALL COATINGS AND COVERINGS FOR HOT SERVICE SHALL BE BREATHER TYPE AND VAPOR BARRIER TYPE FOR COLD SERVICE.  
 HVAC PIPING:  
 INSULATE REFRIGERANT LINES AND ALL CONDENSATE DRAIN LINES WITH 1" THICK CLOE CELLED ELASTOMERIC INSULATION INSTALLED PER THE MANUFACTURERS REQUIREMENTS. PAINT EXTERIOR INSULATION WITH TWO COATS OF PAINT AS REQUIRED BY THE INSULATION MANUFACTURER.

24. EQUIPMENT:  
 CAPACITY, PERFORMANCE AND CHARACTERISTICS OF EQUIPMENT SHALL BE AS INDICATED ON THE DRAWINGS AND AS SPECIFIED OR IMPLIED HEREIN. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INCREASED COST TO HIMSELF OR OTHERS FOR EQUIPMENT WHICH DEVIATES FROM THAT SCHEDULED OR IMPLIED HEREIN. REGARDLESS OF COST AFFECT, THE ARCHITECT MUST APPROVE ANY DEVIATION FROM THE DRAWINGS AND THE SPECIFICATION.

25. MOTORS AND STARTERS:  
 ALL ELECTRIC MOTORS SHALL BE HIGH EFFICIENCY TYPE WITH MAXIMUM OF 1750 RPM WITH OPEN DRIP PROOF OR TEFC ENCLOSURES, UNLESS OTHERWISE NOTED. MOTORS LOCATED ON AIR HANDLING UNITS SHALL BE MOUNTED IN RUBBER SUPPORTS OR THE FAN SHALL BE INDEPENDENTLY SUPPORTED ON SPRING ISOLATORS. MOTORS LOCATED IN THE CONDITIONED SPACE SHALL BE SELECTED FOR QUIET OPERATION AND SHALL NOT PRODUCE AN OBJECTIONABLE "MOTOR NOISE" IN THE SPACE.  
 ELECTRICAL CHARACTERISTICS SHALL BE VERIFIED FROM THE ELECTRICAL DRAWINGS, PRIOR TO BIDDING, AND VERIFIED ON THE JOB WITH THE ELECTRICAL SUB-CONTRACTOR. IF A CONFLICT ARISES, THE ELECTRICAL DRAWINGS SHALL BE THE AUTHORITY.  
 PROVIDE MOTOR STARTERS AND PROPER HEATER ELEMENTS SIZED IN ACCORDANCE WITH NFPA 70. STARTERS SHALL BE SQUARE-D OR EQUIVALENT WITH OVERLOAD TRIP ELEMENT IN EACH PHASE. LARGER MOTORS AND THEIR STARTERS SHALL MEET THE REQUIREMENTS OF THE UTILITY COMPANY AS TO INRUSH ALLOWABLE AND THE TYPE OF STARTING PERMITTED.  
 SHOULD ANY MECHANICAL EQUIPMENT REQUIRE EXTRA WORK BY OTHER TRADES, FOR PROPER INSTALLATION, THIS CONTRACTOR SHALL BEAR ALL COSTS, SUCH AS INCREASED ELECTRICAL, STRUCTURAL, ROOFING, ETC.

26. SYSTEMS TEST AND BALANCE:  
 THE REQUIRED TEST & BALANCE OF THE HVAC SYSTEM SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING AGENCY AS SPECIFIED BELOW.  
 AGENCY QUALIFICATIONS:  
 TEST & BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AGENCY ENGAGED SOLELY IN TEST AND BALANCE WORK. AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) AND NATIONAL ENVIRONMENTAL BALANCING BUREAU, (NEBB). SUBMIT A WRITTEN REPORT WITHIN 30 DAYS OF COMMENCING WORK, WITH ANY RECOMMENDED CHANGES TO INSURE BALANCING CAPABILITY. SUBMIT A DETAILED TEST PLAN TO THE ARCHITECT ILLUSTRATING ALL FORMATS, DRAWINGS, AND TEST PROCEDURE TO BE USED FOR TESTING THE COMPLETED SYSTEM. THE APPROVED PLAN WILL BE USED FOR TESTING THE SYSTEMS. PROCEDURES SHALL INCLUDE REQUIREMENTS LISTED IN AABC/NEBB STANDARDS, LATEST EDITION AND ANY SPECIAL REQUIREMENTS FOR THIS PROJECT. MAKE PROJECT VISITS AS REQUIRED DURING CONSTRUCTION PERIOD INSPECTING FOR PROPER INSTALLATION OF THE SYSTEM AND RELATED BALANCING DEVICES. PROJECT VISIT REPORTS SHALL BE MADE TO THE ARCHITECT IN WRITING.  
 CONTRACTORS REQUIREMENTS PRIOR TO TEST & BALANCE:

THE CONTRACTOR SHALL PERFORM ALL REQUIRED PRELIMINARY TESTS AND OTHER PREPARATORY WORK, INCLUDING BUT NOT LIMITED TO:  
 MAKE SURE ALL FANS ARE OPERATING, CHECK ROTATION, RPM, AND AMPS. CHECK ALL DAMPERS FOR OPERATION.  
 PUT ALL HVAC EQUIPMENT IN FULL OPERATION INCLUDING AIR UNITS AND FANS. MAKE SURE ALL HVAC CONTROLS ARE INSTALLED AND FULLY OPERATIONAL. CLEAN/REPLACE FILTERS JUST PRIOR TO TESTING.  
 PROVIDE ALL BALANCING DEVICES AND DRIVE CHANGES THAT ARE DEEMED NECESSARY BY T&B AGENCY FOR BALANCE AT NO ADDITIONAL COST TO THE OWNER.  
 TEST & BALANCE AGENCY SHALL BALANCE ALL AIR SYSTEMS FOR OPERATION WITHIN DESIGN CRITERIA. PRIME MOVERS SHALL BE WITHIN 5% OF DESIGN AND TERMINALS WITHIN 10% OF DESIGN. AIR SYSTEMS SHALL BE BALANCED AS DESCRIBED HEREIN.  
 TEST REPORT: THE FINAL TAB REPORT SHALL BE SUBMITTED IN PDF FORMAT.  
 REPORT SHALL BE INDEXED.  
 TABLE OF CONTENTS SHALL LIST ALL REPORTS.  
 ALL AIR OUTLETS SHALL BE LOCATED ON CODED DRAWINGS PREPARED BY THE T&B AGENCY. AIR OUTLETS FORMS SHALL BE PREPARED AND CORRELATED TO THE CODED DRAWINGS.  
 TEST SUMMARY SHALL DESCRIBE FINAL TEST PROCEDURES AND SPECIAL CONDITIONS DURING TESTS (SUCH AS THERMOSTAT OUTSIDE/RETURN AIR RELATIONSHIP), AND DUCT STATIC PRESSURE. DESCRIBE OTHER DATA THAT MAY ASSIST OPERATING PERSONNEL IN THE CONTINUING OPERATION OF THE SYSTEM.  
 T&B CONTRACTOR SHALL TAKE AND RECORD ALL NECESSARY READINGS AT THE FINAL BALANCE POINTS, SUCH AS BUT NOT LIMITED TO: AIR QUANTITIES, PRESSURES, SETPOINTS, ENTERING AND LEAVING COIL TEMPERATURES, SPACE INDOOR AND OUTSIDE WET AND DRY BULB TEMPERATURES, OUTDOOR WEATHER CONDITIONS, ELECTRICAL READINGS OF ALL NEW AND EXISTING MOTORS, COMPRESSORS, ETC.  
 TEST REPORT SHALL CONTAIN TAB CERTIFICATION OF TEST DATA AND SYSTEM CONDITIONS. SUBMIT THE TEST REPORTS, FOR REVIEW, BEFORE SUBSTANTIAL COMPLETION.  
 END OF MECHANICAL SPECIFICATIONS.



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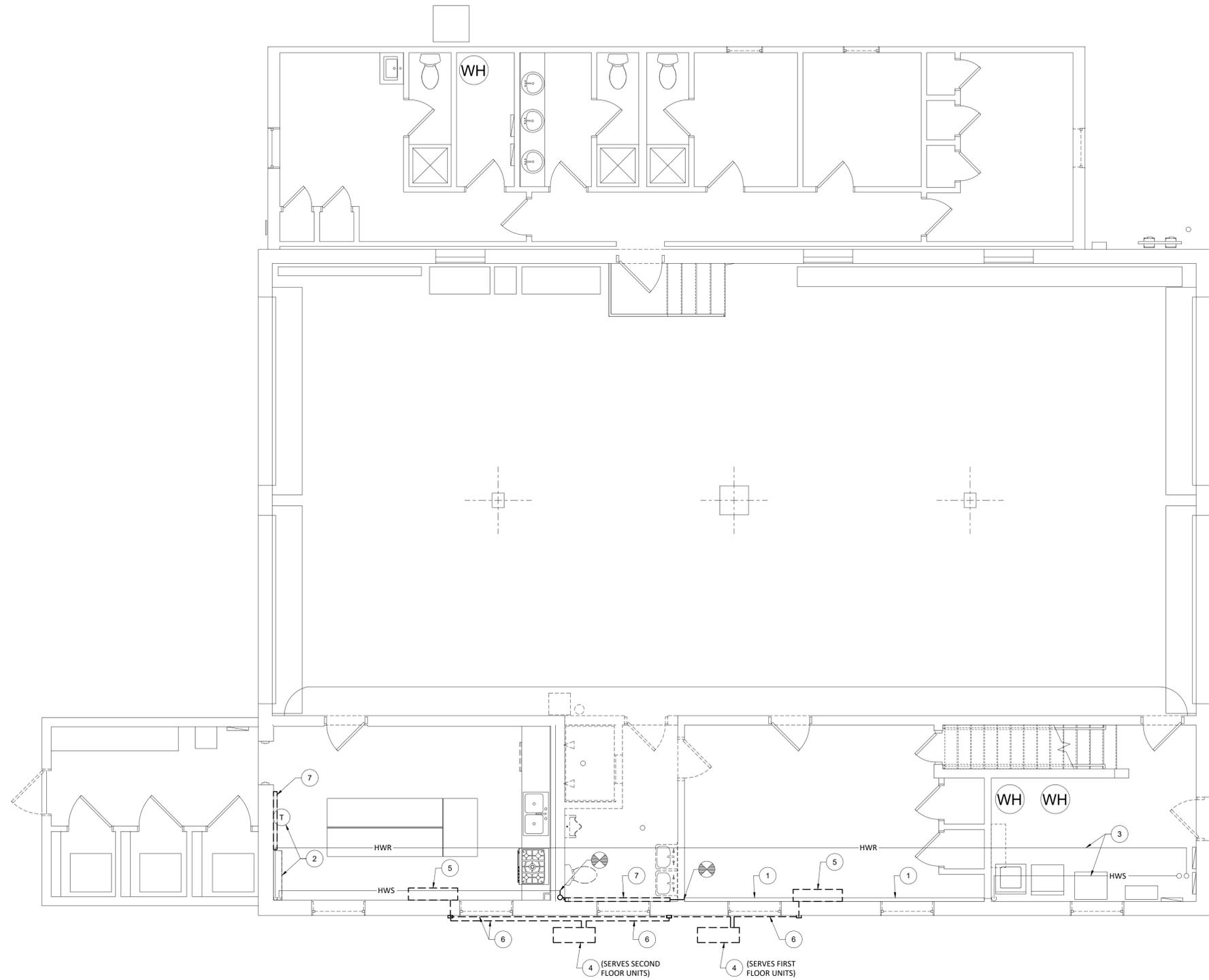
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**SALEM FIRE STATION #2**  
 RENOVATION  
 MECHANICAL SPECIFICATIONS

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24153

DRAWN BY **JNB**  
 DESIGNED BY **JNB**  
 CHECKED BY **JNB**  
 DATE **2024-08-30**  
 SCALE **As indicated**  
 REVISIONS



**GENERAL NOTES:**

1. CONTRACTORS SHALL VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BIDDING.

**KEYED NOTES:**

- 1. EXISTING HYDRONIC BASEBOARD HEATER TO REMAIN.
- 2. EXISTING CABINET UNIT HEATER TO REMAIN.
- 3. EXISTING HOT WATER SUPPLY AND RETURN PIPING FROM BOILER SYSTEM ABOVE.
- 4. EXISTING OUTDOOR HEAT PUMP UNIT ON GRADE TO BE REMOVED IN ITS ENTIRETY. ASSOCIATED CONCRETE PAD AND ALL ASSOCIATED REFRIGERANT PIPING FROM UNIT TO BE REMOVED.
- 5. EXISTING WALL MOUNTED DUCTLESS UNIT AND ASSOCIATED REFRIGERANT AND CONDENSATE DRAIN PIPING TO BE REMOVED IN THEIR ENTIRETY.
- 6. EXISTING REFRIGERANT PIPING AND CONDENSATE PIPING ALONG EXTERIOR WALL LOCATED IN PIPING ENCLOSURE TO BE REMOVED.
- 7. EXISTING HYDRONIC BASEBOARD HEATER, ASSOCIATED HEATING ELEMENTS, ENCLOSURES, AND ASSOCIATED THERMOSTAT TO BE REMOVED IN THEIR ENTIRETY. MODIFY HOT WATER PIPING AS INDICATED.

**MECHANICAL DEMOLITION PLAN - 1ST FL**  
 1 MR2.01 SCALE = 1/4"=1'-0"



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SALEM, VA

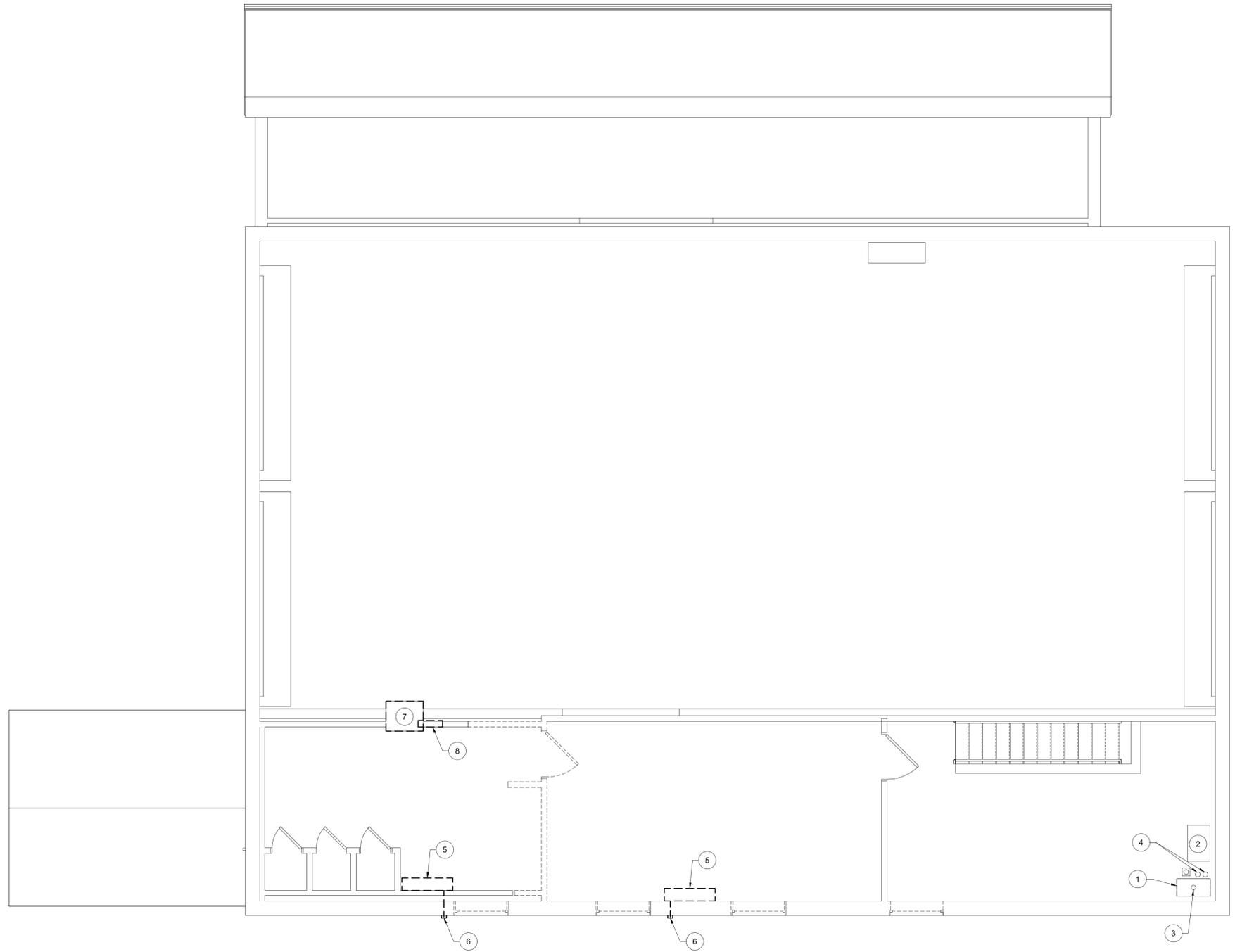


**SALEM FIRE STATION #2**  
 RENOVATION  
**MECHANICAL DEMOLITION PLAN - FIRST FLOOR**

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24163

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

**MR2.01**  
 PROJECT NO 03220052.01



**GENERAL NOTES:**

1. CONTRACTORS SHALL VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BIDDING.

**KEYED NOTES:**

- 1 EXISTING GAS FIRED WATER BOILER SYSTEM TO REMAIN. ALL ASSOCIATED PIPING (GAS, HWS, HWR, & DRAINS), CONTROLS, AND CIRCULATION PUMPS TO REMAIN.
- 2 EXISTING EXPANSION TANK IN ROOF JOIST SPACE TO REMAIN.
- 3 EXISTING FLUE UP THROUGH ROOF.
- 4 EXISTING HOT WATER SUPPLY AND RETURN PIPING FROM BOILER SYSTEM DOWN THROUGH FLOOR TO REMAIN.
- 5 EXISTING WALL MOUNTED DUCTLESS UNIT AND ASSOCIATED REFRIGERANT AND CONDENSATE DRAIN PIPING TO BE REMOVED IN THEIR ENTIRETY.
- 6 EXISTING REFRIGERANT PIPING AND CONDENSATE PIPING DOWN EXTERIOR WALL LOCATED IN PIPING ENCLOSURE TO BE REMOVED.
- 7 EXISTING THROUGH WALL A/C UNIT AND ALL ASSOCIATED ACCESSORIES TO BE REMOVED IN THEIR ENTIRETY. PATCH WALL FROM REMOVED UNIT.
- 8 EXISTING WALL HEATER AND ALL ASSOCIATED ACCESSORIES TO BE REMOVED IN THEIR ENTIRETY. PATCH WALL FROM REMOVED UNIT.

**MECHANICAL DEMOLITION PLAN - 2ND FL**  
 1 MR2.02 SCALE = 1/4"=1'-0"



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SALEM VA



**SALEM FIRE STATION #2**  
 RENOVATION  
**MECHANICAL DEMOLITION PLAN - SECOND FLOOR**

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

**MR2.02**  
 PROJECT NO 03220052.01



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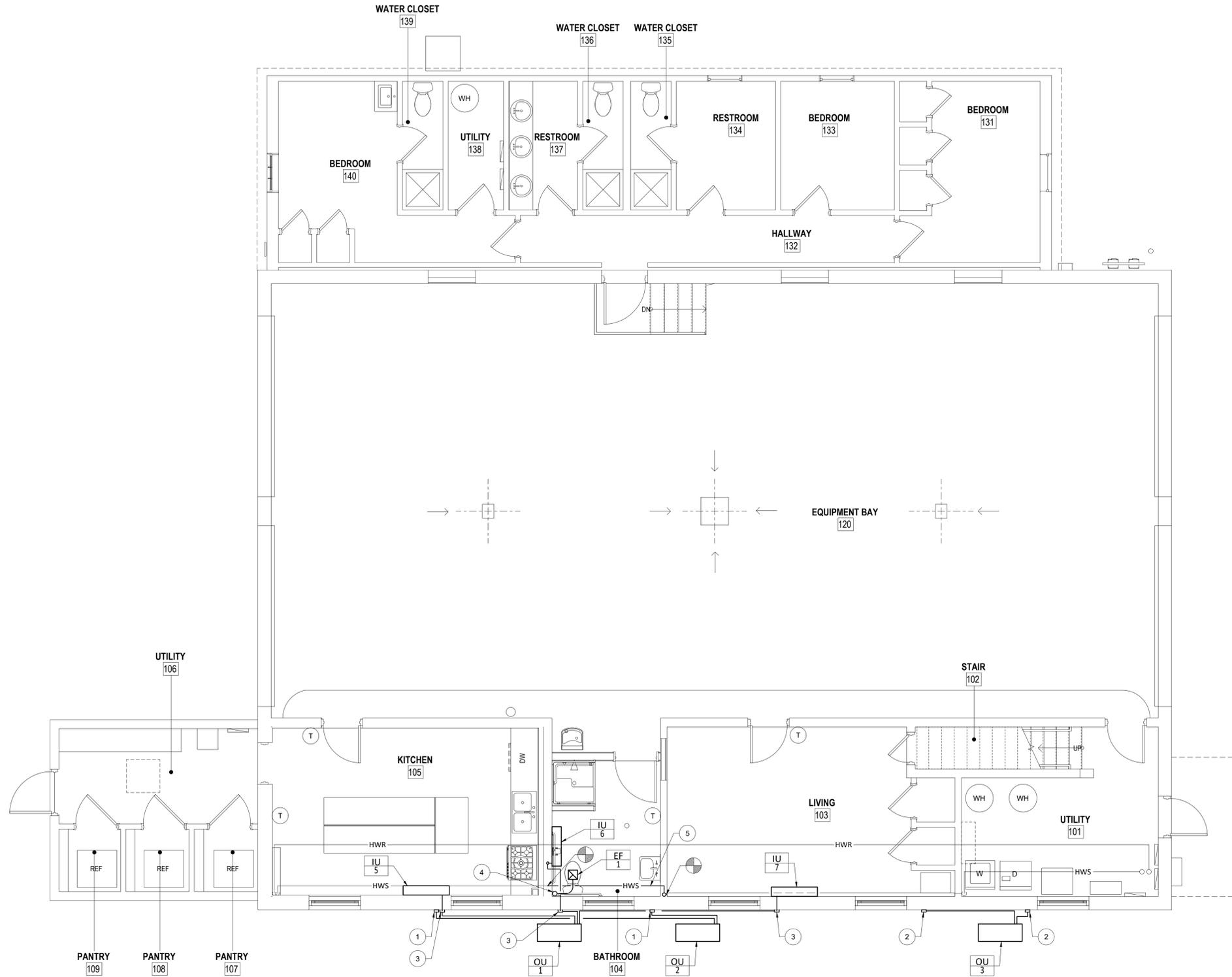
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**GENERAL NOTES:**

1. PROVIDE CONCRETE EQUIPMENT PADS FOR EQUIPMENT ON GRADE.
2. REFRIGERANT PIPING IS SHOWN SCHEMATICALLY. EXACT PIPING LENGTHS AND PATHS WILL NEED TO BE CONFIRMED BY CONTRACTOR PER FIELD CONDITIONS. ALL REFRIGERANT PIPING SHALL BE INSTALLED AND SIZED AS RECOMMENDED BY MANUFACTURER. PROVIDE ALL ACCESSORIES AS REQUIRED.
3. ALL EXPOSED PIPING SHALL BE CONCEALED WITH A WHITE, 4"x2" PVC DECORATIVE LINE COVER SYSTEM THAT IS PRE-ENGINEERED FOR THIS PURPOSE.
4. HEATING HOT WATER PIPING SHALL BE TYPE L HARD DRAWN COPPER TUBING AND FITTINGS. FITTINGS SHALL BE SUITABLE FOR 125 PSI WATER SERVICE. PROVIDE 1-1/2" EXTERNAL INSULATION (0.25 BTUIN./SQ.FT./F/HR. MAXIMUM "K" VALUE).

**KEYED NOTES:**

- 1 REFRIGERANT LINES FROM OU-2 UP TO INDOOR UNITS IU-1 AND IU-2 ON 2ND FLOOR. SPILL 1/2" PVC CONDENSATE DRAIN ON GRADE. ALL PIPING SHALL BE CONCEALED IN PIPING ENCLOSURE.
- 2 REFRIGERANT LINES FROM OU-3 UP TO INDOOR UNITS IU-3 AND IU-4 ON 2ND FLOOR. SPILL 1/2" PVC CONDENSATE DRAIN ON GRADE. ALL PIPING SHALL BE CONCEALED IN PIPING ENCLOSURE.
- 3 REFRIGERANT LINES FROM INDOOR UNIT DOWN TO OU-1 ON GRADE. ROUTE 1/2" PVC CONDENSATE DRAIN FROM CONDENSATE PUMP DOWN TO GRADE. ALL PIPING SHALL BE CONCEALED IN PIPING ENCLOSURE.
- 4 4"Ø EXHAUST DUCT UP TO GOOSENECK ON ROOF.
- 5 PROVIDE FULL SIZE HOT WATER SUPPLY (MIN. 3/4") TO BYPASS REMOVED BASEBOARD HEATER IN BATHROOM. CONTRACTOR TO CONFIRM PIPE SIZE.

**MECHANICAL NEW WORK PLAN - 1ST FL**  
 MR3.01 SCALE = 1/4"=1'-0"

SALEM FIRE STATION #2

RENOVATION

MECHANICAL NEW WORK PLAN - FIRST FLOOR

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24163

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

**MR3.01**

PROJECT NO 03220052.01



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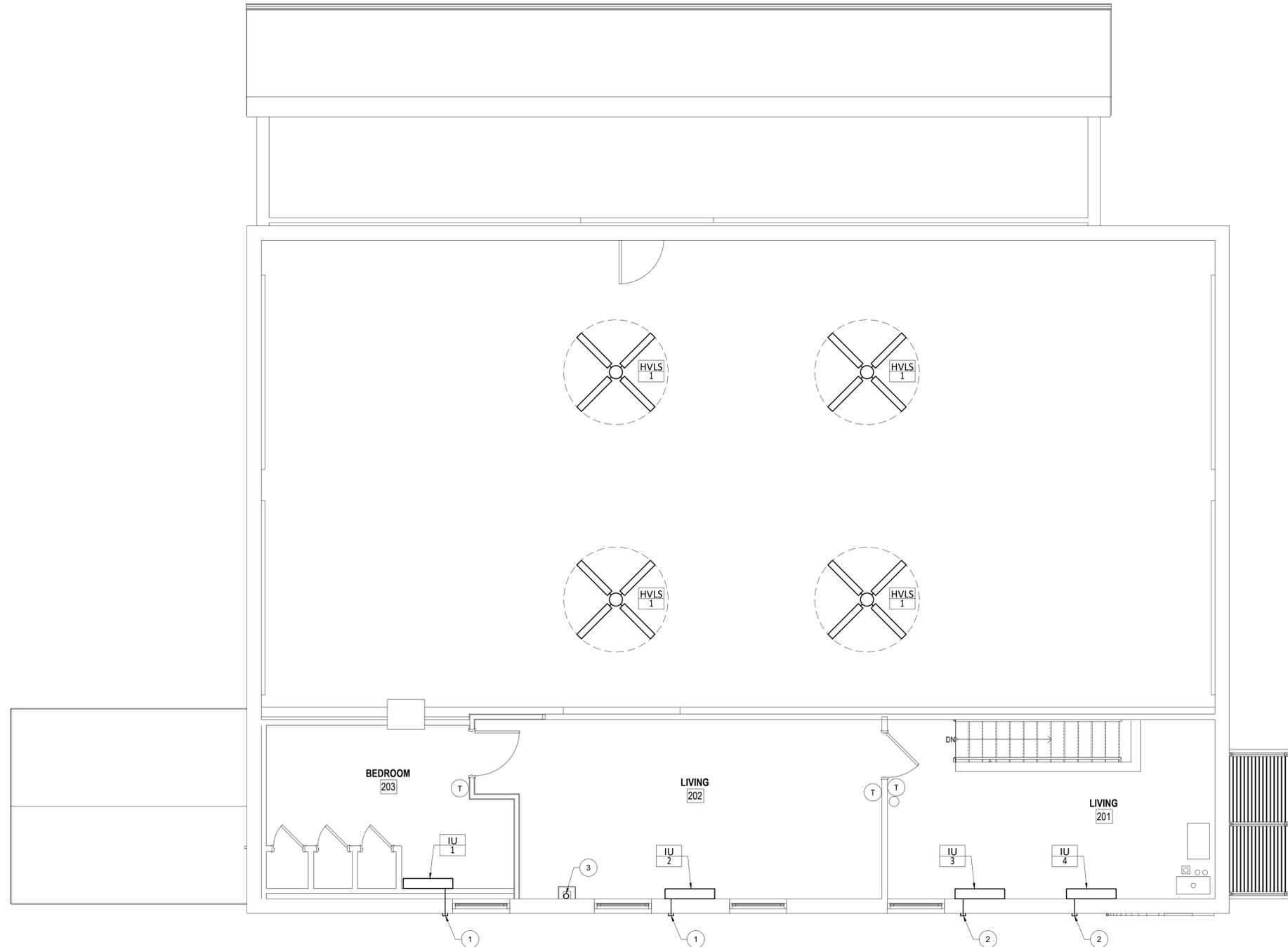


**GENERAL NOTES:**

1. PROVIDE EQUIPMENT PADS FOR EQUIPMENT ON GRADE.
2. REFRIGERANT PIPING IS SHOWN SCHEMATICALLY. EXACT PIPING LENGTHS AND PATHS WILL NEED TO BE CONFIRMED BY CONTRACTOR PER FIELD CONDITIONS. ALL REFRIGERANT PIPING SHALL BE INSTALLED AND SIZED AS RECOMMENDED BY MANUFACTURER. PROVIDE ALL ACCESSORIES AS REQUIRED.
3. ALL EXPOSED PIPING SHALL BE CONCEALED WITH A WHITE, 4"x2" PVC DECORATIVE LINE COVER SYSTEM THAT IS PRE-ENGINEERED FOR THIS PURPOSE.

**KEYED NOTES:**

- 1 REFRIGERANT LINES FROM INDOOR UNIT DOWN TO OU-2 ON GRADE. ROUTE 1/2" PVC CONDENSATE DRAIN FROM CONDENSATE PUMP DOWN TO GRADE. ALL PIPING SHALL BE CONCEALED IN PIPING ENCLOSURE.
- 2 REFRIGERANT LINES FROM INDOOR UNIT DOWN TO OU-3 ON GRADE. ROUTE 1/2" PVC CONDENSATE DRAIN FROM CONDENSATE PUMP DOWN TO GRADE. ALL PIPING SHALL BE CONCEALED IN PIPING ENCLOSURE.
- 3 4" Ø EXHAUST DUCT FROM BELOW AND UP TO GOOSENECK ON ROOF. COVER OPENING WITH INSECT SCREEN.



**MECHANICAL NEW WORK PLAN - 2ND FL**  
 MR3.02 SCALE = 1/4"=1'-0"

SALEM FIRE STATION #2

RENOVATION

MECHANICAL NEW WORK PLAN - SECOND FLOOR

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24163

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

**MR3.02**

PROJECT NO 03220052.01



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**SALEM FIRE STATION #2**  
 RENOVATION  
 GENERAL NOTES, LEGEND, LIGHTING FIXTURE SCHEDULE  
 415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24153

DRAWN BY \_\_\_\_\_ DWG  
 DESIGNED BY \_\_\_\_\_ DWG  
 CHECKED BY \_\_\_\_\_ DWG  
 DATE 8/30/24  
 SCALE AS INDICATED  
 REVISIONS \_\_\_\_\_



2100 LUBNA DR  
 CHRISTIANSBURG VA 24073  
 P. 540.998.6069

**ER1.01**  
 PROJECT NO 0322005201

GENERAL NOTES	ELECTRICAL LEGEND	
1. 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.		LED LIGHTING FIXTURE, RECESSED, SURFACE OR PENDANT CEILING MOUNTED, COORDINATE WITH OWNER FOR ANY DESIRED NIGHT LIGHT LOCATIONS. 'EM' INDICATES INTEGRAL OR REMOTE INVERTER TO PROVIDE STANDBY POWER FOR EGRESS.
2. WHERE LIGHT SWITCHES ARE INDICATED TO BE MOUNTED BEHIND DOOR, MOUNT SUCH SWITCHES A MINIMUM OF 3'-9" FROM HINGED SIDE.		EXIT LIGHTING FIXTURE, SURFACE CEILING MOUNTED, DIRECTIONAL ARROWS AS INDICATED. 'VR' SUBSCRIPT INDICATES VANDAL RESISTANT.
3. REVISE PANELBOARD SCHEDULES ON PANEL DIRECTORIES TO REFLECT FINAL INSTALLATION CONDITIONS.		EXIT LIGHTING FIXTURE, SURFACE WALL MOUNTED, DIRECTIONAL ARROWS AS INDICATED.
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.		FURNITURE WHIPS UNLESS INDICATED OTHERWISE, FOR FURNITURE WHIPS PROVIDE DATA AND POWER
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.		QUAD-PLEX WALL RECEPTACLE
6. COUNTER AND TOILET RECEPTACLES TO BE GFI AND COUNTER HEIGHT EXCEPT WHERE NOTED. REFRIGERATOR RECEPTACLE TO BE 36" AFF.		DUPLEX WALL RECEPTACLE, MOUNTING HEIGHT = 1'-6", EXCEPT 'C' SUBSCRIPT INDICATES MOUNTING IN CASEWORK(TYP). 'GFI' SUBSCRIPT INDICATES GROUND FAULT, 'M' SUBSCRIPT INDICATES RECEPTACLE MOUNTED BEHIND MIRROR, 'EWC' SUBSCRIPT INDICATES GROUND FAULT BEHIND ELECTRIC WATER COOLER. '*' INDICATES MOUNTED HEIGHT = 8" ABOVE COUNTER(TYP). 'E' INDICATES EXISTING TO REMAIN.
7. LIGHT FIXTURE TYPE IS SHOWN ONLY ONCE AS TYPICAL FOR THE ENTIRE ROOM UNLESS SPECIFICALLY INDICATED OTHERWISE.		OCCUPANCY SENSOR, DUAL TECHNOLOGY
8. UNLESS INDICATED OTHERWISE, SIZE CONDUITS IN ACCORDANCE WITH NFPA 70.		EMERGENCY BATTERY UNIT, LITHONIA EU2C OR EQUAL
9. COORDINATE WITH THE MECHANICAL CONTRACTOR TO ENSURE ALL WORKING CLEARANCE AND DEDICATED WORKING SPACE OF PANELBOARDS.		EMERGENCY BATTERY UNIT WP, REMOTE HEAD, CONNECT TO BATTERY PACK INSIDE OF BUILDING. PROVIDE ADDITIONAL BATTERY PACKS AS REQUIRED.
10. GROUNDING CONDUCTORS ARE NOT INDICATED IN BRANCH CIRCUIT RACEWAYS. PROVIDE GROUND CONDUCTORS AS REQUIRED BY NEC.		
11. OCCUPANCY SENSORS SHOULD CONTROL ALL LIGHTING IN ROOMS, BOTH INBOARD AND OUTBOARD SWITCHING WHERE APPLICABLE, UNLESS INDICATED OTHERWISE.		
12. PROVIDE PLASTIC BUSHING ON THE END OF ALL CONDUIT.		
13. PROVIDE LABELS ON ALL RECEPTACLE INDICATING PANEL AND CIRCUIT FEEDING EACH DEVICE.		
14. 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.		
15. CONNECT EMERGENCY BATTERY UNITS TO LOCAL LIGHTING CIRCUITS.		
16. VERIFY ALL FINAL EQUIPMENT CONNECTIONS, WIRING, AND CIRCUIT INFORMATION OF ALL EQUIPMENT PRIOR TO ROUGH IN.		
17. PROVIDE SHUNT TRIP BREAKERS ON ALL EQUIPMENT UNDER THE HOOD.		
		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.
		CONDUCTORS IN CONDUIT TURNED DOWN.
	S	SINGLE-POLE SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP. LOWER CASE SUBSCRIPT WHEN USED, INDICATES FIXTURES CONTROLLED (TYP).
	S3	THREE-WAY SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP.
	Smc	INTEGRAL OCCUPANCY SENSOR SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP.
		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 WITH PULL CORD. WHERE MOUNTED BESIDE COUNTER RECEPTACLE: MOUNT SAME HEIGHT AS RECEPTACLE.
	SD	DIMMER SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP, SUBSCRIPT INDICATES FIXTURES CONTROLLED WITH THIS SWITCH
		PANELBOARD, 208Y/120-VOLT, 3-PHASE, 4-WIRE, MOUNTING HEIGHT=6'-0" TO TOP. SEE PANELBOARD SCHEDULES.
		DISCONNECT SWITCH, EXTERNALLY OPERATED, 240V, 3 Ø UNLESS OTHERWISE NOTED. NOTATION INDICATES NUMBER OF POLES AND AMPERAGE CAPACITY. 'NF' SUBSCRIPT INDICATES NON FUSED.

## SECTION 16000

## 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

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

## B. MOTOR CONTROLLERS

- 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

- NEMA Compliance: Comply with applicable requirements of NEMA Stds. Pub.No.'s LE 1 and LE 2 pertaining to lighting equipment.
- 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.
- 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.

- 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.
- Locate operating and control equipment properly to provide easy access and arrange entire electrical work with adequate access for operation and maintenance.
- Advise other trades of openings required in their work for the subsequent move\_in of large units of electrical equipment.
- 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

- 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.
- 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

- 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.
  - Coordinate 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.
- Do not paint over nameplates on equipment, sliding/rotating shaft surfaces, non\_ferrous hardware/accessories/trim and similar items where painting would normally be omitted.

## 1.5 ELECTRICAL SYSTEM PERFORMANCE

- 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.
- 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

- 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 DWGized in writing. Compensation for additional services must be agreed upon in writing prior to performing services.
- Closeout Coordination: Coordinate closeout operations with closeout of mechanical systems and other power consuming equipment.
- 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:
  - Work concealed behind or within other work, in a nonaccessible location.
  - 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.
  - Maintenance procedures and schedules.
  - Testing procedures and acceptable parameters.
- 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.

## PART 2 - PRODUCTS

## 2.1 CABLE AND WIRE

- 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.
- 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.
- No. 10 AWG and smaller diameter shall be solid copper; No. 8 AWG and larger diameter shall be stranded copper.
- 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 follows:
  - 120/208 volt, 3-phase:
    - Phase A - black.
    - Phase B - red.
    - Phase C - blue.
- Provide the following types of cables in NEC approved locations and applications where indicated. Provide cable UL listed for its intended use.
  - Metal clad cable: Type MC.
- 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

- 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.
  - Rigid Steel Conduit: ANSI C80.1, UL 6.
  - Intermediate Steel Conduit (Zinc Coated Steel): UL 1242.
  - Rigid Metal Conduit Fittings: UL 514B, cadmium- or zinc-coated threaded type.
  - Electrical Metal Tubing (EMT): ANSI C80.3, UL 797.
  - EMT Fittings: UL 514B, compression or set-screw type
  - Flexible Metal Conduit: Cadmium- or zinc-coated steel.
  - Flexible Metal Conduit Fittings: UL 514B, cadmium- or zinc-coated.
  - 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.
  - Liquid-Tight Flexible Metal Conduit Fittings: FS W-F-406.
- 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.
- 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.
  - 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

- 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 feraloy cast outlet boxes where surface mounted with threaded conduit hubs to suit each respective location and installation.
- 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.
- 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

- 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.
- Receptacles:
  - 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.
  - Provide with cast aluminum weatherproof cover where indicated to be WP while in operation.
- Switches:
  - 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 Three-way and Four-way as indicated on drawings.
  - 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, UL listed, Universal Energy Control (UNENCO) Switchomatic Coordinate with connected wattage and type of room light fixtures.
- Wiring Device Accessories:
  - 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 match finish of plate.
  - For surface mounted boxes, provide feraloy cast outlet plates on all outlet boxes, type suitable for wiring device installed in box.
  - Provide plate with engraved legend where indicated.

## 2.5 SAFETY AND DISCONNECT SWITCHES

- General: UL 98, NEMA KS1, provide surface-mounted, sheet-steel enclosed switches, of types, sizes and electrical characteristics indicated; 3-blades, 4-wire with ampere 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.
- Provide General Duty Type: 240 volts AC, Type GD. Heavy Duty Type: 600 volts AC.
- 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

- 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.
- 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.
- 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

- 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

- Provide lighting fixtures of sizes, types, and ratings indicated in lighting fixture schedule
- Wiring: Provide electrical wiring within fixture suitable for connecting to branch circuit.
  - NEC Type AF for 120 volt, minimum No. 18 AWG.
  - NEC Type SF\_2 for 277 volt, minimum No. 18 AWG.

## 2.9 TIME CONTROLLED SWITCHES

- 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.

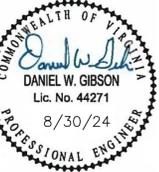
## 2.10 MOTION DETECTORS

- Indoor Motion Detectors: Provide passive infrared motion sensor to operate lights on detection of occupancy, 120/277 volts, field adjustable.
- Outdoor Motion Detectors: Passive infrared motion sensor in weatherproof enclosure with adjustable digital sensitivity and time delay and isolated SPDT relay contact. Provide unit suitable for operation at temperatures as low as -40F. Provide adjustable mounting bracket.



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SALEM VA



SALEM FIRE STATION #2

RENOVATION

GENERAL NOTES, LEGEND, LIGHTING FIXTURE SCHEDULE

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24155

DRAWN BY DWG  
DESIGNED BY DWG  
CHECKED BY DWG  
DATE 8/30/24  
SCALE AS INDICATED  
REVISIONS

**GIBSON  
ENGINEERING**

2100 LUBNA DR  
CHRISTIANSBURG VA 24073  
P. 540.998.6069

**ER1.02**  
PROJECT NO 0322005Z01

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:
    - i. 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 surface 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 66 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 installation.
- D. Mounting heights indicated are to bottom of ceiling-mounted fixtures and to center of wall mounted fixtures.
- E. Install parking lighting units complete with poles/standards and products as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC, NESC and NEMA standards, and with recognized industry practices to ensure that roadway and parking area lighting equipment fulfill requirements.
- F. Adjust poles as necessary to provide a permanent plumb vertical position with the bracket arm in proper position for luminaire location. After installation, touch up pole finish with paint furnished by pole manufacturer.
- G. Metal Poles: Provide anchor bases with galvanized steel anchor bolts, threaded at the top end and bent 90 degrees at the bottom end. Provide galvanized nuts, washers, and ornamental covers for anchor bolts. Concrete for anchor bases, polyvinyl chloride (PVC) conduit ells, and ground rods shall be as specified. Thoroughly compact backfill with compacting arranged to prevent any pressure between conductor, jacket, or sheath and the end of the conduit ell.
- H. 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.
- I. Clean lighting fixtures of dirt and debris upon completion of installation. Protect installed fixtures from damage during remainder of construction period.
- J. Do not install interior fixture lens until construction is complete or protect lens from accumulation of dust and debris.
- K. Adjust all fixtures with adjustable aiming to meet the Architect/Engineer's approval.
- L. Test all lighting fixtures for compliance with intended purpose. Correct malfunctioning or noisy units, then retest to demonstrate compliance.
- M. At date of substantial completion, replace all lamps which are observed to be noticeably dimmed as judged by the Architect/Engineer.
- N. Provide tight equipment grounding connections to comply with tightening torques specified in UL 486A for each lighting fixture.

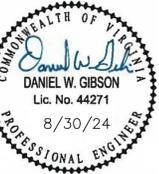


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SALEM FIRE STATION #2

RENOVATION

ELECTRICAL SPECIFICATIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24165

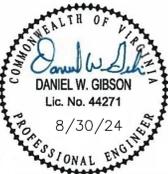
DRAWN BY DWG  
DESIGNED BY DWG  
CHECKED BY DWG  
DATE 8/30/24  
SCALE AS INDICATED  
REVISIONS

ER1.03  
PROJECT NO 0322005Z01

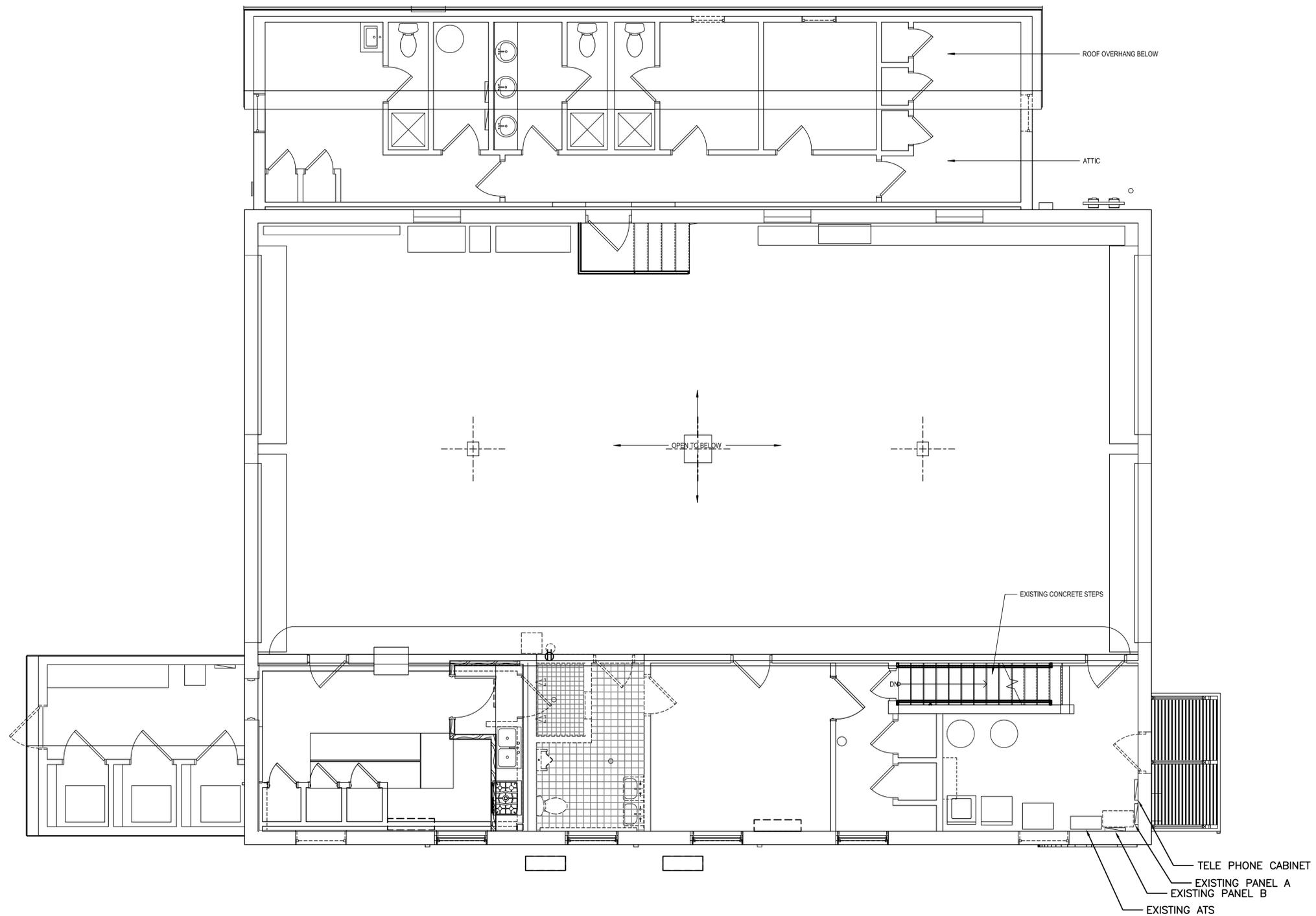


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SALEM VA



GENERAL DEMOLITION NOTES:

1. REMOVE EXISTING RECEPTACLES ON WALLS SCHEDULED FOR DEMOLITION. RETAIN CIRCUIT FOR REUSE WITH NEW LAYOUT.
2. REMOVE POWER FOR HVAC UNIT. RETAIN CIRCUIT FOR NEW EQUIPMENT. INDOOR UNITS ARE LOCATED ON FIRST AND SECOND FLOOR.
3. RELOCATE EXISTING TELEPHONE CABINET TO CREATE SPACE FOR NEW PANEL C. COORDINATE WITH OWNER FOR NEW LOCATION OF CABINET.

FIRST FLOOR DEMOLITION

1/4" = 1'-0"



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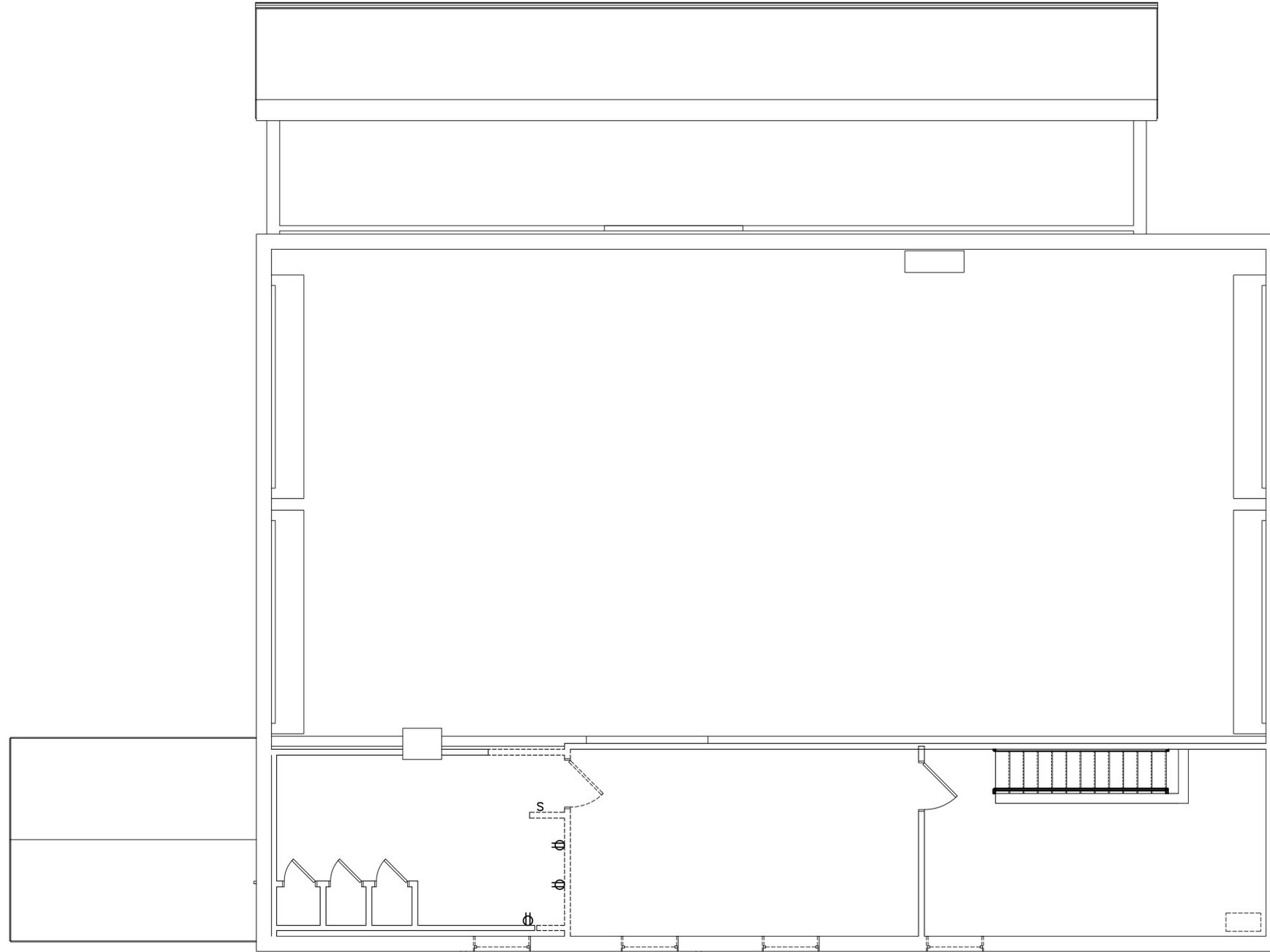
SALEM FIRE STATION #2

RENOVATION  
 ELECTRICAL DEMOLITION

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24155

DRAWN BY: DWG  
 DESIGNED BY: DWG  
 CHECKED BY: DWG  
 DATE: 8/30/24  
 SCALE: AS INDICATED  
 REVISIONS:

ER2.01  
 PROJECT NO: 0322005201



NOTES THIS SHEET:

1. REMOVE EXISTING RECEPTACLES ON WALLS SCHEDULED FOR DEMOLITION. RETAIN CIRCUIT FOR REUSE WITH NEW LAYOUT.
2. REMOVE POWER FOR HVAC UNIT. RETAIN CIRCUIT FOR NEW EQUIPMENT.
3. REMOVE EXISTING BASEBOARD HEATERS ON 2ND FLOOR.
4. RELOCATE EXISTING LIGHTING CONTROLS TO NEW WALLS.

SECOND FLOOR DEMOLITION

1/4" = 1'-0"

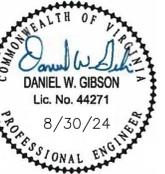


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SALEM VA



**SALEM FIRE STATION #2**  
RENOVATION  
ELECTRICAL DEMOLITION - SECOND FLOOR

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24153

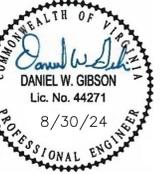
DRAWN BY	DWG
DESIGNED BY	DWG
CHECKED BY	DWG
DATE	8/30/24
SCALE	AS INDICATED
REVISIONS	

**ER2.02**  
PROJECT NO 0322005201

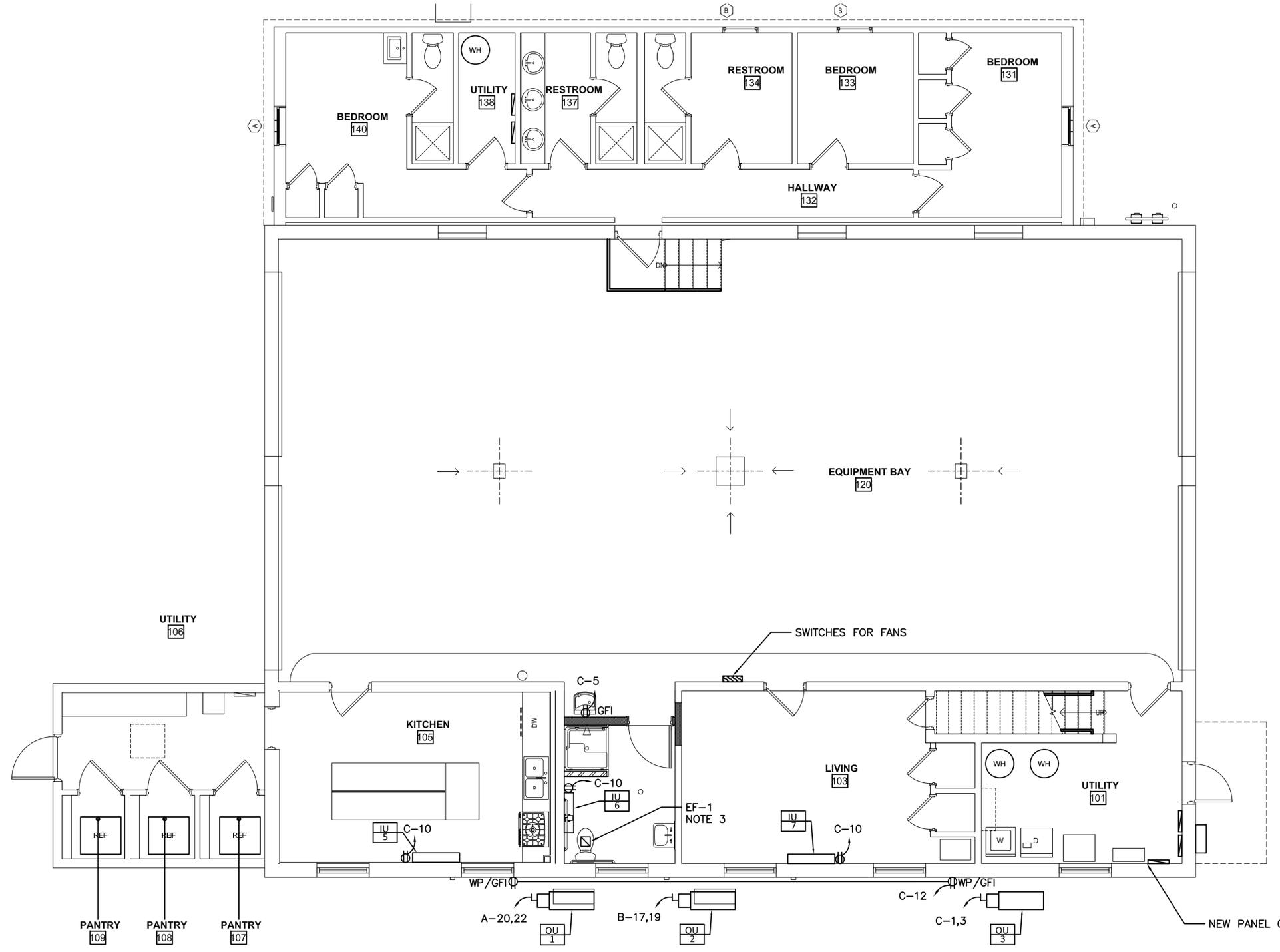


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SALEM VA



NOTES THIS SHEET:

1. VERIFY EXISTING CT CABINET HAS BEEN REMOVED.
2. COORDINATE WITH OWNER TO RETAIN EXISTING DATA CABINETS AND DEVICES ON THIS WALL.
3. SWITCH EXHAUST FAN TO LIGHT CIRCUIT FOR THIS ROOM.



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SALEM FIRE STATION #2

RENOVATION

ELECTRICAL NEW WORK - LIGHTING AND POWER

DRAWN BY: DWG  
 DESIGNED BY: DWG  
 CHECKED BY: DWG  
 DATE: 8/30/24  
 SCALE: AS INDICATED  
 REVISIONS:

ER2.03  
 PROJECT NO 0322005201



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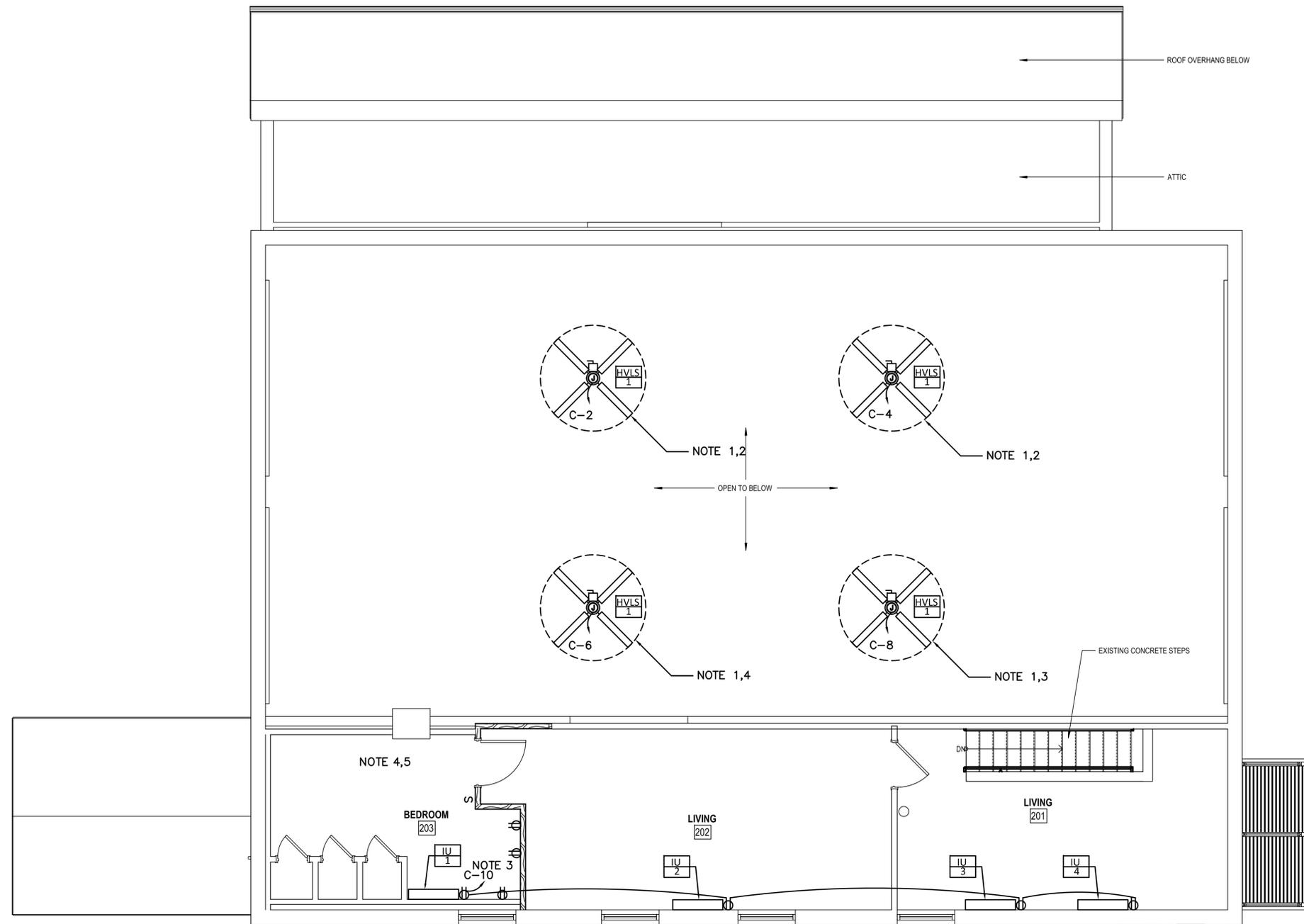
SALEM VA



SALEM FIRE STATION #2  
 RENOVATION  
 ELECTRICAL NEW WORK - SECOND FLOOR

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24165

DRAWN BY: DWG  
 DESIGNED BY: DWG  
 CHECKED BY: DWG  
 DATE: 8/30/24  
 SCALE: AS INDICATED  
 REVISIONS:



NOTES THIS SHEET:

1. RELOCATE EXISTING LIGHTING IN THIS AREA FOR INSTALLATION OF FAN. ADJUST LIGHTS AS REQUIRED TO NOT BE DIRECTLY ABOVE FAN.
2. PROVIDE NECESSARY WIRING FOR CONTROLLER MOUNTED ON WALL. COORDINATE EXACT LOCATION WITH INSTALLER.
3. PROVIDE POWER FOR CONDENSATE PUMPS ASSOCIATED WITH IU UNITS.
4. PROVIDE NEW RECEPTACLES TO REPLACE EXISTING. RECONNECT TO EXISTING CIRCUITS.
5. REINSTALL NEW LIGHTING CONTROLS TO REPLACE EXISTING.

SECOND FLOOR NEW WORK

1/4" = 1'-0"



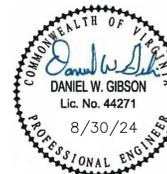
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ER2.04  
 PROJECT NO 03220052.01



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SALEM VA

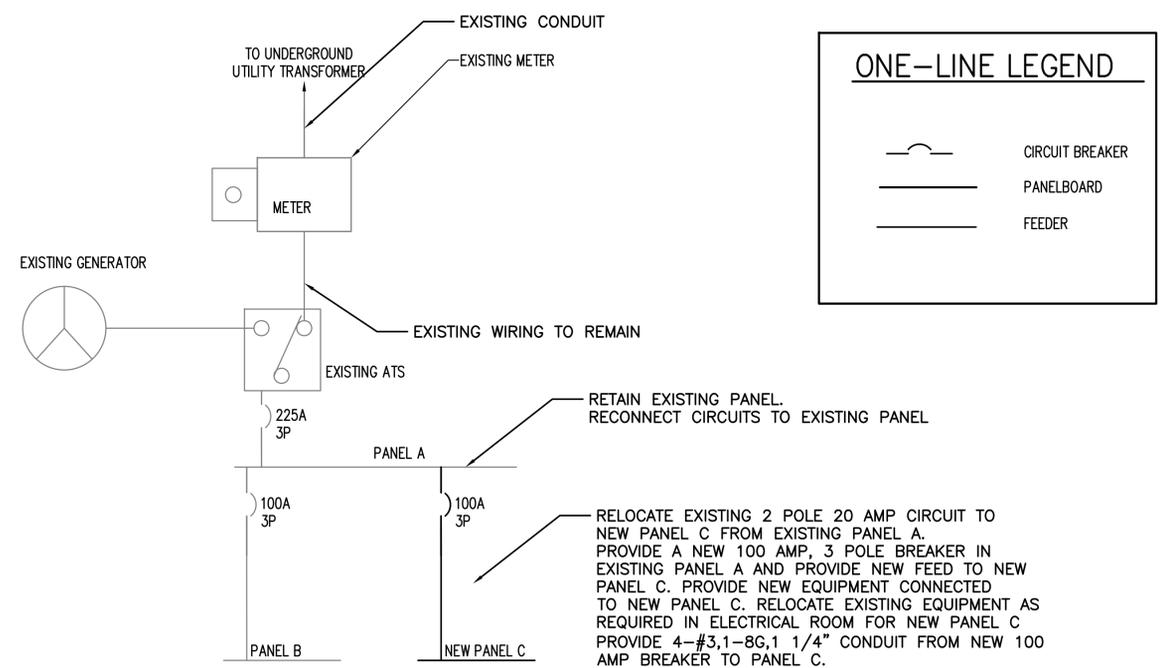


EXISTING PANEL A															
VOLTAGE:		208Y/120		PHASE: 3		BUS AMPS: 225A		WIRE: 4		MAIN BREAKER AMPS: 225A		<input checked="" type="checkbox"/> SURFACE MOUNTED <input type="checkbox"/> FLUSH MOUNTED		kAIC RATING: 22,000	
CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA			CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA				
NO.	P	AMPS	NO	NO	NO	NO	NO	P	AMPS	NO	NO	NO	NO	NO	NO
1	1	20					2	1	20						
3	1	20					4	1	20						
5	1	20					6	1	20						
7	1	20					8	1	20						
9	1	20					10	1	20						
11	1	20					12	1	20						
13	1	20					14	1	20						
15	1	20					16	2	100						
17	2	20					18								
19							20	2	25						
21	1	20					22								
23	1	20					24	2	50						
25	1	20					26								
27	1	20					28	1	20						
29	1	20					30	1	20						
31	1	20					32								
33	1	20					34	3	20						
35	2	20					36								
37															
39	1						40	3	100						
41	1														
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 CONNECTED LOAD				0.0			
TOTAL				0.0	0.0	0.0	0.0	TOTAL				0.0			

\* NOTES  
1. TRACE CIRCUITS LABELED AS UNKNOWN AND IDENTIFY AND UPDATE PANELBOARD SCHEDULES.  
2. RELOCATE EXISTING CIRCUIT TO NEW PANEL C.

EXISTING PANEL B															
VOLTAGE:		208Y/120		PHASE: 3		BUS AMPS: 100A		WIRE: 4		MAIN BREAKER AMPS: MLO		<input checked="" type="checkbox"/> SURFACE MOUNTED <input type="checkbox"/> FLUSH MOUNTED		kAIC RATING: 22,000	
CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA			CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA				
NO.	P	AMPS	NO	NO	NO	NO	NO	P	AMPS	NO	NO	NO	NO	NO	NO
1	2	20					2	1	20						
3							4	1	20						
5	1	20					6	1	20						
7	1	20					8	1	20						
9	1	20					10								
11	2	30					12	1	20						
13							14	1	20						
15	1	20					16	2	30						
17	2	25					18								
19							20	2	30						
21	1	20					22								
41	1	20					42	1	20						
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 CONNECTED LOAD				0.0			
TOTAL				0.0	0.0	0.0	0.0	TOTAL				0.0			

\* NOTES  
1. VERIFY UNKNOWN CIRCUITS AND UPDATE PANELBOARD SCHEDULE.  
2. REMOVE EXISTING CIRCUIT AND REPLACE WITH NEW BREAKER FOR NEW UNIT.



EXISTING ONE LINE DIAGRAM

MODIFIED PANEL A															
VOLTAGE:		208Y/120		PHASE: 3		BUS AMPS: 225A		WIRE: 4		MAIN BREAKER AMPS: 225A		<input checked="" type="checkbox"/> SURFACE MOUNTED <input type="checkbox"/> FLUSH MOUNTED		kAIC RATING: 22,000	
CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA			CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA				
NO.	P	AMPS	NO	NO	NO	NO	NO	P	AMPS	NO	NO	NO	NO	NO	NO
1	1	20					2	1	20						
3	1	20					4	1	20						
5	1	20					6	1	20						
7	1	20					8	1	20						
9	1	20					10	1	20						
11	1	20					12	1	20						
13	1	20					14	1	20						
15	1	20					16	2	100						
17	2	20					18								
19							20	2	40						
21	1	20					22								
23	1	20					24	2	50						
25	1	20					26								
27	1	20					28	1	20						
29	1	20					30	1	20						
31	1	20					32								
33	1	20					34	3	20						
35	1	20					36								
37															
39	3	100					40	3	100						
41	1														
TOTAL LEFT SIDE				5.0	6.0	2.7	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 CONNECTED LOAD				13.7			
TOTAL				5.0	6.0	2.7	0.0	TOTAL				13.7			

\* NOTES  
1. TRACE CIRCUITS LABELED AS UNKNOWN AND IDENTIFY AND UPDATE PANELBOARD SCHEDULES.

MODIFIED PANEL B															
VOLTAGE:		208Y/120		PHASE: 3		BUS AMPS: 100A		WIRE: 4		MAIN BREAKER AMPS: MLO		<input checked="" type="checkbox"/> SURFACE MOUNTED <input type="checkbox"/> FLUSH MOUNTED		kAIC RATING: 22,000	
CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA			CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA				
NO.	P	AMPS	NO	NO	NO	NO	NO	P	AMPS	NO	NO	NO	NO	NO	NO
1	2	20					2	1	20						
3							4	1	20						
5	1	20					6	1	20						
7	1	20					8	2	20						
9	1	20					10								
11	2	30					12	1	20						
13							14	1	20						
15	1	20					16	2	30						
17	2	25					18								
19							20	2	30						
21	1	20					22								
41	1	20					42	1	20						
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 CONNECTED LOAD				0.0			
TOTAL				0.0	0.0	0.0	0.0	TOTAL				0.0			

\* NOTES  
1. VERIFY UNKNOWN CIRCUITS AND UPDATE PANELBOARD SCHEDULE.  
2. REMOVE EXISTING CIRCUIT AND REPLACE WITH NEW BREAKER FOR NEW UNIT.

NEW PANEL C															
VOLTAGE:		208Y/120		PHASE: 3		BUS AMPS: 100A		WIRE: 4		MAIN BREAKER AMPS: MLO		<input checked="" type="checkbox"/> SURFACE MOUNTED <input type="checkbox"/> FLUSH MOUNTED		kAIC RATING: 22,000	
CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA			CKT NO.	BRKR	WIRE	CIRCUIT DESCRIPTION	LOAD - KVA				
NO.	P	AMPS	NO	NO	NO	NO	NO	P	AMPS	NO	NO	NO	NO	NO	NO
1	2	40					2	1	20						
3							4	1	20						
5	1	20					6	1	20						
7	1	20					8	1	20						
9	1	20					10	1	20						
11	1	20					12	1	20						
13							14	1	20						
15	1	20					16	1	20						
17	1	20					18	1	20						
19	1	20					20	1	20						
21	2	20					22	1	20						
23	1	20					24	1	20						
TOTAL LEFT SIDE				3.0	4.0	1.5	0.0	TOTAL RIGHT SIDE				2.0	2.0	1.2	0.0
TOTAL RIGHT SIDE				2.0	2.0	1.2	0.0	TOTAL CONNECTED LOAD				13.7			
TOTAL				5.0	6.0	2.7	0.0	TOTAL				13.7			

\* NOTES  
1. VERIFY UNKNOWN CIRCUITS AND UPDATE PANELBOARD SCHEDULE.



2100 LUBNA DR  
CHRISTIANSBURG VA 24073  
P. 540.998.6069

SALEM FIRE STATION #2  
RENOVATION  
ELECTRICAL DETAILS

DRAWN BY DWG  
DESIGNED BY DWG  
CHECKED BY DWG  
DATE 8/30/24  
SCALE AS INDICATED  
REVISIONS

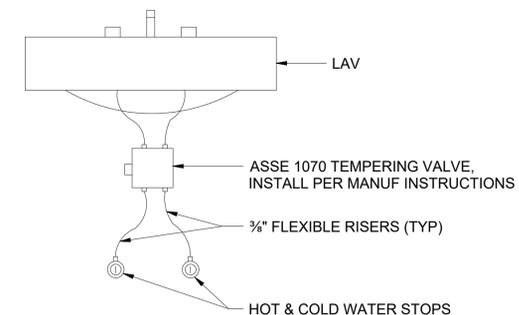
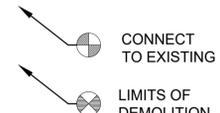
ER3.01  
PROJECT NO 032006201

**PLUMBING FIXTURE SCHEDULE:**

<p>WC-1</p> <p>L-1</p> <p>SH-1</p> <p>EWC-1:</p> <p>FD</p>	<p>WATER CLOSET: AMERICAN STANDARD "CHAMPION 4" MODEL, 1.6 GPF WATERSAVING, VITREOUS CHINA ELONGATED SIPHON JET BOWL, FLOOR MOUNTED, WHITE EXTRA HEAVY DUTY SOLID PLASTIC SEAT WITH COVER, CHECK HINGE, ADA COMPLIANT WITH TRIP LEVER ON OPEN STALL SIDE (LEFT IF FACING WC).</p> <p>AMERICAN STANDARD "LUCERNE" 0355.012 WHITE VITREOUS CHINA WALL HUNG HANDICAP LAVATORY, THREE HOLE MOUNT FOR 4" CENTERS, WITH MOEN 8413F05 CENTERSET CHROME FAUCET WITH SINGLE LEVER HANDLE, METAL GRID STRAINER, OFFSET PVC P-TRAP, FLEXIBLE TUBING SUPPLIES, COMPRESSION FITTINGS AND STOPS. PROVIDE TRUEBRO #102W PRE- MOLDED INSULATION ON BOTH WATER SUPPLIES AND DRAIN. PROVIDE WITH WALL CARRIER.</p> <p>SHOWER, AQUATIC BATH, MODEL 1363BFRF, 36x36x75 ONE-PIECE SHOWER WITH FOLDING SEAT ON LEFT SIDE, VERTICAL ENTRY BAR, L SHAPE HORIZONTAL GRAB BAR, AND HAND HELD SPRAYER AND SLIDE BAR. PROVIDE WITH PRESSURE BALANCING MIXING VALVE IN WALL, 2" BRASS SHOWER DRAIN WITH STRAINER, AND SHOWER CURTAIN WITH ROD. PROVIDE SHOWER SYSTEM WITH RIGHT HAND FIXTURE WALL AS INDICATED ON PLANS.</p> <p>ELECTRIC WATER COOLER, ELKAY MODEL LZS8L. ELKAY® WALL MOUNT ADA COOLER FILTERED REFRIGERATED LIGHT GRAY GRANITE. CHILLING CAPACITY OF 8.0 GPH (GALLONS PER HOUR) OF 50° F DRINKING WATER, BASED ON 80°F INLET WATER AND 90° F AMBIENT, PER ASHRAE 18 TESTING. FEATURES SHALL INCLUDE FILTERED, FURNISHED WITH FLEXI-GUARD® SAFETY BUBBLER. ELECTRONIC FRONT AND SIDE BUBBLER PUSHBAR ACTIVATION. PRODUCT SHALL BE WALL MOUNT (ON WALL), FOR INDOOR APPLICATIONS, SERVING 1 STATION(S). UNIT SHALL BE CERTIFIED TO UL 399 AND CAN/CSA C22.2 NO. 120. PROVIDE WITH WALL CARRIER.</p> <p>FLOOR DRAIN, ZURN MODEL Z415, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS.</p> <p>FOR MECHANICAL ROOM DRAINS NOT RECIEVING INDIRECT WASTE, FINISHED SPACES INCLUDING TOILET, SHOWER, LOCKER ROOMS, ETC., PROVIDE WITH TYPE B, ROUND, POLISHED NICKEL BRONZE, LIGHT DUTY HEEL PROOF STRAINER.</p> <p>ALL FLOOR DRAINS SHALL BE PROTECTED AGAINST LOSS OF TRAP SEAL BY EVAPORATION BY INSTALLATION OF ELASTOMERIC TRAP GUARD DRAIN INSERT, EQUAL TO PROSET SYSTEMS MODEL #TG.</p>
--	--

LEGEND	
	BRANCH CONNECTION - BOTTOM OF MAIN
	BRANCH CONNECTION - SIDE OF MAIN
	BRANCH CONNECTION - TOP OF MAIN
	PIPE DOWN OR PIPE FROM BELOW
	PIPE UP OR PIPE FROM ABOVE
	DIRECTION OF FLOW
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRCULATING
	NATURAL GAS PIPING
	SANITARY SEWER, GREASE WASTE OR DRAIN
	SANITARY VENT
	CLEANOUT FLUSH WITH FLOOR
	OUTLET WITH P-TRAP
	WALL HYDRANT
	WATER HAMMER ARRESTER
	BALL VALVE
	AUTOMATIC GAS SHUT OFF VALVE, INTERLOCK WITH HOOD
	SHUTOFF VALVE IN VERTICAL
	CHECK VALVE
	T&P RELIEF VALVE
	BALANCING COCK
	UNION
	PRESSURE GAUGE AND GAUGE COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	RELIEF VALVE
	BACKFLOW PREVENTER (BFP)
	EXISTING (EQUIPMENT OR DUCTWORK/PIPING)
	DEMOLITION (EQUIPMENT, PIPING, DUCTWORK, ETC.)

ABBREVIATIONS	
AAV	AIR ADMITTANCE VALVE
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
BTU	BRITISH THERMAL UNIT
BEL	BELOW
CLG	CEILING
CO	CLEANOUT
CONN	CONNECT CONNECTION
CW	COLD WATER
CONT	CONTINUED
DN	DOWN
EA	EACH
ELEV	ELEVATION
EWC	ELECTRIC WATER COOLER
F	DEGREES FAHRENHEIT
FD	FLOOR DRAIN
FIN	FINISHED
FLR	FLOOR
FR	FROM
FT	FEET
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
HB	HOSE BIBB
HC	HANDICAPPED ACCESSIBLE
HW	HOT WATER
HP	HORSEPOWER
IN	INCH, INCHES
INV	INVERT
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MIN	MINIMUM
SH	SHEET
TYP	TYPICAL
V	SANITARY VENT
VTR	VENT THRU ROOF
W	SANITARY WASTE
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTER
ZVB	MEDICAL GAS ZONE VALVE BOX



**TYPICAL TEMPERING VALVE FOR LAV'S**



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SALEM, VA



**SALEM FIRE STATION #2**  
 RENOVATION  
**PLUMBING LEGEND, SCHEDULES, AND DETAILS**  
 415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24163

DRAWN BY: JNB  
 DESIGNED BY: JNB  
 CHECKED BY: JNB  
 DATE: 2024-08-30  
 SCALE: As indicated  
 REVISIONS:

PLUMBING SPECIFICATIONS:

1. GENERAL PROVISIONS:

- 1.A. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE, ALL FEDERAL, STATE, AND CITY CODES, ORDINANCES, AND STANDARDS.
- 1.B. THE PLANS ARE DIAGRAMMATIC IN NATURE AND BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE USED. INSTALLATION SHALL BE WITHIN THE LIMITATIONS IMPOSED BY THE ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, AND PLUMBING REQUIREMENTS WITH ADEQUATE SPACE FOR MAINTENANCE.
- 1.C. 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 OWNER.
- 1.D. MAJOR ITEMS ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
- 1.E. A TRADE NAMES AND CATALOG NUMBERS SHALL BE INTERPRETED AS ESTABLISHING A GENERAL DESIGN AND STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. UNLESS STATED OTHERWISE, THE CONTRACTOR MAY USE ANY ARTICLE WHICH, IN HIS JUDGEMENT, AND WITH WRITTEN COMMENT FROM THE ARCHITECT/ENGINEER INDICATING NO OBJECTION, IS EQUAL OR SUPERIOR TO THAT SPECIFIED. DRAWINGS SHOWING CHANGES OR REVISIONS REQUIRED BY THE SUBSTITUTION FOR SPECIFIED ITEMS SHALL BE SUBMITTED WITH THE SHOP DRAWING DATA, AND THE COSTS OF ALL SUCH CHANGES SHALL BE BORNE BY THE CONTRACTOR.
- 1.F. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
- 1.G. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND/OR OTHER RELEVANT TRADES.
- 1.H. ALL PIPING SHALL BE INSTALLED ABOVE THE CEILING UNLESS INDICATED OTHERWISE. ALL WATER PIPING AND P-TRAPS SHALL BE INSTALLED WITHIN THE BUILDINGS INSULATION ENVELOPE OR BE PROVIDED WITH A FREEZE PROTECTION SYSTEM.
- 1.I. 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 WITH MANUFACTURERS STANDARDIZATION SOCIETY (MSS) STANDARDS SP-58, 69 AND 89.
- 1.J. THE CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.

2. SUBMITTAL AND SHOP DRAWINGS:

- 2.A. SUBMIT MANUFACTURER'S CERTIFIED DATA RELATIVE TO ALL EQUIPMENT, PIPING, CONTROLS, ETC. REQUIRED FOR THE INSTALLATION OF THE PLUMBING AND FIRE PROTECTION SYSTEMS. SUBMIT FOR REVIEW ALL NECESSARY ENGINEERING, PRODUCT AND INSTALLATION DATA, SHOP DRAWINGS, SAMPLES ETC. FOR ALL EQUIPMENT, MATERIAL, AND SYSTEMS TO ASCERTAIN COMPLIANCE WITH THE TECHNICAL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- 2.B. SUBMIT A DIGITAL PDF OF ALL NECESSARY DATA, CUTS, MANUFACTURER'S SELECTIONS, CATALOGS, BULLETTINS, INSTALLATION INSTRUCTIONS, DRAWINGS, DIAGRAMS, CURVES, ETC. CLEARLY INDICATE ON THE SUBMITTED DATA, THE MANUFACTURER'S NAME, PRODUCT NUMBER(S), OPTIONS, EQUIPMENT CAPACITY, DIMENSIONAL DATA, WEIGHTS, AND OTHER APPLICABLE TECHNICAL DATA FOR THE PROJECT.
- 2.C. TRADE NAMES, MANUFACTURERS, AND CATALOGUE NUMBERS ARE MENTIONED HEREIN AND ON THE DRAWINGS SOLELY IN ORDER TO ESTABLISH A STANDARD FOR THE TYPE, GENERAL DESIGN, AND QUALITY OF PRODUCT REQUIRED. OTHER PRODUCTS SIMILAR IN DESIGN OF EQUIVALENT QUALITY CAPABLE OF FITTING WITHIN THE SPACES ALLOCATED AND COMPLYING WITH THE DRAWINGS AND SPECIFICATIONS WILL BE CONSIDERED AFTER THE CONTRACT IS LET

UNLESS "PRIOR APPROVAL" REQUIREMENTS ARE SET FORTH IN THESE DOCUMENTS.

- 2.D. REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FITTING THE EQUIPMENT IN THE SPACE ALLOTTED WITH SPACE FOR ALL CONNECTIONS AND SERVICING AND FOR THE COORDINATION OF THE WORK WITH WORK OF OTHER TRADES.
- 2.E. THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS AND SHOP DRAWINGS AND INDICATE BY STAMP OR LETTER THAT HE HAS REVIEWED THEM, BEFORE FORWARDING THEM TO THE ARCHITECT AND/OR ENGINEER. SUBMITTALS AND DRAWINGS WILL BE RETURNED AFTER REVIEW INDICATING WHETHER EXCEPTIONS ARE TAKEN, THE SUBMITTAL RETURNED WITH CORRECTIONS, OR IS COMPLETELY REJECTED. RESUBMISSION OF REVISED SUBMITTALS AND SHOP DRAWINGS, IF REQUIRED, SHALL BE DONE BEFORE INSTALLATION AND CONSTRUCTION IS BEGUN.
- 2.F. CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS AND DRAWINGS DURING THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES, TECHNIQUES OF CONSTRUCTION, COORDINATING THE WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER. REVIEW OF THE SUBMITTALS SHALL NOT PERMIT ANY DEVIATION FROM PLANS AND SPECIFICATIONS.
- 3. AS-BUILT DRAWINGS:
  - 3.A. MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT DRAWINGS TO THE ARCHITECT/ENGINEER.
- 4. OPERATION AND MAINTENANCE MANUALS:
  - 4.A. UPON COMPLETION OF THE PROJECT, SUBMIT ALL OPERATION AND MAINTENANCE MANUALS, WARRANTIES, SPARE PARTS LIST, AS-BUILT DRAWINGS, TEST AND BALANCE REPORTS, AND LETTER OF GUARANTEE ALL BOUND IN THREE RING BINDERS, CLEARLY SHOWING WHICH EQUIPMENT WAS SUPPLIED TO THE JOB.
- 5. PIPING SPECIALTIES:
  - 5.A. 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.
  - 5.B. PIPE ESCUTCHEONS: INSTALL PIPE ESCUTCHEONS ON EACH PIPE PENETRATION THRU FLOORS, WALLS PARTITIONS, AND CEILINGS WHERE PENETRATION IS EXPOSED TO VIEW AND ON EXTERIOR OF BUILDING. SECURE ESCUTCHEON TO PIPE OR INSULATION SO ESCUTCHEON COVERS PENETRATION HOLE, AND IS FLUSH WITH ADJOINING SURFACE. PROVIDE SHEET STEEL ESCUTCHEONS, SOLID OR SPLIT HINGED. FOR AREAS WHERE WATER AND CONDENSATION CAN BE EXPECTED TO ACCUMULATE, PROVIDE CAST BRASS OR SHEET BRASS ESCUTCHEONS, SOLID OR SPLIT HINGED.
  - 5.C. PIPE SLEEVES: INSTALL PIPE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, CEILINGS, AND ROOFS. DO NOT INSTALL SLEEVES THROUGH STRUCTURAL MEMBERS OF WORK, EXCEPT AS DETAILED ON DRAWINGS, OR AS REVIEWED BY ARCHITECT/ENGINEER. SIZE SLEEVES SO THAT PIPING AND INSULATION (IF ANY) WILL HAVE FREE MOVEMENT IN SLEEVE, INCLUDING ALLOWANCE FOR THERMAL EXPANSION; BUT NOT LESS THAN 2 PIPE SIZES LARGER THAN PIPING RUN. INSTALL LENGTH OF SLEEVE EQUAL TO THICKNESS OF CONSTRUCTION PENETRATED, AND FINISH FLUSH TO SURFACE; EXCEPT FLOOR SLEEVES. EXTEND FLOOR SLEEVES 1/4 INCH ABOVE LEVEL FLOOR FINISH, AND 3/4 INCH ABOVE FLOOR FINISH SLOPED TO DRAIN. PROVIDE TEMPORARY SUPPORT OF SLEEVES DURING PLACEMENT OF CONCRETE AND OTHER WORK AROUND SLEEVES, AND PROVIDE TEMPORARY CLOSURE TO PREVENT CONCRETE AND OTHER MATERIALS FROM ENTERING SLEEVES.
  - 5.D. WATER HAMMER ARRESTORS (WHA): PROVIDE AT ALL FAST OPENING WATER VALVES INCLUDING WATER CLOSETS, URINALS, AND CLOTHES WASHERS. SHALL BE ZURN MODEL 1260XL OR EQUIVALENT AND SHALL BE SIZED AND PLACED WITHIN THE SYSTEM AS RECOMMENDED BY THE MANUFACTURER.

6. INSULATION:

- 6.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 ASTM E84 METHOD. INSULATION SHALL BE LABELED BY THE MANUFACTURER. THE LABEL SHALL INDICATE THE INSULATING VALUE, FLAME SPREAD AND SMOKE-DEVELOPED RATING.
- 6.B. 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.
- 6.C. MATERIALS:
  - 6.C.A. GLASS FIBER PIPE INSULATION: HEAVY DENSITY PREFORMED PIPE INSULATION WITH OPERATING TEMPERATURE RANGE OF -60 DEGREES F TO 350 DEGREES F, THERMAL CONDUCTIVITY "K"=0.24 BTU-IN/HOUR-SF-DEG F AT 100 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.
  - 6.C.B. CELLULAR FOAM PIPE INSULATION: TUBULAR, FLEXIBLE, FIRE RESISTANT INSULATION WITH OPERATING TEMPERATURE RANGE OF -40 DEGREES F TO 220 DEGREES F, THERMAL CONDUCTIVITY "K"=0.27 BTU-IN/HOUR-SF-DEG F AT 75 DEGREES F. NO JACKET REQUIRED. EQUAL TO ARMSTRONG ARMAFLEX AP.
  - 6.C.C. A POLYETHYLENE PIPE INSULATION: INSULATION MATERIALS CORPORATION OF AMERICA (MCOA), FLEXIBLE CLOSED CELL POLYETHYLENE TUBING, ASTM C534, "K"=0.24 AT 75 DEGREES F, SERVICE TEMPERATURE -110F TO 210F. NO JACKET REQUIRED.
- 6.D. OMIT INSULATION ON EXPOSED PLUMBING FIXTURE RUNOUTS FROM FACES OF WALL OR FLOOR TO FIXTURE; ON UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, AND EXPANSION JOINTS.
- 6.E. COVER VALVES, FITTINGS AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN.
- 6.F. ALL DOMESTIC WATER PIPING ABOVE GROUND INCLUDING COLD, HOT, AND HOT WATER RE-CIRCULATING PIPING SHALL BE INSULATED WITH A MINIMUM 1/2" THICK INSULATION.
- 7. PLUMBING PIPING:
  - 7.A. DOMESTIC WATER PIPING SHALL BE COPPER TUBE AND FITTINGS IN ACCORDANCE WITH ASTM B88, TYPE L HARD DRAWN COPPER. JOINTS SHALL BE MADE WITH LEAD FREE SOLDER.
  - 7.B. STORM, SOIL, WASTE, AND VENT PIPING BELOW GRADE SHALL BE SCHEDULE 40 PVC PIPE AND FITTINGS. PVC SCHEDULE 40 PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785. INJECTION MOLDED PVC SCHEDULE 40 FITTINGS SHALL CONFORM TO ASTM D 2466. PIPE AND FITTINGS SHALL BE MANUFACTURED AS A SYSTEM AND BE THE PRODUCT OF ONE MANUFACTURER. PIPE AND FITTINGS SHALL CONFORM TO NSF INTERNATIONAL STANDARD 61 AND THE HEALTH-EFFECTS PORTION OF NSF STANDARD 14.
  - 7.C. STORM, SOIL, WASTE, AND VENT PIPING ABOVE GRADE SHALL BE HUBLESS CAST IRON TYPE DESIGNED FOR SAID APPLICATION. HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE® AND LISTED BY NSF® INTERNATIONAL. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310, SHALL BE MANUFACTURED IN THE UNITED STATES, AND BE CERTIFIED BY NSF® INTERNATIONAL.
  - 7.D. CONDENSATE DRAINS SHALL BE TYPE L HARD DRAWN COPPER. JOINTS SHALL BE MADE WITH LEAD FREE SOLDER.
  - 7.E. SLOPE ALL DRAIN LINES AT 1/4 INCH PER FOOT FOR

SIZES LESS THAN 4 INCHES. SLOPE AT 1/8 INCH PER FOOT FOR SIZES 4 INCH AND LARGER.

- 7.F. SOIL, WASTE, AND VENT PIPING BELOW GRADE SHALL BE A MINIMUM OF 2 INCH AND SHALL BE PROVIDED WITH METALLIC TRACING/DETECTION WIRE.
- 7.G. VENTS SHALL EXTEND A MINIMUM OF 12 INCHES ABOVE THE ROOF. ROOF FLASHING SHALL BE PROVIDED AND COORDINATED WITH THE GENERAL AND ROOFING CONTRACTORS.
- 7.H. TRENCHING AS REQUIRED FOR UNDERGROUND PIPING SHALL BE GRADED TO UNIFORM PITCH AND SHALL BE NO WIDER THAN NECESSARY FOR PIPING INSTALLATION. CLEAN BACKFILL SHALL BE USED AND THOROUGHLY TAMPED IN LAYERS NOT EXCEEDING 6 INCHES TO A MINIMUM DEPTH OF 1 FOOT ABOVE PIPE. COMPACTED BACKFILL SHALL BE USED FOR THE ENTIRE DEPTH OF EXCAVATION UNDER SLAB ON GRADE CONSTRUCTION.
- 8. PLUMBING FIXTURES, PUMPS, AND WATER HEATERS SHALL BE PROVIDED AND INSTALLED AS PER THE PLUMBING FIXTURE SCHEDULE. ALL EXPOSED FIXTURE SUPPLIES AND WASTE LINES SHALL BE CHROME PLATED. NO EXPOSED COPPER, PVC, AND/OR CAST IRON IS ALLOWED.
- 9. CLEANOUTS SHALL BE THE SAME SIZE AS LINE SERVED, BUT NOT LARGER THAN 4 INCHES, AND SHALL BE PROVIDED AT THE BASE OF EACH SOIL AND WASTE STACK, AT ALL POINTS WHERE DIRECTION CHANGE IS MORE THAN 45 DEGREES, AT MINIMUM INTERVALS OF 50 FEET FOR 4 INCH AND SMALLER PIPING, AT MINIMUM INTERVALS OF 100 FEET FOR PIPING LARGER THAN 4 INCHES, AS REQUIRED BY CODE AND AS INDICATED ON THE DRAWINGS. COVERS SHALL BE SET FLUSH WITH FLOOR OR WALL.
- 10. PLUMBING VALVES
  - 10.A. PROVIDE SHUT-OFF VALVE AND UNION OR EQUIVALENT AT EACH HOT AND COLD WATER EQUIPMENT CONNECTION. PROVIDE SHUTOFF VALVE ON EACH BRANCH OR RISER THAT SERVES TWO OR MORE PLUMBING FIXTURES.
  - 10.B. GATE VALVES 2-1/2 INCHES AND SMALLER: ALL BRONZE, RISING STEM, SOLID WEDGE DISC. STOCKHAM B-100 OR B-108.
  - 10.C. GLOBE VALVES: ALL BRONZE, RENEWABLE COMPOSITION DISC. STOCKHAM B-16 OR B-14-T.
  - 10.D. CHECK VALVES IN HORIZONTAL PIPES: 2 INCHES AND SMALLER: ALL BRONZE, REGRINDING BRONZE DISC, HORIZONTAL SWING, Y-PATTERN. STOCKHAM B-3190R B-309.
  - 10.E. CHECK VALVES IN VERTICAL PIPES AND PUMP DISCHARGE: SILENT CHECK VALVE WITH SEMI-STEEL BODY, BRONZE TRIM AND STAINLESS STEEL SPRING. METRAFLEX 700 SERIES.
  - 10.F. BALL VALVES MAY BE USED IN LIEU OF GATE VALVES 2 INCHES AND SMALLER. BALL VALVES SHALL HAVE BRONZE BODY, BRONZE BALL AND TFE SEATS AND SEALS. STOCKHAM S-216BRRT OR S-216BRRS.
- 11. CLEANING AND TESTING
  - 11.A. ALL WATER PIPING, VALVES, ETC. SHALL BE THOROUGHLY FLUSHED OF FOREIGN MATTER AND TESTED FOR LEAKS IN ACCORDANCE WITH THE PLUMBING AND BUILDING CODE, LATEST EDITION. ANY LEAKAGE SHALL BE REPAIRED. DISINFECT DOMESTIC WATER PIPING INCLUDING WATER SERVICE PIPING IN ACCORDANCE WITH AWWA C601.
  - 11.B. ALL DRAIN, WASTE AND VENT PIPING SHALL BE TESTED FOR LEAKS IN ACCORDANCE WITH THE PLUMBING AND BUILDING CODE CODE, LATEST EDITION. NO VISIBLE DROP IN WATER LEVEL WILL BE ACCEPTABLE.

END OF SPECIFICATIONS.



**BALZER & ASSOCIATES**

PLANNERS / ARCHITECTS  
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Roanoke, VA 24018  
540.772.9580



SALEM VA



SALEM FIRE STATION #2

RENOVATION

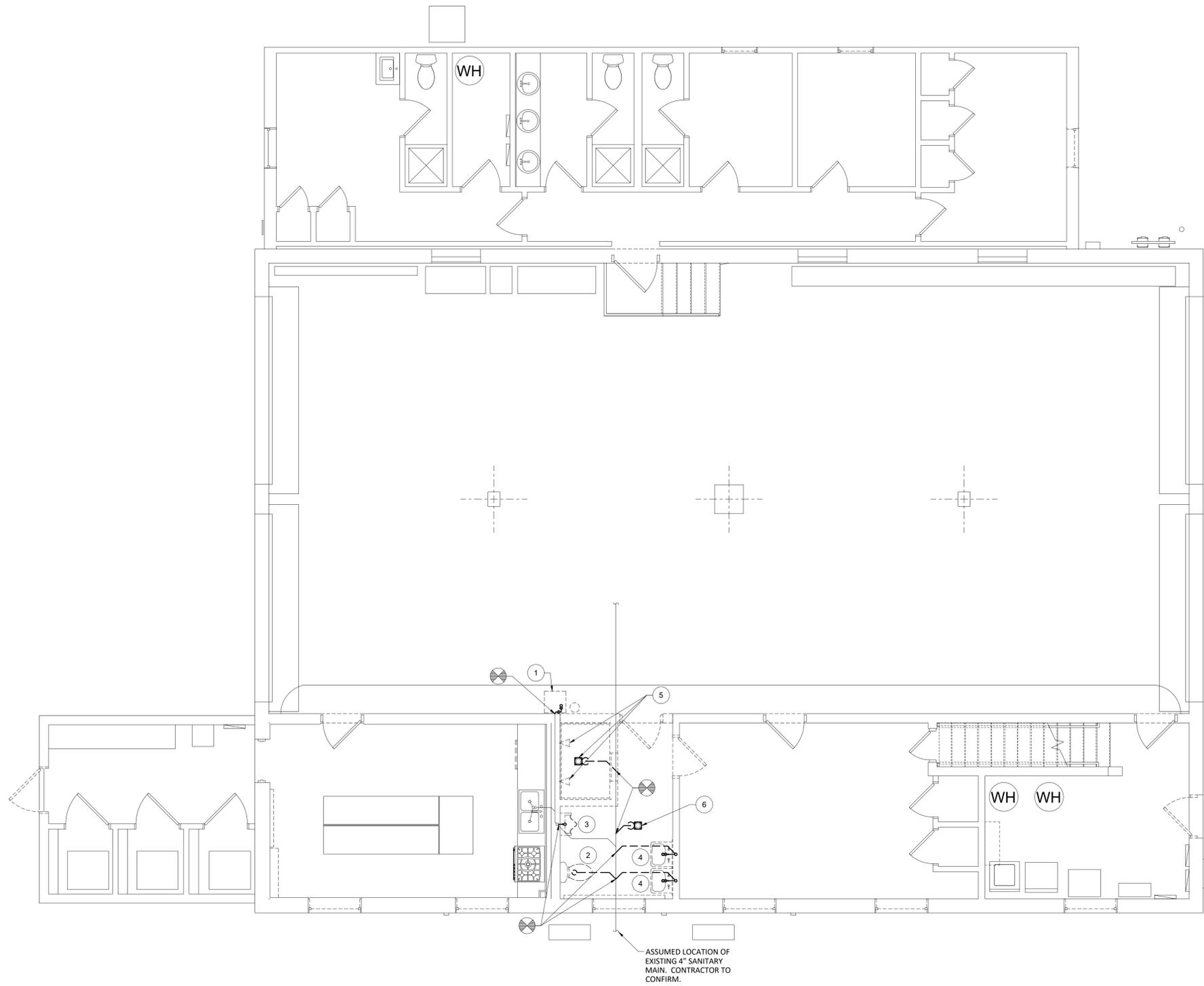
PLUMBING SPECIFICATIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24153

DRAWN BY JNB  
DESIGNED BY JNB  
CHECKED BY JNB  
DATE 2024-08-30  
SCALE As indicated  
REVISIONS

PR1.02

PROJECT NO 03220052.01



**1 PLUMBING DEMOLITION PLAN - 1ST FL**  
 PR2.01 SCALE = 1/4"=1'-0"

**KEYED NOTES:**

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING.

**KEYED NOTES:**

1. EXISTING WATER COOLER TO BE REMOVED IN ITS ENTIRETY. REMOVE EXISTING WASTE AND WATER PIPING AND CAP AT WALL.
2. EXISTING FLOOR MOUNTED WATER CLOSET AND ASSOCIATED FLUSH VALVE TO BE REMOVED IN ITS ENTIRETY. REMOVE ASSOCIATED BRANCH PIPING BACK TO MAIN AND CAP.
3. EXISTING URINAL AND ASSOCIATED FLUSH VALVE TO BE REMOVED IN ITS ENTIRETY. REMOVE ASSOCIATED BRANCH PIPING BACK TO MAIN AND CAP.
4. EXISTING LAVATORY TO BE REMOVED IN ITS ENTIRETY. REMOVE ASSOCIATED BRANCH PIPING BACK TO MAIN AND CAP.
5. EXISTING SHOWER HEADS (X2) AND SHOWER DRAINS TO BE REMOVED IN THEIR ENTIRETY. REMOVE ASSOCIATED BRANCH PIPING BACK TO MAIN AND CAP.
6. EXISTING FLOOR DRAIN TO BE REMOVED. REMOVE WASTE PIPING BACK TO MAIN AND CAP.



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SALEM VA



SALEM FIRE STATION #2

RENOVATION

PLUMBING DEMOLITION PLAN - FIRST FLOOR

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24163

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

**PR2.01**

PROJECT NO 03220052.01

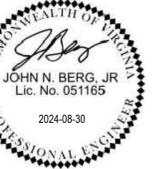


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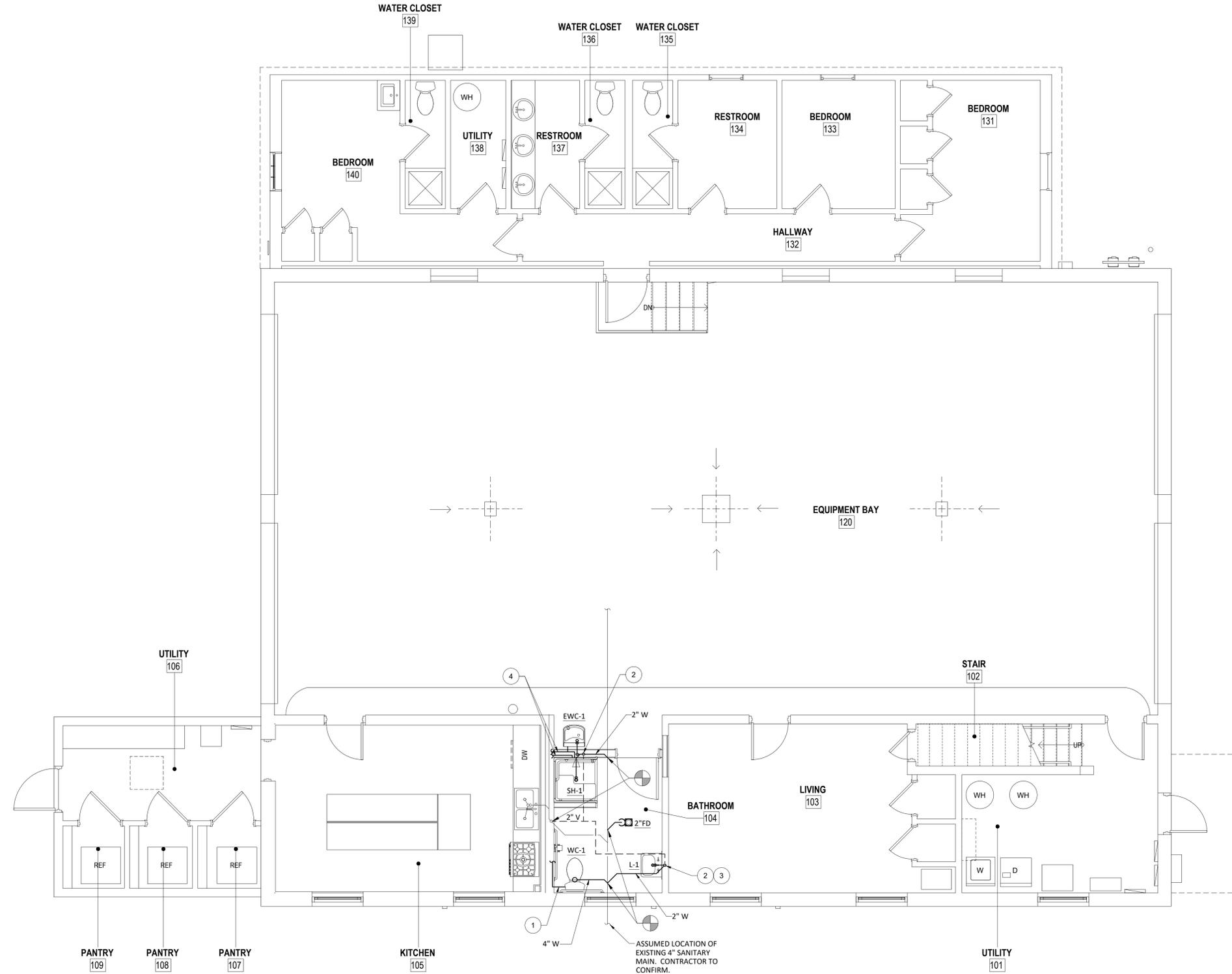
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SALEM VA



KEYED NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING.

KEYED NOTES:

1. EXTEND 1/2" CW FROM EXISTING MAIN IN PLUMBING CHASE TO NEW WATER CLOSET. PROVIDE WALL STOP.
2. 1-1/2" VENT AND 2" WASTE DOWN.
3. EXTEND 1/2" CW AND 1/2" HW TO NEW LAVATORY FROM REMOVED SINK.
4. EXTEND 1/2" CW AND 1/2" FROM EXISTING MAINS IN PLUMBING CHASE TO SHOWER AND CONNECT 1/2" CW TO NEW WATER COOLER.

**1 PLUMBING NEW WORK PLAN - 1ST FL**  
 PR3.01 SCALE = 1/4"=1'-0"

SALEM FIRE STATION #2  
 RENOVATION  
 PLUMBING NEW WORK PLAN - FIRST FLOOR

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24163





**OUTLINE SPECIFICATIONS**

**000000 CITY OF SALEM BIDDING NOTES**

- The outline specifications for product specifications for any product specifically specified are "basis of design" products that establish the level of quality and type of material for those products. Alternate products that meet the same level of quality and same specifications will be considered, to be submitted to architect and owner for review prior to award of contract.
- Construction elements not specifically specified with product selections have been provided with performance specifications. All building products for those items shall meet the performance specifications, to be verified by architect and/or owner during submittal/shop drawing review.
- Unit prices for various building/construction elements shall be provided with bids or submitted prior to contract award. Unit prices shall be given for the following items:
  - Footing/foundation excavation (\$ / linear foot)
  - Concrete sidewalk and base (\$ / linear foot)
  - Rock excavation (\$ / linear foot)
  - Hauling (\$ / ton / mile)

**011000 SUMMARY**

- Contractor shall verify all existing conditions and drawing dimensions prior to commencing any work. Any inconsistencies 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 the inconsistency.
- Under no circumstances shall these drawings be used for shop drawings.
- Work noted as "NIC" is not part of this contract and will be handled by Owner under separate contract.
- Work not indicated on a part of the drawings, but reasonably implied to be similar to that shown at corresponding pieces, shall be repeated.
- In case of conflict between the General Notes, Specifications, and Drawings, the most stringent requirements shall govern unless Architect instructs otherwise.
- Not all details, equipment, systems, or materials sections are included in the documents. The Contractor shall base their 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 that are reasonably and normally included in a completed project of similar scope, in compliance with all laws, codes and ordinances.
- Do not scale the drawings. Rely on written dimensions as given.
- All interior dimensions shown on the plans are from face of stud unless otherwise noted. Exterior wall dimensions are from interior face of stud to exterior face of sheathing. Otherwise, all dimensions are from interior face of exterior wall to face of stud. Dimensions shown on floor plans, sections, elevations, and details are to face of stud, masonry, or concrete gridlines, unless otherwise noted.
- All dimensions shown on the plans to accessible (ICC A117.1-2009) relevant building features/fixtures are from face of finish material (both floors and walls). Make special note of dimensions indicated as "clear" or "above finished floor".
- Contractor shall obtain and maintain access to site to copies of all relevant code resources for reference. Editions shall be per the current version of the Virginia Construction Code (indicated in the code summary) and referenced standards per the Virginia Construction Code.

**012100 ALLOWANCES**

- Lump sum allowances, unit-cost allowances, and quantity allowances shall include cost to Contractor of specific products and materials under allowance and shall include taxes, freight, and delivery to project site. Unless otherwise indicated, Contractor's costs for ordering and handling at project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Contractor under allowance shall be included as part of the contract sum and not part of the allowance.
- Contingency allowances are to provide an equitable way to reimburse Contractor for unknown costs associated with unforeseen events or systems during construction. Contractor's overhead, profit, and related costs for products and equipment under the contingency allowance are included in the allowance. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs. At project closeout, credit unused amounts remaining in the contingency allowance to Owner.

**012200 UNIT PRICES**

- Unit price is an amount incorporated into the agreement, applicable during the duration of the work as a price per unit of measurement for materials, equipment, or works, or a portion of the unit, added to or deducted from the contract sum by appropriate modification, if the scope of work or estimated quantities of work required by the contract documents are increased or decreased. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to contractor.
- Agreements between Contractor and Owner shall include an agreed unit price for removal of unsatisfactory soil and replacement with satisfactory soil material. Unsatisfactory soil excavation and disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required.
- Agreements between Contractor and Owner shall include an agreed unit price for removal of unsatisfactory mass rock and replacement with satisfactory soil material. Mass rock excavation and disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required.

**012300 ALTERNATES**

- The following bid alternates are included in these drawings and shall be bid as alternate prices and either an "add" or "deduct" on the bid form. Any element not listed as part of an alternate shall be part of the base bid.
  - Provide a smaller building in lieu of a larger one.

**012500 SUBSTITUTIONS**

- Proposed substitutions must be clarified and explained to the Owner and/or Architect whether they be for cause or convenience. Substitutions for cause are changes proposed by Contractor that are required due to changed project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms. Substitutions for convenience are changes proposed by Contractor or Owner that are not required in order to meet other project requirements but may offer advantage to Contractor or Owner.
- Substitutions for specified products shall be equal to those specified in composition, physical properties, color and texture and appearance, and environmental qualities. All substitutions shall be submitted to the Architect and/or Owner for review and approval prior to construction.
- Substitutions for specified materials and products shall be made only with prior approval from the Owner and/or Architect.
- Substitution requests shall be made in writing a minimum of 30 days before material to be installed. Request will provide documentation that substituted product complies with all specified properties and performance of original component or material.
- Any cost savings will be returned to the Owner.
- No increase to cost will be allowed except with prior approval from the Owner and/or Architect.

**012900 PAYMENT PROCEDURES**

- Coordinate preparation of the Schedule of Values with preparation of Contractor's construction schedule. Arrange Schedule of Values consistent with format of AIA document G703.
- Revise the Schedule of Values when change orders or construction change directives result in a change in the contract sum. Include at least one separate line item for each change order and construction change directive.
- Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and Construction Manager and paid for by Owner. The date for each progress payment is indicated in the agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

**013000 ADMINISTRATIVE REQUIREMENTS (MEANS AND METHODS)**

- Balzer & Associates and their professional consultants will not have control of and will not be responsible for construction means, methods, sequences, or for safety precautions in connection with the work on this project or for the acts or omissions of the Contractor, Subcontractor, or any other persons performing any of the work on this site.
- Contractor shall be responsible for all construction means, methods, techniques, sequences, and procedures and for safety precautions and programs as they relate to the work of this project.

**013300 SHOP DRAWINGS AND SUBMITTALS**

- Shop drawings for materials shall be submitted to the Engineer/Architect and/or Owner for review prior to the start of fabrication or commencement of work.
- A list of proposed shop drawing submittals with a schedule of required approval dates shall be submitted to the Architect within ten (10) days of issuance of contract. Balzer & Associates shall have a minimum of ten (10) working days to review all shop drawings and resubmittals.
- Contractor shall provide three (3) printed copies of submittals and shop drawings or a digital copy. Digital copies are preferred.
- No portion of the contract drawings may be reproduced for submittal as shop drawings unless authorized by Balzer & Associates, in writing.
- Shop drawings shall bear the Contractor's stamp of approval, which shall constitute certification that they have verified all field measurements, construction criteria, materials, and similar data and have checked each drawing for completeness, coordination, and compliance with the contract documents. Unstamped submittals will be rejected without review.
- Changes to shop drawings that are re-submitted must be clouded or otherwise clearly indicate the changes that have been made to a previously issued and reviewed drawing.
- Where shop drawings are required, Architect/Engineer shall not be liable for work performed without shop drawings approved by their office.
- On each submittal, clearly indicate deviations from requirements in the contract documents, including minor variations and limitations.

**014000 QUALITY REQUIREMENTS**

- All materials shall be free from defects impairing strength, durability, or appearance.
- All work shall be coordinated with other trades in order to avoid interference and preserve maximum headroom and avoid omissions.
- Subcontractors, before starting their work shall check and verify their particular related requirements for compliance along with measurements, surface levels, and surface conditions near and about their work. It will be concluded that each Subcontractor understands and knows exactly what will be required. Commencement of work signifies acceptance of existing conditions as satisfactory.
- Layout all partitions before beginning construction to prevent errors by discrepancy, all partitions will be installed as noted on the drawings. Do not scale the drawings.
- Each Contractor is responsible for first class workmanship and will assume all responsibility for the care and protection of their own work and materials from damage. They will make good any damage to their own or other work caused by themselves or workmen employed by them.

**014100 REGULATORY REQUIREMENTS & APPLICABLE CODES**

- All construction must comply with all governing codes.
- Contractor will abide by local area standards and related Occupational Safety and Health Administration (OSHA) standards for the safety of their employees on site. Balzer & Associates and their professional consultants will be held harmless by the Owner, Contractor and related awarded trades, on this project for accidents or injuries caused or accrued on this property during the construction of this project.
- All designs, construction, materials, and workmanship shall comply with the governing building code(s), as a minimum level of construction detail and quality. All work included in the construction of this project shall comply with all applicable provisions of the code(s). By commencing construction, contractor acknowledges understanding of the code(s) and agrees to incorporate all required elements, whether indicated within the documents or not.
- All areas shall be accessible in accordance with governing codes and amendments and applicable "Accessible and Usable Buildings and Facilities" (ICC A117.1-2009) accessibility guidelines.

**015000 TEMPORARY WORK**

- 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, and similar temporary work, required to ensure the structural integrity/stability of the existing building, sidewalks, utilities, and similar building elements during construction shall be designed by a professional Engineer licensed in the Commonwealth of Virginia.
- Contractor shall be responsible 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 limits of construction. Work required to maintain temporary egress patterns shall comply with applicable governing building code(s) and "Accessible and Usable Buildings and Facilities" (ICC A117.1-2009) guidelines, unless specifically approved by the local authority having jurisdiction.
- Provide a secure staging and material storage area adjacent to the area of construction. Location shall be coordinated with the Owner's requirements.
- Provide temporary barricades to separate construction areas for public safety around entire perimeter of construction areas.
- Provide periodic inspection of temporary barriers, barricades, enclosures, and temporary fencing to ensure their continuity and integrity.

**015200 CONSTRUCTION FACILITIES**

- The Contractor shall protect all existing or newly installed finish work and surfaces from damage during construction and shall replace and/or repair all damaged surfaces caused by contractor or subcontractor personnel to the satisfaction of the Owner.
- All Contractor and Sub-Contractors performing work on the premises shall be responsible for initiating, maintaining, and supervising a reasonable and prudent safety program including but not limited to the isolation of work areas and the prompt removal of any debris or tools which might endanger site visitors and staff of the owner.

**017700 EXECUTION AND CLOSEOUT REQUIREMENTS (SUBSTANTIAL COMPLETION AND FINAL COMPLETION)**

- For final clean up and disposal, remove debris, rubbish, and waste material from the property to a lawful disposal area and pay all hauling and dumping costs. Conform to all pertaining federal, state, and local laws, regulations and orders upon completion of work. All construction areas shall be left vacuum clean and free from debris. Clean all dust, dirt, stain, hand marks, paint spots, droppings, and other blemishes. After all other work is completed and just prior to turning the space over to the Owner, the Construction Manager will employ the services of a professional cleaning services to clean and wash down all installed equipment, service areas, along with the cleaning of all glass window/door surfaces prior to occupancy.
  - a. Clean project site of rubbish, waste material, litter, and other foreign substances.
  - b. Clean exposed exterior surfaces including hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - c. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - d. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
  - e. Vacuum and mop concrete.
  - f. Vacuum carpet and similar soft surfaces, removing debris and excess nap, clean according to manufacturer's recommendations if visible soil or stains remain.
  - g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - h. Remove labels that are not permanent.
  - i. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - j. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- Replace all mechanical system filters with new filters (but before final air balance testing).
- Contraint a list of incomplete items; prepare and submit a list of items to be completed and corrected (Contractor's "Punch List"), indicating the value of each item on the list and reasons why the work is incomplete.
- Advise Owner of pending insurance changeover requirements.
- Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
- Complete startup and testing of systems and equipment.
- Perform preventive maintenance on equipment used prior to substantial completion.
- Advise Owner of changeover in utility services.
- Participate with Owner in conducting inspection and walkthrough with local emergency responders.
- Terminate and remove temporary facilities from project site, along with lockups, construction tools, and similar elements.
- Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

**017823 OPERATION AND MAINTENANCE DATA**

- Organize warranty documents into an orderly sequence based on the sequence of the outline specifications or table of contents of project manual.
- Provide a warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- Warranties in paper form: bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

**017838 PROJECT RECORD DOCUMENTS**

- At project completion Contractor shall provide one (1) complete set of as-built drawings indicating all discrepancies, changes, variance and/or deviation from the construction documents, and actual locations of concealed work, and full collection of warranties and operations instructions prior to final payment.
  - a. Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, to provide information for preparation of corresponding mark-up record prints. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
  - b. Accurately record information in an acceptable drawing technique.
  - c. Record data as soon as possible after obtaining it.
  - d. Record and check the markup before enclosing concealed installations.
  - e. Cross-reference record prints to corresponding photographic documentation.
  - f. Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to drawings.
    - b. Revisions to details shown on drawings.
    - c. Depths of foundations.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual electrical locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by change order or change directive.
    - k. Changes made following architect's written orders.
    - l. Details not on the original contract drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the work that is shown only schematically.
    - o. Mark important additional information that was either shown schematically or omitted from original drawings.

**017900 DEMONSTRATION AND TRAINING**

- Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
- Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

**024000 DEMOLITION**

- Note.

**033000 CAST-IN-PLACE CONCRETE (REFER STRUCTURAL NOTES FOR ADDITIONAL INFORMATION)**

- Interior slabs shall have vapor barrier to be ASTM E 1745, class A, not less than 15 mils thick. Vapor barrier shall be continuous from outside face of exterior walls. All penetrations and seams shall be sealed with membrane manufacturer approved tape and/or sealant. Contractor shall inspect with special inspector (as required) immediately before concrete placement to ensure integrity of membrane.
- Floor slabs to be depressed when necessary to accommodate finished floor system with no change in finished floor elevation to adjacent floor systems. Floor materials may include recessed floor mats, tile, carpet, or similar finishes.

**040200 UNIT MASONRY (REFER STRUCTURAL NOTES FOR ADDITIONAL INFORMATION)**

- Note.

**072100 THERMAL AND MOISTURE PROTECTION**

- Rigid perimeter insulation shall be ASTM G578, type IV; compressive strength: 25 lb. Per square inch, minimum (ASTM D1621); water absorption: 0.1% by volume, maximum (ASTM C272). Foam blowing agent shall provide at least 90% reduction in ozone depletion potential as compared with standard CFC blowing agents. Aged R-value: 4.4 per inch at 75°F - thickness as indicated or of thickness to achieve noted R-value.
- 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.
- Fiberglass batt insulation for exposed installations (including any facings), shall have a flame spread rating per current governing code. Insulation shall be FSK (foil) or PSK (poly) faced fiberglass thermal batt insulation complying with the flame spread requirements listed above, or unfaced high density mineral fiber, with strapping as required be held in place.
- Exterior sealants shall be non-sag, silicone type. Color to match adjacent exterior materials, or exterior door or window frames. Submit samples to architect for approval. Note that more than one (1) sealant color may be required. Verify color locations with Architect prior to installation.
- Include closed cell sill plate insulation, caulking of sills and plates and foam injections at window and door shim space.
- Provide 15mil vapor barrier under concrete slab on grade. Seal all joints and penetrations.
- Provide 60 mil buthene waterproofing membrane with 1/2" protection board at all below grade, exterior walls. Continue membrane and protection board over top of footing. Where grade is less than 8" below finish floor, extend membrane 12" up behind moisture barrier.
- Moisture barrier vapor permeable fluid applied weather barrier, or equal. Continuous on all wall surfaces and integrated with embedded flashing components.

**074113.16 STANDING SEAM METAL ROOF PANELS**

- Metal roof panels shall have a profile fabricated from the metal building suppliers standard types and colors.
- Provide and install a complete system including all accessories required by manufacturer's warranty including but not limited to flashing and trim, gutters, downspouts, and roof curbs as required.
- Panels shall be continuous from ridge to eave, and mechanically joined by roller machine per manufacturers written specifications. Panels shall be mounted with concealed fasteners 12" on center, to allow panel movement, with continuous sealant bead in seam and double fold. No external fasteners will be permitted.
- No partial panel shall be less than 6" wide. All screws shall extend through insulation and into roof structural deck below, to be determined by standing seam roof manufacturer and structural roof decking.
- Energy Star and cool-roof performance shall be based on an aged solar reflectance index of 0.64 when tested according to CRC-1.
- Warranty finishes and weatherthghness: 20 years.
- Provide all fastenings, caps, and accessories as required for a complete system.
- Provide snow guards (couple to match roof) at manufacturer recommended spacing.

**076000 GUTTERS AND FLASHING**

- All metal flashing work shall conform to latest edition of "Sheet Metal and Air Conditioning Contractors' National Association" (SMACNA) standard details.
- Metal flashing and roof trim shall be stainless steel to be minimum 24 gauge, ASTM A167, soft annealed, with no. 2d finish at intersections of roof and vertical walls and other attachments to the downward flow of moisture. Metal flashing to be attached with screws and neoprene washers.
- Gutters and downspouts shall be factory finished metal; 0.027 inch thick gutters, 0.020-inch-thick downspouts. Color as indicated in drawings.
- All gutters to be "K" style pre-finished seamless metal with oversized downspouts, unless otherwise noted.
- Provide flashing at all valleys and drip edge at all eaves. Provide aluminum drip edge (2" x 1-1/2" x 0.032") at all roof edges.

**081130 METAL DOORS**

- Doors to be minimum 3'-0" wide x 7'-0" tall unless otherwise noted.
- Exterior steel doors shall be ANSISI-100, grade III, extra heavy duty, minimum 16-gauge galvanized steel faces, seams welded and ground smooth. Label where indicated on schedule. Insulated core, R-5 minimum.
- Do not paint or conceal labels of fire rated elements.
- Insulated glazing shall be (2) 1/4" thick float glass separated by a 1/2" dehydrated air space complying with ASTM E774. Temper units as required for non-insulated tempered units.
- Tempered glazing shall be 1/4" thick, ASTM 1048, type 1, quality Q5, fully tempered.

**081200 METAL FRAMES**

- Exterior frames shall be fabricated from 16-gauge galvanized steel. Frames with welded corners for exterior doors, unless instructed by owner otherwise. Provide weatherstripping for exterior doors. All frames to receive minimum 26-gauge mortar boxes in mortared in frames. Provide all anchorage devices as required for wall type. Anchors to be concealed type. Factory out doors and frames for hardware installation.
- Interior frames shall be fabricated from 16-gauge. Knock-down type, unless instructed by owner otherwise. Provide silencers on interior frames. All frames to receive minimum 26-gauge mortar boxes in mortared in frames. Provide all anchorage devices as required for wall type. Anchors to be concealed type. Factory out doors and frames for hardware installation.
- Do not paint or conceal labels of fire rated elements.

**083233 OVERHEAD COILING DOORS (EXTERIOR)**

- Insulated service door curtain of galvanized steel with glazed vision panels.
- Overhead hood shall match curtain finish.
- Provide manual door operator and standard duty electric door operator with emergency manual chain operation. Provide and install obstruction detection device. Provide all associated hardware, including chain hoist operator with padlock-able chain keeper, guide tracks, jamb weather seals, and extruded aluminum bottom bar astragal with weather seal.
- Door shall be fire rated consistent with rating designation of host wall.
- Verify motor requirements with Owner.

**084113 ALUMINUM FRAMED ENTRANCES AND STOREFRONTS**

- Standard profile storefront systems shall be anodized bronze finish, physical.
- Storefronts installed in exterior wall construction shall be thermally broken.
- Provide internal structural stiffeners, extruded sills and install per manufacturer standard details.
- Submit complete 1/4" scale minimum elevations and enlarged details and sample of finish for approval.
- Provide storefront system; include anchorage, capable of withstanding wind load design pressures per component and cladding from the general structural notes.
- All openings to receive storefront systems shall be field verified prior to fabrication.
- All storefront glazing and commercial-glazed swinging entrance doors shall be tested for air leakage of 1.57 psf in accordance with ASTM E283 per Virginia Energy Conservation Code. For storefront glazing, maximum air leakage rate shall be 0.3 cubic feet per minute per square foot of fenestration area. For commercial-glazed swinging entrance doors, maximum air leakage rate shall be 1.00 cubic feet per minute per square foot of door area.
- Provide 390 aluminum brake metal flashing, trim and subslits with finishes to match associated systems where indicated on drawings. Integrate with storefront members per manufacturer's recommendations to construct a leak-free assembly.
- Tinted glass panels shall be aluminum metallized dual reflective polyester film with visible light transmission of 30%.
- Provide a five-year system warranty for materials and workmanship. And a 10 year warranty for material finishes.

**087100 DOOR HARDWARE**

- Provide a three (3) year warranty for materials and workmanship.
- Provide "lever style" handles. Hardware shall be heavy duty commercial custom grade. All handles to be permanently mounted to minimum height of 38" above finished floor thresholds to comply with governing accessibility code.
- Unless otherwise noted, all hinges shall be 5-knuckle. Hinge pins in exterior doors shall be non-removable.
- Provide door stops for all openings unless otherwise noted. Wall mounted door stops shall be provided with blocking and their location confirmed based on proposed door hardware. Floor mounted dome door stops shall be equipped with risers as necessary based on proposed floor finishes and shall be located to ensure adequate clearance between door hardware and face of partition or other obstruction.
- Interior doors shall be equipped with silencers unless otherwise noted.
- Hardware finish shall be identified among manufacturer's standard finishes and selected by Owner and/or Architect. Finishes shall be brushed nickel unless otherwise noted.
- All locks to be master key to selected system. Coordinate with Owner for master/sub-master keying.

**099000 PAINTS AND COATINGS**

- Interior walls and interior face of exterior walls shall be painted, consisting of (1) coat of primer and (2) coats of interior finish latex, unless otherwise noted.
- Paints utilized shall meet the following specifications:
  - A. Exterior paint: utilizes alkyl enamel semi-gloss finish paint. Provide one coat primer and two coats finish.
  - B. Interior paint: utilize paint materials containing 0% VOCs (volatile organic compounds), consisting of (1) coat interior latex primer and (2) coats of latex finish.
  - C. Doors and frames: exterior paint for doors and frames; provide 1 coat all surface enamel latex primer and 2 coats all surface latex enamel high gloss. Color per elevations.
- Provide extra stock of 2% in each color and type, clearly marked to indicate contents and location used.

**101423 PANEL SIGNAGE**

- Panel signs with exposed edges shall be solid-sheet sign and returns made from fiberglass, or PVC sheet with surface-applied, raised graphics. Panel sign mounting shall be surface mounted with concealed anchors, adhesive, hook-and-loop tape, or magnetic tape.
- Field-applied, vinyl-character signs shall be pre-spaced characters die cut from adhesive-backed, weather-resistant vinyl film; field applied to substrate.

**104416 FIRE EXTINGUISHERS**

- Portable hand-carried regular dry-chemical type fire extinguishers shall comply with NFPA 10 and UL-rated 4-a 60-b.c., 10# capacity with standard mounting brackets.
- For installations in finished spaces with framed partitions provide and install a semi-recessed cabinet full panel, clear acrylic door glazing, stainless steel with 1-1/2" square trim.

**111300 WAREHOUSE & LOADING DOCK EQUIPMENT**

- Overhead door accessories: None.

**120500 FURNISHINGS**

- Interior light work (equipment, displays, and similar systems provided by the owner) to be designed by others under separate contract.

**133000 SPECIAL STRUCTURES (METAL BUILDINGS)**

- The structural frame and exterior enclosure are to be a pre-engineered metal building engineered by the manufacturer in compliance and conformance with these drawings and specifications.
- Building frame and roof are to be designed by manufacturer under supervision of a professional engineer licensed in the Commonwealth of Virginia.
- Provide design calculations as required by code. Provide foundation design reactions and anchor bolt plans to architect and engineer for foundation design.
- Submit three printed copies or digital copy of complete shop drawings for review and approval by Contractor, Structural Engineer and Architect.
- Metal building design engineer shall design structure to accommodate all code and structural engineer stipulated design deflection criteria and imposed loads designed to building frame from non-metal building components.
- Complete metal building package shall include all components required to complete the building envelope, including, but not limited to: metal framing primary and secondary components, bracing, insulation, exterior wall and roof panels, doors and windows, soffits, flashing, gutters and downspouts, and all associated anchoring devices required for complete installation of all components.
- All components to be installed per manufacturer's standard details, fit, and sealed to form an air and weather-tight building envelope.
- Pre-engineered metal building supplier shall submit test report demonstrating exterior envelope weather protection, structural, fire resistance, flood resistance, and air barrier compliance according to the local authority having jurisdiction.
- Manufacturer shall be IAS AC472 accredited.
- Material warranty for metal panel finishes shall be 25 years.
- Weather-tightness warranty for standing-seam metal roof panels shall be 20 years.
- Design loads are indicated on drawings.
- Building accessories shall include flashing and trim, gutters, downspouts, service walkways, roof ventilators (continuous or sectional-ridge type), fixed blade louvers, roof curbs, and pipe flashing.

**142000 CONVEYING EQUIPMENT: ELEVATORS**

- Note.

**DIVISIONS 15 THRU 20 (NOT USED)**

**210500 - COMMON WORK RESULTS FOR FIRE SUPPRESSION**

- Note.

**220500 COMMON WORK RESULTS FOR PLUMBING (SEE MECHANICAL AND PLUMBING SHEETS BY OTHERS FOR ADDITIONAL INFORMATION)**

- All plumbing designs, construction, materials, and workmanship shall comply with all provisions of the current governing code, as a minimum level of construction detail and quality.
- 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 or neoprene 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).
- 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. Provide access panels as required in solids walls or ceilings.
- Hot water lines and exposed drain lines are to be insulated in accordance with governing accessibility code requirements.

**230500 COMMON WORK RESULTS FOR HEATING, VENTILATING, AND AIR CONDITIONING (SEE MECHANICAL AND PLUMBING SHEETS BY OTHERS FOR ADDITIONAL INFORMATION)**

- All mechanical designs, construction, materials, and workmanship shall comply with all provisions of the current governing code, as a minimum level of construction detail and quality.

**DIVISION 24 (NOT USED)**

**DIVISIONS 25 INTEGRATED AUTOMATION (NONE)**

**260500 COMMON WORK RESULTS FOR ELECTRICAL (SEE ELECTRICAL SHEETS BY OTHERS FOR ADDITIONAL INFORMATION)**

- All electrical designs, construction, materials, and workmanship shall comply with all provisions of the current governing code, and the current edition of the National Electric Code (NEC), as a minimum level of construction detail and quality.
- Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions: notify Owner and/or Tenant no fewer than seven days in advance of proposed interruption of electrical service. Arrange to provide temporary electrical service or power.
- Subcontractor shall provide closeout submittals including: operation and maintenance data, software and firmware operational documentation, provide software and firmware operational documentation. Subcontractor shall also provide demonstration to owner's maintenance and clerical personnel and/or building occupants on how to operate the project's systems and equipment.

**DIVISION 27 COMMUNICATIONS (SEE ELECTRICAL SHEETS BY OTHERS FOR ADDITIONAL INFORMATION)**

**DIVISION 28 ELECTRONIC SAFETY AND SECURITY (SEE ELECTRICAL SHEETS BY OTHERS FOR ADDITIONAL INFORMATION)**

**DIVISION 29 THRU 30 (NOT USED)**

**310500 COMMON WORK RESULTS FOR EARTHWORK (SEE CIVIL SHEETS BY OTHERS FOR ADDITIONAL INFORMATION)**

- Contractor shall review complete site plan package and notify Architect of perceived conflicts for resolution prior to commencing work.
- Contractor shall review geotechnical subsurface investigation report (if any) and shall include recommended work in bid. The Contractor shall perform any additional exploration as deemed necessary prior to bid to determine sub-surface conditions to minimize chances of need for changes to the contract.
- Provide unit prices for cut and/or fill (both on-site and off-site) and rock removal.
- Include all seasonal site protection as needed in bid for dewatering, hot conditions, cold conditions, wet conditions, and dry conditions.
- Contractor to include all construction survey and staking work fees/services in bid.
- All disturbed areas of the site shall receive pavement, mulch, landscaping, sod, or seed and straw prior to completion of the project. See civil drawings for layout plans and additional notes.

**320500 COMMON WORK RESULTS FOR EXTERIOR IMPROVEMENTS (SEE CIVIL SHEETS BY OTHERS FOR ADDITIONAL INFORMATION)</**

**DIVISION 1 - GENERAL:**

- In case of conflict between the general notes, specifications, and drawings regarding structural issues, the most stringent requirements shall govern.
- Structural drawings shall be used in conjunction with the architectural, mechanical, electrical, & plumbing drawings, as well as any additional drawings provided by material & equipment suppliers. Contractor shall be responsible for coordinating the work of all other trades with the structure.
- This structure is considered unstable until all structural components are in place, fastened, plumbed, true and in accordance with these signed and sealed drawings. Contractor shall be responsible for furnishing, erecting, and removing any temporary shoring and bracing during construction.
- Contractor shall strictly adhere to all safety regulations. The architect/engineer shall not be responsible for construction means, methods, or procedures for safety precautions in connection with the work.
- Construction materials, equipment, or other heavy loads shall not be placed upon structural components in concentrated areas. Construction material or equipment staging shall not impart loads to the structure greater than that shown in the design load schedule.
- Work not indicated on a part of the drawings, but reasonably implied to be similar to that shown at corresponding pieces, shall be repeated.
- Temporary bracing, sheeling, shoring, etc., required to ensure the structural integrity/stability of the existing buildings, sidewalks, utilities, etc., during construction is the Contractor's responsibility and shall be designed by a Professional Engineer licensed in the Commonwealth of Virginia.
- Shop Drawings:
  - Shop drawings for materials shall be submitted to the Architect for review prior to the start of fabrication or commencement of work.
  - No portion of the contract drawings may be reproduced for submittal as shop drawings unless authorized by Balzer and Associates, Inc. in writing. Violation of this provision will result in the rejection of the shop drawings and will be returned without being reviewed by the Architect or Structural Engineer.
  - Shop drawings shall bear the General Contractor's stamp of approval, which shall constitute certification that he has verified all field measurements, construction criteria, materials, and similar data and has checked each drawing for completeness, coordination, and compliance with the contract documents. Shop drawings not reviewed by the General Contractor prior to submittal will be rejected.
  - Changes to shop drawings that are re-submitted must be clouded or otherwise clearly indicate the changes that have been made to a previously issued and reviewed drawing.
  - The Contractor shall provide the Architect or Structural Engineer with written notice of deviations of any type from the requirements of the Construction Documents. The notice must be received prior to shop drawing submittal. The Contractor remains liable for any deviation unless reviewed by the Architect or Structural Engineer and acknowledged in writing, prior to receipt of the shop drawings.
  - Shop Drawings will be returned not later than 10 working days after receipt by the Architect or Structural Engineer.
  - Architect/Engineer shall not be liable for work performed without approved shop drawings.

**DIVISION 2 - FOUNDATION & SITE PREPARATION:**

- The surface of the exposed sub-grade shall be inspected by probing or testing to check for pockets of soft or unsuitable material. All fill and unsuitable foundation material shall be removed and footings shall rest on undisturbed soil or engineered fill. Footings shall be designed for an assumed soil bearing capacity of **1,500 psf**. Preparation of soil and sub-grade beneath footings and slabs on grade shall be in accordance with the recommendations of the Owner's geotechnical engineer's report. All footing excavations, site stripping, undercutting and control fill operations shall be done under the supervision of an independent testing laboratory, under the direction of a professional engineer licensed in the Commonwealth of Virginia.
- General contractor shall coordinate foundation details, dimensions, and anchor bolt setting plan with requirements of metal building system supplier. Contractor is responsible for the conformance of the metal building column bases with the foundation plan.
- The pre-engineered building columns shall have pinned based and shall transfer no moments to the foundation.
- Foundation sizes are based on preliminary reactions for the pre-engineered metal building and mezzanine loadings. Contractor shall submit metal building foundation reactions and anchor bolt setting plan by metal building manufacturer to the engineer for approval prior to any foundation construction. The anchor bolt setting plan and foundation reactions shall be provided to the engineer for his approval two weeks prior to any foundation construction.
- Reference plan notes on foundation plan for additional notes and requirements.
- Clear site and remove all vegetation, trees, roots, decaying material and other obstructions from areas occupied by utilities and structures, etc; strip top soil to a depth of 5' or deeper as required; debris is to be completely removed from site or disposed of and is not to be deposited in fills.
- Strip all topsoil from areas to be covered by structures or pavement and fill with an approved controlled fill, compacted to 95% or better of maximum dry density as determined by Standard Proctor (ASTM D698).
- Foundations are not to be excavated until building fill is placed and compacted.
- Center footings under walls and columns unless noted otherwise.
- Footing elevations shown represent the minimum depth to which footings shall be carried and shall be lowered as required to obtain suitable bearing.
- All footings shall project at least 1'-0" into undisturbed natural soil or compacted controlled fill having a bearing value at least equal to that specified above. Place bottoms of all exterior footings at least 2'-0" below finished grade. Earth cuts may be used as forms for footing concrete. Drain all bearing strata adequately before placing foundation concrete. Do not place concrete on frozen soil.
- Proper site drainage shall be maintained in order to protect the site from excess surface moisture during construction. Protection of the site shall include the construction of temporary ditches, berms or other surface water diversion devices in order to divert surface water from and not across the site.
- Where, due to field conditions, actual bottom of footing elevations will differ from elevations shown on plans, piers and columns shall be increased, decreased, added or eliminated following intent of these drawings and specifications.
- Footing step locations indicated on the foundation plans are approximate; actual locations may vary from that shown based upon existing conditions at the site. Contractor shall locate footing steps in field as required by finish grade and localized soil conditions.
- Except where unbalanced fill on foundation walls is less than 4'-0" (or as otherwise stated on drawings), backfill shall not be placed against concrete or masonry foundation walls unless the walls have attained full design strength and the top of these walls are braced against overturning in a manner satisfactory to the engineer.
- Excavations at retaining walls shall be sloped. Temporary slopes should be constructed on a slope of one horizontal to one vertical or flatter.
- All walls shall be adequately braced to resist all horizontal loads from wind, earth, and construction loads during installation and until such time as permanent anchorage is in place. Heavy compaction equipment will not be allowed within a distance subtended by a 45° angle between the surface of the ground and any footing.
- Contractor shall include in his bid all civil engineering and site work including landscaping, seeding and straw placement at denuded/disturbed areas, as well as temporary erosion control as required by the governing jurisdiction(s).
- All underground utilities shall be referenced from site, mechanical, electrical, and plumbing drawings and connections shall be made prior to placing foundation concrete. Architect / Structural Engineer is not responsible for locating and coordinating utility interactions with building.
- Roof drain pipes serving the structure shall tie into underground perimeter foundation drain pipes and be taken to an appropriate point of discharge. Contractor to coordinate with civil drawings for daylight or underground tie-in information.
- All concrete sidewalks shall receive a broom finish unless otherwise specified on architectural or landscape drawings.

**DIVISION 3 - CONCRETE:**

- Materials for concrete construction shall be in accordance with the following specifications:
  - Unit weight: Normal weight (145-150 pcf)
  - Portland cement: ASTM C150 Type 1
  - Coarse and Fine Aggregate: ASTM C686 max size 3/4"
  - Water: ASTM C193/2102 potable
  - Cementitious Admixtures: ASTM C618 Flyash  
ASTM C898 Ground granulated blast furnace slag
  - Chemical Admixtures: ASTM C260 Air-Entrainment  
ASTM C494 Plasticizers, Water Reducers, High Early Strength, etc.
- Reinforcing steel:
  - ASTM A615, Grade 60 deformed billet steel bars
  - ASTM A185 Welded Wire Reinforcement using ASTM A82 wire
  - ASTM A416 7-wire steel strand for prestressed concrete (270 ksi)
  - Embedded fiber reinforcing: ASTM C1116 Standard spec for fiber reinforced concrete  
ASTM A820 Steel fibers  
STM C1665 Glass fibers
- Adhesive anchoring:
  - Hilti HIT-HY 200 Safe Set System or approved equal
  - Hilti HIT-Z rod (ICC ESR 3187) or approved equal
  - Hilti KWIK Con II+ or Simpson Titen or approved equal
  - Heavy duty screw anchors: Hilti KWIK HUS-EZ or Simpson Titen HD
  - Expansion / wedge anchors: Hilti KWIK Bolt TZ or Simpson Strong Bolt 2 or approved equal
- Shotcrete: ASTM C1446
- Other agents, components, admixtures, and/or embedded items as approved by Engineer
- All concrete materials, processes, and work shall be in accordance with ACI 318-14 "Building Code Requirements for Structural Concrete", ACI 301-10 "Specifications for Structural Concrete", and ASTM C94, unless otherwise noted or detailed on the contract drawings.
- All exterior concrete slabs exposed to traffic shall be 4000 psi. All concrete slabs, on-grade or on suspended metal deck, shall be 3500 psi. Footings for walls and columns, and all other concrete, shall be 3000 psi. Refer to structural drawings for additional notes and use highest strength mix where discrepancies occur.
- All concrete exposed to freezing and thawing shall have an entrained air content of 6% (±1.5%).
- Refer to Table 19.3.2.1 "Requirements for Concrete by Exposure Class" and referenced exposure class definitions for maximum water / cementitious materials (w/c) ratio, minimum design strength, entrained air contents, and other constituent restrictions for this project.
- Contractor shall submit a concrete mix design for each type of concrete to the project Architect for approval prior to the placement of concrete.
- Contractor to provide a mockup sample of all exposed architectural concrete elements as directed by the Architect.
- All reinforcing steel shall be deformed bars of new billet steel conforming to specification listed above. Rebar splices shall be as per ACI 318. All reinforcing margin continuous (cont.) on the plans and details shall be lapped 48x bar diameters at splices unless otherwise noted.
- Welded wire fabric shall be lapped a minimum of one full wire space plus 2" when spliced.
- Detail, fabricate and place reinforcement in accordance with ACI 318 unless otherwise shown. Concrete protection for reinforcing steel reinforcing steel shall be in accordance with ACI 318-14.
- All reinforcing steel shall be held securely in place to prevent displacement during the placing operation. Slab reinforcing bars shall be supported on mud chairs and bar spacers of suitable design. In no case may bars be heated to facilitate bending.
- No concrete shall be placed until all embedded items have been installed, tested and inspected.
- Contractor shall gain approval from Structural Engineer for post-installing any column anchor rods.
- Follow manufacturer's written installation procedures for installation of all post-installed anchors in concrete work. Control silica dust per OSHA requirements and prepare hole for receiving adhesive in accordance with manufacturer's requirements. Where required, contractor shall receive certification from manufacturer for conformance to installation procedures.
- Concrete slabs on ground specified as fiber reinforced concrete shall be reinforced at minimum with micropolymeric fibers to control plastic shrinkage cracking. At the contractor's option, steel or macropolymeric fibers may be added to control random cracking upon the concrete reaching its hardened state. Micropolymeric fibers shall be added into the concrete mix at a minimum rate of 0.1% by volume (1.5 lbs per cubic yard of concrete), or as suggested by material supplier.
- Sufficient time should be allowed before cutting saw joints in fiber reinforced concrete slabs to ensure that the saw blade cuts the fiber reinforcement without pulling the fibers out of the concrete.
- Where resilient floors are to be installed on concrete slab-on-grade, a vapor retarder (per ASTM E1745) with a maximum permeance of 0.3 perms (per ASTM E96), shall be installed over a minimum of 4" of compacted porous fill. Seal all penetrations of vapor retarder to maintain continuity. Moisture, alkali, and bond testing must be conducted prior to installation of finished flooring, in accordance with manufacturer's written Guaranteed Installation Guide.
- Floor depressions and openings to be provided where equipment or floor finishes require them, whether or not indicated on structural drawings. It shall be the contractor's responsibility to coordinate his work with architectural and mechanical drawings and specifications and provide depressions and openings as required.
- Concrete for all floor slabs shall be wet-cured with wet burlap, plastic film, waterproof paper or misting.
- Concrete slab surfaces shall conform to ASTM E 1155 F-number system for flatness and levelness or as required by owner.
- Refer to structural plans for additional notes regarding concrete slabs and walls.
- Unless otherwise shown, provide #5 bar at each face around all sides of openings in concrete walls. Bars shall extend a minimum of 24" beyond the edge of the opening.
- Construction and control joints shall be located where indicated on the drawings. See typical details for additional reinforcing at construction joints.
- Where column and wall footings coincide, provide full reinforcement for both footings, with wall footing reinforcement continuous through column footing. Joints between wall footings and column footings not permitted.
- Unless otherwise required, provide 3/4" chamfer on all concrete corners exposed to view.
- Unless noted otherwise, all concrete column vertical reinforcing to be doweled into footings with dowels same size as verticals, lap 48x bar diameters.
- Top of plumbing pipes must be at least 12" below bottom of wall footings or above. Otherwise footings must be lowered below pipe invert. Pipes shall not pass through footings. See mechanical drawings for location of pipe sleeves and openings. Prior approval required for cutting and bending of reinforcing to accommodate sleeving and in no case shall major reinforcing be cut or bent.
- All structural members shall be poured for their full depth in one operation. Construction joints, such as day's pour joints, shall not be located in the middle third of any span or over intermediate supports of continuous multi-span members. The reinforcement shall extend through the joint in both faces. Where, in either face, no reinforcement is called for, provide #4 dowels at 12" on center. Joint shall be roughened by use of an approved surface retarder in accordance with manufacturer's directions, to expose aggregate. Depth of etch shall be 1/8" minimum. Apply a chemical bonding agent per manufacturer's specifications prior to finishing the concrete placement.
- The concrete contractor shall cooperate with other contractors and, where required, install all built-in work, sleeves, inserts, brick ties, etc., including framework for chases, registers and other provisions for built-in work to complete the job (see specifications).
- At steel deck slabs, concrete contractor shall include in his bid additional quantity of concrete that may be required to provide a level slab at the prescribed elevation and compensate for steel deck and steel beam deflections.
- Electrical contractor shall confer with architect and structural engineer before placing any conduits in concrete construction in order to agree on permissible arrangements of conduits.
- Electrical contractor shall prevent placing conduits in concrete that will impair concrete strengths.
- Only conduits having outside diameters no larger than one-third of the slab thickness may be installed. For slabs on steel deck, slab thickness shall be considered as thickness of concrete above upper deck flutes. Conduits are to be spaced so as to provide no less than three (3) conduit diameters, center-to-center. Wherever possible, larger spacings are preferred.
- Continuous rows of conduits are not to be placed immediately along bearing ends of slabs.
- Aluminum conduits are not allowed.
- Conduits are not allowed in concrete slabs less than 4" thick.
- Crossover of conduit shall not be allowed in steel deck slabs.

**DIVISION 5 - STRUCTURAL STEEL:**

- Structural steel shall be in accordance with the following specifications:
  - Wide flange shapes: ASTM A992 (fy = 50 ksi)
  - Angles, channels, plates, bars, misc. shapes: ASTM A36 (fy = 36 ksi)
  - Pipes columns: ASTM A500, Grade C (fy = 50 ksi)
  - Square and rectangular tubing: ASTM A1085 (fy = 50 ksi)
  - High strength bolts: ASTM A325 or A490 as specified  
ASTM A563 nuts  
ASTM F436 hardened washers or  
ASTM F959 tension-indicating washers
- Common (non-high strength) bolts: ASTM A307 Grade A
- Threaded rod: ASTM A36 (or proprietary rods as specified)
- Shear headed studs: ASTM A108
- Anchor rods: ASTM F1554 Grade 36 or Grade 55 welded  
Fexx = 70 ksi
- Welding electrodes: E70xx = 70 ksi
- Power driven fasteners: Hilti X-U, 0.157"Ø or equal  
Hilti S-MD, Simpson Strong Drive XM, or Tels
- Structural steel work and erection shall be in accordance with the 2015 International Building Code, 14th Edition AISC 360 "Manual of Steel Construction", and AISC "Code of Standard Practice", including the "Commentary" and supplements.
- Shop drawings are required for structural steel and steel joists and decking. Shop drawings shall be furnished by the Fabricator to the General Contractor. Contractor shall review and approved shop drawings prior to submitting to Architect/Engineer. All structural steel shop drawings shall be prepared under the direct supervision of professional engineer registered in the Commonwealth of Virginia.
- Structural steel shall be new, clean and straight.
- Cuts, holes, copings, etc. in structural steel members required by work of other trades shall be made in the shop and shall be shown on the shop drawings. Burning of holes or cuts in structural steel members in the field will not be permitted without specific approval of the engineer.
- All structural steel exposed to elements shall be galvanized or receive one shop coat of an approved rust-inhibitive primer. Reference architectural drawings for additional paint and finish requirements on exposed steel members.
- Refer to architectural drawings for intumescent paint, spray-on fireproofing, or other special coatings.
- Existing steel members shall be properly cleaned and painted for protection.
- Preparation of steel and application of coatings shall be in accordance with the specifications of the Society for Protective Coatings (SSPC).
- All shop connections shall be welded and all field connections shall be bolted using high strength bolts unless otherwise noted. All high strength bolt diameters shall be as called out on plans. All bolted connections designed to be installed to a snug-tight condition in standard holes unless otherwise noted.
- Provide hardened washers shall be provided under turning element at all high strength bolted connections.
- All steel in contact with pressure treated lumber or exposed to weather shall be at minimum galvanized with a G185 coating. When galvanized steel is welded provide appropriate ventilation measures. Welded surfaces shall be ground smooth and coated with galvanizing repair paint.
- Stainless steel shall be used for all exposed steel in coastal areas and other locations subject to salt water, including atmospheric water vapor and spray from de-icing salts.
- All welding shall be in accordance with AWS D1.1:2010, Structural Welding Code. Welds to be approved by a welding inspection agency. All shop and field welding shall be performed by qualified welders in accordance with AWS D1.1.
- Field welded surfaces shall be cleaned, ground smooth, and coated with appropriate primer/paint as specified.
- Beams supporting columns or struts and beams bearing on columns shall be provided with stiffener angles, tees or plates on webs.
- Connections for hung lintels and other members requiring adjustment shall be provided with shims or slotted holes, as required for proper final installation.
- Unless otherwise noted, all bolted connections shall be bearing type, non slip-critical, tightened to a "snug-tight condition" as defined by AISC.
- All truss connections shall be shop welded and shall be designed for the factored/unfactored forces shown on the contract drawings, but not less than 50% of the effective strength of the member. Shop drawings shall clearly show weld sizes and lengths for all connections. Provide gusset plates as required to obtain sufficient weld length. Gusset plate thickness shall match web thickness of chord.
- Bolting in combination with welds shall not be considered as sharing the stress. Welds shall be provided to carry the entire stress for which the connection is designed.
- The frame of the steel skeleton shall be carried up true and plumb and temporary bolting and bracing shall be introduced to safely carry all loads to which the structure may be subjected, including equipment and operation of same. Individual columns must be braced before beam connections are made and bracing shall be left in place as long as may be required for safety. No bolting or welding shall be done until as much of the structure as will be stiffened thereby has been properly aligned.
- The owner shall retain the services of a qualified inspector to inspect erected steel and connections.
- All powder actuated fasteners to be used in structural steel shall be as listed with a minimum length sufficient to fully penetrate base member thickness (not less than 5/8").
- Provide 1/2 gauge galvanized gripstay masonry anchoring system by Hohmann & Barnard, inc., or equal, vertically on all steel column flanges and webs and horizontally on all beam webs, abutted with or encased in masonry. See "Typical Masonry Anchoring System Details".
- See architectural drawings for steel plate and grate flooring specifications and details. Steel grating shall be manufactured in accordance with the Metal Bar Grating Manual, as published by the National Association of Architectural Metals Manufacturers and shall conform to Federal Specification RR-G-661E, Type I, Class 1. Steel for grating shall conform to ASTM A569. Perpendicular welded cross bars to be spaced 4" on center. Stair tread grating shall be same type. Band exposed edges, unless noted otherwise. Grating and fasteners shall be hot dipped galvanized, unless noted otherwise.

**DESIGN LOAD SCHEDULE (2018 VCC)**

DESIGN ALLOWABLE SOIL BEARING CAPACITY:	1500 psf (ASSUMED)
<b>DEAD LOADS:</b>	
MEZZANINE FLOOR DEAD LOAD:	55 psf
COLLATERAL FLOOR DEAD LOAD:	10 psf
ROOF DEAD LOAD:	BY MBM
<b>UNREDUCED LIVE LOADS:</b>	
MEZZANINE FLOOR LIVE LOAD:	125 psf
ROOF LIVE LOAD:	20 psf
<b>SNOW LOADS:</b>	
GROUND SNOW LOAD:	30 psf
SLOPED ROOF SNOW LOAD:	20.0 psf
SNOW EXPOSURE FACTOR:	1.0
IMPORTANCE FACTOR:	1.0
THERMAL FACTOR:	1.0
<b>WIND LOAD DESIGN CRITERIA:</b>	
ANALYSIS PROCEDURE:	ASCE 7-16 CHAPTER 27
BUILDING TYPE:	ENCLOSED
ULTIMATE DESIGN WIND SPEED:	115 mph
NOMINAL DESIGN WIND SPEED:	89 mph
RISK CATEGORY:	II
EXPOSURE:	B
INTERNAL PRESSURE COEFFICIENT:	+0.18
<b>SEISMIC LOADS:</b>	
RISK CATEGORY:	II
IMPORTANCE FACTOR:	1.0
MAPPED SPECTRAL ACCELERATION:	S <sub>1</sub> =0.20 S <sub>0.1</sub> =0.06 D
SITE CLASS:	F <sub>1</sub> =1.60 F <sub>2</sub> =2.40
SITE CLASS COEFFICIENTS:	S <sub>1</sub> =0.21 S <sub>0.1</sub> =0.10 B
SPECTRAL RESPONSE COEFFICIENT:	
SEISMIC DESIGN CATEGORY:	

**SYMBOL LEGEND**

	GRID LINE MARK
	COLUMN MARK
	SPREAD FOOTING MARK
	CONTINUOUS WALL FOOTING MARK
	GRADE BEAM MARK
	PIER MARK
	BEAM MARK
	LINTEL MARK
	SLAB JOINT
	CONSTRUCTION JOINT
	ELEVATION
	STEEL MOMENT CONNECTION
	REVISION CLOUD
	REVISION TAG
	DETAIL SECTION
	DETAIL CALLOUT
	LETTER/NUMBER COMBINATION INDICATES ELEVATION OR DETAIL
	SHEET NUMBER WHERE ELEVATION, SECTION OR DETAIL IS DRAWN



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Roanoke, VA 24018  
540.772.9580



SALEM FIRE STATION #2 - NEW SERVICE BAYS

NEW CONSTRUCTION

GENERAL STRUCTURAL NOTES

415 ELECTRIC ROAD  
SHEEN, VA 24151

DRAWN BY: AAA  
DESIGNED BY: AAA  
CHECKED BY: MJF  
DATE: 08/30/2024  
SCALE: As indicated  
REVISIONS:

**S0.01**  
PROJECT NO: 03220052.01



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540.772.9580



### FOOTING SCHEDULE

MARK	WIDTH	LENGTH	DEPTH	LONGITUDINAL REINFORCEMENT	TRANSVERSE REINFORCEMENT	REMARKS
F5.0	5'-0"	5'-0"	1'-0"	(6) #5 @ BOTTOM	(5) #5 @ BOTTOM	SPREAD FOOTING
F6.0	6'-0"	6'-0"	1'-0"	(6) #5 @ BOTTOM	(6) #5 @ BOTTOM	SPREAD FOOTING
F7.5	7'-6"	7'-6"	1'-0"	(8) #5 @ BOTTOM	(8) #5 @ BOTTOM	SPREAD FOOTING
TDF1.5	1'-6"	CONT.	2'-0"	(2) #5 CONT. TOP & BOTTOM	#4 TIES @ 12" O.C.	TURNDOWN SLAB
TSF1.5	1'-6"	CONT.	4'-7"	(2) #5 CONTINUOUS	#4 @ 12" O.C.	STAIR BASE THICKENED SLAB

### PIER SCHEDULE

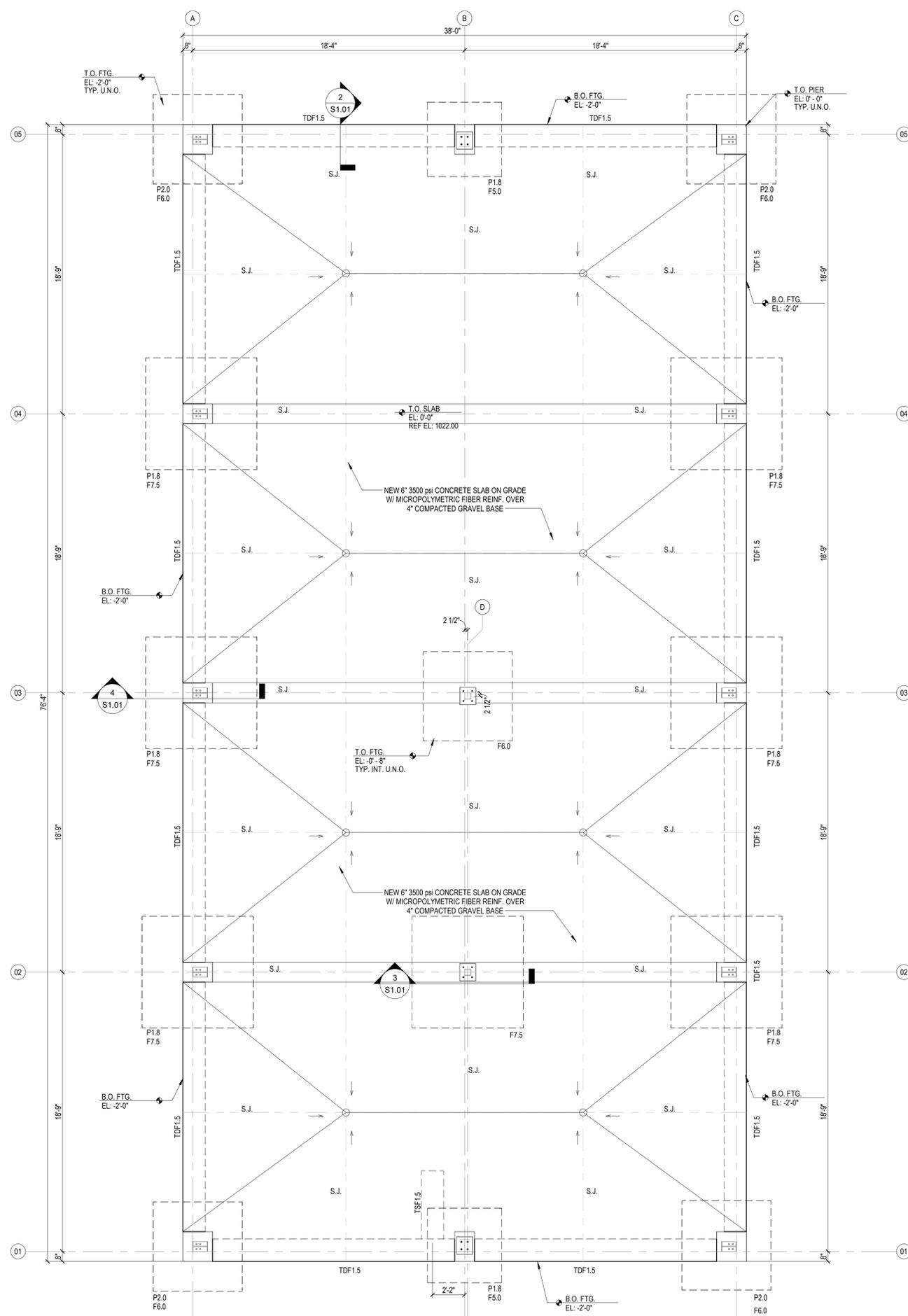
MARK	W x L	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	REMARKS
P1.8	24" x 16"	(4) #5 BARS	#3 TIES @ 12" O.C.	ADDITIONAL TIES @ ANCHOR RODS
P2.0	24" x 24"	(4) #5 BARS	#3 TIES @ 12" O.C.	ADDITIONAL TIES @ ANCHOR RODS

#### GENERAL FOUNDATION NOTES:

- SEE SITE PLAN FOR EXACT WALKWAY/CURB, ETC. LOCATIONS AND FOR CONTINUATION REQUIREMENTS.
- FOOTING SIZES BASED ON AN ASSUMED 1500 psf BEARING CAPACITY. OWNER/ CONTRACTOR SHALL VERIFY EXISTING SOILS ARE SUITABLE AND MEET OR EXCEED THIS CAPACITY.
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- ALL EARTHWORK CUT AND FILL OPERATIONS SHALL BE OBSERVED BY A LICENSED GEOTECHNICAL ENGINEER AS STIPULATED IN THE PROJECT STATEMENT OF SPECIAL INSPECTIONS. NOTIFY ENGINEER OF RECORD OF ANY ADVERSE SOIL CONDITIONS DISCOVERED THAT MAY AFFECT THE DESIGN OF ANY FOUNDATION ELEMENTS.

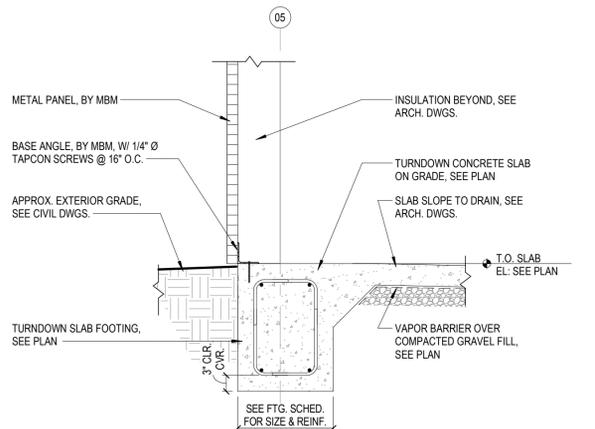
#### CONCRETE SLAB NOTES:

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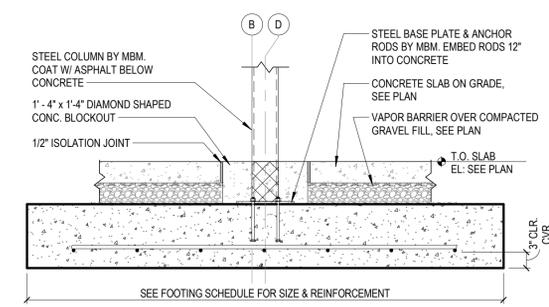
### FOUNDATION PLAN

1 S1.01 1/4" = 1'-0"



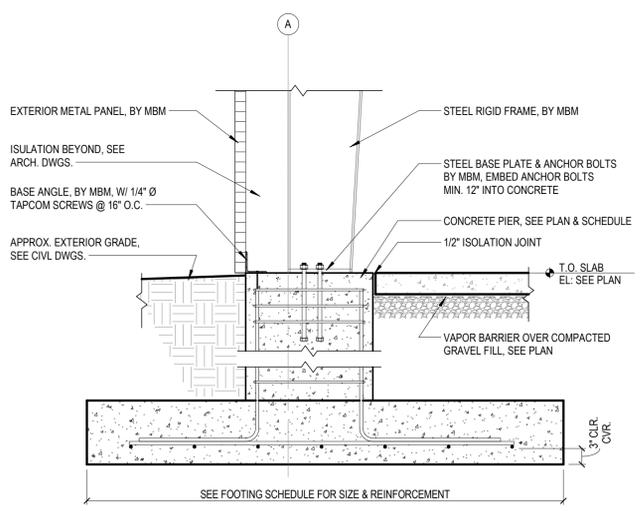
### TYP. TURNDOWN FOUNDATION

2 S1.01 3/4" = 1'-0"



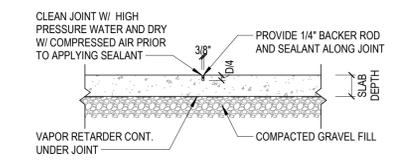
### TYP. INTERIOR COLUMN

3 S1.01 3/4" = 1'-0"



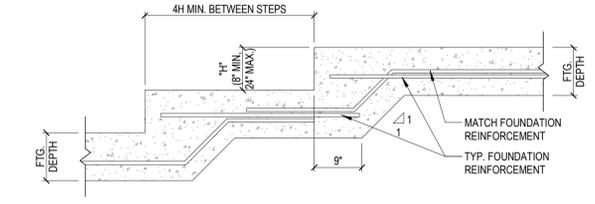
### TYP. COLUMN FOUNDATION

4 S1.01 3/4" = 1'-0"



### SAW CUT CONTROL JOINT

3/4" = 1'-0"



### TYPICAL FOUNDATION STEP

3/4" = 1'-0"

SALEM FIRE STATION #2 - NEW SERVICE BAYS  
NEW CONSTRUCTION  
GARAGE FOUNDATION PLAN

415 ELECTRIC ROAD  
SHEIKH, VA 24161

DRAWN BY AAA  
DESIGNED BY AAA  
CHECKED BY MJF  
DATE 08/30/2024  
SCALE As indicated  
REVISIONS

S1.01

PROJECT NO 03220052.01



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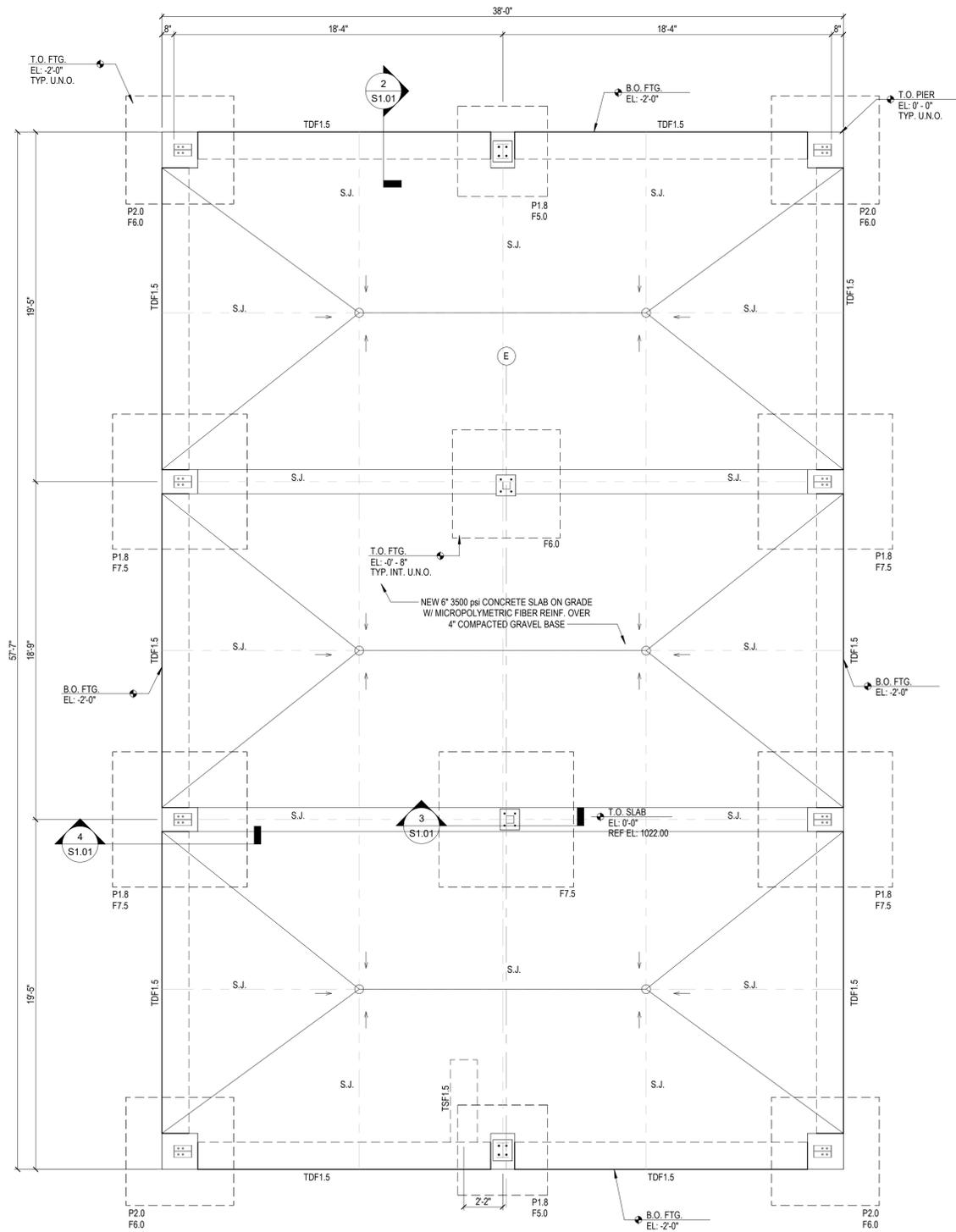
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### FOUNDATION PLAN

1  
S1.02 1/4" = 1'-0"

SALEM FIRE STATION #2 - NEW SERVICE BAYS

NEW CONSTRUCTION

ALTERNATIVE GARAGE FOUNDATION PLAN

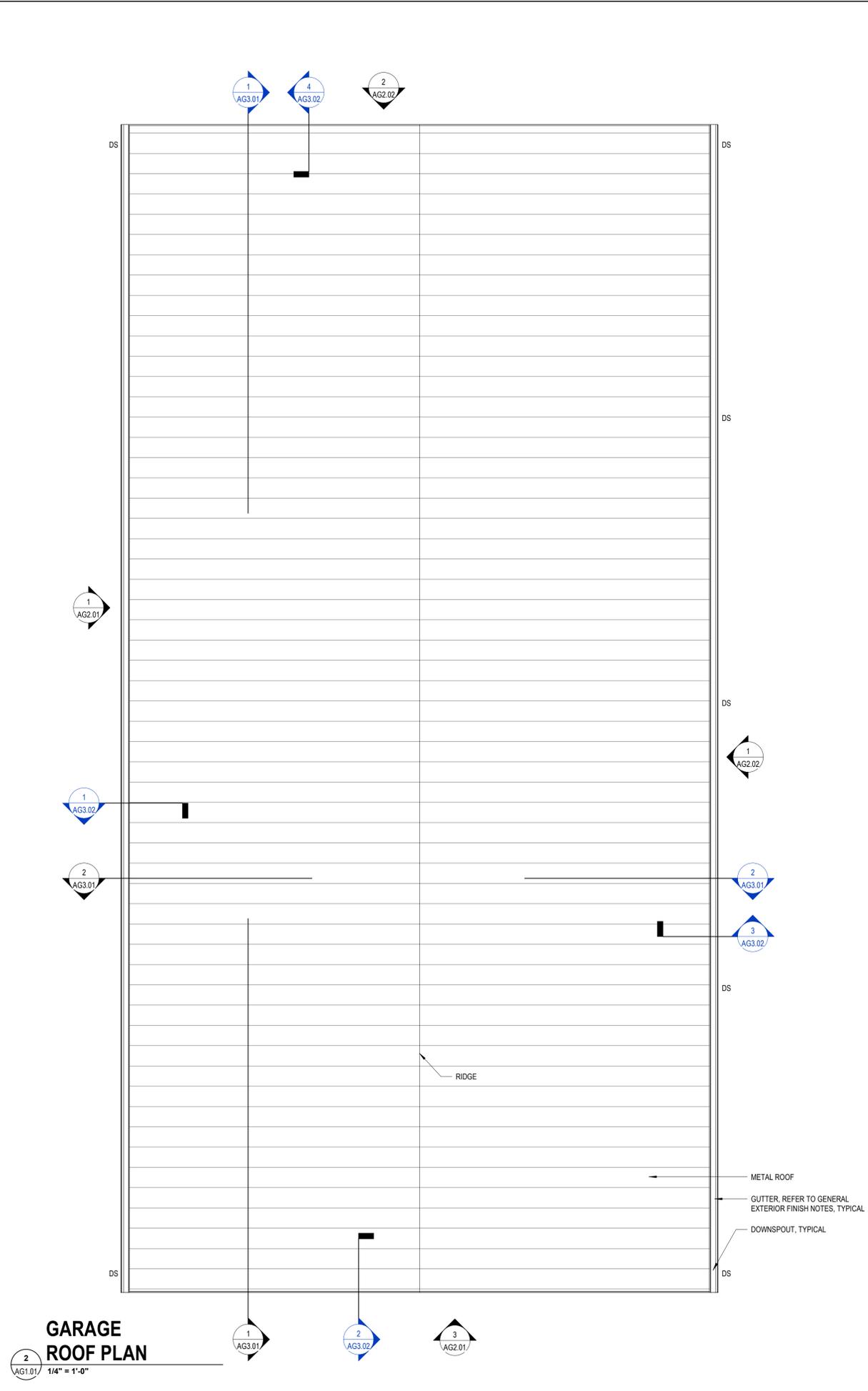
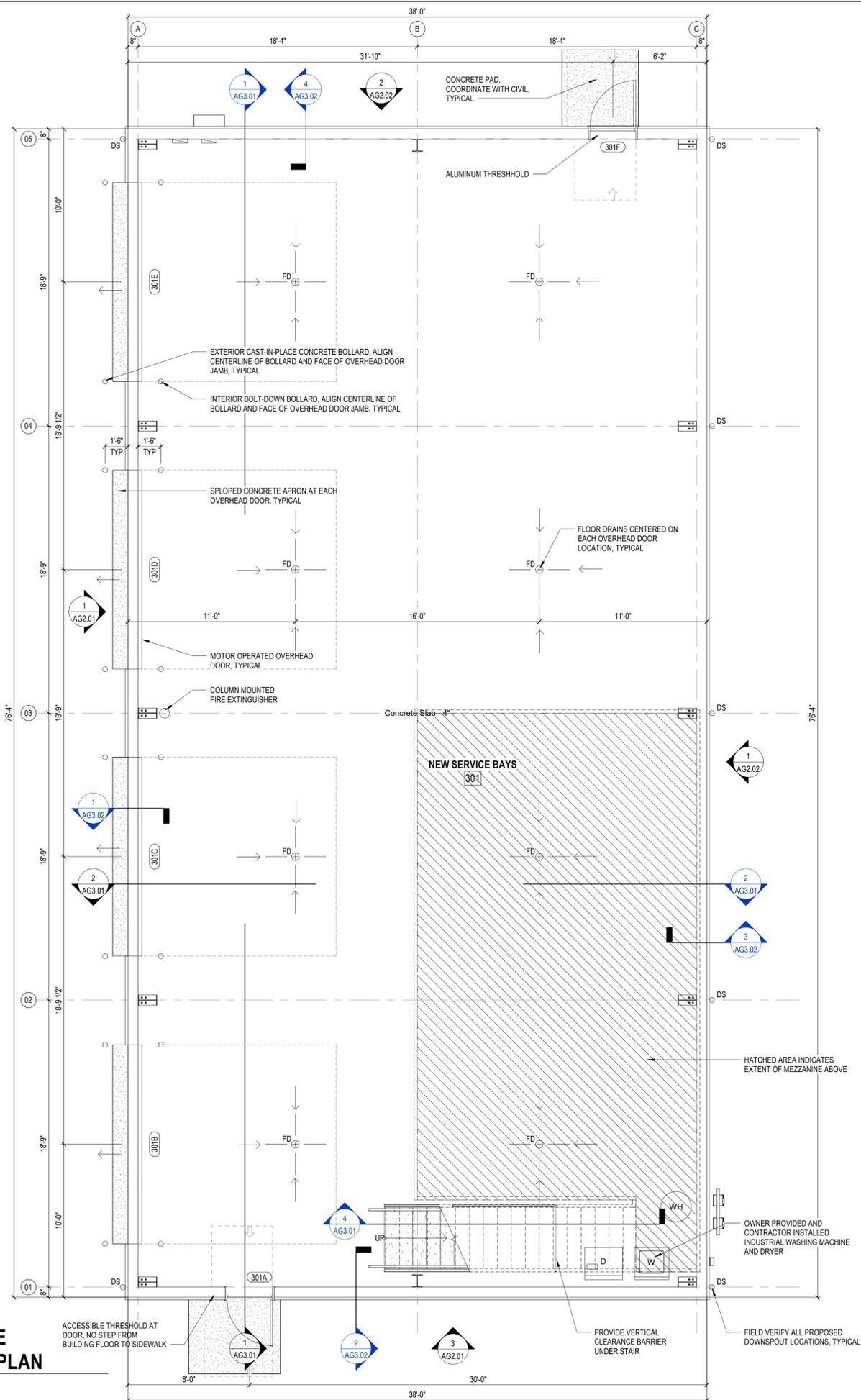
415 ELECTRIC ROAD  
SHEIK, VA 24151

DRAWN BY: AAA  
 DESIGNED BY: AAA  
 CHECKED BY: MJF  
 DATE: 08/30/2024  
 SCALE: As indicated  
 REVISIONS:

# S1.02

PROJECT NO 03220052.01

J:\2024\08\20240821\Salem Fire Station 4\Arch\Drawings\20240821\Salem Fire Station AG1.01



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540.772.9580



SALEM VA

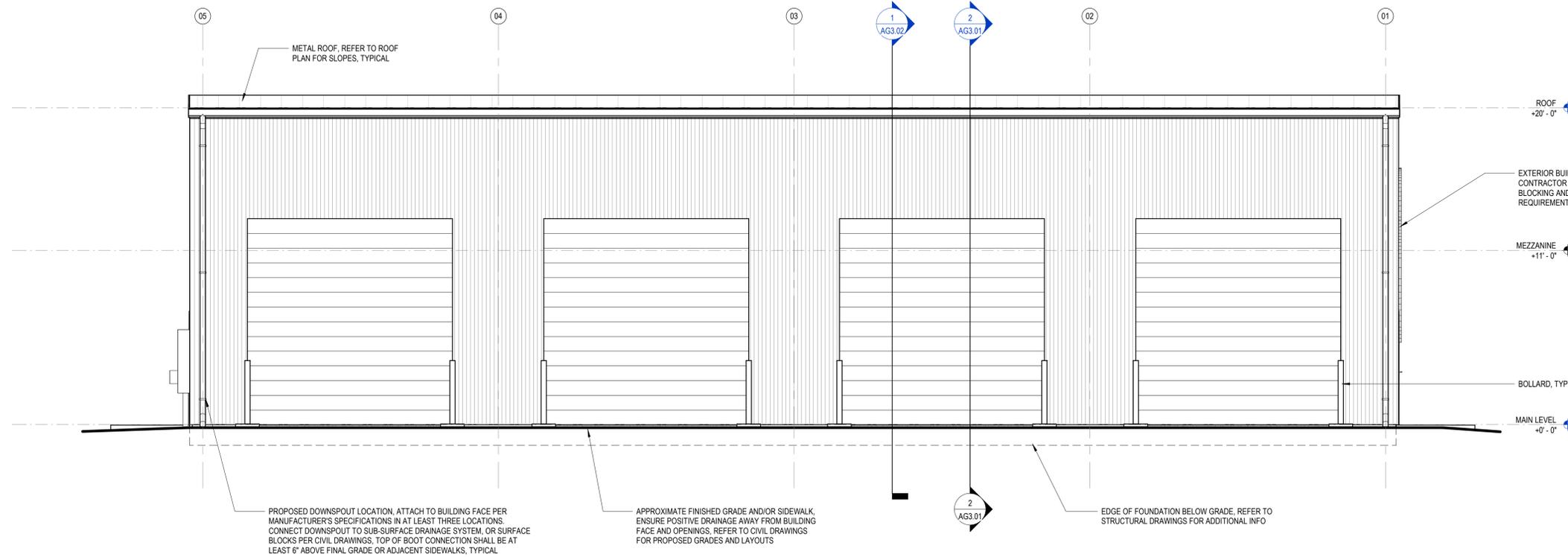


**SALEM FIRE STATION #2 - NEW SERVICE BAYS**  
NEW CONSTRUCTION  
GARAGE FLOOR PLAN & ROOF PLAN

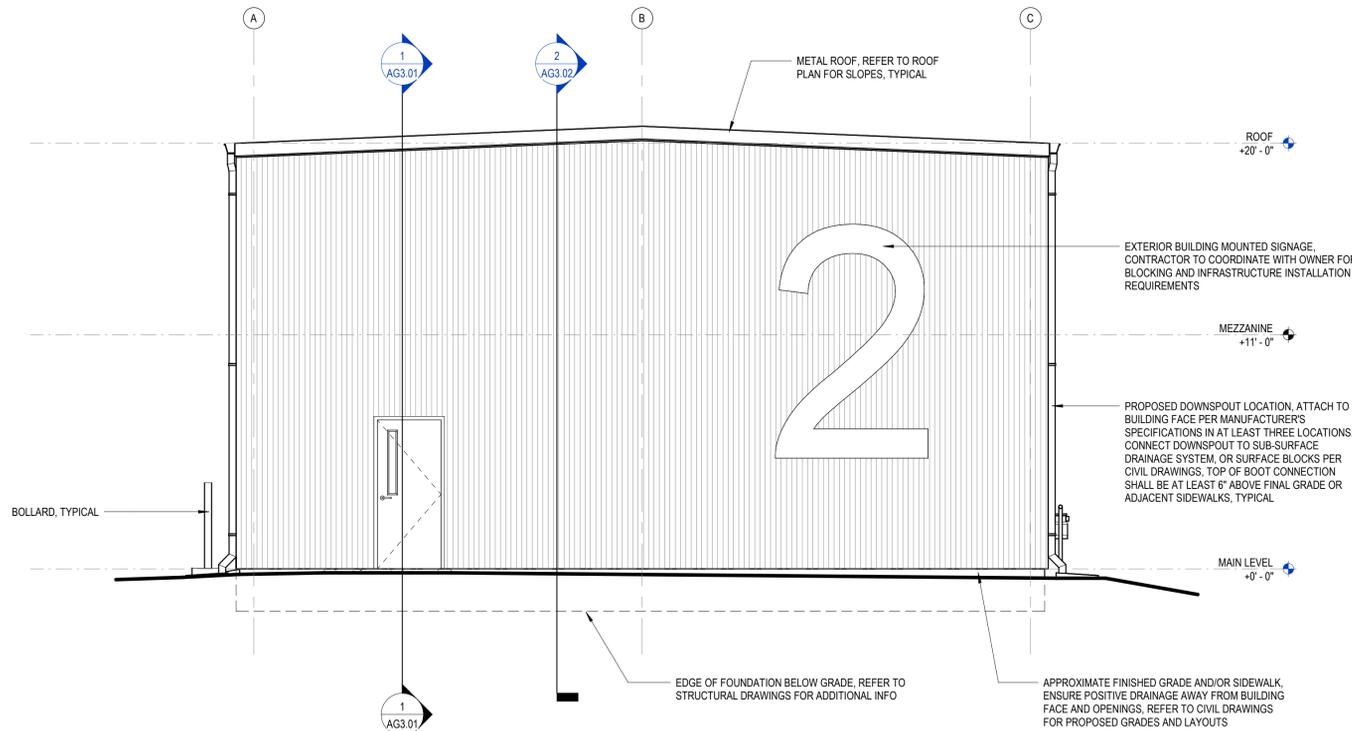
DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE 1/4" = 1'-0"  
REVISIONS

**AG1.01**  
PROJECT NO 03220052.01

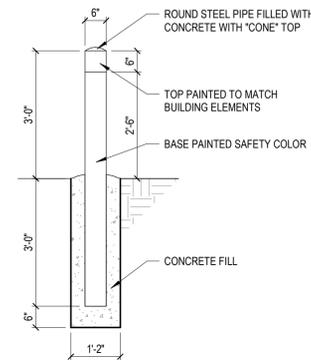




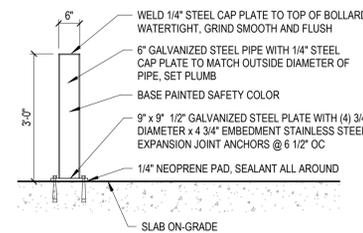
1 EXTERIOR ELEVATION  
1/4" = 1'-0"



3 EXTERIOR ELEVATION  
1/4" = 1'-0"

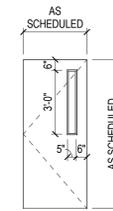


4 BOLLARD DETAIL  
NOT TO SCALE



2 BOLLARD DETAIL  
NOT TO SCALE

DOOR SCHEDULE - GARAGE											
DOOR NO.	WIDTH	HEIGHT	THICKNESS	MATERIAL	LABEL (MIN)	TRHD	DOOR TYPE	FRAME TYPE	HWDR SET #	ENERGY STAR	REMARKS
301A	3'-0"	7'-0"	0'-1 3/4"	MTL	-	Yes	A	1	2	Yes	
301B	13'-0"	13'-0"	0'-3"	MTL	-	-	BY MFR	BY MFR			
301C	13'-0"	13'-0"	0'-3"	MTL	-	-	BY MFR	BY MFR			
301D	13'-0"	13'-0"	0'-3"	MTL	-	-	BY MFR	BY MFR			
301E	13'-0"	13'-0"	0'-3"	MTL	-	-	BY MFR	BY MFR			
301F	3'-0"	7'-0"	0'-1 3/4"	MTL	-	Yes	A	1	2	Yes	



DOOR TYPE  
NOT TO SCALE



DOOR FRAMES  
NOT TO SCALE

- HARDWARE SETS**
- REFER TO DOOR SCHEDULE FOR SIGNAGE REQUIREMENTS
- NOT USED
  - EXTERIOR EGRESS
    - (1-1/2) PAIR HINGES
    - LEVER HANDLE EXIT LOCK SET (ANSI F89), PREPARE FOR ELECTRONIC SECURE DOOR CONTROLS
    - (1) ADA ACCESSIBLE THRESHOLD
    - (1) CLOSER
    - (1) WEATHERSTRIPPING
    - (1) KICKPLATE (INTERIOR)
  - NOT USED



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SALEM VA



SALEM FIRE STATION #2 - NEW SERVICE BAYS  
NEW CONSTRUCTION  
GARAGE EXTERIOR ELEVATIONS, DOOR SCHEDULE & DETAILS  
415 ELECTRIC ROAD  
SALEM, VIRGINIA 24145

DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE As indicated  
REVISIONS

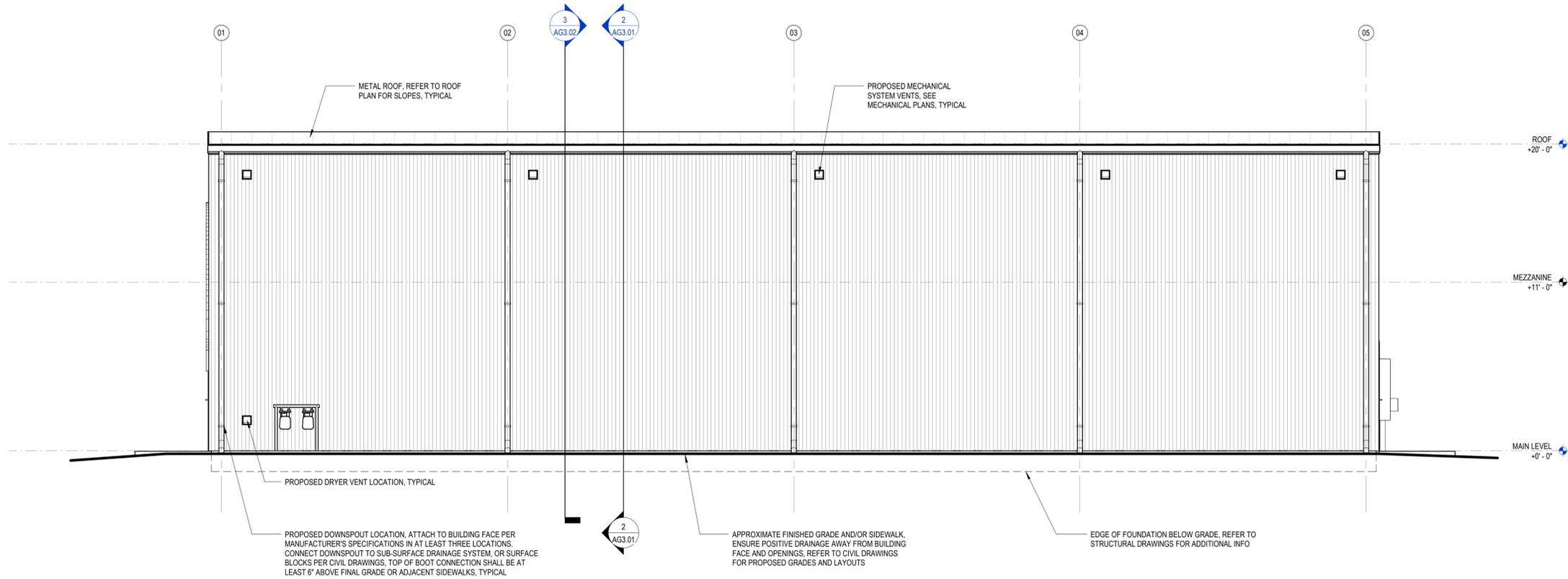
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PROJECT NO 03220052.01



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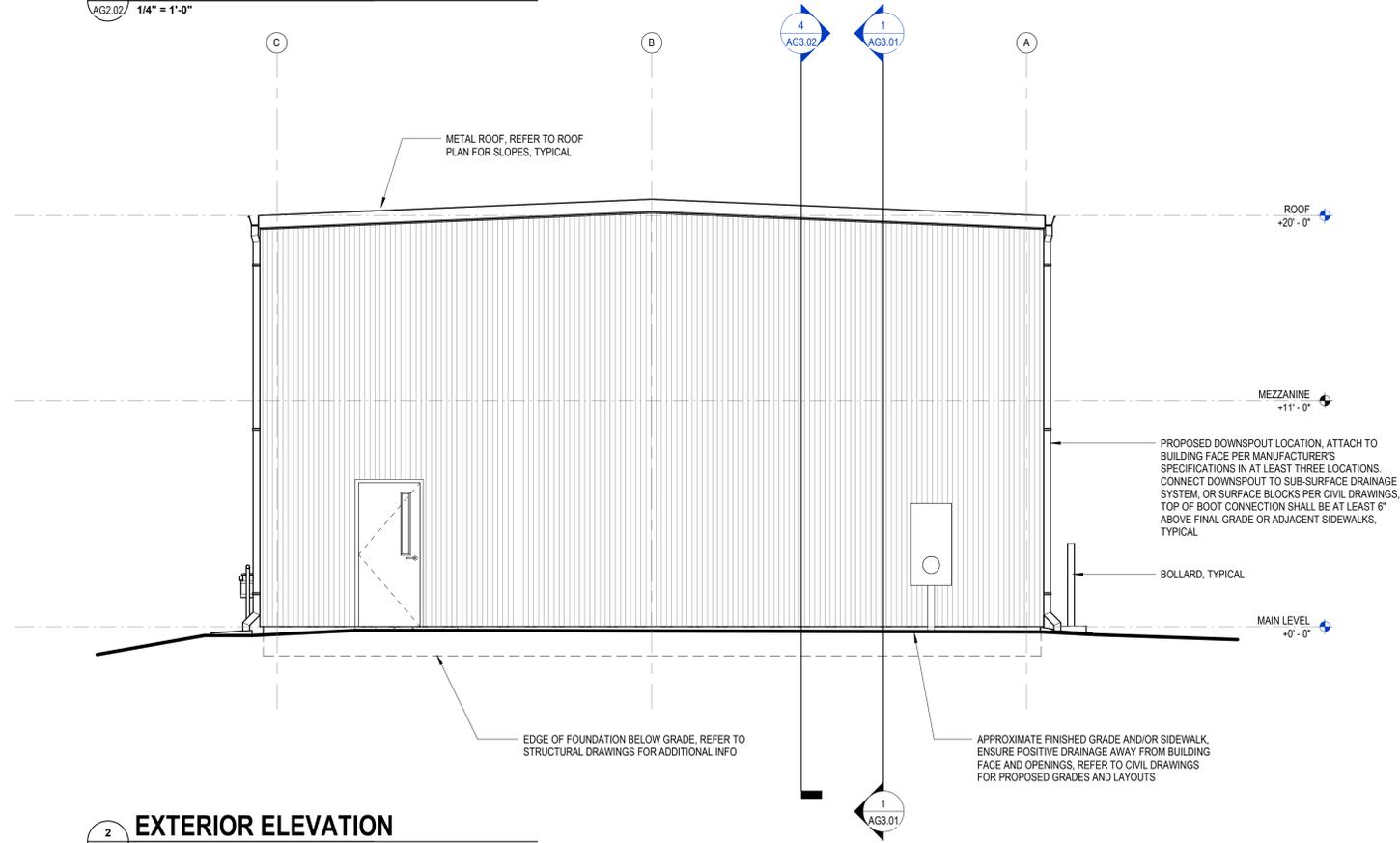


SALEM VA



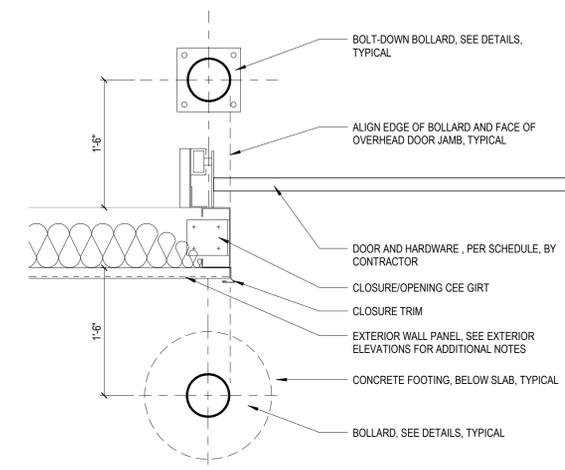
**1 EXTERIOR ELEVATION**

AG2.02 / 1/4" = 1'-0"



**2 EXTERIOR ELEVATION**

AG2.02 / 1/4" = 1'-0"



**TYPICAL BOLLARDS FOR AT-GRADE DOORS**

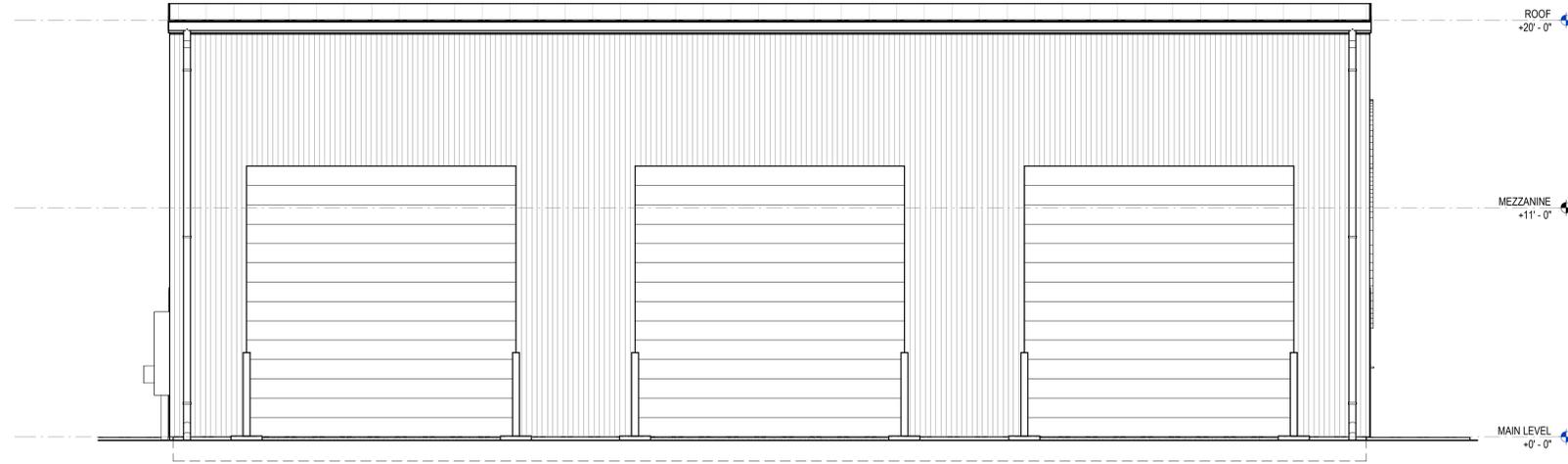
AG2.02 / 1" = 1'-0"

SALEM FIRE STATION #2 - NEW SERVICE BAYS

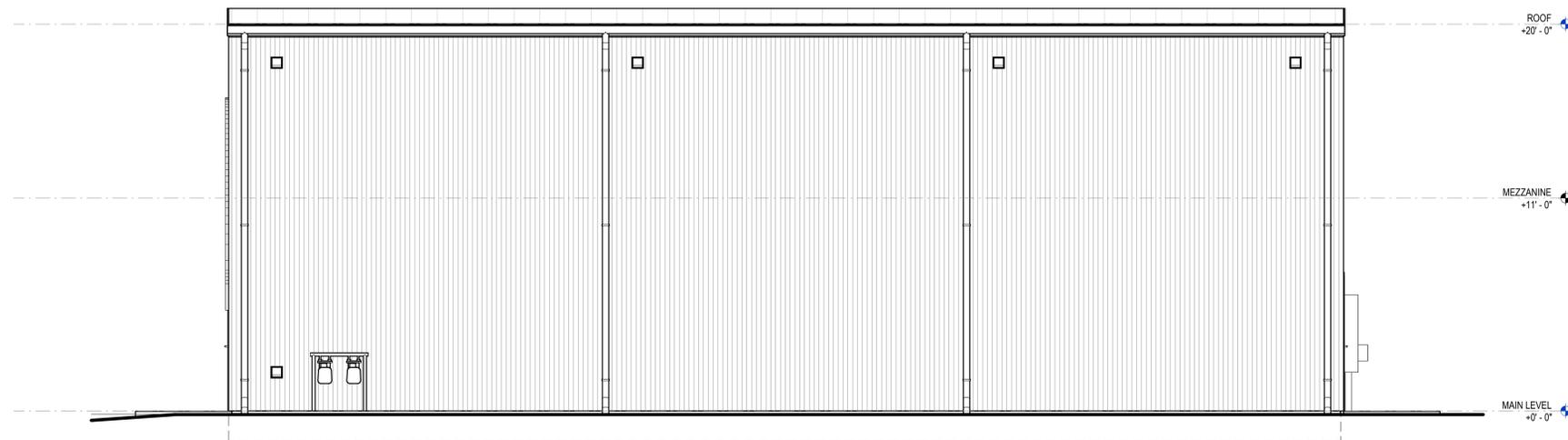
NEW CONSTRUCTION  
GARAGE EXTERIOR ELEVATIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24145

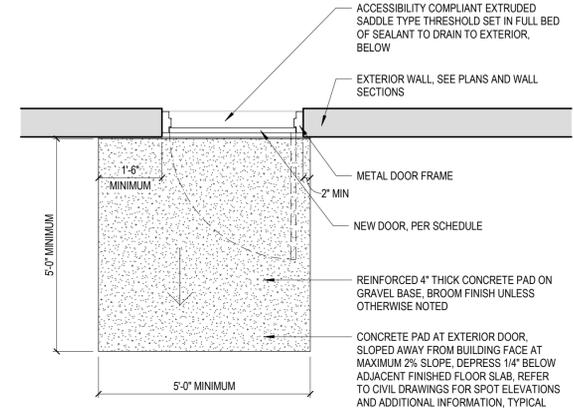
DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE As indicated  
REVISIONS



1 ALTERNATE ELEVATION  
 AG2.03 1/4" = 1'-0"



2 ALTERNATE ELEVATION  
 AG2.03 1/4" = 1'-0"



3 EXTERIOR CONCRETE PAD  
 AG2.03 1/2" = 1'-0"



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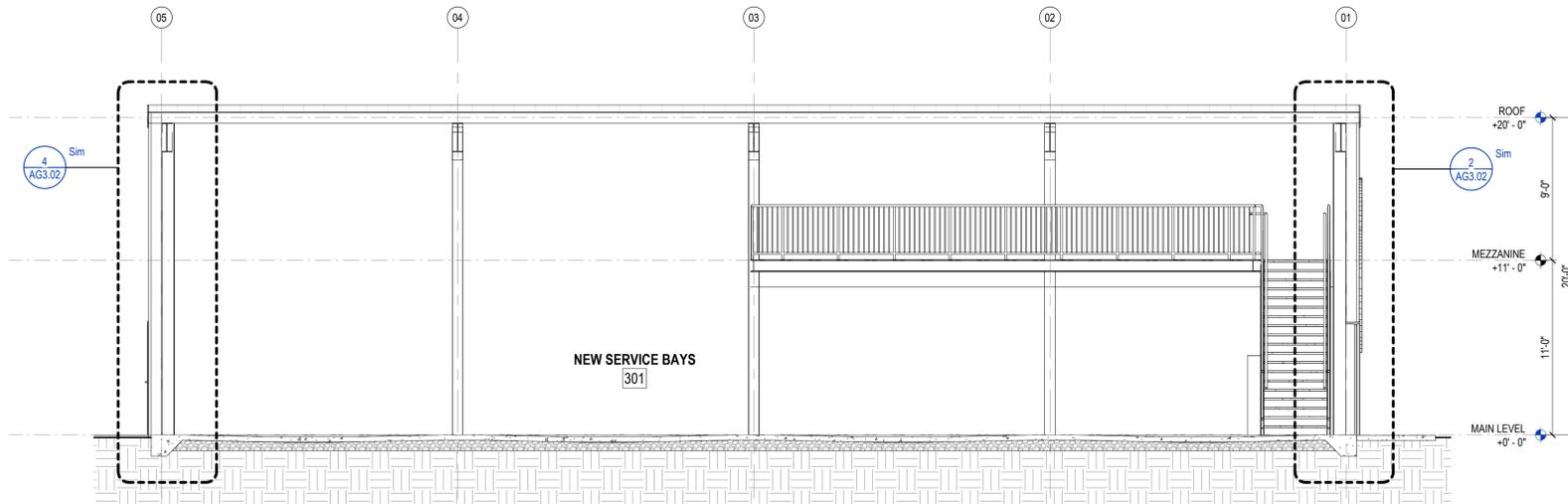


SALEM VA

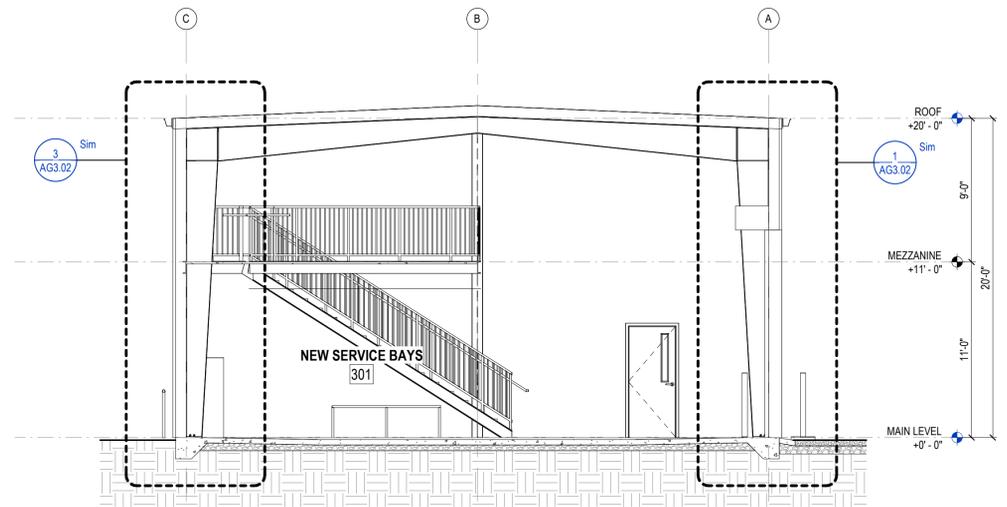


SALEM FIRE STATION #2 - NEW SERVICE BAYS  
 NEW CONSTRUCTION  
 ALTERNATE GARAGE EXTERIOR ELEVATIONS  
 415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24165

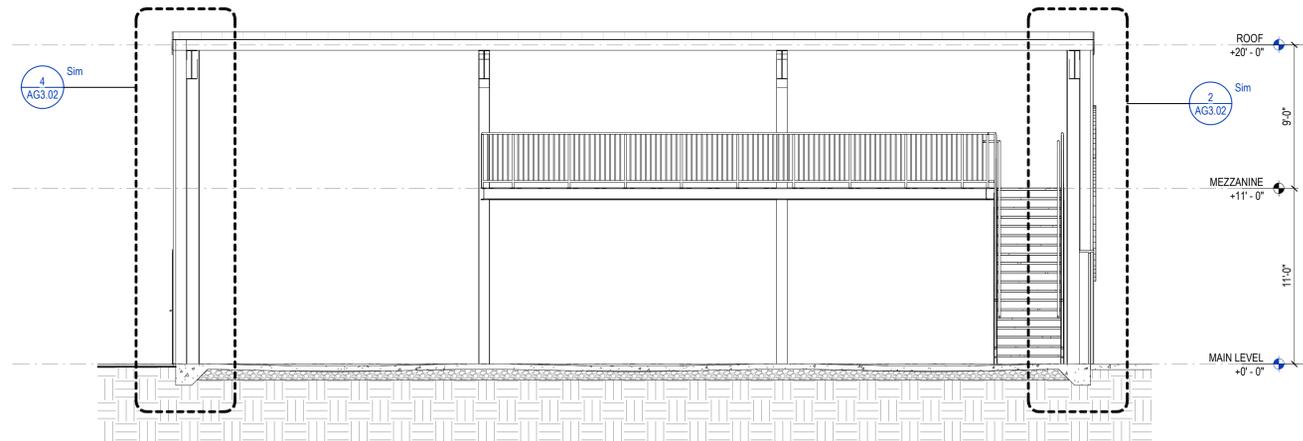
DRAWN BY JR3  
 DESIGNED BY JR3  
 CHECKED BY RWP  
 DATE 2024-08-30  
 SCALE As indicated  
 REVISIONS



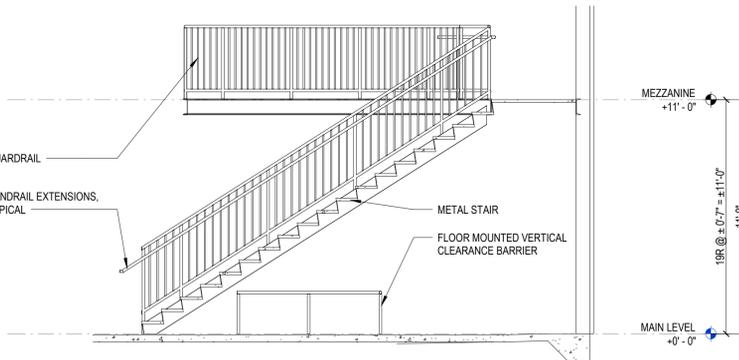
**1 BUILDING SECTION**  
AG3.01 / 3/16" = 1'-0"



**2 BUILDING SECTION**  
AG3.01 / 3/16" = 1'-0"



**3 ALTERNATE BUILDING SECTION**  
AG3.01 / 3/16" = 1'-0"



**4 STAIR SECTION**  
AG3.01 / 1/4" = 1'-0"



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SALEM VA

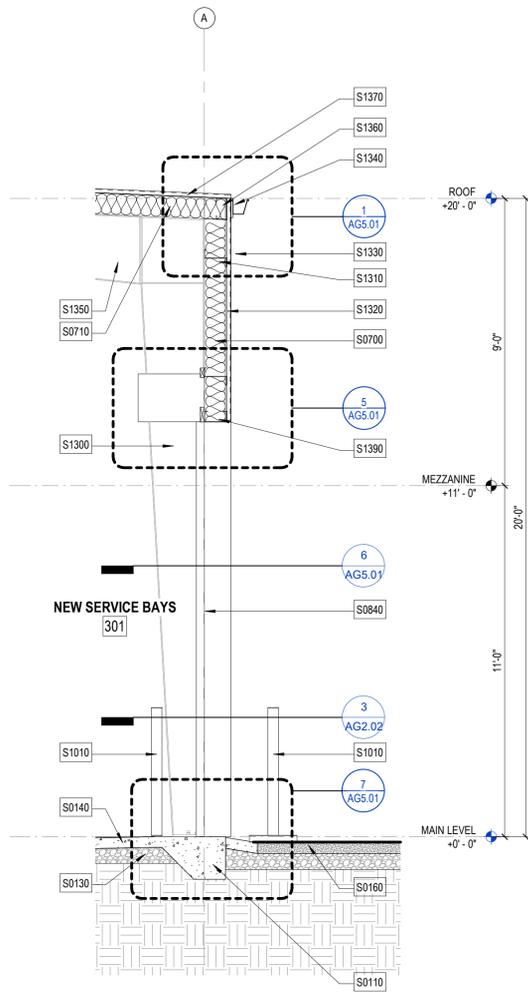


**SALEM FIRE STATION #2 - NEW SERVICE BAYS**  
NEW CONSTRUCTION  
GARAGE BUILDING SECTIONS  
415 ELECTRIC ROAD  
SHEIK, VIRGINIA 24165

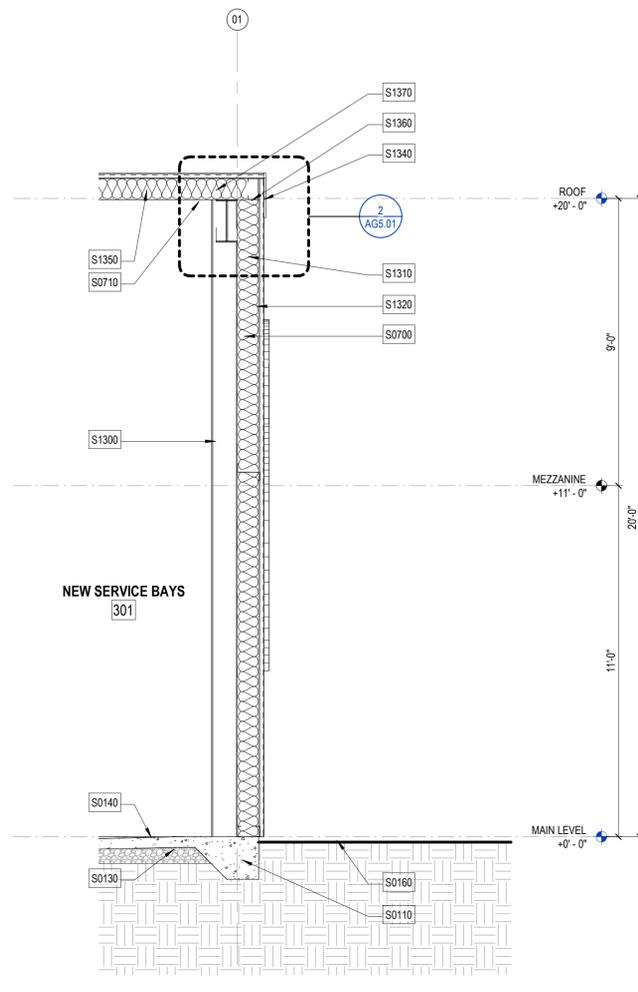
DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE As indicated  
REVISIONS

**AG3.01**  
PROJECT NO 03220052.01

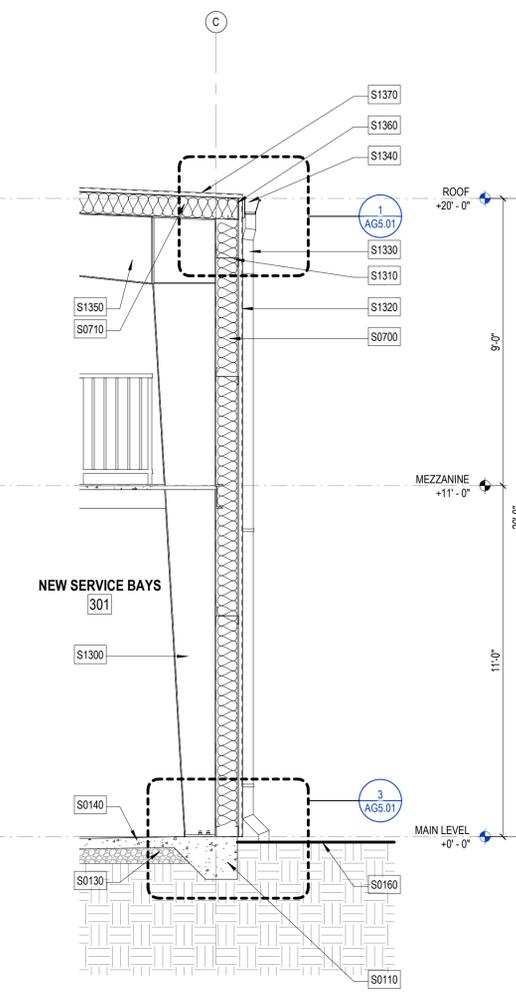
2024.08.30 10:27:29 AM



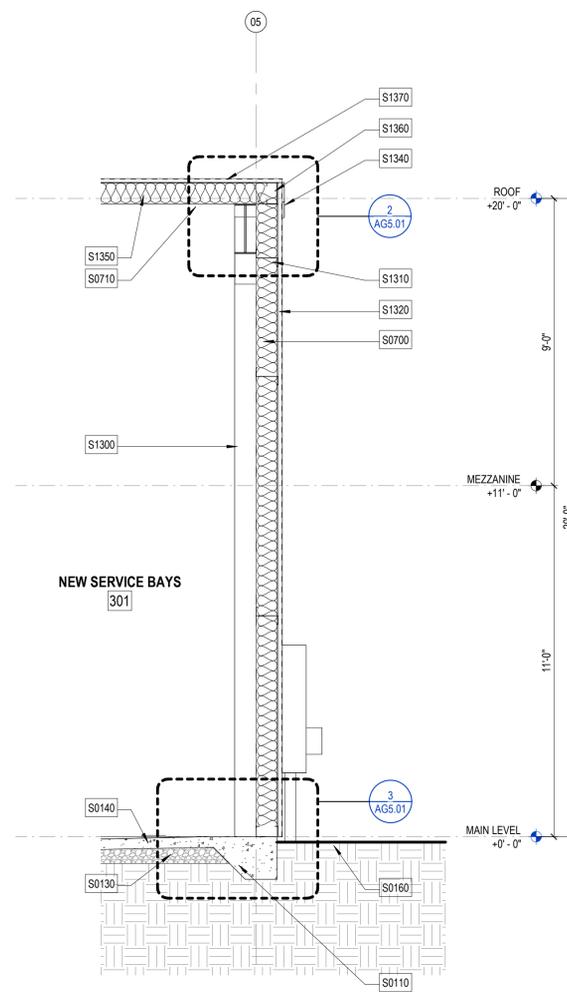
**1 WALL SECTION**  
AG3.02/ 3/8" = 1'-0"



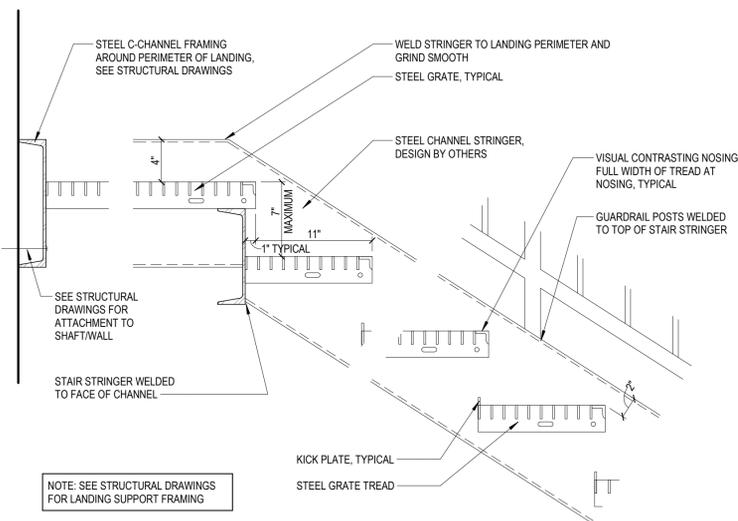
**2 WALL SECTION**  
AG3.02/ 3/8" = 1'-0"



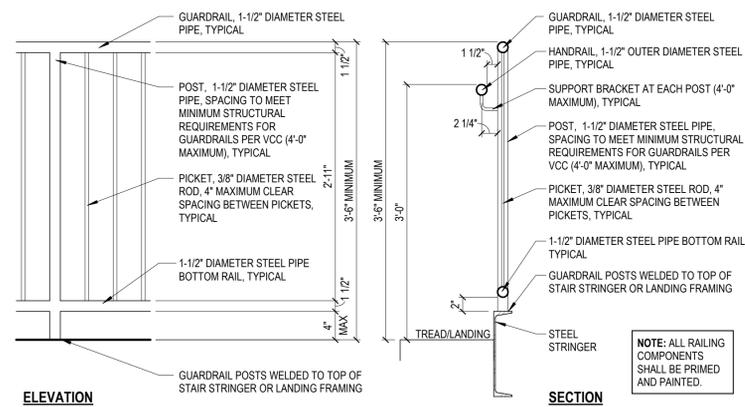
**3 WALL SECTION**  
AG3.02/ 3/8" = 1'-0"



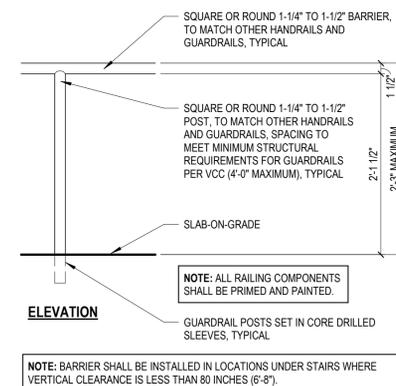
**4 WALL SECTION**  
AG3.02/ 3/8" = 1'-0"



**6 METAL GRATE STAIR DETAILS**  
AG3.02/ 1 1/2" = 1'-0"



**5 GUARDRAIL AND HANDRAIL DETAILS**  
AG3.02/ 1" = 1'-0"



**7 VERTICAL CLEARANCE BARRIER**  
AG3.02/ 1" = 1'-0"

**WALL SECTION NOTES**

- S0110 CONCRETE REINFORCED STRIP/SPREAD FOOTING. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION
- S0130 CLEAN GRAVEL BACKFILL, TYPICAL
- S0140 INTERIOR CONCRETE SLAB WITH WWF REINFORCING OVER MINIMUM 15 MIL VAPOR BARRIER AND MINIMUM OF 4" CLEAN GRAVEL FILL. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL NOTES, TYPICAL
- S0160 APPROXIMATE FINISHED GRADE. VARIES. SLOPE COMPACTED FILL AREAS AROUND BUILDING SO AS TO HAVE A 5% GRADE AWAY FROM BUILDING FACE. REFER TO CIVIL DRAWINGS FOR SPOT ELEVATIONS, TYPICAL
- S0700 VINYL-FACED BATT INSULATION, BY METAL BUILDING MANUFACTURER
- S0710 VINYL-FACED ROOF INSULATION, BY METAL BUILDING MANUFACTURER
- S0840 INSULATED LOADING DOCK HEIGHT OVERHEAD VERTICAL LIFT DOOR BOLLARD BEYOND, REFER TO FLOOR PLAN FOR ADDITIONAL NOTES
- S1300 MAIN BUILDING FRAME, BY METAL BUILDING MANUFACTURER
- S1310 GIRTS, BY METAL BUILDING MANUFACTURER
- S1320 METAL PANELS, BY METAL BUILDING MANUFACTURER
- S1330 TYPICAL GUTTER AND DOWNSPOUT, BY METAL BUILDING MANUFACTURER
- S1340 PRE-FINISHED EAVE TRIM, BY METAL BUILDING MANUFACTURER
- S1350 STEEL ROOF FRAMING, BY METAL BUILDING MANUFACTURER
- S1360 ROOF PURLINS AND EAVE STRUT, BY METAL BUILDING MANUFACTURER
- S1370 METAL PANEL ROOF SYSTEM, BY METAL BUILDING MANUFACTURER
- S1390 ZEE OR CEE GIRT AT TOP OF OPENINGS, BY METAL BUILDING MANUFACTURER, TYPICAL



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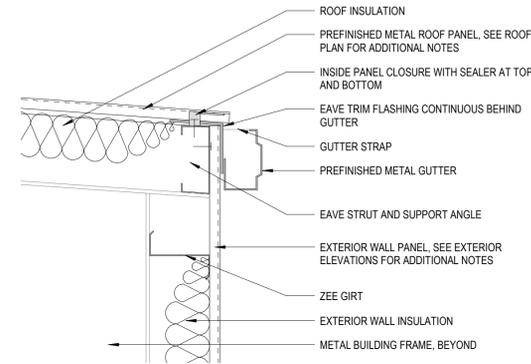
**SALEM VA**



**SALEM FIRE STATION #2 - NEW SERVICE BAYS**  
NEW CONSTRUCTION  
GARAGE BUILDING WALL SECTIONS

DRAWN BY: JR3  
DESIGNED BY: JR3  
CHECKED BY: RWP  
DATE: 2024-08-30  
SCALE: As indicated  
REVISIONS:

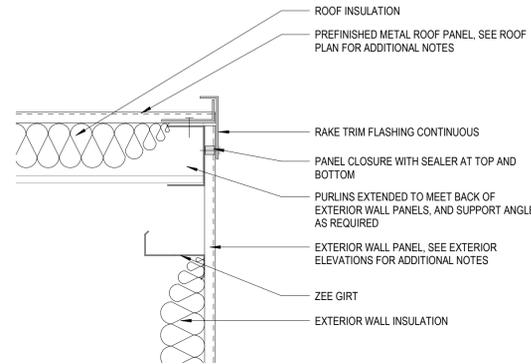
**AG3.02**  
PROJECT NO: 032200521



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**1 METAL BUILDING EAVE**

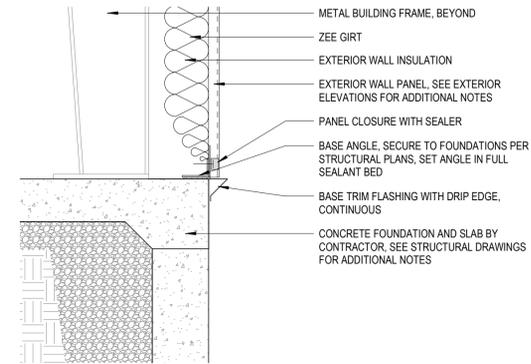
AG5.01 1" = 1'-0"



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**2 METAL BUILDING RAKE**

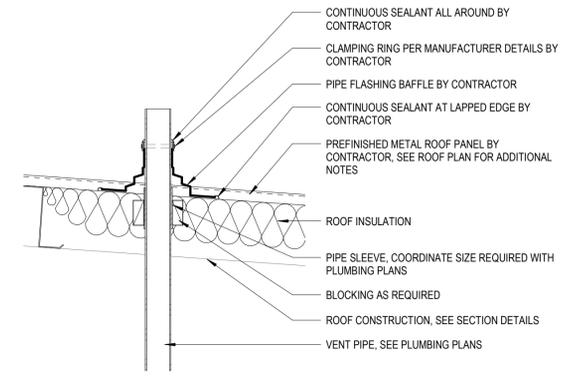
AG5.01 1" = 1'-0"



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**3 METAL BUILDING BASE FLASHING**

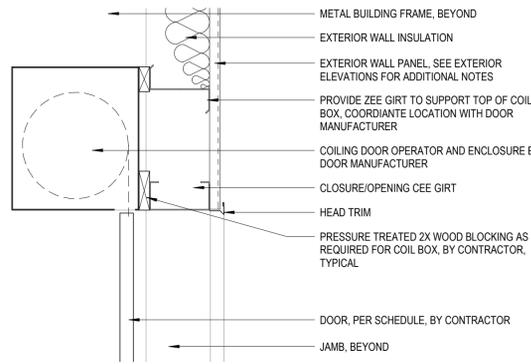
AG5.01 1" = 1'-0"



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**4 METAL BUILDING ROOF VENT PENETRATION**

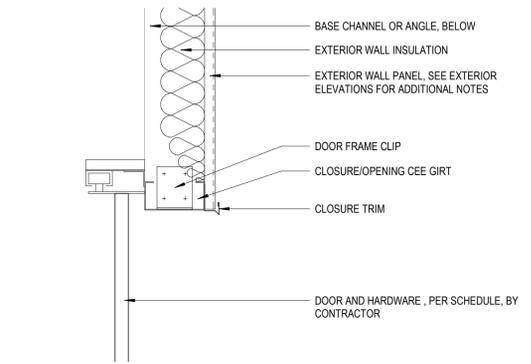
AG5.01 1" = 1'-0"



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**5 METAL BUILDING COILING DOOR HEAD**

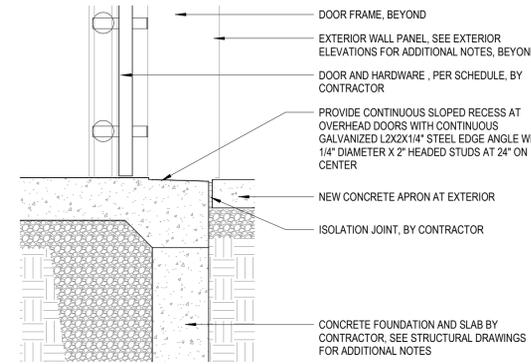
AG5.01 1" = 1'-0"



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**6 METAL BUILDING COILING DOOR JAMB**

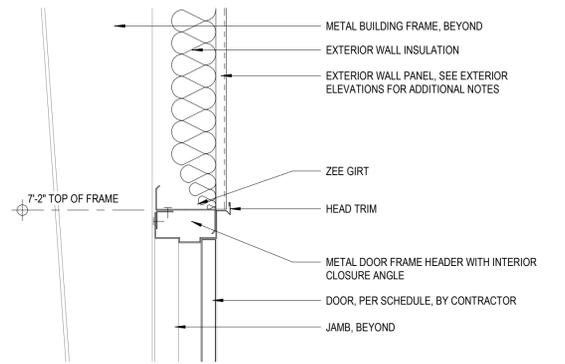
AG5.01 1" = 1'-0"



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**7 METAL BUILDING COILING DOOR SILL**

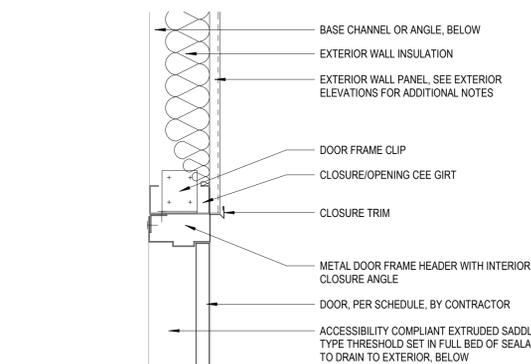
AG5.01 1" = 1'-0"



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**8 METAL BUILDING PERSONNEL DOOR HEAD**

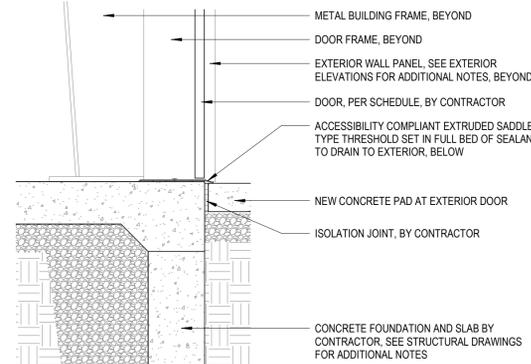
AG5.01 1" = 1'-0"



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**9 METAL BUILDING PERSONNEL DOOR JAMB**

AG5.01 1" = 1'-0"



ALL COMPONENTS SHALL BE PROVIDED BY METAL BUILDING MANUFACTURER UNLESS OTHERWISE NOTED. REFER TO METAL BUILDING DESIGN DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON DIMENSION, HEIGHTS AND SIZES OF BUILDING COMPONENTS.

**10 METAL BUILDING PERSONNEL DOOR SILL**

AG5.01 1" = 1'-0"



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SALEM, VA



SALEM FIRE STATION #2 - NEW SERVICE BAYS

NEW CONSTRUCTION  
DETAILS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24143

DRAWN BY JR3  
DESIGNED BY JR3  
CHECKED BY RWP  
DATE 2024-08-30  
SCALE 1" = 1'-0"  
REVISIONS

**AG5.01**  
PROJECT NO 03220052.01

RADIANT TUBE HEATER SCHEDULE						
MARK	TUBE LENGTH (FT)	OPERATING WEIGHT (LBS.)	NATURAL GAS HEATING	ELECTRICAL		BASIS OF DESIGN (MANUFACTURER,MODEL#)
			HEATING INPUT (MBH)	V / PH	AMPS	
IH-1	30	150	100/70	120 / 1	1.0	GORDONRAY/ ROBERTS GORDON DUAL STAGE INFRARED TUBE HEATER MODEL DF-100
IH-2	10	150	40	120 / 1	1.0	GORDONRAY/ ROBERTS GORDON SINGLE STAGE INFRARED TUBE HEATER MODEL BH-40

**NOTES:**

- PROVIDE IH-1 WITH TWO STAGES OF HEAT.
- PROVIDE EACH IH-1 HEATER WITH A WALL MOUNTED TWO STAGE PROGRAMMABLE THERMOSTAT WITH ON/OFF AND SCHEDULING ABILITY.
- PROVIDE IH-2 WITH ONE STAGE OF HEAT.
- PROVIDE EACH IH-2 HEATER WITH A WALL MOUNTED SINGLE STAGE PROGRAMMABLE THERMOSTAT WITH ON/OFF AND SCHEDULING ABILITY.
- PROVIDE EACH HEATER WITH VENT ADAPTOR TO ALLOW CONNECTION TO 4" VENT PIPING AT EXHAUST END OF HEATER.

ELECTRIC UNIT HEATER SCHEDULE					
MARK	HEATING CAPACITY		ELECTRICAL		BASIS OF DESIGN
	KW	MBH	V / PH	AMPS	
UH-1	7.5	25.6	208 / 1	36.1	MARKEL, MODEL # F2F5107CA1L, HORIZONTAL FORCED FAN UNIT HEATER
UH-2	3.3	11.2	208 / 1	14.4	MARKEL, MODEL # F1F5103N, HORIZONTAL FORCED FAN UNIT HEATER

**NOTES:**

- PROVIDE WITH STANDARD LOUVER DIFFUSER.
- PROVIDE UH-1 WITH LOW VOLTAGE REMOTE MOUNTED THERMOSTAT.
- PROVIDE UH-2 WITH UNIT MOUNTED CONTROLS.

HVAC LEGEND	
DUCTWORK	
	SUPPLY AIR DUCT, (RECTANGULAR)
	RETURN AIR DUCT, (RECTANGULAR)
	TEMPERATURE SENSOR
	RECTANGULAR DUCTWORK (1ST FIG. SIDE SHOWN, 2ND SIDE NOT SHOWN)
	ROUND DUCTWORK
	FLEXIBLE DUCT, (ROUND)
	SUPPLY DIFFUSER
	EXHAUST GRILLE
	RETURN GRILLE
	AIR DEVICE TAG
	AIRFLOW (CFM) INLET SIZE - TAG - # OF THROW DIRECTIONS
	DUCT TRANSITION, RECTANGULAR OR ROUND
	EQUIPMENT TAG
	EQUIPMENT TYPE ABBREVIATION UNIT MARK #
	MVD, MANUAL VOLUME DAMPER
	MOTORIZED CONTROL DAMPER
	CONNECT TO EXISTING
	LIMITS OF DEMOLITION
	EXISTING (EQUIPMENT OR DUCTWORK/PIPING)
	DEMOLITION (EQUIPMENT, PIPING, DUCTWORK, ETC.)
	DIRECTION OF AIRFLOW



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SALEM VA



SALEM FIRE STATION #2 - NEW SERVICE BAYS  
NEW CONSTRUCTION  
MECHANICAL LEGEND AND SCHEDULES

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24163

DRAWN BY JNB  
DESIGNED BY JNB  
CHECKED BY JNB  
DATE 2024-08-30  
SCALE AS NOTED  
REVISIONS

MG1.01

PROJECT NO 03220052.01

GENERAL MECHANICAL SPECIFICATIONS

1. SCOPE:  
PROVIDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR OWNER'S USE COMPLETE SYSTEMS OF HEATING, VENTILATION, AIR CONDITIONING (HVAC), PLUMBING, FOR THE PROPOSED WORK AND BUILDING RENOVATIONS AS SHOWN ON THE DRAWINGS AND CALLED FOR IN THESE SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION WITH OTHER DIVISIONS OF WORK FOR THE FULL EXTENT OF THE SCOPE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL ASPECTS, COMPONENTS, SYSTEMS, ETC. AND ACCOMMODATE THE PERFORMANCE INTENT OF THE CONSTRUCTION DOCUMENTS THROUGHOUT THE PROJECT SCOPE.

2. BIDDERS RESPONSIBILITY:  
EXAMINE THE DRAWINGS AND SPECIFICATIONS AND VISIT THE WORK SITE. BECOME FAMILIAR WITH THE CHARACTER OF THE WORK, THE COORDINATION WITH OTHER TRADES REQUIRED, AND ANY OTHER CONDITIONS THAT AFFECT THE COMPLETION OF THIS WORK. GENERAL CONTRACTOR SHALL BE REQUIRED TO COORDINATE WORK WITH TENANT FINISH CONTRACTOR IN A SIDE BY SIDE SCENARIO.

3. PERMITS, CODES AND LAWS:  
APPLY FOR ALL PERMITS AND PAY ALL FEES.  
ALL WORK SHALL BE IN ACCORDANCE WITH LATEST EDITIONS OF THE FOLLOWING RULES AND REGULATIONS, HEREIN REFERRED TO AS "CODES":  
THE LATEST OR ADOPTED EDITION OF THE APPLICABLE LOCAL, STATE, AND FEDERAL BUILDING, MECHANICAL, SANITATION, PLUMBING, ETC. CODES.  
UNDERWRITER'S LABORATORIES, INC. (U.L) NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.) OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A)  
WHERE ANY OF THESE CODES ARE AT VARIANCE WITH THE DRAWINGS AND SPECIFICATIONS, THEIR REQUIREMENTS SHALL TAKE PRECEDENCE, UNLESS THE DRAWINGS AND SPECIFICATIONS REQUIREMENTS EXCEED THESE CODES. INCLUDE ANY COST NECESSARY TO MEET THESE CODES IN THE BID PRICE.

4. MECHANICAL PLANS:  
THE MECHANICAL PLANS ARE DIAGRAMMATIC AND BASED ON ONE MANUFACTURER'S EQUIPMENT.  
THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE USED. INSTALLATION SHALL BE WITHIN THE LIMITATIONS IMPOSED BY THE ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, AND PLUMBING REQUIREMENTS WITH ADEQUATE SPACE FOR MAINTENANCE.

5. QUESTIONS AND CLARIFICATIONS OF BID DOCUMENTS:  
BIDDERS SHALL NOT RELY ON ANY ORAL CLARIFICATION OF THE DRAWINGS OR SPECIFICATIONS. ANY QUESTIONS OR CLARIFICATIONS SHALL BE REFERRED IN WRITING TO THE ARCHITECT.

6. GUARANTEES:  
ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. WARRANTIES SHALL BE IN WRITING AND SHALL INCLUDE FACTORY WARRANTIES FOR EACH PIECE OF EQUIPMENT. PROVIDE A CERTIFICATE FOR EACH PIECE OF EQUIPMENT. CLEARLY INDICATE ON EACH WARRANTY CERTIFICATE THE MODEL NO., SERIAL NO., LOCATION, AND OWNER'S NAME.

7. COMPLETE SYSTEM:  
ALL PRODUCTS, MATERIALS AND ACCESSORIES SHALL BE FURNISHED AND INSTALLED AS REQUIRED FOR A COMPLETE SYSTEM READY FOR OWNER'S BENEFICIAL USE.

8. WORKMANSHIP:  
ALL WORK SHALL BE PERFORMED BY COMPETENT MECHANICS USING PROPER TOOLS AND EQUIPMENT TO PRODUCE FIRST QUALITY WORK. ALL WORK SHALL BE NEATLY INSTALLED, ACCESSIBLE FOR MAINTENANCE, AND COMPLETE WITH ALL ACCESSORIES REQUIRED.

9. ACCESSIBILITY:  
INSTALL ALL EQUIPMENT AND THEIR APPURTENANCES SUCH AS, BUT NOT LIMITED TO, VALVES, COILS, DRAIN PANS, DRAINS, DAMPERS, CONTROLS, MOTORS, CONTROLLERS, ETC., SO THAT THEY CAN BE SERVICED, RESET, REPLACED OR RECALIBRATED, ETC. INSTALL ALL NECESSARY ACCESS PANELS AND BUILDING ACCESS DOORS, AS BELOW, WHERE REQUIRED TO ACCOMPLISH THIS. IF ANY EQUIPMENT OR COMPONENTS DO NOT FIT WHERE INTENDED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING, REQUESTING FURTHER GUIDANCE.  
PROVIDE BUILDING ACCESS DOORS FOR ALL MECHANICAL EQUIPMENT REQUIRING SERVICE, INCLUDING BUT NOT LIMITED TO, AHU'S, FANS, DAMPERS, DUCT ACCESS PANELS, CONTROLS, PIPING, VALVES, REGULATORS, TRAPS, ETC., INSTALLED ABOVE HARD CEILINGS, BEHIND WALLS, AND BELOW FLOORS, FOR INSTALLATION BY OTHER DIVISIONS OF THE WORK. BUILDING ACCESS DOORS ARE NOT REQUIRED WHERE THE MECHANICAL EQUIPMENT IS INSTALLED ABOVE LAY-IN AND ACCESSIBLE SPLINE CEILINGS. OTHER TYPES OF SPLINE CEILINGS REQUIRE BUILDING ACCESS DOORS. SIZE THE BUILDING ACCESS DOORS FOR THE USE INTENDED, BUT NOT LESS THAN 12 INCHES BY 12 INCHES. WHERE HUMAN ACCESS IS REQUIRED, PROVIDE 24 INCHES BY 24 INCHES, OR LARGER. WHERE BUILDING ACCESS DOORS CANNOT BE INSTALLED FOR STRUCTURAL OR ARCHITECTURAL REASONS, NOTIFY THE ARCHITECT. PRIME COAT BUILDING ACCESS DOORS IN PAINTED AREAS WITH FINISH PAINTING AS SPECIFIED IN OTHER DIVISIONS. IN WET AREAS, TOILET ROOMS, OR AREAS WITH CERAMIC TILE FLOORS OR WALLS, PROVIDE STAINLESS STEEL BUILDING ACCESS DOORS. PROVIDE BUILDING ACCESS DOORS WITH A CONCEALED KEY OPERATED LOCK AND CONCEALED HINGES. ALL LOCKS SHALL BE KEYED ALIKE. PROVIDE BUILDING ACCESS DOORS AS SPECIFIED IN OTHER DIVISIONS OF THE WORK OR PROVIDE MILCOR DOORS, OR EQUIVALENT, SUITABLE FOR THE INSTALLATION INTENDED. PROVIDE FIRE RATED DOORS FOR ALL FIRE RATED WALLS, PARTITIONS, AND CEILINGS.

10. WORK BY OTHER TRADES:  
FURNISH ALL SLEEVE FRAMES, BUILDING ACCESS DOORS, PREFABRICATED EQUIPMENT CURBS, ROOF CURBS, ETC. FOR INSTALLATION BY OTHER TRADES.  
INSTALL ALL MOTORS AND FURNISH THE STARTING EQUIPMENT AND DISCONNECTS TO THE DIVISION 26000 SUBCONTRACTOR FOR INSTALLATION. CONTROL WIRING, INCLUDING SWITCHES, THERMOSTATS, INTERLOCKS, ETC. SHALL BE FURNISHED BY DIVISION 23000. ENSURE THAT THE ELECTRICAL EQUIPMENT MOUNTED NEAR THE MECHANICAL EQUIPMENT DOES NOT BLOCK ACCESS TO SERVICE AREAS OF THE MECHANICAL EQUIPMENT. DO NOT ALLOW ANY EQUIPMENT TO BE INSTALLED ON THE HVAC EQUIPMENT ENCLOSURES.

11. FIRE STOPPING:  
ALL PENETRATIONS OF FLOORS AND OTHER FIRE-RATED ASSEMBLIES SHALL BE FIRE AND SMOKE-STOPPED IN STRICT ACCORDANCE WITH THE APPLICABLE CODES.

12. FOUNDATIONS AND SPECIAL SUPPORTS:  
FURNISH AND INSTALL ALL SPECIAL FOUNDATIONS AND SUPPORTS REQUIRED FOR EQUIPMENT INSTALLED UNDER THIS SECTION, UNLESS THEY ARE A PART OF THE BUILDING STRUCTURE AND ARE SHOWN IN OTHER SECTIONS.

13. CLEANING AND PAINTING:  
THOROUGHLY CLEAN ALL EQUIPMENT AND REMOVE ALL TRASH, CARTONS, ETC. MAKE ANY NECESSARY CORRECTIONS OR REPAIR/REPLACE ANY DAMAGED MATERIALS OR EQUIPMENT. LEAVE THE ENTIRE SYSTEM IN A THOROUGHLY CLEAN AND ORDERLY MANNER.  
ANY FINISHED SURFACES THAT HAVE BEEN SCRATCHED OR DISCOLORED SHALL BE TOUCHED-UP OR REPAINTED BREAK TO BREAK WITH PAINT TO MATCH THE ORIGINAL COLOR. TOUCH UP PAINTED SURFACES OR REPAINT THE ENTIRE PAINTED SURFACE IF TOUCH UP IS UNACCEPTABLE. SEE ARCHITECTURAL PAINTING SPECIFICATIONS.  
ALL METAL ITEMS SUBJECT TO RUSTING, INSIDE OR EXPOSED TO WEATHER SHALL BE GIVEN ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER AS SOON AS INSTALLED. APPLY TWO FINISH COATS WITH COLOR TO BE SELECTED BY THE ARCHITECT.  
FOR ALL INTERIOR OR EXTERIOR STRUCTURAL GALVANIZED STEEL, COLD GALVANIZE ALL EXPOSED METAL CUT ENDS, HOLES, WELDS, SCRATCHES, ETC., OR HOT DIP GALVANIZE THE ENTIRE STRUCTURE OR FRAME AFTER FABRICATION AND MOUNTING HOLES ARE CUT.  
UPON COMPLETION OF THE INSTALLATION, BUT NOT BEFORE, AND BEFORE ACCEPTANCE, THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, PIPING, DUCTWORK, INSULATION JACKETS, ETC.,

REMOVING ALL STICKERS, LABELS, MARKING, WRITING, FABRICATION MARKINGS, IDENTIFICATION, ADHESIVE, SEALER, GLUE, RUST, CORROSION, ETC., FROM THEIR EXTERIOR SURFACES.  
THE CLEANLINESS AND PAINTING ACCEPTABILITY IS AT THE SOLE DISCRETION OF THE ARCHITECT AND MAY REQUIRE ADDITIONAL CLEANING AND COATS OF PAINT BEFORE ANY SURFACE IS ACCEPTED.

14. SUBMITTAL AND SHOP DRAWINGS:  
SUBMIT MANUFACTURER'S CERTIFIED DATA RELATIVE TO ALL EQUIPMENT, PIPING, CONTROLS, ETC. REQUIRED FOR THE INSTALLATION OF THE HVAC, PLUMBING AND FIRE PROTECTION SYSTEMS. SUBMIT FOR REVIEW ALL NECESSARY ENGINEERING, PRODUCT AND INSTALLATION DATA, SHOP DRAWINGS, SAMPLES ETC. FOR ALL EQUIPMENT, MATERIAL, AND SYSTEMS TO ASCERTAIN COMPLIANCE WITH THE TECHNICAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. SUBMIT SIX (6) COPIES OF ALL NECESSARY DATA, CUTS, MANUFACTURER'S SELECTIONS, CATALOGS, BULLETINS, INSTALLATION INSTRUCTIONS, DRAWINGS, DIAGRAMS, CURVES, ETC. CLEARLY INDICATE ON THE SUBMITTED DATA, THE MANUFACTURER'S NAME, PRODUCT NUMBER(S), OPTIONS, EQUIPMENT CAPACITY, DIMENSIONAL DATA, WEIGHTS, AND OTHER APPLICABLE TECHNICAL DATA FOR THE PROJECT.  
TRADE NAMES, MANUFACTURERS, AND CATALOGUE NUMBERS ARE MENTIONED HEREIN AND ON THE DRAWINGS SOLELY IN ORDER TO ESTABLISH A STANDARD FOR THE TYPE, GENERAL DESIGN, AND QUALITY OF PRODUCT REQUIRED. OTHER PRODUCTS SIMILAR IN DESIGN OF EQUIVALENT QUALITY CAPABLE OF FITTING WITHIN THE SPACES ALLOCATED AND COMPLYING WITH THE DRAWINGS AND SPECIFICATIONS WILL BE CONSIDERED AFTER THE CONTRACT IS LET UNLESS "PRIOR APPROVAL" REQUIREMENTS ARE SET FORTH IN THESE DOCUMENTS.  
WHERE TWO OR MORE MANUFACTURERS OR MATERIALS ARE NAMED, THE CONTRACTOR MAY SUBMIT ANY OF THOSE NAMES, PROVIDED THEY CONFORM TO THE SPECIFICATIONS AND DESIGN INTENT. CONTRACTOR SHALL INCLUDE WITH THE SUBMITTAL A LIST OF ALL COMPARATIVE FEATURES INDICATING COMPLIANCE WITH THE SPECIFICATIONS.  
THE ARCHITECT AND/OR ENGINEER MAY REQUIRE THE SUBMISSION OF SAMPLES, PARTICULARLY WHEREVER EQUIPMENT OR APPLIANCES ARE VISIBLE IN FINISHED AREAS, SUCH AS CEILINGS, INTERIOR AND EXTERIOR WALLS. THE CONTRACTOR AND SUPPLIER SHALL ARRANGE FOR DEMONSTRATIONS OF THE INSTALLATION OF ANY OF THESE PRODUCTS AND THEIR ABILITY TO PERFORM AS SPECIFIED, IF REQUIRED.  
REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FITTING THE EQUIPMENT IN THE SPACE ALLOTTED WITH SPACE FOR ALL CONNECTIONS AND SERVICING AND FOR THE COORDINATION OF THE WORK WITH WORK OF OTHER TRADES.

THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS AND SHOP DRAWINGS AND INDICATE BY STAMP OR LETTER THAT HE HAS REVIEWED THEM, BEFORE FORWARDING THEM TO THE ARCHITECT AND/OR ENGINEER. SUBMITTALS AND DRAWINGS WILL BE RETURNED AFTER REVIEW INDICATING WHETHER EXCEPTIONS ARE TAKEN, THE SUBMITTAL RETURNED WITH CORRECTIONS, OR IS COMPLETELY REJECTED. RESUBMISSION OF REVISED SUBMITTALS AND SHOP DRAWINGS, IF REQUIRED, SHALL BE DONE BEFORE INSTALLATION AND CONSTRUCTION IS BEGUN. CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS AND DRAWINGS DURING THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES, TECHNIQUES OF CONSTRUCTION, COORDINATING THE WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER. REVIEW OF THE SUBMITTALS SHALL NOT PERMIT ANY DEVIATION FROM PLANS AND SPECIFICATIONS.  
SUBMITTALS FOR A SPECIFIC CLASS OF PRODUCTS, SYSTEMS, INSTALLATION PROCEDURES, SHOP DRAWINGS, ETC. WILL BE REVIEWED BY THE ENGINEER ONE TIME AND ITS RESUBMITTAL ONE TIME, IF NECESSARY, AS ABOVE, AT NO COST TO THE CONTRACTOR. THE CONTRACTOR WILL BEAR THE FULL COST FOR ALL SUBSEQUENT RESUBMITTAL REVIEWS AT THE ENGINEER'S STANDARD HOURLY RATES. PAYMENT WILL BE REQUIRED AT COMPLETION OF RESPECTIVE REVIEW.  
REQUIRED SHOP DRAWINGS:  
SUBMIT THE FOLLOWING SHOP DRAWINGS BEFORE ANY MECHANICAL DUCTWORK, PIPING, EQUIPMENT, ETC. IS FABRICATED AND INSTALLED. SUBMIT THESE SHOP DRAWINGS IN ¼ INCH PER FOOT MINIMUM SCALE WITH NECESSARY PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ISOMETRICS. SUBMIT SIX (6) PAPER COPIES AND ONE (1) CD-ROM WITH ALL THESE DRAWINGS IN AUTOCAD DRAWING DWG FILES, LATEST AUTOCAD FORMAT.  
SOON AFTER AWARD OF THE CONTRACT, DETERMINE WHERE THERE MAY BE INSTALLATION, SPACE CONCERNS, AND/OR WHERE OTHER CONFLICTS MAY OCCUR. SUBMIT COORDINATION DRAWINGS, RELATING TO THESE CONFLICTS WITH THE MECHANICAL EQUIPMENT, DUCT, PIPING, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL SYSTEMS ETC., SHOWING CLEARANCES AND RELATIONSHIP TO STRUCTURAL MEMBERS, PIPING, LIGHTS, CONDUITS, ELECTRICAL EQUIPMENT, AND BUILDING COMPONENTS. IN PREPARING THESE SHOP DRAWINGS, ESTABLISH LINES AND LEVELS FOR ALL DIVISIONS OF THE WORK IN THE AFFECTED AREA. IMMEDIATELY CALL TO THE ATTENTION OF THE ARCHITECT ANY INTERFERENCE OR CONFLICT FOR CLARIFICATION IN WRITING.  
SUBMIT SHOP DRAWINGS FOR ALL DUCTWORK. SUBMIT LAYOUT DRAWINGS OF EACH MECHANICAL SYSTEM SHOWING THE LOCATION, ARRANGEMENT, ETC. OF ALL EQUIPMENT, ALL TRADES, ETC. TO BE INSTALLED RELATED TO THE RESPECTIVE SYSTEM.

15. AS-BUILT DRAWINGS:  
MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT THREE COPIES, ONE REPRODUCIBLE.

16. OPERATION AND MAINTENANCE MANUALS:  
UPON COMPLETION OF THE PROJECT, SUBMIT THREE COPIES OF ALL OPERATION AND MAINTENANCE MANUALS, WARRANTIES, SPARE PARTS LIST, AS-BUILT DRAWINGS, TEST AND BALANCE REPORTS, AND LETTER OF GUARANTEE ALL BOUND IN THREE RING BINDERS, CLEARLY SHOWING WHICH EQUIPMENT WAS SUPPLIED TO THE JOB.

17. PROJECT COMPLETION:  
BEFORE STARTING AND TESTING ANY SYSTEM, HVAC, OR PLUMBING, TO PREVENT INADVERTENT OPERATION OF THE MECHANICAL EQUIPMENT BEFORE THE MANUFACTURER'S INSPECTION AND TESTING, THE CONTRACTOR SHALL:  
VERIFY THAT ALL ELECTRICAL POWER IS OFF TO ALL MECHANICAL EQUIPMENT, INCLUDING THE AHU'S, ACCU'S, BOOSTER PUMPS, FIRE PUMPS, ETC.  
LOCK OUT EACH SYSTEM USING SETON MODEL NUMBER 70329; "DO NOT OPERATE" LOCK ON LOCKOUT TAGS, OR EQUIVALENT. INSTALL LOCKOUT TAGS AT EACH PIECE OF EQUIPMENT, ELECTRICAL DISCONNECTS, STARTERS, SWITCHES, ETC.  
REMOVE THESE TAGS ONLY WHEN THE MANUFACTURER APPROVES OF THE EQUIPMENT INSTALLATION IN WRITING. EACH MANUFACTURER OR THEIR REPRESENTATIVE SHALL INSPECT THEIR EQUIPMENT FOR COMPLIANCE TO THEIR INSTALLATION REQUIREMENTS AND RECOMMENDATIONS. IN ADDITION, THE COMPRESSOR MANUFACTURER SHALL INSPECT EACH REFRIGERANT PIPING INSTALLATION FOR ADHERENCE TO THE APPROVED REFRIGERANT PIPING DIAGRAMS, ROUTING. EACH MANUFACTURER SHALL PREPARE A PUNCH LIST OF ALL DEFICIENCIES, IN WRITING WITH COPIES TO THE ARCHITECT AND CONTRACTOR.  
EACH MANUFACTURER SHALL REINSPECT THE EQUIPMENT AFTER THE CONTRACTOR HAS CORRECTED ALL DEFICIENCIES. WHEN THE MANUFACTURER HAS GIVEN THEIR WRITTEN APPROVAL WITH COPIES TO THE ARCHITECT AND CONTRACTOR, THE CONTRACTOR MAY REMOVE THE LOCKOUT TAGS, SAFELY START, AND TEST THE EQUIPMENT, AS REQUIRED HEREIN.  
CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY DRILLING OF WALL STUDS, CEILING JOISTS, PLATES, FINISHES, ETC. TO ACCOMMODATE ROUTING AND INSTALLATION OF ALL PIPING, DUCT,

ETC.  
HVAC EQUIPMENT, METHODS AND MATERIALS

18. DUCTWORK GENERAL:  
DUCT SIZES SHOWN ON THE DRAWINGS ARE INSIDE DIMENSIONS AND DO NOT TAKE INTO ACCOUNT LINING THICKNESS. DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH GAUGES, CONSTRUCTION DETAILS AND INSTALLATION ACCORDING TO N.F.P.A. STANDARD 90A, ASHRAE, AND SMACNA DUCT CONSTRUCTION MANUALS AND REQUIREMENTS. PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS AND FANS. ALL COMBUSTION AIR INTAKE DUCTWORK SHALL BE EXTERNALLY INSULATED.  
REFER TO PLANS FOR OTHER REQUIREMENTS FOR VENTING AND COMBUSTION AIR INTAKES.

19. FABRICATION, ERECTION, AND SUPPORT:  
ALL DUCTWORK SHALL BE FABRICATED, ERECTED, BRACED, AND SUPPORTED IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA AND ASHRAE REQUIREMENTS.

20. JOINT SEALING:  
SEAL ALL DUCT JOINTS AND SEAMS (LONGITUDINAL AND TRANSVERSE) WITH HIGH PRESSURE DUCT SEALER, HARDCAST "IRON-GRIP 601" OR APPROVED EQUIVALENT. REINFORCED FOIL BACKED TAPES, CLOTH OR PLASTIC BACKED TAPES (DUCT TAPE) ARE NOT ACCEPTABLE.

21. FLEXIBLE AIR DUCT:  
DUCT SHALL BE UL LISTED UL-181, CLASS I AIR DUCT MATERIAL AND SHALL COMPLY WITH N.F.P.A 90A AND 90B AND ALL LOCAL REQUIREMENTS. DUCT SHALL HAVE AN OPERATING AIR PRESSURE OF 6 INCHES WG POSITIVE AND 4 INCHES WG NEGATIVE, ACOUSTICAL DOUBLE LAMINATED INNER FABRIC BONDED TO A STEEL HELIX WIRE. OUTER JACKET FIRE RETARDANT REINFORCED ALUMINUM MYLAR WITH FIBERGLASS INSULATION. FLEXMASTER TYPE "8M" ACOUSTICAL INSULATED OR EQUIVALENT.  
MAKE ALL FLEXIBLE DUCT CONNECTIONS TO HARD DUCT USING STAINLESS STEEL SCREW CLAMPING BANDS AND SEALED AIR TIGHT WITH HIGH PRESSURE DUCT SEALER. PLASTIC BANDS ARE NOT ACCEPTABLE.  
SEAL FLEXIBLE DUCT VAPOR BARRIER TO HARD DUCT AND/OR ADJACENT INSULATION. NO EXPOSED FIBERGLASS SHALL BE VISIBLE.

22. AIR DISTRIBUTION DEVICES:  
COORDINATE THE EXACT LOCATIONS OF ALL AIR DEVICE NEEDS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION. COORDINATE THE EXACT LOCATION OF EACH OUTLET WITH THE ARCHITECT WITH REGARD TO CEILING AND WALL SPACING, CENTERING ALONG SOFFITS, WALLS, ETC. FURNISH AND INSTALL WHERE SHOWN ON THE DRAWINGS ALL DIFFUSERS, GRILLES, AND REGISTERS OF THE SIZE, TYPE, AND CAPACITY AS INDICATED IN THE AIR DEVICE SCHEDULE. ELBOWS:  
23. BRANCH TAKEOFF FITTINGS:  
AT ALL MAIN TO BRANCH DUCT TAPS, TAKEOFFS, OR RUN-OUTS, PROVIDE 45 DEGREE ENTRANCE TAPS, AS DETAILED BY SMACNA STANDARDS.

24. GENERAL  
THIS SECTION APPLIES TO ALL MECHANICAL WORK.  
ALL INSULATION SHALL BE IN STRICT ACCORDANCE WITH ASHRAE STANDARDS AND ALL LOCAL AND STATE ENERGY CODES.  
THE INSULATION WORK SHALL BE PERFORMED BY A FIRM REGULARLY ENGAGED IN THIS TYPE WORK USING MECHANICS SKILLED IN THE TRADE.  
INSTALL ALL MATERIALS AS RECOMMENDED BY THE MANUFACTURER FOR THE SERVICE INTENDED. ALL INSULATION MATERIAL, INCLUDING SEALER MATERIAL, ADHESIVES, COVERING MATERIAL, FINISH, ETC. SHALL HAVE A U.L. LISTED FLAME SPREAD RATING NOT OVER 24 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. ALL COATINGS AND COVERINGS FOR HOT SERVICE SHALL BE BREATHER TYPE AND VAPOR BARRIER TYPE FOR COLD SERVICE.  
HVAC PIPING:  
INSULATE REFRIGERANT SUCTION LINES AND ALL CONDENSATE DRAIN LINES WITH 1" THICK CLOSE CELLED ELASTOMERIC INSULATION INSTALLED PER THE MANUFACTURERS REQUIREMENTS. PAINT EXTERIOR INSULATION WITH TWO COATS OF PAINT AS REQUIRED BY THE INSULATION MANUFACTURER.  
EXTERNALLY INSULATED DUCTS (SUPPLY DUCTS COMPLETELY ABOVE LAY IN CEILINGS NOT IN DINING AREAS):  
EXTERNALLY INSULATE ALL SUPPLY DUCTWORK WITH 1 1/2" THICK (3/4 LBS/CU. FT. DENSITY) DUCT WRAP WITH ALUMINUM ALL SERVICE JACKET, VAPOR BARRIER, EXCEPT PRE-INSULATED FLEXIBLE DUCT.  
SUPPLY AND RETURN DUCTS FROM MAKE UP AIR UNITS AND RTU'S LOCATED OUTSIDE THE BUILDING THERMAL ENVELOPE SHALL BE PROVIDED WITH 3" THICK DUCT WRAP AND ALUMAGUARD, ALL WEATHER, FLEXIBLE WEATHER-PROOFING JACKET.

25. EQUIPMENT:  
CAPACITY, PERFORMANCE AND CHARACTERISTICS OF EQUIPMENT SHALL BE AS INDICATED ON THE DRAWINGS AND AS SPECIFIED OR IMPLIED HEREIN. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INCREASED COST TO HIMSELF OR OTHERS FOR EQUIPMENT WHICH DEVIATES FROM THAT SCHEDULED OR IMPLIED HEREIN. REGARDLESS OF COST AFFECT, THE ARCHITECT MUST APPROVE ANY DEVIATION FROM THE DRAWINGS AND THE SPECIFICATION.

26. MOTORS AND STARTERS:  
ALL ELECTRIC MOTORS SHALL BE HIGH EFFICIENCY TYPE WITH MAXIMUM OF 1750 RPM WITH OPEN DRIP PROOF OR TEFC ENCLOSURES, UNLESS OTHERWISE NOTED. MOTORS LOCATED ON AIR HANDLING UNITS SHALL BE MOUNTED IN RUBBER SUPPORTS OR THE FAN SHALL BE INDEPENDENTLY SUPPORTED ON SPRING ISOLATORS. MOTORS LOCATED IN THE CONDITIONED SPACE SHALL BE SELECTED FOR QUIET OPERATION AND SHALL NOT PRODUCE AN OBJECTIONABLE "MOTOR NOISE" IN THE SPACE.  
ELECTRICAL CHARACTERISTICS SHALL BE VERIFIED FROM THE ELECTRICAL DRAWINGS, PRIOR TO BIDDING, AND VERIFIED ON THE JOB WITH THE ELECTRICAL SUB-CONTRACTOR. IF A CONFLICT ARISES, THE ELECTRICAL DRAWINGS SHALL BE THE AUTHORITY.  
PROVIDE MOTOR STARTERS AND PROPER HEATER ELEMENTS SIZED IN ACCORDANCE WITH NFPA 70. STARTERS SHALL BE SQUARE-D OR EQUIVALENT WITH OVERLOAD TRIP ELEMENT IN EACH PHASE. LARGER MOTORS AND THEIR STARTERS SHALL MEET THE REQUIREMENTS OF THE UTILITY COMPANY AS TO INRUSH ALLOWABLE AND THE TYPE OF STARTING PERMITTED.  
SHOULD ANY MECHANICAL EQUIPMENT REQUIRE EXTRA WORK BY OTHER TRADES, FOR PROPER INSTALLATION, THIS CONTRACTOR SHALL BEAR ALL COSTS, SUCH AS INCREASED ELECTRICAL, STRUCTURAL, ROOFING, ETC.

END OF MECHANICAL SPECIFICATIONS.



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**SALEM VA**

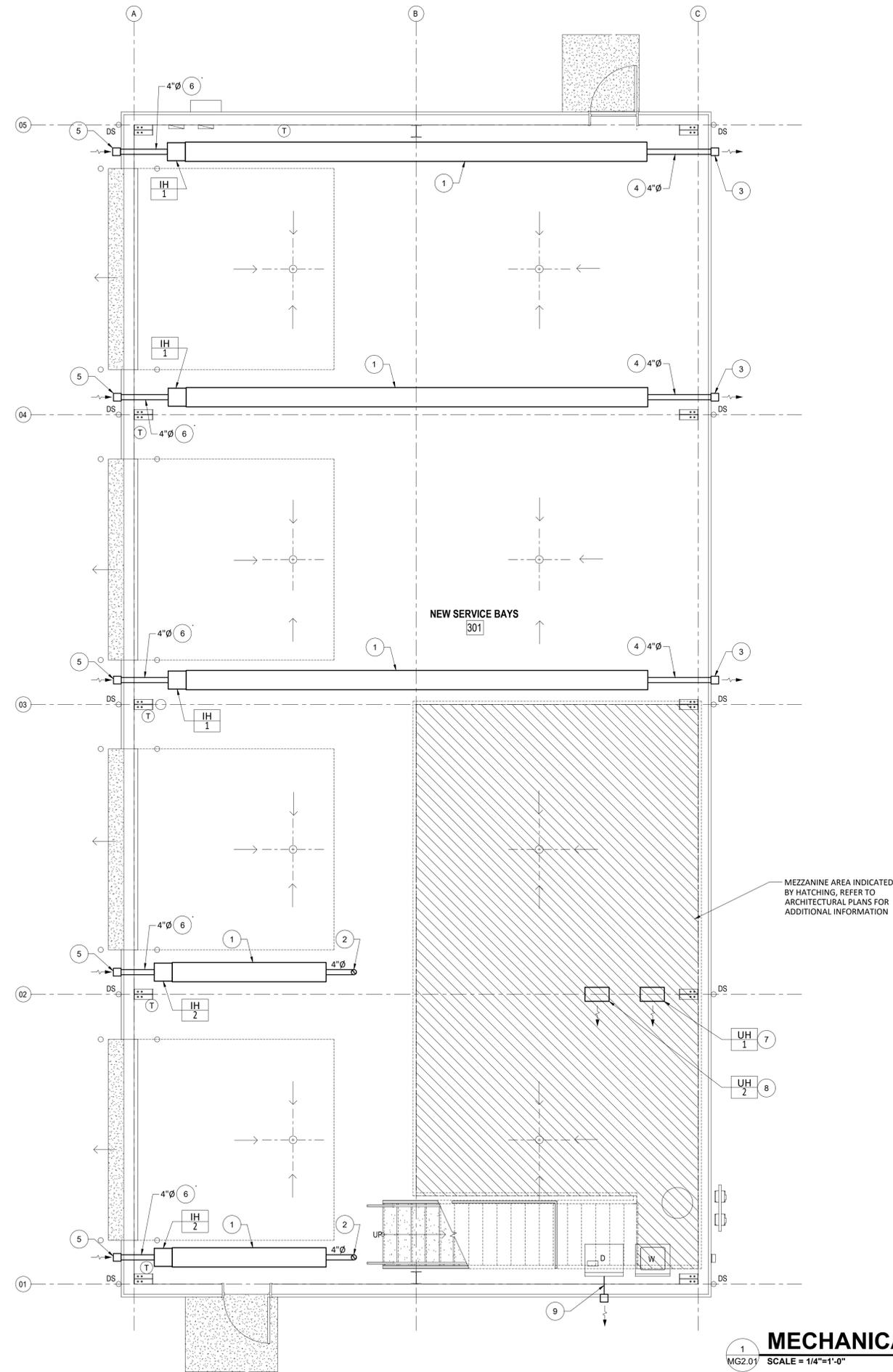


**SALEM FIRE STATION #2 - NEW SERVICE BAYS**  
NEW CONSTRUCTION  
MECHANICAL SPECIFICATIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24163

DRAWN BY JNB  
DESIGNED BY JNB  
CHECKED BY JNB  
DATE 2024-08-30  
SCALE AS NOTED  
REVISIONS

**MG1.02**  
PROJECT NO 03220052.01



- KEYED NOTES:**
- 1 MOUNT HEATER AT 12FT.-8IN. ABOVE FINISHED FLOOR.
  - 2 4" EXHAUST VENT FROM HEATER UP THROUGH ROOF. PROVIDE B TO C ADAPTER TO ATTACHED TO END OF TUBE IN PLACE OF SUPPLIED VENT ADAPTER. VENT PIPING SHALL BE DOUBLE-WALL TYPE B VENT SUITABLE FOR CATEGORY I VENTING. PROVIDE VENT CAP AT MIN. OF 24" ABOVE ROOF, EQUIVALENT TO METALBESTOS 4" VENT CAP OR OTHER AS APPROVED BY HEATER MANUFACTURE. AT VERTICAL TURN UP, PROVIDE TEE FITTING WITH CLEAN OUT CAP AT BOTTOM. SLOPE HORIZONTAL PORTION OF VENT AWAY FROM HEATER AT 1/2 IN. PER 20FT.
  - 3 PROVIDE HORIZONTAL VENT HOOD, EQUIVALENT TO TJERNLUND PRODUCTS, MODEL VH1-4.
  - 4 HORIZONTAL VENT PIPING SHALL BE INSTALLED AS PER MANUFACTURES REQUIREMENTS FOR CATEGORY III VENTING. SLOPE VENT DOWNWARDS, AWAY FROM HEATER AT 1/2 IN. PER 20FT. VENT PIPING SHALL BE SINGLE WALL PIPE, TYPE C, THAT IS CORROSION RESISTANT GALVANIZED STEEL, MINIMUM 26 GAUGE.
  - 5 PROVIDE 4" VENT CAP, ROBERTS GORDON PART NUMBER 90502300, OR EQUIVALENT APPROVED BY HEATER MANUFACTURER.
  - 6 COMBUSTION AIR INTAKE DUCT SHALL BE SINGLE WALL GALVANIZED STEEL, SUITABLE FOR LOW PRESSURE SYSTEMS WITH MINIMUM 1-1/2" EXTERNAL INSULATION. PROVIDE FLEXIBLE HOSE CONNECTION AT BURNER INLET AS PER MANUFACTURES INSTALLATION RECOMMENDATIONS.
  - 7 UNIT HEATER TO BE SUSPENDED FROM BOTTOM OF MEZZANINE FLOOR.
  - 8 UNIT HEATER TO BE SUSPENDED FROM ROOF ABOVE MEZZANINE.
  - 9 PROVIDE 4"Ø DRYER VENT FROM DRYER TO EXTERIOR WALL WITH WALL VENT AND BACKDRAFT DAMPER.

MEZZANINE AREA INDICATED BY HATCHING, REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION

**MECHANICAL NEW WORK PLAN - GARAGE**  
 1 MG2.01 SCALE = 1/4"=1'-0"



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SALEM, VA



**SALEM FIRE STATION #2 - NEW SERVICE BAYS**  
 NEW CONSTRUCTION  
 MECHANICAL NEW WORK PLAN - GARAGE

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE AS NOTED  
 REVISIONS

**MG2.01**  
 PROJECT NO 03220052.01



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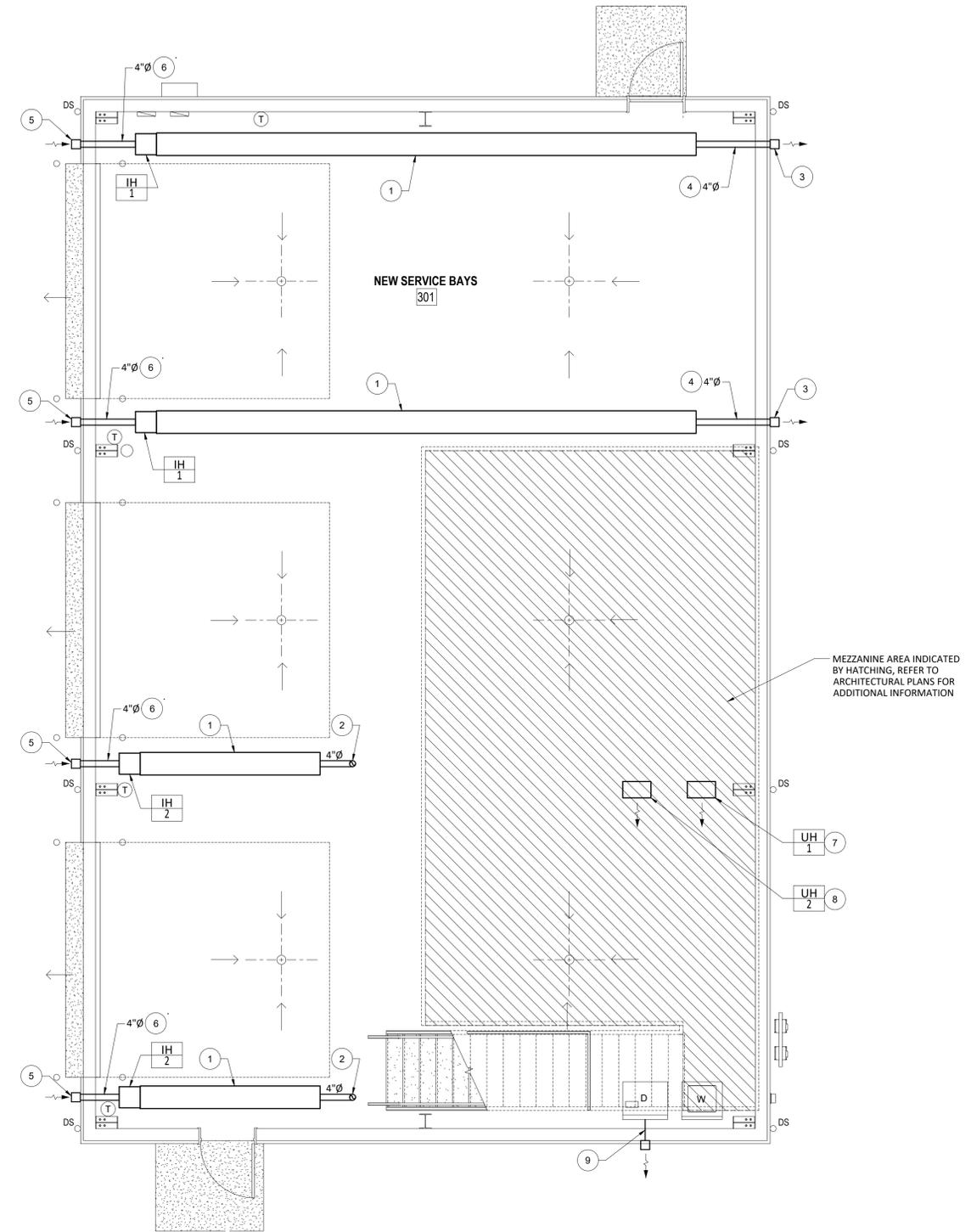
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SALEM, VA



KEYED NOTES:

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MEZZANINE AREA INDICATED BY HATCHING, REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION

**MECHANICAL NEW WORK PLAN - ALTERNATE**  
SCALE = 1/4"=1'-0"

**SALEM FIRE STATION #2 - NEW SERVICE BAYS**  
NEW CONSTRUCTION  
**MECHANICAL NEW WORK PLAN - GARAGE ALTERNATE**  
415 ELECTRIC ROAD  
SALEM, VIRGINIA 24163

DRAWN BY JNB  
DESIGNED BY JNB  
CHECKED BY JNB  
DATE 2024-08-30  
SCALE AS NOTED  
REVISIONS



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SALEM FIRE STATION #2 - NEW SERVICE BAYS  
NEW CONSTRUCTION  
GENERAL NOTES, LEGEND, LIGHTING FIXTURE SCHEDULE  
415 ELECTRIC ROAD  
SALEM, VIRGINIA 24165

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.
- 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.
- 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.
- COUNTER AND TOILET RECEPTACLES TO BE GFI AND COUNTER HEIGHT EXCEPT WHERE NOTED. REFRIGERATOR RECEPTACLE TO BE 36" AFF.
- LIGHT FIXTURE TYPE IS SHOWN ONLY ONCE AS TYPICAL FOR THE ENTIRE ROOM UNLESS SPECIFICALLY INDICATED OTHERWISE.
- UNLESS INDICATED OTHERWISE, SIZE CONDUITS IN ACCORDANCE WITH NFPA 70.
- COORDINATE WITH THE MECHANICAL CONTRACTOR TO ENSURE ALL WORKING CLEARANCE AND DEDICATED WORKING SPACE OF PANELBOARDS.
- GROUNDING CONDUCTORS ARE NOT INDICATED IN BRANCH CIRCUIT RACEWAYS. PROVIDE GROUND CONDUCTORS AS REQUIRED BY NEC.
- OCCUPANCY SENSORS SHOULD CONTROL ALL LIGHTING IN ROOMS, BOTH INBOARD AND OUTBOARD SWITCHING WHERE APPLICABLE, UNLESS INDICATED OTHERWISE.
- PROVIDE PLASTIC BUSHING ON THE END OF ALL CONDUIT.
- PROVIDE LABELS ON ALL RECEPTACLE INDICATING PANEL AND CIRCUIT FEEDING EACH DEVICE.
- 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.
- CONNECT EMERGENCY BATTERY UNITS TO LOCAL LIGHTING CIRCUITS.
- VERIFY ALL FINAL EQUIPMENT CONNECTIONS, WIRING, AND CIRCUIT INFORMATION OF ALL EQUIPMENT PRIOR TO ROUGH IN.
- PROVIDE SHUNT TRIP BREAKERS ON ALL EQUIPMENT UNDER THE HOOD.

ELECTRICAL LEGEND

	LED LIGHTING FIXTURE, RECESSED, SURFACE OR PENDANT CEILING MOUNTED, COORDINATE WITH OWNER FOR ANY DESIRED NIGHT LIGHT LOCATIONS. 'EM' INDICATES INTEGRAL OR REMOTE INVERTER TO PROVIDE STANDBY POWER FOR EGRESS.		CONDUCTORS IN CONDUIT CONCEALED IN CEILING OR WALL.
	EXIT LIGHTING FIXTURE, SURFACE CEILING MOUNTED, DIRECTIONAL ARROWS AS INDICATED. 'VR' SUBSCRIPT INDICATES VANDAL RESISTANT.		BRANCH CIRCUIT HOME RUN TO PANELBOARD. NOTATION INDICATES PANELBOARD & BRANCH CIRCUIT CONNECTION.
	EXIT LIGHTING FIXTURE, SURFACE WALL MOUNTED, DIRECTIONAL ARROWS AS INDICATED.		CONDUCTORS IN CONDUIT CONCEALED IN SLAB OR BELOW GRADE.
	FURNITURE WHIPS UNLESS INDICATED OTHERWISE, FOR FURNITURE WHIPS PROVIDE DATA AND POWER		CONDUCTORS IN CONDUIT TURNED UP.
	QUAD-PLEX WALL RECEPTACLE		CONDUCTORS IN CONDUIT TURNED DOWN.
	DUPLEX WALL RECEPTACLE, MOUNTING HEIGHT = 1'-6", EXCEPT 'C' SUBSCRIPT INDICATES MOUNTING IN CASEWORK(TYP). 'GFI' SUBSCRIPT INDICATES GROUND FAULT, 'M' SUBSCRIPT INDICATES RECEPTACLE MOUNTED BEHIND MIRROR, 'EWC' SUBSCRIPT INDICATES GROUND FAULT BEHIND ELECTRIC WATER COOLER. '*' INDICATES MOUNTED HEIGHT = 8" ABOVE COUNTER(TYP). 'E' INDICATES EXISTING TO REMAIN.	S	SINGLE-POLE SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP. LOWER CASE SUBSCRIPT WHEN USED, INDICATES FIXTURES CONTROLLED (TYP).
	OCCUPANCY SENSOR, DUAL TECHNOLOGY	S3	THREE-WAY SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP.
	EMERGENCY BATTERY UNIT, LITHONIA EU2C OR EQUAL	Soc	INTEGRAL OCCUPANCY SENSOR SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP.
	EMERGENCY BATTERY UNIT WP, REMOTE HEAD, CONNECT TO BATTERY PACK INSIDE OF BUILDING. PROVIDE ADDITIONAL BATTERY PACKS AS REQUIRED.		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 WITH PULL CORD. WHERE MOUNTED BESIDE COUNTER RECEPTACLE: MOUNT SAME HEIGHT AS RECEPTACLE.
		Sd	DIMMER SWITCH, MOUNTING HEIGHT = 4'-0" TO TOP, SUBSCRIPT INDICATES FIXTURES CONTROLLED WITH THIS SWITCH
			PANELBOARD, 208Y/120-VOLT, 3-PHASE, 4-WIRE, MOUNTING HEIGHT=6'-0" TO TOP. SEE PANELBOARD SCHEDULES.
			DISCONNECT SWITCH, EXTERNALLY OPERATED, 240V, 3 # UNLESS OTHERWISE NOTED. NOTATION INDICATES NUMBER OF POLES AND AMPERAGE CAPACITY. 'NF' SUBSCRIPT INDICATES NON FUSED.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	INPUT VOLTAGE	LAMPS		MNTG.	REMARKS
				WATTS	TYPE		
A	LITHONIA LIGHTING	CPHB 12000LM HEF GCL MD 35K 90CRI WGX	120	75	LED	GRID	HIGH BAY, INTERIOR LIGHT
B	LITHONIA LIGHTING	WPXO	120	33	LED	SURF	LOW PROFILE WALL LIGHT MOUNTED ABOVE MAN DOOR
C	LITHONIA LIGHTING	DSXW1LED 20C 1000 40K T4M	120	74	LED	SURF	WALL MOUNTED LIGHT ABOVE ROLL UP DOOR
	LITHONIA LIGHTING	LHQM LED R HO	120	5.0	LED	SURF	DIRECTIONAL EXIT LIGHT, COMBO UNIT
	LITHONIA LIGHTING	EU2C	120	.56	LED	SURF	EMERGENCY LIGHT



2100 LUBNA DR  
CHRISTIANSBURG VA 24073  
P. 540.998.6069

DRAWN BY: DWG  
DESIGNED BY: DWG  
CHECKED BY: DWG  
DATE: 8/30/24  
SCALE: AS INDICATED  
REVISIONS:

EG1.01  
PROJECT NO: 03220052.01

## SECTION 16000

## 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

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

## B. MOTOR CONTROLLERS

- 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

- NEMA Compliance: Comply with applicable requirements of NEMA Stds. Pub/No.'s LE 1 and LE 2 pertaining to lighting equipment.
- 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.
- 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.

- 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.
- Locate operating and control equipment properly to provide easy access and arrange entire electrical work with adequate access for operation and maintenance.
- Advise other trades of openings required in their work for the subsequent move\_in of large units of electrical equipment.
- 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

- 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.
- 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

- 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.
  - 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.
- Do not paint over nameplates on equipment, sliding/rotating shaft surfaces, non\_ferrous hardware/accessories/trim and similar items where painting would normally be omitted.

## 1.5 ELECTRICAL SYSTEM PERFORMANCE

- 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.
- 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

- 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 DWGized in writing. Compensation for additional services must be agreed upon in writing prior to performing services.
- Closeout Coordination: Coordinate closeout operations with closeout of mechanical systems and other power consuming equipment.
- 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:
  - Work concealed behind or within other work, in a nonaccessible location.
  - 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.
  - Maintenance procedures and schedules.
  - Testing procedures and acceptable parameters.
- 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.

## PART 2 - PRODUCTS

## 2.1 CABLE AND WIRE

- 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.
- 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.
- No. 10 AWG and smaller diameter shall be solid copper; No. 8 AWG and larger diameter shall be stranded copper.
- 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 follows:
  - 120/208 volt, 3-phase:
    - Phase A - black.
    - Phase B - red.
    - Phase C - blue.
- Provide the following types of cables in NEC approved locations and applications where indicated. Provide cable UL listed for its intended use.
  - Metal clad cable: Type MC.
- 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

- 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.
  - Rigid Steel Conduit: ANSI C80.1, UL 6.
  - Intermediate Steel Conduit (Zinc Coated Steel): UL 1242.
  - Rigid Metal Conduit Fittings: UL 514B, cadmium- or zinc- coated threaded type.
  - Electrical Metal Tubing (EMT): ANSI C80.3, UL 797.
  - EMT Fittings: UL 514B, compression or set-screw type
  - Flexible Metal Conduit: Cadmium- or zinc-coated steel.
  - Flexible Metal Conduit Fittings: UL 514B, cadmium- or zinc-coated.
  - 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.
  - Liquid-Tight Flexible Metal Conduit Fittings: FS W-F-406.
- 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.

- 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.
  - 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

- 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 ferally cast outlet boxes where surface mounted with threaded conduit hubs to suit each respective location and installation.
- 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.
- 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

- 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.
- Receptacles:
  - 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.
  - Provide with cast aluminum weatherproof cover where indicated to be WP while in operation.
- Switches:
  - 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 Three-way and Four-way as indicated on drawings.
  - 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, suitable for use in classrooms, 5\_year warranty, UL listed, Universal Energy Control (UNENCO) Switchomatic Coordinate with connected wattage and type of room light fixtures.
- Wiring Device Accessories:
  - 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 match finish of plate.
  - For surface mounted boxes, provide ferally cast outlet plates on all outlet boxes, type suitable for wiring device installed in box.
  - Provide plate with engraved legend where indicated.

## 2.5 SAFETY AND DISCONNECT SWITCHES

- 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.
- Provide General Duty Type: 240 volts AC, Type GD. Heavy Duty Type: 600 volts AC.
- 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

- 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.
- 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.
- 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

- 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

- Provide lighting fixtures of sizes, types, and ratings indicated in lighting fixture schedule
- Wiring: Provide electrical wiring within fixture suitable for connecting to branch circuit.
  - NEC Type AF for 120 volt, minimum No. 18 AWG.
  - NEC Type SF\_2 for 277 volt, minimum No. 18 AWG.

## 2.9 TIME CONTROLLED SWITCHES

- 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.

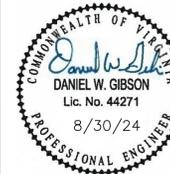
## 2.10 MOTION DETECTORS

- Indoor Motion Detectors: Provide passive infrared motion sensor to operate lights on detection of occupancy, 120/277 volts, field adjustable.
- Outdoor Motion Detectors: Passive infrared motion sensor in weatherproof enclosure with adjustable digital sensitivity and time delay and isolated SPDT relay contact. Provide unit suitable for operation at temperatures as low as -40F. Provide adjustable mounting bracket.



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ELECTRICAL SPECIFICATIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24165

DRAWN BY DWG  
DESIGNED BY DWG  
CHECKED BY DWG  
DATE 8/30/24  
SCALE AS INDICATED  
REVISIONS

**GIBSON**  
ENGINEERING

2100 LUBNA DR  
CHRISTIANSBURG VA 24073  
P. 540.998.6069

EG1.02  
PROJECT NO 032005Z01

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:
    - i. 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" x 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 installation.
- D. Mounting heights indicated are to bottom of ceiling\_mounted fixtures and to center of wall mounted fixtures.
- E. Install parking lighting units complete with poles/standards and products as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC, NESC and NEMA standards, and with recognized industry practices to ensure that roadway and parking area lighting equipment fulfill requirements.
- F. Adjust poles as necessary to provide a permanent plumb vertical position with the bracket arm in proper position for luminaire location. After installation, touch up pole finish with paint furnished by pole manufacturer.
- G. Metal Poles: Provide anchor bases with galvanized steel anchor bolts, threaded at the top end and bent 90 degrees at the bottom end. Provide galvanized nuts, washers, and ornamental covers for anchor bolts. Concrete for anchor bases, polyvinyl chloride (PVC) conduit ells, and ground rods shall be as specified. Thoroughly compact backfill with compacting arranged to prevent any pressure between conductor, jacket, or sheath and the end of the conduit ell.
- H. 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.
- I. Clean lighting fixtures of dirt and debris upon completion of installation. Protect installed fixtures from damage during remainder of construction period.
- J. Do not install interior fixture lens until construction is complete or protect lens from accumulation of dust and debris.
- K. Adjust all fixtures with adjustable aiming to meet the Architect/Engineer's approval.
- L. Test all lighting fixtures for compliance with intended purpose. Correct malfunctioning or noisy units, then retest to demonstrate compliance.
- M. At date of substantial completion, replace all lamps which are observed to be noticeably dimmed as judged by the Architect/Engineer.
- N. Provide tight equipment grounding connections to comply with tightening torques specified in UL 486A for each lighting fixture.

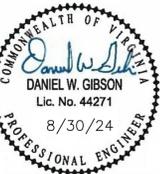


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SALEM FIRE STATION #2 - NEW SERVICE BAYS

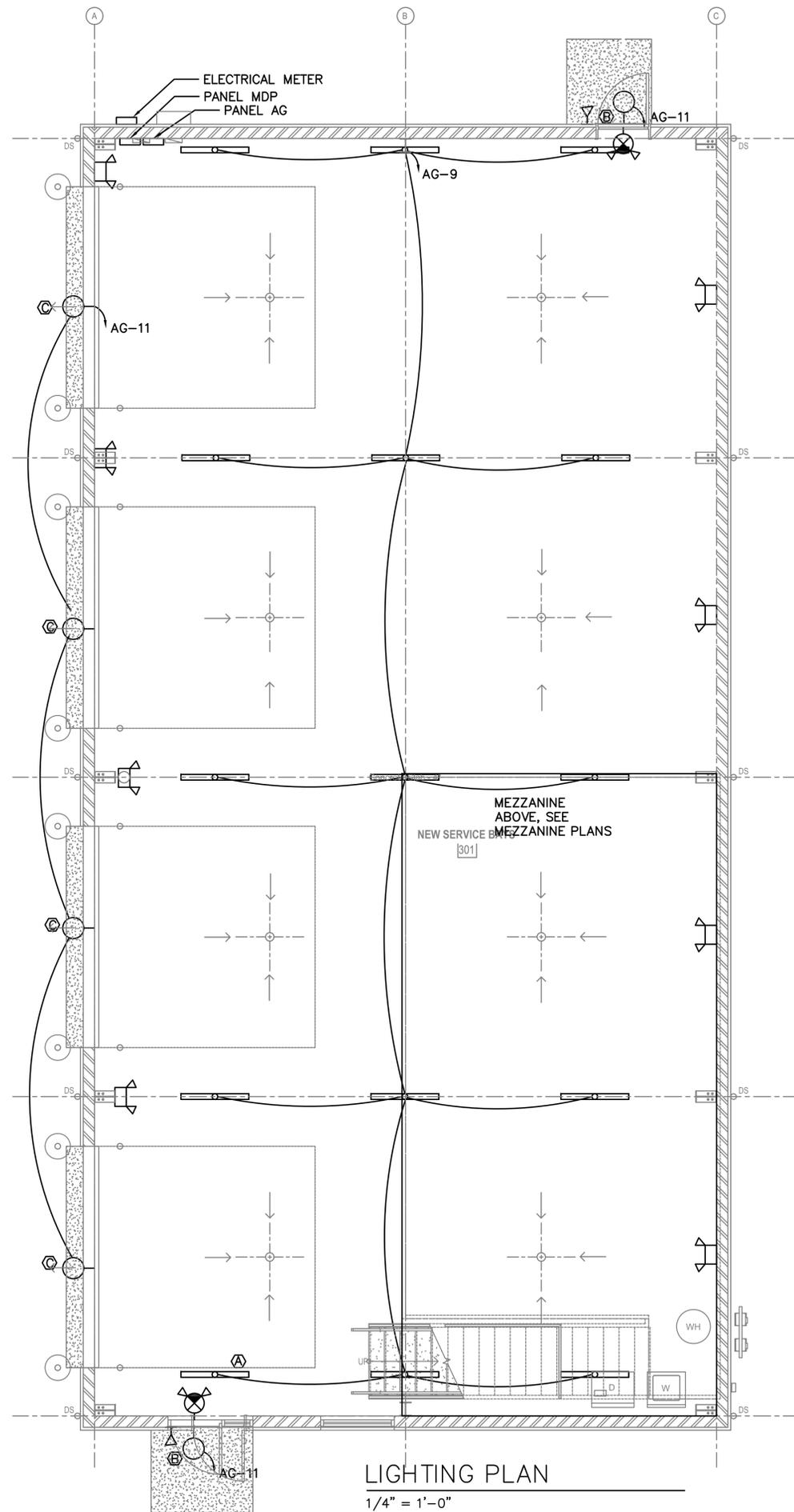
NEW CONSTRUCTION

ELECTRICAL SPECIFICATIONS

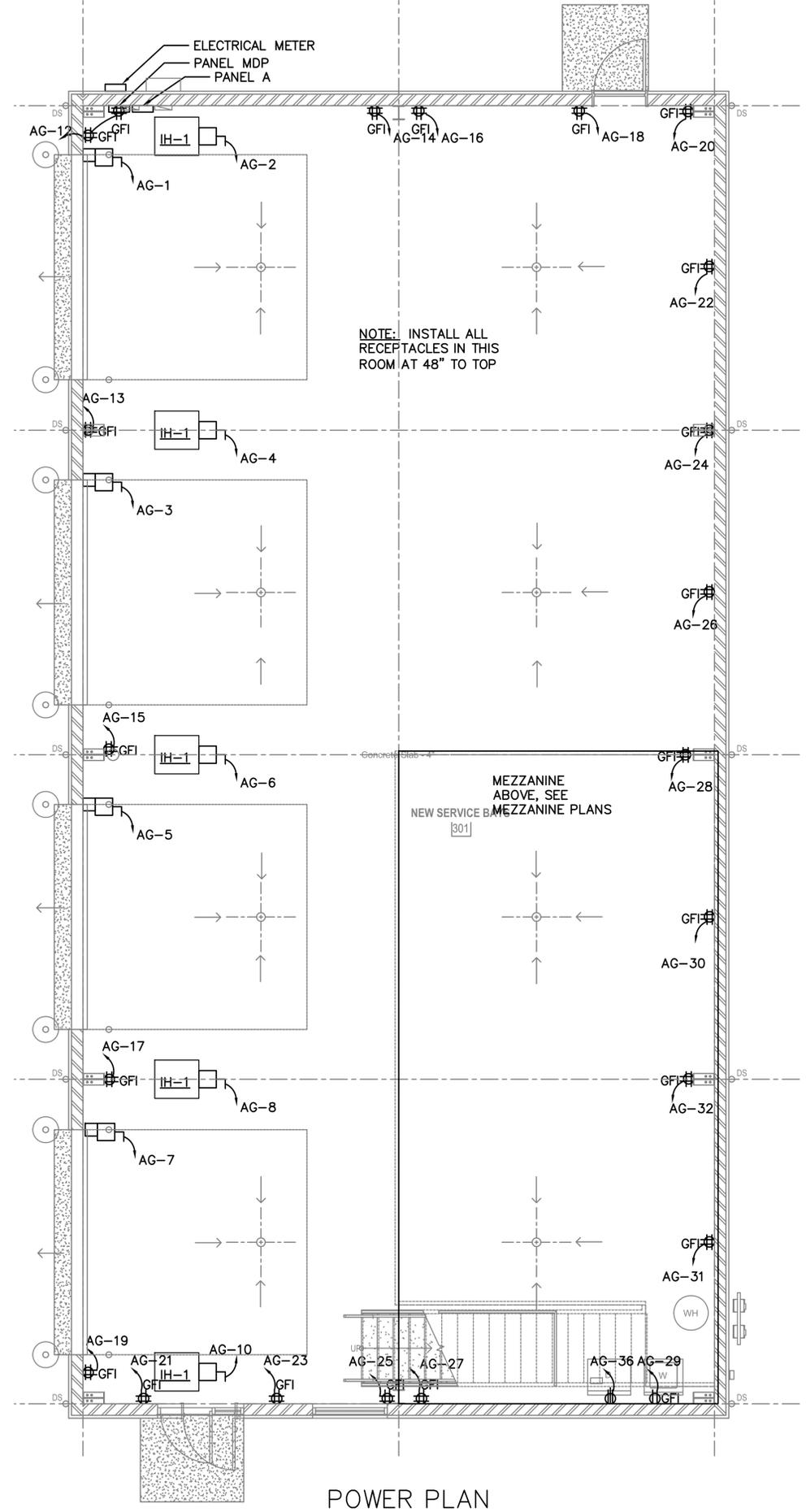
415 ELECTRIC ROAD  
SALEM, VIRGINIA 24165

DRAWN BY DWG  
DESIGNED BY DWG  
CHECKED BY DWG  
DATE 8/30/24  
SCALE AS INDICATED  
REVISIONS

EG1.03  
PROJECT NO 032005Z01



**LIGHTING PLAN**  
1/4" = 1'-0"



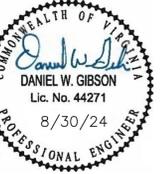
**POWER PLAN**  
1/4" = 1'-0"



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**SALEM FIRE STATION #2 - NEW SERVICE BAYS**

NEW CONSTRUCTION  
ELECTRICAL NEW WORK - LIGHTING AND POWER

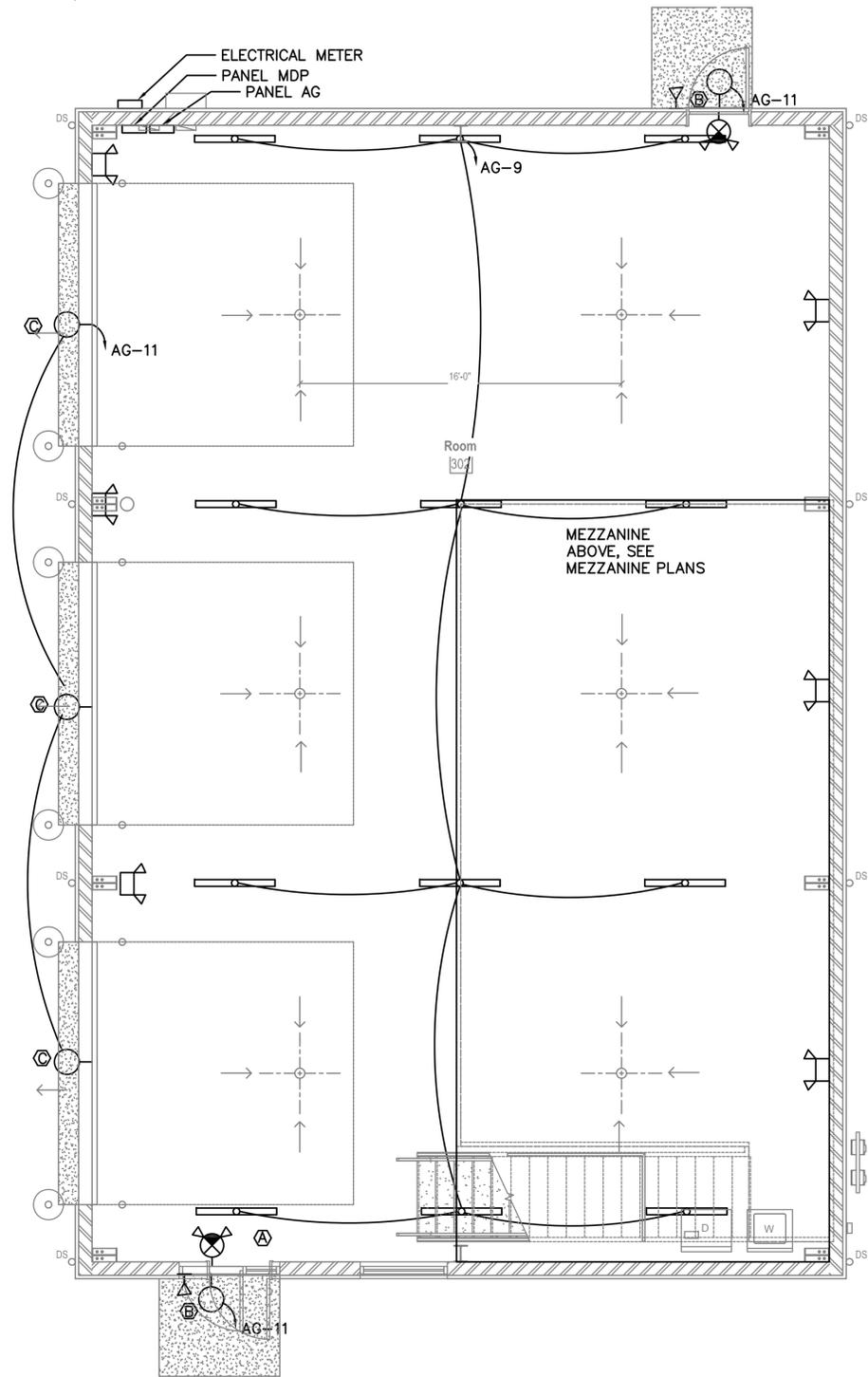
415 ELECTRIC ROAD  
SALEM, VIRGINIA 24165

DRAWN BY: DWG  
DESIGNED BY: DWG  
CHECKED BY: DWG  
DATE: 8/30/24  
SCALE: AS INDICATED  
REVISIONS:

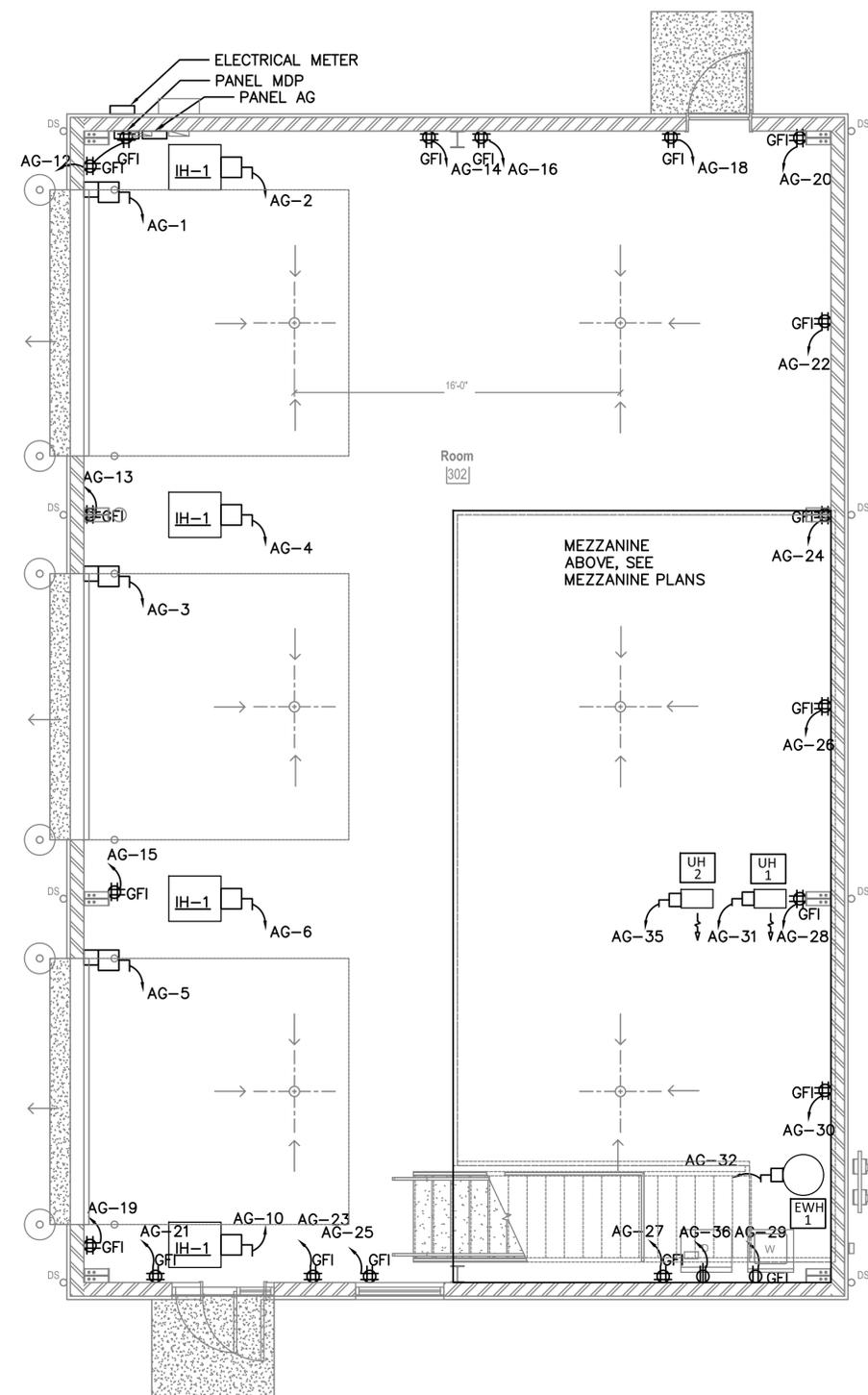
**EG2.01**  
PROJECT NO 0322005201

GENERAL NOTES

1. COORDINATE WITH OWNER TO PROVIDE LIGHTING CONTROLS. PROVIDE INDIVIDUAL SWITCHES FOR EACH AREA. COORDINATE EXACT LOCATION.
- 1.1. EXTERIOR LIGHTING, (CONTROLLED BY PHOTOCELL AND TIMECLOCK, SWITCH IS FOR MAINTENANCE TO OVERRIDE PHOTOCELL AND TIME CLOCK)
- 1.2. INTERIOR BAY LIGHTING
- 1.3. MEZZANINE LIGHTING



ALTERNATE LIGHTING PLAN  
1/4" = 1'-0"



ALTERNATE POWER PLAN  
1/4" = 1'-0"

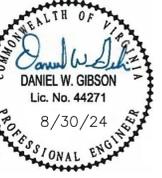


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SALEM FIRE STATION #2 - NEW SERVICE BAYS

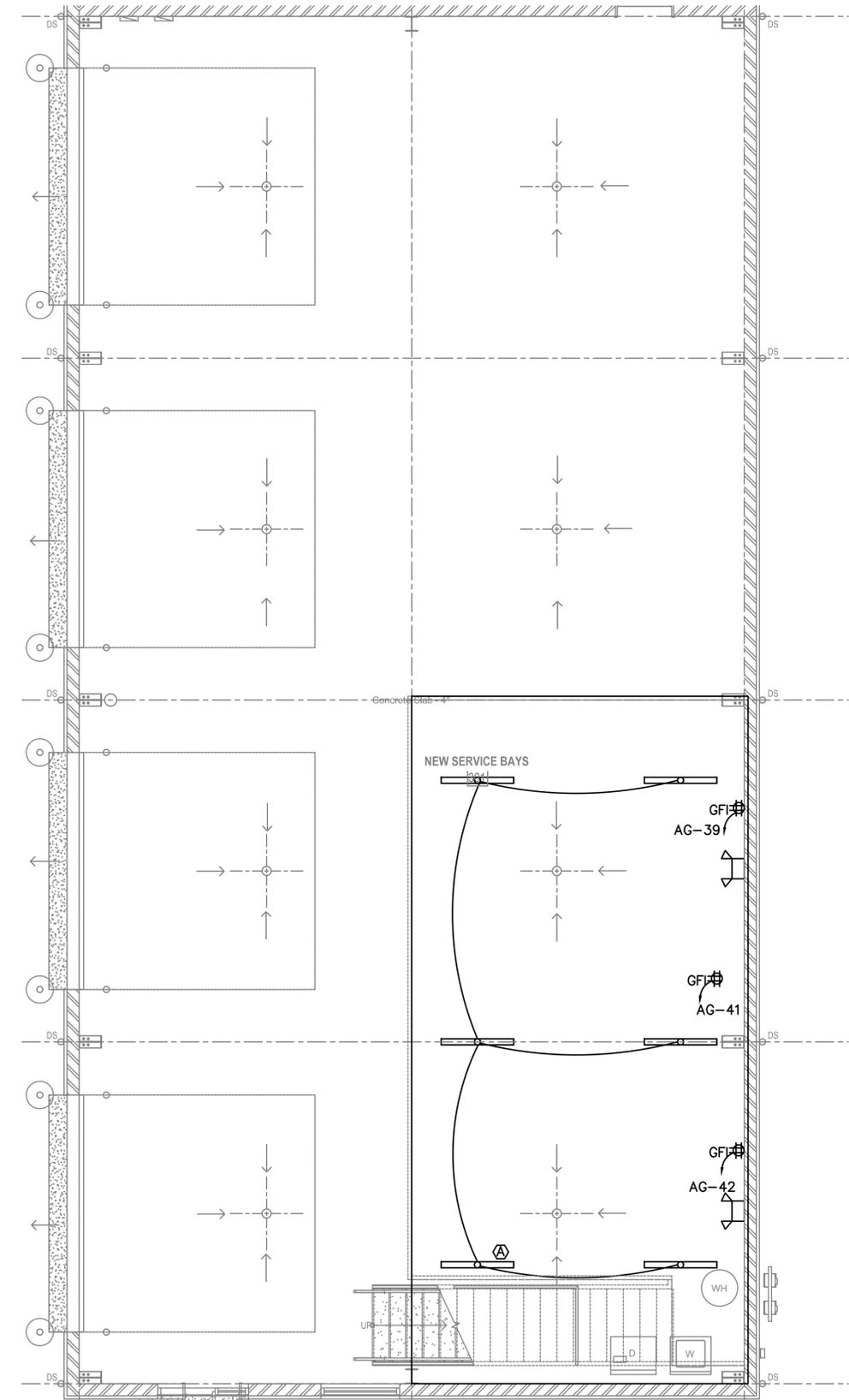
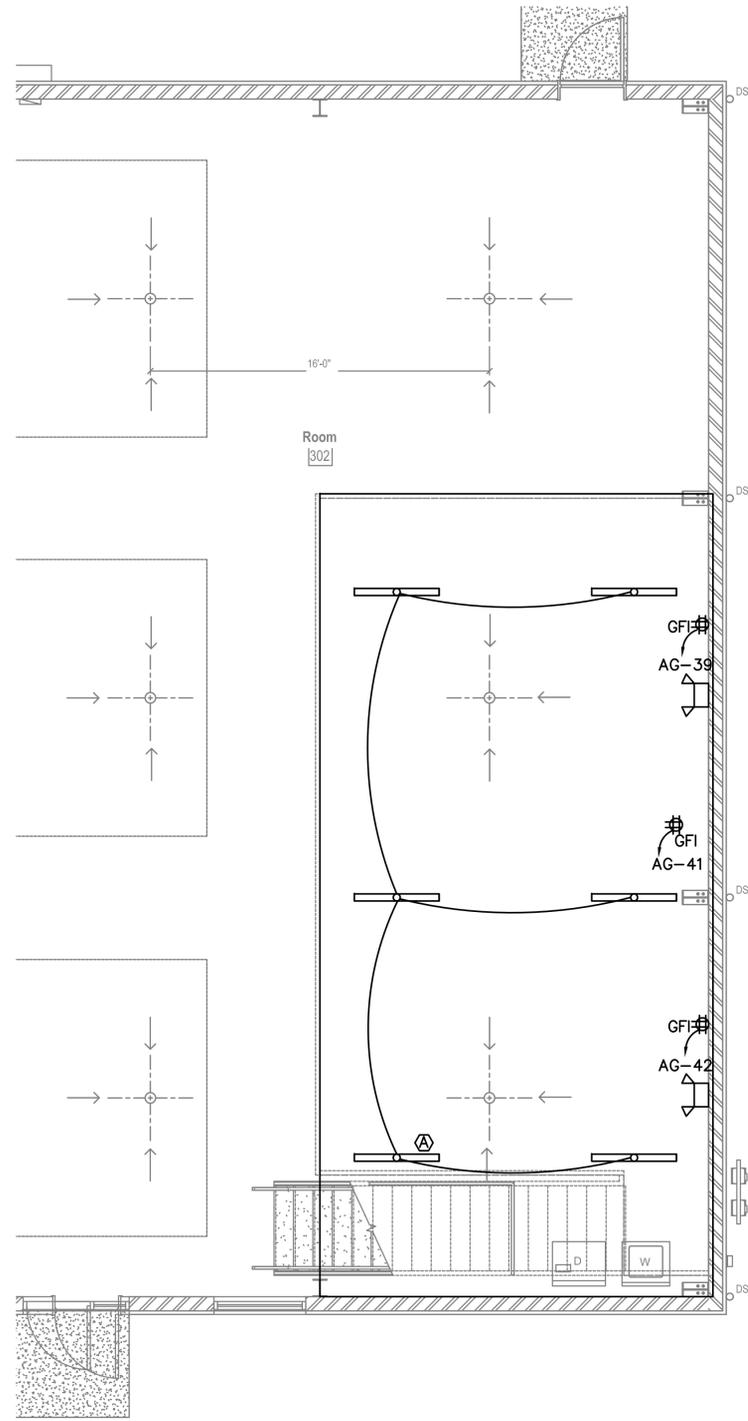
NEW CONSTRUCTION

ALTERNATE: ELECTRICAL NEW WORK - POWER AND LIGHTING

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24165

DRAWN BY	DWG
DESIGNED BY	DWG
CHECKED BY	DWG
DATE	8/30/24
SCALE	AS INDICATED
REVISIONS	

EG2.02  
PROJECT NO 0322005Z01



**GENERAL NOTES**

1. COORDINATE WITH OWNER TO PROVIDE LIGHTING CONTROLS. PROVIDE INDIVIDUAL SWITCHES FOR EACH AREA. COORDINATE EXACT LOCATION.
  - 1.1. EXTERIOR LIGHTING, (CONTROLLED BY PHOTOCELL AND TIMECLOCK, SWITCH IS FOR MAINTENANCE TO OVERRIDE PHOTOCELL AND TIME CLOCK)
  - 1.2. INTERIOR BAY LIGHTING
  - 1.3. MEZZANINE LIGHTING

**ALTERNATE MEZZANINE LIGHTING AND POWER PLAN**  
1/4" = 1'-0"

**MEZZANINE LIGHTING AND POWER PLAN**  
1/4" = 1'-0"

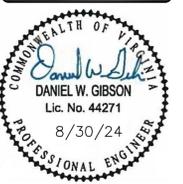


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SALEM VA



**SALEM FIRE STATION #2 - NEW SERVICE BAYS**

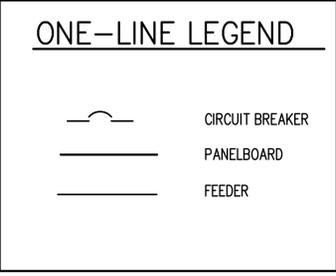
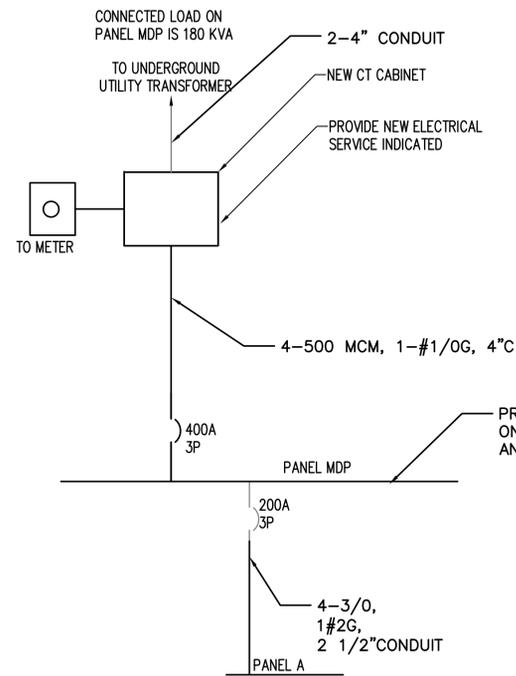
NEW CONSTRUCTION

MEZANINE: ELECTRICAL NEW WORK - POWER AND LIGHTING

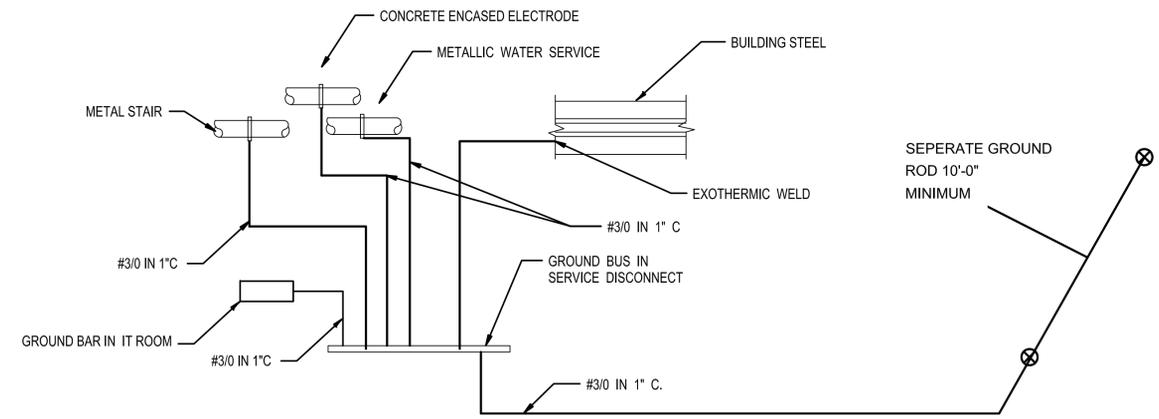
415 ELECTRIC ROAD  
SALEM, VIRGINIA 24165

DRAWN BY	DWG
DESIGNED BY	DWG
CHECKED BY	DWG
DATE	8/30/24
SCALE	AS INDICATED
REVISIONS	

**EG2.03**  
PROJECT NO 0322005201



**ONE-LINE DIAGRAM**



**GROUNDING DETAIL**

**PANEL MDP**

VOLTAGE: 208Y/120 PHASE: 3 BUS AMPS: 400A  
WIRE: 4 MAIN BREAKER AMPS: 400A

SURFACE MOUNTED  
 FLUSH MOUNTED

KAIC RATING: 35,000

CKT NO.	BRKR	P	AMPS	WIRE		CIRCUIT DESCRIPTION	LOAD - KVA				CKT NO.	BRKR	P	AMPS	WIRE		CIRCUIT DESCRIPTION	LOAD - KVA			
				NO	SZ		PHA	PHB	PHC	3 PH					NO	SZ		PHA	PHB	PHC	3 PH
1																					
3	3		200			SPARE					4	3	200A			PANEL A	13.3	10.9	8.3	0.0	
5						SPACE ONLY					8	1	20			SPACE					
7	1		20			SPACE ONLY					10	1	20			SPACE					
9	1		20			SPACE ONLY					12	1	20			SPACE					
11	1		20			SPACE ONLY					14	1	20			SPACE					
13	1		20			SPACE ONLY					16	1	20			SPACE					
15	1		20			SPACE ONLY					18	1	20			SPACE					
17	1		20			SPACE ONLY					20	1	20			SPACE					
19	1		20			SPACE ONLY					22	1	20			SPACE					
21	1		20			SPACE ONLY					24	1	20			SPACE					
23	1		20			SPACE ONLY					26	1	20			SPACE					
25	1		20			SPACE ONLY					28	1	20			SPACE					
27	1		20			SPACE ONLY					30	1	20			SPACE					
29	1		20			SPACE ONLY					32	1	20			SPACE					
31	1		20			SPACE ONLY					34	1	20			SPACE					
33	1		20			SPACE ONLY					36	1	20			SPACE					
35	1		20			SPACE ONLY					38	1	20			SPACE					
37	1		20			SPACE ONLY					40	1	20			SPACE					
39	1		20			SPACE ONLY					42	1	20			SPACE					
41	1		20			SPACE ONLY															
TOTAL LEFT SIDE							0.0	0.0	0.0	0.0	TOTAL RIGHT SIDE							13.3	10.9	8.3	0.0
TOTAL RIGHT SIDE							13.3	10.9	8.3	0.0	TOTAL CONNECTED LOAD							32.4			
TOTAL							13.3	10.9	8.3	0.0	TOTAL CONNECTED LOAD							32.4			

\* NOTES

**PANEL AG**

VOLTAGE: 208Y/120 PHASE: 3 BUS AMPS: 200A  
WIRE: 4 MAIN BREAKER AMPS: MLO

SURFACE MOUNTED  
 FLUSH MOUNTED

KAIC RATING: 22,000

CKT NO.	BRKR	P	AMPS	WIRE		CIRCUIT DESCRIPTION	LOAD - KVA				CKT NO.	BRKR	P	AMPS	WIRE		CIRCUIT DESCRIPTION	LOAD - KVA			
				NO	SZ		PHA	PHB	PHC	3 PH					NO	SZ		PHA	PHB	PHC	3 PH
1	1		20	2	12	BAY 1 DOOR	0.2				2	1	20	2	12	IH-1 EXT WALL	0.1				
3	1		20	2	12	BAY 2 DOOR		0.2			4	1	20	2	12	IH-1 BAY 2		0.1			
5	1		20	2	12	BAY 3 DOOR					6	1	20	2	12	IH-1 BAY 3			0.1		
7	1		20	2	12	BAY 4 DOOR	0.2				8	1	20	2	12	IH-1 BAY 4	0.1				
9	1		20	2	12	LIGHTING		1.1			10	1	20	2	12	IH-1 EXT WALL		0.1			
11	1		20	2	12	EXTERIOR LIGHTING			1.0		12	1	20	2	12	BAY WALLS RCPT			0.4		
13	1		20	2	12	BAY WALL RCPT	0.4				14	1	20	2	12	BAY WALLS RCPT	0.4				
15	1		20	2	12	BAY WALL RCPT	0.4				16	1	20	2	12	BAY WALLS RCPT	0.4				
17	1		20	2	12	BAY WALL RCPT		0.4			18	1	20	2	12	BAY WALLS RCPT		0.4			
19	1		20	2	12	BAY WALL RCPT	0.4				20	1	20	2	12	BAY WALLS RCPT	0.4				
21	1		20	2	12	BAY WALL RCPT		0.4			22	1	20	2	12	BAY WALLS RCPT		0.4			
23	1		20	2	12	BAY WALL RCPT	0.4				24	1	20	2	12	BAY WALLS RCPT	0.4				
25	1		20	2	12	BAY WALL RCPT		0.4			26	1	20	2	12	BAY WALLS RCPT		0.4			
27	1		20	2	12	BAY WALL RCPT	0.4				28	1	20	2	12	BAY WALLS RCPT	0.4				
29	1		20	2	12	BAY WALL RCPT		0.4			30	1	20	2	12	BAY WALLS RCPT		0.4			
31	2		40	2	8	UH-1	3.8			32	2	40	2	12	EW-1	3.0					
33							3.8			34							3.0				
35	2		25	2	10	UH-2	1.7			36	2	30	2	10	DRYER	2.0			2.0		
37							1.7			38							2.0				
39	1		20	2	12	MEZZ RCPT		0.4		40	1	20	2	10	MEZZ LTG						
41	1		20	2	12	MEZZ RCPT		0.4		42	1	20	2	12	MEZZ RCPT				0.4		
TOTAL LEFT SIDE							7.0	6.6	4.3	0.0	TOTAL RIGHT SIDE							6.3	4.3	3.9	0.0
TOTAL RIGHT SIDE							6.3	4.3	3.9	0.0	TOTAL CONNECTED LOAD							32.4			
TOTAL							13.3	10.9	8.3	0.0	TOTAL CONNECTED LOAD							32.4			

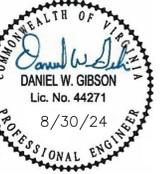
\* NOTES  
1. EXISTING PANEL TO HAVE SPARE BREAKERS FOR UNUSED CIRCUITS IN ALTERNATE PLANS.



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**SALEM FIRE STATION #2 - NEW SERVICE BAYS**

NEW CONSTRUCTION  
ELECTRICAL DETAILS

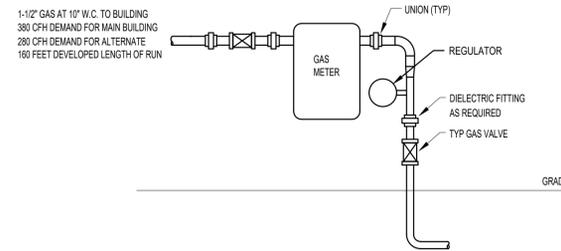
DRAWN BY: DWG  
DESIGNED BY: DWG  
CHECKED BY: DWG  
DATE: 8/30/24  
SCALE: AS INDICATED  
REVISIONS:

EG3.01  
PROJECT NO: 03220052.01

**PLUMBING EQUIPMENT SCHEDULE:**

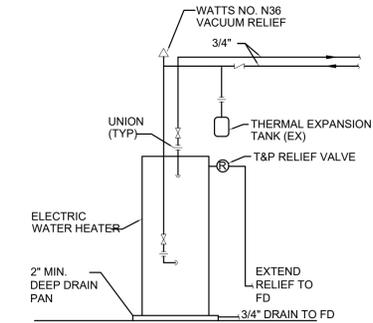
<p>FD-1</p> <p>FD-2</p> <p>HB</p> <p>WB-1</p> <p>BFP</p> <p>EX</p> <p>EWH-1</p>	<p>FLOOR DRAIN, ZURN MODEL Z415, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS.</p> <p>FOR MECHANICAL ROOM DRAINS NOT RECEIVING INDIRECT WASTE, FINISHED SPACES INCLUDING TOILET, SHOWER, LOCKER ROOMS, ETC., PROVIDE WITH TYPE B, ROUND, POLISHED NICKEL BRONZE, LIGHT DUTY HEEL PROOF STRAINER.</p> <p>FOR ANY FLOOR DRAINS RECEIVING INDIRECT WASTE OR CONDENSATE (NOT FLOOR SINKS), PROVIDE TYPE I POLISHED NICKEL BRONZE STRAINER WITH RAISED FLANGE.</p> <p>ALL FLOOR DRAINS SHALL BE PROTECTED AGAINST LOSS OF TRAP SEAL BY EVAPORATION BY INSTALLATION OF ELASTOMERIC TRAP GUARD DRAIN INSERT, EQUAL TO PROSET SYSTEMS MODEL #TG.</p> <p>HEAVY DUTY FLOOR DRAIN, ZURN MODEL Z535, SQUARE TOP HEAVY-DUTY DRAIN, OVEN CURED ACID RESISTANT EPOXY COATED ALUMINUM BODY WITH BOTTOM OUTLET, TOP MEMBRANE CLAMPING COLLAR, ANTI-PONDING SLOTS, SEDIMENT BUCKET AND HEAVY-DUTY ANTI-TILT HINGED SLOTTED GRATE WITH STAINLESS STEEL HINGE PINS.</p> <p>HOSE BIBB/ WALL FAUCET. ZURN MODEL Z1341-BFP, EXPOSED, ANTI-SIPHON, WALL FAUCET FOR USE IN MODERATE CLIMATE INSTALLATION, COMPLETE WITH Z1399-BFP EXTERNAL BACKFLOW PREVENTER, ALL BRONZE INTERIOR COMPONENTS, VANDAL-RESISTANT OPERATING STEM, ROUGH BRONZE EXTERIOR AND 3/4 MALE HOSE CONNECTION (CONFORM TO ASME B1.20.7). MOUNT AT 24" ABOVE FLOOR.</p> <p>WASHER BOX: OATEY CENTRO II WASHER BOX, HW &amp; CW CONNECTION, 2" DRAIN OUTLET, RECESSED MOUNTED.</p> <p>REDUCED PRESSURE ZONE BACK FLOW PREVENTER (FOR BUILDING SERVICE) SIZES 1/2" - 2": WATTS SERIES LFU009. PROVIDE WITH STRAINER UPSTREAM AND SHUT OFF VALVES ON INLET AND OUTLET.</p> <p>EXPANSION TANK - AMTROL THERM-X-TROL MODEL #ST-5 THERMAL EXPANSION TANK, 2.0 GALLONS MIN. ACCEPTANCE VOLUME WITH DIAPHRAGM. FACTORY PRE-CHARGED TO 40 PSI, SET EQUAL TO LINE PRESSURE.</p> <p>ELECTRIC WATER HEATER, A.O. SMITH MODEL #DRE-52-6, SINGLE ELEMENT, 50 GALLON CAPACITY TANK, 25 GAL./HR. RECOVERY AT 40 DEG.F. ENT. AND 100 DEG.F. RISE, 6 KW, 208V/1PH; T &amp; P RELIEF VALVE. PIPING CONNECTIONS INCLUDING T&amp;P RELIEF VALVE ON SIDE OF EQUIPMENT.</p>
---	--

LEGEND		ABBREVIATIONS	
	BRANCH CONNECTION - BOTTOM OF MAIN	AAV	AIR ADMITTANCE VALVE
	BRANCH CONNECTION - SIDE OF MAIN	ABV	ABOVE
	BRANCH CONNECTION - TOP OF MAIN	AFF	ABOVE FINISHED FLOOR
	PIPE DOWN OR PIPE FROM BELOW	BFF	BELOW FINISHED FLOOR
	PIPE UP OR PIPE FROM ABOVE	BTU	BRITISH THERMAL UNIT
	DIRECTION OF FLOW	BEL	BELOW
	DOMESTIC COLD WATER	CLG	CEILING
	DOMESTIC HOT WATER	CO	CLEANOUT
	DOMESTIC HOT WATER RECIRCULATING	CONN	CONNECT CONNECTION
	NATURAL GAS PIPING	CW	COLD WATER
	SANITARY SEWER, GREASE WASTE OR DRAIN	CONT	CONTINUED
	SANITARY VENT	DN	DOWN
	CLEANOUT FLUSH WITH FLOOR	EA	EACH
	OUTLET WITH P-TRAP	ELEV	ELEVATION
	WALL HYDRANT	EWIC	ELECTRIC WATER COOLER
	WATER HAMMER ARRESTER	F	DEGREES FAHRENHEIT
	BALL VALVE	FD	FLOOR DRAIN
	AUTOMATIC GAS SHUT OFF VALVE, INTERLOCK WITH HOOD	FIN	FINISHED
	SHUTOFF VALVE IN VERTICAL	FLR	FLOOR
	CHECK VALVE	FR	FROM
	T&P RELIEF VALVE	FT	FEET
	BALANCING COCK	GPH	GALLONS PER HOUR
	UNION	GPM	GALLONS PER MINUTE
	PRESSURE GAUGE AND GAUGE COCK	GW	GREASE WASTE
	THERMOMETER	HB	HOSE BIBB
	GAS PRESSURE REGULATOR	HC	HANDICAPPED ACCESSIBLE
	RELIEF VALVE	HW	HOT WATER
	BACKFLOW PREVENTER (BFP)	HP	HORSEPOWER
	EXISTING (EQUIPMENT OR DUCTWORK/PIPING)	IN	INCH, INCHES
	DEMOLITION (EQUIPMENT, PIPING, DUCTWORK, ETC.)	INV	INVERT
		MAX	MAXIMUM
		MBH	THOUSAND BTU PER HOUR
		MIN	MINIMUM
		SH	SHEET
		TYP	TYPICAL
		V	SANITARY VENT
		VTR	VENT THRU ROOF
		W	SANITARY WASTE
		WCO	WALL CLEANOUT
		WH	WALL HYDRANT
		WHA	WATER HAMMER ARRESTER
		ZVB	MEDICAL GAS ZONE VALVE BOX
			CONNECT TO EXISTING
			LIMITS OF DEMOLITION



**GAS METER DETAIL**

NO SCALE



**ELECTRIC WATER HEATER DETAIL**



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SALEM, VA



SALEM FIRE STATION #2 - NEW SERVICE BAYS

NEW CONSTRUCTION

PLUMBING LEGEND, SCHEDULES, AND DETAILS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24163

DRAWN BY JNB  
DESIGNED BY JNB  
CHECKED BY JNB  
DATE 2024-08-30  
SCALE AS NOTED  
REVISIONS

**PG1.01**

PROJECT NO 03220052.01

PLUMBING SPECIFICATIONS:

1. GENERAL PROVISIONS:

- 1.A. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE, ALL FEDERAL, STATE, AND CITY CODES, ORDINANCES, AND STANDARDS.
- 1.B. THE PLANS ARE DIAGRAMMATIC IN NATURE AND BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE USED. INSTALLATION SHALL BE WITHIN THE LIMITATIONS IMPOSED BY THE ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, AND PLUMBING REQUIREMENTS WITH ADEQUATE SPACE FOR MAINTENANCE.
- 1.C. 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 OWNER.
- 1.D. MAJOR ITEMS ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
- 1.E. A TRADE NAMES AND CATALOG NUMBERS SHALL BE INTERPRETED AS ESTABLISHING A GENERAL DESIGN AND STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. UNLESS STATED OTHERWISE, THE CONTRACTOR MAY USE ANY ARTICLE WHICH, IN HIS JUDGEMENT, AND WITH WRITTEN COMMENT FROM THE ARCHITECT/ENGINEER INDICATING NO OBJECTION, IS EQUAL OR SUPERIOR TO THAT SPECIFIED. DRAWINGS SHOWING CHANGES OR REVISIONS REQUIRED BY THE SUBSTITUTION FOR SPECIFIED ITEMS SHALL BE SUBMITTED WITH THE SHOP DRAWING DATA, AND THE COSTS OF ALL SUCH CHANGES SHALL BE BORNE BY THE CONTRACTOR.
- 1.F. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
- 1.G. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND/OR OTHER RELEVANT TRADES.
- 1.H. ALL PIPING SHALL BE INSTALLED ABOVE THE CEILING UNLESS INDICATED OTHERWISE. ALL WATER PIPING AND P-TRAPS SHALL BE INSTALLED WITHIN THE BUILDINGS INSULATION ENVELOPE OR BE PROVIDED WITH A FREEZE PROTECTION SYSTEM.
- 1.I. 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 WITH MANUFACTURERS STANDARDIZATION SOCIETY (MSS) STANDARDS SP-58, 69 AND 89.
- 1.J. THE CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.

2. SUBMITTAL AND SHOP DRAWINGS:

- 2.A. SUBMIT MANUFACTURER'S CERTIFIED DATA RELATIVE TO ALL EQUIPMENT, PIPING, CONTROLS, ETC. REQUIRED FOR THE INSTALLATION OF THE PLUMBING AND FIRE PROTECTION SYSTEMS. SUBMIT FOR REVIEW ALL NECESSARY ENGINEERING, PRODUCT AND INSTALLATION DATA, SHOP DRAWINGS, SAMPLES ETC. FOR ALL EQUIPMENT, MATERIAL, AND SYSTEMS TO ASCERTAIN COMPLIANCE WITH THE TECHNICAL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- 2.B. SUBMIT A DIGITAL PDF OF ALL NECESSARY DATA, CUTS, MANUFACTURER'S SELECTIONS, CATALOGS, BULLETINS, INSTALLATION INSTRUCTIONS, DRAWINGS, DIAGRAMS, CURVES, ETC. CLEARLY INDICATE ON THE SUBMITTED DATA, THE MANUFACTURER'S NAME, PRODUCT NUMBER(S), OPTIONS, EQUIPMENT CAPACITY, DIMENSIONAL DATA, WEIGHTS, AND OTHER APPLICABLE TECHNICAL DATA FOR THE PROJECT.
- 2.C. TRADE NAMES, MANUFACTURERS, AND CATALOGUE NUMBERS ARE MENTIONED HEREIN AND ON THE DRAWINGS SOLELY IN ORDER TO ESTABLISH A STANDARD FOR THE TYPE, GENERAL DESIGN, AND QUALITY OF PRODUCT REQUIRED. OTHER PRODUCTS SIMILAR IN DESIGN OF EQUIVALENT QUALITY CAPABLE OF FITTING WITHIN THE SPACES ALLOCATED AND COMPLYING WITH THE DRAWINGS AND SPECIFICATIONS WILL BE CONSIDERED AFTER THE CONTRACT IS LET

UNLESS "PRIOR APPROVAL" REQUIREMENTS ARE SET FORTH IN THESE DOCUMENTS.

- 2.D. REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FITTING THE EQUIPMENT IN THE SPACE ALLOTTED WITH SPACE FOR ALL CONNECTIONS AND SERVICING AND FOR THE COORDINATION OF THE WORK WITH WORK OF OTHER TRADES.
- 2.E. THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS AND SHOP DRAWINGS AND INDICATE BY STAMP OR LETTER THAT HE HAS REVIEWED THEM, BEFORE FORWARDING THEM TO THE ARCHITECT AND/OR ENGINEER. SUBMITTALS AND DRAWINGS WILL BE RETURNED AFTER REVIEW INDICATING WHETHER EXCEPTIONS ARE TAKEN, THE SUBMITTAL RETURNED WITH CORRECTIONS, OR IS COMPLETELY REJECTED. RESUBMISSION OF REVISED SUBMITTALS AND SHOP DRAWINGS, IF REQUIRED, SHALL BE DONE BEFORE INSTALLATION AND CONSTRUCTION IS BEGUN.
- 2.F. CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS AND DRAWINGS DURING THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES, TECHNIQUES OF CONSTRUCTION, COORDINATING THE WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER. REVIEW OF THE SUBMITTALS SHALL NOT PERMIT ANY DEVIATION FROM PLANS AND SPECIFICATIONS.
- 3. AS-BUILT DRAWINGS:
  - 3.A. MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT DRAWINGS TO THE ARCHITECT/ENGINEER.
- 4. OPERATION AND MAINTENANCE MANUALS:
  - 4.A. UPON COMPLETION OF THE PROJECT, SUBMIT ALL OPERATION AND MAINTENANCE MANUALS, WARRANTIES, SPARE PARTS LIST, AS-BUILT DRAWINGS, TEST AND BALANCE REPORTS, AND LETTER OF GUARANTEE ALL BOUND IN THREE RING BINDERS, CLEARLY SHOWING WHICH EQUIPMENT WAS SUPPLIED TO THE JOB.
- 5. PIPING SPECIALTIES:
  - 5.A. 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.
  - 5.B. PIPE ESCUTCHEONS: INSTALL PIPE ESCUTCHEONS ON EACH PIPE PENETRATION THRU FLOORS, WALLS PARTITIONS, AND CEILINGS WHERE PENETRATION IS EXPOSED TO VIEW AND ON EXTERIOR OF BUILDING. SECURE ESCUTCHEON TO PIPE OR INSULATION SO ESCUTCHEON COVERS PENETRATION HOLE, AND IS FLUSH WITH ADJOINING SURFACE. PROVIDE SHEET STEEL ESCUTCHEONS, SOLID OR SPLIT HINGED. FOR AREAS WHERE WATER AND CONDENSATION CAN BE EXPECTED TO ACCUMULATE, PROVIDE CAST BRASS OR SHEET BRASS ESCUTCHEONS, SOLID OR SPLIT HINGED.
  - 5.C. PIPE SLEEVES: INSTALL PIPE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, CEILINGS, AND ROOFS. DO NOT INSTALL SLEEVES THROUGH STRUCTURAL MEMBERS OF WORK, EXCEPT AS DETAILED ON DRAWINGS, OR AS REVIEWED BY ARCHITECT/ENGINEER. SIZE SLEEVES SO THAT PIPING AND INSULATION (IF ANY) WILL HAVE FREE MOVEMENT IN SLEEVE, INCLUDING ALLOWANCE FOR THERMAL EXPANSION; BUT NOT LESS THAN 2 PIPE SIZES LARGER THAN PIPING RUN. INSTALL LENGTH OF SLEEVE EQUAL TO THICKNESS OF CONSTRUCTION PENETRATED, AND FINISH FLUSH TO SURFACE; EXCEPT FLOOR SLEEVES. EXTEND FLOOR SLEEVES 1/4 INCH ABOVE LEVEL FLOOR FINISH, AND 3/4 INCH ABOVE FLOOR FINISH SLOPED TO DRAIN. PROVIDE TEMPORARY SUPPORT OF SLEEVES DURING PLACEMENT OF CONCRETE AND OTHER WORK AROUND SLEEVES, AND PROVIDE TEMPORARY CLOSURE TO PREVENT CONCRETE AND OTHER MATERIALS FROM ENTERING SLEEVES.
  - 5.D. WATER HAMMER ARRESTORS (WHA): PROVIDE AT ALL FAST OPENING WATER VALVES INCLUDING WATER CLOSETS, URINALS, AND CLOTHES WASHERS. SHALL BE ZURN MODEL 1260XL OR EQUIVALENT AND SHALL BE SIZED AND PLACED WITHIN THE SYSTEM AS RECOMMENDED BY THE MANUFACTURER.

6. INSULATION:

- 6.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 ASTM E84 METHOD. INSULATION SHALL BE LABELED BY THE MANUFACTURER. THE LABEL SHALL INDICATE THE INSULATING VALUE, FLAME SPREAD AND SMOKE-DEVELOPED RATING.
- 6.B. 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.
- 6.C. MATERIALS:
  - 6.C.A. GLASS FIBER PIPE INSULATION: HEAVY DENSITY PREFORMED PIPE INSULATION WITH OPERATING TEMPERATURE RANGE OF -60 DEGREES F TO 350 DEGREES F, THERMAL CONDUCTIVITY "K"=0.24 BTU-IN/HOUR-SF-DEG F AT 100 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.
  - 6.C.B. CELLULAR FOAM PIPE INSULATION: TUBULAR, FLEXIBLE, FIRE RESISTANT INSULATION WITH OPERATING TEMPERATURE RANGE OF -40 DEGREES F TO 220 DEGREES F, THERMAL CONDUCTIVITY "K"=0.27 BTU-IN/HOUR-SF-DEG F AT 75 DEGREES F. NO JACKET REQUIRED. EQUAL TO ARMSTRONG ARMAFLEX AP.
  - 6.C.C. A POLYETHYLENE PIPE INSULATION: INSULATION MATERIALS CORPORATION OF AMERICA (MCOA), FLEXIBLE CLOSED CELL POLYETHYLENE TUBING, ASTM C534, "K"=0.24 AT 75 DEGREES F, SERVICE TEMPERATURE -110F TO 210F. NO JACKET REQUIRED.
- 6.D. OMIT INSULATION ON EXPOSED PLUMBING FIXTURE RUNOUTS FROM FACES OF WALL OR FLOOR TO FIXTURE; ON UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, AND EXPANSION JOINTS.
- 6.E. COVER VALVES, FITTINGS AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN.
- 6.F. ALL DOMESTIC WATER PIPING ABOVE GROUND INCLUDING COLD, HOT, AND HOT WATER RE-CIRCULATING PIPING SHALL BE INSULATED WITH A MINIMUM 1/2" THICK INSULATION.
- 7. PLUMBING PIPING:
  - 7.A. DOMESTIC WATER PIPING SHALL BE COPPER TUBE AND FITTINGS IN ACCORDANCE WITH ASTM B88, TYPE L HARD DRAWN COPPER. JOINTS SHALL BE MADE WITH LEAD FREE SOLDER.
  - 7.B. STORM, SOIL, WASTE, AND VENT PIPING BELOW GRADE SHALL BE SCHEDULE 40 PVC PIPE AND FITTINGS. PVC SCHEDULE 40 PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785. INJECTION MOLDED PVC SCHEDULE 40 FITTINGS SHALL CONFORM TO ASTM D 2466. PIPE AND FITTINGS SHALL BE MANUFACTURED AS A SYSTEM AND BE THE PRODUCT OF ONE MANUFACTURER. PIPE AND FITTINGS SHALL CONFORM TO NSF INTERNATIONAL STANDARD 61 AND THE HEALTH-EFFECTS PORTION OF NSF STANDARD 14.
  - 7.C. STORM, SOIL, WASTE, AND VENT PIPING ABOVE GRADE SHALL BE HUBLESS CAST IRON TYPE DESIGNED FOR SAID APPLICATION. HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE® AND LISTED BY NSF® INTERNATIONAL. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310, SHALL BE MANUFACTURED IN THE UNITED STATES, AND BE CERTIFIED BY NSF® INTERNATIONAL.
  - 7.D. CONDENSATE DRAINS SHALL BE TYPE L HARD DRAWN COPPER. JOINTS SHALL BE MADE WITH LEAD FREE SOLDER.
  - 7.E. SLOPE ALL DRAIN LINES AT 1/4 INCH PER FOOT FOR

SIZES LESS THAN 4 INCHES. SLOPE AT 1/8 INCH PER FOOT FOR SIZES 4 INCH AND LARGER.

- 7.F. SOIL, WASTE, AND VENT PIPING BELOW GRADE SHALL BE A MINIMUM OF 2 INCH AND SHALL BE PROVIDED WITH METALLIC TRACING/DETECTION WIRE.
- 7.G. VENTS SHALL EXTEND A MINIMUM OF 12 INCHES ABOVE THE ROOF. ROOF FLASHING SHALL BE PROVIDED AND COORDINATED WITH THE GENERAL AND ROOFING CONTRACTORS.
- 7.H. TRENCHING AS REQUIRED FOR UNDERGROUND PIPING SHALL BE GRADED TO UNIFORM PITCH AND SHALL BE NO WIDER THAN NECESSARY FOR PIPING INSTALLATION. CLEAN BACKFILL SHALL BE USED AND THOROUGHLY TAMPED IN LAYERS NOT EXCEEDING 6 INCHES TO A MINIMUM DEPTH OF 1 FOOT ABOVE PIPE. COMPACTED BACKFILL SHALL BE USED FOR THE ENTIRE DEPTH OF EXCAVATION UNDER SLAB ON GRADE CONSTRUCTION.
- 7.I. NATURAL GAS SYSTEMS: PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE, ASTM A120/A53-CW OR ASTM/A53 GRADE B (WELDED OR SEAMLESS); WROUGHT STEEL BUTTWELDING FITTINGS. GAS COCKS 2 INCHES AND SMALLER SHALL BE RATED FOR 150 PSI, NON SHOCK WOG, BRONZE STRAIGHTWAY COCK, FLAT OR SQUARE HEAD, WITH THREADED ENDS. ALL GAS PIPING CONNECTIONS SHALL BE PROVIDED WITH A 6 INCH DIRT TRAP, UNION, AND GAS COCK SHUT OFF VALVE. ALL JOINTS SHALL BE SEALED WITH CHEMICALLY RESISTANT SEALER APPLIED TO MALE THREADS OF PIPE CONNECTION. PROVIDE DRIP LEG AT ANY POINT IN THE WHERE CONDENSATE MAY COLLECT AS PER THE FUEL GAS CODE. GAS PIPING SHALL BE INSTALLED WITH A 1/64 INCH PER FOOT DOWNWARD SLOPE IN THE DIRECTION OF FLOW. A ROLLER BEARING TYPE PIPE SUPPORT SHALL BE USED TO SUPPORT ALL GAS PIPING LOCATED ON THE ROOF. SUPPORTS SHALL HAVE A POLYCARBONATE BASE, WITH PIPE RESTING ON A SELF LUBRICATING POLYCARBONATE RESIN AXLE AND ROLLER AND BE SIZED FOR THE PIPE BEING SUPPORTED. MAXIMUM SPACING SHALL NOT EXCEED 10FT. PROVIDE PIPE HANGERS AS REQUIRED FOR ALL INTERIOR PIPING.
- 8. PLUMBING FIXTURES, PUMPS, AND WATER HEATERS SHALL BE PROVIDED AND INSTALLED AS PER THE PLUMBING FIXTURE SCHEDULE. ALL EXPOSED FIXTURE SUPPLIES AND WASTE LINES SHALL BE CHROME PLATED. NO EXPOSED COPPER, PVC, AND/OR CAST IRON IS ALLOWED.
- 9. CLEANOUTS SHALL BE THE SAME SIZE AS LINE SERVED, BUT NOT LARGER THAN 4 INCHES, AND SHALL BE PROVIDED AT THE BASE OF EACH SOIL AND WASTE STACK, AT ALL POINTS WHERE DIRECTION CHANGE IS MORE THAN 45 DEGREES, AT MINIMUM INTERVALS OF 50 FEET FOR 4 INCH AND SMALLER PIPING, AT MINIMUM INTERVALS OF 100 FEET FOR PIPING LARGER THAN 4 INCHES, AS REQUIRED BY CODE AND AS INDICATED ON THE DRAWINGS. COVERS SHALL BE SET FLUSH WITH FLOOR OR WALL.
- 10. PLUMBING VALVES
  - 10.A. PROVIDE SHUT-OFF VALVE AND UNION OR EQUIVALENT AT EACH HOT AND COLD WATER EQUIPMENT CONNECTION. PROVIDE SHUTOFF VALVE ON EACH BRANCH OR RISER THAT SERVES TWO OR MORE PLUMBING FIXTURES.
  - 10.B. GATE VALVES 2-1/2 INCHES AND SMALLER: ALL BRONZE, RISING STEM, SOLID WEDGE DISC. STOCKHAM B-100 OR B-108.
  - 10.C. GLOBE VALVES: ALL BRONZE, RENEWABLE COMPOSITION DISC. STOCKHAM B-16 OR B-14-T.
  - 10.D. CHECK VALVES IN HORIZONTAL PIPES: 2 INCHES AND SMALLER: ALL BRONZE, REGRINDING BRONZE DISC, HORIZONTAL SWING, Y-PATTERN. STOCKHAM B-319OR B-309.
  - 10.E. CHECK VALVES IN VERTICAL PIPES AND PUMP DISCHARGE: SILENT CHECK VALVE WITH SEMI-STEEL BODY, BRONZE TRIM AND STAINLESS STEEL SPRING. METRAFLEX 700 SERIES.
  - 10.F. BALL VALVES MAY BE USED IN LIEU OF GATE VALVES 2 INCHES AND SMALLER. BALL VALVES SHALL HAVE BRONZE BODY, BRONZE BALL AND TFE SEATS AND SEALS. STOCKHAM S-216BRRT OR S-216BRRS.
- 11. CLEANING AND TESTING
  - 11.A. ALL WATER PIPING, VALVES, ETC. SHALL BE THOROUGHLY FLUSHED OF FOREIGN MATTER AND TESTED FOR LEAKS IN ACCORDANCE WITH THE PLUMBING AND BUILDING CODE, LATEST EDITION. ANY LEAKAGE SHALL BE REPAIRED. DISINFECT DOMESTIC WATER PIPING INCLUDING WATER SERVICE PIPING IN ACCORDANCE WITH AWWA C601.
  - 11.B. ALL DRAIN, WASTE AND VENT PIPING SHALL BE TESTED FOR LEAKS IN ACCORDANCE WITH THE PLUMBING AND BUILDING CODE CODE, LATEST EDITION. NO VISIBLE DROP IN WATER LEVEL WILL BE ACCEPTABLE.

END OF SPECIFICATIONS.



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1208 Corporate Circle

Roanoke, VA 24018

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SALEM VA



SALEM FIRE STATION #2 - NEW SERVICE BAYS

NEW CONSTRUCTION

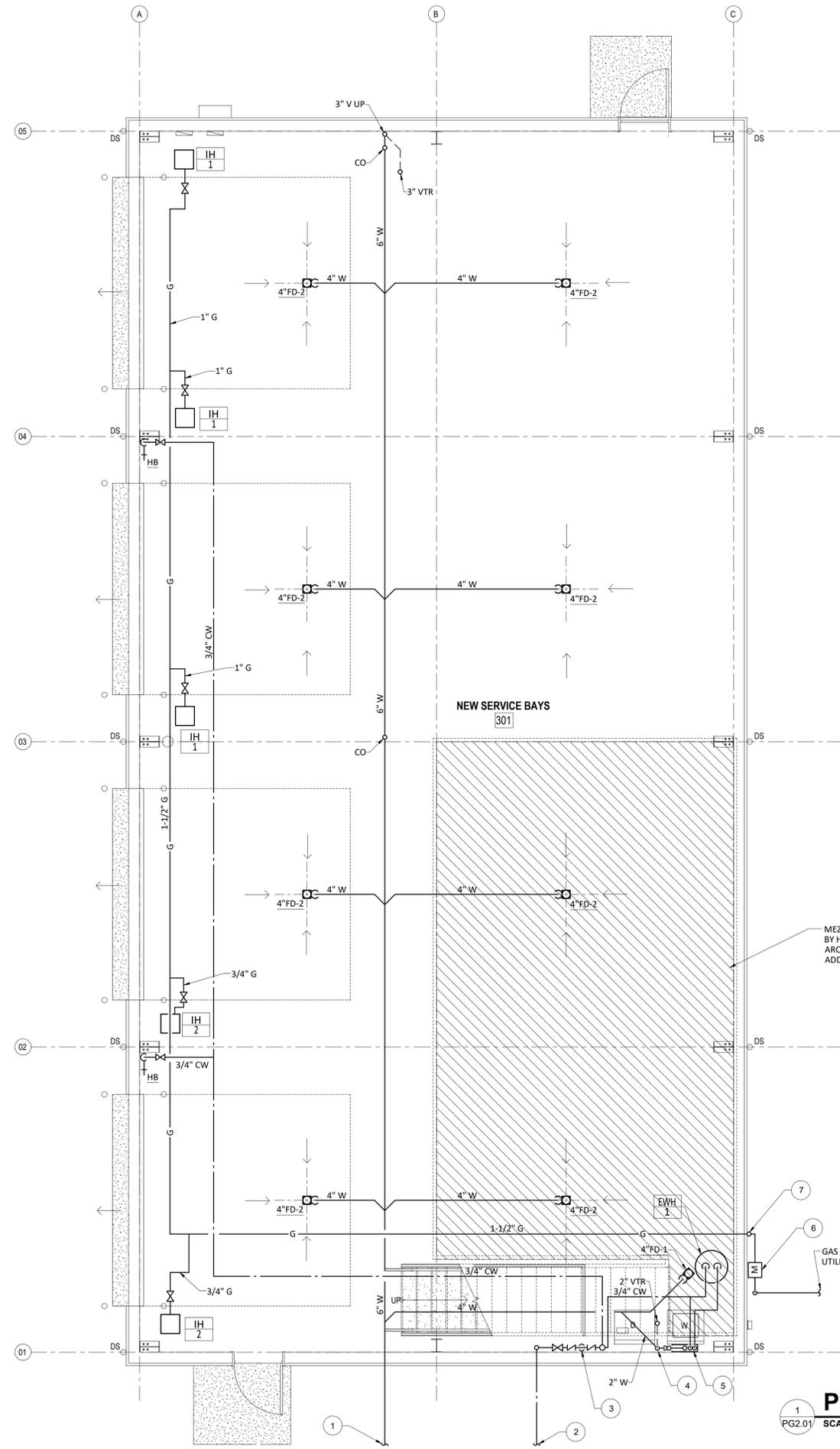
PLUMBING SPECIFICATIONS

415 ELECTRIC ROAD  
SALEM, VIRGINIA 24153

DRAWN BY JNB  
DESIGNED BY JNB  
CHECKED BY JNB  
DATE 2024-08-30  
SCALE AS NOTED  
REVISIONS

PG1.02

PROJECT NO 03220052.01



- KEYED NOTES:**
- 6" SANITARY SERVICE BELOW GRADE. REFER TO SITE UTILITY PLAN FOR CONTINUATION. INVERT ELEVATION = -36 INCHES, RELATIVE TO FINISHED FLOOR ELEVATION.
  - 3/4" DOMESTIC WATER SERVICE BELOW GRADE. REFER TO SITE UTILITY PLAN FOR CONTINUATION.
  - 3/4" RPZ RPZ BACKFLOW PREVENTER. INSTALL AT 24" AFF AND PROVIDE 6" HUB DRAIN BELOW FOR DISCHARGE RELIEF AND ROUTE DRAIN LINE THRU PLAN NORTH WALL AND TERMINATE W/ DOWNSPOUT COVER, ZURN MODEL Z-199
  - 2" WASTE DOWN AND 2" VENT UP.
  - 1/2" CW AND HW DOWN TO WASHER BOX.
  - NEW GAS METER AND PRESSURE REGULATOR SET FOR 10 IN. W.C. DELIVERY PRESSURE TO BUILDING. TOTAL GAS LOAD = 380 CFH. PIPING SIZED FOR 160FT OF RUN AT 0.5 IN. W.C. PRESSURE LOSS.
  - 1-1/2" GAS UP EXTERIOR WALL AND INTO BUILDING AS HIGH AS POSSIBLE AT ROOF.

MEZZANINE AREA INDICATED BY HATCHING, REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION

GAS SERVICE BY UTILITY COMPANY

**PLUMBING NEW WORK PLAN - GARAGE**  
 SCALE = 1/4"=1'-0"



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 Roanoke, VA 24018  
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SALEM VA



**SALEM FIRE STATION #2 - NEW SERVICE BAYS**  
 NEW CONSTRUCTION  
 PLUMBING NEW WORK PLAN - GARAGE

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24163

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE AS NOTED  
 REVISIONS



**BALZER & ASSOCIATES**  
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 ENGINEERS / SURVEYORS

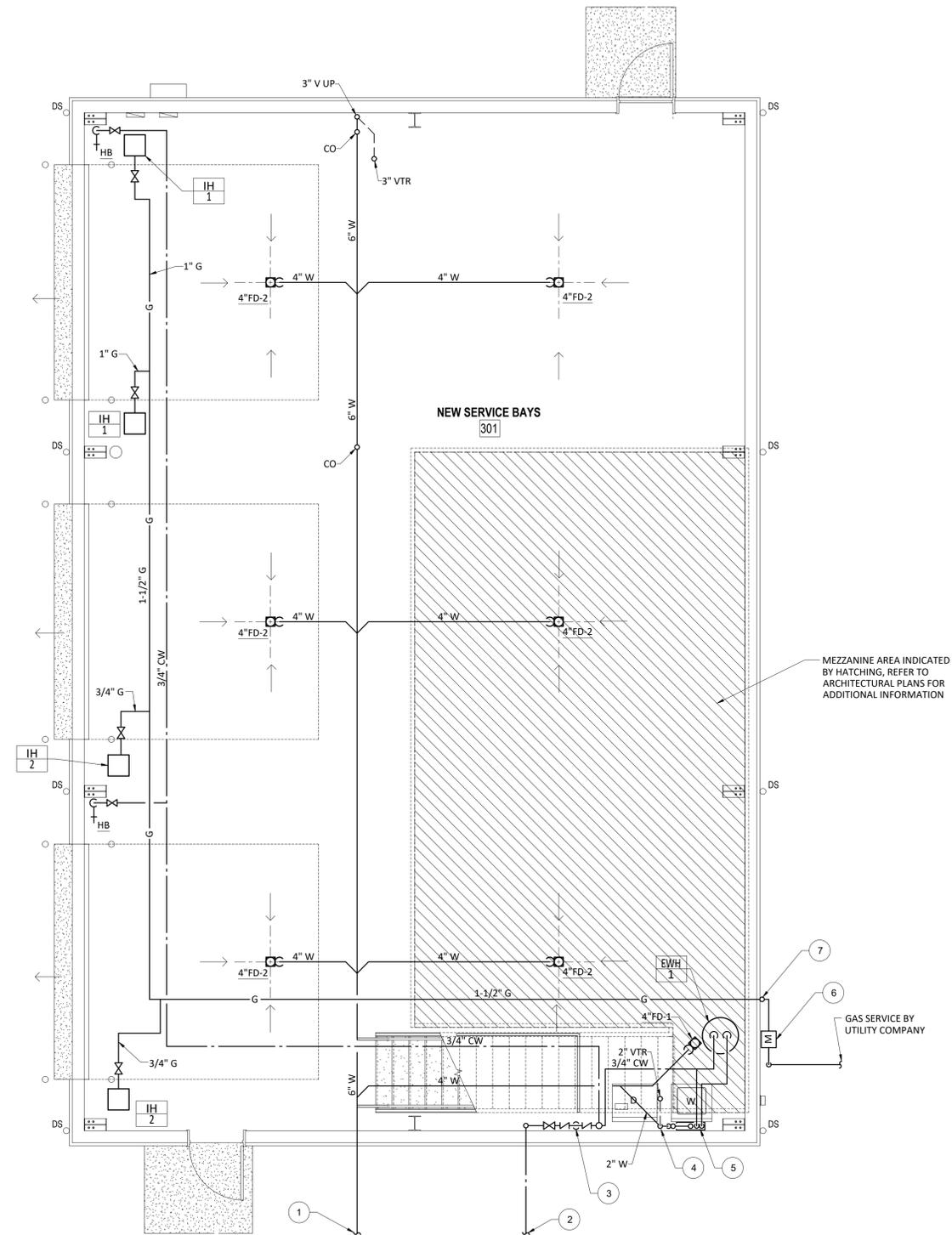
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SALEM VA



**KEYED NOTES:**

- 1 6" SANITARY SERVICE BELOW GRADE. REFER TO SITE UTILITY PLAN FOR CONTINUATION. INVERT ELEVATION = -36 INCHES, RELATIVE TO FINISHED FLOOR ELEVATION.
- 2 3/4" DOMESTIC WATER SERVICE BELOW GRADE. REFER TO SITE UTILITY PLAN FOR CONTINUATION.
- 3 3/4" RPZ RPZ BACKFLOW PREVENTER. INSTALL AT 24" AFF AND PROVIDE 6" HUB DRAIN BELOW FOR DISCHARGE RELIEF AND ROUTE DRAIN LINE THRU PLAN NORTH WALL AND TERMINATE W/ DOWNSPOUT COVER, ZURN MODEL Z-199
- 4 2" WASTE DOWN AND 2" VENT UP.
- 5 1/2" CW AND HW DOWN TO WASHER BOX.
- 6 NEW GAS METER AND PRESSURE REGULATOR SET FOR 10 IN. W.C. DELIVERY PRESSURE TO BUILDING. TOTAL GAS LOAD = 280 CFH. PIPING SIZED FOR 160FT OF RUN AT 0.5 IN. W.C. PRESSURE LOSS.
- 7 1-1/2" GAS UP EXTERIOR WALL AND INTO BUILDING AS HIGH AS POSSIBLE AT ROOF.

MEZZANINE AREA INDICATED BY HATCHING, REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION

GAS SERVICE BY UTILITY COMPANY

**1 PLUMBING NEW WORK PLAN - ALTERNATE**  
 PG2.02 SCALE = 1/4"=1'-0"

SALEM FIRE STATION #2 - NEW SERVICE BAYS

NEW CONSTRUCTION  
 PLUMBING NEW WORK PLAN -  
 GARAGE ALTERNATE

415 ELECTRIC ROAD  
 SALEM, VIRGINIA 24163

DRAWN BY JNB  
 DESIGNED BY JNB  
 CHECKED BY JNB  
 DATE 2024-08-30  
 SCALE AS NOTED  
 REVISIONS

**PG2.02**  
 PROJECT NO 03220052.01